

FORCE AND TORQUE MEASUREMENT



- FORCE AND TORQUE TRANSDUCERS
- CUSTOM-MADE LOAD CELLS
- WEIGHING LOAD CELLS
- CRANE OVERLOAD PROTECTION
- STANDARD REFERENCE TRANSDUCERS (ISO 376 ASTM E74)
- TENSIO METERS
- INSTRUMENTATION










SENSY
www.sensy.com

LOAD CELL
MANUFACTURER



* Available for models: 5000, 5100, 5300, 5600, 5560, 2600, 2960

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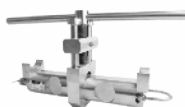
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FORCE TRANSDUCERS



LOAD CELL
MANUFACTURER



TECHNICAL DATA

Accuracy class

	SL	1	0.5	0.25	0.1	C1 (1000 d OIML)	0.05 (2000 d)	A3	0.03 (3000 d)	C3 (3000 d OIML)	0.02 (5000 d)
Combined error *	±0.5 ... 1	< ±1	< ±0.5	< ±0.25	< ±0.1	< ±0.03	< ±0.05	< ±0.03	< ±0.025	< ±0.020	< ±0.015
Non-repeatability	< ±0.25	< ±0.5	< ±0.25	< ±0.1	< ±0.03	< ±0.02	< ±0.02	< ±0.015	< ±0.015	< ±0.01	< ±0.01
Creep error over 30 min	< ±0.3	< ±0.25	< ±0.1	< ±0.075	< ±0.06	< ±0.04	< ±0.04	< ±0.03	< ±0.025	< ±0.020	< ±0.015
Reference temperature	23										
Temperature coefficient of sensitivity per 10°C	< ±0.2	< ±0.2	< ±0.1	< ±0.05	< ±0.05	< ±0.02	< ±0.035	< ±0.05	< ±0.015	< ±0.009	< ±0.008
Temperature coefficient of zero signal per 10°C	< ±0.2	< ±0.2	< ±0.1	< ±0.035	< ±0.035	< ±0.03	< ±0.03	< ±0.05	< ±0.023	< ±0.015	< ±0.013
Nominal sensitivity	1 ... 1.5		1 ... 2		1 ... 3		2 ... 3				
Sensitivity tolerance	< ±0.3										
Nominal range of the excitation voltage	5 to 10 if input resistance = 350 Ω; 5 to 18 if input resistance = 700 Ω										
Maximum excitation voltage	15 if input resistance = 350 Ω; 20 if input resistance = 700 Ω										

* Combined error = non-linearity + hysteresis.

The temperature coefficient of sensitivity and the combined error are balanced in such a way that their sum is less than 70 % of the error limit of the scale, class III, according to the OIML R60 and EN 45501 standards.

F.S.: Full Scale

g= 9.8107 m/s² (Jumet, Belgium)

Specifications are subject to change without notice.

2710-2715

TENSION AND COMPRESSION LOAD CELLS

Universal load cells combining accuracy, sturdiness and easy installation



Model 2710 - 30 kN



Features

- o Material:
 - 2710: stainless steel
 - 2715: alloy steel
- o Protection class: IP67
- o Compact design
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Application(s) SENSY's load cells 2710-2715 are perfectly designed for the following applications:

- Tank / Silo / Hopper / Vessel weighing,
- Conveyor belts weighing.

Capacities

2710: 5 - (7.5) - 10 - (15) - 20 - 30 - 50 - 75 - 100 kN

2715: 20 - 30 - 50 - 75 - 100 kN

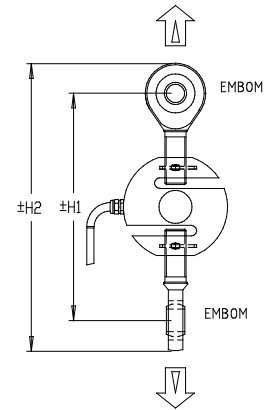
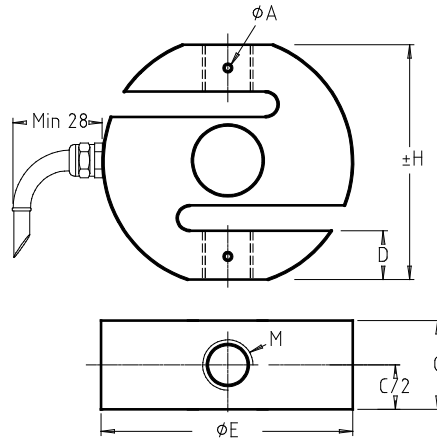
Specifications	0.1 %	0.03 %	
Accuracy class	0.1% F.S.*	0.03% F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.1	<± 0.03	% F.S.*
Repeatability error	<± 0.03	<± 0.015	% F.S.*
Creep error over 30 min.	<± 0.06	<± 0.025	% F.S.*
Zero shift after loading	<± 0.015	<± 0.0075	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.015	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.023	% F.S./10°C
Zero balance	± 0.02	± 0.02	mVV
Nominal sensitivity	2	2	mVV
Sensitivity tolerance	<± 0.3	<± 0.2	%
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	120	120	% F.S.*
Breaking load	>300	>300	% F.S.*
Permissible dynamic loading	60	60	% F.S.*
Static lateral force limit	50	50	% F.S.*

* F.S. : Full Scale.

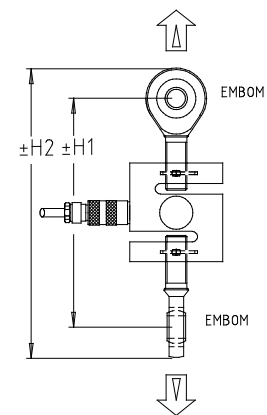
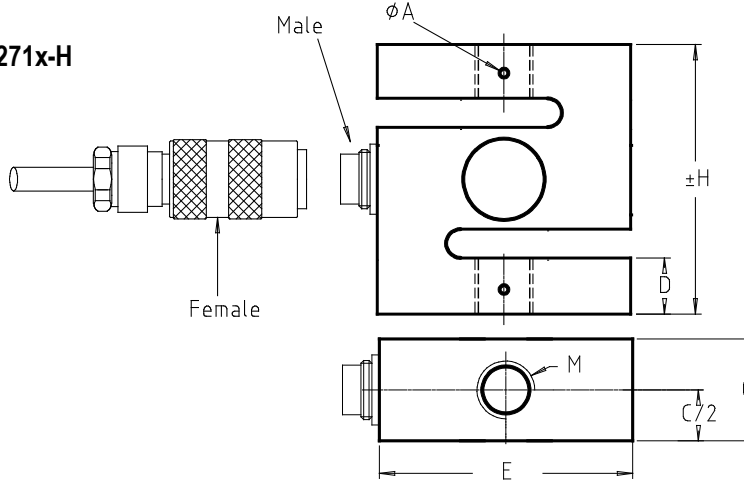
Specifications subject to change without notice..

2710-2715 > STANDARD DIMENSIONS

2710-E / 2710-F



271x-G / 271x-H



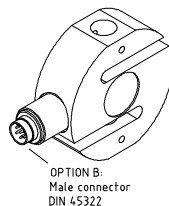
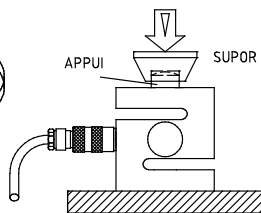
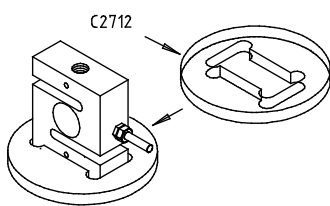
Ref. Item*	Capacities	ØA	H	C	D	E	ØE	M	H1	H2	CL (m)	Max. Deflexion (mm)	Weight (kg)	ACCESSORIES			
														APPUI	SUPOR	EMBOM	C2712
2710-E	5 - 15 kN	4	76	28	16	/	79	M16	177	222	3	0.30	0.85	APPUI-16	SUPOR-30	EMBOM-M16-BA	/
2710-F	20 - 50 kN	4	116	38	30	/	128	M24x2	238	302	3	0.35	2.6	APPUI-24	SUPOR-36	EMBOM-M24x2-BA	/
271x-G	20 - 50 kN	4	116	38	30	98	/	M24x2	238	302	3	0.35	2.6	APPUI-24	SUPOR-36	EMBOM-M24x2-BA	C2712-G
271x-H	75 - 100 kN	6	130	56	33	118	/	M36x3	318	402	6	0.60	5.2	APPUI-36	SUPOR-56	EMBOM-M36x3-PTFE	C2712-H

*x=Material: 2710 - stainless steel; 2715 - alloy steel

→ Other capacities and dimensions available on request

Dimensions in mm

Accessories



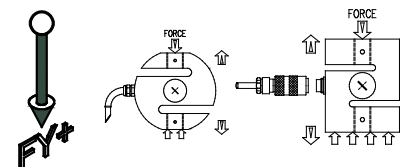
Wiring

Note: standard wiring for compression



Standard : Cable screen not connected to transducer / Faradisation non connectée au capteur

Load direction



High-accuracy universal load cells, easy to install.



Features

- o Wide range of capacities: from 100 N to 10 kN
- o Overload protection in tension and compression (only for 2712-A and 2712-C)
- o Compact design
- o Protection class: IP54 / IP65 (see drawing)
- o Material: anodised aluminium alloy
- o Cable length: 3 m (other lengths available on request)
- o Also available as standard reference load cells according to ISO 376 (classes "1", "0,5" and "00" - see specific data sheet 2712-ISO)

Most popular options (see more in ANNEX)



Model 2712 - 250 N



Application(s) SENSY's load cells 2712 are perfectly designed for the following applications:

- Industrial force measurement,
- Suspended reactors or hoppers, conveyor belts weighing,
- Primary transducer for universal testing machine.

Capacities

2712: 100 - (150) - 200 - (300) - 500 - (750) N
1 - (1.5) - 2 - (3) - 5 - (7.5) - 10 kN

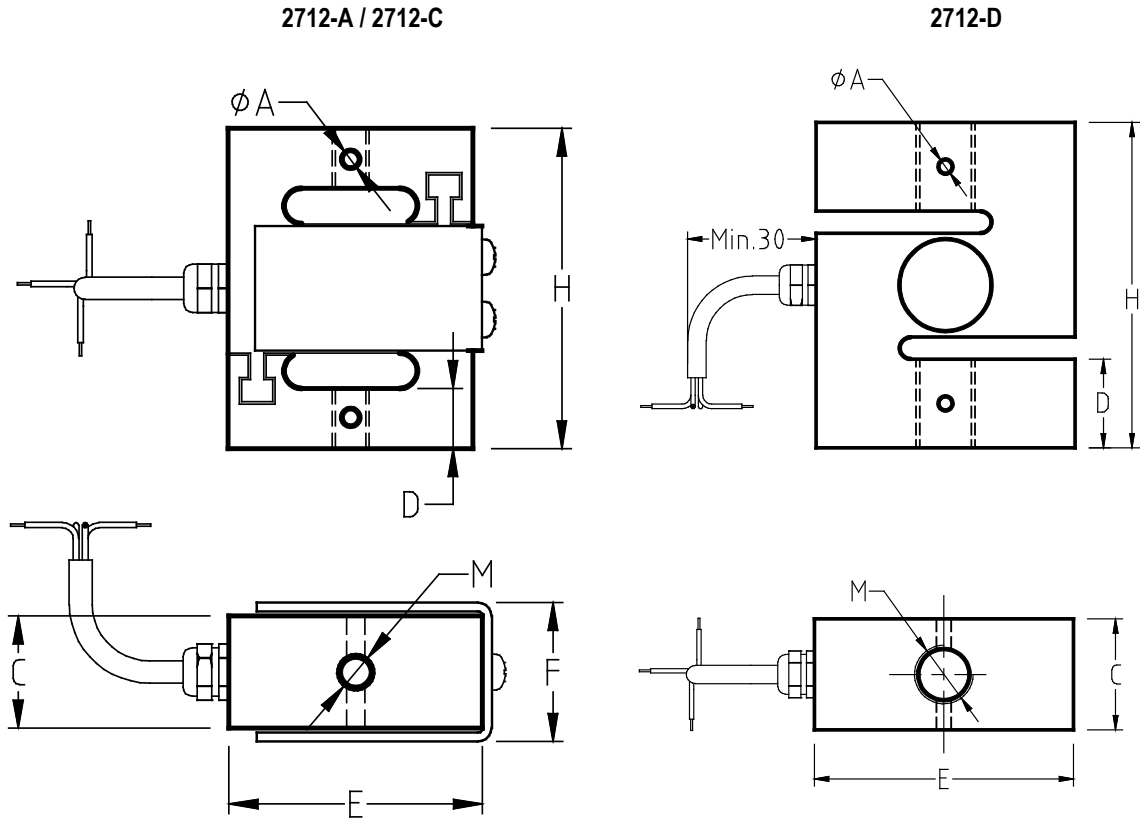
Specifications	0.1 %	0.03 %	0.02 %	
Accuracy class	0.1% F.S.*	0.03% F.S.*	0.02 % F.S.*	-
Combined error (non-linearity + hysteresis)	< ± 0.1	<± 0.03	<± 0.012	% F.S.*
Repeatability error	<± 0.03	<± 0.015	<± 0.01	% F.S.*
Creep error over 30 min.	<± 0.06	<± 0.025	<± 0.015	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.015	<± 0.008	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.023	<± 0.013	% F.S./10°C
Nominal sensitivity	2.038	2.038	2.038	mV/V
Sensitivity tolerance	<± 0.3	<± 0.2	<± 0.2	%
Input resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	352 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	120	120	120	% F.S.*
Breaking load	>300**	>300**	>300**	% F.S.*
Permissible dynamic loading	50	50	50	% F.S.*
Static lateral force limit	50	50	50	% F.S.*

* F.S. : Full Scale.

** : see drawing table

Specifications subject to change without notice..

2712 > STANDARD DIMENSIONS



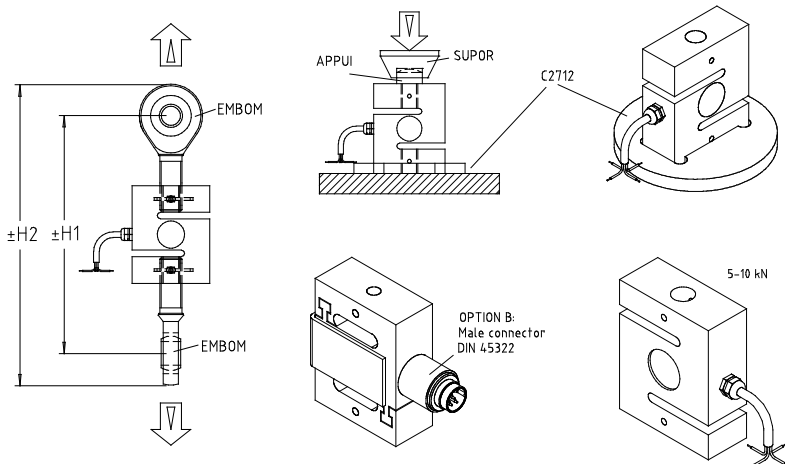
Ref. Item	Capacities	ØA	H	C	D	E	F	M	H1	H2	Breaking load	Max. Deflexion (mm)	IP	Weight (kg)	ACCESSORIES			
															APPUI	SUPOR	EMBOM	C2712
2712-A	100 - 1000 N	4	72	25	13.5	55	±32	M8	127	151	1000 %	0.40	IP54	0.42	APPUI-8	SUPOR-20	EMBOM-M8-BA	C2712-ABC
2712-C	(*) 1500 - 5000 N	4	72	25	13.5	55	±32	M12	151	185	600 % max. 20 kN	0.35	IP65	0.42	APPUI-12	SUPOR-20	EMBOM-M12-BA	C2712-C
2712-D	5 - 10 kN	4	88	30	24	70	/	M16	188	233	> 300 %	0.30	IP65	0.6	APPUI-16	SUPOR-30	EMBOM-M16-BA	C2712-D

(*): 5000 N accuracy class: 0.1 % only

→ Other capacities and dimensions available on request

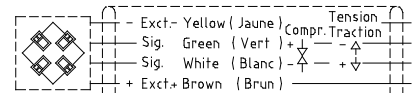
Dimensions in mm

Accessories



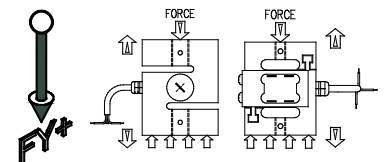
Wiring

Note: standard wiring for compression



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



2960-2962-2965

LOW-PROFILE (PANCAKE) LOAD CELLS

Universal tension and compression load cells for industrial force measurement.



Features

- o Flat design
- o High stiffness and fatigue resistant
- o Highly resistant to transverse forces
- o Protection class: IP66
- o Complete range of mounting accessories available
- o Material: stainless steel (2960)**, anodised aluminium alloy (2962), alloy steel (2965)
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Model 2960 - 300 kN



Application(s) SENSY's load cells 2960-2962-2965 are perfectly designed for the following applications:

- Force measurement on machines, industrial process control, hydraulic cylinders monitoring, fatigue tests,
- Hydraulic cylinders monitoring.

Capacities

2962: (3) - 5 - 7.5 kN

2960 - 2965: 10 - (15) - 20 - (30) - 50 - (75) - 100 - 150 - 200 - 300 - 500 - (750) - 1.000 - (1500) - 2.000 - 3.000 kN

Specifications	0.25 %	0.1 %	0.03 %	
Accuracy class	0.25 % F.S.*	0.1% F.S.*	0.03% F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.25	<± 0.1	<± 0.03	% F.S.*
Repeatability error	<± 0.1	<± 0.03	<± 0.015	% F.S.*
Creep error over 30 min.	<± 0.1	<± 0.06	<± 0.025	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.05	<± 0.015	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.035	<± 0.023	% F.S./10°C
Nominal sensitivity	2	2	2	mV/V
Sensitivity tolerance	<± 0.3	<± 0.3	<± 0.2	%
Input resistance	700 ± 2	700 ± 2	700 ± 2	ohm(s)
Output resistance	700 ± 2	700 ± 2	700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	150	150	150	% F.S.*
Breaking load	>300	>300	>300	% F.S.*
Permissible dynamic loading	70	70	70	% F.S.*
Static lateral force limit	50	50	50	% F.S.*

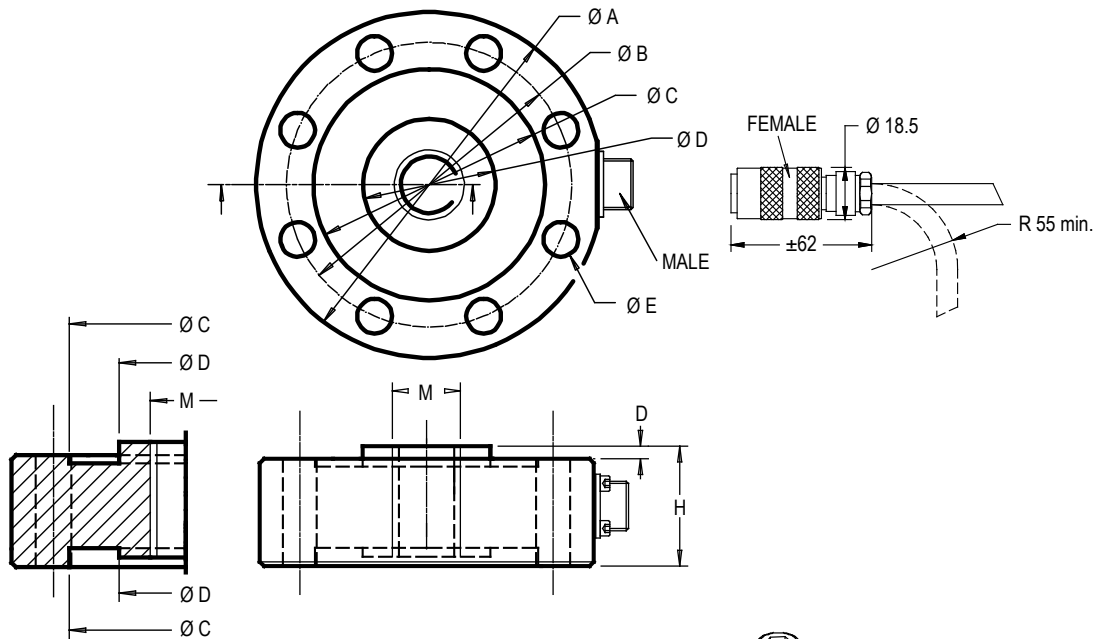
* F.S. : Full Scale.

** CSA and IECEx options are available only for stainless steel (2960) version.

Note: 0.03% only for anodised aluminium alloy (2962) version.

Specifications subject to change without notice..

2960-2962-2965 > STANDARD DIMENSIONS



Fastener quality: 10.9 or 12.9

Ref. Item*	Capacities	Ø A	Ø B	Ø C	Ø D	Ø E	M	H	D	CL (m)	H1	Max. Deflexion	Torque (N·m)	Weight (kg)	ACCESSORIES		
															APPUI	SUPOR	EMBOM
2962-A	3 - 7.5 kN	89	72	59	33	8xØ8.2	M16	28	2	3	40	0.05	15 (M8)	0.3	APPUI-16B	SUPOR-36	EMBOM-M16-BA
296x-B	10 - 50 kN	89	72	59	33	8xØ8.2	M20x1.5	28	2	3	40	0.04	40 (M8)	0.9	APPUI-20	SUPOR-36	EMBOM-M20x1.5-BA
296x-C	75 - 100 kN	149	125	106	46	8xØ12.5	M30x2	38.5	2	6	53.5	0.05	130 (M12)	3.5	APPUI-30	SUPOR-45	EMBOM-M30x2-BA
296x-D	150 - 200 kN	178	145	115	69	8xØ16.5	M36x3	50	2	6	70	0.06	320 (M16)	7	APPUI-36B	SUPOR-69	EMBOM-M36x3-BA**
296x-E	300 - 500 kN	198	172	140	90	16xØ16.5	M60x4	65	3	12	92	0.07	320 (M16)	12	APPUI-60	SUPOR-90	EMBOM-M60x4-PTFE**
296x-F	0.75 - 1 MN	279	229	180	120	16xØ24.5	M64x4***	70	3	12	103	0.08	1000 (M24)	28	APPUI-64	SUPOR-90	EMBOM-M64x4-PTFE**
296x-G	1.5 - 2 MN	345	290	240	156	16xØ32	M110x4	115	15	12	/	0.10	1300 (M30)	50	According to customer's design specifications		
296x-H	3 MN	390	335	280	195	24xØ24.5	M125x4	130	7	12	/	0.15	1000 (M24)	86	According to customer's design specifications		

*x=Material: 2960 - stainless steel; 2965 - alloy steel

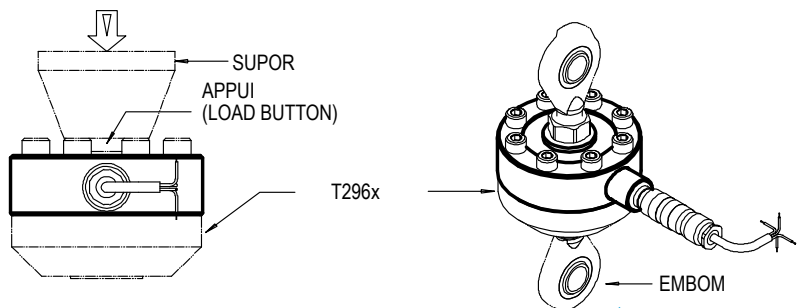
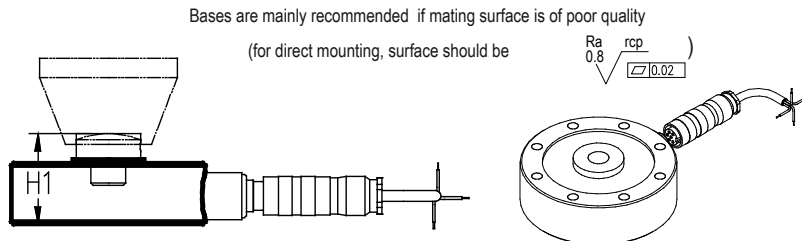
**See EMBOM data sheet (ACCESSORIES section)

***M90x4 available on request

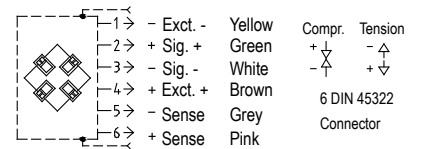
Other capacities and dimensions available on request

Dimensions in mm

Accessories

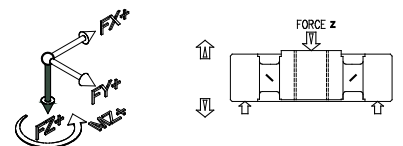


Wiring



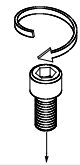
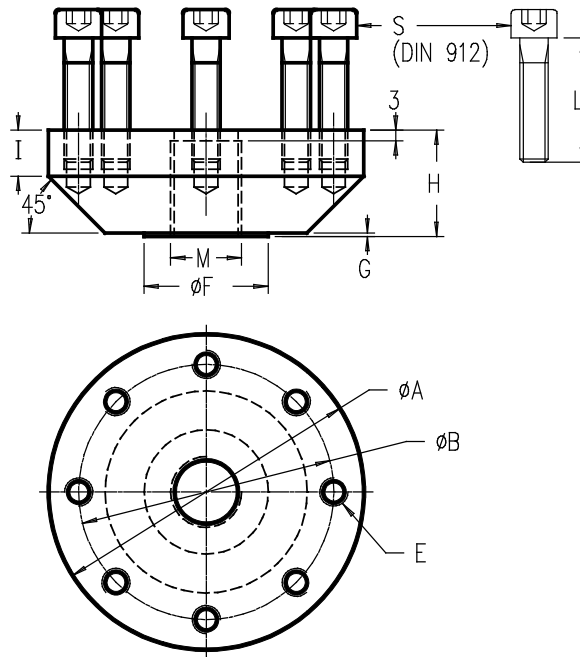
Standard: Cable screen not connected to the transducer

Load direction



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T2960-T2962-T2965 > STANDARD DIMENSIONS



Ref. Item**	Capacities	Ø A	Ø B	E	Ø F	G	I	S	M	H	H1	H2	H3	H4	Torque (N·m)	Weight (kg)
T2962-A	3 - 7.5 kN	89	72	8xM8	25	1	13	8xM8 L=35	M16	30	70	105	58	143	15 (M8)	0.57
T296x-B	10 - 50 kN	89	72	8xM8	35	1	13	8xM8 L=35	M20x1.5	30	70	109	58	160	40 (M8)	1.19
T296x-C	75 - 100 kN	149	125	8xM12	52	1	20	8xM12 L=50	M30x2	46	99.5	140.5	84.5	225	130 (M12)	5.25
T296x-D	150 - 200 kN	178	145	8xM16	70	1	23	8xM16 L=70	M36x3	50	120	160	100	285	320 (M16)	8.7
T296x-E	300 - 500 kN	198	172	16xM16	115	1	35	16xM16 L=80	M60x4	65	157	219	130	455	320 (M16)	14.5
T296x-F	0.75 - 1 MN	279	229	16xM24	162	1	36	16xM24 L=100	M64x4	75	172	247	145	550	1000 (M24)*	35.5
T296x-G	1.5 - 2 MN	According to customer's design specifications														
T296x-H	3 MN	According to customer's design specifications														

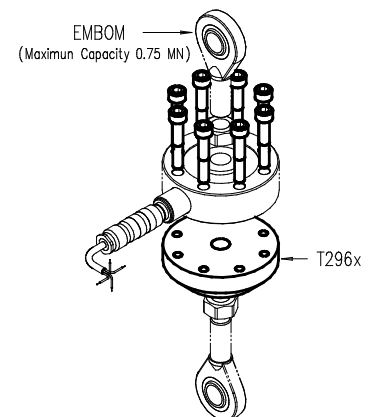
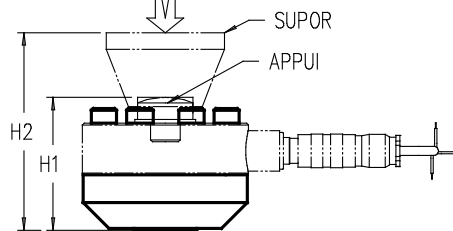
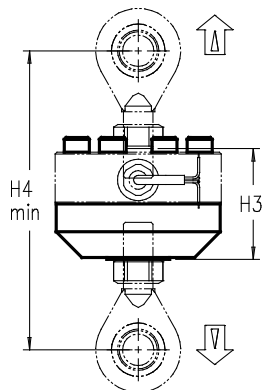
*Fastener quality 10.9 or 12.9

** x=Material: T2960 - stainless steel; T2965 - alloy steel

→ Other capacities and dimensions available on request

Dimensions in mm

Other views



3110-3115

HEAVY COMPRESSION LOAD CELLS (VERY HIGH CAPACITIES)

High-capacity compression load cells.



Features

- o Wide range of capacities: 30 kN (3 t) up to 50 MN (5.000 t)
- o Material: nickel-plated steel (3115) or stainless steel (3110)
- o Protection class: IP65
- o A whole range of mounting accessories is available
- o Cable length: see drawing table - CL (other lengths available on request)
- o Also available as standard reference load cells according to ISO 376 (classes 1, 0,5 and 00 - see specific data sheet 3115-ISO)

Most popular options (see more in ANNEX)



Ex i



Model 3115 - 3 MN



Application(s) SENSY's load cells 3110-3115 are perfectly designed for the following applications:

- Industrial force measurement, industrial process control (ISO 9000, ...),
- Primary transducer for universal testing machine, structure weighing.

Capacities

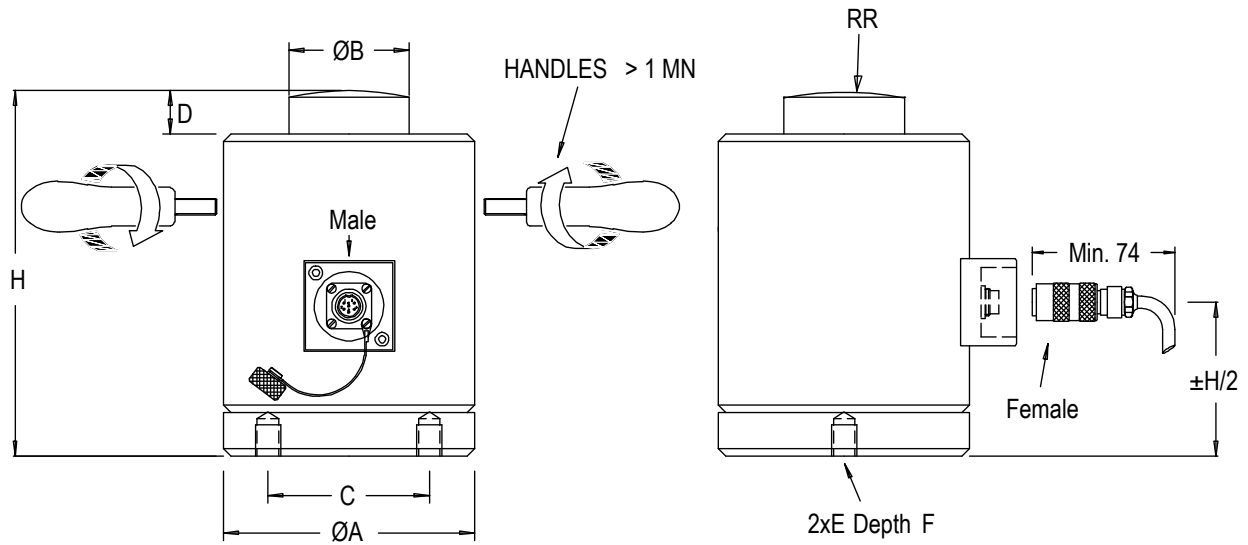
3110 - 3115: 30 - 50 - (75) - 100 - (150) - 200 - 300 - 500 kN
(0.75) - 1 - 1.5 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 - 40 - 50 MN

Specifications	0.25 %	0.1 %	0.05 %	0.03 %	
Accuracy class	0.25 % F.S.*	0.1% F.S.*	0.05 % F.S.*	0.03% F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.25	< ± 0.1	<± 0.05	<± 0.03	% F.S.*
Repeatability error	<± 0.1	<± 0.03	<± 0.02	<± 0.015	% F.S.*
Creep error over 30 min.	<± 0.1	<± 0.06	<± 0.04	<± 0.025	% F.S.*
Reference temperature	23	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.05	<± 0.035	<± 0.015	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.035	<± 0.03	<± 0.023	% F.S./10°C
Zero balance	± 0.02	± 0.02	± 0.02	± 0.02	mVV
Nominal sensitivity	1.5	1.5	1.5	1.5	mVV
Sensitivity tolerance	<± 0.3	<± 0.3	<± 0.3	<± 0.2	%
Input resistance	350..700 ± 2	350..700 ± 2	350..700 ± 2	350..700 ± 2	ohm(s)
Output resistance	350..700 ± 2	350..700 ± 2	350..700 ± 2	350..700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	3...12	VDC
Safe load limit	150	150	150	150	% F.S.*
Breaking load	>300	>300	>300	>300	% F.S.*
Permissible dynamic loading	50	50	50	50	% F.S.*
Static lateral force limit	15	15	15	15	% F.S.*

* F.S. : Full Scale.

Specifications subject to change without notice..

3110-3115 > STANDARD DIMENSIONS



Ref. Item*	Capacities	ØA	ØB	C	D	E	F	H	RR	CL (m)	Max. Deflexion	Weight (kg)
311x-A	30 - 50 kN	64	36	45	20	M10	12	135	250	6	0.12	2
311x-B	75 - 200 kN	64	36	45	20	M10	12	135	250	6	0.16-0.18	2.2
311x-C	300 - 500 kN	89	56	60	30	M12	15	160	300	6	0.18-0.20	4.5
311x-D	0.75 - 1 MN	99	64	65	30	M16	16	190	400	6	0.33-0.34	6
311x-E	1.5 - 2 MN	119	90	90	30	M16	16	225	400	6	0.29-0.35	20
311x-F	3 MN	159	125	100	40	M20	20	270	450	12	±0.4	42
311x-G	5 MN	205	160	125	50	M20	35	350	500	12	±0.5	90
311x-H	7.5 - 10 MN	294	200	200	60	M30	40	460	600	12	±0.7	243
311x-I	15 MN	330	250	250	65	M30	40	510	800	12	±0.75	330
311x-J	20 MN	364	250	270	75	M36	50	550	800	12	±0.8	446
311x-K	30 MN	445	300	300	75	M36	50	660	1000	12	±1	770
311x-L	40 MN	495	360	330	90	M36	50	730	1200	12	±1.1	1060
311x-M	50 MN	540	430	360	90	M36	50	900	2000	12	±1.2	1587

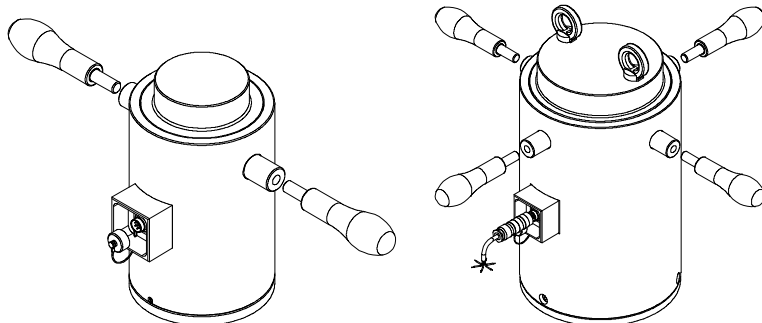
Note: 2 - 50 MN (200 - 5000 t) usually according to customer's design specifications.

*x=Material: 3110 - stainless steel; 3115 - alloy steel

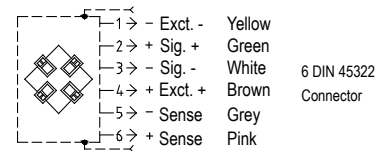
→ Other capacities and dimensions available on request

Dimensions in mm

Other views

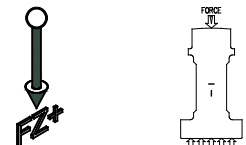


Wiring



Standard: Cable screen not connected to the transducer

Load direction



5100-5105

TENSION AND COMPRESSION LOAD CELLS (VERY HIGH CAPACITIES)

Accuracy universal load cells, easy to install.



Features

- o Wide range of capacities: 10 kN (1 t) up to 50 MN (5.000 t)
- o Compact design
- o Protection class: IP66
- o Material: stainless steel (5100)**, nickel-plated steel (5105)
- o Cable length: see drawing table - CL (other lengths available on request)
- o Also available as standard reference load cells according to ISO 376 (classes "1", "0,5" and "00" - see specific data sheet 5105-ISO)

Most popular options (see more in ANNEX)



Application(s) SENSY's load cells 5100-5105 are perfectly designed for the following applications:

- Industrial force measurement
- Force measurement test bench, hanging load weighing.

Capacities

5100 - 5105: (10) - (15) - 20 - 30 - 50 - (75) - 100 - (150) - 200 - 300 - 500 kN
(0.75) - 1 - 1.5 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 - 40 - 50 MN

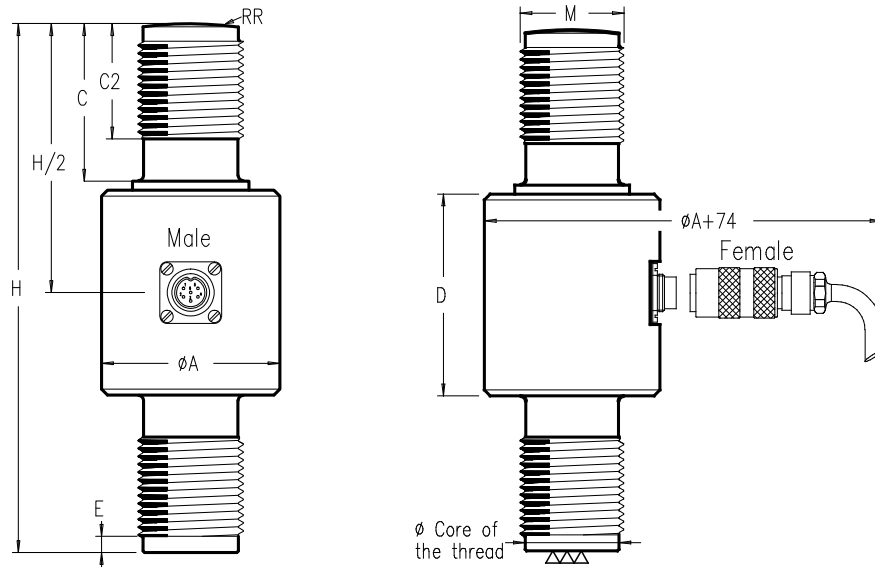
Specifications	0.25 %	0.1 %	0.05 %	0.03 %	
Accuracy class	0.25 % F.S.*	0.1% F.S.*	0.05 % F.S.*	0.03% F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.25	< ± 0.1	<± 0.05	<± 0.03	% F.S.*
Repeatability error	<± 0.1	<± 0.03	<± 0.02	<± 0.015	% F.S.*
Creep error over 30 min.	<± 0.1	<± 0.06	<± 0.04	<± 0.025	% F.S.*
Zero shift after loading	<± 0.025	<± 0.015	<± 0.01	<± 0.0075	% F.S.*
Reference temperature	23	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.05	<± 0.035	<± 0.015	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.035	<± 0.03	<± 0.023	% F.S./10°C
Zero balance	± 0.02	± 0.02	± 0.02	± 0.02	mVV
Nominal sensitivity	1...2	1...2	1...2	1...2	mVV
Sensitivity tolerance	<± 0.3	<± 0.3	<± 0.3	<± 0.2	%
Input resistance	350...700 ± 2	350...700 ± 2	350...700 ± 2	350...700 ± 2	ohm(s)
Output resistance	350...700 ± 2	350...700 ± 2	350...700 ± 2	350...700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	3...12	VDC
Safe load limit	150	150	150	150	% F.S.*
Breaking load	>300	>300	>300	>300	% F.S.*

* F.S. : Full Scale.

** CSA and IECEx options are available only for stainless steel model - 5100

Specifications subject to change without notice..

5100-5105 > STANDARD DIMENSIONS



Ref. Item*	Capacities	Ø A	C	C2	D	E	H	RR	CL (m)	M	H1	H2	Max. Deflexion (mm)	Weight (kg)	ACCESSORIES		
															EMBOF	PADIN	SUPOR
510x-A	10 - 50 kN	50	36	26	47	3	125	75	3	M24x2	245	307	0.02 - 0.08	0.8	EMBOF-M24x2-BA	PADIN-24**	SUPOR-24
510x-B	75 - 100 kN	60	48	35	73	3	170	80	3	M30x2	320	402	0.13 - 0.15	1.9	EMBOF-M30x2-BA	PADIN-30	SUPOR-30
510x-C	150 - 200 kN	75	49	44	87	4	190	350	6	M45x3	398	510	0.14 - 0.16	3.65	EMBOF-45x3-PTFE	PADIN-45	SUPOR-45
510x-D	300 - 500 kN	88.5	69	59	119	5	265	400	6	M64x4	560	740	0.19 - 0.25	9.8	EMBOF-64x4-PTFE	PADIN-64	SUPOR-64
510x-E	0.75 - 1.5 MN	111	95	80	145	5	340	400	6	M90x4	/	/	0.30 - 0.42	21	/	PADIN-100A	SUPOR-90
510x-G	2 MN	150	128	120	165	7	430	600	6	M125x4	/	/	0.35 - 0.65	38	/	PADIN-125A	SUPOR-125A
	3 MN															PADIN-125B	SUPOR-125B
510x-H	5 MN	180	162	158	180	8	520	800	6	M160x6	/	/	0.73	87	/	PADIN-160	SUPOR-160
510x-I	7.5 MN	220	205	175	200	10	590	1000	6	M200x6	/	/	0.83	151	/	PADIN-200A	SUPOR-200A
	10 MN															PADIN-200B	SUPOR-200B
510x-K	15 MN	280	250	230	230	10	710	1200	12	M250x6	/	/	1	292	/	PADIN-250	SUPOR-250A
510x-L	20 MN	360	380	340	320	36x30°	1080	1500	12	TR 330x24	/	/	1.7	700	/	PADIN-330A	SUPOR-330A
510x-M	30 MN	450	460	420	540	36x30°	1460	2000	12	TR 400x24	/	/	2.26	1420	/	PADIN-400A	SUPOR-400A
-	40 - 50 MN	According to customer's design specifications															

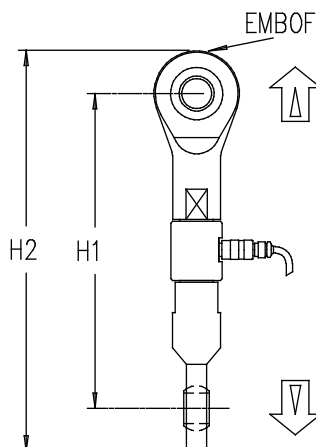
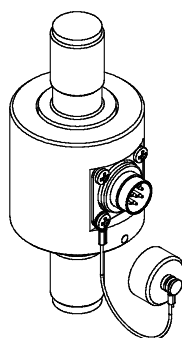
*x=Material: 5100 - stainless steel; 5105 - alloy steel

** PADIN-24 only for 50 kN; PADIN not necessary for < 50 kN load cells

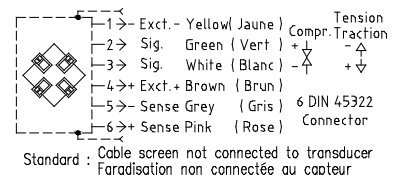
→ Other capacities and dimensions available on request

Dimensions in mm

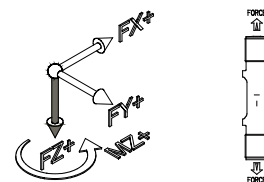
Accessories



Wiring



Load direction



5180-5182

COMPRESSION WASHER LOAD CELLS

Compression washer annular load cells specially designed for force measurement on bolts.



Features

- o Very low profile for high-capacity load cells
- o Material:
 - stainless steel body; aluminium housing (5180)
 - anodised aluminium alloy (5182)
 - 2 washers (included): stainless steel
- o Protection class: IP65
- o Very competitive prices
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i

Model 5180 - 300 kN



Application(s) SENSY's load cells 5180-5182 are perfectly designed for the following applications:

- Bolts tightening measurement,
- Industrial force measurement in confined spaces.

Capacities

5182: 20 - 30 kN

5180: 50 - 75 - (100) - 150 - 200 - 300 - 500 - 750 kN

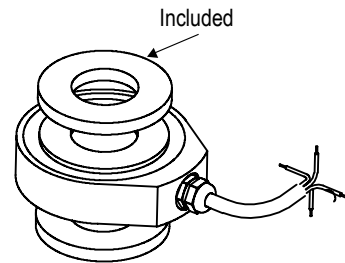
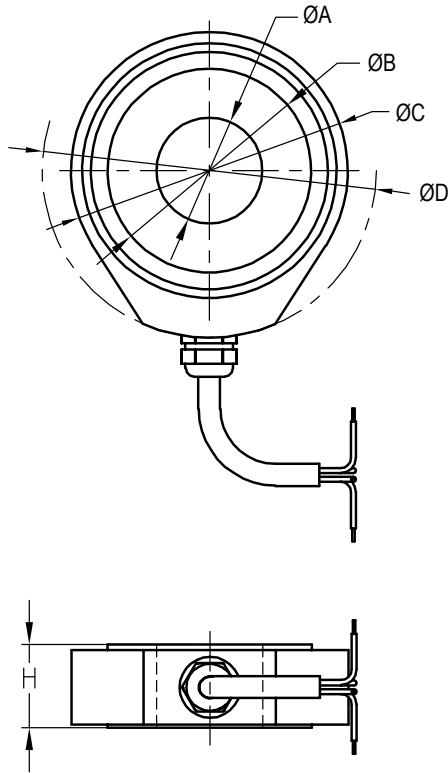
Specifications

Specifications	SL	
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-30...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	% F.S./10°C
Zero balance	± 0.02	mV/V
Input resistance	700 ± 2	ohm(s)
Output resistance	700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	5	VDC
Permissible nominal range of excitation voltage	3..10	VDC
Safe load limit	150	% F.S.*
Breaking load	> 300	% F.S.*
Permissible dynamic loading	50	% F.S.*
Static lateral force limit	25	% F.S.*

* F.S. : Full Scale.

Specifications subject to change without notice..

5180-5182 > STANDARD DIMENSIONS



Ref. Item	Capacities	M	ØA	ØB	ØC	ØD	ØE	H	E	CL (m)	Weight (kg)
5182-A *	20 kN	6	6.1	17	34	40	12.7	11	3	2	0.1
5182-B *	30 kN	8	8.1	19.5	34	40	19	11	3	2	0.1
5180-C	50 kN	10	10.1	19.5	34	40	22	11	3	2	0.1
5180-D	75 kN	12	12.1	24	38	47	25	12.5	3	2	0.1
5180-E	150 kN	16	16.1	29	45	55	32	15	5	3	0.12
5180-F	200 kN	20	20.1	36	53	62	38	17	5	3	0.15
5180-G	300 kN	24	24.1	44.9	63	70	48	19	5	3	0.25
5180-H	500 kN	30	30.25	53	70	79	54	26	6	3	0.5
5180-I	750 kN	36	36.5	76	99	99	74	35	6	3	1.3

*: Aluminium models limited to + 130°

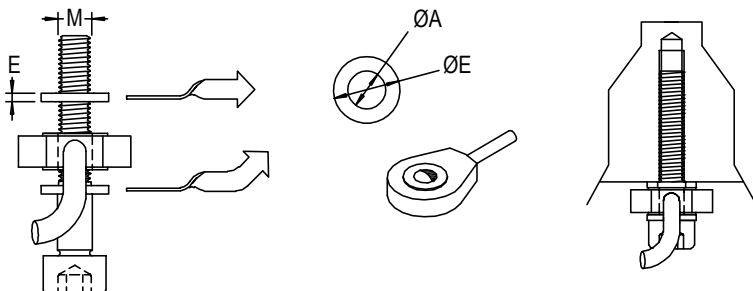
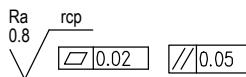
→ Other capacities and dimensions available on request

(For more drawings of accessories, please see page 193)

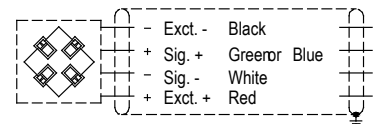
Dimensions in mm

Other views

The minimum roughness of mating surfaces has to be

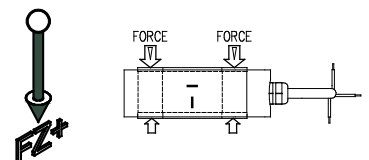


Wiring



Standard: Cable screen not connected to the transducer

Load direction



5190-5195

THROUGH HOLE (ANNULAR) HEAVY-CAPACITY LOAD CELLS

Annular compression load cells.



Features

- o Low profile for high-capacity load cells
- o Material: stainless steel (5190) or nickel-plated steel (5195)
- o Protection class: IP65
- o Sturdy design
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



Model 5190 - 500 kN



Application(s) SENSY's load cells 5190-5195 are perfectly designed for the following applications:

- Primary transducer on tensile test machine,
- Pre-stressed rods measurement (concrete, snow, earth pressure, rocks,...),
- Industrial force measurement in confined spaces.

Capacities

5190 - 5195: 200 - 300 - 500 kN / (0.75) - 1 - 1.5 - 2 - 3 - 5 MN

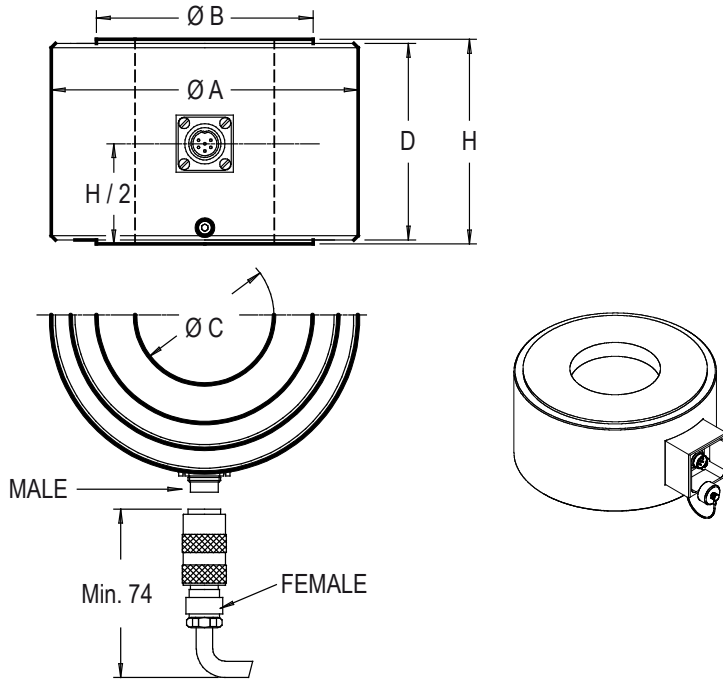
5195: (7.5) -10 - 15 - 20 - (30) MN

Specifications	SL	
Repeatability error	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	% F.S.*
Zero shift after loading	<± 0.5	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-30...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	% F.S./10°C
Zero balance	± 0.02	mVV
Nominal sensitivity	1.5	mVV
Input resistance	700 ± 2	ohm(s)
Output resistance	700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	150	% F.S.*
Breaking load	> 300	% F.S.*
Permissible dynamic loading	50	% F.S.*
Static lateral force limit	25	% F.S.*

* F.S.: Full Scale.

Specifications subject to change without notice..

5190-5195 > STANDARD DIMENSIONS



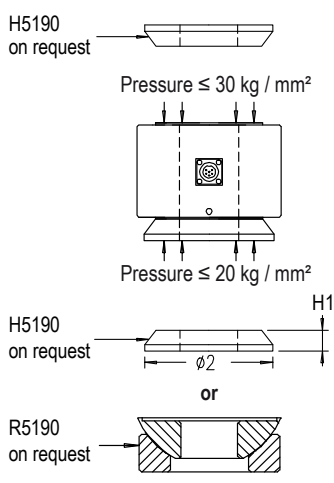
Ref. Item*	Capacities	ØA	ØB	ØC	D	H	H1	Ø2	Max. Deflexion (mm)	CL (m)	Weight (kg)
519x-A	200 - 300 kN	60	49	20	66	70	22	57	0.08	3	1.4
519x-B	500 kN	80	59	30	66	90	28	66	0.1	6	3.2
519x-C	0.75 - 1 MN	110	89	50	81	100	40	97	0.12	6	5.5
519x-D	1.5 - 2 MN	148	120	64	96	140	50	129	0.15	12	17
519x-E	3 MN	180	155	80	124	160	65	172	0.17	12	26
519x-F	5 MN	230	200	105	150	190	75	225	0.2	12	50
5195-G	7.5 -10 MN	290	290	150	/	260	60	387	0.3	20	100
5195-H	15 MN	340	340	165	/	290	80	480	0.34	20	175
5195-I	20 MN	390	390	200	/	330	110	545	0.38	20	260
-	30 MN	According to customer's design specifications									

Other dimensions ØA, ØB, and H on request
 *x=Material: 5190 - stainless steel; 5195 - nickel-plated steel

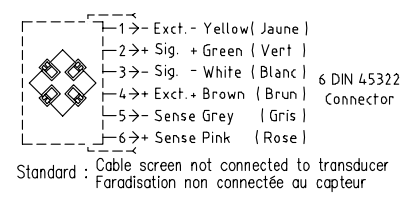
Other capacities and dimensions available on request

Dimensions in mm

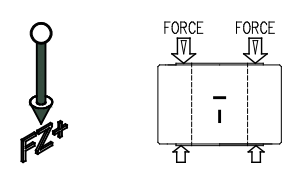
Accessories



Wiring



Load direction



5200-5205

TENSION LINK LOAD CELLS

Tension link load cells specially adapted for standard shackles.



Model 5205 - 25 kN



Features

- o Sturdy design
- o Protection class: IP66
- o Cable length: see drawing table - CL (other lengths available on request)
- o Material: stainless steel (5200), nickel-plated steel (5205)

Most popular options (see more in ANNEX)



Ex i



IP67
MARINE

Application(s) SENSY's load cells 5200-5205 are perfectly designed for the following applications:

- Tension force measurement,
- Suspended industrial weighing,
- Winch monitoring.

Capacities

5200-5205 FORCE: from 75 kN to 5 MN

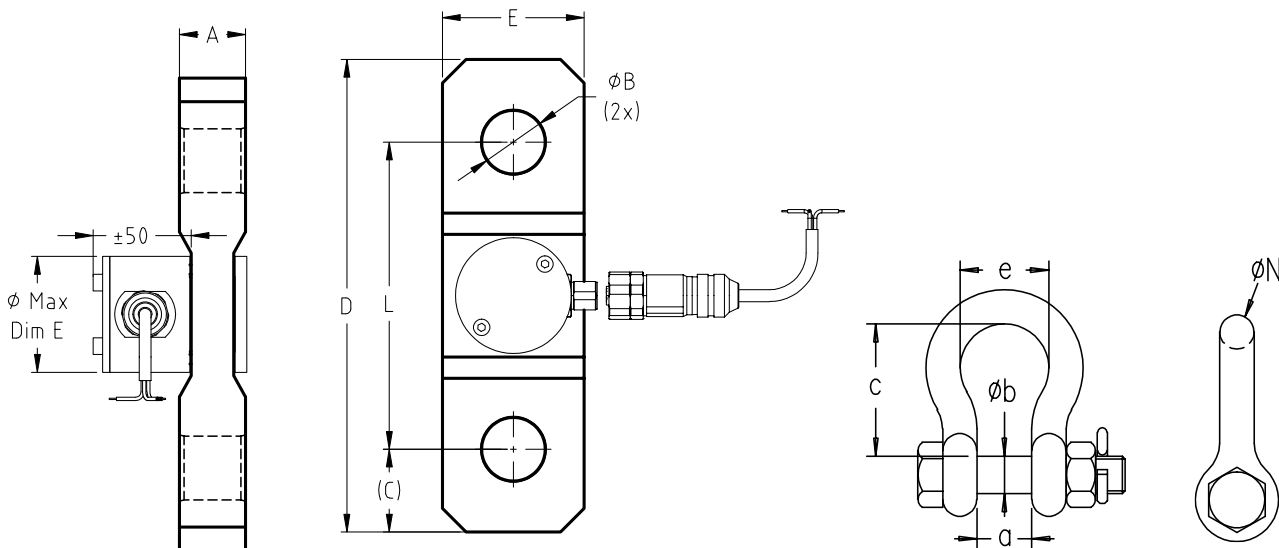
5200-5205 HOIST: from 7.5 t to 500 t

Specifications	0.5 %	
Combined error (non-linearity + hysteresis)	< ± 0.5	% F.S.*
Repeatability error	< ± 0.25	% F.S.*
Creep error over 30 min.	< ± 0.2	% F.S.*
Zero shift after loading	< ± 0.1	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	< ± 0.1	% F.S./10°C
Temperature coefficient of zero signal	< ± 0.1	% F.S./10°C
Zero balance	± 0.02	mV/V
Input resistance	352 ± 2	ohm(s)
Output resistance	352 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	150	% F.S.*
Breaking load	> 300	% F.S.*

* F.S. : Full Scale.

Specifications subject to change without notice..

5200-5205 > STANDARD DIMENSIONS



LOAD CELLS										
Ref. Item*	Capacities		A	Ø B	(C)	D	E	L	CL (m)	Weight (kg)
	Force > 300 %**	Hoist > 500 %**								
520x-A	75 kN	See 5200L-5205L sheet	22	27	32	179	60	115	3	2
520x-B	150 kN	See 5200L-5205L sheet	30	38	46	277	80	185	6	6
520x-C	250 kN	15 t	40	45	54	327	90	219	6	9.5
520x-D	300 kN	20 t	40	54	65	392	110	262	6	13
520x-E	500 kN	30 t	50	60	72	436	135	292	6	22
520x-F	750 kN	50 t	50	74	89	538	185	360	12	37
520x-G	1.25 MN	75 t	78	88	106	640	200	428	12	73
520x-H	1.5 MN	100 t	88	98	123	722	235	476	12	111
520x-I	2.5 MN	150 t	138	112	140	824	240	544	12	200
520x-J	3 MN	200 t	148	135	169	994	310	656	12	333
-	4 - 5 MN	400 - 500 t	According to customer's design specifications							

*x=Material: 5200 - stainless steel; 5205 - nickel-plated steel
 **Breaking load (% full scale)

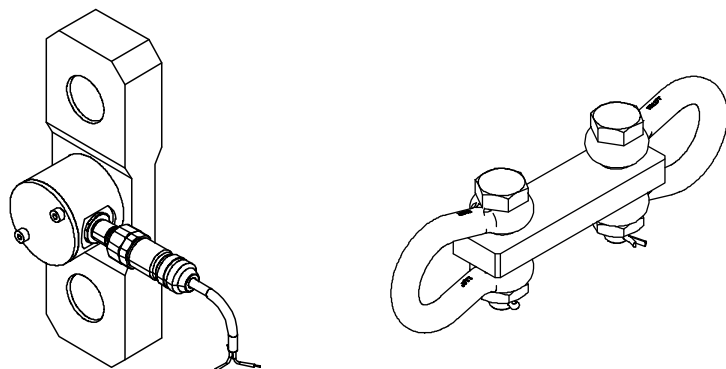
ASSOCIATED SHACKLES						
S.W.L.**	a	Ø b	c	e	Ø N	
					mm	inch
6.5 t	36±2.2	25+0.9	83±6.4	58±2.6	22+0.9	7/8"
12 t	51±3.2	35+1	115±6.4	83±4.2	32+1	1 1/4"
17 t	60±4	42+1.5	146±6.4	99±5	38+1.5	1 1/2"
25 t	74±4	50+2	178±6.4	126±6.3	45+2	1 3/4"
35 t	83±4.2	57+2	197±12.7	138±7.5	50+2	2"
55 t	105±4.7	70+2.5	260±12.7	180±9	65+2.5	2 1/2"
85 t	127±5	83+3	329±29	190±9.5	75+3	3"
120 t	147±5	95+2	400±19	238±12	95±2	3 3/4"
150 t	169±5	108±2	410±12	275±14	105±2	4 1/8"
200 t	179±5	130±3	513±13	290±15	120±3	4 23/32"

***SWL: Safe Working Load

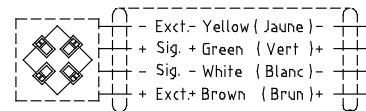
→ Other capacities and dimensions available on request

Dimensions in mm

Other views

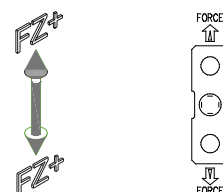


Wiring



Standard : Cable screen not connected to transducer
 Faradisation non connectée au capteur

Load direction



5300

STANDARD LOAD PINS

Load pins with standard dimensions.



Features

- o CE certified for hoisting applications
- o Sturdy design
- o Material: stainless steel
- o Protection class: IP65
- o Easy to install
- o Complete range of CE certified electronics and load limiters
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 5300 - 20 t



Application(s) SENSY's load cells 5300 are perfectly designed for the following applications:

- Hoisting devices and crane security in combination with load limitation electronics (e.g.: BRIDGE-BOY, CRANE-BOY, ...),
- Agriculture machines, theater equipment, elevators, hydraulic cylinders monitoring.

Capacities

5300: 0.5 - 1 - 2 - 3 - 5 - 10 - 20 - 30 - 50 - 75 - 100 - 125*** t

Specifications	SL - FORCE	SL - HOIST	SL - LIFT	
Combined error (non-linearity + hysteresis)	0.25 - 1**	0.5 - 2**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.3	<± 0.2	% F.S.*
Zero shift after loading	<± 0.5	<± 0.5	<± 0.5	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	<± 0.2	% F.S./10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1.5	± 1	± 0.5	mV/V
Input resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	150	200	300	% F.S.*
Breaking load	> 300	> 500	> 1000	% F.S.*
Permissible dynamic loading	50	75	100	% F.S.*
Static lateral force limit	100	150	200	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.

*** 125 t only force version.

Specifications subject to change without notice..

5300 > TECHNICAL SPECIFICATIONS

Load pins range



5000 (1 to 2000 t)
CUSTOM-MADE LOAD PIN



5050 (1 to 2000 t)
SUBSEA LOAD PIN

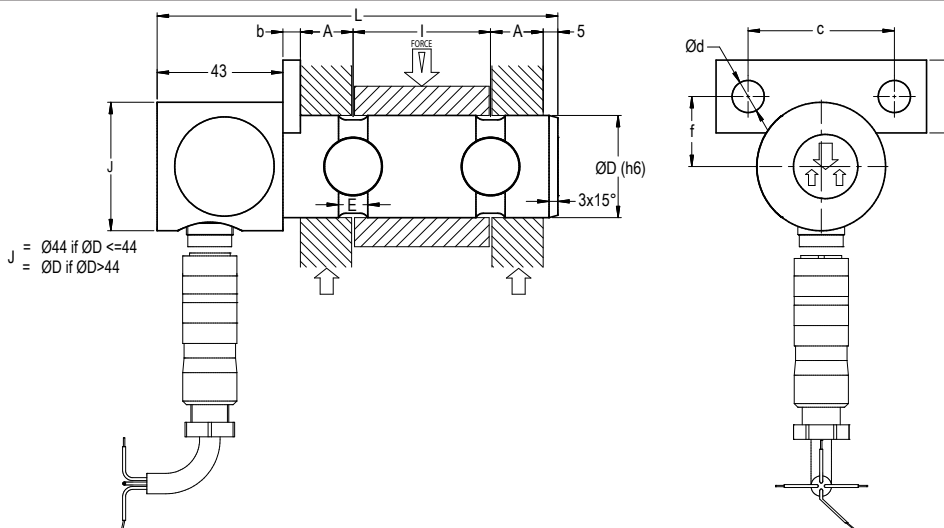


5300 (0.5 to 125 t)
STANDARD LOAD PIN



5600 (0.5 to 14 t)
ECONOMICAL LOAD PIN

5300 drawing



Ref. Item	CAPACITIES			ØD	A	E	l	a	b	c	Ød	f	L	Weight (kg)
	Force > 300 %*	Hoist > 500 %*	Lift > 1000 %*											
5300-A	0.75 t	0.5 t	0.25 t	25	13.5	8	31	25	6	50	11	20.5	112	1.02
5300-B	1.5 - 3 t	1 - 2 t	0.5 - 1 t	25	13.5	8	31	25	6	50	11	20.5	112	1.04
5300-C	5 - 7.5 t	3 - 5 t	1.5 - 2.5 t	35	18	10	47	25	6	50	11	24	137	1.44
5300-D	16.6 t	10 t	5 t	50	27	14	66	30	8	70	13	33	176	2.88
5300-E	30 t	20 t	10 t	65	32.5	18	90	30	8	70	13	38	211	5.44
5300-F	50 t	30 t	15 t	75	40	25	100	40	10	100	17	47	241	8.15
5300-G	75 t	50 t	-	85	49	20	117	40	10	100	17	50.5	271	12
5300-H	100 t	75 t	-	100	72.5	35	155	40	10	100	17	56	354	21.1
5300-I	125 t	100 t	-	120	72.5	35	155	50	12	140	21	68.5	354	31.4

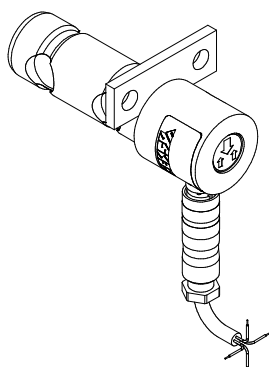
* Breaking load (% full scale)

Other capacities and dimensions available on request

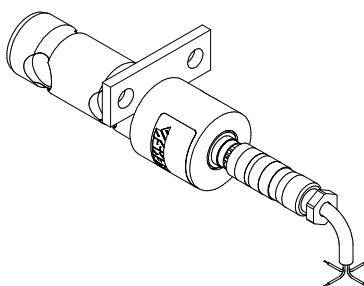
Dimensions in mm

Other views

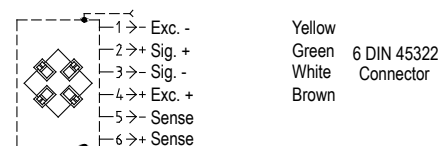
RADIAL OUTPUT (STANDARD)



AXIAL OUTPUT (5300A-x) - OPTION

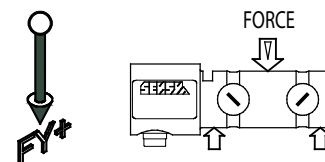


Wiring



Standard: Cable screen not connected to transducer

Load direction



Annular force transducers specially designed for applications requiring a load measurement through a centred hole.



Features

- o Sturdy design
- o Material: stainless steel
- o Protection class: IP67
- o Easy to install
- o CE certified for hoisting applications
- o Complete range of "CE" certified electronics and load limiters
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 5900 - 20 t



Application(s) SENSY's load cells 5900 are perfectly designed for the following applications:

Load limitation on EOT cranes, industrial weighing, force measurement,...

Capacities

5900 FORCE: 3 - 5 - (7.5) - 10 - (15) - 20 - 30 - 50 - 75 - 100 - 150 - (200) kN

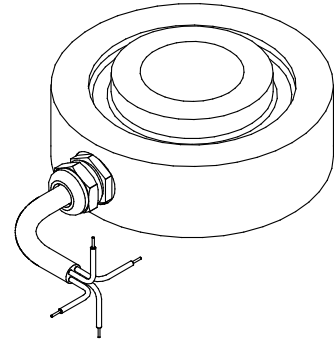
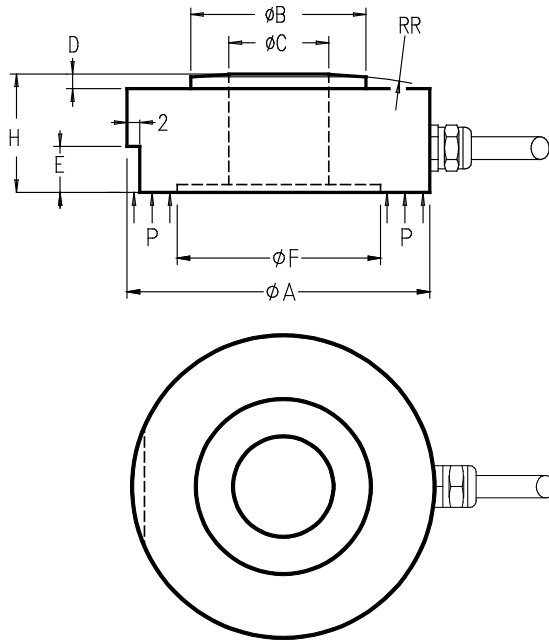
5900 HOIST: 0.2 - 0.5 - (0.75) - 1 - (1.5) - 2 - 3 - 5 - 7.5 - 10 - 15 t

Specifications	0.25 %	SL - FORCE	SL - HOIST	
Combined error (non-linearity + hysteresis)	<± 0.25	0.25 - 1**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.1	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.1	<± 0.3	<± 0.3	% F.S.*
Zero shift after loading	<± 0.025	<± 0.5	<± 0.5	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.2	<± 0.2	% F.S./10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Nominal sensitivity	1.5	± 1.5	± 1	mV/V
Sensitivity tolerance	<± 0.3	<± 0.5	<± 0.5	%
Input resistance	700 ± 2	700 ± 2	700 ± 2	ohm(s)
Output resistance	700 ± 2	700 ± 2	700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	150	150	200	% F.S.*
Breaking load	> 300	> 300	> 500	% F.S.*
Permissible dynamic loading	40	50	75	% F.S.*
Static lateral force limit	10	10	10	% F.S.*

* F.S.: Full Scale.

** Typical range of accuracy, depending on design and dimensions. Specifications subject to change without notice..

5900 > STANDARD DIMENSIONS



STANDARD													
Ref. Item	Capacities		ØA	ØB	ØC	D	E	ØF	H	P (N/mm²)	RR	Max. Deflexion (mm)	Weight (kg)
	Force > 300 %*	Hoist > 500 %*											
5900-A	3 - 30 kN	0.2 - 2 t	59	30	16	4	13	49	25	4 - 24.5	300	0.05-0.15	0.5
5900-B	30 - 100 kN	3 - 7.5 t	79	50	30	5	14	70	31	30 - 74	500	0.20-0.35	1
5900-C	100 - 150 (200) kN	10 - 15 t	119	80	50	6	14.5	105	40	42 - 83	750	0.30-0.40	3.2

* Breaking load (% full scale)

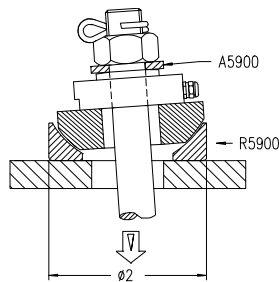
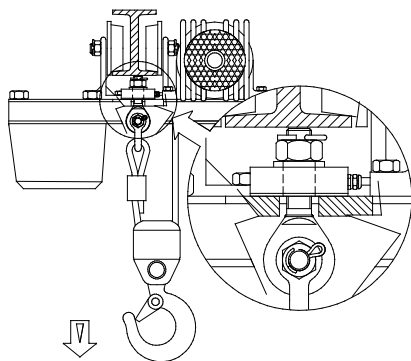
CUSTOM-MADE						
Capacities		ØC	ØB	ØA	H	
Force > 300 %*	Hoist > 500 %*					
3 - 30 kN	0.2 - 2 t	ØX	ØX+14	±ØX+43	23...25	
30 - 100 kN	3 - 7.5 t	ØX	ØX+20	±ØX+49	27...31	
100 - 150 (200) kN	10 - 15 t	ØX	ØX+30	±ØX+69	35...40	

* Breaking load (% full scale)

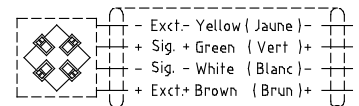
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

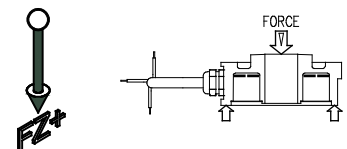


Wiring

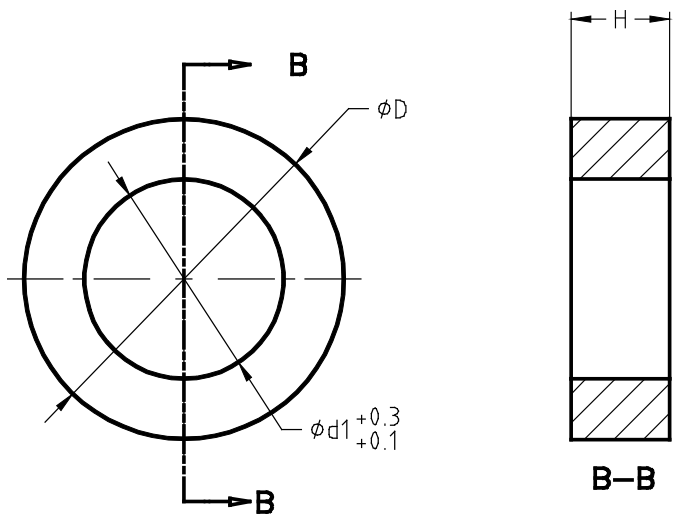


Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



A5900 > STANDARD DIMENSIONS



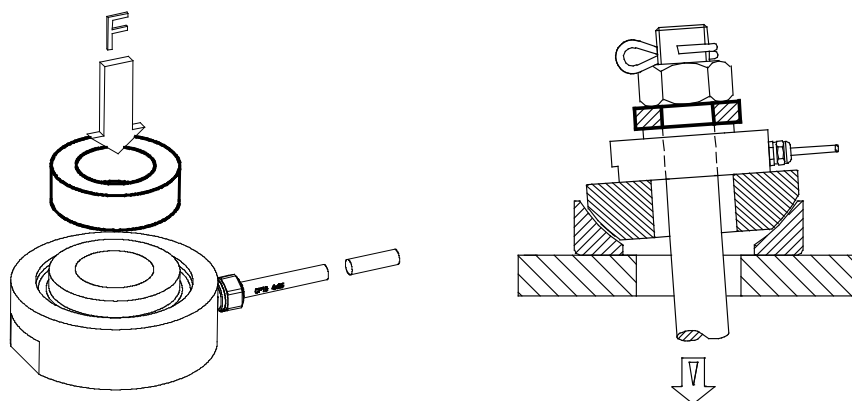
Ref. Item*	Capacities		$\phi d1$	ϕD	H	Weight (kg)
	Force > 300 %**	Hoist > 500 %**				
A5900-A	3 - 30 kN	0.2 - 2 t	16	39	10	0.08
A5900-B	30 - 100 kN	3 - 7.5 t	30	49	15	0.14
A5900-C	100 - 150 (200) kN	10 - 15 t	50	89	20	0.68

* Material: stainless steel
 **Breaking load (% full scale)

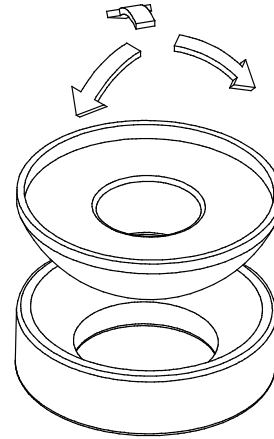
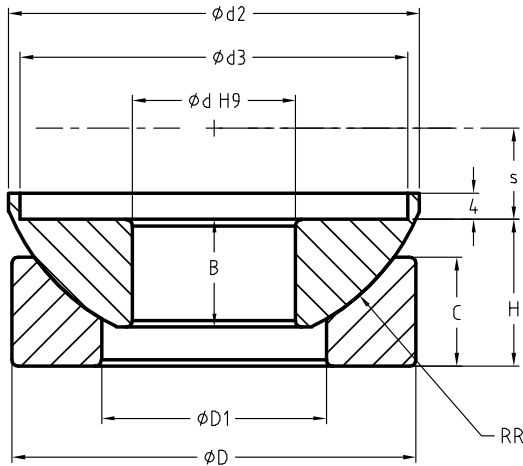
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



R5900 > STANDARD DIMENSIONS



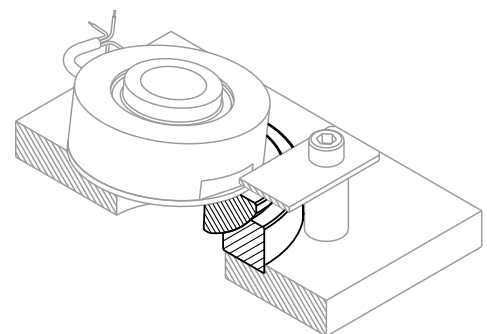
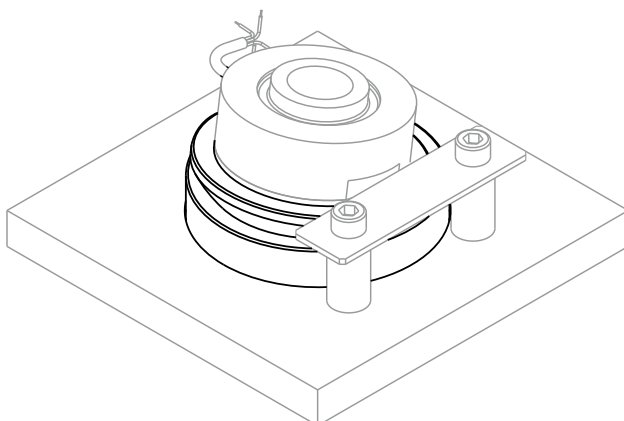
Ref. Item*	Capacities		Ød	ØD	ØD1	H	Ød2	Ød3	RR	B	C	s	Weight (kg)
	Force > 300 %**	Hoist > 500 %**											
R5900-A	3 - 30 kN	0.2 - 2 t	25	62	34.5	22.5	63	59.5	34	16.5	16.7	14	0.43
R5900-B	30 - 100 kN	3 - 7.5 t	35	90	50.5	28	84	79.5	49	22	20.7	22	1.2
R5900-C	100 - 150 (200) kN	10 - 15 t	80	180	107.5	50	172	119.5	98.5	43.5	38	42.5	8

* Material: stainless steel
 **Breaking load (% full scale)

— Other capacities and dimensions available on request

Dimensions in mm

Other views



Sealed and compact tension and compression sensors.



Model 5930 - 1 kN



Features

- o Protection class: IP65
- o Very competitive prices
- o Tension and / or compression (universal)
- o Load accessories available
- o Material:
 - stainless steel (5930)
 - anodised aluminium alloy (5932)
- o Cable length: 1.5 m (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i

IP67
MARINE

IP68

Application(s) SENSY's load cells 5930-5932 are perfectly designed for the following applications:

- Industrial force measurement in small spaces.

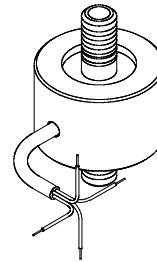
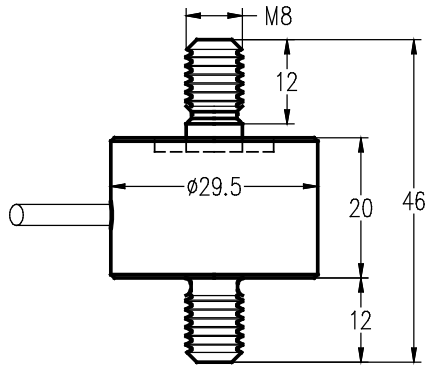
Capacities

- 5932: 200 - 300 - 500 N
- 5930: 1 - (1.5) - 2 - (3) - 5 kN

Specifications	1 %	
Combined error (non-linearity + hysteresis)	<± 1	% F.S.*
Repeatability error	<± 0.5	% F.S.*
Creep error over 30 min.	<± 0.25	% F.S.*
Zero shift after loading	<± 0.2	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	% F.S./10°C
Zero balance	± 0.05	mV/V
Nominal sensitivity	1.5	mV/V
Input resistance	1000 ± 100	ohm(s)
Output resistance	1000 ± 100	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Reference excitation voltage	5	-
Permissible nominal range of excitation voltage	3...10	VDC
Safe load limit	120	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	40	% F.S.*

* F.S. : Full Scale.
Specifications subject to change without notice..

5930-5932 > STANDARD DIMENSIONS

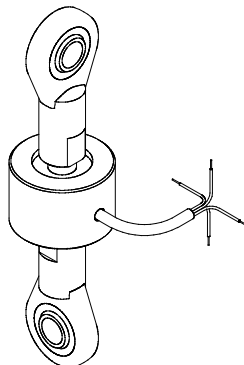
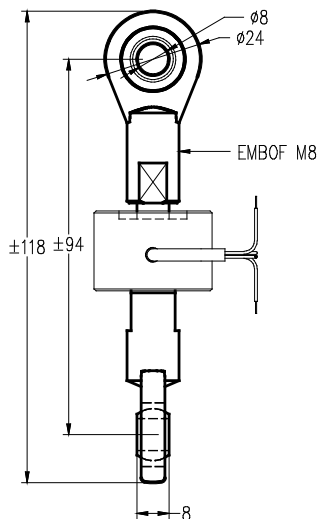


Ref. Item*	Capacities	Weight (kg)
5932-A	200 - 500 N (20 - 50 kg)	0.051
5930-A	1 - 5 kN (100 - 500 kg)	0.098

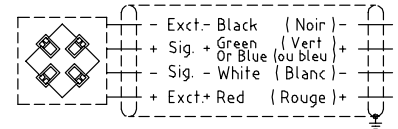
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

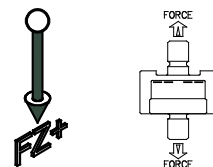


Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



Sealed and compact compression sensors.



Features

- o Protection class: IP65
- o Very competitive prices
- o Material:
 - stainless steel (5960)
 - anodised aluminium alloy (5962)
- o Cable length: 1.5 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 5960 - 5 kN



Application(s) SENSY's load cell 5960-5962 are perfectly designed for the following applications:

- Industrial force measurement in confined spaces,
- Weight control.

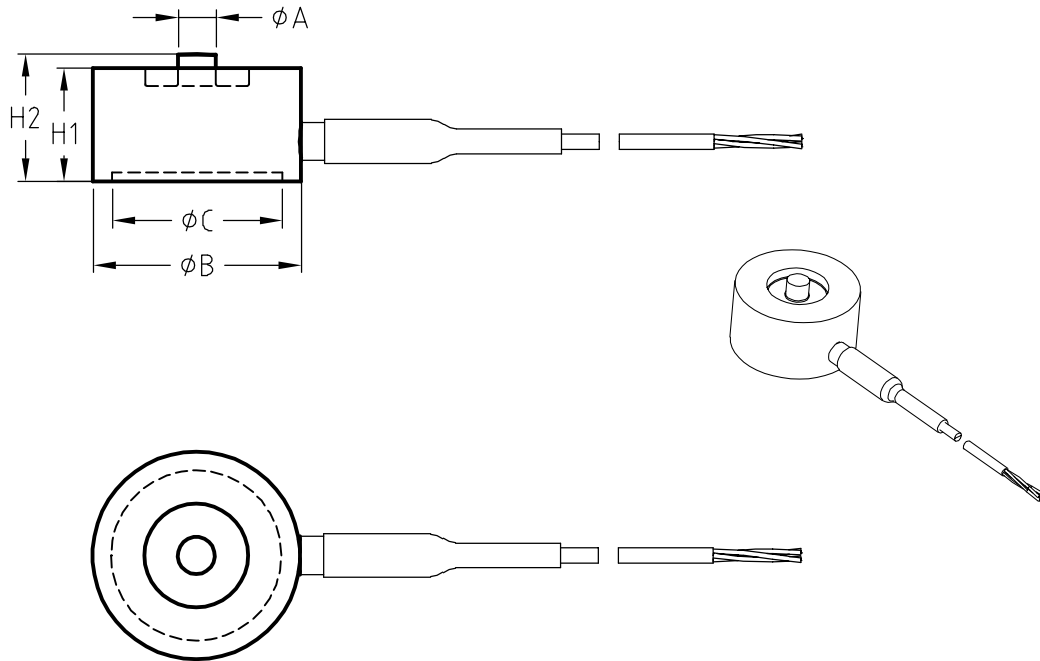
Capacities

5962: 200 - 300 - 500 N
 5960: (0.75) - 1 - (1.5) - 2 - (3) - 5 - (7.5) - 10 - (15) - 20 kN

Specifications	1 %	
Combined error (non-linearity + hysteresis)	<± 1	% F.S.*
Repeatability error	<± 0.5	% F.S.*
Creep error over 30 min.	<± 0.25	% F.S.*
Zero shift after loading	<± 0.2	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	% F.S./10°C
Zero balance	± 0.05	mV/V
Nominal sensitivity	1.5	mV/V
Input resistance	1000 ± 3	ohm(s)
Output resistance	1000 ± 3	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	5	VDC
Permissible nominal range of excitation voltage	3..10	VDC
Safe load limit	120	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	40	% F.S.*

* F.S. : Full Scale.
 Specifications subject to change without notice..

5960-5962 > **STANDARD DIMENSIONS**

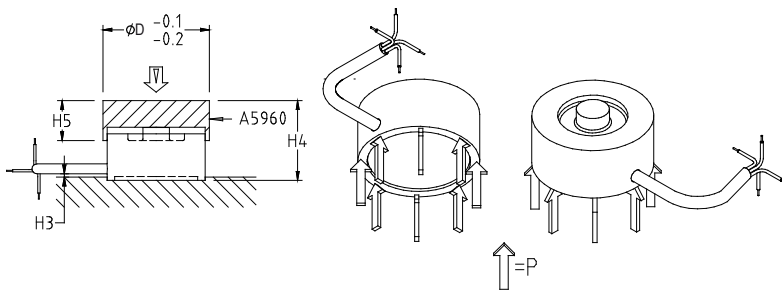


Ref. Item*	Capacities	ϕA	ϕB	ϕC	H1	H2	P (N/mm ²)	Max. Deflexion (mm)	H3 (Max)	H4	H5	ϕD	Weight (kg)
5962-A	200 - 500 N	4	22	19.75	12	13.5	2.7 to 6.8	0.08 to 0.12	1.5	17.5	8	24	± 0.042
5960-B	750 - 5000 N	4	22	19.75	12	13.5	10.16 to 68	0.08 to 0.12	1.5	17.5	8	24	± 0.052
5960-C	10 - 20 kN	8	29.5	23	14	16	37.3 to 0.20	0.14 to 0.20	2	24	12	32	± 0.091

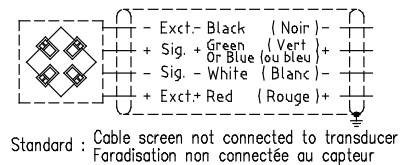
→ Other capacities and dimensions available on request

Dimensions in mm

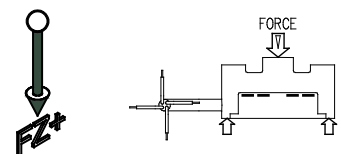
Other views



Wiring



Load direction



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WEIGHING LOAD CELLS



LOAD CELL
MANUFACTURER



SEWSP

SEWSP

SEWSP

SEWSP

SEWSP

SEWSP



TECHNICAL DATA

Accuracy class

	SL	1	0.5	0.25	0.1	C1 (1000 d OIML)	0.05 (2000 d)	A3	0.03 (3000 d)	C3 (3000 d OIML)	0.02 (5000 d)
Combined error *	±0.5 ... 1	< ±1	< ±0.5	< ±0.25	< ±0.1	< ±0.03	< ±0.05	< ±0.03	< ±0.025	< ±0.020	< ±0.015
Non-repeatability	< ±0.25	< ±0.5	< ±0.25	< ±0.1	< ±0.03	< ±0.02	< ±0.02	< ±0.015	< ±0.015	< ±0.01	< ±0.01
Creep error over 30 min	< ±0.3	< ±0.25	< ±0.1	< ±0.075	< ±0.06	< ±0.04	< ±0.04	< ±0.03	< ±0.025	< ±0.020	< ±0.015
Reference temperature	23										
Temperature coefficient of sensitivity per 10°C	< ±0.2	< ±0.2	< ±0.1	< ±0.05	< ±0.05	< ±0.02	< ±0.035	< ±0.05	< ±0.015	< ±0.009	< ±0.008
Temperature coefficient of zero signal per 10°C	< ±0.2	< ±0.2	< ±0.1	< ±0.035	< ±0.035	< ±0.03	< ±0.03	< ±0.05	< ±0.023	< ±0.015	< ±0.013
Nominal sensitivity	1 ... 1.5		1 ... 2		1 ... 3		2 ... 3				
Sensitivity tolerance	< ±0.3										
Nominal range of the excitation voltage	5 to 10 if input resistance = 350 Ω; 5 to 18 if input resistance = 700 Ω										
Maximum excitation voltage	15 if input resistance = 350 Ω; 20 if input resistance = 700 Ω										

* Combined error = non-linearity + hysteresis.
 The temperature coefficient of sensitivity and the combined error are balanced in such a way that their sum is less than 70 % of the error limit of the scale, class III, according to the OIML R60 and EN 45501 standards.
 F.S.: Full Scale
 g= 9.8107 m/s² (Jumet, Belgium)
 Specifications are subject to change without notice.

2000S

HERMETICALLY SEALED BENDING BEAM LOAD CELL

Load cell combining high accuracy and resistance in harsh environment.



Features

- o Material: stainless steel
- o Protection class: IP67 (welded sealing)
- o Complies with OIML / R 60 up to 3000 d for scales in class III according to EN 45501
- o Standardised dimensions
- o Cable length: 3 m (other lengths available on request)
- o Whole range of mounting kits available

Most popular options (see more in ANNEX)



Ex i



IP68

Model 2000S - 50 kg



Application(s) SENSY's load cell 2000S is perfectly designed for the following applications:

- OIML certified and industrial scales,
- Packaging, batching and filling machines,
- Reactors, tanks, vessels or hopper weighing.

Capacities

2000S: 10 - (15) - 20 - (30) - 50 - (75) - 100 - (150) - 200 kg

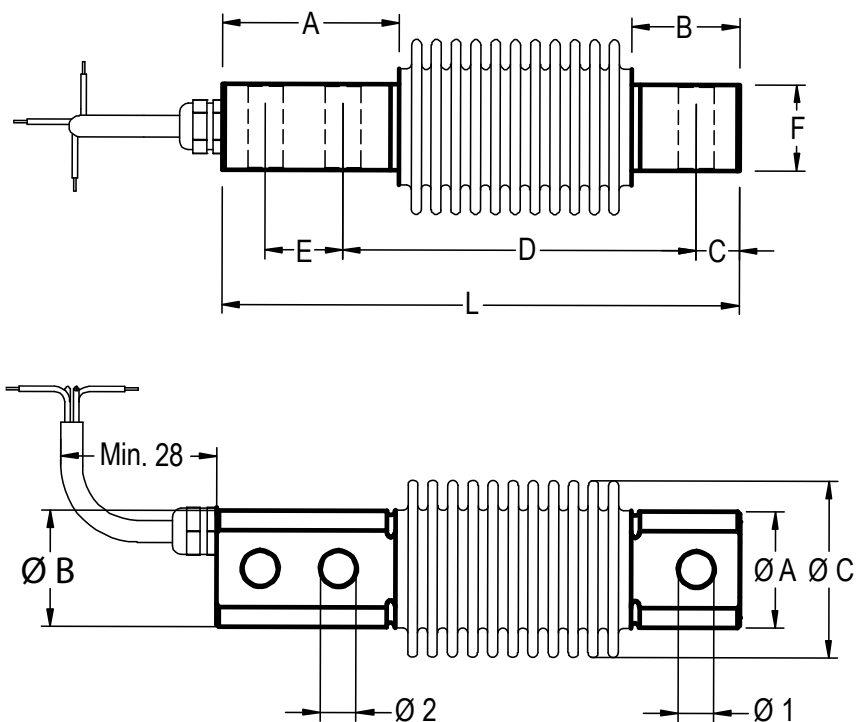
Specifications	A3	0.03 %	C 3	
Accuracy class	0.03 %** F.S.*	0.03% F.S.*	3000 d OIML	-
Repeatability error	<± 0.015	<± 0.015	<± 0.01	% F.S.*
Creep error over 30 min.	<± 0.03	<± 0.025	<± 0.02	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.015	<± 0.009	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.05	<± 0.023	<± 0.013	% F.S.*10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Sensitivity tolerance	<± 0.2	<± 0.2	<± 0.1	%
Input resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3..12	3...12	3...12	VDC
Safe load limit	150	150	150	% F.S.*
Breaking load	>300	>300	>300	% F.S.*
Permissible dynamic loading	60	60	60	% F.S.*
Static lateral force limit	100	100	100	% F.S.*

* F.S. : Full Scale.

** : except thermal drifts.

Specifications subject to change without notice..

2000S > STANDARD DIMENSIONS

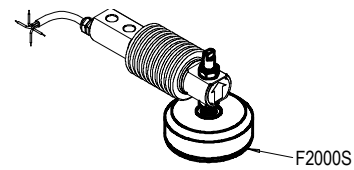
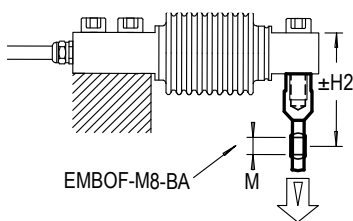
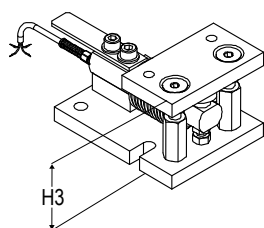


Ref. Item	Capacities	A	B	C	D	E	F	L	Ø1	Ø2	ØA	ØB	ØC	H1	H2	H3	ØM	Max. Deflexion (mm)	Weight (kg)
2000S-A	10 - 200 kg	40	20	10	82	18	20	120	8.2	8.2	± 26.7	32 max	45 max	78	56	80	8	0.2 to 0.3	0.48

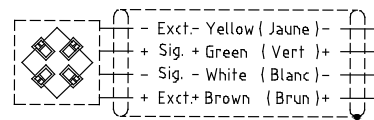
Other capacities and dimensions available on request

Dimensions in mm

Accessories

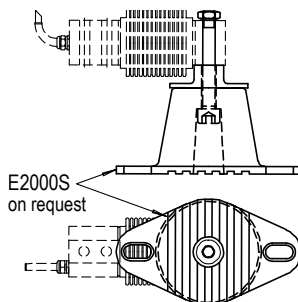
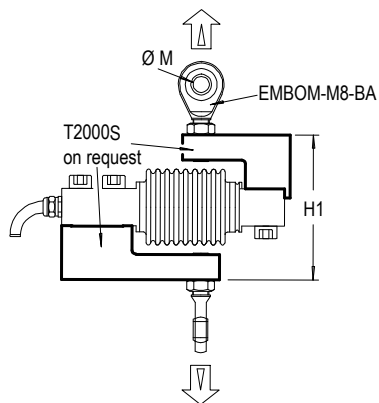
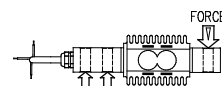
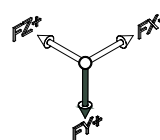


Wiring

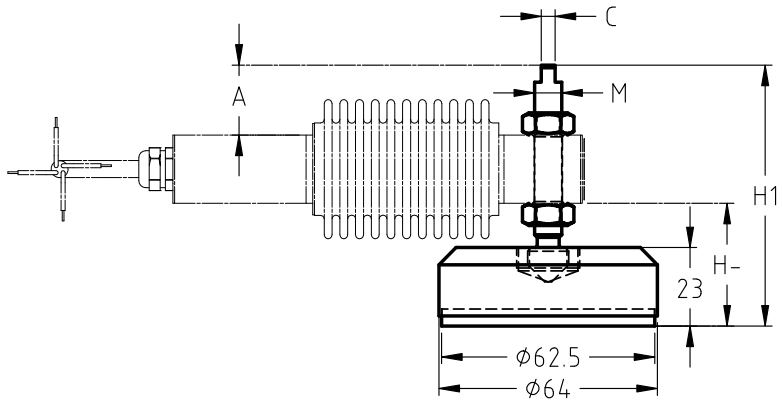
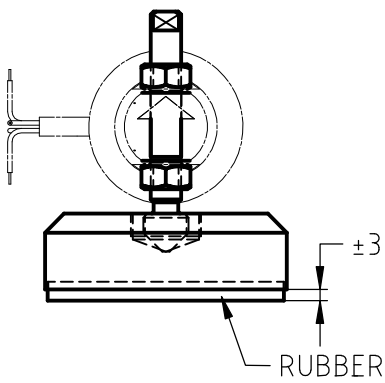
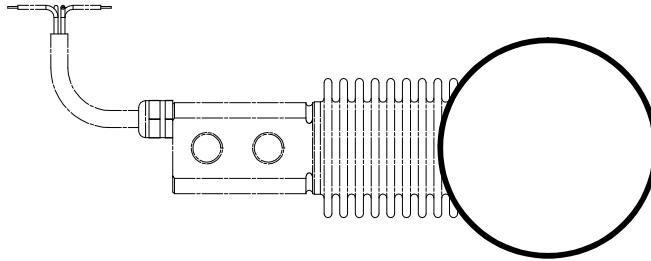
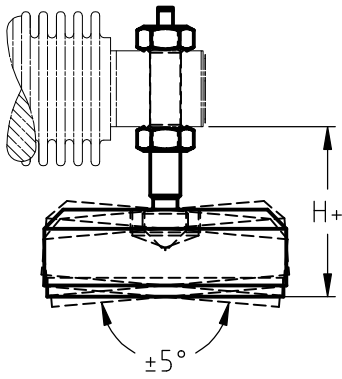


Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



F2000S > STANDARD DIMENSIONS



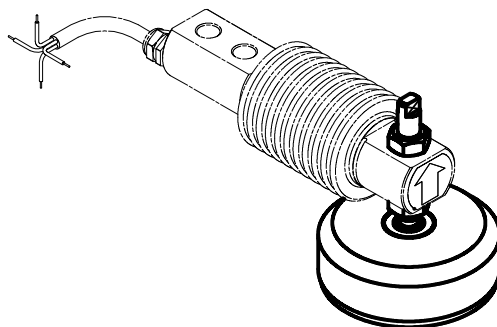
Ref. Item*	Capacities	A	C	M	H-	H+	H1
F2000S-A	10 - 200 kg	20.5	4	8	36	45	76.5

* Material: stainless steel

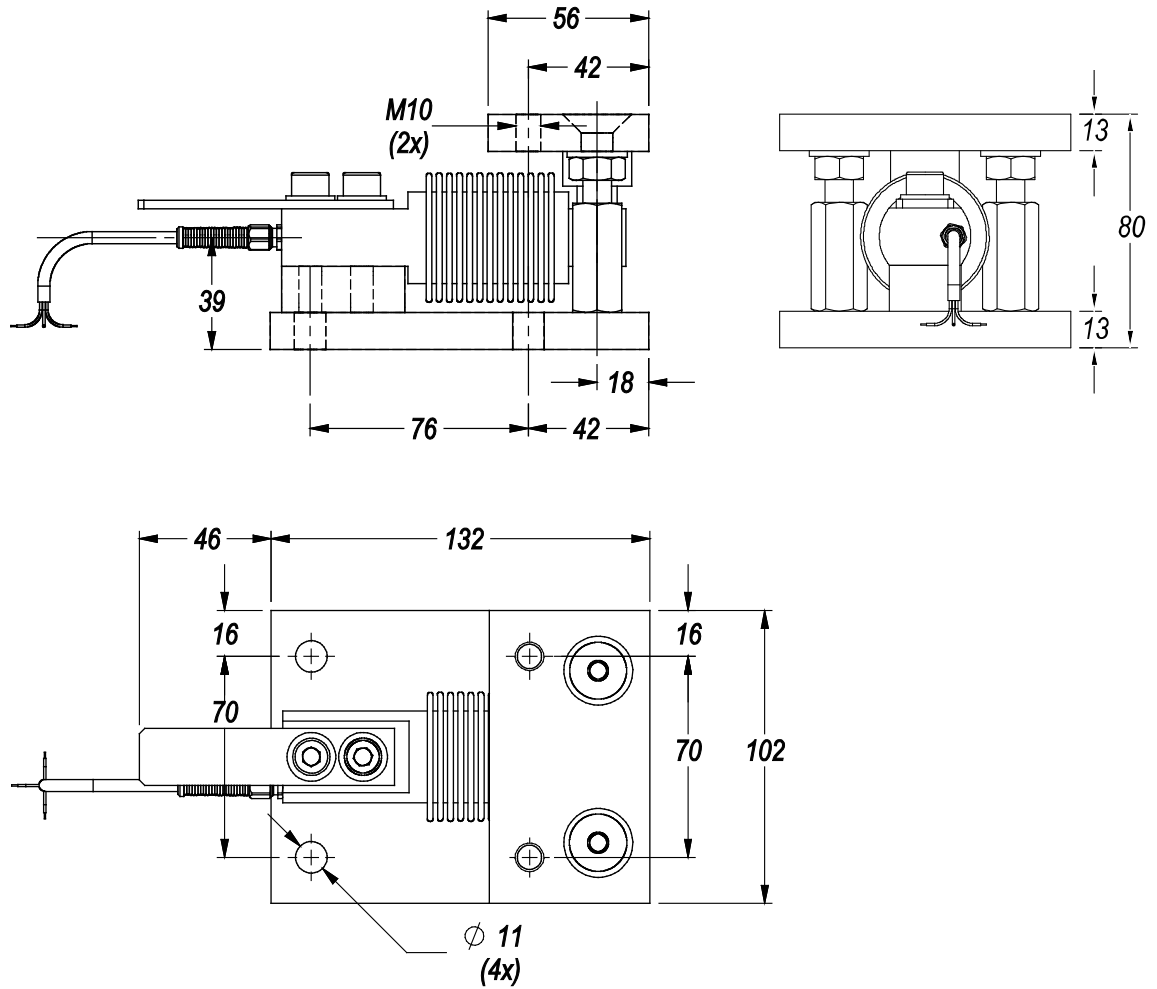
→ Other capacities and dimensions available on request

Dimensions in mm

Other view



I2000S-I2005S > STANDARD DIMENSIONS

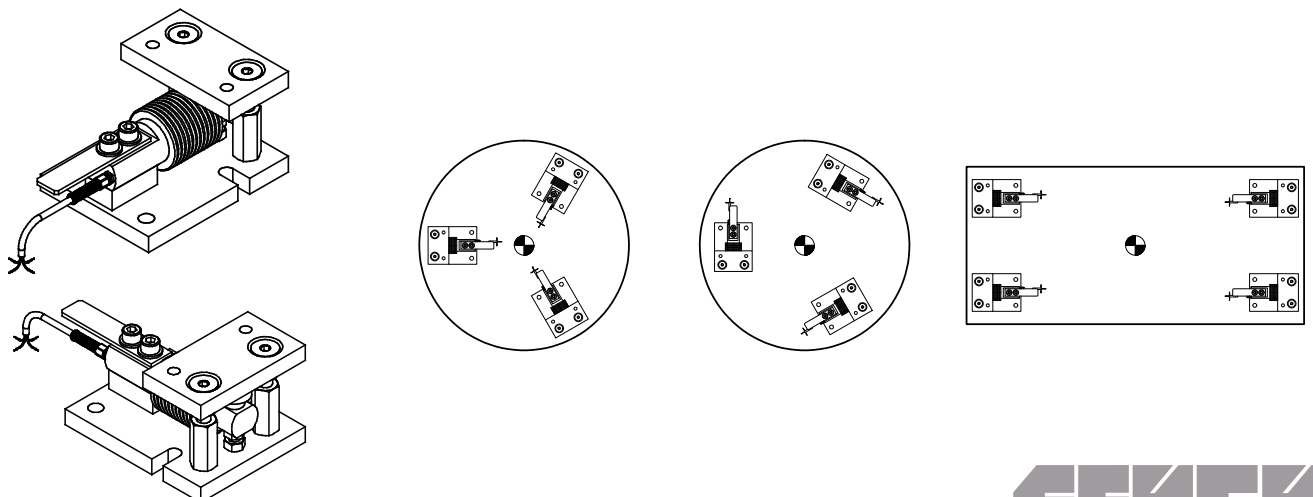


Ref. Item*	Capacities
I200xS-A	10 - 200 kg
* x=Material: I2000S - stainless steel; I2005S - nickel-plated steel	

→ Other capacities and dimensions available on request

Dimensions in mm

Other views



Single point load cell specially designed for platform and hopper weighing.



Features

- o Designed for off-center load
- o Maximum platform size: 800 x 800 mm
- o Material: anodised aluminium alloy
- o Protection class: IP64
- o Easy to install
- o Complies with OIML / R60 up to 3000 d for scales in class III according to EN 45501
- o Cable length: 3 m (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



Model 2022/2022-F - 300 kg



Application(s) SENSY's load cell 2022 is perfectly designed for the following applications:

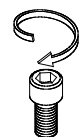
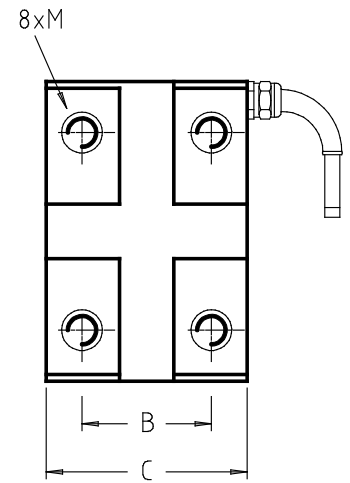
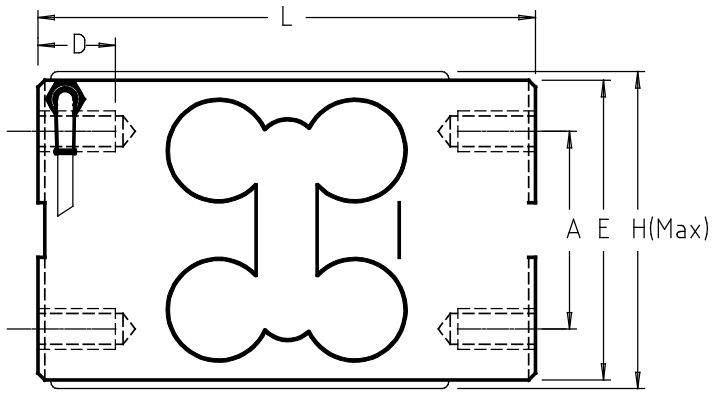
- Industrial scales and platforms, retail and computing scales, airport weighing scales.
- Medium-sized hoppers weighing, filling, packaging and batching applications.

Capacities

2022: 100 - 150 - (200) - 300 - 500 kg

Specifications	0.03 %	C 3	
Accuracy class	0.03% F.S.*	3000 d OIML	-
Combined error (non-linearity + hysteresis)	<± 0.03	<± 0.02	% F.S.*
Repeatability error	<± 0.015	<± 0.01	% F.S.*
Creep error over 30 min.	<± 0.025	<± 0.02	% F.S.*
Zero shift after loading	<± 0.0075	<± 0.005	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.015	<± 0.009	% F.S.* / 10°C
Temperature coefficient of zero signal	<± 0.023	<± 0.013	% F.S.* / 10°C
Zero balance	± 0.02	± 0.02	mV/V
Nominal sensitivity	2	2	mV/V
Sensitivity tolerance	<± 0.2	<± 0.1	%
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	150	150	% F.S.*
Breaking load	>300	>300	% F.S.*
Permissible dynamic loading	60	60	% F.S.*
Static lateral force limit	100	100	% F.S.*

* F.S. : Full Scale.
Specifications subject to change without notice..



Note: Correct torque for fixing bolts:
 30 N·m (M12 100-500 kg)
 70 N·m (M16 750-1000 kg)
 (don't touch bottom of tapped holes)

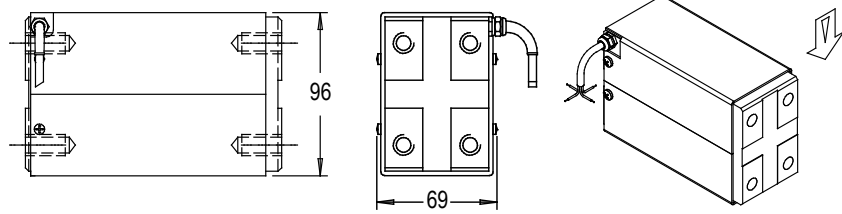
Ref. Item	Capacities	A	B	C	D	E	H	L	M	Max. Platform Size	Max. Deflexion (mm)	Weight (kg)
2022-A	100 - 500 kg	58	38	58	25	88	90	146	12	800x800	0.6 to 1	0.48

→ Other capacities and dimensions available on request

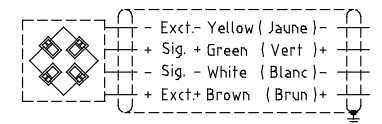
Dimensions in mm

Other views

F = COVER OPTION (mandatory for Ex i version)

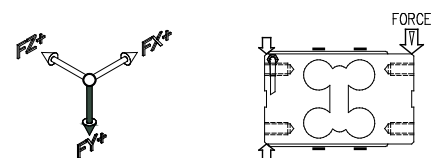


Wiring



Standard : Cable screen not connected to transducer
 Faradisation non connectée au capteur

Load direction



Small-sized single point load cells.



Features

- o Designed for off-center load
- o Maximum platform size: 250x250 / 400x400 mm (depending on capacity)
- o Small sized
- o Material: anodised aluminium alloy
- o Protection class: IP63
- o Competitive price
- o Cable length: see drawing table - CL (other lengths available on request)
- o Easy to install

Most popular options (see more in ANNEX)

Model 2052 - 5 kg



Application(s) SENSY's load cells 2052 are perfectly designed for the following applications:

- Bench scales,
- Small hopper weighing,
- Filling, packaging and batching applications.

Capacities

2052: 2 - (3) - 5 - 10 - 20 - 30 - 40 - 50 - 100 - (150) - 200 kg

Specifications	A3	0.03 %	
Accuracy class	0.03 %** F.S.*	0.03% F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.03	<± 0.03	% F.S.*
Repeatability error	<± 0.015	<± 0.015	% F.S.*
Creep error over 30 min.	<± 0.03	<± 0.025	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.015	% F.S./10°C
Temperature coefficient of zero signal	<± 0.05	<± 0.023	% F.S./10°C
Nominal sensitivity	1.6...2.7	1.6...2.7	mV/V
Sensitivity tolerance	<± 0.2	<± 0.2	%
Input resistance	400 ± 10	400 ± 10	ohm(s)
Output resistance	350 ± 3	350 ± 3	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3..12	3...12	VDC
Safe load limit	150	150	% F.S.*
Breaking load	>300	>300	% F.S.*
Permissible dynamic loading	60	60	% F.S.*
Static lateral force limit	100	100	% F.S.*

* F.S. : Full Scale.

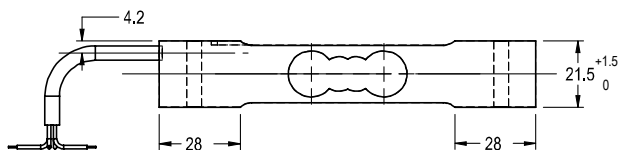
** : except thermal drifts.

Specifications subject to change without notice..

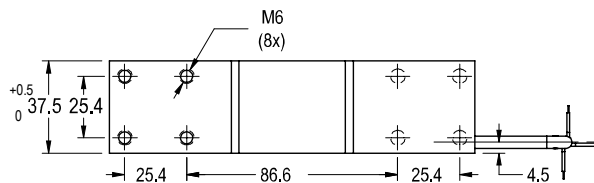
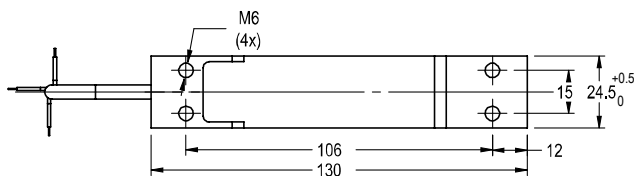
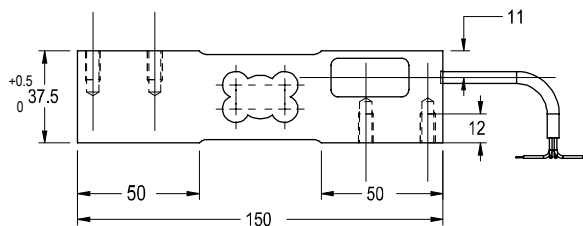
2052 > STANDARD DIMENSIONS



2052-A



2052-B



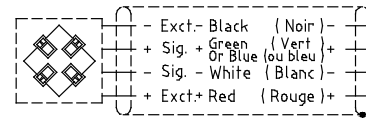
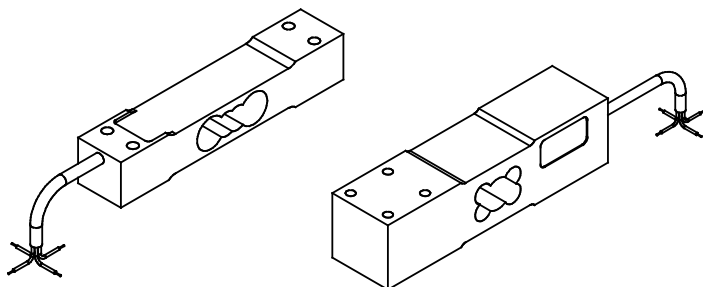
Ref. Item	Capacities	Max. Platform Size (mm)	CL (m)	Weight (kg)
2052-A	2 - 40 kg	250 x 250	0.5	0.15
2052-B	50 - 200 kg	400 x 400	1.5	0.52

→ Other capacities and dimensions available on request

Dimensions in mm

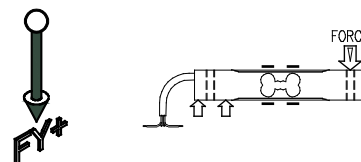
Accessories

Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



2162L

SINGLE POINT LOAD CELLS "OFF CENTER"

Economical single point load cells specially designed for small platform and hopper weighing.



Features

- o Designed for off-center load
- o Maximum platform size: 400 x 400 mm
- o Material: anodised aluminium alloy
- o Protection class: IP63
- o Competitive price
- o Easy to install
- o Weight: 0.35 kg
- o Cable length: 2 m (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



Model 2162 - 10 kg



Application(s) SENSY's load cells 2162L are perfectly designed for the following applications:

- Single point load cells for industrial scales and weighing systems,
- Small hopper weighing,
- Filling, packaging and batching applications.

Capacities

2162L: 10 - 15 - 20 - (30) - 50 - 75 kg

Specifications

A3

Specifications	A3	
Accuracy class	0.03 %** F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.03	% F.S.*
Repeatability error	<± 0.015	% F.S.*
Creep error over 30 min.	<± 0.03	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-30...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	< ± 0.1	% F.S./10°C
Temperature coefficient of zero signal	< ± 0.05	% F.S./10°C
Zero balance	± 0.02	mV/V
Nominal sensitivity	2 ± 10%	mV/V
Sensitivity tolerance	<± 0.2	%
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3..12	VDC
Safe load limit	150	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	60	% F.S.*
Static lateral force limit	100	% F.S.*

* F.S. : Full Scale.

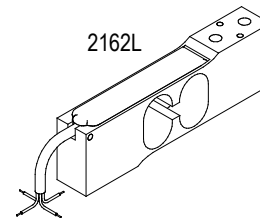
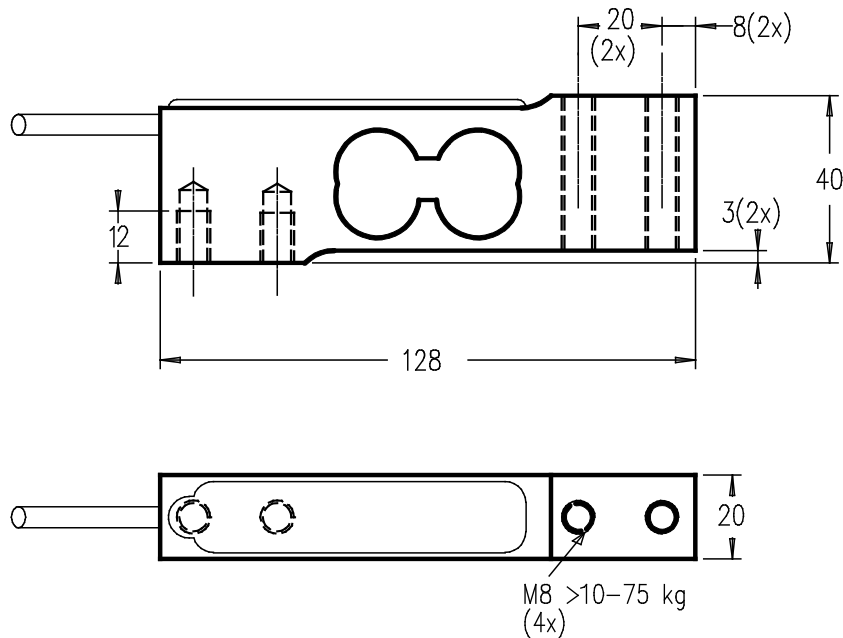
** : except thermal drifts.

Specifications subject to change without notice..



ISO 9001 certified

2162L > STANDARD DIMENSIONS



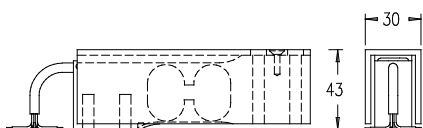
Note: correct torque for fixing bolts: 10 N-m if M8; 50 N-m if M10 (do not touch bottom of tapped holes)

Ref. Item	Capacities	Weight (kg)	Note
2162L-A	10 - 75 kg	0.35	-
2162L-Ex-A	10 - 75 kg	0.35	Cover and cable gland mandatory for Ex i version

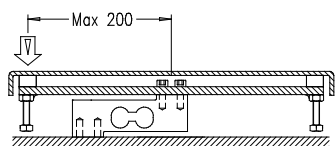
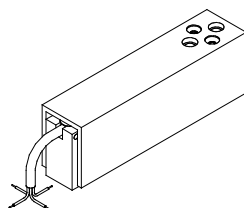
Other capacities and dimensions available on request

Dimensions in mm

Accessories

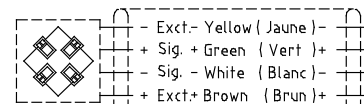


F- COVER OPTION



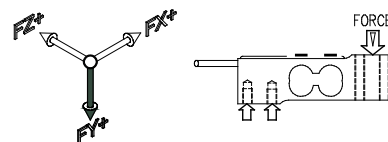
Polyethylene plate

Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



Load cells for silo weighing combining a sturdy design with easy installation.



Features

- o Material: stainless steel
- o Protection class: IP67
- o Mounting kits available with following properties:
 - stabilisation without tension rods
 - compensation of thermal dilatations
 - compensation of defective alignment
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Model 2600 - 10 t + 12600



Application(s) SENSY's load cells 2600 are perfectly designed for the following applications:

- High-capacity silos, tanks or hopper weighing (indoor and outdoor),
- Reactors and mixers weighing (vibrating),
- Weighing in potentially seismic areas.

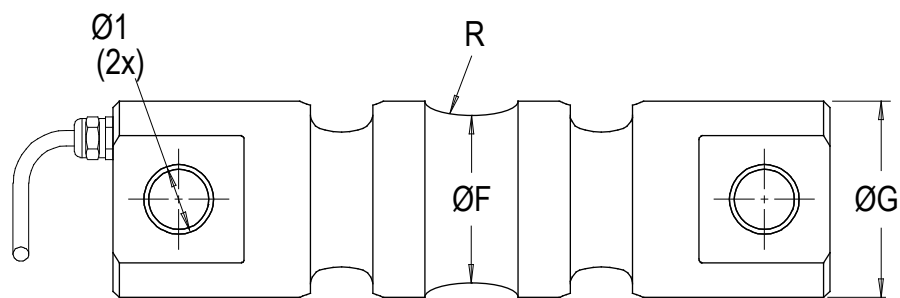
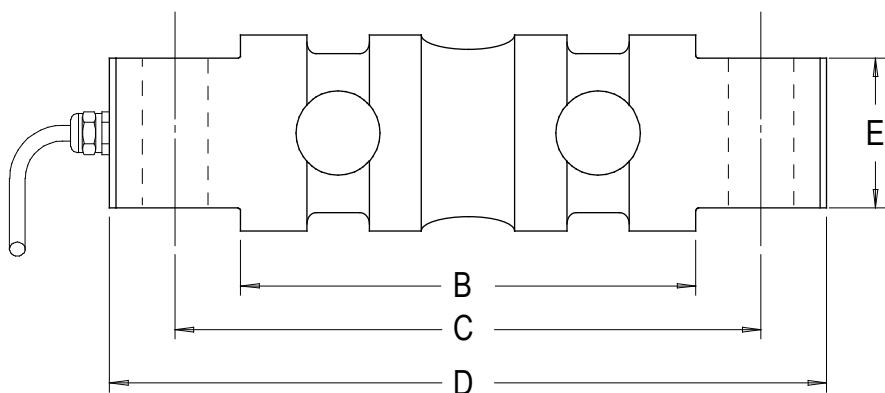
Capacities

2600: 10 - (15) - 20 - 30 - 50 - 75 t

Specifications	0.25 %	0.1 %	
Accuracy class	0.25 % F.S.*	0.1% F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.25	< ± 0.1	% F.S.*
Repeatability error	<± 0.1	<± 0.03	% F.S.*
Creep error over 30 min.	<± 0.1	<± 0.06	% F.S.*
Zero shift after loading	<± 0.025	<± 0.015	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.05	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.035	% F.S.*10°C
Nominal sensitivity	2	2	mV/V
Sensitivity tolerance	<± 0.3	<± 0.3	%
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	150	150	% F.S.*
Breaking load	>300	>300	% F.S.*
Permissible dynamic loading	50	50	% F.S.*

* F.S. : Full Scale.
Specifications subject to change without notice..

2600 > STANDARD DIMENSIONS

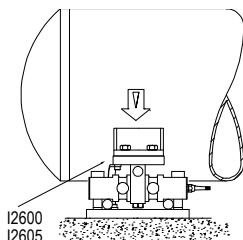
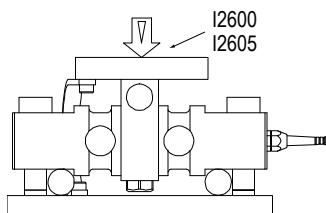
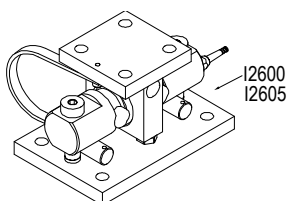
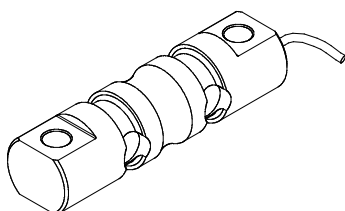


Ref. Item	Capacities	B	C	D	E	ØF	ØG	R	Ø1	CL (m)	Weight (kg)
2600-A	10 - 20 t	118	188	230	51	55	63	30	21	10	4.3
2600-B	30 t	130	220	270	55	57	74	50	24.5	12	7
2600-C	50 t	134	240	290	70	80	89	40	31	12	11
2600-D	75 t	222	300	360	88	103	109	45	34	20	24.6

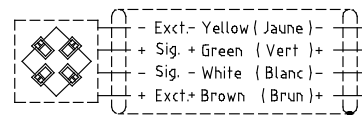
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

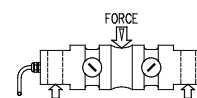
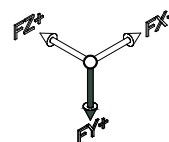


Wiring

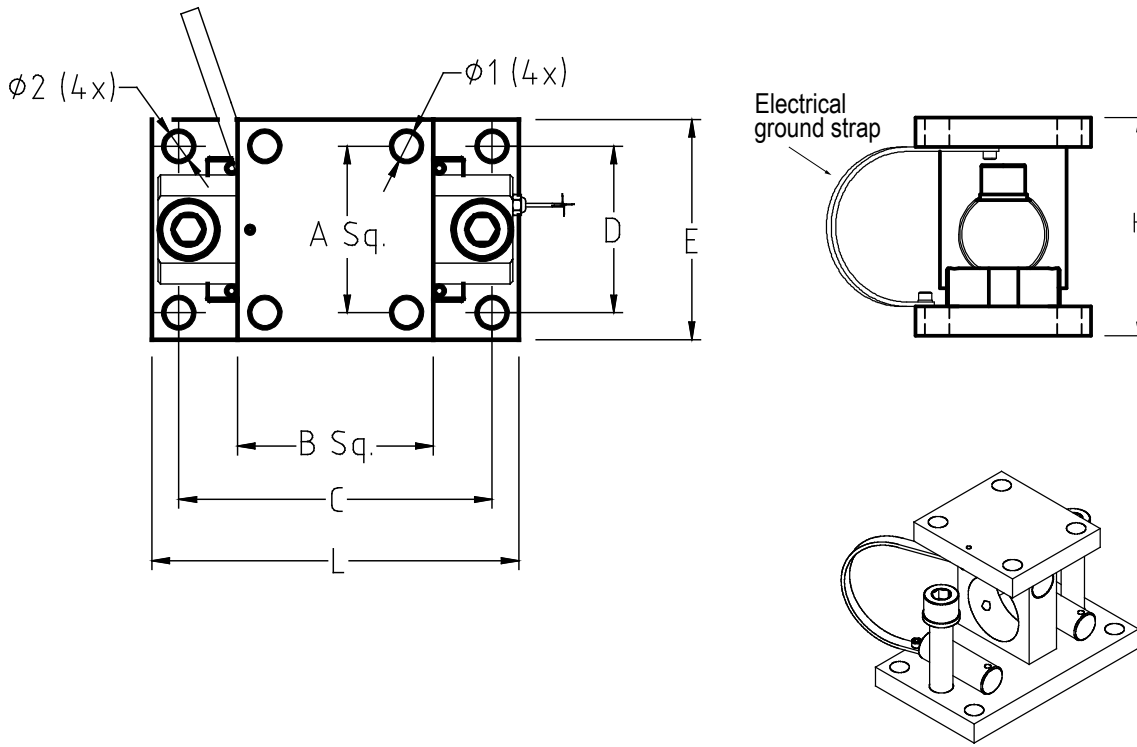


Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



→ I2600-I2605 > **STANDARD DIMENSIONS**



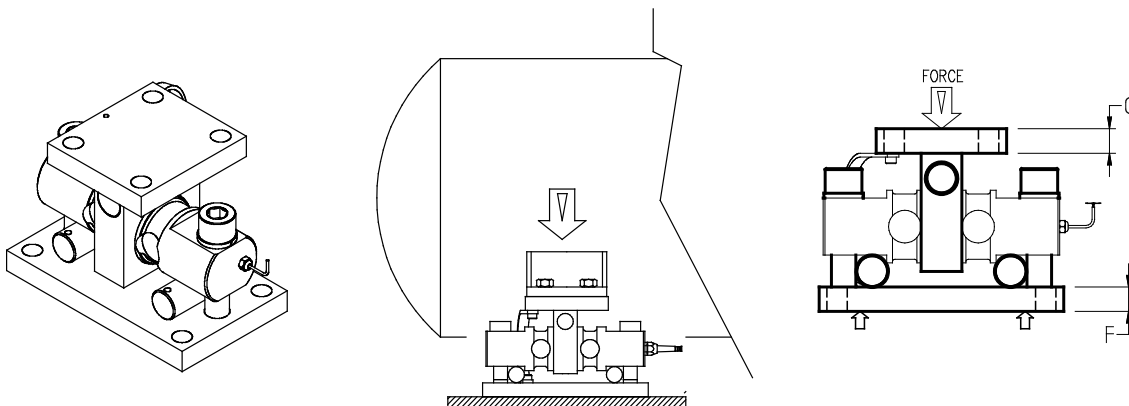
Ref. Item*	Capacities	A	B	C	D	E	F	G	H	L	Ø1	Ø2	Weight (kg)
I260x-A	10 - 20 t	80	120	190	110	150	20	20	145	230	17	17	10.5
I260x-B	30 t	110	150	240	110	150	25	25	184	280	21	21	16.5
I260x-C	50 t	136	180	256	136	180	30	30	224	300	25	25	25
I260x-D	75 t	180	250	440	160	250	40	30	327	520	23	34	86

* x=Material: I2600 - stainless steel; I2605 - alloy steel

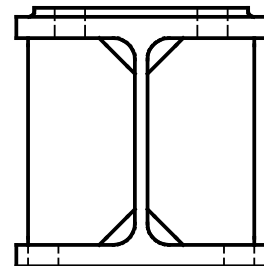
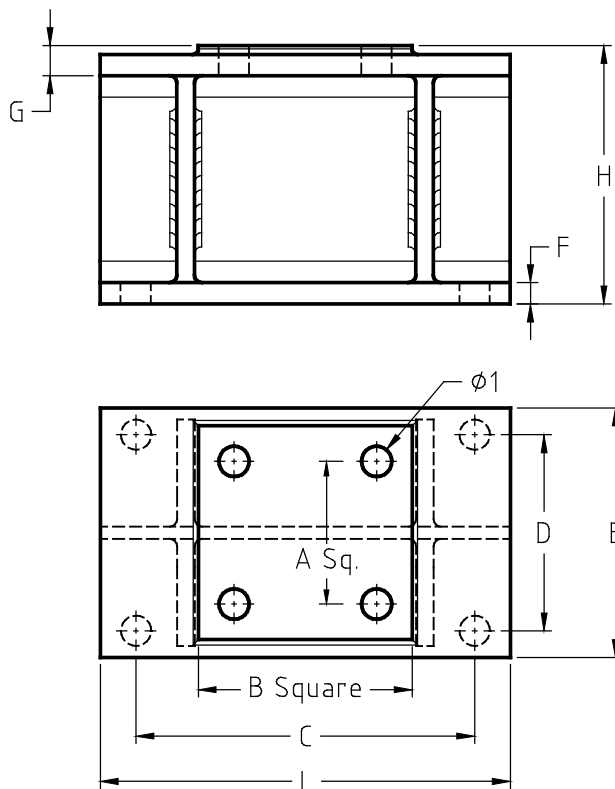
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



D2600-D2605 > STANDARD DIMENSIONS



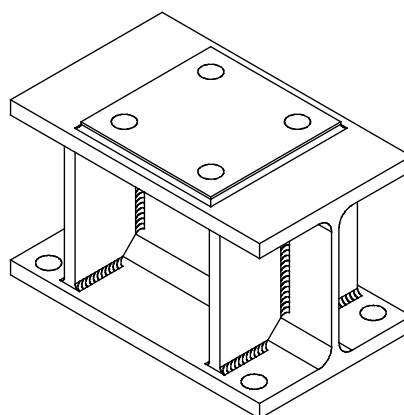
Ref. Item*	Capacities	A	B	C	D	E	F	G	H	L	Ø1	Weight (kg)
D260x-A	10 - 20 t	80	120	190	110	140	12	17	145	230	17	10.2
D260x-B	30 t	110	150	240	110	180	14	184	184	280	18	18.4
D260x-C	50 t	136	180	256	136	220	16	224	224	300	20	26.23
D260x-D	75 t	According to customer's design specifications										

* x=Material: D2600 - stainless steel; D2605 - alloy steel

→ Other capacities and dimensions available on request

Dimensions in mm

Other view



Load cells specially designed for on-board weighing on trucks.



Features

- o Very sturdy design
- o High resistance against shocks
- o Protection class: IP67
- o Low-cost solution
- o Material: alloy steel
- o Easy to install (no stabilisation system needed)
- o Screws and blocks to be welded available
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



Model 2645 - 10 t



Application(s)

SENSY's load cells 2625-2645 are perfectly designed for the following applications:

- 'On-board' weighing system on trucks, lorries or agricultural trailers,
- 'On-board' overload preventing system,
- Railways weighing.

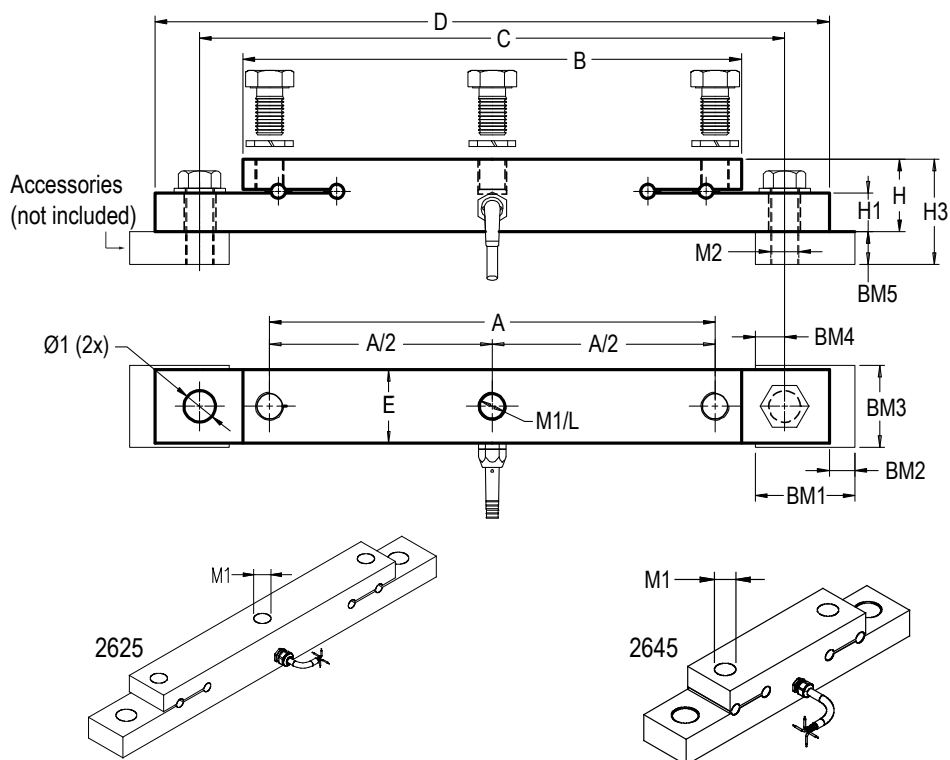
Capacities

2625: 10 t
2645: 10 - 50 t

Specifications	0.5 %	
Repeatability error	< ± 0.25	% F.S.*
Creep error over 30 min.	< ± 0.2	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	< ± 0.1	% F.S.*10°C
Temperature coefficient of zero signal	< ± 0.1	% F.S.*10°C
Zero balance	± 0.02	mV/V
Nominal sensitivity	1	mV/V
Input resistance	352 ± 2	ohm(s)
Output resistance	352 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	120	% F.S.*
Breaking load	>250	% F.S.*
Permissible dynamic loading	50	% F.S.*
Static lateral force limit	100	% F.S.*

* F.S. : Full Scale.
Specifications subject to change without notice.

2625-2645 > STANDARD DIMENSIONS



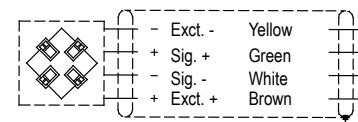
Ref. Item	Capacities		A	B	C	D	E	H	H1	H3	Ø1	M1 / L	CL (m)	Weight (kg)
	Static	Dynamic												
2625-A	10 t	5 t	380	425	499	575	63	62	33	90	27	3xM24x1.5/26	10	14.8
2645-A	10 t	5 t	152	200	270	330	63	62	33	90	27	2xM24x1.5/26	10	7.5
2645-B	50 t	30 t	150	250	510	600	97	97	53	147	38.5	2xM36x3/42	10	31.2

—> Other capacities and dimensions available on request

Dimensions in mm

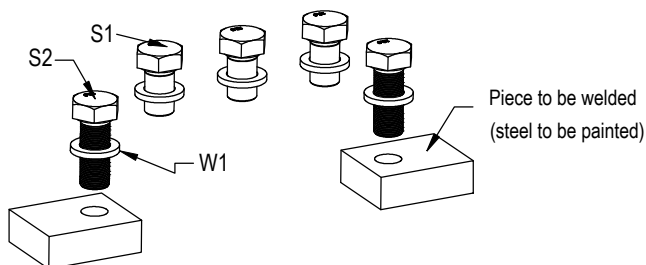
Accessories										
Ref. Item	BM1	BM2	BM3	BM4	BM5	M2	S1 (DIN 961)	S2 (DIN 961)	W1 (DIN 127)	Weight (kg)
K-BM2625-A	85	22	70	25	28	M24x1.5	3x M24x1.5 L40 10.9	2xM24x1.5 L60 10.9	5x A24	4
K-BM2645-A	85	22	70	25	28	M24x1.5	2x M24x1.5 L40 10.9	2xM24x1.5 L60 10.9	4x A24	3.75
K-BM2645-B	145	50	97	50	50	M36x3	2x M36x3 L70 10.9	2xM36x3 L100 10.9	4x A36	15.3

Wiring

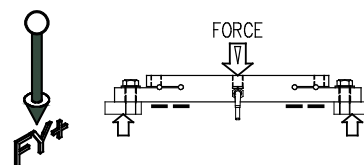


Standard: Cable screen not connected to the transducer

Accessories kit mounting blocks:



Load direction



3100P

PENDULAR COMPRESSION LOAD CELLS

Compression load cells



Model 3100P - 20 t



Features

- o Canister, high-capacity load cell (up to 500 t)
- o Made completely of stainless steel
- o Protection class: IP67
- o Pendular technology - Self-restoring
- o Available in C1.5 (1500 d) OIML / R 60 (EN 45501)
- o Matched impedance and sensitivity (for parallel connection)
- o Whole range of mounting accessories is available
- o Cable length: 12 m (500 t: 20 m) (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



IP68

Application(s) SENSY's load cells 3100P are perfectly designed for the following applications:

- Weighbridges, high-capacity reactor weighing,
- Silos, tanks or hoppers weighing.

Capacities

3100P: (5) - (7.5) - 10 - (15) - 20 - 30 - 50 - (75) - 100 - (150) - 200 - 300 - 500** t

Specifications	0.25 %	0.1 %	C 1.5	0.03 %	
Accuracy class	0.25 % F.S.*	0.1% F.S.*	1500 d OIML	0.03% F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.25	<± 0.1	<± 0.035	<± 0.03	% F.S.*
Repeatability error	<± 0.1	<± 0.03	<± 0.015	<± 0.015	% F.S.*
Creep error over 30 min.	<± 0.1	<± 0.06	<± 0.035	<± 0.025	% F.S.*
Reference temperature	23	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.05	<± 0.017	<± 0.015	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.035	<± 0.025	<± 0.023	% F.S./10°C
Nominal sensitivity	1.5	1.5	1.5	1.5	mV/V
Sensitivity tolerance	<± 0.3	<± 0.3	<± 0.2	<± 0.2	%
Input resistance	350..700 ± 2	350..700 ± 2	350..700 ± 2	350..700 ± 2	ohm(s)
Output resistance	350..700 ± 2	350..700 ± 2	350..700 ± 2	350..700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	3...12	VDC
Safe load limit	150	150	150	150	% F.S.*
Breaking load	>300	>300	>300	>300	% F.S.*
Permissible dynamic loading	50	50	50	50	% F.S.*
Static lateral force limit	15	15	15	15	% F.S.*

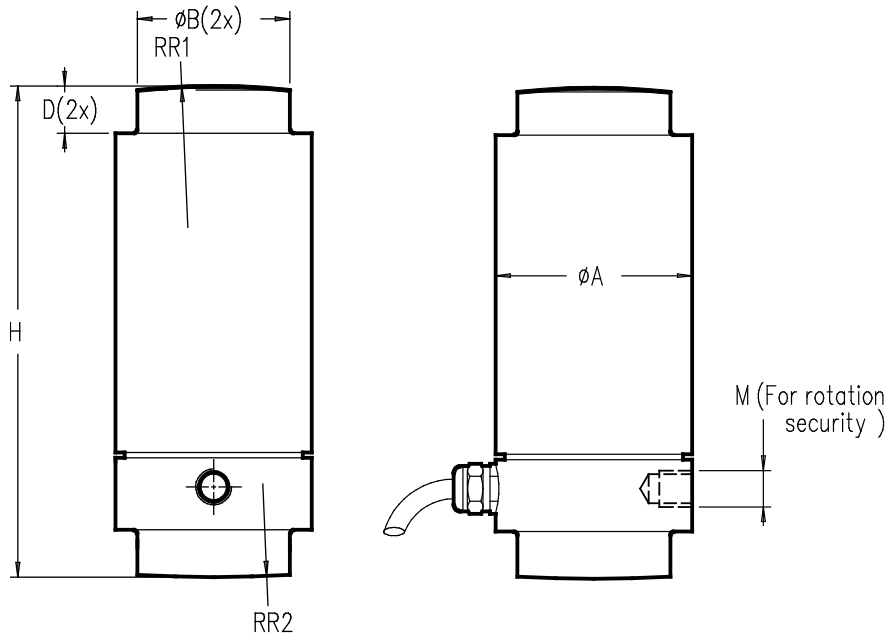
* F.S. : Full Scale.

** : 2 mV/V

Note: C 1.5 only available for capacities between 5 and 100 t.

Specifications subject to change without notice..

3100P > STANDARD DIMENSIONS

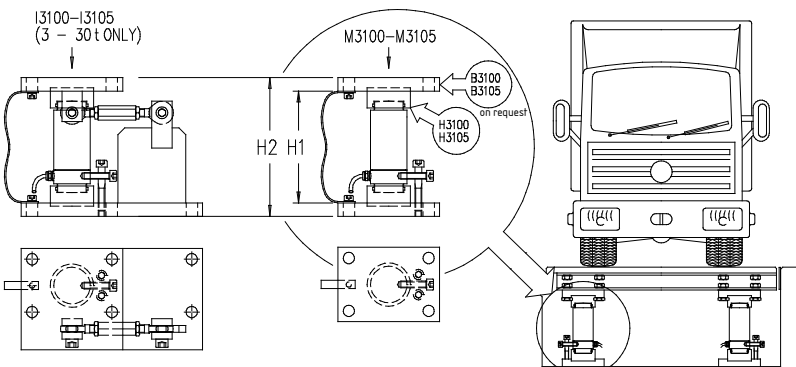


Ref. Item	Capacities	ØA	ØB	D	H	M	RR1	RR2	H1	H2	Max. Deflexion (mm)	Weight (kg)
3100P-A	5 - 30 t	54	42	13	135	M10	200	250	165	205	0.03 - 0.1	2.2
3100P-B	50 - 100 t	±89	64	30	190	M12	300	300	234	294	0.26 - 0.34	5
3100P-C	150 - 200 t	115	90	20	210	M16	400	400	290	370	0.33	15
3100P-D	300 t	136	110	20	240	M16	400	400	338	418	0.4	23
3100P-E	500 t	180	130	25	350	M12	600	600	610	594	0.57	46

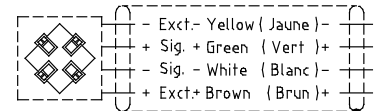
Other capacities and dimensions available on request

Dimensions in mm

Accessories

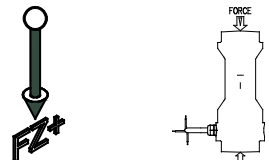


Wiring code

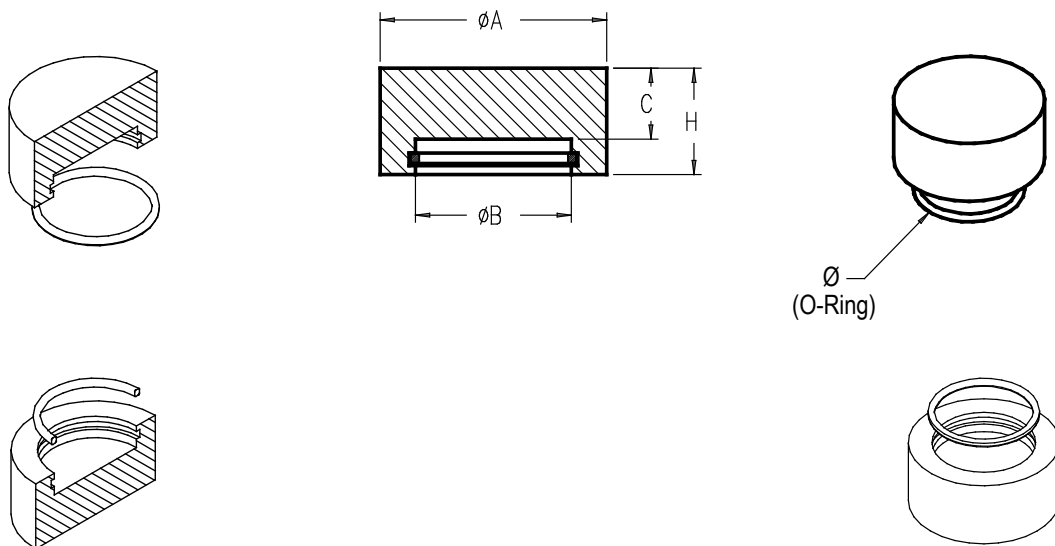


Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



H3100P > STANDARD DIMENSIONS



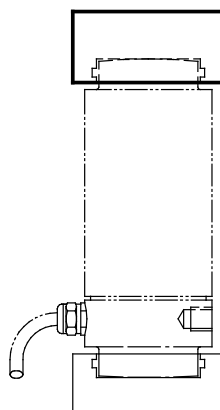
Ref. Item*	Capacities	Ø A	Ø B	C	H	Ø (O-Ring)	Weight (kg)
H3100P-A	5 - 30 t	64	44	20	30	42 x 3	±0.65
H3100P-B	50 - 100 t	99	66	32	43	64 x 4	±2.3
H3100P-C	150 - 200 t	128	92	50	65	90 x 5	±6
H3100P-D	300 t	148	112	59	75	110 x 5	±9
H3100P-E	500 t	178	132	90	105	130 x 5	±19.3

*Material: stainless steel

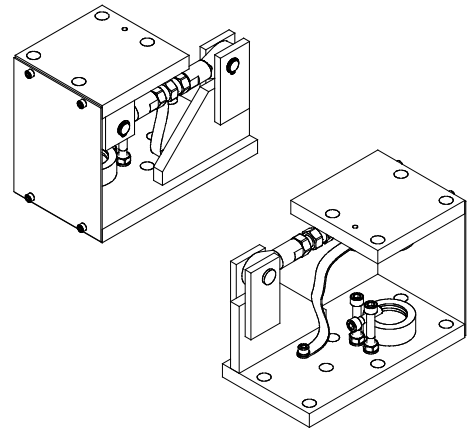
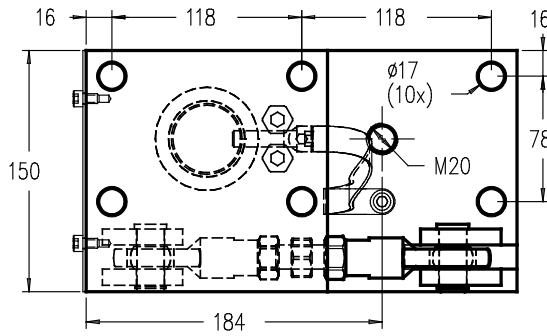
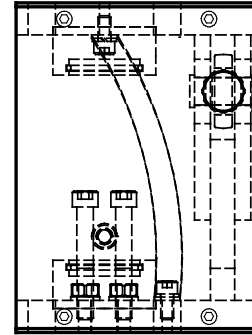
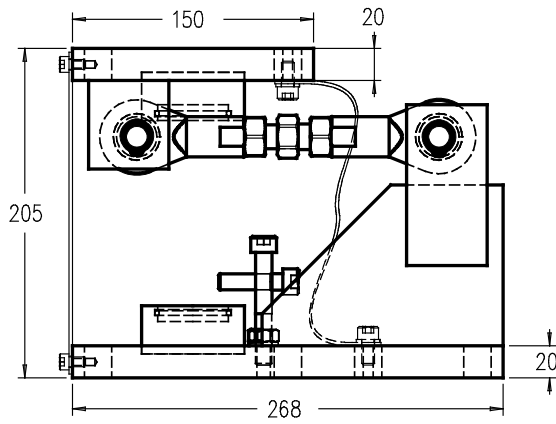
→ Other capacities and dimensions available on request

Dimensions in mm

Other view



I3100P-I3105P > STANDARD DIMENSIONS

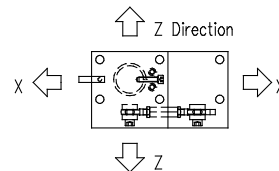
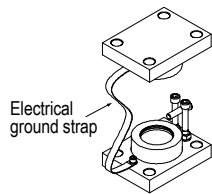
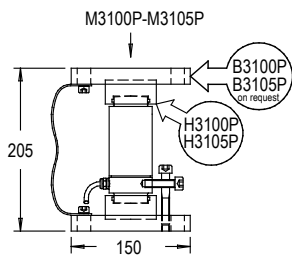


Ref. Item*	Capacities
I310xP-A	5 - 30 t
* x=Material: I3100P - stainless steel; I3105P - alloy steel	

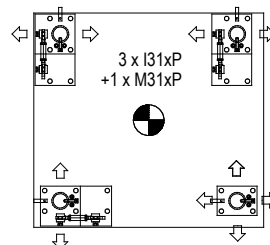
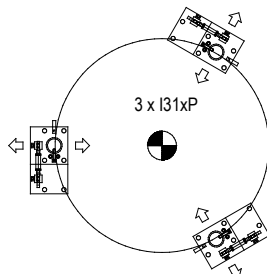
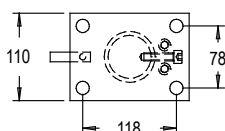
Other capacities and dimensions available on request

Dimensions in mm

Other views

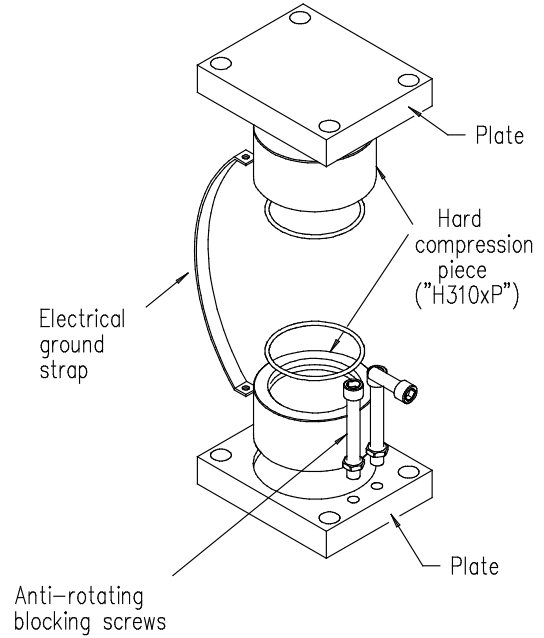
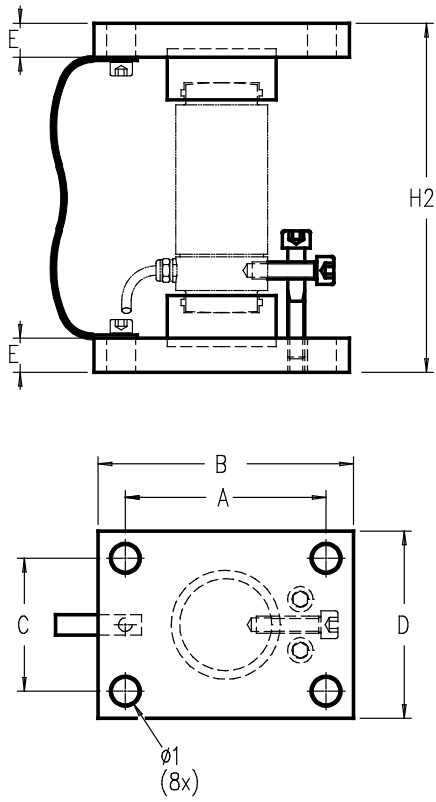


X Direction
 (MAX. 5200 kg STAT.
 2240 kg DYN.)
 Stainless steel
 (MAX. 2100 kg STAT.
 800 kg DYN.)



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M3100P-M3105P > STANDARD DIMENSIONS



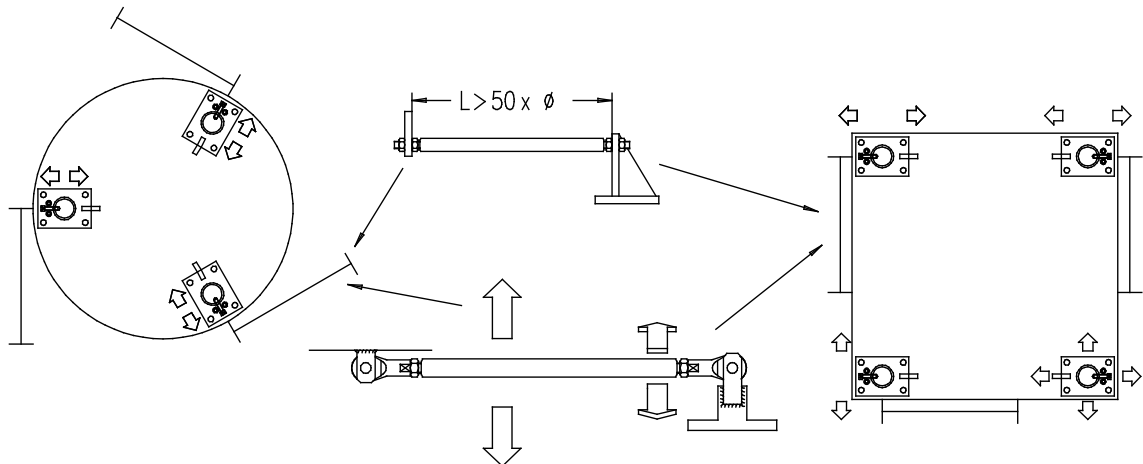
Ref. Items	Capacities	A	B	C	D	E	Ø1	H2	Weight (kg)
M310xP-A	5 - 30 t	118	150	78	110	20	17	205	±5.7
M310xP-B	50 - 100 t	130	170	90	130	30	21	294	±13
M310xP-C	150 - 200 t	185	235	135	185	40	25	370	±35.5
M310xP-D	300 t	185	235	135	185	40	25	418	±41
M310xP-E	500 t	200	260	200	260	40	27	594	±78

*x=Material: M3100P - stainless steel; M3105P - alloy steel

Other capacities and dimensions available on request

Dimensions in mm

Other view



3300

INSERTABLE STRAIN SENSOR - INSERTGAGE®

Insertable extensometer designed to measure the force in a structure



Features

- o Designed to measure:
 - tension, compression shear and bending force
 - torque
- o One unique model regardless of the capacity range
- o Material: stainless steel
- o Protection class: IP67
- o Very competitive prices
- o Easy to install (one hole to drill)
- o Accuracy in the structure: 2 to 5 %
- o Cable length: 0.25 or 5 m (other lengths available on request)

Most popular options (see more in ANNEX)

Ex i



Model 3300



Application(s) SENSY's insertable strain sensor 3300 is perfectly designed for the following applications:

- Silos, hoppers, tanks, reactors or containers weighing,
- Level measurement,
- Stress measurement on machines,
- Force distribution control,
- Rail weighing,
- Set-point detection.

Capacities

3300: 40 to 120 N/mm²

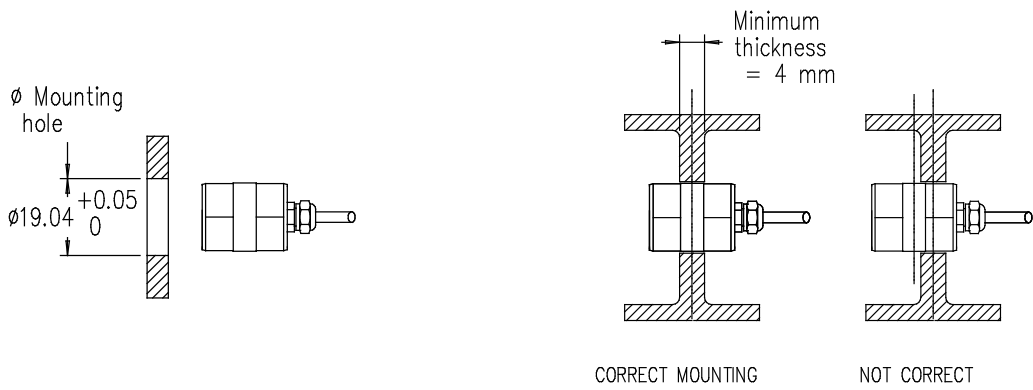
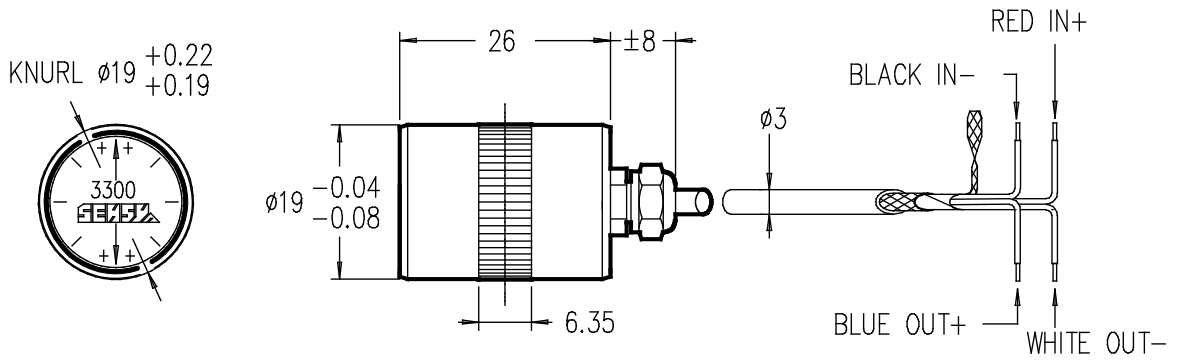
Specifications	2 - 5 %	
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-30...+60	°C
Storage temperature range	-50...+85	°C
Nominal sensitivity	± 1 **	mV/V
Input resistance	700 ± 2	ohm(s)
Output resistance	700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC

* F.S. : Full Scale.

** : for a stress of ± 10 kg/mm²

Specifications subject to change without notice..

3300 > STANDARD DIMENSIONS

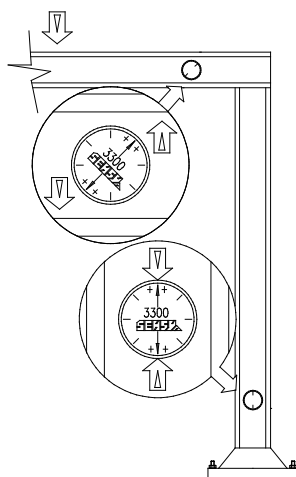
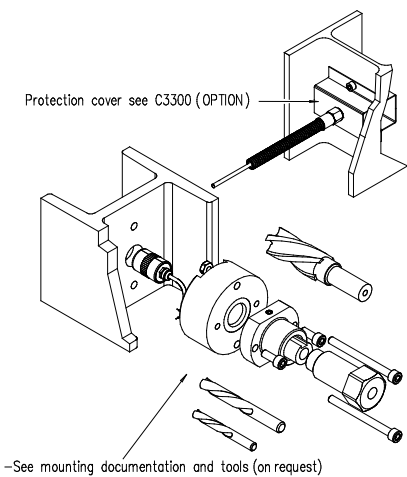


Ref. Item	Capacities	
3300-A	40 to 120 N/mm ²	One unique model regardless of the capacity range

→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

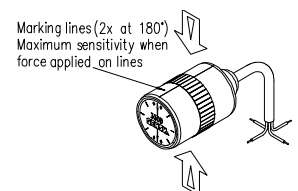


Wiring

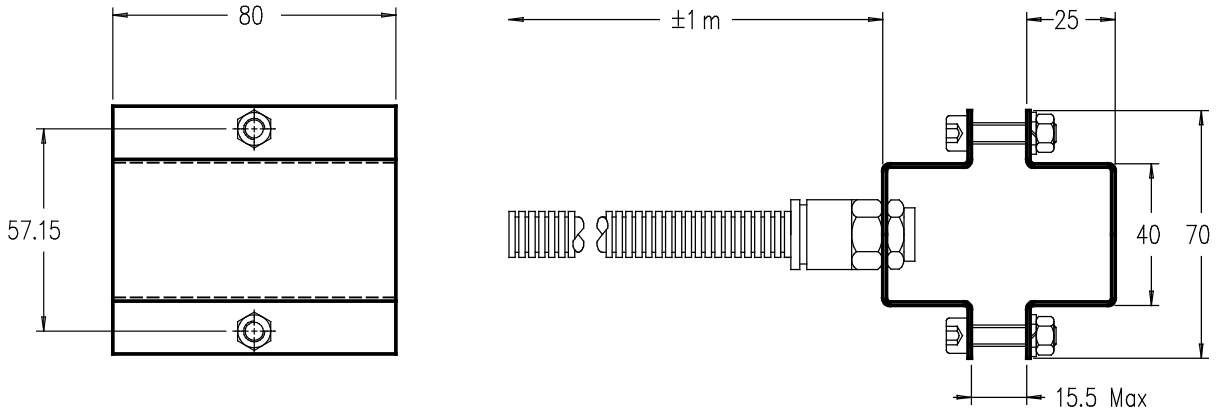


Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



C3300 > STANDARD DIMENSIONS



Ref. Item*

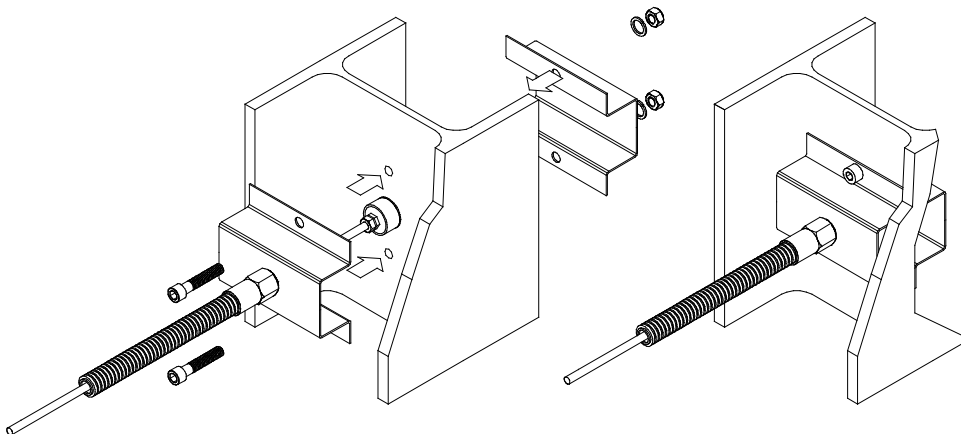
C3300-A

* Material: stainless steel

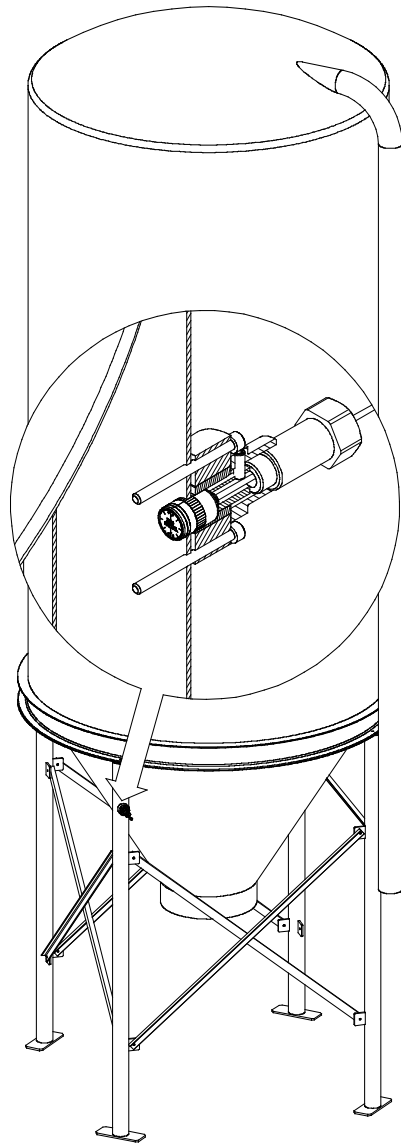
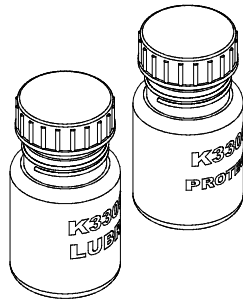
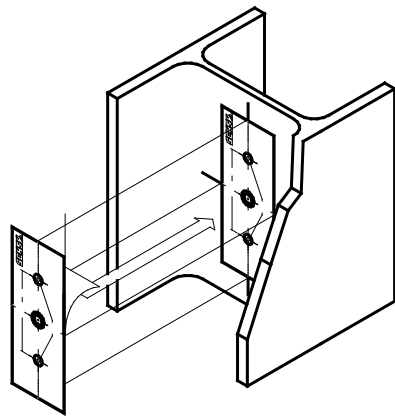
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



↳ K3300 > STANDARD DIMENSIONS



Included:

K3300 LUBRI (lubricant)

K3300 PROTECT (protection grease)

K3300 D6 & S10 (drills Ø6.5 & Ø10)

Ref. Item*

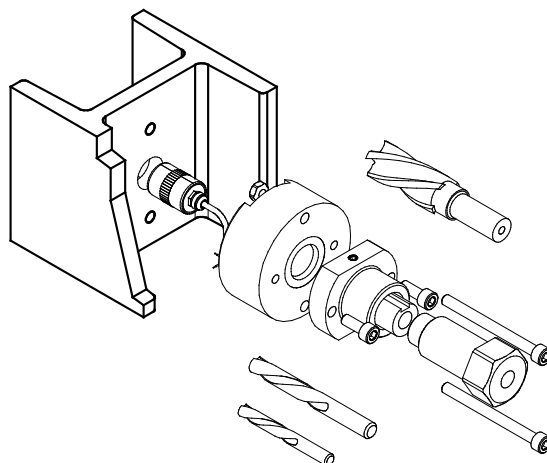
K3300-A

* Material: stainless steel

→ Other capacities and dimensions available on request

Dimensions in mm

Other view



Universal load cells combining sturdy design, high accuracy and low cost.



Features

- o Material: stainless steel
- o Protection class: IP67
- o Sturdy design
- o Mounting kits available with following properties:
 - stabilisation without tension rods
 - compensation of defaults of parallelism
- o Cable length: see drawing table (other lengths available on request)

Most popular options (see more in ANNEX)

Model 3500 - 10 t



Ex i



Application(s) SENSY's load cells 3500 are perfectly designed for the following applications:

- Low-profile scales, pallets, platform scales,
- Packaging, batching and filling machines,
- Reactors, tanks, vessels or hoppers weighing.

Capacities

3500: 3 - 5 - (7.5) - 10 t

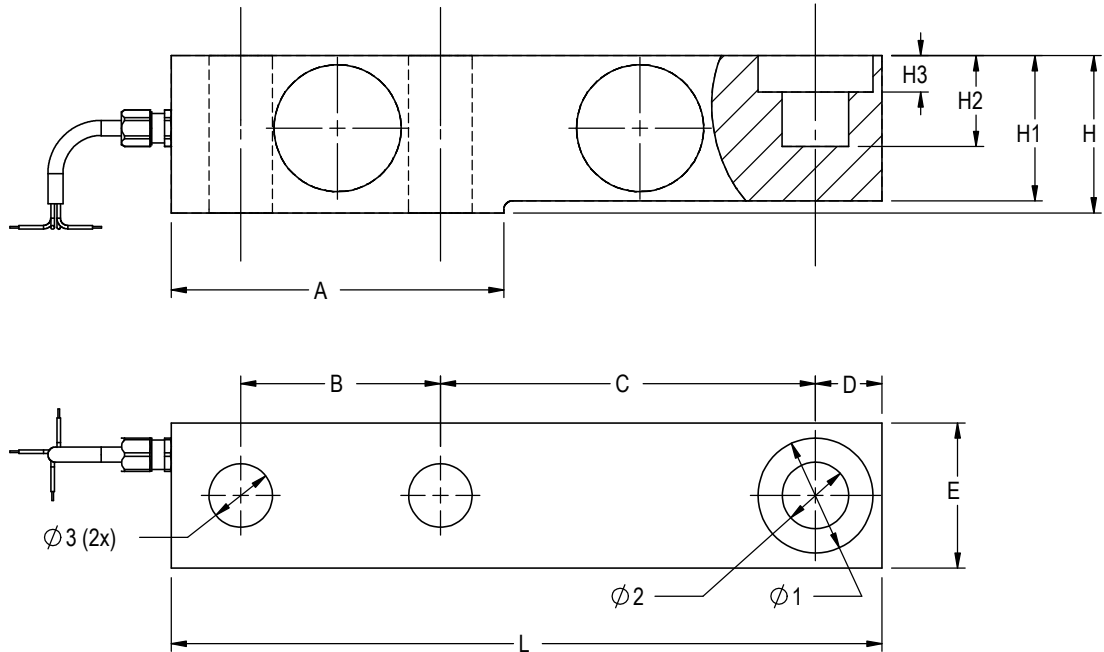
Specifications	A3	0.03 %	
Accuracy class	0.03 %** F.S.*	0.03% F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.03	<± 0.03	% F.S.*
Repeatability error	<± 0.015	<± 0.015	% F.S.*
Creep error over 30 min.	<± 0.03	<± 0.025	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.015	% F.S./10°C
Temperature coefficient of zero signal	<± 0.05	<± 0.023	% F.S./10°C
Nominal sensitivity	2	2	mV/V
Sensitivity tolerance	<± 0.2	<± 0.2	%
Input resistance	400 ± 10	400 ± 10	ohm(s)
Output resistance	350 ± 3	350 ± 3	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3..12	3...12	VDC
Safe load limit	150	150	% F.S.*
Breaking load	>300	>300	% F.S.*
Permissible dynamic loading	50	50	% F.S.*
Static lateral force limit	100	100	% F.S.*

* F.S. : Full Scale.

** : except thermal drifts

Specifications subject to change without notice..

3500 > STANDARD DIMENSIONS

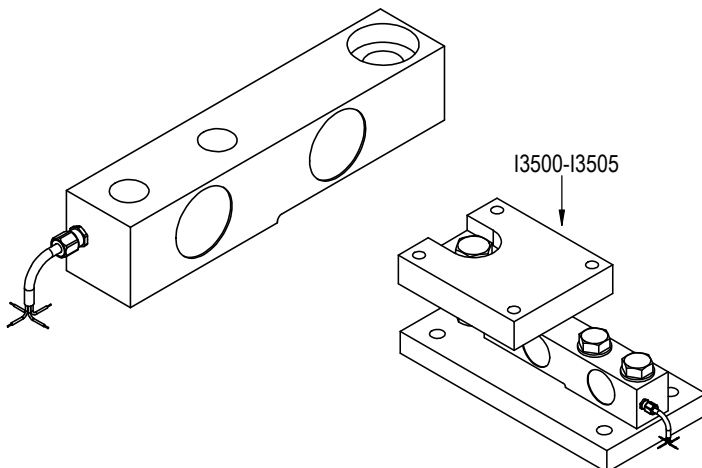


Ref. Item	Capacities	L	A	B	C	D	E	H	H1	H2	H3	Ø 1	Ø 2	Ø 3	CL (m)	Weight (kg)
3500-A	3 t	203	95	64	98	22	36.6	43	36.6	30.5	8	32	16	13	3	2.15
3500-B	5 - 7.5 t	235	110	66	124	22	48	52	48	30	12	38	22	21	5	4.01
3500-C	10 t	279	133	82	140	32	60	67	60	20	8.5	48	32	28	6	7.26

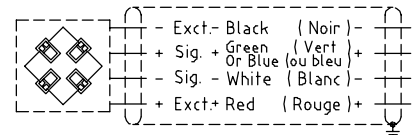
Other capacities and dimensions available on request

Dimensions in mm

Accessories

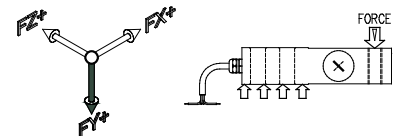


Wiring



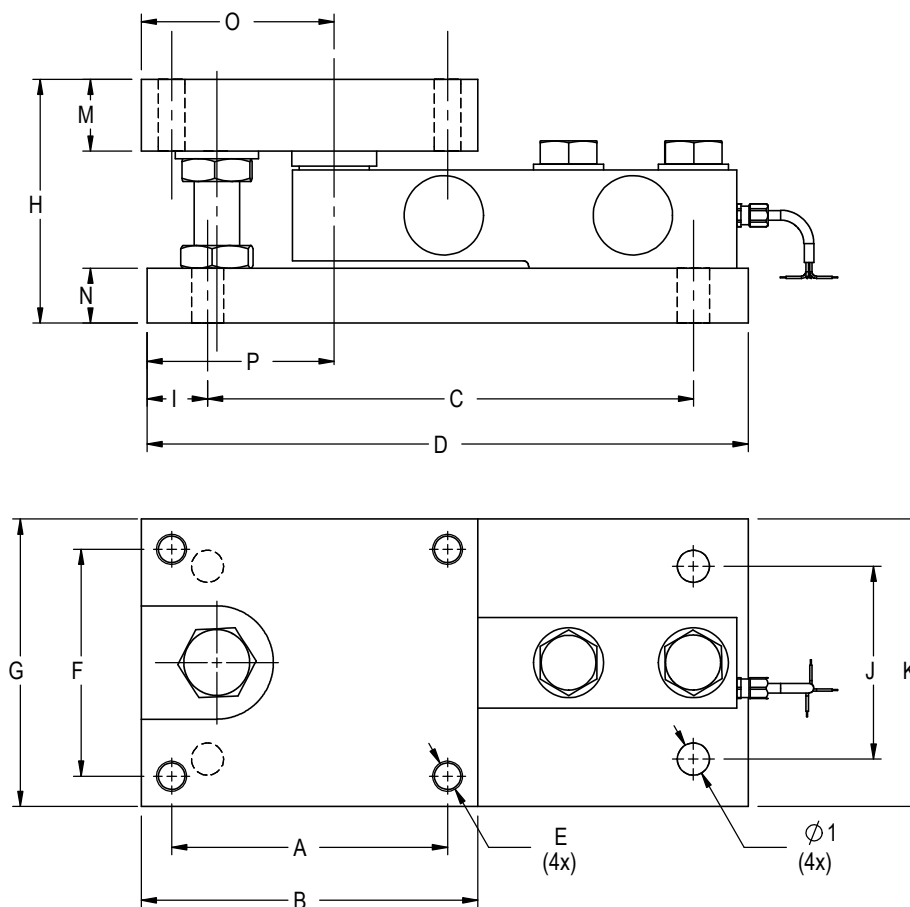
Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



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I3500-I3505 > STANDARD DIMENSIONS



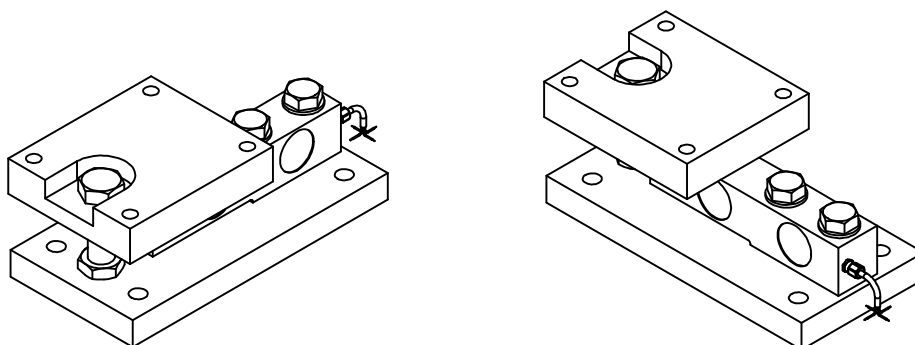
Ref. Item*	Capacities	A	B	C	D	E	F	G	H	I	J	K	M	N	O	P	Ø1
I350x-A	3 t	124	150	226	286	M10	102	112	102	32	80	112	28	23	99	96	13
I350x-B	5 - 7.5 t	146	178	257	318	M16	120	152	129	32	102	152	38	29	102	99	17
I350x-C	10 t	152	184	295	360	M20	122	154	166	32	106	154	44	44	108	105	21

* Material : I3500 - stainless steel ; I3505 - alloy steel

— Other capacities and dimensions available on request

Dimensions in mm

Other views



4500

SHEAR BEAM LOAD CELLS

Load cells for silo weighing combining a sturdy design with easy installation.



Features

- o Material: stainless steel
- o Protection class: IP67
- o Easy to install, cost-effective solution, sturdy design
- o Cable length: see drawing table - CL (other lengths available on request)
- o Mounting kits available with following properties:
 - stabilisation without tension rods
 - anti-lift-off device
 - compensation for thermal dilatations and defective alignment

Most popular options (see more in ANNEX)



Ex i



IP68



Model 4500 - 3 t



Application(s) SENSY's load cells 4500 are perfectly designed for the following applications:

- Silo and tank weighing,
- Reactor or hopper weighing,
- Mixers (vibrating).

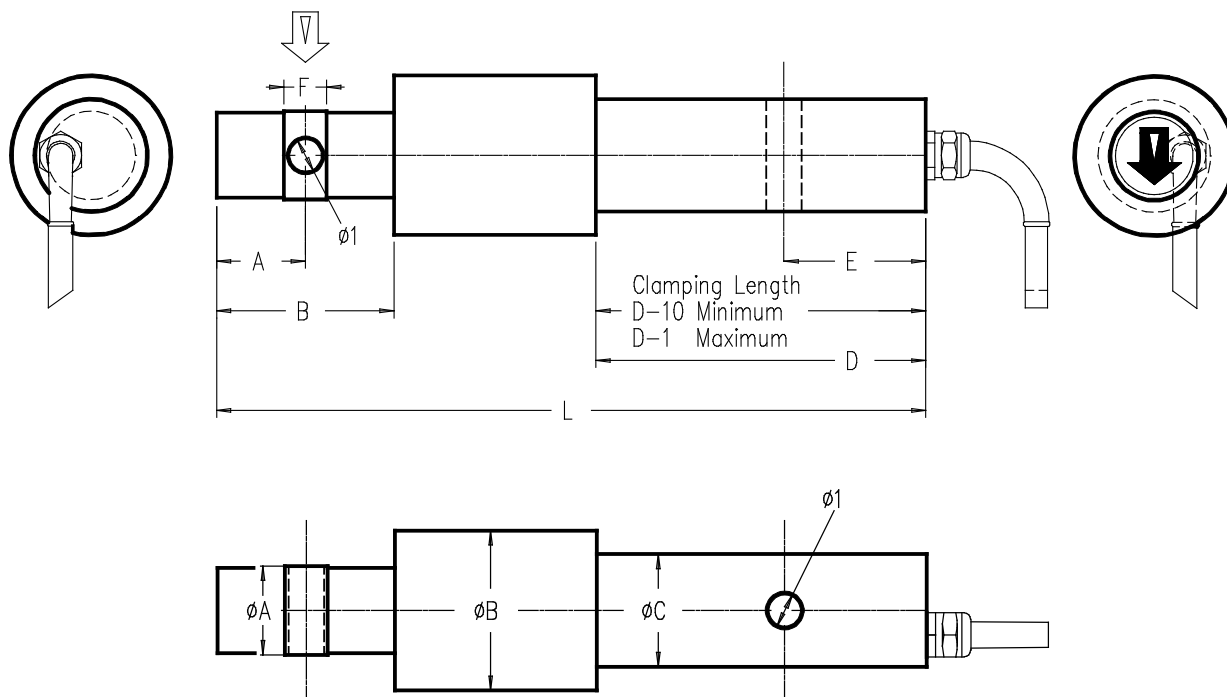
Capacities

4500: (0.5)- (0.75) - 1 - 1.5 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 t

Specifications	0.1 %	
Accuracy class	0.1% F.S.*	-
Combined error (non-linearity + hysteresis)	< ± 0.1	% F.S.*
Repeatability error	<± 0.03	% F.S.*
Creep error over 30 min.	<± 0.06	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	% F.S./10°C
Nominal sensitivity	2	mV/V
Sensitivity tolerance	<± 0.3	%
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	150	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	50	% F.S.*
Static lateral force limit	100	% F.S.*

* F.S. : Full Scale.
Specifications subject to change without notice..

4500 > STANDARD DIMENSIONS

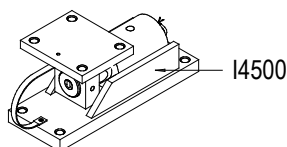
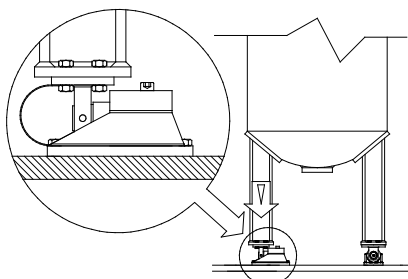
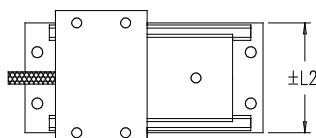
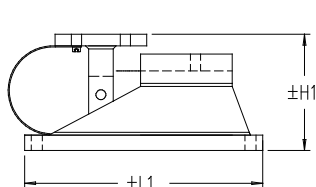


Ref. Item	Capacities	A	B	D	E	F	L	Ø1	ØA	ØB (MAX)	ØC	CL (m)	H1	L1	L2	Weight (kg)
4500-A	0.5 - 3 t	25	50	93	40	8	200	10	25	40	31.75	6	125	285	120	1.48
4500-B	5 - 7.5 t	25	50	93	40	12	200	10	40	49	49	6	125	285	120	3
4500-C	10 - 15 t	25	50	105	20	24	200	16	60	62	62	12	174	405	150	3.4
4500-D	20 t	25	50	145	60	24	240	16	60	62	62	12	174	405	150	4.3
4500-E	30 t	25	50	145	60	30	240	16	60	78	78	12	206.5	450	200	8

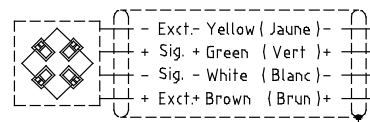
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

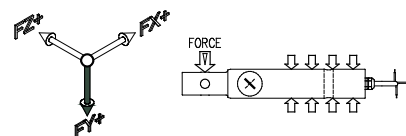


Wiring



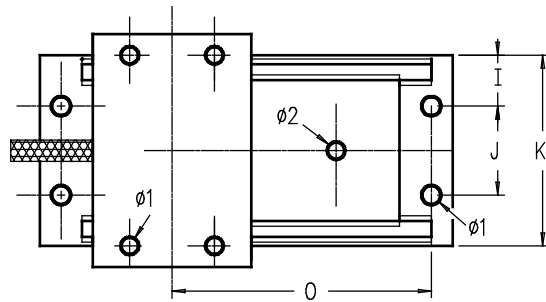
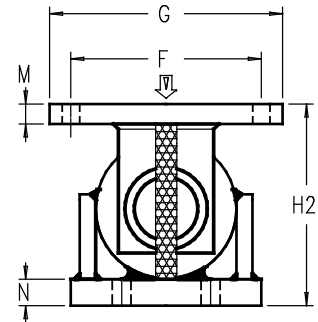
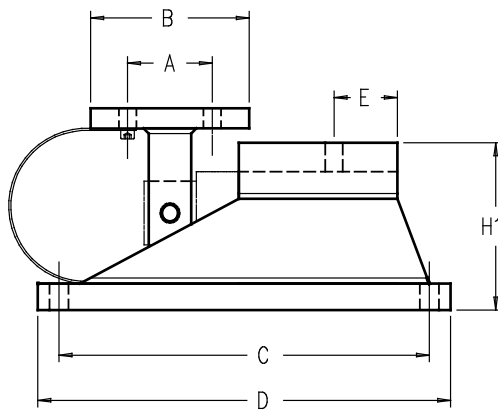
Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



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I4500-I4505 > STANDARD DIMENSIONS



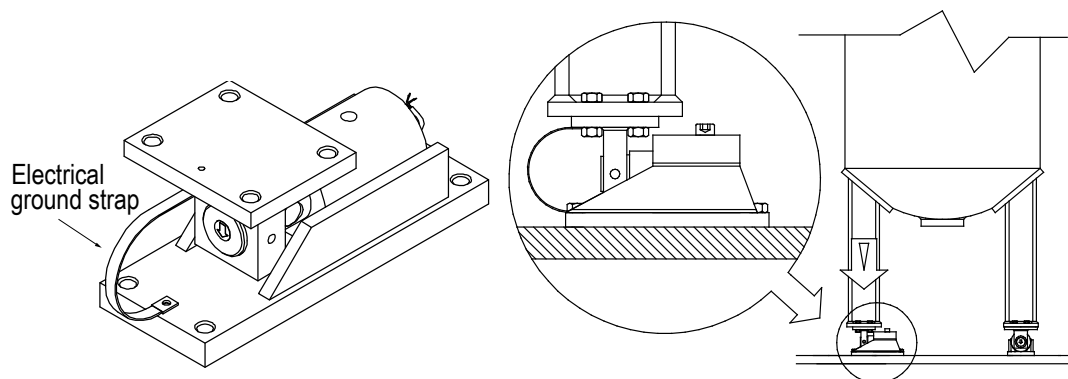
Ref. Item*	Capacities	A	B	C	D	E	F	G	I	J	K	M	N	O	Ø1	Ø2	H1	H2	Weight (kg)
I450x-A	0.5 - 3 t	60	90	255	285	40	90	120	15	90	120	15	20	200	12.5	10.5	100	125	10.6 (I4505 Ni plated)
I450x-B	5 - 7.5 t	60	90	255	285	40	90	120	15	90	120	15	20	200	12.5	10.5	100	125	11.2 (I4505 Ni plated)
I450x-CD	10 - 20 t	110	150	365	405	60	140	180	20	110	150	20	30	260	17	16.5	134	174	23.5 (I4505 painted)
I450x-E	30 t	110	150	407	450	60	157	200	30	157	200	30	30	273.5	21.5	16.5	160	206.5	48 (I4505 painted)

*x=Material: I4500 - stainless steel; I4505 - alloy steel

— Other capacities and dimensions available on request

Dimensions in mm

Other views



5000M-WI

WIRELESS LOAD SHACKLES

Wireless load-measuring shackles designed to measure tension force.



Model 5000M-WI - 20 t



Features

- o Sturdy design
- o Protection class: IP65
- o Easy to install
- o Load pin material: stainless steel
- o Standard dimensions
- o Frequencies: from 2.4000 to 2.4835 GHz
- o Power: 10 mW, licence: exempted
- o Range: 500 m open field (antenna integrated)
- o Sleep mode, remote wake-up mode, remote control of batteries
- o Not appropriate for overload protection

Most popular options (see more in ANNEX)



Ex i



Application(s) SENSY's wireless load shackles 5000M-WI are perfectly designed for the following applications:

- Load display on hoisting devices and EOT cranes,
- Industrial weighing / force measurement on test benches,
- Theater rigging equipment,
- Mooring - tow forces measurement / Winches monitoring, agriculture machinery, general machinery, test benches.

Capacities

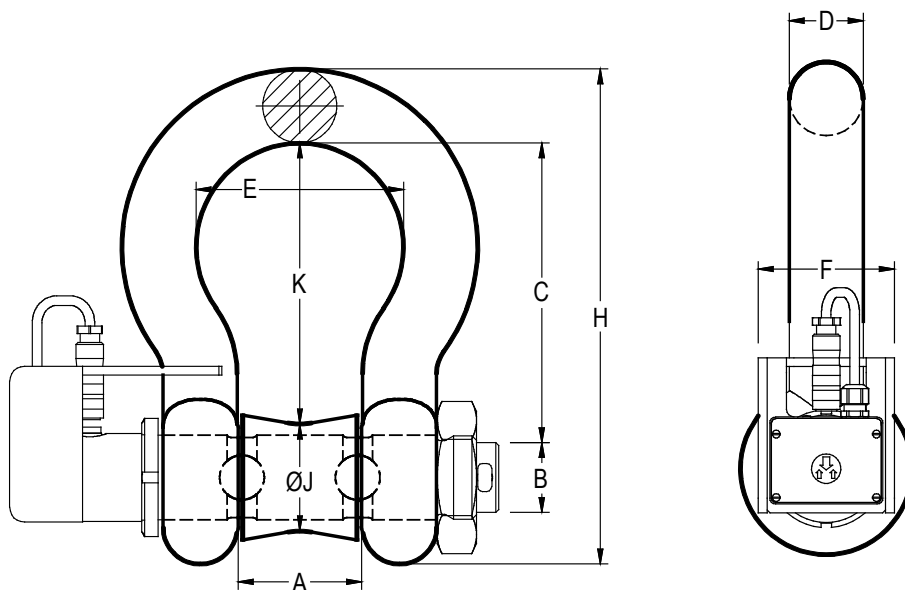
from 1 t to 400 t

Specifications	SL - FORCE	SL - HOIST	
Combined error (non-linearity + hysteresis)	0.25 - 1**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.3	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	% F.S./10°C
Nominal sensitivity	± 1.5	± 1	mV/V
Reference excitation voltage	3 VDC (2 x AA batteries)	3 VDC (2 x AA batteries)	-
Consumption	65 mA	65 mA	-
Current @ stand-by mode	20	20	µA
Autonomy @ normal mode (2 batteries)	1 month	1 month	-
Autonomy @ 12 x 5mn/day mode (2 D batteries)	2	2	years
Safe load limit	150	200	% F.S.*
Breaking load	> 300	> 500	% F.S.*
Permissible dynamic loading	50	75	% F.S.*
Static lateral force limit	100	150	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.
Specifications subject to change without notice..

5000M-WI > STANDARD DIMENSIONS



Ref. Item	Capacities			D		A	B	C	E	F	H	ØJ	K	Tolerances C & K	Total weight (kg)
	Force		Hoist > 500 %**	(mm)	(inch)										
	Standard > 300 %**	Extended capacity* > 300 %**													
5000M-WI-3/4"	2.5 t	3 t	1.5 t	19	3/4"	31.8±2.2	22.5	71.5	51	93±3	126±8.6	34	65	±6.4	3
5000M-WI-7/8"	4 t	6 t	2.5 t	22	7/8"	36±2.2	25	83	58	93±3	143.5±8.6	35.5	78	±6.4	3.5
5000M-WI-1"	6 t	8 t	4 t	25	1"	43±2.4	28	95	68	93±3	163.5±8.6	37	90.5	±6.4	4
5000M-WI-1" 1/8	8 t	10 t	5 t	28	1 1/8"	47±2.4	32	108	75	93±3	185±8.9	40	104	±6.4	5
5000M-WI-1" 1/2	12 t	15 t	8 t	38	1 1/2"	60±4	42	146	99	93±3	249±9.9	54	140	±6.4	12
5000M-WI-1" 3/4	16 t	25 t	12 t	45	1 3/4"	74±4	50	178	126	106	299.5±11.2	65	171	±6.4	19
5000M-WI-2"	30 t	40 t	20 t	50	2"	83±4.2	57	197	138	122	331±17.5	72	189.5	±12.7	28
5000M-WI-2" 1/2	40 t	50 t	30 t	65	2 1/2"	105±4.7	70	260	180	145	432.5±18.7	90	250	±12.7	52
5000M-WI-3"	60 t	75 t	45 t	75	3"	127±5	83	329	190	165	526.5±26	105	318	±19	90
5000M-WI-3" 3/4	90 t	125 t	60 t	95	3 3/4"	147±5	95	400	238	208	647±25	117	389	±19	150
5000M-WI-4" 1/8	100 t	150 t	75 t	105	4 1/8"	169±5	108	410	275	240	688±18	130	399	±12	190
5000M-WI-5" 1/8	200 t	300 t	120 t	130	5 1/8"	205±6	140	554	305	308	904±22	165	541.5	±14	320
5000M-WI-6" 11/16	300 t	400 t	200 t	170	6 11/16"	231±6	175	668	325	387	1114±27	200	655	±18	585

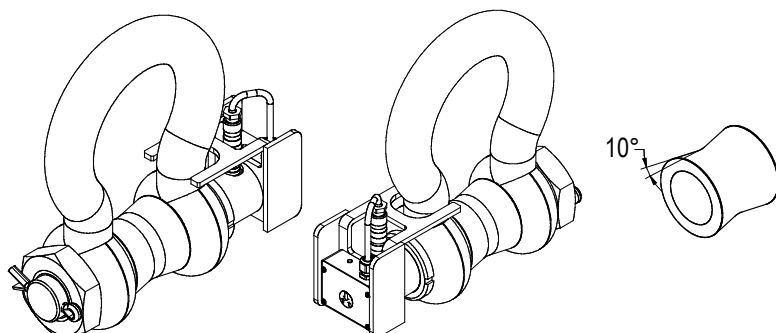
* Very resistant load cell, special design

** Breaking load (% full scale)

→ Other capacities and dimensions available on request

Dimensions in mm

Other views

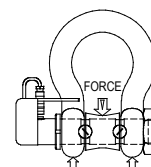


Wiring

Not applicable



Load direction



5100L-5105L

TENSION LOAD CELLS

Robust and easy to install tension load cells.



Features

- o Wide range of capacities: 2 t up to 100 t
- o Compact design
- o Protection class: IP66
- o Material: stainless steel (5100L), nickel-plated steel (5105L)
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Model : 5100L- 50 t



Application(s) SENSY's load cells 5100L-5105L are perfectly designed for the following applications:

- Towing force measurement (marine),
- Force measurement on rigging,
- Hanging load weighing,
- Tensile test benches.

Capacities

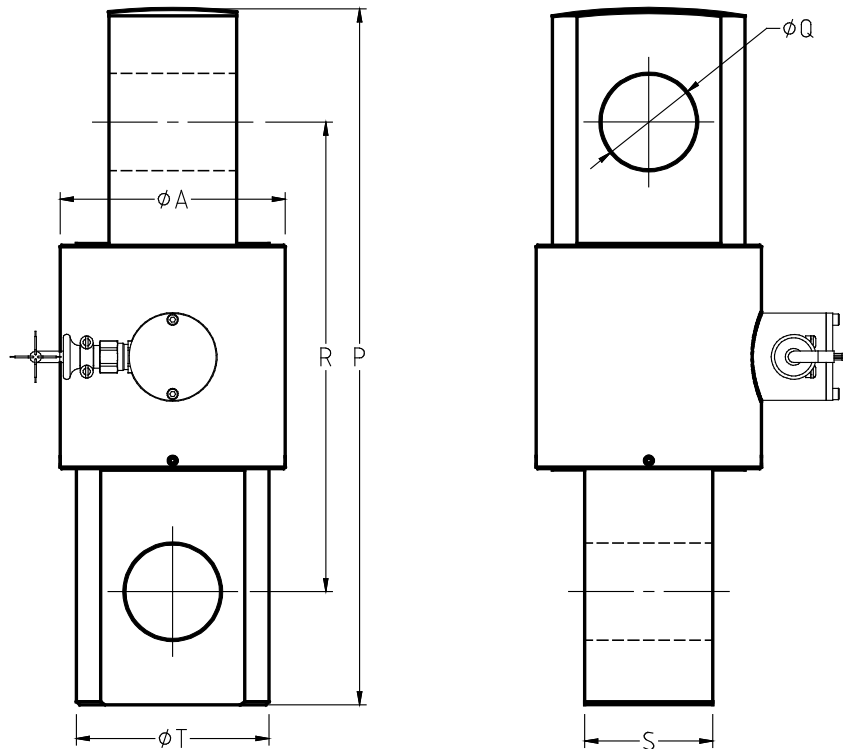
5100L - 5105L: 1 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 - 50 - 75 - 100 t

Specifications	SL - HOIST	0.25 %	
Combined error (non-linearity + hysteresis)	0.5 - 2**	<± 0.25	% F.S.*
Repeatability error	<± 0.25	<± 0.1	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.1	% F.S.*
Zero shift after loading	<± 0.5	<± 0.025	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.05	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.035	% F.S./10°C
Zero balance	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1	1.5	mV/V
Sensitivity tolerance	< ± 0.5	<± 0.3	%
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	200	150	% F.S.*
Breaking load	> 500	> 300	% F.S.*
Permissible dynamic loading	75	40	% F.S.*
Static lateral force limit	10	10	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.
Specifications subject to change without notice..

5100L-5105L > STANDARD DIMENSIONS



Ref. Item*	Capacities		ØA	P	ØQ	R	S	ØT	CL (m)	Weight (kg)
	Hoist > 500 %**	Force > 300 %**								
510xL-A	1 - 2 t	2 - 3 t	50	144	18	108	20	35	3	±1.5
510xL-B	3 t	5 t	60	160	24	112	30	45	3	±2
510xL-C	4 - 7.5 t	7.5 - 10 t	80	240	35	170	44	64	3	± 5.5
510xL-D	10 - 15 t	15 - 20 t	100	310	42	226	52	86	6	±12.8
510xL-E	20 - 30 t	30 - 50 t	139	430	58	290	78	109	6	±25
510xL-F	40 - 75 t	75 - 100 t	180	520	80	348	100	149	12	±65

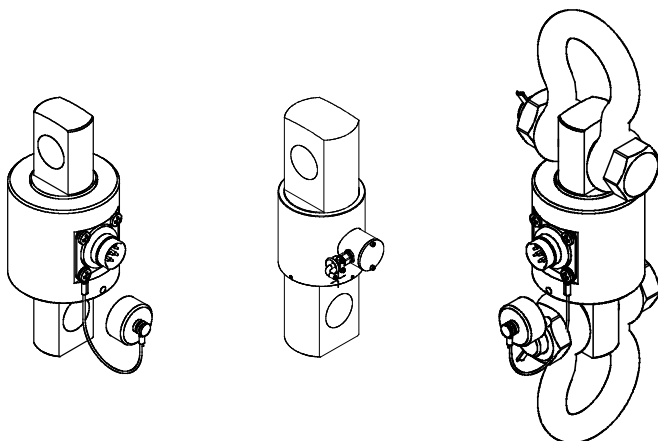
*x=Material: 5100L - stainless steel; 5105L - nickel-plated steel

** Breaking load (% full scale)

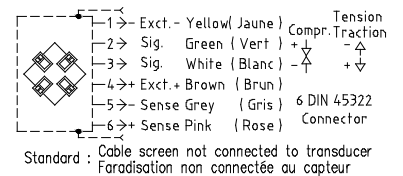
—> Other capacities and dimensions available on request

Dimensions in mm

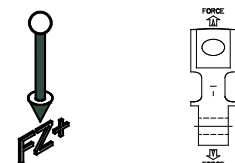
Other views



Wiring



Load direction



5510

SHEAR BEAM LOAD CELL

Universal load cell combining sturdy design, high accuracy and low cost.



Features

- o Material: stainless steel
- o Protection class: IP67
- o Sturdy design
- o Complies with OIML / R60 up to 3000 d for scales in class III (EN 45501)
- o Mounting kits available with following properties:
 - stabilisation without tension rods
 - compensation for thermal dilatations and default of parallelism
- o Cable length: 8 m (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



Model 5510 - 1 t



Application(s) SENSY's load cell 5510 is perfectly designed for the following applications:

- Low-profile scales, pallets, platform scales,
- Packaging, batching and filling machines,
- Reactors, tanks, vessels or hoppers weighing.

Capacities

5510: 0.5 - (0.75) - 1 - 1.5 - 2 t

Specifications	A3	0.03 %	C 3	
Accuracy class	0.03 %** F.S.*	0.03% F.S.*	3000 d OIML	-
Combined error (non-linearity + hysteresis)	<± 0.03	<± 0.03	<± 0.02	% F.S.*
Repeatability error	<± 0.015	<± 0.015	<± 0.01	% F.S.*
Creep error over 30 min.	<± 0.03	<± 0.025	<± 0.02	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.015	<± 0.009	% F.S./10°C
Temperature coefficient of zero signal	<± 0.05	<± 0.023	<± 0.013	% F.S./10°C
Nominal sensitivity	2	2	2	mV/V
Sensitivity tolerance	<± 0.2	<± 0.2	<± 0.1	%
Input resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3..12	3..12	3..12	VDC
Safe load limit	150	150	150	% F.S.*
Breaking load	>300	>300	>300	% F.S.*
Permissible dynamic loading	50	50	50	% F.S.*
Static lateral force limit	100	100	100	% F.S.*

* F.S. : Full Scale.

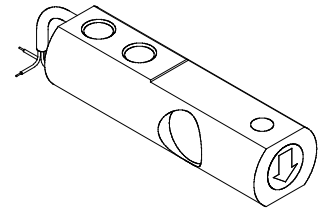
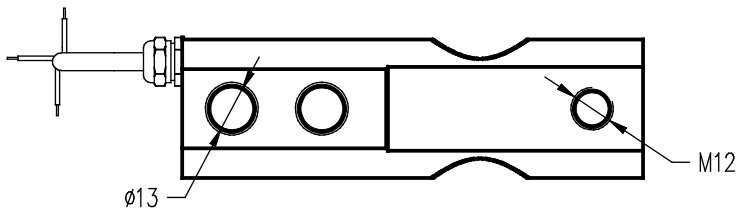
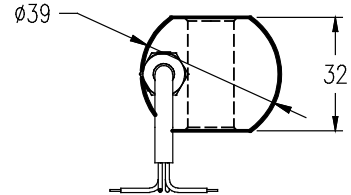
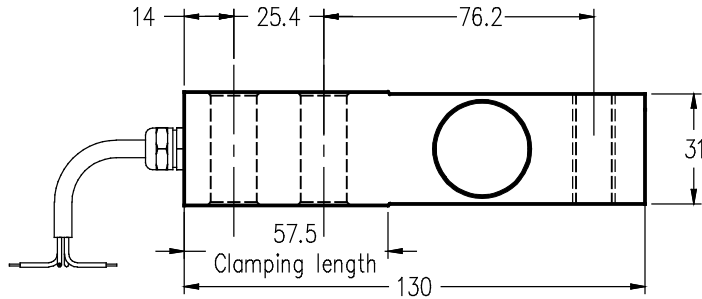
** : except thermal drifts

Specifications subject to change without notice..



ISO 9001 certified

5510 > STANDARD DIMENSIONS

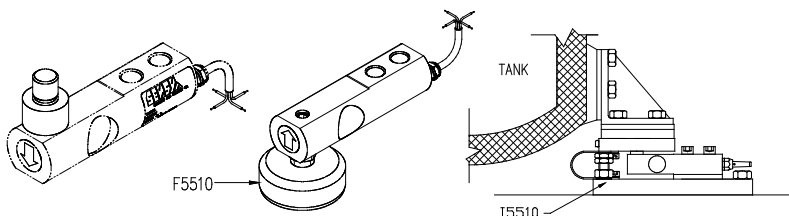
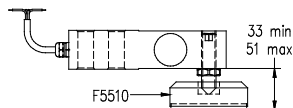
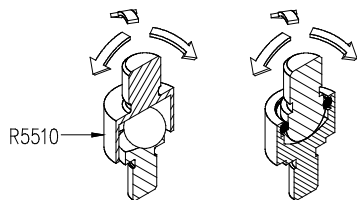


Ref. Item	Capacities	Weight (kg)
5510-A	0.5 - 2 t	0.95

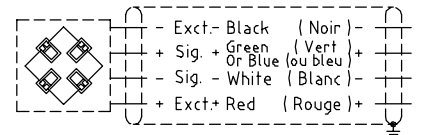
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

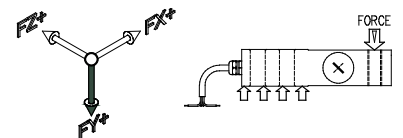


Wiring

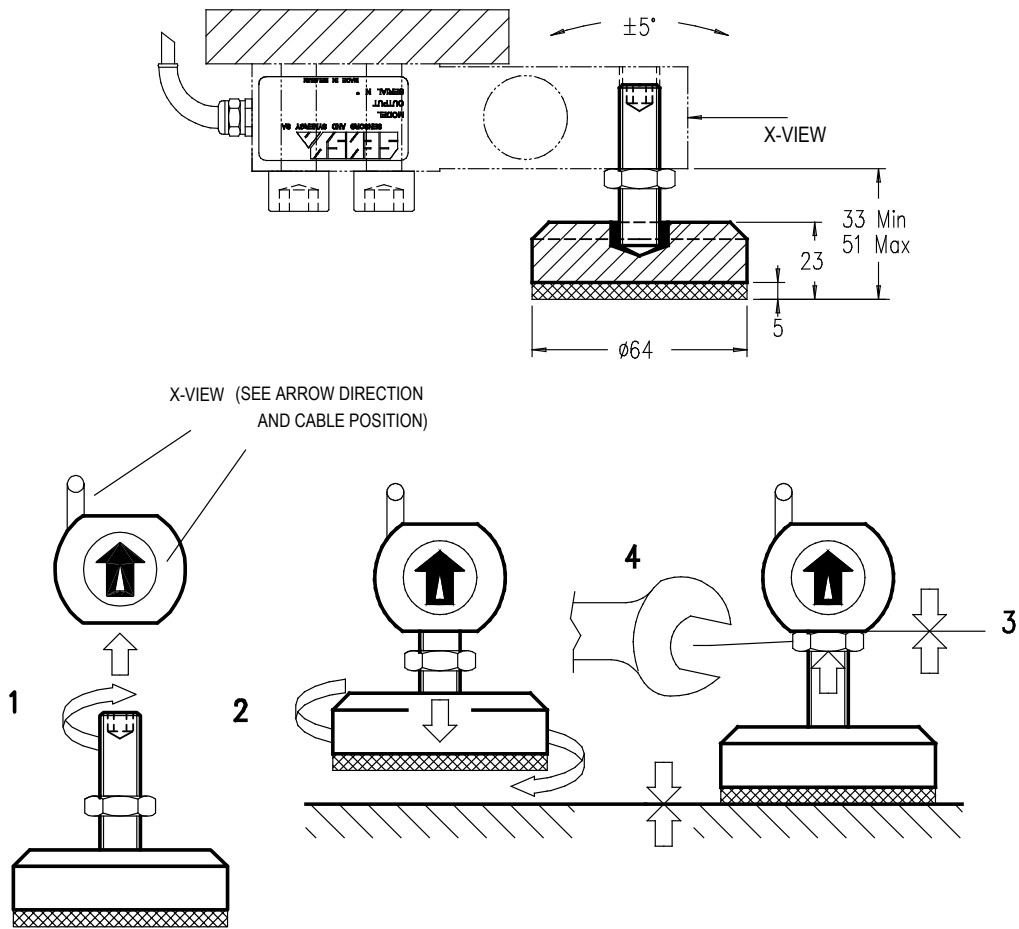


Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



F5510 > STANDARD DIMENSIONS

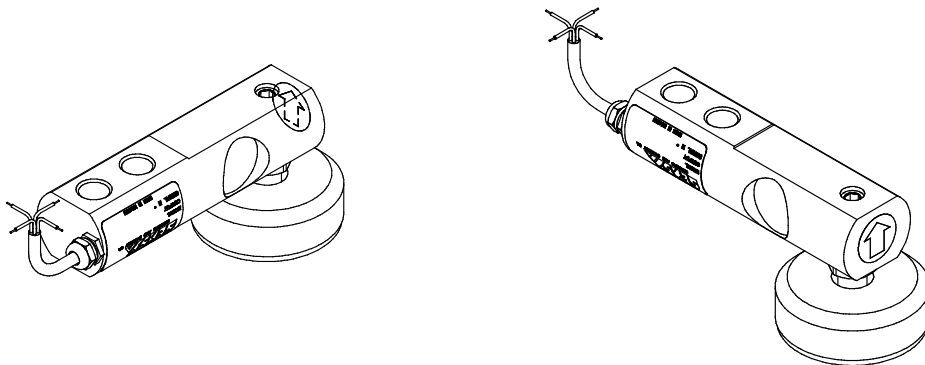


Ref. Item*	Capacities
F5510-A	0.5 - 2 t
* Material: stainless steel	

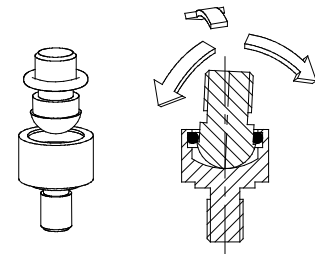
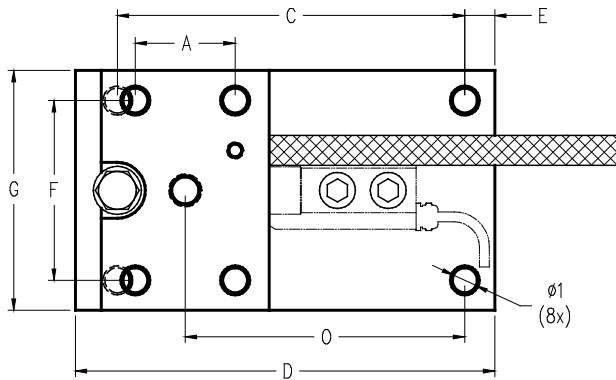
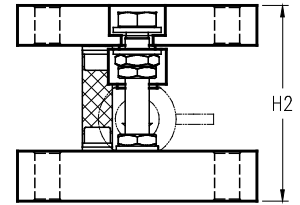
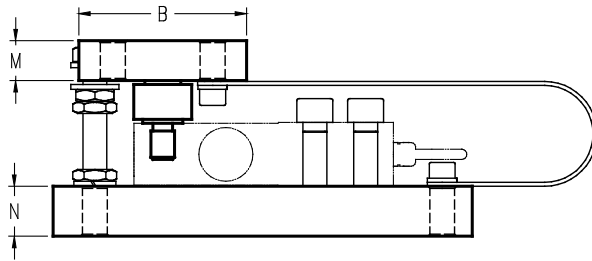
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



I5510-I5515 > STANDARD DIMENSIONS



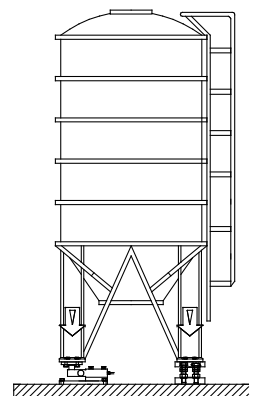
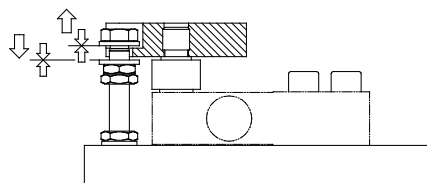
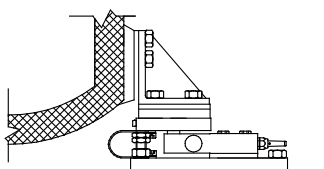
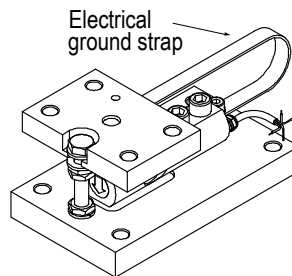
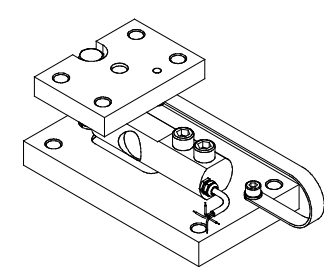
Ref. Item*	Capacities	A	B	C	D	E	F	G	M	N	O	Ø1	H2	Weight (kg)
I551x-A	0.5 - 2 t	50	84	174	210	15	90	120	20	25	140	12.5	98	±6.76

* x=Material: I5510 - stainless steel; I5515 - alloy steel

→ Other capacities and dimensions available on request

Dimensions in mm

Other views



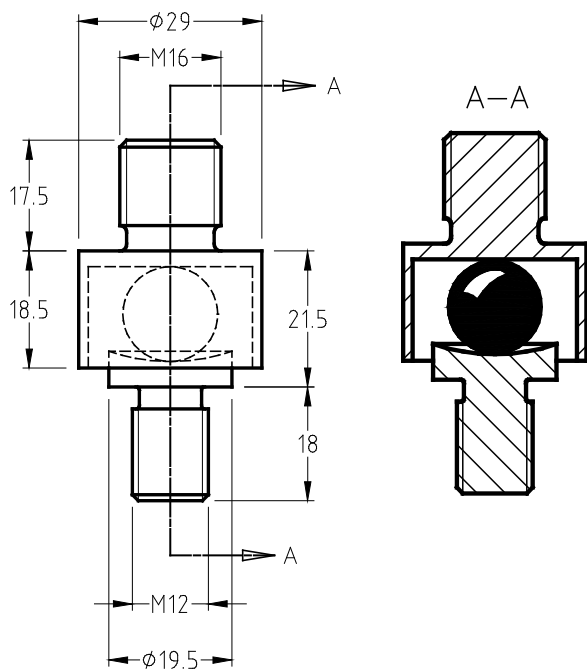
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R5510 > STANDARD DIMENSIONS



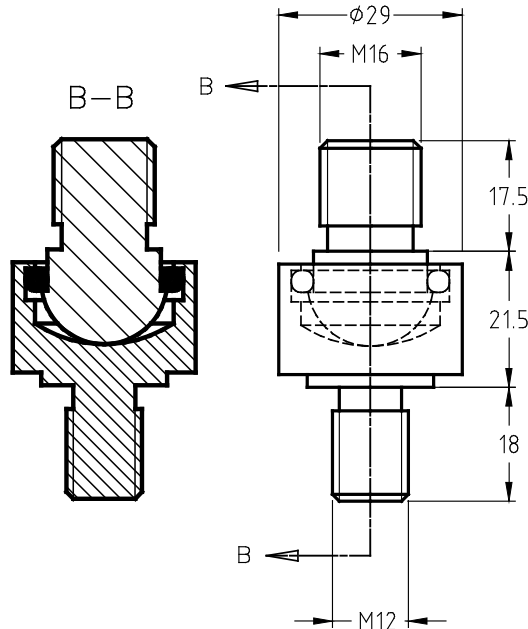
R5510-A1

Range: 500 kg - Weight: 0.097 kg



R5510-A2

Range: 750 kg - Weight: 0.127 kg



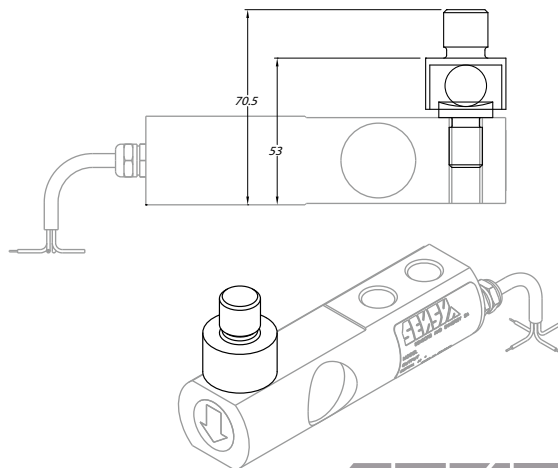
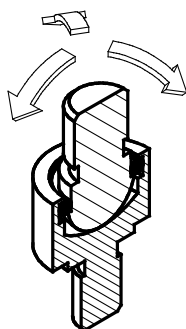
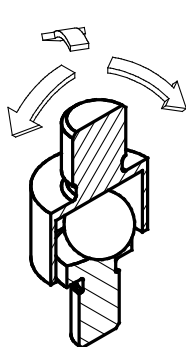
Ref. Item*	Capacities
R5510-A1	500 kg
R5510-A2	750 kg - 2 t

* Material: R5510 - stainless steel

→ Other capacities and dimensions available on request

Dimensions in mm

Other views



Load cell combining high capacity with low design.



Features

- o Material: stainless steel
- o Protection class: IP67
- o Low design
- o Cost-effective solution
- o Sturdy design
- o Easy to install
- o Cable length: 3 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 5910 - 2 t



Application(s) SENSY's load cell 5910 is perfectly designed for the following applications:

- Manufacturing of portable wheel scales,
- Industrial force applications where space is limited,
- Silos, tanks, hoppers or reactors weighing.

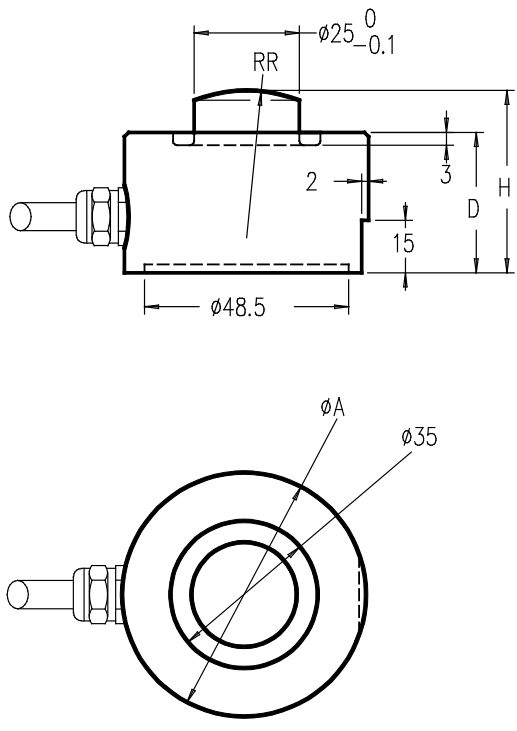
Capacities

5910: (0.3) - 0.5 - (0.75) - 1 - (1.5) - 2 - 3 - 5 t

Specifications	0.25 %	0.1 %	
Accuracy class	0.25 % F.S.*	0.1% F.S.*	-
Combined error (non-linearity + hysteresis)	<± 0.25	< ± 0.1	% F.S.*
Repeatability error	<± 0.1	<± 0.03	% F.S.*
Creep error over 30 min.	<± 0.1	<± 0.06	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.05	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.035	% F.S./10°C
Nominal sensitivity	1.5	1.5	V
Sensitivity tolerance	<± 0.3	<± 0.3	%
Input resistance	700 ± 2	700 ± 2	ohm(s)
Output resistance	700 ± 2	700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	150	150	% F.S.*
Breaking load	>300	>300	% F.S.*
Permissible dynamic loading	40	40	% F.S.*
Static lateral force limit	10	10	% F.S.*

* F.S.: Full Scale.
Specifications subject to change without notice..

5910 > STANDARD DIMENSIONS

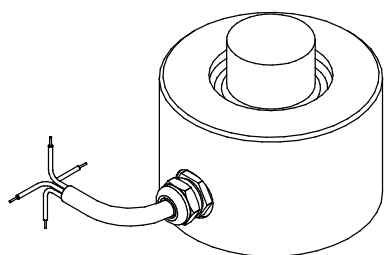


Ref. Item	Capacities	ϕA	D	H	RR	CL (m)	Max. Deflexion (mm)	Weight (kg)
5910-A	0.3 - 5 t	59	30	40	35	3	0.04 - 0.07	± 0.6

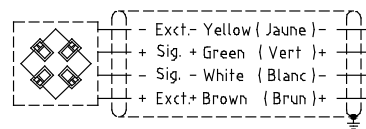
Other capacities and dimensions available on request

Dimensions in mm

Other view

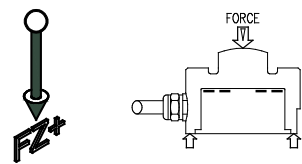


Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



Load cells combining high capacity, low design and cost-effective solution.



Features

- o Material: stainless steel
- o Protection class: IP67
- o Low design
- o Cost-effective solution
- o Sturdy design
- o Easy to install
- o Whole range of mounting kits available
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)

Model 5950 - 2 t



Ex i



IP68

Application(s) SENSY's load cells 5950 are perfectly designed for the following applications:

- Silos, tanks or hoppers weighing,
- Reactors weighing,
- Industrial force measurement where space is limited.

Capacities

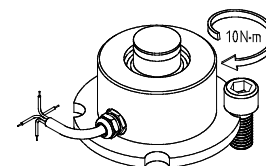
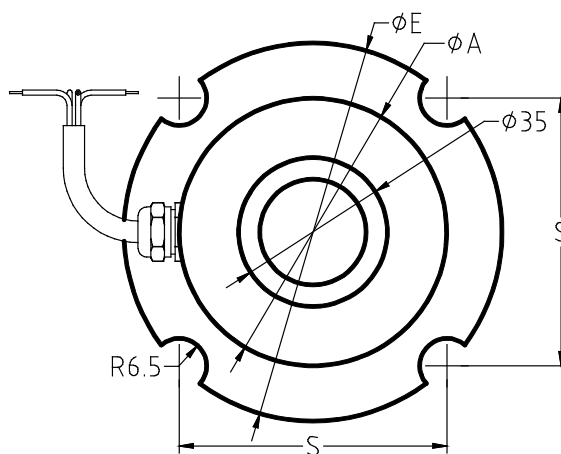
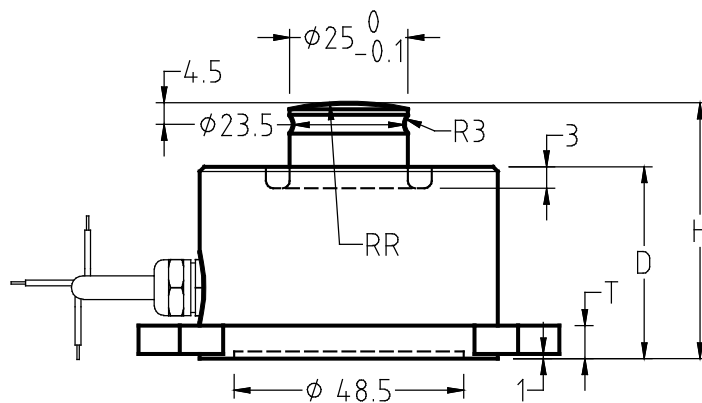
5950: (0.3) - 0.5 - (0.75) - 1 - (1.5) - 2 - 3 - 5 - 7.5 - 10 - 15 - 20** t

Specifications	0.5 %	0.25 %	0.1 %	
Accuracy class	0.5 % F.S.*	0.25 % F.S.*	0.1% F.S.*	-
Combined error (non-linearity + hysteresis)	< ± 0.5	<± 0.25	< ± 0.1	% F.S.*
Repeatability error	< ± 0.25	<± 0.1	<± 0.03	% F.S.*
Creep error over 30 min.	< ± 0.2	<± 0.1	<± 0.06	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	< ± 0.1	<± 0.05	<± 0.05	% F.S./10°C
Temperature coefficient of zero signal	< ± 0.1	<± 0.035	<± 0.035	% F.S./10°C
Nominal sensitivity	1.5	1.5	1.5	mV/V
Sensitivity tolerance	< ± 0.5	<± 0.3	<± 0.3	%
Input resistance	700 ± 2	700 ± 2	700 ± 2	ohm(s)
Output resistance	700 ± 2	700 ± 2	700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	150	150	150	% F.S.*
Breaking load	>300	>300	>300	% F.S.*
Permissible dynamic loading	40	40	40	% F.S.*
Static lateral force limit	10	10	10	% F.S.*

* F.S.: Full Scale.

** : 5950-20 t only available with 0.5 % accuracy class
Specifications subject to change without notice..

5950 > STANDARD DIMENSIONS

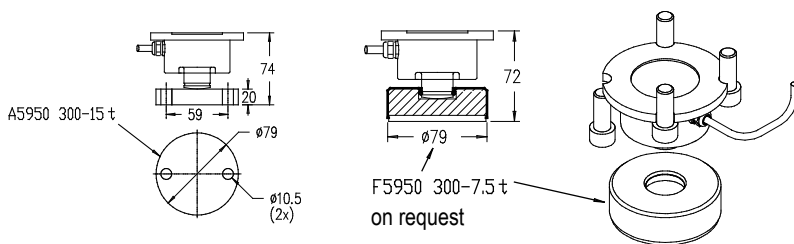


Ref. Item	Capacities	ØA	D	H	S	T	ØE	RR	Max. Deflexion (mm)	Weight (kg)
5950-A	0.3 - 5 t	54.5	38.5	54	62.9	7	89	60	0.04 - 0.07	±1.4
5950-B	7.5 - 15 t	59	38.5	54	62.9	7	89	60	0.08 - 0.15	±1.4
5950-C	20 t	59	38.5	54	62.9	7	89	60	0.2	±1.4

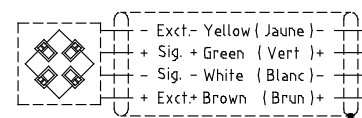
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

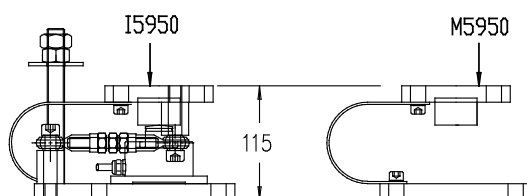
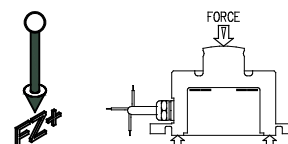


Wiring

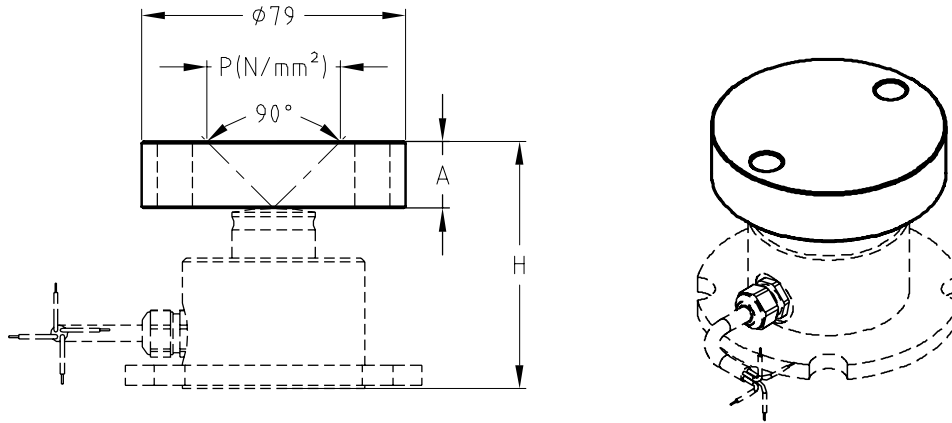


Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



A5950 > STANDARD DIMENSIONS



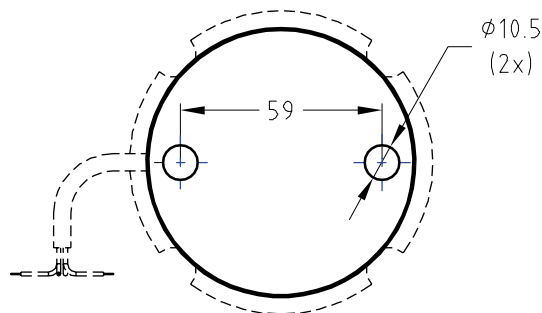
Ref. Item*	Capacities	A	H	P N/mm ²	Weight (kg)
A5950-AB	0.3 - 15 t	20	74	± 120 (15 t)	± 0.76
A5950-C	20 t	25	79	± 100	± 0.95

*Material: stainless steel

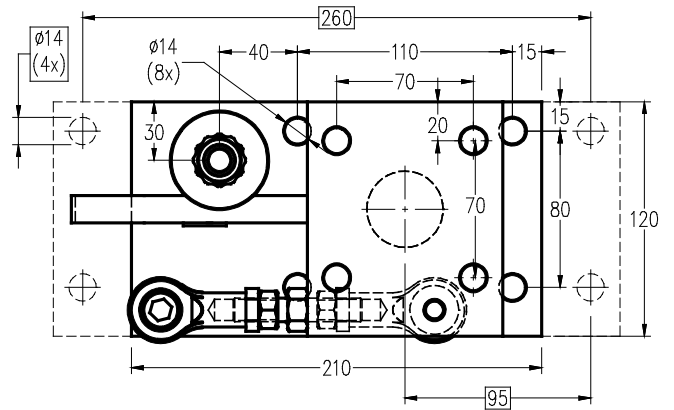
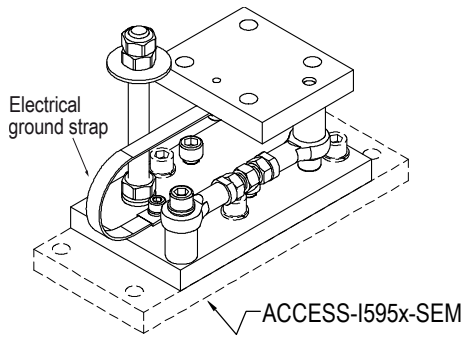
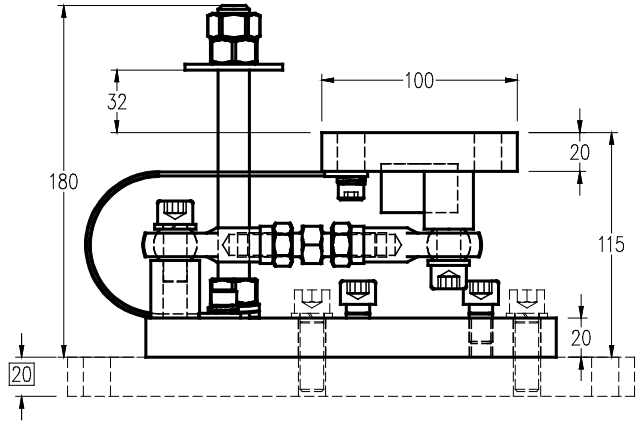
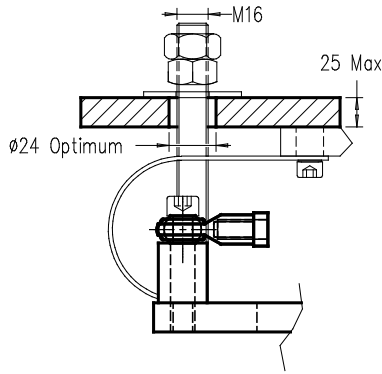
→ Other capacities and dimensions available on request

Dimensions in mm

Other view



I5950-I5955 > STANDARD DIMENSIONS

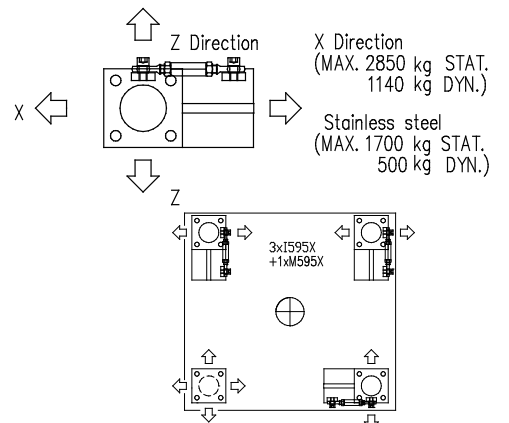
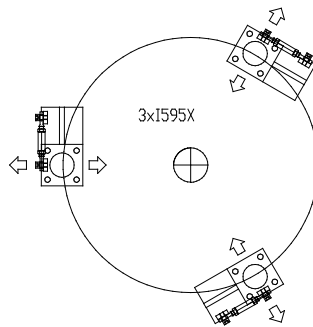
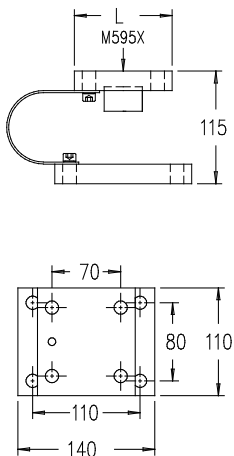


Ref. Item*	Capacities
I595x-A	0.3 - 20 t
*x=Material: I5950 - stainless steel; I5955 - alloy steel	

Other capacities and dimensions available on request

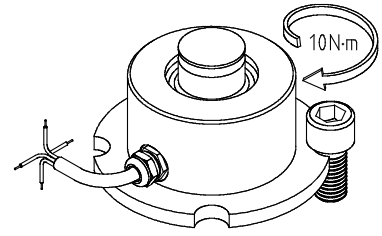
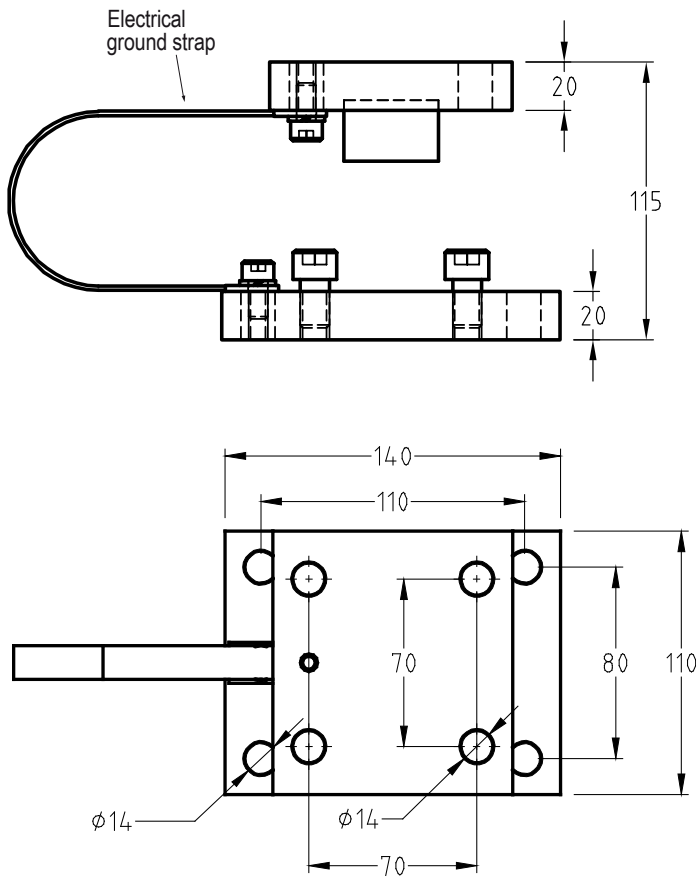
Dimensions in mm

Other views



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M5950 > STANDARD DIMENSIONS

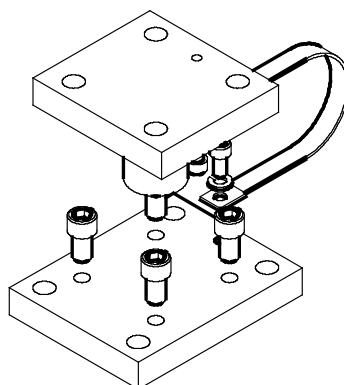


Ref. Item*	Capacities
M595x-A	0.3 - 20 t
*Material: M5950 - stainless steel; M5955 - alloy steel	

→ Other capacities and dimensions available on request

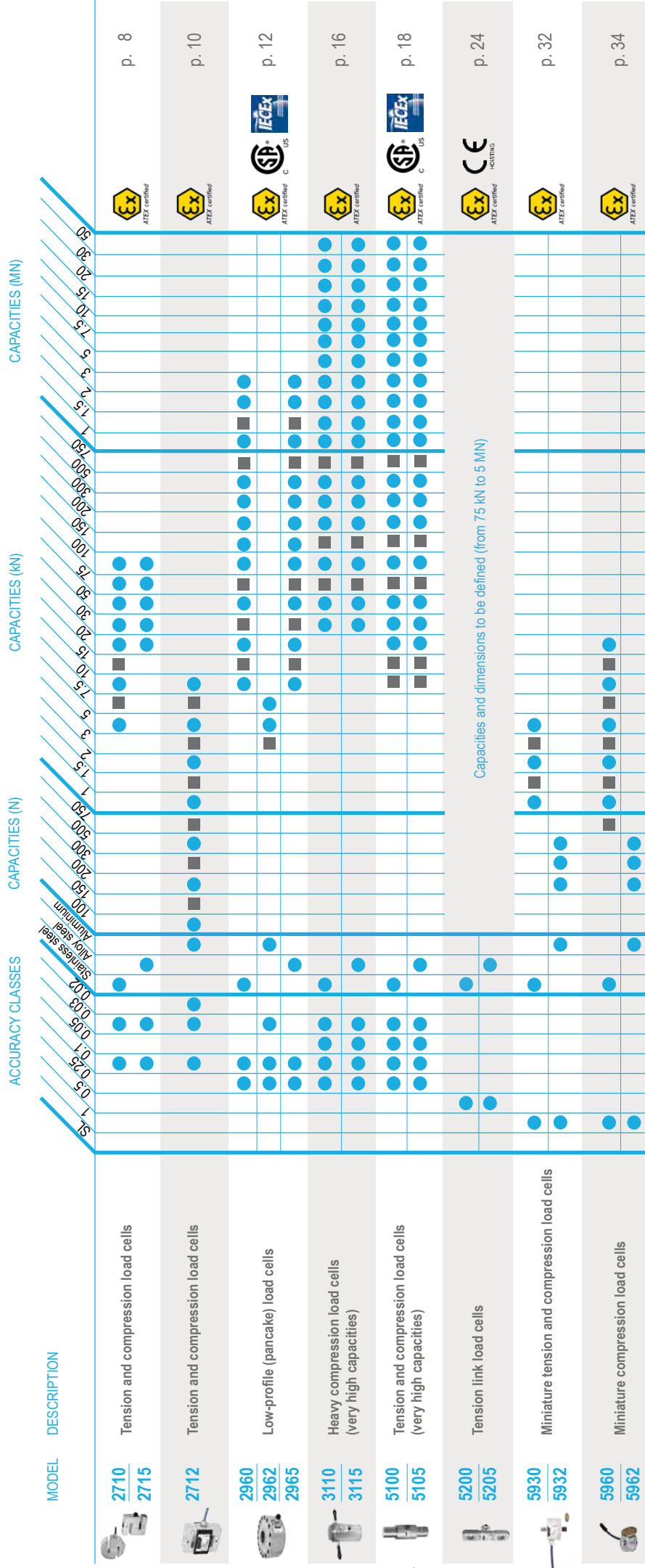
Dimensions in mm

Other view



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FORCE TRANSDUCERS ALSO AVAILABLE FOR WEIGHING APPLICATIONS



● Standard ■ Optional

Note: CSA and/or IECEx options are available only for 2960 and 5100 models.

CRANE OVERLOAD PROTECTION



LOAD CELL
MANUFACTURER



00000

CRANE BOY
124.99
000 000 000 000 000

SENSY

SENSY
000 000 000 000 000

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5300

STANDARD LOAD PINS

Load pins with standard dimensions.



Features

- o CE certified for hoisting applications
- o Sturdy design
- o Material: stainless steel
- o Protection class: IP65
- o Easy to install
- o Complete range of CE certified electronics and load limiters
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 5300 - 20 t



Application(s) SENSY's load cells 5300 are perfectly designed for the following applications:

- Hoisting devices and crane security in combination with load limitation electronics (e.g.: BRIDGE-BOY, CRANE-BOY, ...),
- Agriculture machines, theater equipment, elevators, hydraulic cylinders monitoring.

Capacities

5300: 0.5 - 1 - 2 - 3 - 5 - 10 - 20 - 30 - 50 - 75 - 100 - 125*** t

Specifications	SL - FORCE	SL - HOIST	SL - LIFT	
Combined error (non-linearity + hysteresis)	0.25 - 1**	0.5 - 2**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.3	<± 0.2	% F.S.*
Zero shift after loading	<± 0.5	<± 0.5	<± 0.5	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	<± 0.2	% F.S./10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1.5	± 1	± 0.5	mV/V
Input resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	150	200	300	% F.S.*
Breaking load	> 300	> 500	> 1000	% F.S.*
Permissible dynamic loading	50	75	100	% F.S.*
Static lateral force limit	100	150	200	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.

*** 125 t only force version.

Specifications subject to change without notice..

5300 > TECHNICAL SPECIFICATIONS

Load pins range



5000 (1 to 2000 t)
CUSTOM-MADE LOAD PIN



5050 (1 to 2000 t)
SUBSEA LOAD PIN

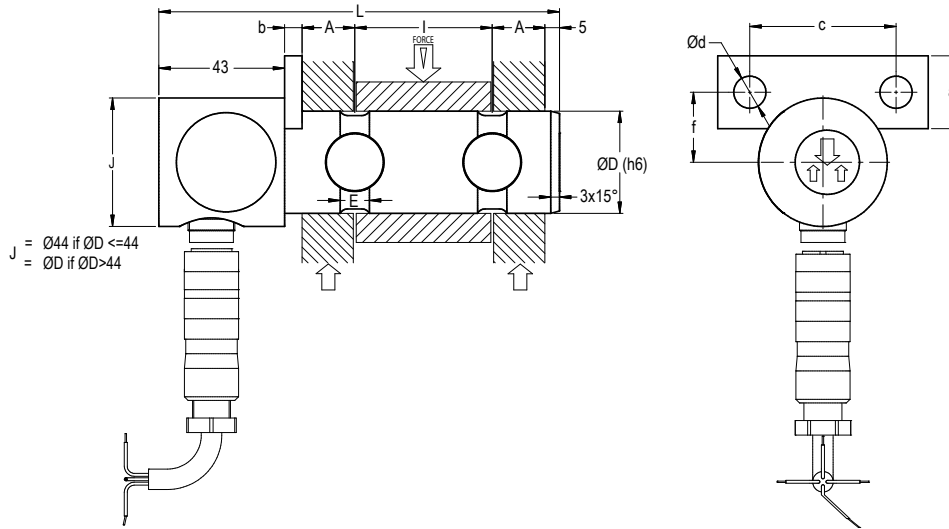


5300 (0.5 to 125 t)
STANDARD LOAD PIN



5600 (0.5 to 14 t)
ECONOMICAL LOAD PIN

5300 drawing



Ref. Item	CAPACITIES			ØD	A	E	l	a	b	c	Ød	f	L	Weight (kg)
	Force > 300 %*	Hoist > 500 %*	Lift > 1000 %*											
5300-A	0.75 t	0.5 t	0.25 t	25	13.5	8	31	25	6	50	11	20.5	112	1.02
5300-B	1.5 - 3 t	1 - 2 t	0.5 - 1 t	25	13.5	8	31	25	6	50	11	20.5	112	1.04
5300-C	5 - 7.5 t	3 - 5 t	1.5 - 2.5 t	35	18	10	47	25	6	50	11	24	137	1.44
5300-D	16.6 t	10 t	5 t	50	27	14	66	30	8	70	13	33	176	2.88
5300-E	30 t	20 t	10 t	65	32.5	18	90	30	8	70	13	38	211	5.44
5300-F	50 t	30 t	15 t	75	40	25	100	40	10	100	17	47	241	8.15
5300-G	75 t	50 t	-	85	49	20	117	40	10	100	17	50.5	271	12
5300-H	100 t	75 t	-	100	72.5	35	155	40	10	100	17	56	354	21.1
5300-I	125 t	100 t	-	120	72.5	35	155	50	12	140	21	68.5	354	31.4

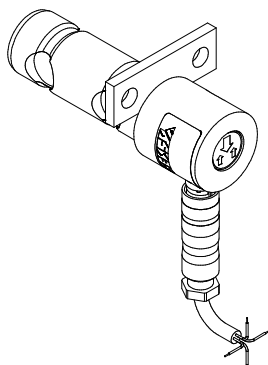
* Breaking load (% full scale)

→ Other capacities and dimensions available on request

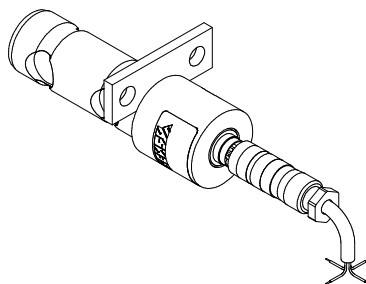
Dimensions in mm

Other views

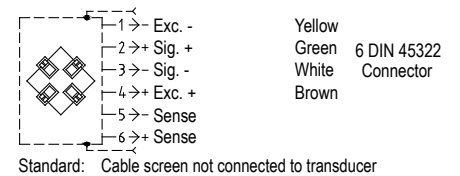
RADIAL OUTPUT (STANDARD)



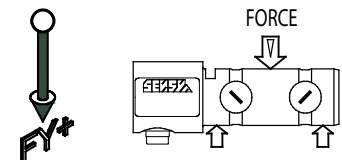
AXIAL OUTPUT (5300A-x) - OPTION



Wiring



Load direction



Our model 5000 is designed to measure a force or constraint, without any change to the mechanical structure, simply by replacing the clevis pin with our custom-made load pin.



Features

- o Material: stainless steel
- o Protection class: IP65 (up to IP68: see options)
- o Sturdy design
- o Easy to install
- o Complete range of CE certified electronics, load limiters and displays available for hoisting applications and lifts
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 5000-XY-188 kN



Application(s) SENSY's load cells 5000 are perfectly designed for the following applications:

- SL - FORCE: - Force measurement on cylinders, industrial weighing / Winches monitoring, agriculture machinery, general machinery, test benches.
- SL - HOIST: Hoisting devices and crane's security in combination with a load limitation electronic,
- SL - LIFT: - Load limitation for elevators and cable cars / Rigging of theater equipment.

Capacities

from 0.5 to 2000 t

Specifications	SL - FORCE	SL - HOIST	SL - LIFT	
Combined error (non-linearity + hysteresis)	0.25 - 1**	0.5 - 2**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.3	<± 0.2	% F.S.*
Zero shift after loading	<± 0.5	<± 0.5	<± 0.5	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	<± 0.2	% F.S./10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1.5	± 1	± 0.5	mV/V
Input resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	150	200	300	% F.S.*
Breaking load	> 300	> 500	> 1000	% F.S.*
Permissible dynamic loading	50	75	100	% F.S.*
Static lateral force limit	100	150	200	% F.S.*

*F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions. Specifications subject to change without notice..

5000 > TECHNICAL SPECIFICATIONS

Load pins range

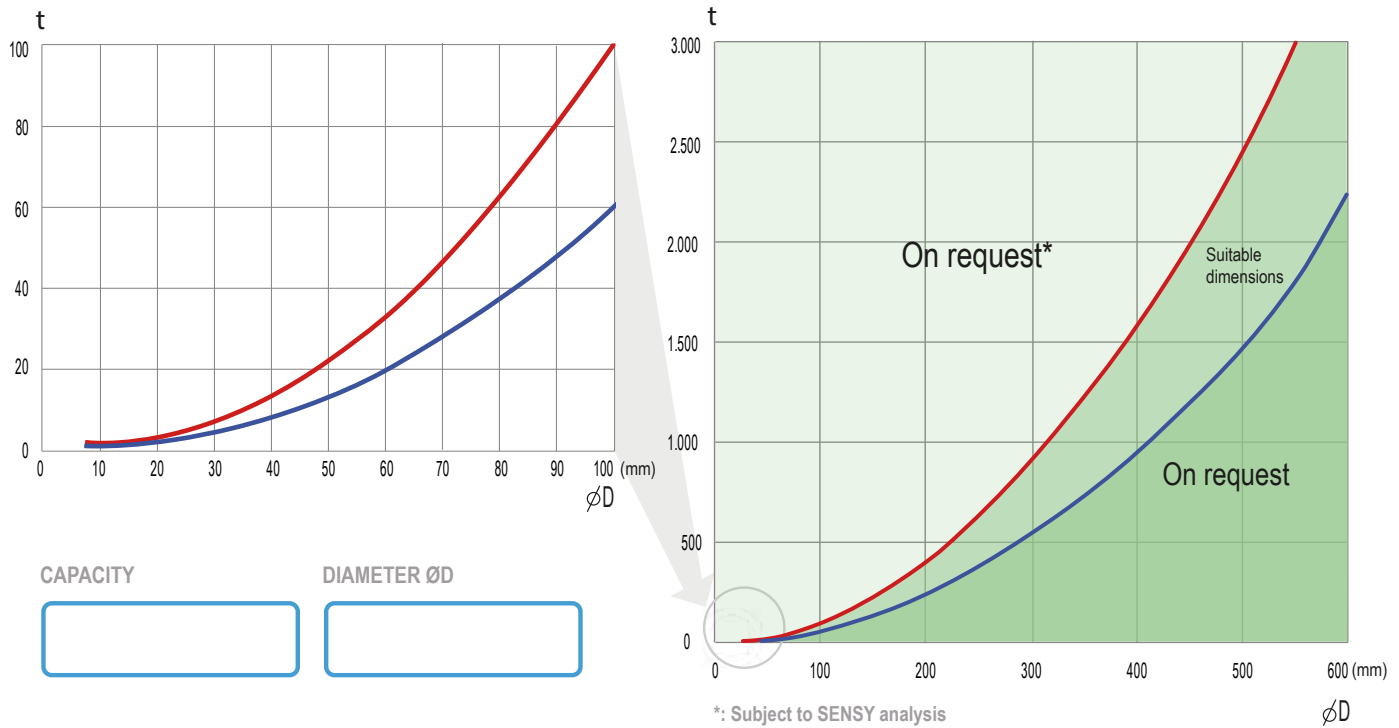


TOOLS

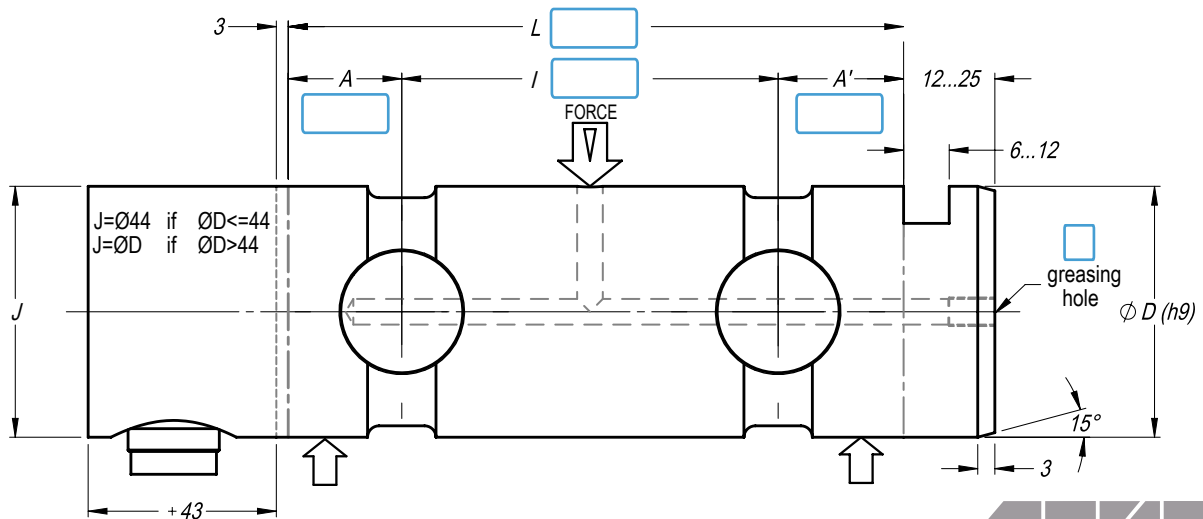
CONFIGURATOR
<https://www.sensy.com/en/load-pins-configurator/load-pin>

LOAD PIN DESIGN
<https://www.sensy.com/en/load-pins-configurator/load-pin-design>

Load-diameter relationship



Mechanical dimensions



5000 > OPTIONS

Configuration

Example: CB HN

C: Connector
B: Cable entry: 180°
H: Fixing plate: 0°
N: Position code

Example: PB HC

P: Cable gland
B: Cable entry: 180°
H: Fixing plate: 0°
C: Position code

Example: PA DN

P: Cable gland
A: Cable entry: axial
D: Fixing plate: 90°
N: Position code

Cable entry | Connector | Cable gland

Fixing plate nr. | if ØD ≤ 100 | if ØD > 100

1 | 2 | 4

Options

Type of application	FORCE (BL* > 300 %)	static dynamic	HOISTING (BL* > 500 %)		LIFT (BL* > 1000 %)	
Environment	IP65	IP66	IP67	IP67 MARINE	IP68	
	NORMAL	INDUSTRIAL	NUCLEAR	AERONAUTICS	Other:	
	SUBSEA		Immersion depth:		Immersion time:	
Output signal	mV/V	4-20 mA 2 wires 3 wires	0-10 V (force)	1-5 V (hoisting)	RS-485	WIRELESS Other:
Service temperature range	<p>Standard temperature range</p> <p>-20°C ←————→ 70°C</p> <p>←————→ Temperature range available (option)</p> <p>-50°C ————— +200°C</p>					
Dual bridge circuit	NO		YES			
			Redundancy Safety SIL / PL Biaxial load pin, directions X and Y			
Cable length (m)	6	12	20	50	100	Other:
Intrinsically safe	Not applicable	ATEX	IECEX/ ATEX	CSA US/Canada	Triple certification	

* BL = Breaking load

Wiring

Std. cable (mV/V)

Exc.- (YELLOW) | Exc.+ (BROWN)
 Sig.- (WHITE) | Sig.+ (GREEN)

4-20 mA (3 wires) | 4-20 mA (2 wires)

Common (YELLOW) | Exc.+ (BROWN) | Sig.+ (GREEN) | Or | Exc.- (YELLOW) | Exc.+ (BROWN) | Exc.- (WHITE)

Load direction

5000 > EXAMPLES

5000-HOIS003158-12 t - SIL3



5000-FORC000678-12 t



5000-HOIS003629-60 t



5000-HOIS003043-15 klb
3053-3.5 klb



5000-FORC000474-778 t



5000-HOIS003025-16 t



5000-FORC003812-8 t



5000-FORC000025-150 kg



5000-FORC000492-226 t



5000-HOIS001860-105 t



5050

SUBSEA / SUBMERGED LOAD PINS

Design for underwater applications.



Features

- o Custom-made dimensioning
- o Sturdy design
- o Material: stainless steel
- o Protection class: IP68
- o Easy to install
- o Depth: up to -7500 m / -24 606 ft (750 bars / 11 000 psi) - deeper on request
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)



Ex d

Ex i



Model 5050



Application(s) SENSY's load cells 5050 are perfectly designed for the following applications:

- Shipbuilding / Monitoring system / Tank test / Oil exploration,
- Working at sea / Seabed mooring / ROV subsea tethers,
- Force testing / weighing inside pressure vessels.

Capacities

from 0.5 to 2000 t

Specifications	SL - FORCE	SL - HOIST	
Combined error (non-linearity + hysteresis)	0.25 - 1**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.3	% F.S.*
Zero shift after loading	<± 0.5	<± 0.5	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	% F.S./10°C
Zero balance	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1.5	± 1	mV/V
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	150	200	% F.S.*
Breaking load	> 300	> 500	% F.S.*
Permissible dynamic loading	50	75	% F.S.*
Static lateral force limit	100	150	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.
Specifications subject to change without notice..

5050 > TECHNICAL SPECIFICATIONS

Load pins range



5000 (1 to 2000 t)
CUSTOM-MADE LOAD PIN



5050 (1 to 2000 t)
SUBSEA LOAD PIN



5300 (0.5 to 125 t)
STANDARD LOAD PIN



5600 (0.5 to 14 t)
ECONOMICAL LOAD PIN

TOOLS

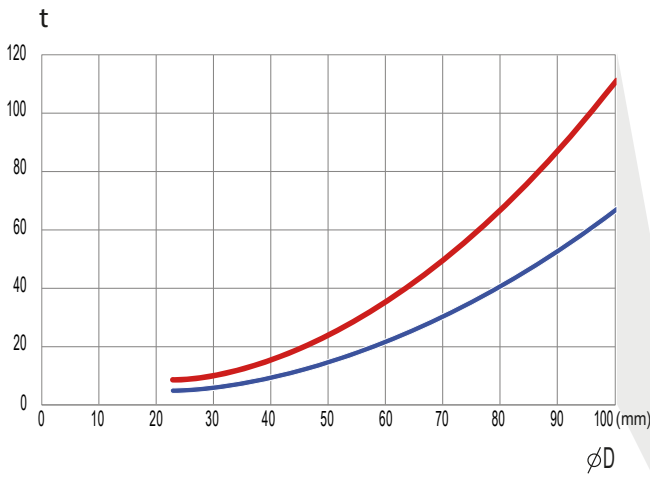
CONFIGURATOR

<https://www.sensy.com/en/load-pins-configurator/subsea-load-pin>

LOAD PIN DESIGN

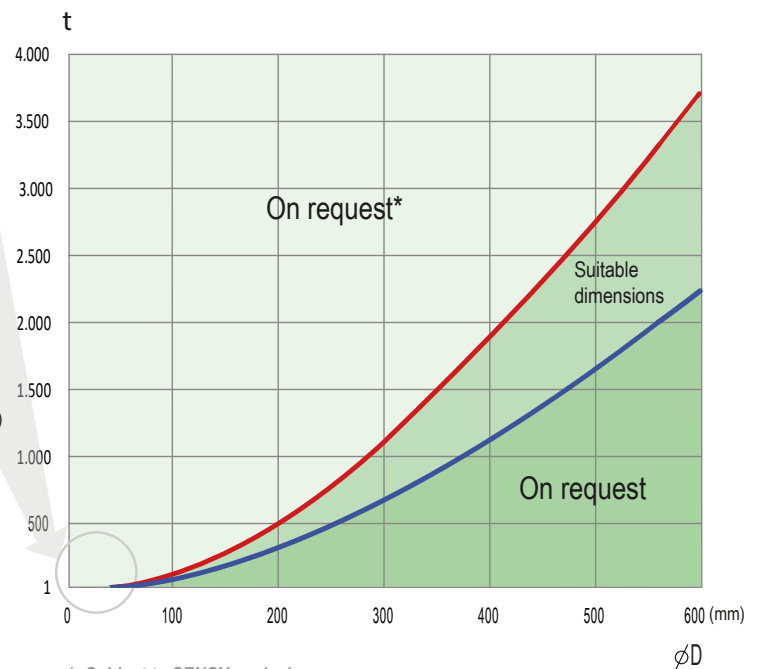
<https://www.sensy.com/en/load-pins-configurator/load-pin-design>

Load-diameter relationship



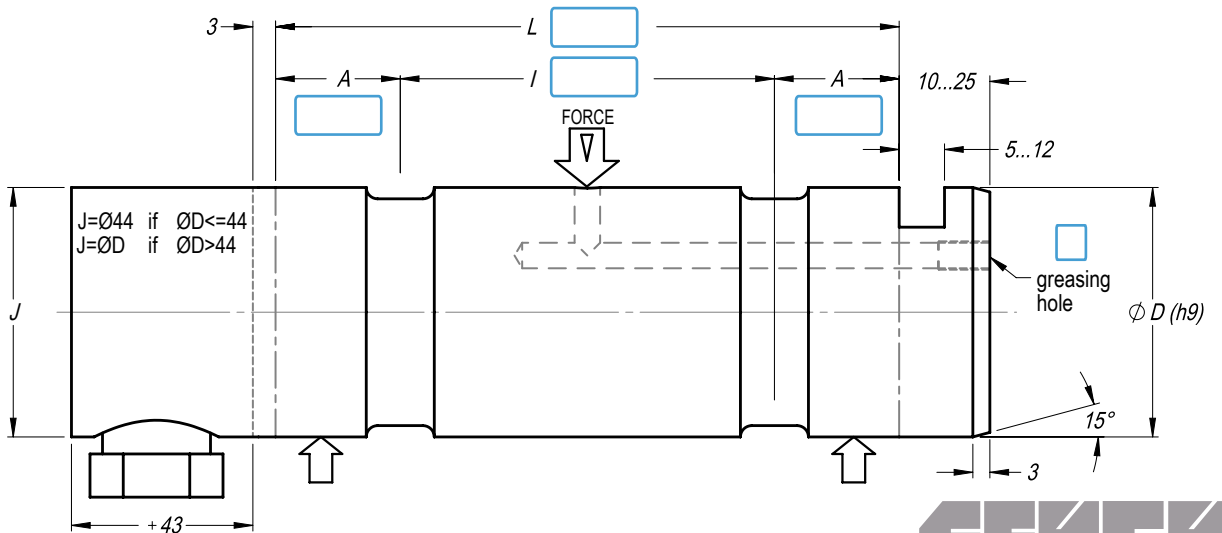
CAPACITY

DIAMETER ØD



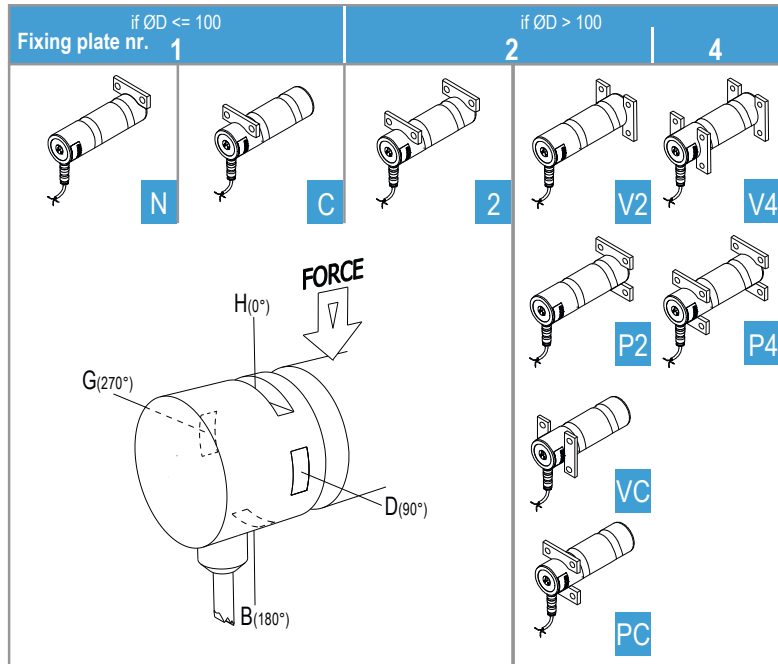
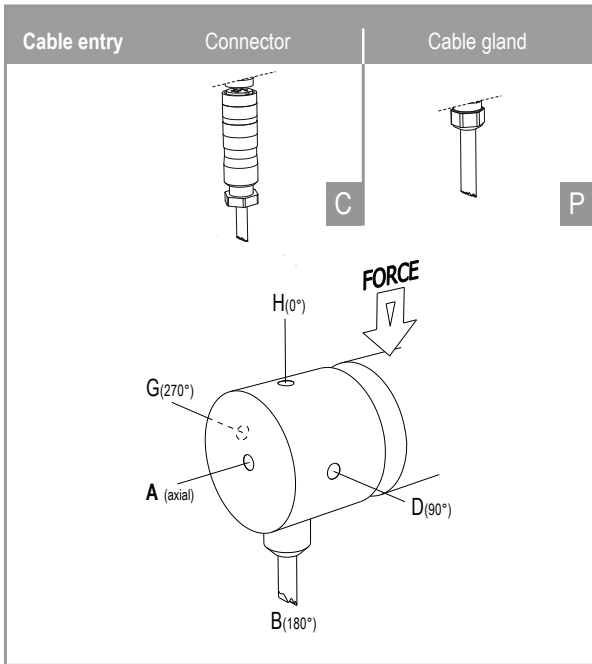
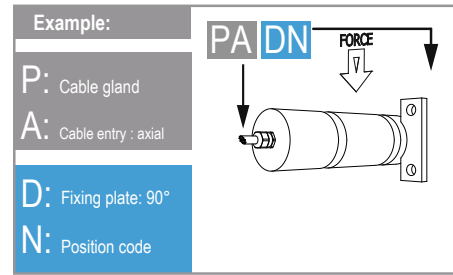
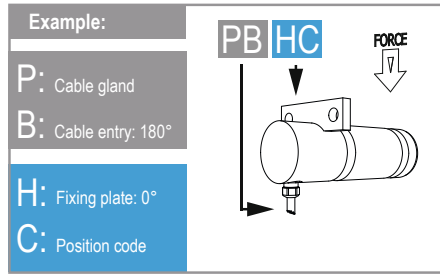
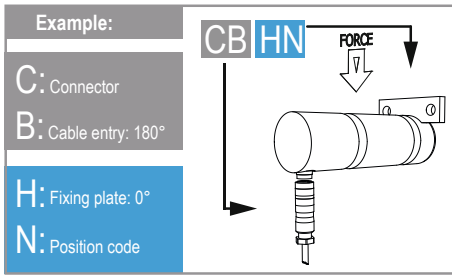
*: Subject to SENSY analysis

Mechanical dimensions



5050 > OPTIONS

Configuration

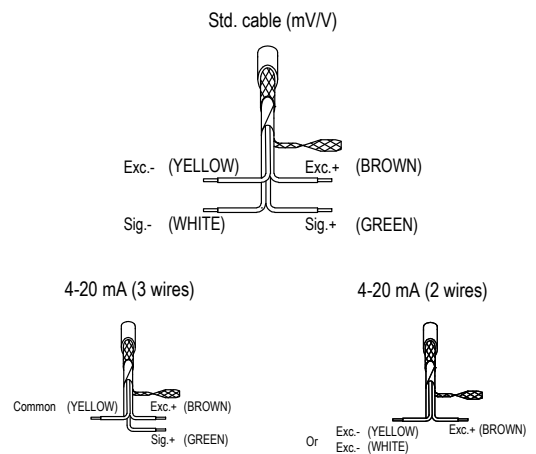


Options

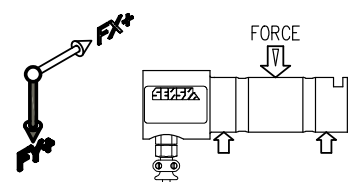
Type of application	FORCE (BL* > 300 %)	static dynamic	HOISTING (BL* > 500 %)		LIFT (BL* > 1000 %)	
Environment	NORMAL	INDUSTRIAL	NUCLEAR	AERONAUTICS	Other:.....	
	SUBSEA		Immersion depth:		Immersion time:	
Output signal	mV/V	4-20 mA 2 wires	0-10 V 3 wires (force)	1-5 V (hoisting)	RS-485	WIRELESS
Service temperature range	Standard temperature range -20°C ← → 70°C					
	Temperature range available (option) -50°C ← → +200°C					
Dual bridge circuit	NO		YES			
	Redundancy Safety SIL / PL Biaxial load pin, directions X and Y					
Cable length (m)	6	12	20	50	100	Other:.....
Intrinsically safe	Not applicable	ATEX	IECEX/ ATEX	CSA (US/Canada)	Triple certification	

* BL = Breaking load

Wiring



Load direction



5050 > EXAMPLES

5050-CHHN-50 t



5050-CHxx-20 t



5050-SIL



5050-15 MN



5050-75 t



5050-CHHN-50 t



5050-30-kN



5050-75 t



5050-4.5 MN



5050-60 t



Custom-made load pins designed to be installed at the same place of a common axle without change to the existing mechanical environment. Economical version of model 5000.



Features

- o Complete range of CE certified electronics, load limiters and displays available for hoisting applications and lifts
- o Useful diameter smaller than or equal to 39 mm
- o With axial cable gland
- o Sturdy design
- o Material: stainless steel
- o Protection class: IP65
- o Cable length: 6 m (other lengths available on request).

Model 5600 - 0.5 t



Most popular options (see more in ANNEX)



Application(s) SENSY's load cells 5600 are perfectly designed for the following applications:

- SL-FORCE: Force measurement on cylinders / industrial weighing.
- SL-HOIST: Hoisting devices and crane security in combination with load limitation electronics.

Capacities

5600: 0.5 to 14 t

Specifications	SL - FORCE	SL - HOIST	
Combined error (non-linearity + hysteresis)	0.25 - 1**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.3	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	% F.S.*/10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	% F.S.*/10°C
Zero balance	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1.5	± 1	mV/V
Sensitivity tolerance	< ± 0.5	< ± 0.5	%
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	150	200	% F.S.*
Breaking load	> 300	> 500	% F.S.*
Permissible dynamic loading	50	75	% F.S.*
Static lateral force limit	100	150	% F.S.*

* F.S.: Full Scale.

** Typical range of accuracy, depending on design and dimensions. Specifications subject to change without notice..

5600 > TECHNICAL SPECIFICATIONS

Load pins range



5000 (1 to 2000 t)
CUSTOM-MADE LOAD PIN



5050 (1 to 2000 t)
SUBSEA LOAD PIN



5300 (0.5 to 125 t)
STANDARD LOAD PIN



5600 (0.5 to 14 t)
ECONOMICAL LOAD PIN

TOOLS

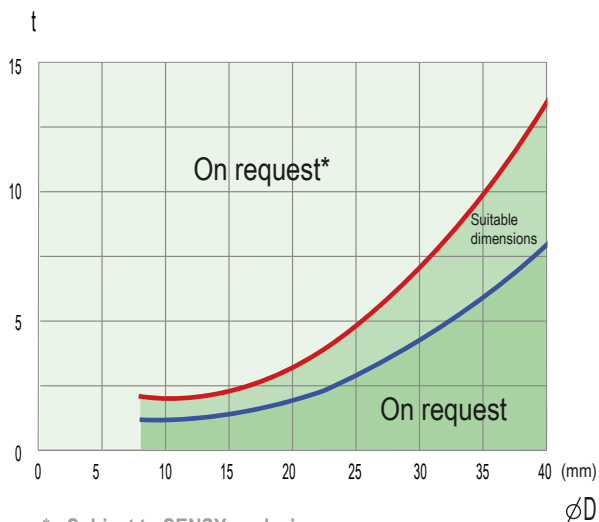
CONFIGURATOR

<https://www.sensy.com/en/load-pins-configurator/load-pin>

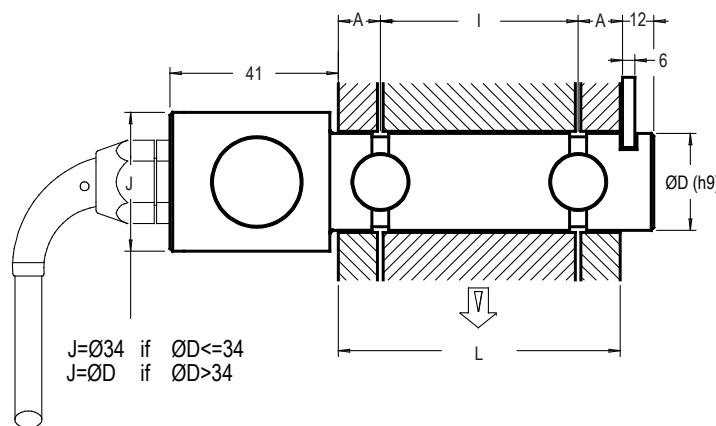
LOAD PIN DESIGN

<https://www.sensy.com/en/load-pins-configurator/load-pin-design>

Load-diameter relationship



* : Subject to SENSY analysis



J=Ø34 if ØD≤34
J=ØD if ØD>34

CAPACITY

DIAMETER ØD:

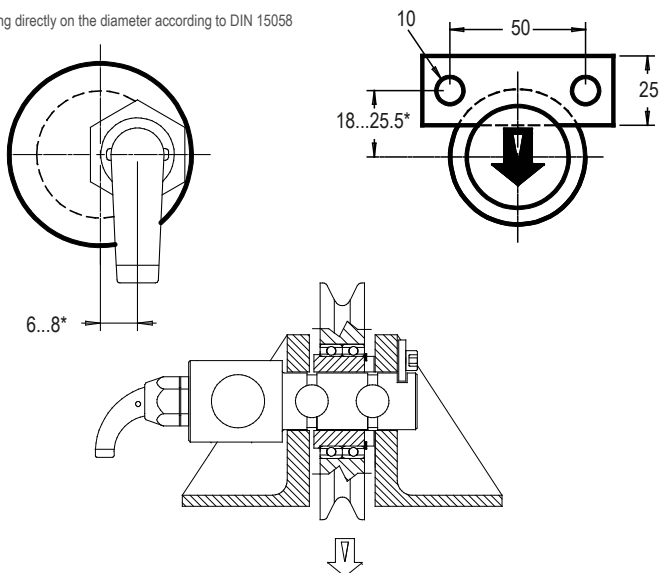
A:

I:

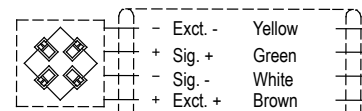
L:

Mechanical dimensions

*: Depending directly on the diameter according to DIN 15058

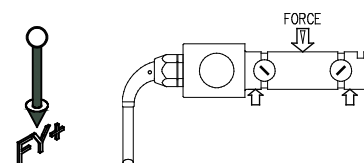


Wiring



Standard: Cable screen not connected to transducer

Load direction



5200-5205

TENSION LINK LOAD CELLS

Tension link load cells specially adapted for standard shackles.



Model 5205 - 25 kN



Features

- o Sturdy design
- o Protection class: IP66
- o Cable length: see drawing table - CL (other lengths available on request)
- o Material: stainless steel (5200), nickel-plated steel (5205)

Most popular options (see more in ANNEX)



Ex i



IP67
MARINE

Application(s) SENSY's load cells 5200-5205 are perfectly designed for the following applications:

- Tension force measurement,
- Suspended industrial weighing,
- Winch monitoring.

Capacities

5200-5205 FORCE: from 75 kN to 5 MN

5200-5205 HOIST: from 7.5 t to 500 t

Specifications	0.5 %	
Combined error (non-linearity + hysteresis)	< ± 0.5	% F.S.*
Repeatability error	< ± 0.25	% F.S.*
Creep error over 30 min.	< ± 0.2	% F.S.*
Zero shift after loading	< ± 0.1	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	< ± 0.1	% F.S./10°C
Temperature coefficient of zero signal	< ± 0.1	% F.S./10°C
Zero balance	± 0.02	mV/V
Input resistance	352 ± 2	ohm(s)
Output resistance	352 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	150	% F.S.*
Breaking load	> 300	% F.S.*

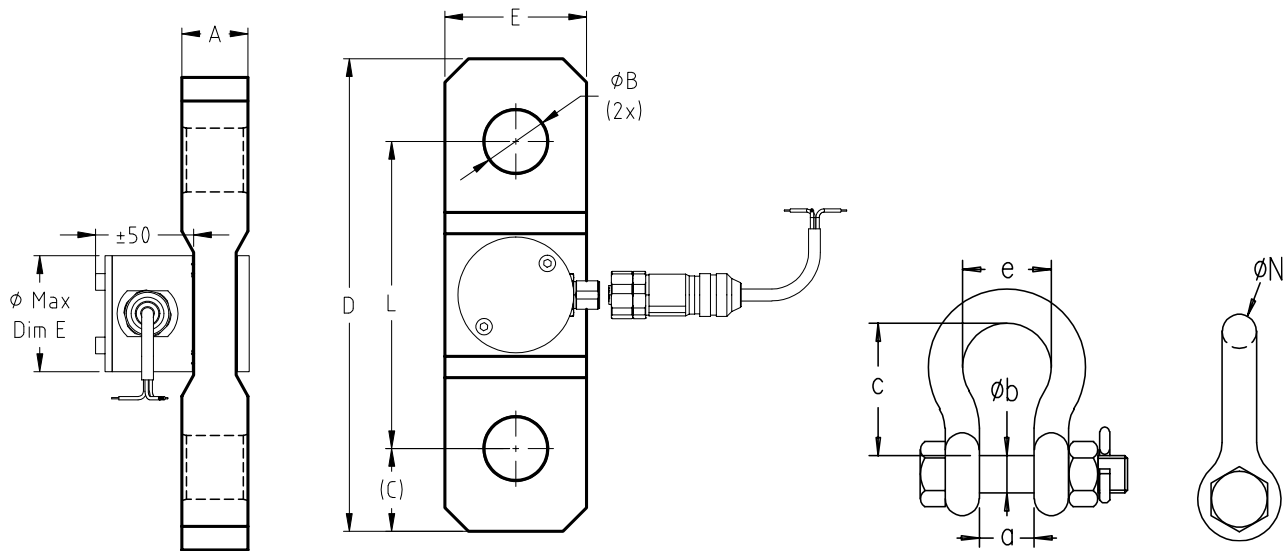
* F.S. : Full Scale.

Specifications subject to change without notice..



ISO 9001 certified

5200-5205 > STANDARD DIMENSIONS



LOAD CELLS										
Ref. Item*	Capacities		A	Ø B	(C)	D	E	L	CL (m)	Weight (kg)
	Force > 300 %**	Hoist > 500 %**								
520x-A	75 kN	See 5200L-5205L sheet	22	27	32	179	60	115	3	2
520x-B	150 kN	See 5200L-5205L sheet	30	38	46	277	80	185	6	6
520x-C	250 kN	15 t	40	45	54	327	90	219	6	9.5
520x-D	300 kN	20 t	40	54	65	392	110	262	6	13
520x-E	500 kN	30 t	50	60	72	436	135	292	6	22
520x-F	750 kN	50 t	50	74	89	538	185	360	12	37
520x-G	1.25 MN	75 t	78	88	106	640	200	428	12	73
520x-H	1.5 MN	100 t	88	98	123	722	235	476	12	111
520x-I	2.5 MN	150 t	138	112	140	824	240	544	12	200
520x-J	3 MN	200 t	148	135	169	994	310	656	12	333
-	4 - 5 MN	400 - 500 t	According to customer's design specifications							

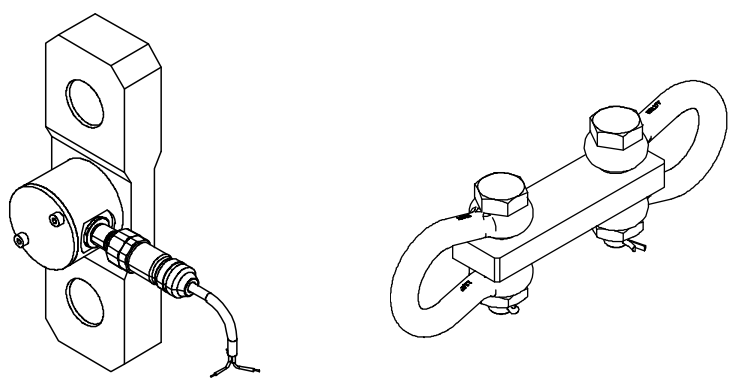
*x=Material: 5200 - stainless steel; 5205 - nickel-plated steel
 **Breaking load (% full scale)

ASSOCIATED SHACKLES						
S.W.L.***	a	Ø b	c	e	Ø N	
					mm	inch
6.5 t	36±2.2	25+0.9	83±6.4	58±2.6	22+0.9	7/8"
12 t	51±3.2	35+1	115±6.4	83±4.2	32+1	1 1/4"
17 t	60±4	42+1.5	146±6.4	99±5	38+1.5	1 1/2"
25 t	74±4	50+2	178±6.4	126±6.3	45+2	1 3/4"
35 t	83±4.2	57+2	197±12.7	138±7.5	50+2	2"
55 t	105±4.7	70+2.5	260±12.7	180±9	65+2.5	2 1/2"
85 t	127±5	83+3	329±29	190±9.5	75+3	3"
120 t	147±5	95±2	400±19	238±12	95±2	3 3/4"
150 t	169±5	108±2	410±12	275±14	105±2	4 1/8"
200 t	179±5	130±3	513±13	290±15	120±3	4 23/32"

***SWL: Safe Working Load

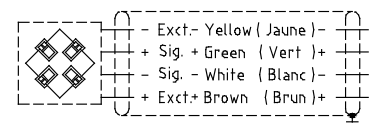
→ Other capacities and dimensions available on request

Other views



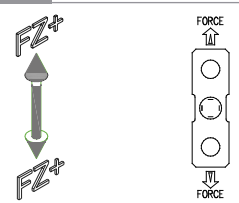
Dimensions in mm

Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



5100L-5105L

TENSION LOAD CELLS

Robust and easy to install tension load cells.



Features

- o Wide range of capacities: 2 t up to 100 t
- o Compact design
- o Protection class: IP66
- o Material: stainless steel (5100L), nickel-plated steel (5105L)
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



IP68

Model : 5100L-50 t



Application(s) SENSY's load cells 5100L-5105L are perfectly designed for the following applications:

- Towing force measurement (marine),
- Force measurement on rigging,
- Hanging load weighing,
- Tensile test benches.

Capacities

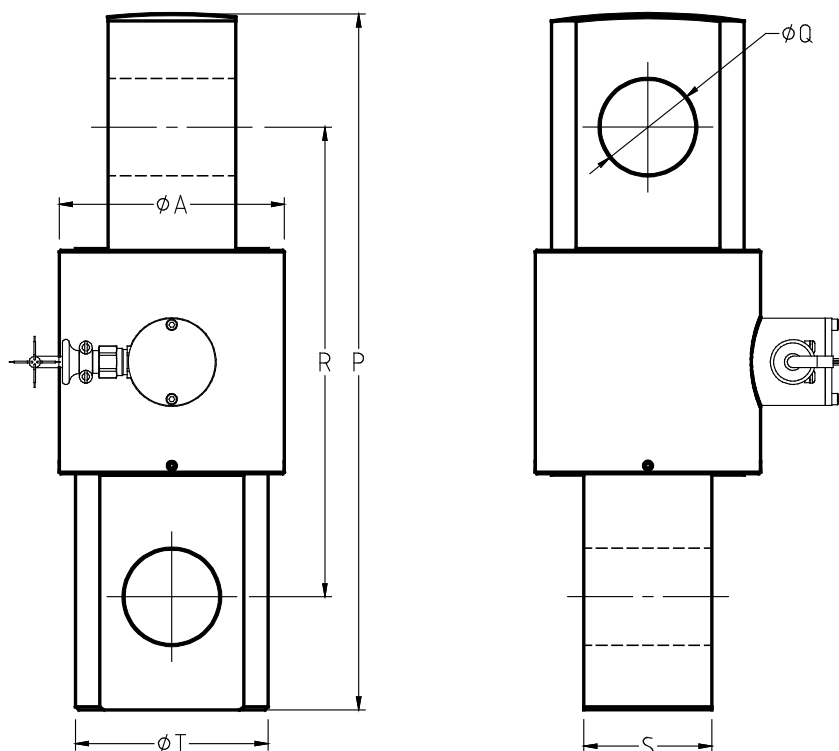
5100L - 5105L: 1 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 - 50 - 75 - 100 t

Specifications	SL - HOIST	0.25 %	
Combined error (non-linearity + hysteresis)	0.5 - 2**	<± 0.25	% F.S.*
Repeatability error	<± 0.25	<± 0.1	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.1	% F.S.*
Zero shift after loading	<± 0.5	<± 0.025	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.05	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.035	% F.S./10°C
Zero balance	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1	1.5	mV/V
Sensitivity tolerance	< ± 0.5	<± 0.3	%
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	200	150	% F.S.*
Breaking load	> 500	> 300	% F.S.*
Permissible dynamic loading	75	40	% F.S.*
Static lateral force limit	10	10	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.
Specifications subject to change without notice..

5100L-5105L > STANDARD DIMENSIONS



Ref. Item*	Capacities		ØA	P	ØQ	R	S	ØT	CL (m)	Weight (kg)
	Hoist > 500 %**	Force > 300 %**								
510xL-A	1 - 2 t	2 - 3 t	50	144	18	108	20	35	3	±1.5
510xL-B	3 t	5 t	60	160	24	112	30	45	3	±2
510xL-C	4 - 7.5 t	7.5 - 10 t	80	240	35	170	44	64	3	±5.5
510xL-D	10 - 15 t	15 - 20 t	100	310	42	226	52	86	6	±12.8
510xL-E	20 - 30 t	30 - 50 t	139	430	58	290	78	109	6	±25
510xL-F	40 - 75 t	75 - 100 t	180	520	80	348	100	149	12	±65

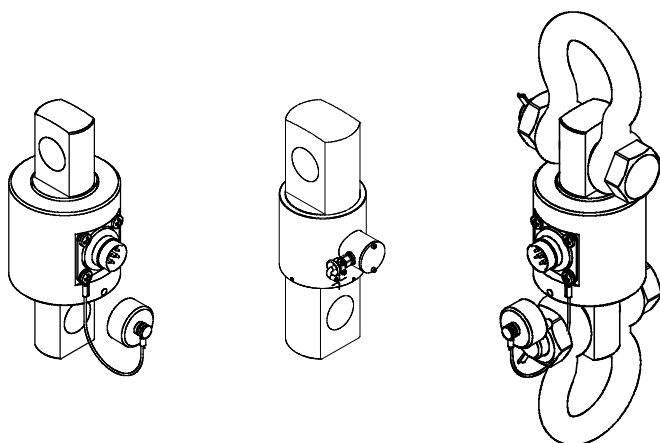
*x=Material: 5100L - stainless steel; 5105L - nickel-plated steel

** Breaking load (% full scale)

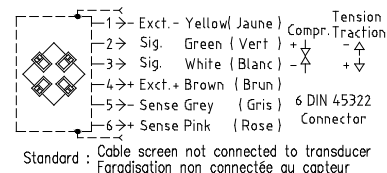
→ Other capacities and dimensions available on request

Dimensions in mm

Other views

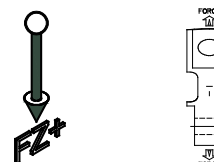


Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



5200L-5205L

TENSION LINK LOAD CELLS

Tension link load cells specially designed for load limitation on hoisting devices.



Model 5205L - 10 t



Features

- o Sturdy design
- o Breaking load > 500 %
- o CE certified for hoisting devices
- o Protection class: IP66
- o Material: stainless steel (5200L), nickel-plated steel (5205L)
- o Easy to install (standard shackles)
- o Cable length: 0.5...5 t: 3 m (other lengths available on request)
10 t: 6 m (other lengths available on request)
- o Complete range of CE certified electronics and load limiters available

Most popular options (see more in ANNEX)



Application(s) SENSY's load cells 5200L-5205L are perfectly designed for the following applications:

- Hoisting devices and crane security in combination with load limitation electronics (e.g.: BRIDGE-BOY, CRANE-BOY, ...),
- Tensile monitoring on winches,
- Load limitation for lifts.

Capacities

5200L: (0.5) - (0.75) - (1.5) - (3) - (5) - (10) - (15) t

5205L: 0.5 - 0.75 - 1.5 - 3 - 5 - 10 - 15 t

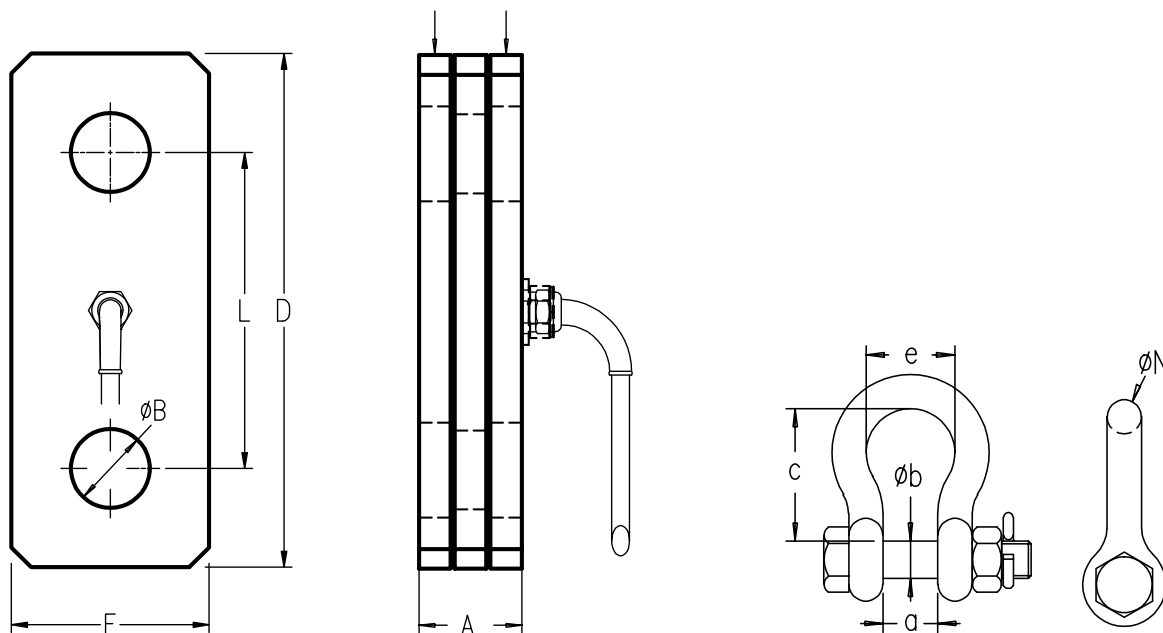
Specifications	SL - HOIST	SL - LIFT	
Combined error (non-linearity + hysteresis)	< ± 1	< ± 1	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.2	% F.S.*
Zero shift after loading	<± 0.5	<± 0.5	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	% F.S./10°C
Zero balance	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1	± 0.5	mV/V
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	200	300	% F.S.*
Breaking load	> 500	> 1000	% F.S.*
Permissible dynamic loading	75	100	% F.S.*

* F.S. : Full Scale.

Specifications subject to change without notice..

5200L-5205L > STANDARD DIMENSIONS

Dual safety plates



LOAD CELLS									
Ref. Item*	Capacities		Range (t)	A±1	ØB	L	D	E	Weight (kg)
	Hoist > 500 %**	Lift > 1000 %**							
520xL-A	0.5 t	0.25 t	0.325 - 0.65	13	11.5	65	94	40	0.3
520xL-A	0.75 t	0.4 t	0.5 - 0.95	13	11.5	65	94	40	0.3
520xL-B	1.5 t	0.75 t	1 - 1.9	20	16.5	65	105	40	0.5
520xL-C	3 t	1.5 t	2 - 3.75	25	19.5	90	135	50	1.1
520xL-D	5 t	2.5 t	3.3 - 6.35	35	26	110	175	60	2.5
520xL-E	10 t	5 t	6.6 - 12	47	36	185	275	80	7.2
520xL-F	15 t	7.5 t	10 - 19	47	42	195	300	100	9.9

*x=Material: 5200L - stainless steel; 5205L - nickel-plated steel
 ** Breaking load (% full scale)

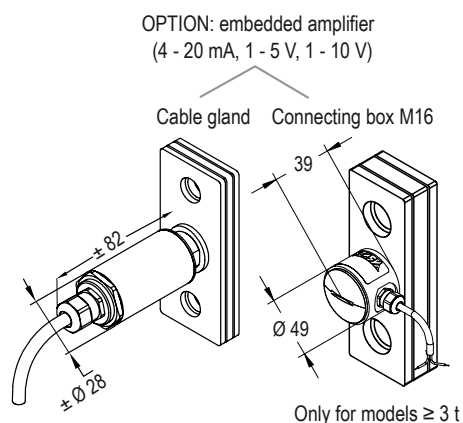
ASSOCIATED SHACKLES					
S.W.L.***	a	Øb	c	e	ØN
1 t	16.8	11.2	36.5	26.1	9.65
2 t	20.6	16	47.7	33.3	12.7
3.25 t	26.9	19.1	60.5	42.9	17.5
6.5 t	36.6	25.4	84	58	24.6
12 t	51.5	35.1	119	82.5	33.1
17 t	60.5	41.4	146	98.5	41.2

***SWL: Safe Working Load

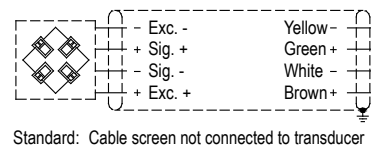
→ Other capacities and dimensions available on request

Dimensions in mm

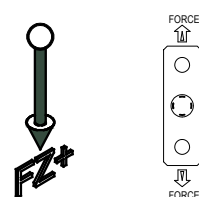
Other view



Wiring



Load direction



5000B

LOAD MEASURING WEDGE SOCKETS

Load measuring wedge sockets designed to measure the force applied on a cable end.



Features

- o CE certified for hoisting applications
- o Sturdy design
- o Load pin material: stainless steel
- o Protection class: IP65
- o Easy to install
- o Cable length: 6 m (other lengths available on request)
- o Complete range of CE certified electronics and load limiters

Most popular options (see more in ANNEX)



Model 5000B - 8 t



Application(s) SENSY's load pins 5000B are perfectly designed for the following applications:

SL - HOIST: Hoisting devices and crane's security in combination with load limitation electronics.

Capacities

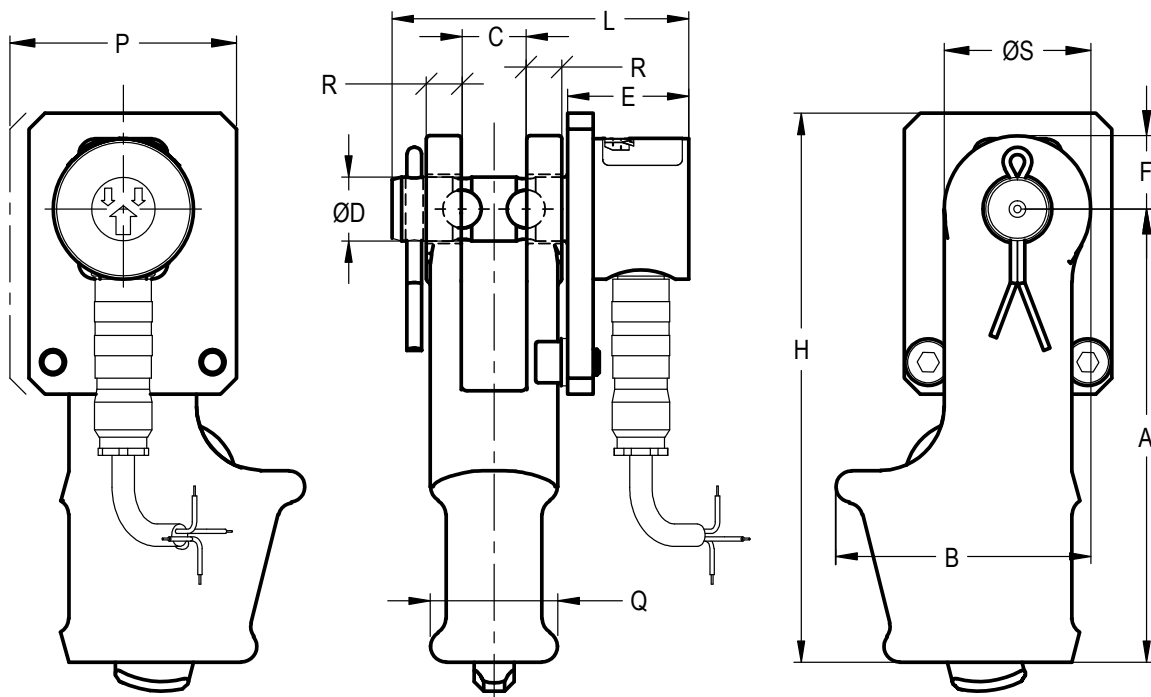
5000B: from 0.3 to 20 t (for cables of 9 to 39 mm in diameter)

Specifications	SL - HOIST	
Combined error (non-linearity + hysteresis)	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	% F.S.*
Zero shift after loading	<± 0.5	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	% F.S./10°C
Zero balance	± 0.02	mV/V
Nominal sensitivity	± 1	mV/V
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	200	% F.S.*
Breaking load	> 500	% F.S.*
Permissible dynamic loading	75	% F.S.*
Static lateral force limit	150	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.
Specifications subject to change without notice..

5000B > STANDARD DIMENSIONS

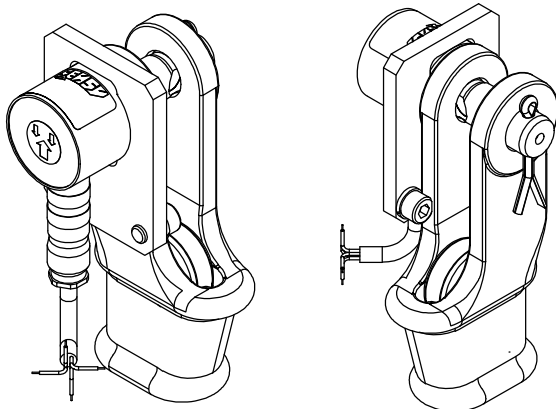


Ref. Item	Capacities	Size (Ø of cable)		A	B	C	ØD h9	E±	F	H	L±	P±	Q	R	ØS±	Weight (kg)
		(mm)	(inch)													
5000B-3/8"	0.3 - 2 t	9 - 10	3/8"	142±2.5	80±2.5	20.5±2	20	38	23±2	172±2.5	93	71	40±2	11±2	48	±1.8
5000B-1/2"	0.5 - 3 t	11 - 13	1/2"	146±2.5	109±2.5	25±2	25	53	29±2	175±3	114	80	46±2	12±2	59	±3.4
5000B-5/8"	0.75 - 5 t	14 - 16	5/8"	176±3	127±2.5	31±2	30	38	35±2	211±3	114	97	57±2	15±2	73	±6
5000B-3/4"	1 - 6 t	18 - 19	3/4"	212±3	154±2.5	38±2	35	60	40±2	252±3.5	142	120	67±2.5	16±2	83	±9.5
5000B-7/8"	1.5 - 8 t	20 - 22	7/8"	240±3	175±3	44±2	41	52	48±2	288±3.5	149	130	77±2.5	19±2	98	±13
5000B-1"	4 - 12.5 t	24 - 26	1"	274±3.5	198±3	51±2	50	52	55±2	329±3.5	165	145	89±2.5	22±2	113	±17
5000B-1" 1/8	5 - 16 t	27 - 29	1" 1/8	310±3.5	215±3	57±2	57	52	65±2.5	375±3.5	182	150	100±2.5	25±2	133	±23
5000B-1" 1/4	8 - 20 t	30 - 32	1" 1/4	350±3.5	246±3	63±2	64	52	73±2.5	423±4	191	190	111±2.5	28±2	149	±32
5000B-1" 3/8	8 - 20 t	34 - 36	1" 3/8	400±3.5	264±3.5	69±2.5	64	52	74±2.5	474±4	196	190	117±2.5	28±2	151	±37
5000B-1" 1/2	10 - 20 t	35 - 39	1" 1/2	450±4	280±3.5	76±2.5	70	52	77±2.5	527±4	208	190	128±2.5	30±2	156	±52

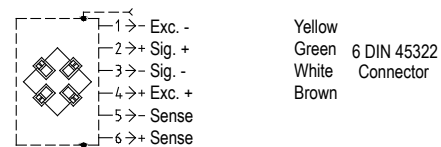
→ Other capacities and dimensions available on request

Dimensions in mm

Other views

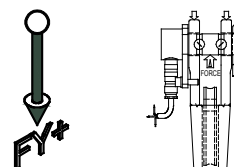


Wiring



Standard: Cable screen not connected to transducer

Load direction



5000M

LOAD SHACKLES

Load measuring shackles designed to measure tension force.



Features

- o CE certified for hoisting applications
- o Sturdy design
- o Load pin material: stainless steel
- o Protection class: IP65
- o Easy to install
- o Cable length: 6 m (other lengths available on request)
- o Complete range of CE certified electronics and load limiters

Most popular options (see more in ANNEX)



Model 5000M - 30 t



Application(s) SENSY's load shackles 5000M are perfectly designed for the following applications:

- Hoisting devices and crane security in combination with load limitation electronics,
- Industrial weighing,
- Force measurement on test benches,
- Force measurement on rigging,
- Theater rigging equipment.

Capacities

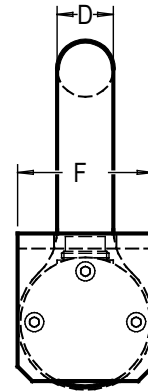
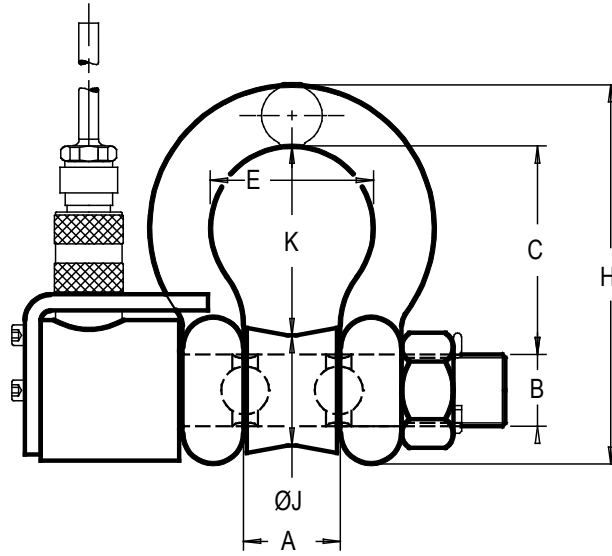
from 1.5 t to 400 t

Specifications	SL - FORCE	SL - HOIST	
Combined error (non-linearity + hysteresis)	0.25 - 1**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.3	% F.S.*
Zero shift after loading	<± 0.5	<± 0.5	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	% F.S./10°C
Zero balance	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1.5	± 1	mV/V
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	150	200	% F.S.*
Breaking load	> 300	> 500	% F.S.*
Permissible dynamic loading	50	75	% F.S.*
Static lateral force limit	100	150	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.
Specifications subject to change without notice..

5000M > STANDARD DIMENSIONS



Ref. Item	Capacities			D		A	B	C	E	F	H	ØJ	K	Tolerances C & K	Total weight (kg)
	Force		Hoist	(mm)	(inch)										
	Standard > 300 %**	Extended capacity* > 300 %**	> 500 %**												
5000M-3/4"	2.5 t	3 t	1.5 t	19	3/4"	31.8±1.5	22.5	71.5	51	93±3	126±8.6	34	65	±6.4	2.18
5000M-7/8"	4 t	6 t	2.5 t	22	7/8"	36±2.2	25	83	58	93±3	143.5±8.6	35.5	78	±6.4	2.7
5000M-1"	6 t	8 t	4 t	25	1"	43±2.4	28	95	68	93±3	163.5±8.6	37	90.5	±6.4	3.832
5000M-1" 1/8	8 t	10 t	5 t	28	1" 1/8	47±2.4	32	108	75	93±3	185±8.9	40	104	±6.4	4.58
5000M-1" 1/2	12 t	15 t	8 t	38	1" 1/2	60±4	42	146	99	93±3	249±9.9	54	140	±6.4	9.473
5000M-1" 3/4	16 t	25 t	12 t	45	1" 3/4	74±4	50	178	126	103	299.5±11.2	65	171	±6.4	15.89
5000M-2"	30 t	40 t	20 t	50	2"	83±4.2	57	197	138	111	331±17.5	72	189.5	±12.7	21.62
5000M-2" 1/2	40 t	50 t	30 t	65	2" 1/2	105±4.7	70	260	180	145	432.5±18.7	90	250	±12.7	48.7
5000M-3"	60 t	75 t	45 t	75	3"	127±5	83	329	190	162	526.5±26	105	318	±19	68.3
5000M-3" 3/4	90 t	125 t	60 t	95	3" 3/4	147±5	95	400	238	208	647±25	117	389	±19	124.1
5000M-4" 1/8	100 t	150 t	75 t	105	4" 1/8	169±5	108	410	275	238	688±18	130	399	±12	168.2
5000M-5" 1/8	200 t	300 t	120 t	130	5" 1/8	205±6	140	554	305	299	904±22	165	541.5	±14	290.4
5000M-6" 11/16	300 t	400 t	200 t	170	6" 11/16	231±6	175	668	325	387	1114±27	200	655	±18	585

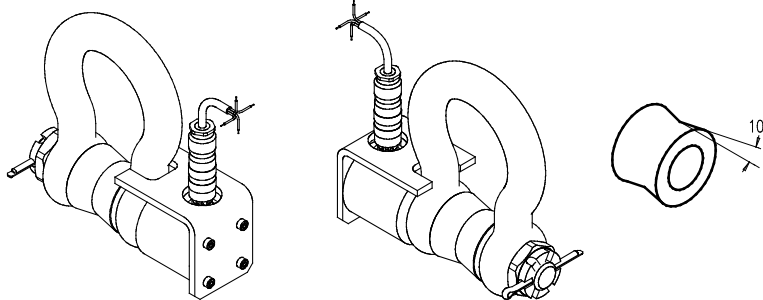
* Very high resistance load cell, special design

** Breaking load (% full scale)

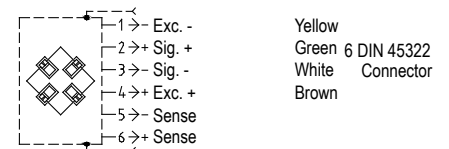
→ Other capacities and dimensions available on request

Dimensions in mm

Other views

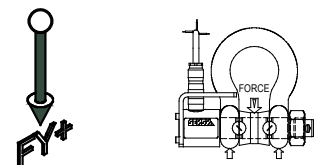


Wiring



Standard: Cable screen not connected to transducer

Load direction



5050M

SUBSEA LOAD SHACKLES

Load measuring shackles designed to measure subsea tension forces.



Model 5050M - 30 t



Features

- o CE certified for hoisting applications
- o Protection class: IP68
- o Depth: up to -7500 m / -24 606 ft (750 bars / 11 000 psi) - deeper on request
- o Sturdy design
- o Material: stainless steel except shackle bow
- o Easy to install
- o Complete range of CE certified electronics, load limiters and display available
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i

Ex d

IP68

Application(s) SENSY's dynamometric load shackles 5050M are perfectly designed for the following applications:

SL-FORCE: Force measurement on subsea lines / Subsea mooring.

SL-HOIST: Load monitoring on subsea hoisting devices.

Capacities

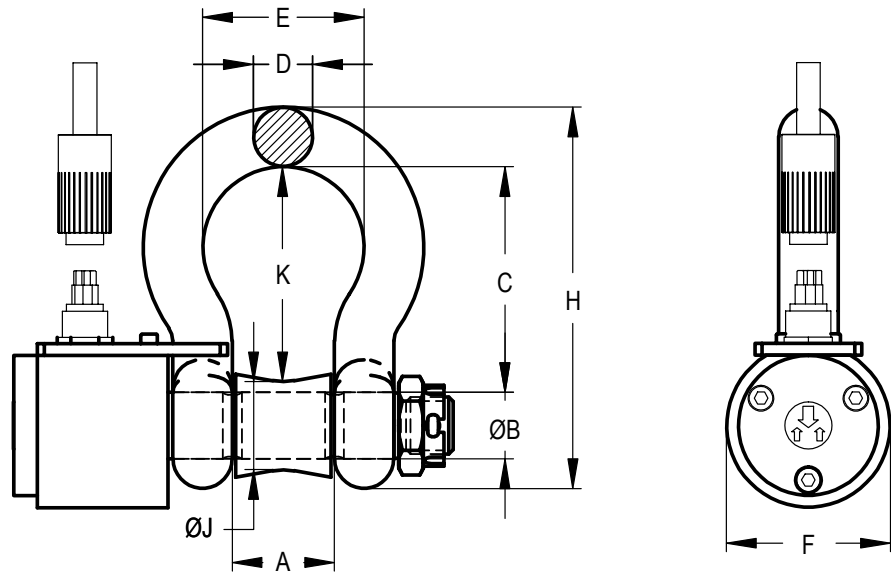
from 5 t to 400 t

Specifications	SL - FORCE	SL - HOIST	
Combined error (non-linearity + hysteresis)	0.25 - 1**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.3	% F.S.*
Zero shift after loading	<± 0.5	<± 0.5	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	% F.S./10°C
Zero balance	± 0.02	± 0.02	mV/V
Nominal sensitivity	± 1.5	± 1	mV/V
Input resistance	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	VDC
Safe load limit	150	200	% F.S.*
Breaking load	> 300	> 500	% F.S.*
Permissible dynamic loading	50	75	% F.S.*
Static lateral force limit	100	150	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.
Specifications subject to change without notice..

5050M > STANDARD DIMENSIONS



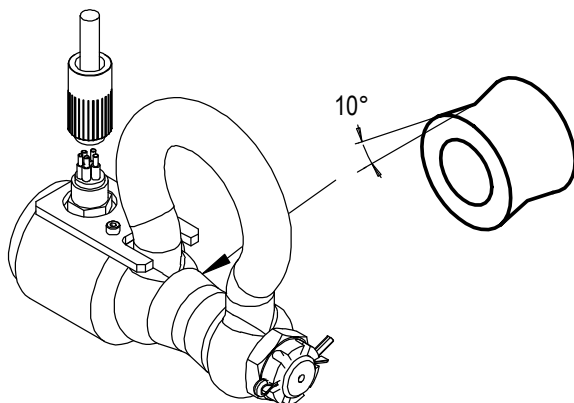
Ref. Item	Capacities			D		A	B	C	E	F±	H	ØJ	K	Tolerances C & K	Total weight (kg)
	Force		Hoist	(mm)	(inch)										
	Standard > 300 %**	Extended capacity* > 300 %**	> 500 %**												
5050M-1" 1/8	8 t	10 t	5 t	28	1 1/8"	47±2.4	32	108	75	68	185±8.9	40	104	±6.4	5
5050M-1" 1/2	12 t	15 t	8 t	38	1 1/2"	60±4	42	146	99	92	249±9.9	54	140	±6.4	12
5050M-1" 3/4	20 t	25 t	12 t	45	1 3/4"	74±4	50	178	126	106	299.5±11.2	65	171	±6.4	19
5050M-2"	33 t	40 t	20 t	50	2"	83±4.2	57	197	138	122	331±17.5	72	189	±12.7	28
5050M-2" 1/2	50 t	60 t	30 t	65	2 1/2"	105±4.7	70	260	180	145	432.5±18.7	90	250	±12.7	52
5050M-3"	75 t	85 t	45 t	75	3"	127±5	83	329	190	165	526.5±26	105	318	±19	90
5050M-3" 3/4	100 t	130 t	70 t	95	3 3/4"	147±5	95	400	238	208	647±25	117	389	±19	150
5050M-4" 1/8	110 t	150 t	85 t	105	4 1/8"	169±5	108	410	275	240	688±18	130	399	±12	190
5050M-5" 1/8	200 t	300 t	150 t	130	5 1/8"	205±6	140	554	305	308	904±22	165	541.5	±14	320
5050M-5" 1/2	250 t	300 t	150 t	140	5 1/2"	205±6	150	618	305	335	996±27	180	603	±18	350
5050M-6" 11/16	300 t	400 t	240 t	170	6 11/16"	231±6	175	668	325	387	1114±27	200	655	±18	585

* Very resistant load cell, special design
 ** Breaking load (% full scale)

→ Other capacities and dimensions available on request

Dimensions in mm

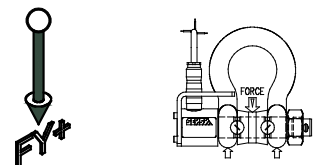
Other view



Wiring

SUBSEA CONNECTOR

Load direction



5000M-WI

WIRELESS LOAD SHACKLES

Wireless load-measuring shackles designed to measure tension force.



Model 5000M-WI - 20 t



Features

- o Sturdy design
- o Protection class: IP65
- o Easy to install
- o Load pin material: stainless steel
- o Standard dimensions
- o Frequencies: from 2.4000 to 2.4835 GHz
- o Power: 10 mW, licence: exempted
- o Range: 500 m open field (antenna integrated)
- o Sleep mode, remote wake-up mode, remote control of batteries
- o Not appropriate for overload protection

Most popular options (see more in ANNEX)



Ex i



Application(s) SENSY's wireless load shackles 5000M-WI are perfectly designed for the following applications:

- Load display on hoisting devices and EOT cranes,
- Industrial weighing / force measurement on test benches,
- Theater rigging equipment,
- Mooring - tow forces measurement / Winches monitoring, agriculture machinery, general machinery, test benches.

Capacities

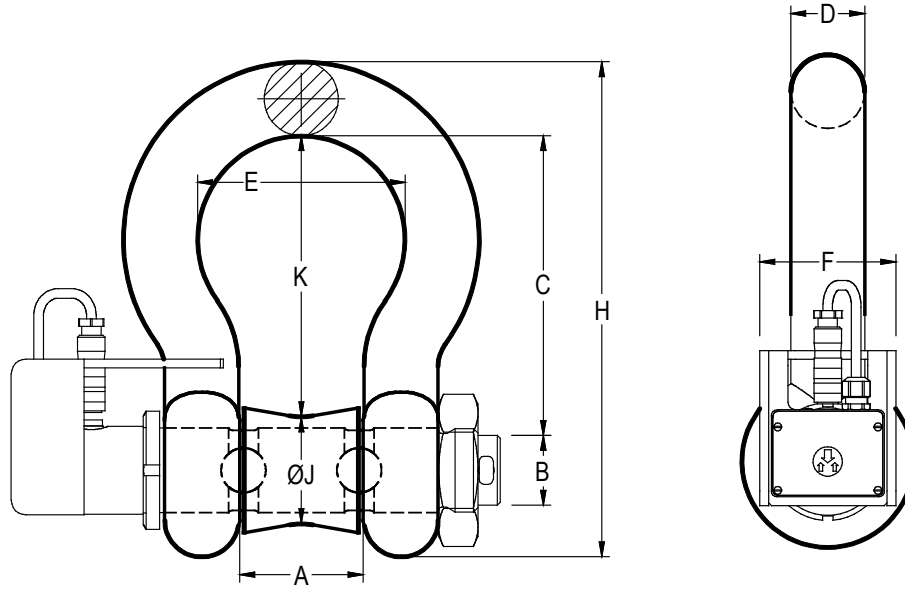
from 1 t to 400 t

Specifications	SL - FORCE	SL - HOIST	
Combined error (non-linearity + hysteresis)	0.25 - 1**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.3	<± 0.3	% F.S.*
Reference temperature	23	23	°C
Compensated temperature range	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	% F.S./10°C
Nominal sensitivity	± 1.5	± 1	mV/V
Reference excitation voltage	3 VDC (2 x AA batteries)	3 VDC (2 x AA batteries)	-
Consumption	65 mA	65 mA	-
Current @ stand-by mode	20	20	µA
Autonomy @ normal mode (2 batteries)	1 month	1 month	-
Autonomy @ 12 x 5mn/day mode (2 D batteries)	2	2	years
Safe load limit	150	200	% F.S.*
Breaking load	> 300	> 500	% F.S.*
Permissible dynamic loading	50	75	% F.S.*
Static lateral force limit	100	150	% F.S.*

* F.S. : Full Scale.

** Typical range of accuracy, depending on design and dimensions.
Specifications subject to change without notice..

5000M-WI > STANDARD DIMENSIONS



Ref. Item	Capacities			D		A	B	C	E	F	H	ØJ	K	Tolerances C & K	Total weight (kg)
	Force		Hoist > 500 %**	(mm)	(inch)										
	Standard > 300 %**	Extended capacity* > 300 %**													
5000M-WI-3/4"	2.5 t	3 t	1.5 t	19	3/4"	31.8±2.2	22.5	71.5	51	93±3	126±8.6	34	65	±6.4	3
5000M-WI-7/8"	4 t	6 t	2.5 t	22	7/8"	36±2.2	25	83	58	93±3	143.5±8.6	35.5	78	±6.4	3.5
5000M-WI-1"	6 t	8 t	4 t	25	1"	43±2.4	28	95	68	93±3	163.5±8.6	37	90.5	±6.4	4
5000M-WI-1" 1/8	8 t	10 t	5 t	28	1 1/8"	47±2.4	32	108	75	93±3	185±8.9	40	104	±6.4	5
5000M-WI-1" 1/2	12 t	15 t	8 t	38	1 1/2"	60±4	42	146	99	93±3	249±9.9	54	140	±6.4	12
5000M-WI-1" 3/4	16 t	25 t	12 t	45	1 3/4"	74±4	50	178	126	106	299.5±11.2	65	171	±6.4	19
5000M-WI-2"	30 t	40 t	20 t	50	2"	83±4.2	57	197	138	122	331±17.5	72	189.5	±12.7	28
5000M-WI-2" 1/2	40 t	50 t	30 t	65	2 1/2"	105±4.7	70	260	180	145	432.5±18.7	90	250	±12.7	52
5000M-WI-3"	60 t	75 t	45 t	75	3"	127±5	83	329	190	165	526.5±26	105	318	±19	90
5000M-WI-3" 3/4	90 t	125 t	60 t	95	3 3/4"	147±5	95	400	238	208	647±25	117	389	±19	150
5000M-WI-4" 1/8	100 t	150 t	75 t	105	4 1/8"	169±5	108	410	275	240	688±18	130	399	±12	190
5000M-WI-5" 1/8	200 t	300 t	120 t	130	5 1/8"	205±6	140	554	305	308	904±22	165	541.5	±14	320
5000M-WI-6" 11/16	300 t	400 t	200 t	170	6 11/16"	231±6	175	668	325	387	1114±27	200	655	±18	585

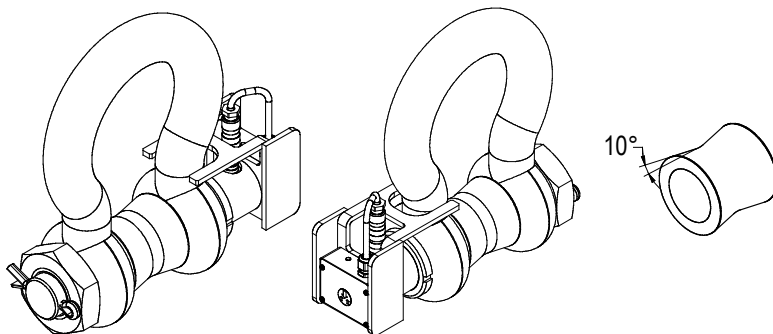
* Very resistant load cell, special design

** Breaking load (% full scale)

→ Other capacities and dimensions available on request

Dimensions in mm

Other views

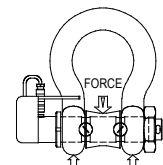


Wiring

Not applicable



Load direction



5500-5505

WIRE ROPE LOAD CELLS

Low cost load cells specially designed to measure the tension force on hoisting ropes.



Features

- o CE certified for hoisting applications
- o Easy installation directly without dismantling on the hoisting rope
- o Wide range of measured loads on cable (from 0.25 up to 24 t) and suitable cables (available diameters: from 6 up to 46 mm)
- o Material:
 - 5500: stainless steel
 - 5505: nickel-plated steel
- o Protection class: IP65
- o Sturdy design
- o Reliable and economical solution
- o Complete range of "CE" certified electronics and load limiters available
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



Model 5500 - 2 t + accessories



Application(s) SENSY's load cells 5500-5505 are perfectly designed for the following applications:

- Hoisting devices and crane security in combination with load limitation electronics (e.g.: BRIDGE-BOY, CRANE-BOY, ...),
- Cost-effective solution for safety improvement on existing cranes.

Capacities

5500-5505: 0.25 to 24 t on the wire rope

Specifications	2 - 5 %	
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-30...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.1	% F.S./10°C
Temperature coefficient of zero signal	<± 0.1	% F.S./10°C
Nominal sensitivity	± 1 **	mV/V
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	200	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	70	% F.S.*

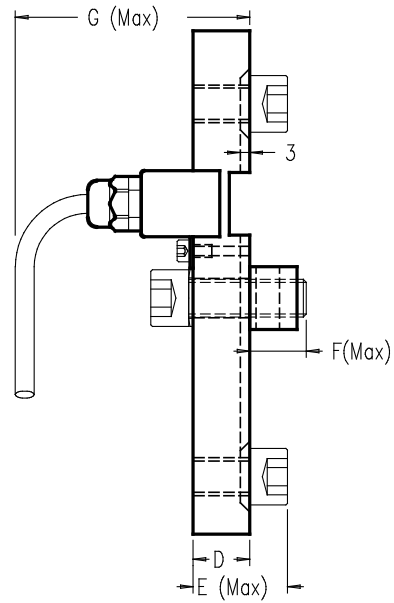
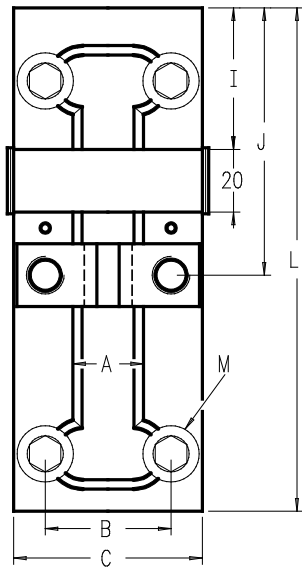
* F.S. : Full Scale.

** : can be different (according to the wire rope)

Combined error depends on rope material and on-site calibration

Specifications subject to change without notice..

5500-5505 > STANDARD DIMENSIONS



Ref. Item*	Capacities	Load range (t) Min-Max	Cable Ø (mm)	±A	B	C	D	E	±F	G	I	J	L	M	Torque (Optimum) (N·m)	CL (m)	Weight (kg)
550x-A	0.25 t (1TTSA)**	-	6 - 12	20	40	60	18	30	31	100	45	85	160	M12	10	3	1.75
550x-B	1 t (1TSA)	0.4 - 1.5	6 - 15	20	40	60	18	30	31	100	45	85	160	M12	15	3	1.75
550x-C	2 t (1SA)	0.75 - 2.8	6 - 22	20	40	60	18	30	31	100	45	85	160	M12	15	3	1.8
550x-D	3.5 t (1A)	1.6 - 5	6 - 22	20	40	60	18	30	31	100	45	85	160	M12	15	3	1.8
550x-E	5 t (2A)	2 - 7	14 - 28	20	50	75	18	30	40	100	45	85	160	M12	20	3	2.1
550x-F	10 t (3A)	5.5 - 16	26 - 36	25	68	100	25	41	55	115	55	95	200	M16	25	6	4.3
550x-G	15 t (4A)	10 - 24	30 - 46	35	75	115	26	46	70	116	55	110	230	M20	50	6	5.7

* x=Material: 5500 - stainless steel; 5505: alloy steel

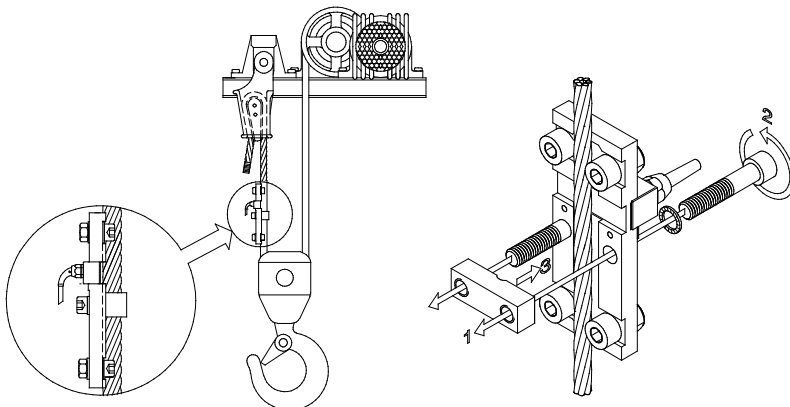
** Only for amplified version (4-20 mA 3 wires)

Table including sensitivity and SENSY electronics limits for each cable diameter, available upon request

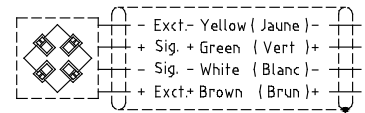
→ Other capacities and dimensions available on request

Dimensions in mm

Other views

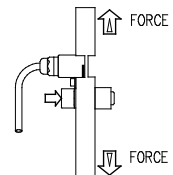


Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



5900

THROUGH HOLE (ANNULAR) LOAD CELLS

Annular force transducers specially designed for applications requiring a load measurement through a centred hole.



Features

- o Sturdy design
- o Material: stainless steel
- o Protection class: IP67
- o Easy to install
- o CE certified for hoisting applications
- o Complete range of "CE" certified electronics and load limiters
- o Cable length: 6 m (other lengths available on request)

Model 5900 - 20 t



Most popular options (see more in ANNEX)



Application(s) SENSY's load cells 5900 are perfectly designed for the following applications:

Load limitation on EOT cranes, industrial weighing, force measurement,...

Capacities

5900 FORCE: 3 - 5 - (7.5) - 10 - (15) - 20 - 30 - 50 - 75 - 100 - 150 - (200) kN

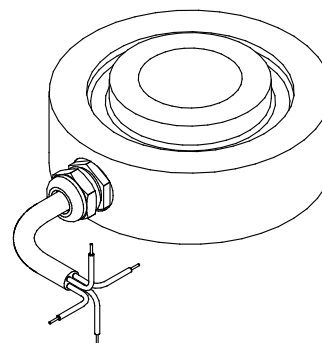
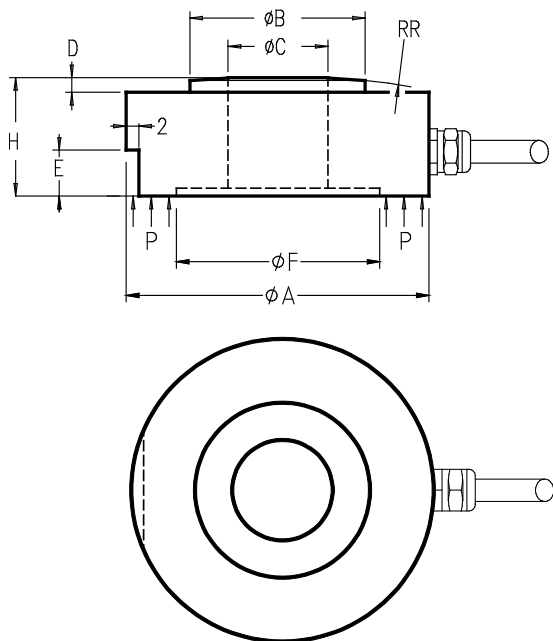
5900 HOIST: 0.2 - 0.5 - (0.75) - 1 - (1.5) - 2 - 3 - 5 - 7.5 - 10 - 15 t

Specifications	0.25 %	SL - FORCE	SL - HOIST	
Combined error (non-linearity + hysteresis)	<± 0.25	0.25 - 1**	0.5 - 2**	% F.S.*
Repeatability error	<± 0.1	<± 0.25	<± 0.25	% F.S.*
Creep error over 30 min.	<± 0.1	<± 0.3	<± 0.3	% F.S.*
Zero shift after loading	<± 0.025	<± 0.5	<± 0.5	% F.S.*
Reference temperature	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.2	<± 0.2	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	<± 0.2	<± 0.2	% F.S./10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Nominal sensitivity	1.5	± 1.5	± 1	mV/V
Sensitivity tolerance	<± 0.3	<± 0.5	<± 0.5	%
Input resistance	700 ± 2	700 ± 2	700 ± 2	ohm(s)
Output resistance	700 ± 2	700 ± 2	700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	150	150	200	% F.S.*
Breaking load	> 300	> 300	> 500	% F.S.*
Permissible dynamic loading	40	50	75	% F.S.*
Static lateral force limit	10	10	10	% F.S.*

* F.S.: Full Scale.

** Typical range of accuracy, depending on design and dimensions. Specifications subject to change without notice..

5900 > STANDARD DIMENSIONS



STANDARD													
Ref. Item	Capacities		ØA	ØB	ØC	D	E	ØF	H	P (N/mm²)	RR	Max. Deflexion (mm)	Weight (kg)
	Force > 300 %*	Hoist > 500 %*											
5900-A	3 - 30 kN	0.2 - 2 t	59	30	16	4	13	49	25	4 - 24.5	300	0.05-0.15	0.5
5900-B	30 - 100 kN	3 - 7.5 t	79	50	30	5	14	70	31	30 - 74	500	0.20-0.35	1
5900-C	100 - 150 (200) kN	10 - 15 t	119	80	50	6	14.5	105	40	42 - 83	750	0.30-0.40	3.2

* Breaking load (% full scale)

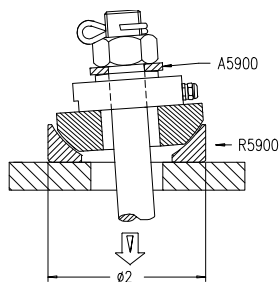
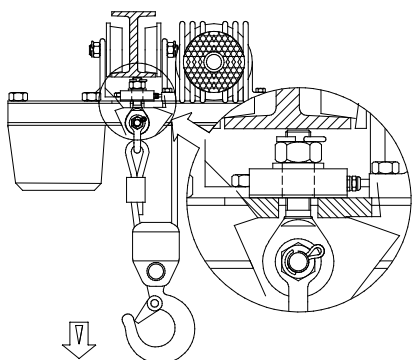
CUSTOM-MADE							
Capacities		ØC	ØB	ØA	H		
Force > 300 %*	Hoist > 500 %*						
3 - 30 kN	0.2 - 2 t	ØX	ØX+14	±ØX+43	23...25		
30 - 100 kN	3 - 7.5 t	ØX	ØX+20	±ØX+49	27...31		
100 - 150 (200) kN	10 - 15 t	ØX	ØX+30	±ØX+69	35...40		

* Breaking load (% full scale)

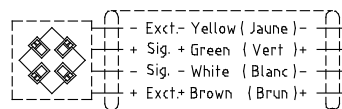
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

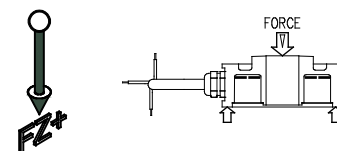


Wiring

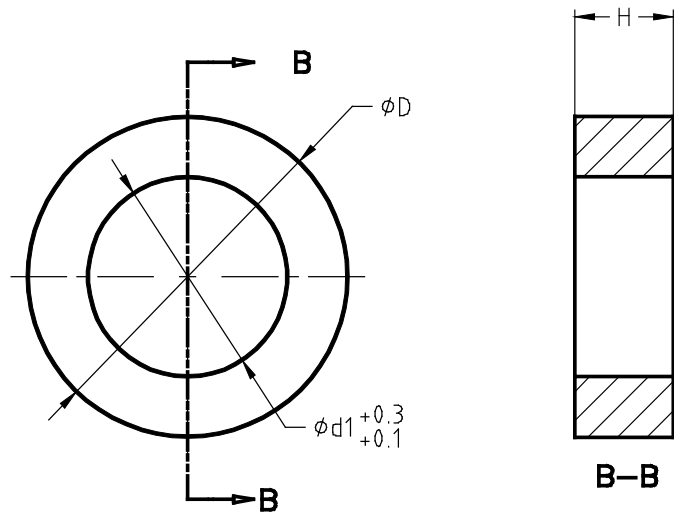


Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



A5900 > STANDARD DIMENSIONS



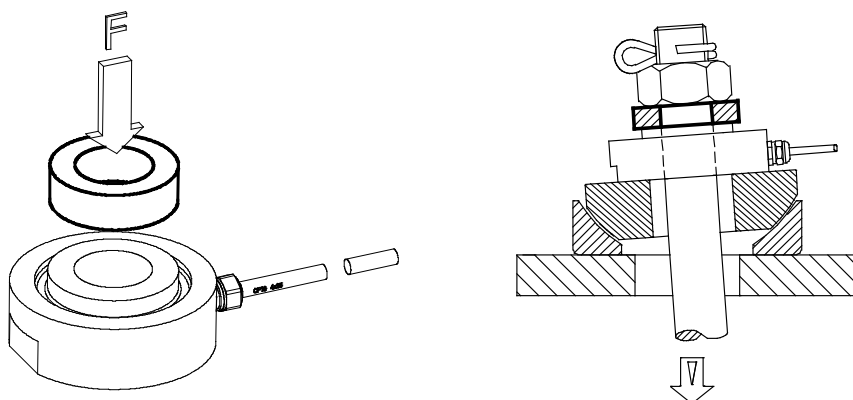
Ref. Item*	Capacities		$\phi d1$	ϕD	H	Weight (kg)
	Force > 300 %**	Hoist > 500 %**				
A5900-A	3 - 30 kN	0.2 - 2 t	16	39	10	0.08
A5900-B	30 - 100 kN	3 - 7.5 t	30	49	15	0.14
A5900-C	100 - 150 (200) kN	10 - 15 t	50	89	20	0.68

* Material: stainless steel
 **Breaking load (% full scale)

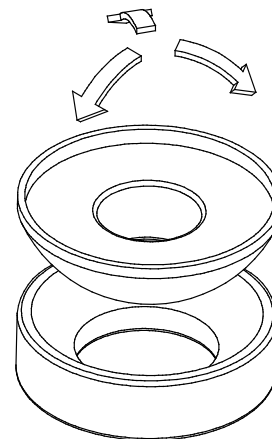
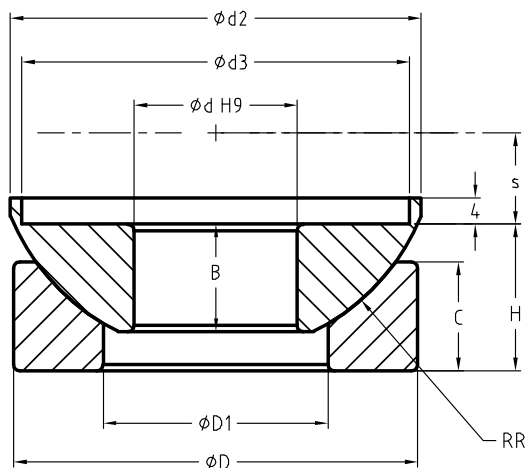
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



R5900 > STANDARD DIMENSIONS



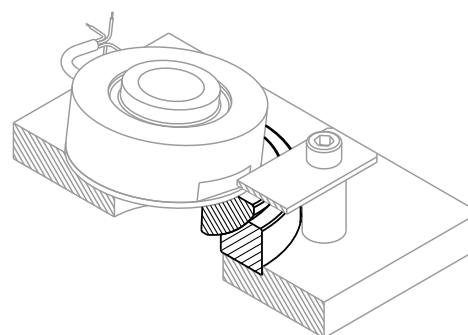
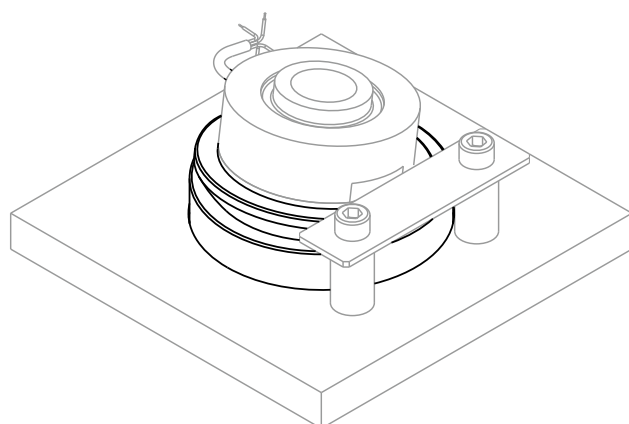
Ref. Item*	Capacities		Ød	ØD	ØD1	H	Ød2	Ød3	RR	B	C	s	Weight (kg)
	Force > 300 %**	Hoist > 500 %**											
R5900-A	3 - 30 kN	0.2 - 2 t	25	62	34.5	22.5	63	59.5	34	16.5	16.7	14	0.43
R5900-B	30 - 100 kN	3 - 7.5 t	35	90	50.5	28	84	79.5	49	22	20.7	22	1.2
R5900-C	100 - 150 (200) kN	10 - 15 t	80	180	107.5	50	172	119.5	98.5	43.5	38	42.5	8

* Material: stainless steel
 **Breaking load (% full scale)

→ Other capacities and dimensions available on request

Dimensions in mm

Other views



TENSIOMETERS








LOAD CELL
MANUFACTURER



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PRODUCTS OVERVIEW - TENSIO METERS

MODEL	DESCRIPTION	ACCURACY CLASS			MATERIAL			CAPACITIES (t)
		2.5 %	Stainless steel	Alloy steel	Aluminum			
 5560S 5562S	Static line tensiometers	●	●		●		From 2 t up to 75 t	   p. 136
	Running line tensiometers	●	●				From 0.4 t up to 40 t (up to 600 t on request)	p. 138
 5580 5585	Running line tensiometers with removable center sheave	●	●		●		From 0.4 t up to 40 t (up to 600 t on request)	p. 140

ASSOCIATED ELECTRONICS

 ANALOGUE AMPLIFIERS p. 290	 INDI-PAXS DISP-PAX p. 210	 DISP-PAXDP p. 212	 INDI-PSD p. 236	 DISP-RLT p. 288	 BRIDGE-BOY p. 254	 CRANE-BOY CRANE-BOYP p. 266	 INDI-BOY DISP-BOYP p. 258	 DISP-BOYDP CRANE-BOYDP CRANE-BOYDP-Exd p. 262	 CRANE-SUMD DISP-SUMD p. 270	 DISP-F p. 286	 WI-T24TR-ACM p. 238	 WI-T24RE-AO1 p. 242	 WI-T24RE-Hx p. 240
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● Standard ■ Optional

Note: CSA and IECEx options are available only for 5560S model.

5560S-5562S

STATIC LINE TENSIO METERS

Load cells specially designed to measure the tension force applied to a static wire rope or rope fiber.



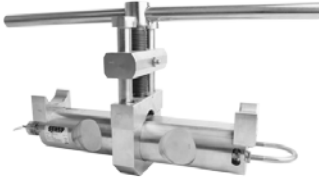
Features

- o Easy and fast mounting
- o Protection class: IP67
- o Wide range of cable diameters: from 3 up to 90 mm (0.11 to 3.5")
- o Material:
 - stainless steel (5560S)
 - anodised aluminium alloy (5562S)
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 5560S - 30 t



Application(s)

SENSY's load cells 5560S-5562S are perfectly designed for the following applications:

- Hook-load sensor for drilling, mud-logging, ...
- Tension measurement of wire ropes, ropes, shrouds and riggings of electric pylons, transmission antenna, towers, flare masts, barge mooring lines, ...
- Tension measurement for suspended bridges and foot-bridges, big tops, ...

Capacities

5560S-5562S: 2 to 75 t on cable

Specifications	2 - 5 %	
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-30...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.1	% F.S./10°C
Temperature coefficient of zero signal	<± 0.1	% F.S./10°C
Nominal sensitivity	± 1 **	mV/V
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	200	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	70	% F.S.*

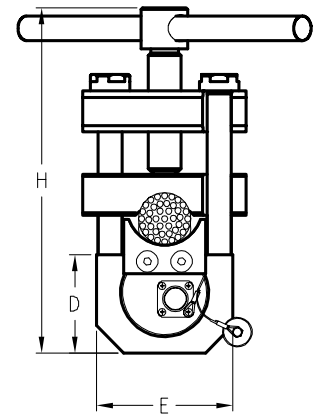
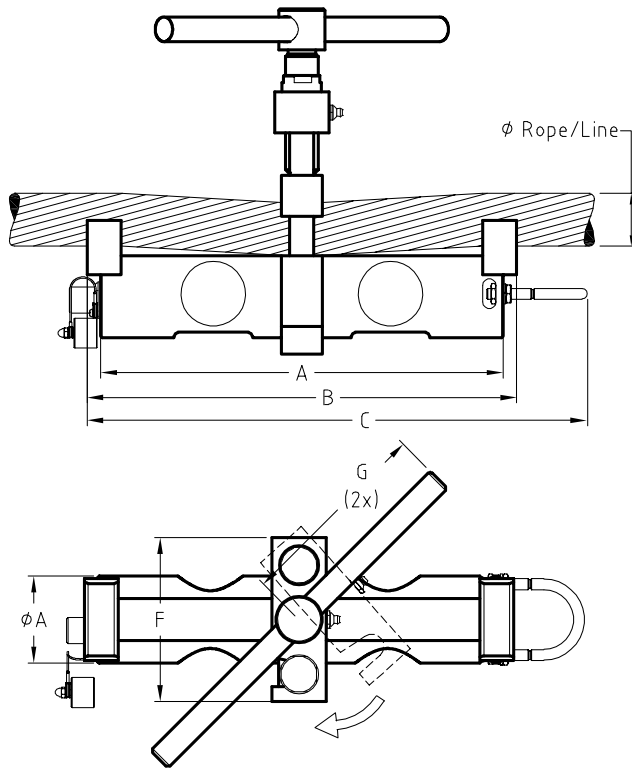
* F.S. : Full Scale.

** : can be different (depending on the wire rope)

Combined error depends on rope material and on-site calibration

Specifications subject to change without notice..

5560S-5562S > STANDARD DIMENSIONS



Ref. Item*	Capacities	ØRope/Line	ØA	A	B	C	D	E	F	G	H (Min)	H (Max)	Weight (kg)
5562S-A	2 - 4 t	Min 6 - Max 12	39	214	220	-	<49	<49	50	162	118	130	± 2
5560S-B	5 t	Min 12 - Max 20	64	295	315	367	72	100	120	217	224	264	±10.4
5560S-C	7.5 t	Min 18 - Max 26	64	295	315	367	72	100	120	217	224	264	±10.4
5560S-D	10 t	Min 8 - Max 20	64	295	315	367	72	100	120	217	224	264	±10.4
5560S-E	15 - 20 t	Min 22 - Max 50.8	64	295	315	367	72	100	120	217	224	264	±11
5560S-F	30 t	Min 22 - Max 50.8	64	295	315	367	72	100	120	217	224	284	±11
5560S-G	45 t	Min 22 - Max 50.8	64	295	315	367	72	100	120	217	224	284	±11
5560S-H	75 t	Min 38 - Max 58	74	405	415	472	89	150	147	324.5	296	365	±26

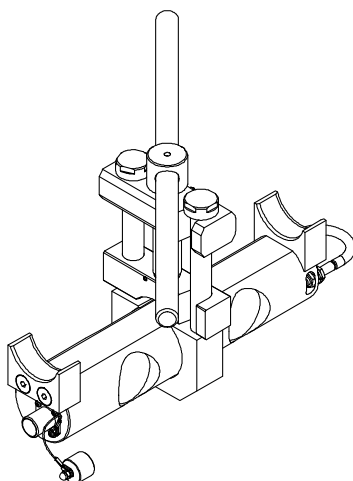
*x=Material: 5560S - stainless steel; 5562S - aluminium

Configurator: www.sensy.com/static-running-line-tensiometer/5560S-5562S

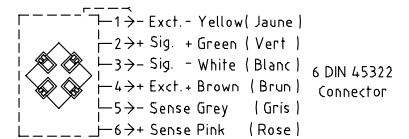
→ Other capacities and dimensions available on request

Dimensions in mm

Other view

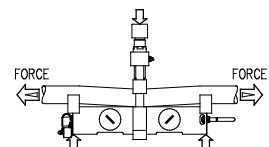


Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



Load cells specially designed to measure the tension force applied to a running cable or running rope.



Features

Model 5575 - 0.5 t



- o Custom-made design according to your needs:
 - type of rope (steel, synthetic, optical fiber, umbilical)
 - capacity
 - rope diameter (from 6 up to 115 mm)
 - maximum winding speed
 - accuracy
- o Protection class: IP65
- o Material:
 - load pin: stainless steel
 - other: nickel-plated steel or stainless steel (option)
- o Complete range of CE certified electronics and load limitation devices available
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)



Application(s) SENSY's load cells 5570-5575 are perfectly designed for the following applications:

- Mooring control in oil and gas and marine equipment,
- Single rope crane load limitation,
- Tension measurement of towage and haulage ropes,
- Winch force measurement.

Capacities

5570 - 5575: from 0.4 to 40 t (up to 600 t on request)

Specifications	2 - 5 %	
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.1	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.1	% F.S.*10°C
Nominal sensitivity	± 1 **	mV/V
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	200	% F.S.*
Breaking load	> 300	% F.S.*
Permissible dynamic loading	70	% F.S.*

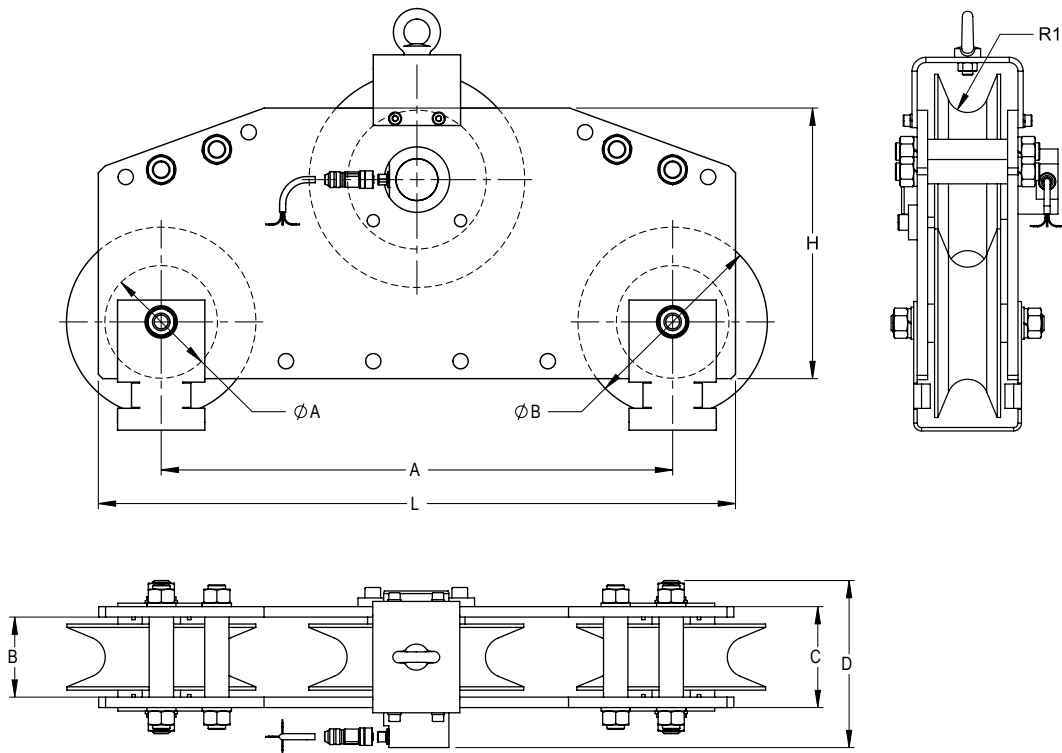
* F.S. : Full Scale.

** : can be different (depending on the wire rope)

Combined error depends on rope material and on-site calibration

Specifications subject to change without notice..

5570-5575 > STANDARD DIMENSIONS



Ref. Item*	Capacities	Ø rope (mm)	ØA	ØB	R1	A	B	C	D	H	L	Max. Speed (m/s)	Weight (kg)
557x-A	400 kg	8	48	90	8.5	500	34	50	110	117	630	1	±9
557x-B	1.5 t	12	48	90	8.5	500	34	50	110	140	630	1	±10.6
557x-C	6 t	16	119	151	9	500	34	50	110	140	661	2	±38
557x-D	20 t	32	120	184	17	900	63	79	159	341	1210	3	±51
557x-E	40 t	36	206	278	19	900	94	122	224	497	1188	4	±224

Ø38 → Ø115 according to customer's design specifications (up to 600 t)

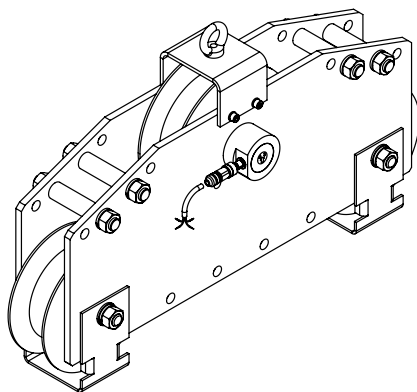
*x=Material: 5570 - stainless steel; 5575 - nickel-plated steel

Configurator: <http://www.sensy.com/tensiometer-configurator/5570-5575>

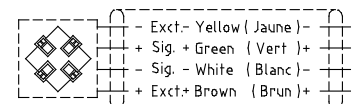
→ Other capacities and dimensions available on request

Dimensions in mm

Other view

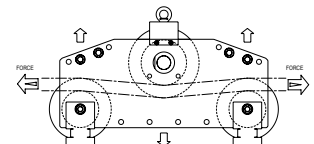


Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



5580-5585

RUNNING LINE TENSIO METERS WITH REMOVABLE CENTER SHEAVE

Load cells specially designed to measure the tension force applied to a running wire rope. The removable center sheave enables easy installation without cutting the winch lines.



Model 5580 - 2 t



Features

- o Wide range of cables (Ø from 6 up to 115 mm)
- o Protection class: IP67
- o Material:
 - load pin: stainless steel
 - other components: stainless steel (5580)
 - other components: nickel-plated steel (5585)
- o Complete range of CE certified electronics and load limitation devices available
- o Custom-made manufacturing
- o Cable length: 6 m (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



IP68



Application(s) SENSY's load cells 5580 and 5585 are perfectly designed for the following applications:

- Tension measurement of towage and haulage cables,
- Winch force measurement,
- ROV umbilical tension control, wireline / slickline tension monitoring.

Capacities

5580-5585: from 0.4 to 40 t (up to 600 t on request)

Specifications	2 - 5 %	
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.1	% F.S./10°C
Temperature coefficient of zero signal	<± 0.1	% F.S./10°C
Nominal sensitivity	± 1 **	mV/V
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	200	% F.S.*
Breaking load	> 300	% F.S.*
Permissible dynamic loading	70	% F.S.*

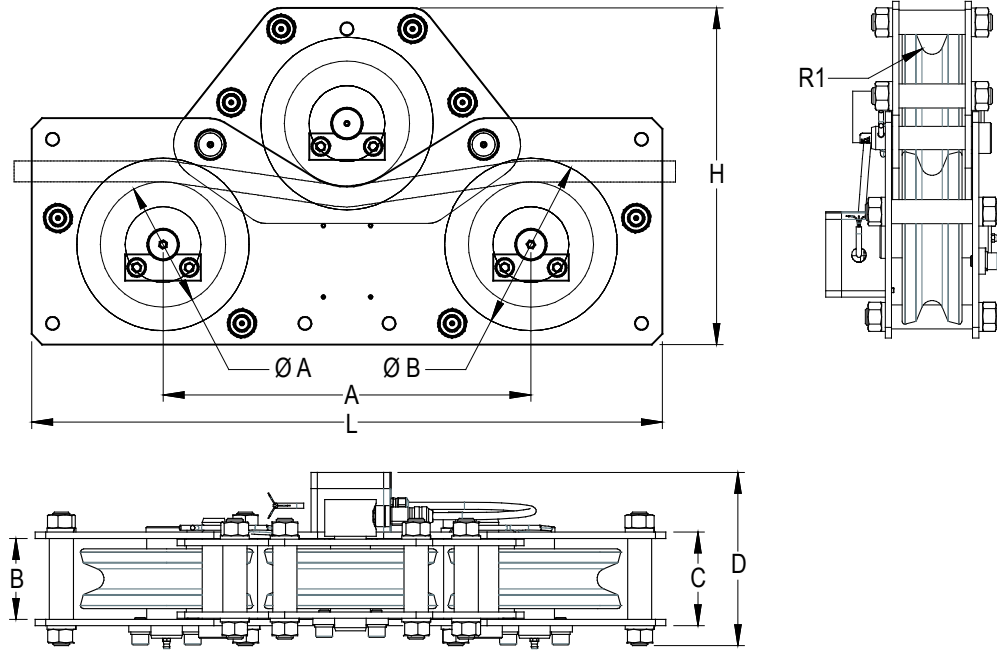
* F.S. : Full Scale.

** : can be different (depending on the wire rope)

Combined error depends on rope material and on-site calibration

Specifications subject to change without notice..

5580-5585 > STANDARD DIMENSIONS



Ref. Item*	Capacities	Ø rope (mm)	ØA	ØB	R1	A	B	C	D	H	L	Max. Speed (m/s)	Weight (kg)
558x-A	400 kg	8	48	90	8.5	500	34	50	110	117	630	1	±9
558x-B	1.5 t	12	48	90	8.5	500	34	50	110	140	630	1	±10.6
558x-C	6 t	16	119	151	9	500	34	50	110	140	661	6	±38
558x-D	20 t	32	120	184	17	900	63	79	159	341	1210	80	±51
558x-E	40 t	36	206	278	19	900	94	122	224	497	1188	10	±224

Ø38 → Ø115 according to customer's design specifications (up to 600 t)

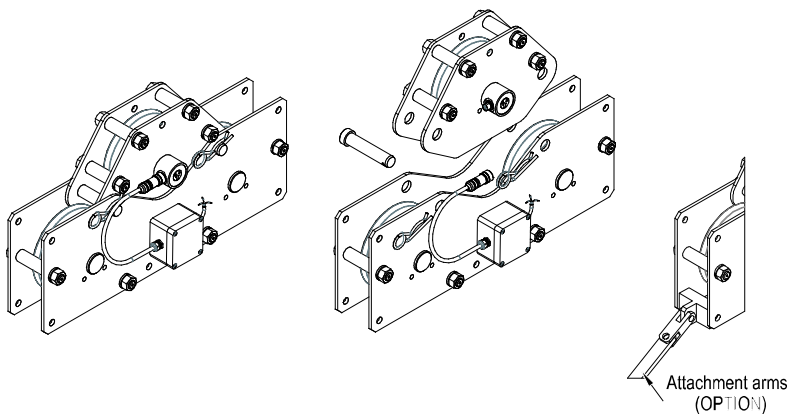
*x=Material: 5580 - stainless steel; 5585 - nickel-plated steel

Configurator: www.sensy.com/tensiometer-configurator/5580-5585

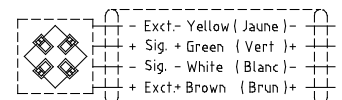
→ Other capacities and dimensions available on request

Dimensions in mm

Other views

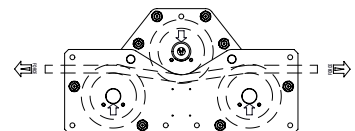


Wiring



Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



STANDARD REFERENCE FORCE TRANSDUCERS



LOAD CELL
MANUFACTURER



Hauptschalter
Kran

TECHNICAL DATA: STANDARD REFERENCE FORCE TRANSDUCERS

CLASSES

SENSY specifications according to ISO 376 standard	CLASSES			
	2	1	0.5	00
Hysteresis	≤ ± 0.50	≤ ± 0.30	≤ ± 0.15	≤ ± 0.07
Repeatability with rotation (reproductibility)	≤ ± 0.40	≤ ± 0.20	≤ ± 0.10	≤ ± 0.05
Repeatability without rotation (repeatability)	≤ ± 0.20	≤ ± 0.10	≤ ± 0.05	≤ ± 0.025
Creep (over 30 minutes)	≤ ± 0.20	≤ ± 0.10	≤ ± 0.05	≤ ± 0.025
Return to zero	≤ ± 0.10	≤ ± 0.05	≤ ± 0.025	≤ ± 0.012
Reference temperature	°C +20			
Compensated temperature range	°C - 10 ... +45			
Service temperature range	°C - 30 ... +70			
Storage temperature range	°C - 50 ... +85			
Temperature coefficient on sensitivity	≤ ± 0.05	≤ ± 0.035	≤ ± 0.035	≤ ± 0.015
Temperature coefficient on zero	≤ ± 0.035	≤ ± 0.03	≤ ± 0.03	≤ ± 0.023

(1)R.O. : Rated Output

(2)F.S. : Full Scale of the load cell

2712-ISO

STANDARD REFERENCE FORCE TRANSDUCERS IN TENSION AND COMPRESSION

Standard reference force transducers specially designed according to the ISO 376 standard (classes 1, 0,5 and 00).



Model 2712 - 250 N



Features

- o Wide range of capacities
- o Tension and / or compression (universal)
- o Compact design
- o Overload protection: see drawing table
- o Complete range of load accessories
- o Material: anodised aluminium alloy
- o Cable length: 3 m (other lengths available on request)

Most popular options (see more in ANNEX)



Application(s) SENSY's load cells 2712-ISO are perfectly designed for the following applications:

- Calibration of testing machines according to ISO 7500.

Note: this standard reference force transducer covers the calibration of standard force measurement instruments used for static verification of uniaxial testing machines.

Capacities

2712-ISO: 0.2 - 0.3 - 0.5 - 0.75 - 1 - 1.5 - 2 - 3 - 5 - 7.5 - 10 kN

Specifications	1	05	00	
Relative reversibility error	<± 0.3	<± 0.15	<± 0.07	% M.V.**
Relative repeatability error with rotation	<± 0.2	<± 0.1	<± 0.05	% M.V.**
Relative repeatability error without rotation	<± 0.1	<± 0.05	<± 0.025	% M.V.**
Stabilization time after power excitation supply	200...600	200...600	200...600	s
Creep error over 30 min.	<± 0.1	<± 0.05	<± 0.025	% F.S.*
Zero shift after loading	<± 0.05	<± 0.025	<± 0.012	% F.S.*
Reference temperature	20	20	20	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.035	<± 0.035	<± 0.015	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.03	<± 0.03	<± 0.023	% F.S.*10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Nominal sensitivity	2	2	2	mV/V
Input resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	110	110	110	% F.S.*
Breaking load	>300	>300	>300	% F.S.*

* : Full Scale of the force transducer.

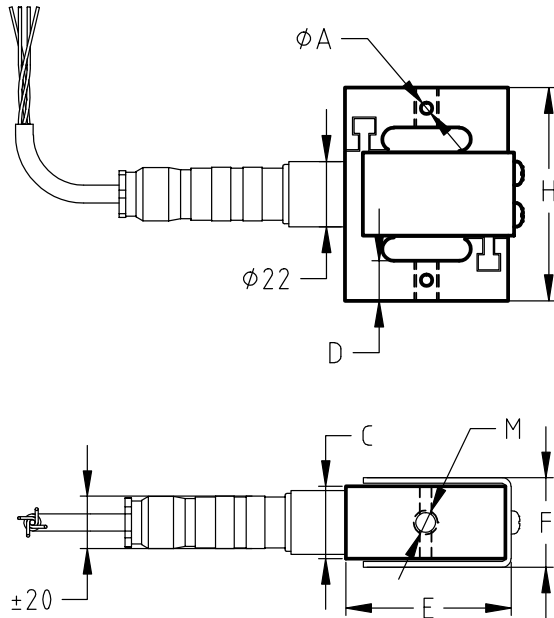
** : M.V. is the measured value. The mentioned values are only valid if M.V. >= 10 % of full scale.

Specifications subject to change without notice..

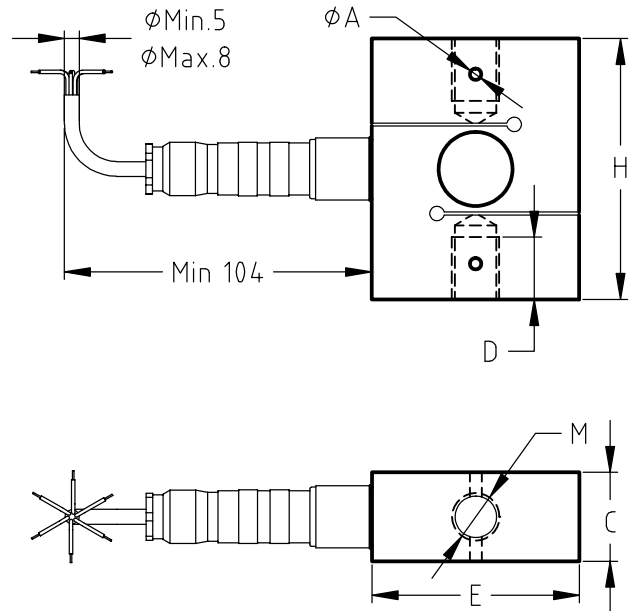
2712-ISO > STANDARD DIMENSIONS



2712-ISO-A / 2712-ISO-B



2712-ISO-D

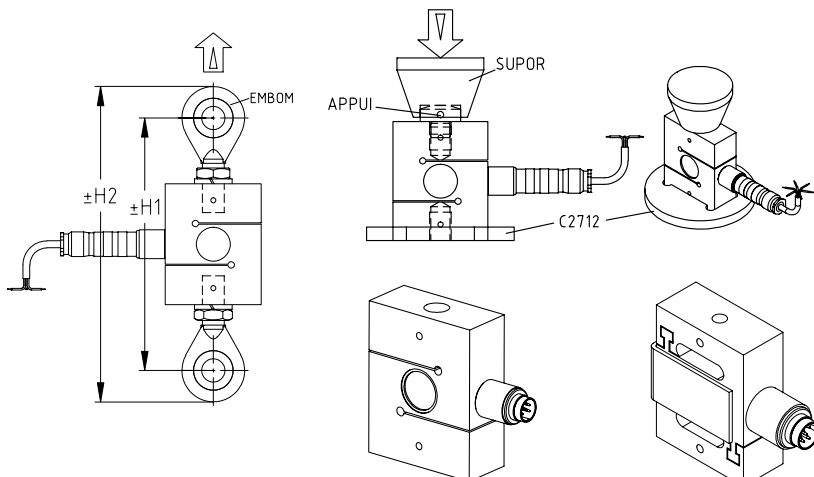


Ref. Item	Capacities	ØA	H	C	D	E	F	M	H1	H2	Breaking Load	Max. Deflexion (mm)	IP	Weight (kg)	ACCESSORIES
2712-ISO-A	200 - 1000 N	4	72	25	13.5	55	±32	M8	132	167	1000 %	0.40	IP54	0.42	C2712-ABC
2712-ISO-B	1500 - 3000 N	4	72	25	13.5	55	±32	M12	132	167	600 %	0.40	IP54	0.42	C2712-ABC
2712-ISO-D	5 - 10 kN	4	88	30	21	70	/	M16	188	233	> 300 %	0.30	IP65	0.6	C2712-D

—> Other capacities and dimensions available on request

Dimensions in mm

Accessories



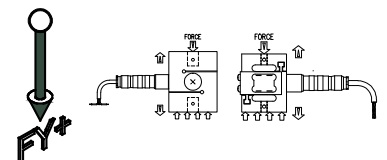
Wiring

Note: standard wiring for compression



Standard: Cable screen not connected to transducer / Faradisation non connectée au capteur

Load direction

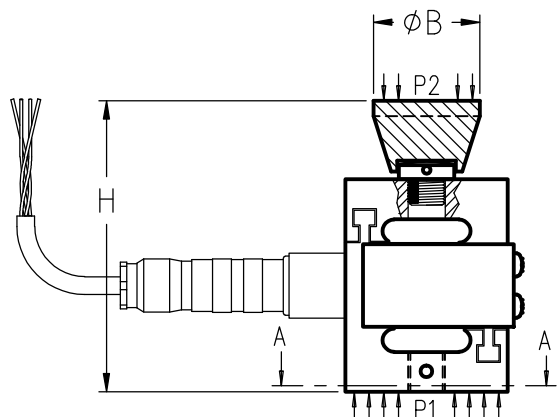


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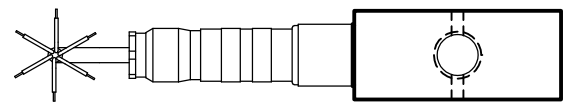
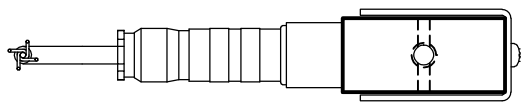
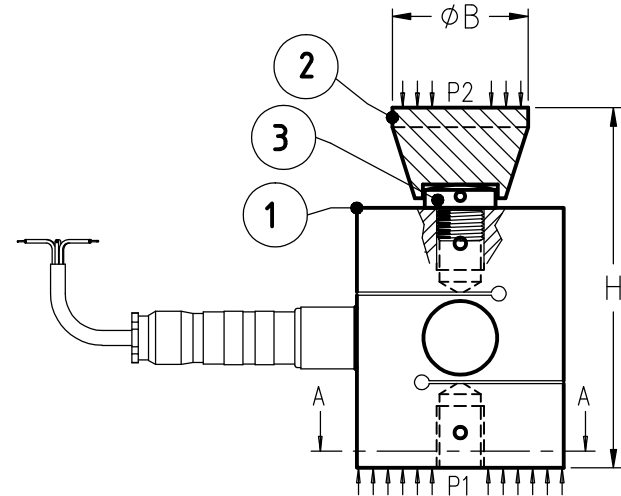
2712-ISO > CHOICE OF LOADING PADS



2712-ISO-A / 2712-ISO-B



2712-ISO-D



Ref. Item	Capacities ①	Section A-A mm ²	Pressure		Section ØB mm ²	Pressure		H	Total weight (kg)	ACCESSORIES	
			P1 N/mm ²	ØB		P2 N/mm ²	H			SUPOR ②	APPUI ③
2712-ISO-A	200 N	1325	0.2	49	1886	0.1	105	0.77	SUPOR-20	APPUI-8	
2712-ISO-A	300 N	1325	0.2	49	1886	0.2	105	0.77	SUPOR-20	APPUI-8	
2712-ISO-A	500 N	1325	0.4	49	1886	0.3	105	0.77	SUPOR-20	APPUI-8	
2712-ISO-A	750 N	1325	0.6	49	1886	0.4	105	0.77	SUPOR-20	APPUI-8	
2712-ISO-A	1000 N	1325	0.8	49	1886	0.5	105	0.77	SUPOR-20	APPUI-8	
2712-ISO-B	1.5 kN	1262	1.1	49	1886	0.8	108	0.78	SUPOR-20	APPUI-12	
2712-ISO-B	2.0 kN	1262	1.6	49	1886	1.1	108	0.78	SUPOR-20	APPUI-12	
2712-ISO-B	3.0 kN	1262	2.4	49	1886	1.6	108	0.78	SUPOR-20	APPUI-12	
2712-ISO-D	5.0 kN	1703	3	64	3217	1.6	135	1.46	SUPOR-30	APPUI-16	
2712-ISO-D	7.5 kN	1703	4.4	64	3217	2.3	135	1.46	SUPOR-30	APPUI-16	
2712-ISO-D	10 kN	1703	5.9	64	3217	3.1	135	1.46	SUPOR-30	APPUI-16	

→ Other capacities and dimensions available on request

Dimensions in mm

2715-ISO

STANDARD REFERENCE FORCE TRANSDUCERS IN TENSION AND COMPRESSION

Standard reference force transducers specially designed according to the ISO 376 standard (classes 1, 0,5 and 00).



Model 2715 - 30 kN



Features

- o Wide range of capacities
- o Tension and / or compression (universal)
- o Compact design
- o Complete range of load accessories
- o Protection class: IP65
- o Material: alloy steel (stainless steel available on request)
- o Cable length: see drawing (other lengths available on request)

Most popular options (see more in ANNEX)



Application(s) SENSY's load cells 2715-ISO are perfectly designed for the following applications:

- Calibration of testing machines according to ISO 7500.

Note: this standard reference force transducer covers the calibration of standard force measurement instruments used for static verification of uniaxial testing machines.

Capacities

2715-ISO: 20 - 30 - 50 - 75 - 100 kN

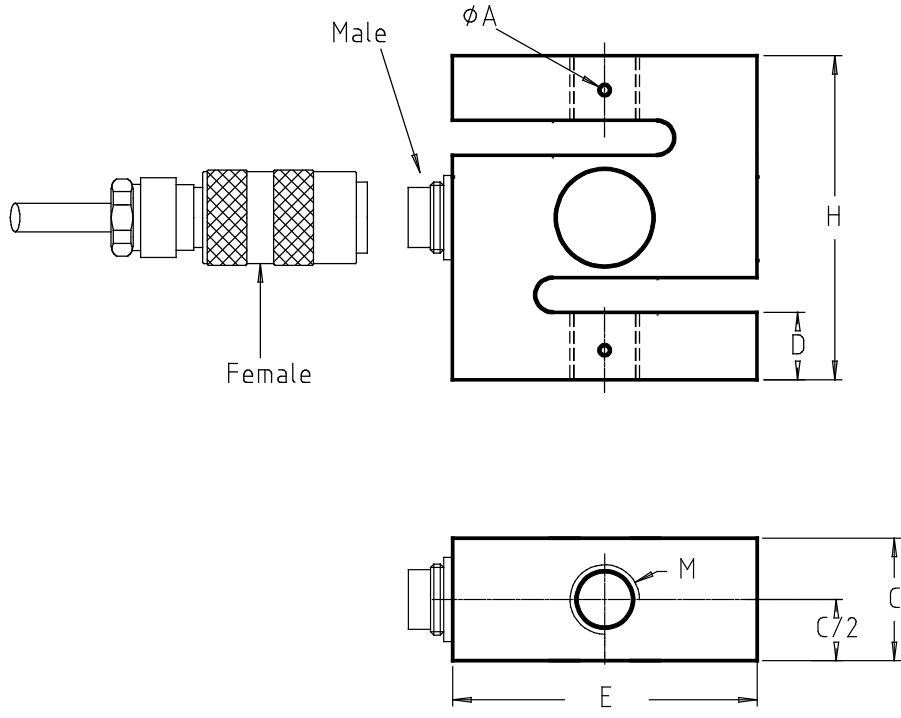
Specifications	1	05	00	
Relative reversibility error	<± 0.3	<± 0.15	<± 0.07	% M.V.**
Relative repeatability error with rotation	<± 0.2	<± 0.1	<± 0.05	% M.V.**
Relative repeatability error without rotation	<± 0.1	<± 0.05	<± 0.025	% M.V.**
Stabilization time after power excitation supply	200...600	200...600	200...600	s
Creep error over 30 min.	<± 0.1	<± 0.05	<± 0.025	% F.S.*
Reference temperature	20	20	20	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.035	<± 0.035	<± 0.015	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.03	<± 0.03	<± 0.023	% F.S.*10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Nominal sensitivity	2	2	2	mV/V
Input resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Output resistance	350 ± 2	350 ± 2	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	110	110	110	% F.S.*
Breaking load	>300	>300	>300	% F.S.*

* : Full Scale of the force transducer.

** : M.V. is the measured value. The mentioned values are only valid if M.V. >= 10 % of full scale.

Specifications subject to change without notice..

2715-ISO > STANDARD DIMENSIONS



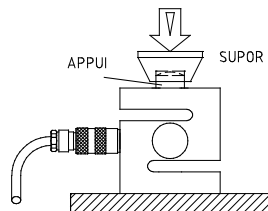
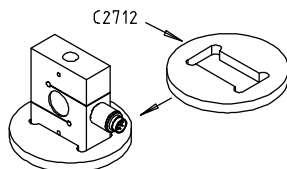
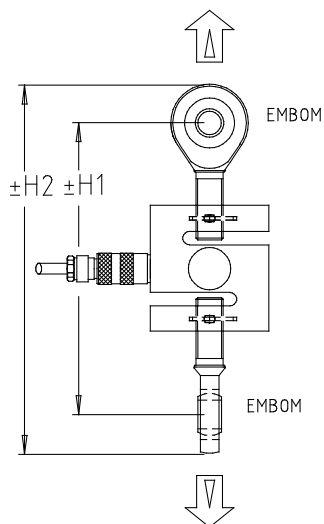
Ref. Item*	Capacities	ØA	H±	C	D	E	M	H1	H2	CL (m)	Max. Deflexion (mm)	Weight (kg)	ACCESSORIES
271x-ISO-G	20 - 50 kN	4	116	38	30	98	M24x2	238	302	3	0.35	2.6	C2712-G
271x-ISO-H	75 - 100 kN	6	130	56	33	118	M36x3	318	402	6	0.60	5.2	C2712-H

*Material: 2710-ISO - stainless steel; 2715-ISO - nickel-plated steel

→ Other capacities and dimensions available on request

Dimensions in mm

Accessories



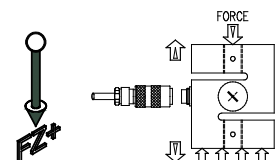
Wiring

Note: standard wiring for compression



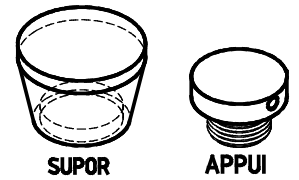
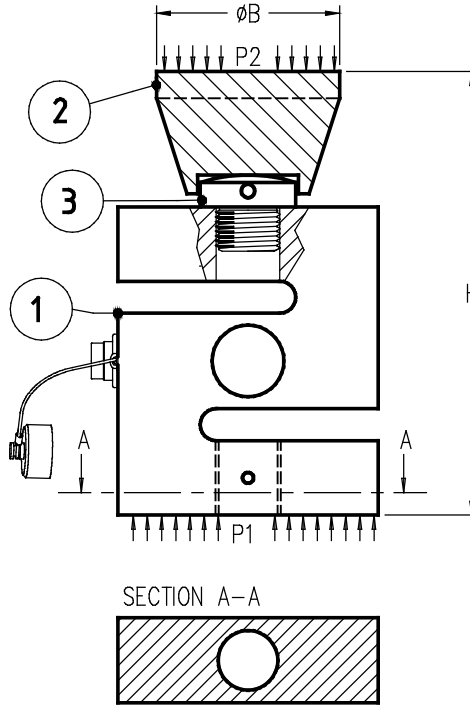
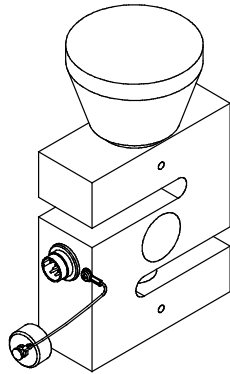
Standard : Cable screen not connected to transducer / Faradisisation non connectée au capteur

Load direction



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2715-ISO > CHOICE OF LOADING PADS



Ref. Item	Capacities ①	Section A-A mm ²	Pressure P1 N/mm ²	ØB	Section ØB mm ²	Pressure P2 N/mm ²	H	Total weight (kg)	ACCESSORIES	
									SUPOR ②	APPUI ③
271x-ISO-G	20 kN	3272	6.1	69	3739	5.3	167	3.73	SUPOR-36	APPUI-24
271x-ISO-G	30 kN	3272	9.2	69	3739	8	167	3.73	SUPOR-36	APPUI-24
271x-ISO-G	50 kN	3272	15.3	69	3739	13.4	167	3.73	SUPOR-36	APPUI-24
271x-ISO-H	75 kN	5590	13.4	79	4902	15.3	190	7.25	SUPOR-56	APPUI-36
271x-ISO-H	100 kN	5590	19.9	79	4902	20.4	190	7.25	SUPOR-56	APPUI-36

→ Other capacities and dimensions available on request

Dimensions in mm



3115-ISO

HIGH-CAPACITY COMPRESSION STANDARD REFERENCE FORCE TRANSDUCERS

Standard reference force transducers specially designed according to ISO 376 standard (classes 1, 0,5 and 00).



Features

- o Wide range of capacities (up to 50 MN)
- o Complete range of load accessories
- o Protection class: IP65
- o Material: alloy steel (stainless steel available on request)
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Model 3115-ISO - 3 MN



Application(s) SENSY's load cells 3115-ISO are perfectly designed for the following applications:

- Calibration of testing machines according to ISO 7500.

Note: this standard reference force transducer covers the calibration of standard force measurement instruments used for static verification of uniaxial testing machines.

Capacities

3115-ISO: 200 - 300 - 500 kN
(0.75) - 1 - 1.5 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 - 40 - 50 MN

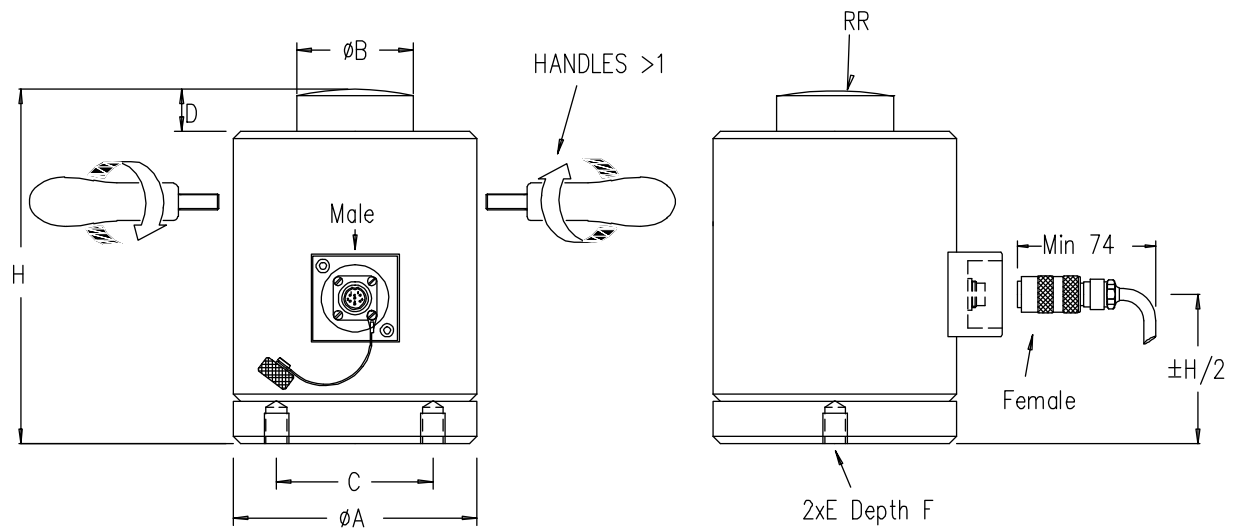
Specifications	1	05	00	
Relative reversibility error	<± 0.3	<± 0.15	<± 0.07	% M.V.**
Relative repeatability error with rotation	<± 0.2	<± 0.1	<± 0.05	% M.V.**
Relative repeatability error without rotation	<± 0.1	<± 0.05	<± 0.025	% M.V.**
Stabilization time after power excitation supply	200...600	200...600	200...600	s
Creep error over 30 min.	<± 0.1	<± 0.05	<± 0.025	% F.S.*
Zero shift after loading	<± 0.05	<± 0.025	<± 0.012	% F.S.*
Reference temperature	20	20	20	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-30...+70	-30...+70	-30...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.035	<± 0.035	<± 0.015	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.03	<± 0.03	<± 0.023	% F.S.*10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Nominal sensitivity	1.5	1.5	1.5	mV/V
Input resistance	350...700 ± 2	350...700 ± 2	350...700 ± 2	ohm(s)
Output resistance	350...700 ± 2	350...700 ± 2	350...700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	110	110	110	% F.S.*
Breaking load	>300	>300	>300	% F.S.*

* : Full Scale of the force transducer.

** : M.V. is the measured value. The mentioned values are only valid if M.V. >= 10 % of full scale.

Specifications subject to change without notice..

3115-ISO > STANDARD DIMENSIONS



Ref. Item*	Capacities	ØA	ØB	C	D	E	F	H	RR	CL (m)	Max. Deflexion (mm)	Weight (kg)
311x-ISO-B	200 kN	64	36	45	20	M10	12	135	250	6	0.16-0.18	2.2
311x-ISO-C	300 - 500 kN	89	56	60	30	M12	15	160	300	6	0.18-0.20	4.5
311x-ISO-D	0.75 - 1MN	99	64	65	30	M16	16	190	400	6	0.33-0.34	6
311x-ISO-E	1.5 - 2 MN	119	90	90	30	M16	16	225	400	6	0.29-0.35	20
311x-ISO-F	3 MN	159	125	100	40	M20	20	270	450	12	±0.4	42
311x-ISO-G	5 MN	205	160	125	50	M20	35	350	500	12	±0.5	90
311x-ISO-H	7.5 - 10 MN	294	200	200	60	M30	40	460	600	12	±0.7	243
311x-ISO-I	15 MN	330	250	250	65	M30	40	510	800	12	±0.75	330
311x-ISO-J	20 MN	364	250	270	75	M36	50	550	800	12	±0.8	446
311x-ISO-K	30 MN	445	300	300	75	M36	50	660	1000	12	±1	770
311x-ISO-L	40 MN	495	360	330	90	M36	50	730	1200	12	±1.1	1060
311x-ISO-M	50 MN	540	430	360	90	M36	50	900	2000	12	±1.2	1587

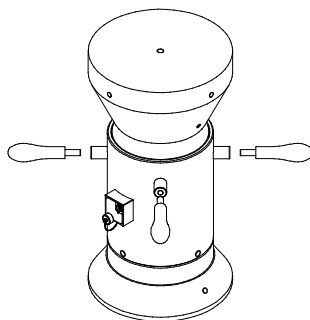
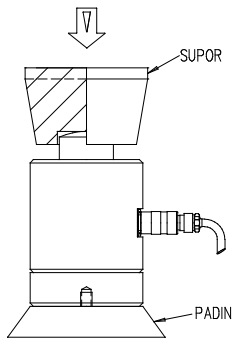
Note: 2 - 50 MN (200 - 5000 t) according to customer's design specification.

*x=Material: 3110-ISO - stainless steel; 3115-ISO - nickel-plated steel

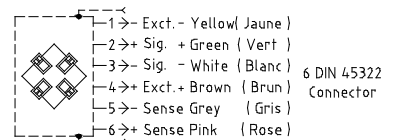
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

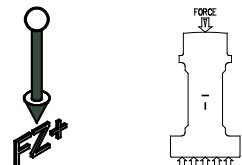


Wiring



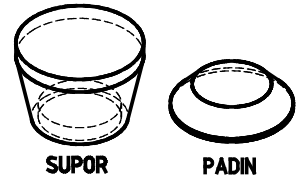
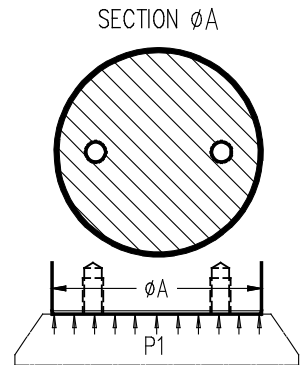
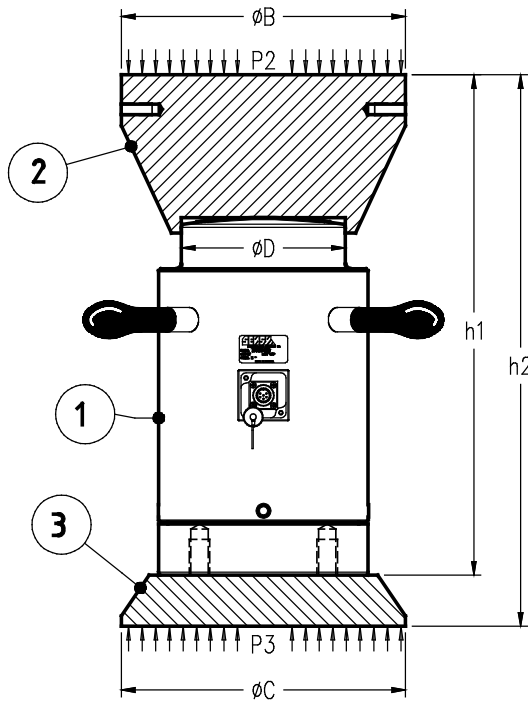
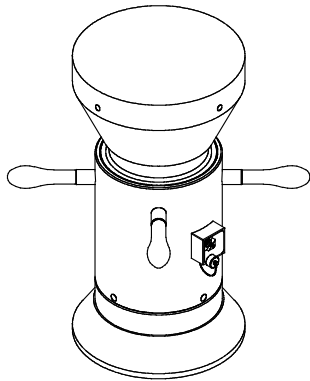
Standard : Cable screen not connected to transducer
Faradisation non connectée au capteur

Load direction



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3115-ISO > CHOICE OF LOADING PADS



Ref. Item	Force ①	$\varnothing D$	$\varnothing A$	Section $\varnothing A$ mm ²	Pressure P1 N/mm ²	$\varnothing B$	Section $\varnothing B$ mm ²	Pressure P2 N/mm ²	$\varnothing C$	Section $\varnothing C$ mm ²	Pressure P3 N/mm ²	h1	h2	Total weight (kg)	ACCESSORIES	
															SUPOR ②	PADIN ③
311x-ISO-B	200 kN	36	64	2670	75	69	3739	53	/	/	/	174	/	3.2	SUPOR-36	NOT NECESSARY
311x-ISO-C	300 kN	56	89	5449	55	79	4902	61	/	/	/	200	/	6	SUPOR-56	
311x-ISO-C	500 kN	56	89	5449	92	79	4902	102	/	/	/	200	/	6	SUPOR-56	
311x-ISO-D	0.75 MN	64	99	6686	112	99	7698	97	129	13070	57	237	262	11.1	SUPOR-64	PADIN-100B
311x-ISO-D	1 MN	64	99	6686	150	114	10207	98	129	13070	77	248	273	12.5	SUPOR-64E	PADIN-100B
311x-ISO-E	1.5 MN	90	119	9985	150	164	21124	71	158	19607	77	317	342	36	SUPOR-90B	PADIN-125A
311x-ISO-E	2 MN	90	119	9985	200	164	21124	95	158	19607	102	317	342	36	SUPOR-90B	PADIN-125A
311x-ISO-F	3 MN	125	159	18241	164	195	29865	100	248	48305	62	360	420	79	SUPOR-125B	PADIN-160
311x-ISO-G	5 MN	160	205	31103	161	248	48305	104	248	48305	104	476	506	141	SUPOR-160	PADIN-210
311x-ISO-H	7.5 MN	200	294	64638	116	308	74506	101	353	97868	77	615	650	342	SUPOR-200A	PADIN-300
311x-ISO-H	10 MN	200	294	64638	155	353	97868	102	353	97868	102	640	675	372	SUPOR-200B	PADIN-300
311x-ISO-I	15 MN	250	330	85530	175	438	150674	100	438	150674	100	730	790	604	SUPOR-250A	PADIN-330
311x-ISO-J	20 MN	250	364	99752	200	503	198713	101	503	198713	101	805	885	845	SUPOR-250B	PADIN-365
311x-ISO-K	30 MN	300	445	155528	193	594	277117	109	594	277117	109	957	1042	1397	SUPOR-300A	PADIN-445
311x-ISO-L	40 MN	360	495	192442	208	694	379367	106	694	379367	106	1077	1187	2122	SUPOR-360A	PADIN-495
311x-ISO-M	50 MN	430	540	229022	218	795	496391	100	795	496391	100	1298	1428	3202	SUPOR-430A	PADIN-540

→ Other capacities and dimensions available on request

Dimensions in mm

5105-ISO

HIGH-CAPACITY STANDARD REFERENCE FORCE TRANSDUCERS IN TENSION AND COMPRESSION

Standard reference force transducers specially designed according to the ISO 376 standard (classes 1, 0,5 and 00).



Features

- o Wide range of capacities (up to 50 MN)
- o Complete range of load accessories
- o Tension and / or compression (universal)
- o Protection class: IP65
- o Material: alloy steel (stainless steel available on request)
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Model 5105



Application(s) SENSY's load cells 5105-ISO are perfectly designed for the following applications:

- Calibration of testing machines according to ISO 7500.

Note: this standard reference force transducer covers the calibration of standard force measurement instruments used for static verification of uniaxial testing machines.

Capacities

5105-ISO: 200 - 300 - 500 kN
(0.75) - 1.5 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 - (40) - (50) MN

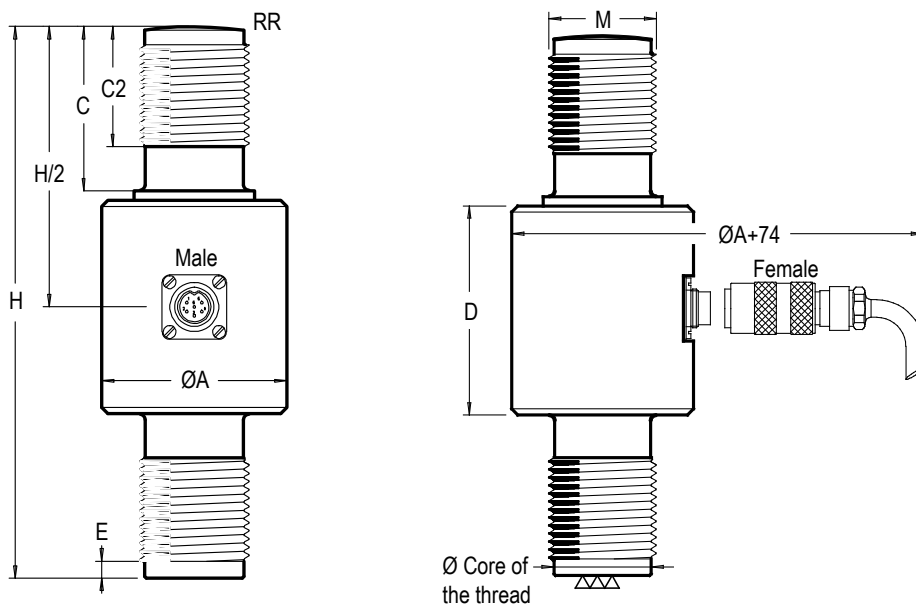
Specifications	1	05	00	
Relative reversibility error	<± 0.3	<± 0.15	<± 0.07	% M.V.**
Relative repeatability error with rotation	<± 0.2	<± 0.1	<± 0.05	% M.V.**
Relative repeatability error without rotation	<± 0.1	<± 0.05	<± 0.025	% M.V.**
Stabilization time after power excitation supply	200...600	200...600	200...600	s
Creep error over 30 min.	<± 0.1	<± 0.05	<± 0.025	% F.S.*
Zero shift after loading	<± 0.05	<± 0.025	<± 0.012	% F.S.*
Reference temperature	20	20	20	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.035	<± 0.035	<± 0.015	% F.S./10°C
Temperature coefficient of zero signal	<± 0.03	<± 0.03	<± 0.023	% F.S./10°C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Nominal sensitivity	1.5	1.5	1.5	mV/V
Input resistance	350 or 700 ± 2	350 or 700 ± 2	350 or 700 ± 2	ohm(s)
Output resistance	350 or 700 ± 2	350 or 700 ± 2	350 or 700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	110	110	110	% F.S.*
Breaking load	>300	>300	>300	% F.S.*

* : Full Scale of the force transducer.

** : M.V. is the measured value. The mentioned values are only valid if M.V. >= 10 % of full scale.

Specifications subject to change without notice..

5105-ISO > STANDARD DIMENSIONS



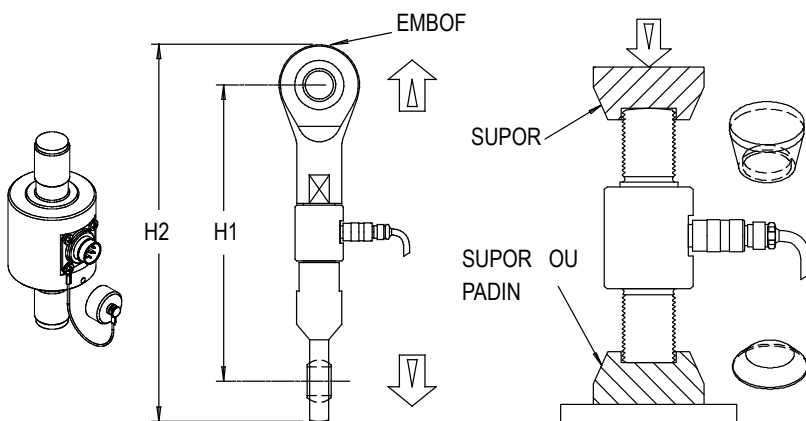
Ref. Item*	Capacities	Ø A	C	C2	D	E	H	RR	CL (m)	M	H1	H2	Max. Deflexion	Weight (kg)
510x-ISO-C	200 kN	75	49	44	87	4	190	350	6	M45x3	398	510	0.14-0.16	3.65
510x-ISO-D	300 - 750 kN	88.5	69	59	119	5	265	400	6	M64x4	560	740	0.19-0.25	9.8
510x-ISO-E	0.75 - 1.5 MN	111	95	80	145	5	340	400	6	M90x4	/	/	0.30-0.42	21
510x-ISO-F	2 MN	150	128	120	165	7	430	600	6	M110x4	/	/	0.35-0.65	33
510x-ISO-G	2 - 3 MN	150	128	120	165	7	430	600	6	M125x4	/	/	0.35-0.65	38
510x-ISO-H	5 MN	180	162	158	180	8	520	800	6	M160x6	/	/	0.73	87
510x-ISO-I	7.5 - 10 MN	220	205	175	200	10	590	1000	6	M200x6	/	/	0.83	151
510x-ISO-J	10 MN	270	279	254	237	25.4x30°	795	1000	6	Stub Acme 9"-1"	/	/	1.23	270
510x-ISO-K	15 MN	280	250	230	230	10	710	1200	12	M250x6	/	/	1	280
510x-ISO-L	20 MN	360	380	340	320	36x30°	1080	1500	12	TR 330x24	/	/	1.7	700
510x-ISO-M	30 MN	450	460	460	540	36x30°	1460	2000	12	TR 400x24	/	/	2.26	1420
-	40 - 50 MN	According to customer's design specification.												

*x=Material: 5100-ISO - stainless steel; 5105-ISO - nickel-plated steel

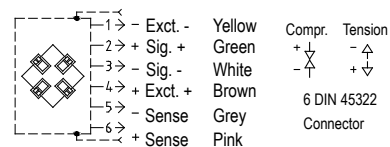
Other capacities and dimensions available on request

Dimensions in mm

Accessories

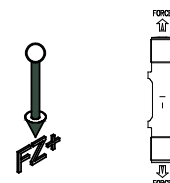


Wiring



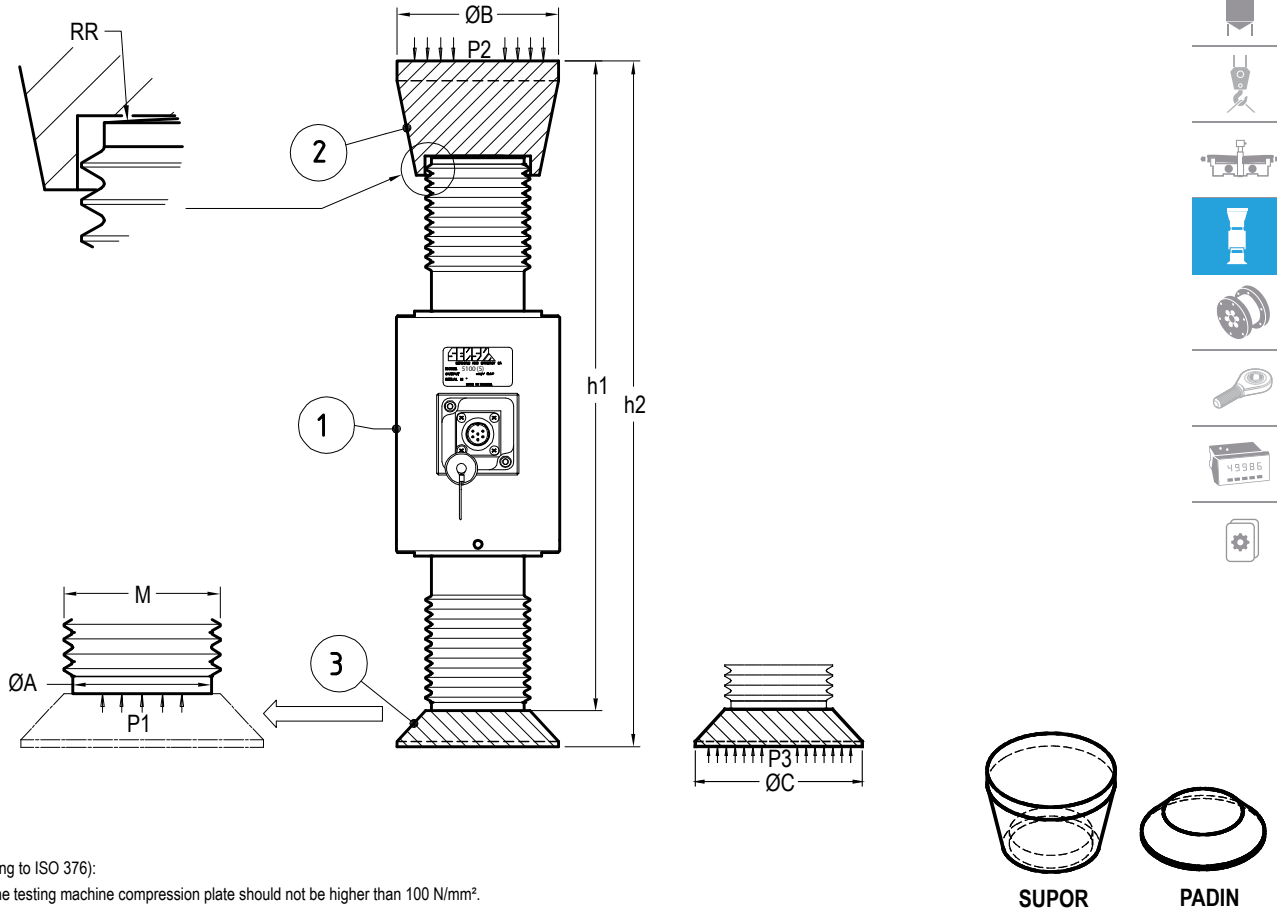
Standard: Cable screen not connected to the transducer

Load direction



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5105-ISO > CHOICE OF LOADING PADS



Principles (according to ISO 376):

The pressure on the testing machine compression plate should not be higher than 100 N/mm².

If necessary intermediate plates "PADIN"(3) should be chosen and installed.

Ref. Item	Capacities ①	M	ØA	Section		Pressure		ØC	Section		Pressure		h1	h2	Total Weight (kg)	ACCESSORIES	
				ØA mm ²	P1 N/mm ²	ØB mm ²	P2 N/mm ²		ØC mm ²	P3 N/mm ²	SUPOR ②	PADIN ③					
510x-ISO-C	200 kN	45x3	41.8	1372	146	79	4902	41	79	4902	41	231	252	5.9	SUPOR-45	PADIN-45	
510x-ISO-D	300 kN	64x4	59.7	2799	107	99	7698	39	99	7698	39	312	334	14	SUPOR-64	PADIN-64	
510x-ISO-D	500 kN	64x4	59.7	2799	179	99	7698	65	99	7698	65	312	334	14	SUPOR-64	PADIN-64	
510x-ISO-D	0.75 MN	64x4	59.7	2799	268	99	7698	97	99	7698	97	387	409	25	SUPOR-64	PADIN-64	
510x-ISO-E	0.75 MN	90x4	85.7	5768	130	129	13070	57	129	13070	57	402	427	30	SUPOR-90	PADIN-100A	
510x-ISO-E	1 MN	90x4	85.7	5768	173	129	13070	77	129	13070	77	402	427	30	SUPOR-90	PADIN-100A	
510x-ISO-E	1.5 MN	90x4	85.7	5768	260	129	13070	115	129	13070	115	402	427	30	SUPOR-90	PADIN-100A	
510x-ISO-F	2 MN	110x4	105	8775	228	195	29865	67	195	29865	67	520	571	46	SUPOR-110	PADIN-110E	
510x-ISO-F	3 MN	110x4	105	8775	341	195	29865	101	195	29865	101	520	571	46	SUPOR-110	PADIN-110E	
510x-ISO-G	2 MN	125x4	121	11442	175	158	19607	102	158	19607	102	505	530	53	SUPOR-125A	PADIN-125A	
510x-ISO-G	3 MN	125x4	121	11442	262	195	29865	101	195	29865	101	520	565	66	SUPOR-125B	PADIN-125B	
510x-ISO-H	5 MN	160x6	154	18506	270	248	48305	104	248	48305	104	646	706	105	SUPOR-160	PADIN-160	
510x-ISO-I	7.5 MN	200x6	194	29407	255	308	74506	101	308	74506	101	745	812	257	SUPOR-200A	PADIN-200A	
510x-ISO-I	10 MN	200x6	194	29407	340	353	97868	102	353	97868	102	770	860	307	SUPOR-200B	PADIN-200B	
510x-ISO-J	10 MN	Acme 9"	199	31187	321	353	97868	102	353	97868	102	972	1052	438	SUPOR-230	PADIN-230	
510x-ISO-K	15 MN	250x6	244	46568	322	438	150674	100	438	150674	100	930	1010	559	SUPOR-250A	PADIN-250	
510x-ISO-L	20 MN	TR330x24	288	65339	306	503	198713	102	503	198713	102	1332	1447	1171	SUPOR-330A	PADIN-330A	
510x-ISO-M	30 MN	TR400x24	358	100902	297	594	277117	109	594	277117	109	1757	1877	2216	SUPOR-400A	PADIN-400A	
	40 - 50 MN														According to customer's design specifications		

→ Other capacities and dimensions available on request

Dimensions in mm

3115F-12390

STRAIN GAUGE CYLINDERS (HARDENED CONCRETE TESTING)

Standard reference force transducers specially designed for checking concrete testing machines according to the EN 12390-4 or standard DIN 51302-2.



Features

- o Allows the homogeneity of the repartition of the forces generated to be checked by verifying:
 - self-alignment and restraint on movement of the upper plate
 - alignment of the machine's component parts
- o Standard dimensions
- o 4 independent full bridges at 90°
- o Protection class: IP65
- o Material: nickel-plated alloy steel
- o Cable length: 4 x 6 m (other lengths available on request)



Model 3115F-12390 - 3 MN

Most popular options (see more in ANNEX)



Application(s) SENSY's load cells 3115F-12390 are perfectly designed for the following applications:

- Testing machines for compressive strength of hardened concrete according to EN 12390 standard.

Capacities

3115F-12390: 2 - (3) - (5) MN

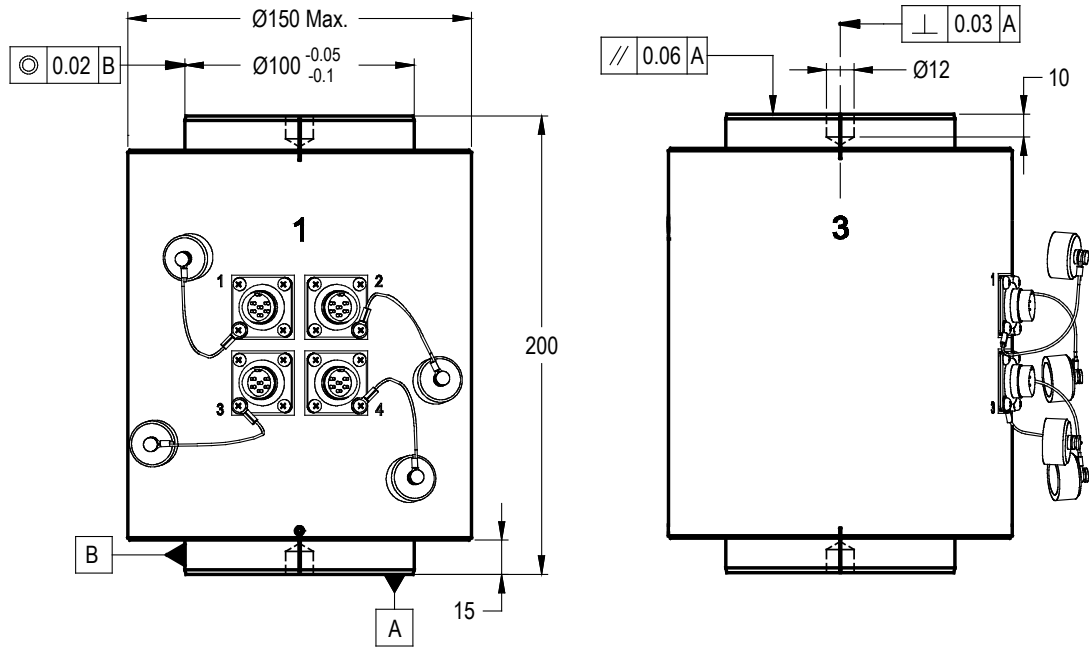
Specifications	12390	1	
Relative reversibility error	-	<± 0.3	% M.V.**
Relative repeatability error with rotation	-	<± 0.2	% M.V.**
Relative repeatability error without rotation	-	<± 0.1	% M.V.**
Stabilization time after power excitation supply	200...600	200...600	s
Creep error over 30 min.	<± 0.25	<± 0.1	% F.S.*
Zero shift after loading	<± 0.05	<± 0.05	% F.S.*
Reference temperature	20	20	°C
Compensated temperature range	0...+30	-10...+45	°C
Service temperature range	-25...+70	-25...+70	°C
Storage temperature range	-50...+85	-50...+85	°C
Temperature coefficient of the sensitivity	0.05	<± 0.035	% F.S.*10°C
Temperature coefficient of zero signal	0.05	<± 0.03	% F.S.*10°C
Zero balance	0.02	± 0.02	mV/V
Nominal sensitivity	1.5	1.5	mV/V
Input resistance	350 or 700 ± 2	350 or 700 ± 2	ohm(s)
Output resistance	350 or 700 ± 2	350 or 700 ± 2	ohm(s)
Insulation resistance (50 V)	>5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	VDC
Permissible nominal range of excitation voltage	5...15	3...12	VDC
Safe load limit	110	110	% F.S.*
Breaking load	>300	>300	% F.S.*

* : Full Scale of the force transducer.

** : M.V. is the measured value. The mentioned values are only valid if M.V. >= 10 % of full scale.

Specifications subject to change without notice..

3115F-12390 > STANDARD DIMENSIONS

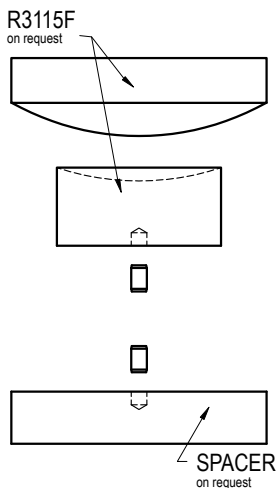


Ref. Item	Capacities	Weight (kg)	Note
3115F-12390-A	2 MN	15.8	-
3115F-12390-B	3 MN	28	Dimensions on request
3115F-12390-C	5 MN	66	Dimensions on request

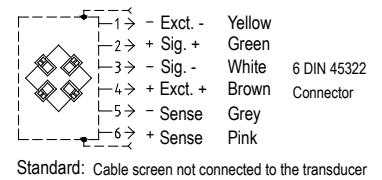
→ Other capacities and dimensions available on request

Dimensions in mm

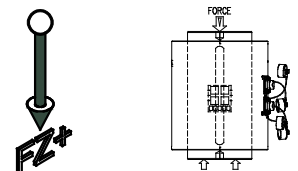
Accessories



Wiring



Load direction



TORQUE SENSORS



LOAD CELL
MANUFACTURER



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Universal non-rotating torque meters combining accuracy and sturdiness.



Features

- o Easy to install, compact design
- o Protection class: IP65
- o Material: stainless steel (6100), nickel-plated steel (6105)
- o Cable length: 3 m (other lengths available on request)
- o Also available as standard reference torque meters

Most popular options (see more in ANNEX)



Ex i



Model 6105 - 10 000 N · m



Application(s) SENSY's torque meters 6100-6105 are perfectly designed for the following applications:

- Torque measurement on machines,
- Servo control or torque limitation industrial process,
- Torque wrench calibration,
- Torque measurement in laboratories.

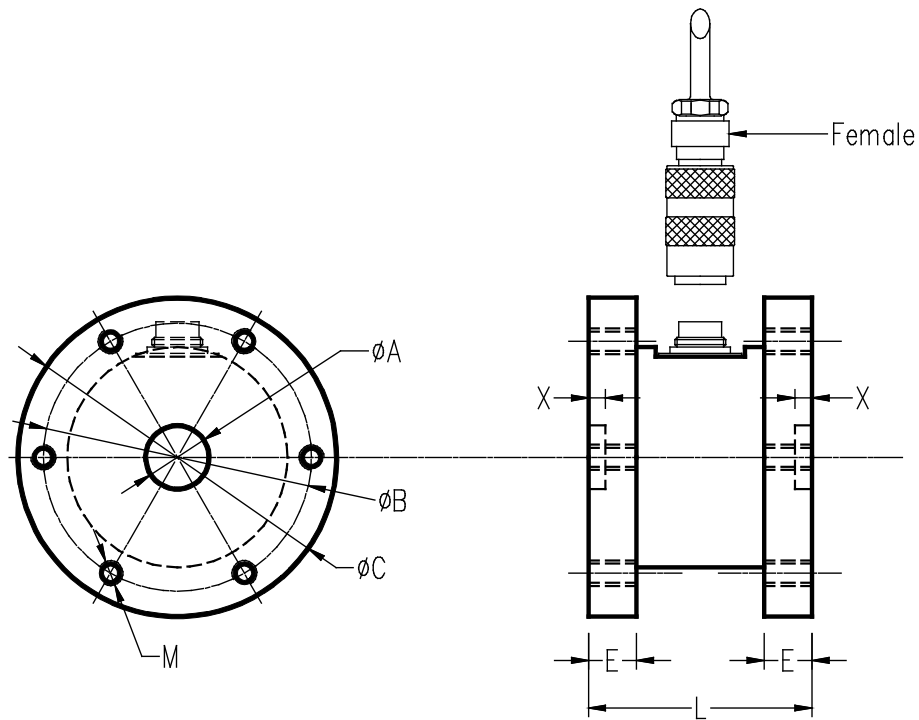
Capacities

6100 - 6105: 300 - 500 - 1000 - 2000 - 5000 - 10 000 N · m
Higher capacity on request

Specifications	0.25 %	
Combined error (non-linearity + hysteresis)	<± 0.25	% F.S.*
Repeatability error	<± 0.1	% F.S.*
Creep error over 30 min.	<± 0.1	% F.S.*
Zero shift after loading	<± 0.025	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	% F.S./10°C
Zero balance	± 0.02	mV/V
Nominal sensitivity	1.5	mV/V
Sensitivity tolerance	<± 0.3	%
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	130	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	50	% F.S.*

* F.S. : Full Scale.
Specifications subject to change without notice..

6100-6105 > STANDARD DIMENSIONS



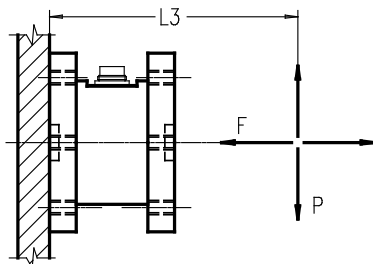
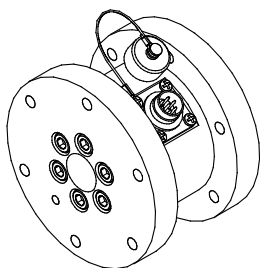
Ref. Item*	Capacities	ØA	ØB	ØC	E	L	M	X	F max (kN)	L3xP max (N x m)	Torsional stiffness (kN·m/rad)	Weight (kg)
610x-A	300 - 500 N·m	20 H7	84	99	15	70	M8 (6x60°)	10	7 - 12	80 - 170	170 - 215	2.2
610x-B	1 - 2 - 5 kN·m	20 H7	127	149	18	100	M12 (8x45°)	15	18 - 35 - 55	330 - 700 - 1300	220 - 600 - 1300	7.5
610x-C	10 kN·m	20 H7	150	179	25	120	M16 (8x45°)	15	84	2000	3400	12.8

*x=Material: 6100 - stainless steel; 6105 - nickel-plated steel

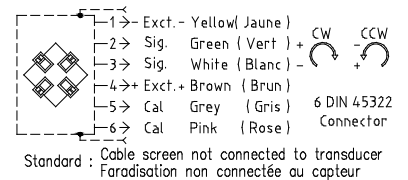
Other capacities and dimensions available on request

Dimensions in mm

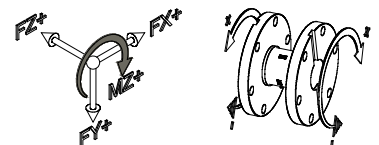
Other views



Wiring



Load direction



Universal non-rotating torque meters combining accuracy and sturdiness.



Features

- Easy to install, compact design
- Protection class: see drawing table (IP)
- Materials: stainless steel (6200), nickel-plated steel (6205)
- Cable length: 3 m (other lengths available on request)
- Also available as standard reference torque meters

Most popular options (see more in ANNEX)



Ex i



Model 6200 - 10 N·m



Application(s)

SENSY's torque meters 6200-6205 are perfectly designed for the following applications:

- Torque measurement on machines,
- Servo control or torque limitation on industrial process,
- Calibration of torque wrench,
- Torque measurement in laboratories.

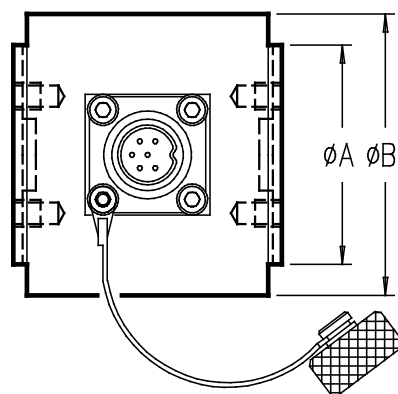
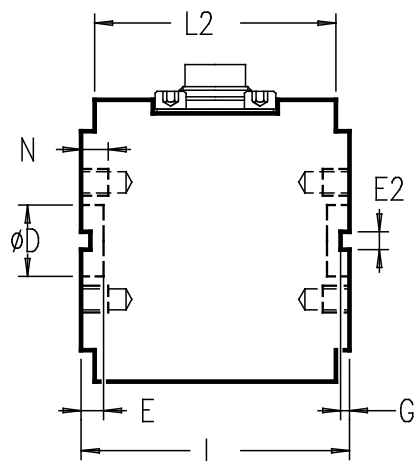
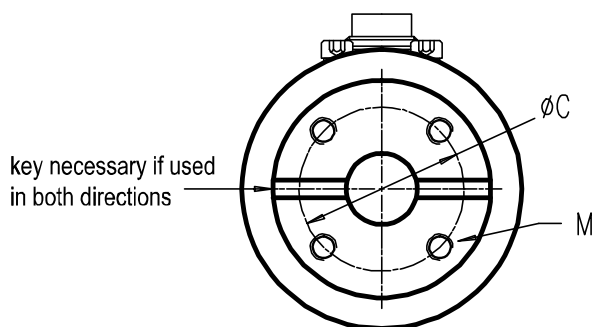
Capacities

6200: 10 - 20 - 50 - 100 - 200 - 500 - 1000 - 2000 N·m
 6205: (10) - (20) - (50) - (100) - (200) - (500) - 1000 - 2000 N·m
 Higher capacity on request

Specifications	0.25 %	
Repeatability error	<± 0.1	% F.S.*
Creep error over 30 min.	<± 0.1	% F.S.*
Zero shift after loading	<± 0.025	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-30...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.035	% F.S.*10°C
Zero balance	± 0.02	mV/V
Nominal sensitivity	1.5	mV/V
Sensitivity tolerance	<± 0.3	%
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	130	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	50	% F.S.*

* F.S. : Full Scale.
 Specifications subject to change without notice..

6200-6205 > STANDARD DIMENSIONS



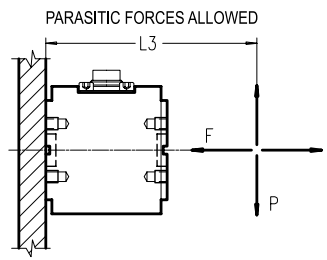
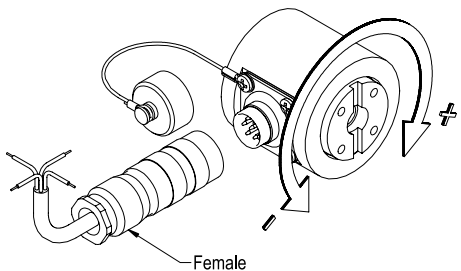
Ref. Item*	Capacities	ØA	ØB	ØC	ØD H7	E	E2	G	L	L2	M	N	IP	F max (N)	L3xP max (N x m)	Torsional stiffness (kN·m / rad)
6200-A	10 - 20 N·m	30	45	22	10	5	4	2	45	40	4x M4	4	IP54	100 - 160	8 - 10	2300 - 3500
6200-B	50 - 100 N·m	49	63	37	16	5	4	2	60	54	4x M6	6	IP67	2000 - 4000	16 - 32	4000 - 10200
6200-C	200 - 500 N·m	79	95	59	25	5	5	2.5	80	73	4x M10	10	IP67	6000 - 10000	64 - 163	20200 - 70000
620x-D	1 kN·m	99	112	78	40	5	6	3	125	115	4x M12	12	IP67	18000	323	105000
620x-E	2 kN·m	99	112	69	40	5	6	3	125	115	4x M16	16	IP67	30000	647	260000

*x=Material: 6200 - stainless steel; 6205 - nickel-plated steel

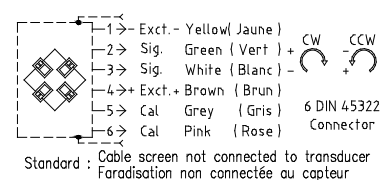
Other capacities and dimensions available on request

Dimensions in mm

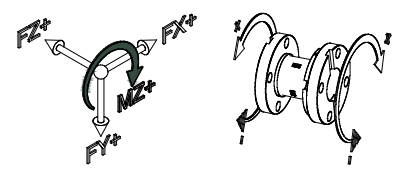
Other views



Wiring



Load direction



6305

REACTION TORQUE METERS FOR RATCHET WRENCH

Non-rotating torque meters designed to be placed between ratchet and wrench.



Features

- o Wide range of capacities: from 50 N·m to 20 kN·m
- o Easy to install (standardised wrenches)
- o Compact design
- o Protection class: IP54
- o Material: alloy steel
- o Cable length: 3 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 6305 - 2000 N·m



Application(s) SENSY's torque meters 6305 are perfectly designed for the following applications:

- Tightening torque control on torque wrenches,
- Tightening torque control on machines.

Capacities

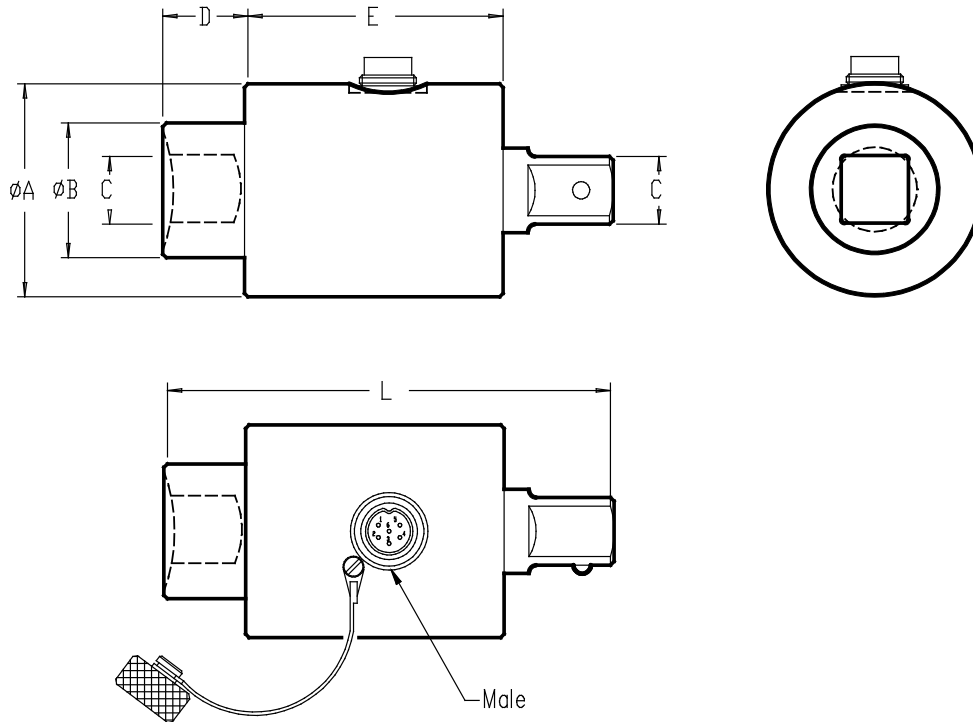
6305: 50 - 100 - 300 - 750 - 1000 - 2000 - (2500) - (5000) - (10 000) - (20 000) N·m

Specifications	0.25 %	
Combined error (non-linearity + hysteresis)	<± 0.25	% F.S.*
Repeatability error	<± 0.1	% F.S.*
Creep error over 30 min.	<± 0.1	% F.S.*
Zero shift after loading	<± 0.025	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	% F.S./10°C
Zero balance	± 0.02	mV/V
Nominal sensitivity	1.5	mV/V
Sensitivity tolerance	<± 0.3	%
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	120	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	40	% F.S.*
Static lateral force limit	10	% F.S.*

* F.S. : Full Scale.

Specifications subject to change without notice..

6305 > STANDARD DIMENSIONS

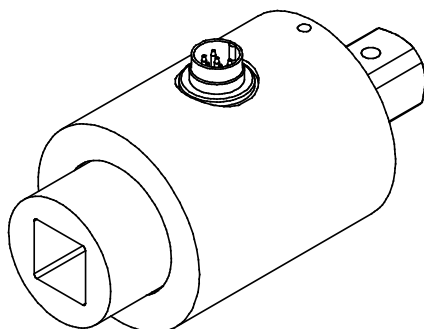


Ref. Item	Capacities	ØA	ØB	C (inch)	D	E	L		
							(mm)	(inch)	
6305-A	50 N·m	45	17.6	3/8"	10	47.5	75	2.95"	
6305-B	100 N·m	50	25	1/2"	16.5	73	127	5"	
6305-C	300 N·m	60	38	3/4"	22	73	127	5"	
6305-D	750 N·m	70	54	1"	30	82	155	6.1"	
6305-E	1 - 2 kN·m	85	69	1 1/2"	38	95	185	7.3"	
-	2.5 - 20 kN·m	According to customer design specifications							

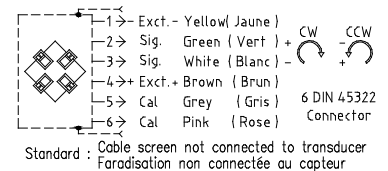
Other capacities and dimensions available on request

Dimensions in mm

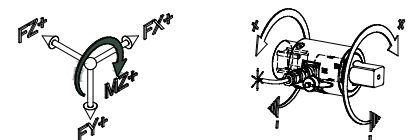
Other view



Wiring



Load direction



6300V-6305V

HIGH-RANGE REACTION TORQUE METERS

High-range reaction torque transducers with square ends.



Model 6305V - 1:1 MN·m



Features

- o Wide range of capacities: from 20 kN·m to 1.1 MN·m
- o Protection class: IP67
- o Material:
 - 6300V: stainless steel
 - 6305V: alloy steel
- o Cable length: 3 m (other lengths available on request)

Most popular options (see more in ANNEX)



Application(s) SENSY's torque meters 6300V-6305V are perfectly designed for the following applications:

- Tightening torque control on machines,
- Calibration of hydraulic torque wrenches / Iron roughneck, running casing tool calibration.

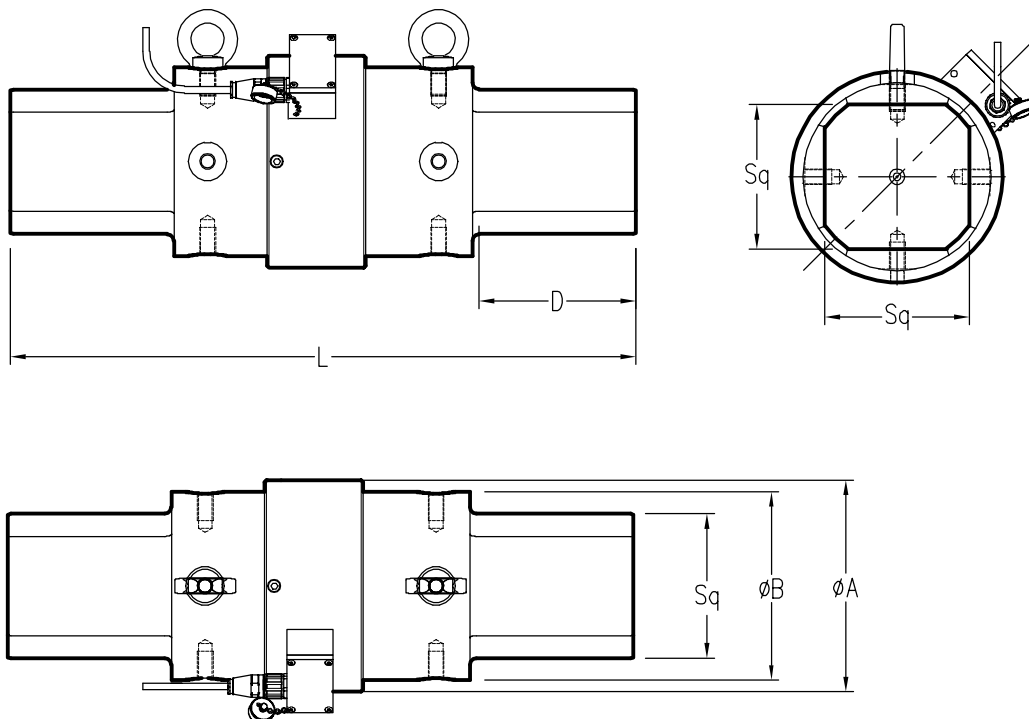
Capacities

6300V: 20 - 110 - 250 - (300) - (500) - (1100) kN·m
 6305V: (20) - (110) - (250) - (300) - (500) - (1100) kN·m

Specifications	0.5 %	
Combined error (non-linearity + hysteresis)	< ± 0.5	% F.S.*
Repeatability error	< ± 0.25	% F.S.*
Creep error over 30 min.	< ± 0.2	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-25...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	< ± 0.1	% F.S./10°C
Temperature coefficient of zero signal	< ± 0.1	% F.S./10°C
Zero balance	± 0.02	mV/V
Nominal sensitivity	1.5	mV/V
Sensitivity tolerance	< ± 0.5	%
Input resistance	350±2 or 700±2	ohm(s)
Output resistance	350±2 or 700±2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	150	% F.S.*
Breaking load	> 300	% F.S.*
Permissible dynamic loading	40	% F.S.*

* F.S. : Full Scale.
 Specifications subject to change without notice..

6300V-6305V > STANDARD DIMENSIONS



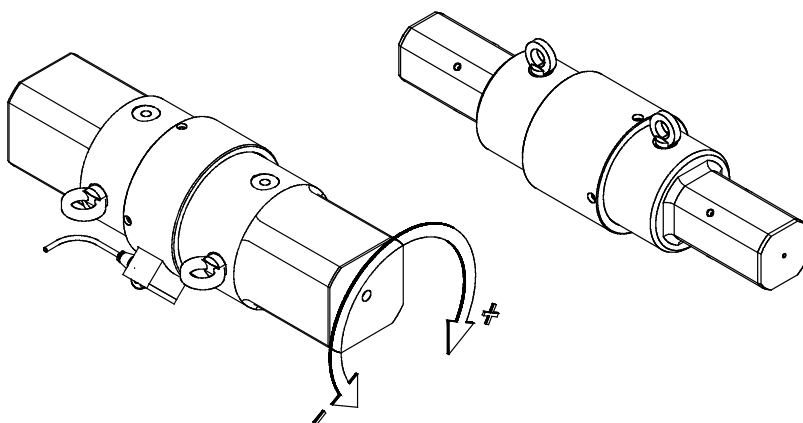
Ref. Item*	Capacities	ØA	ØB	D	L	Sq	Weight (kg)
630xV-A	20 kN·m	136	116	126	530	70	35
630xV-B	110 kN·m	220	196	163	650	150	140
630xV-C	250 kN·m	314	286	195	1000	200	440
-	300 kN·m - 1.1 MN·m	According to customer's design specifications					

*x=Material: 6300V - stainless steel; 6305V - alloy steel

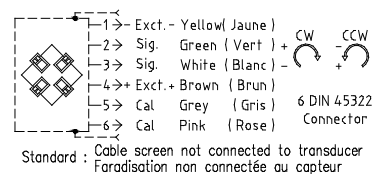
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



Wiring



Load direction



6500-6502
6500A-6502A

REACTION TORQUE METERS

Non-rotating torque meters with hexagonal head.



Model 6500 - 20 N·m / 6500A - 300 N·m



Features

- o 6500-6502: cable output with radial cable gland
- o 6500A-6502A: cable output with axial cable gland
- o Compact design, easy to install
- o 6500(A)-6502(A): mechanical fastening with threaded holes (see drawing)
- o Protection class: IP54
- o Material: - stainless steel (6500 / 6500A)
- anodised aluminium alloy (6502 / 6502A)
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options (see more in ANNEX)



Ex i



Application(s) SENSY's torque meters 6500-6502 / 6500A-6502A are perfectly designed for the following applications:

- Calibration of industrial torque wrench with torque control,
- Servo control or torque limitation in industrial process.

Capacities

6502 / 6502A: 2 - 5 N·m

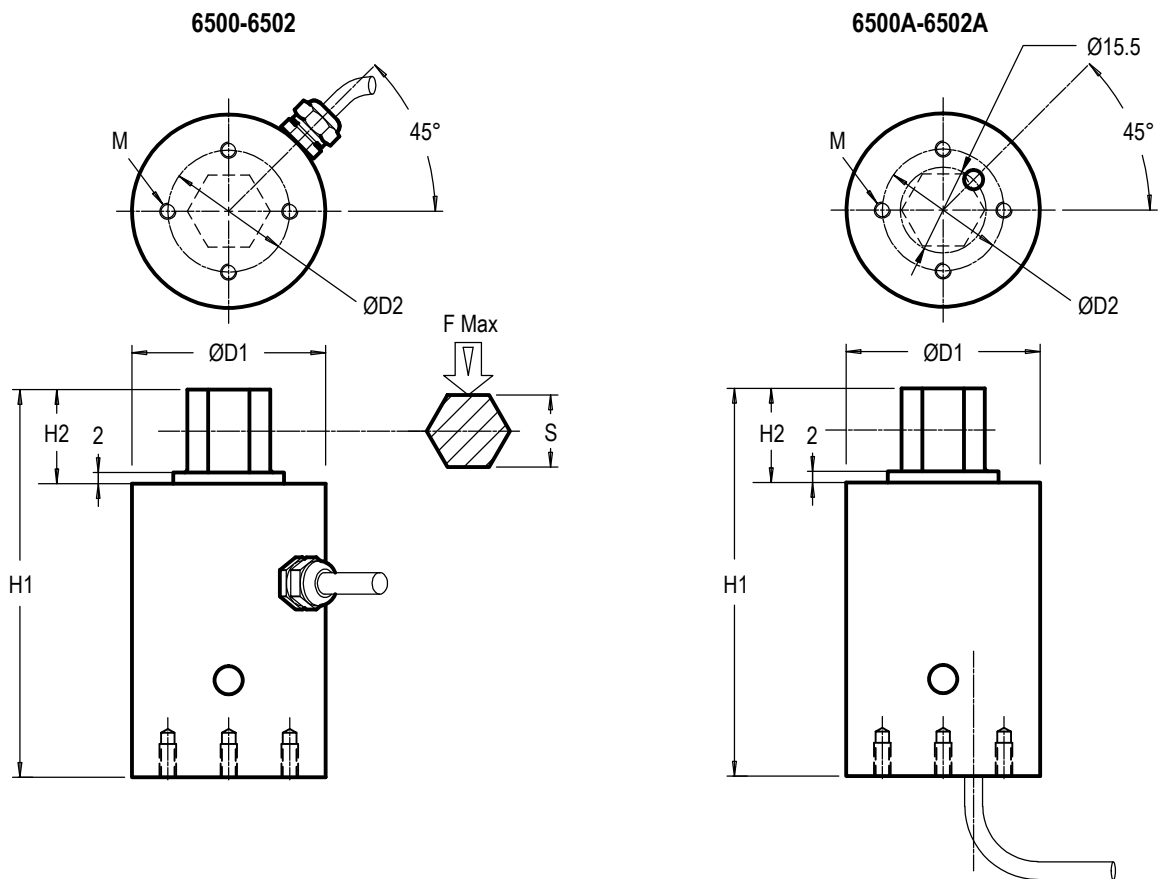
6500 / 6500A: 2 - 5 - 10 - 20 - 50 - 100 - 200 - 300 - 500 - 750 N·m

Specifications	0.25 %	
Combined error (non-linearity + hysteresis)	<± 0.25	% F.S.*
Repeatability error	<± 0.1	% F.S.*
Creep error over 30 min.	<± 0.1	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-30...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.035	% F.S.*10°C
Zero balance	± 0.02	mV/V
Nominal sensitivity	1.5	mV/V
Sensitivity tolerance	<± 0.3	%
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	120	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	40	% F.S.*
Static lateral force limit	10	% F.S.*

* F.S. : Full Scale.

Specifications subject to change without notice.

6500-6502 / 6500A-6502A > STANDARD DIMENSIONS



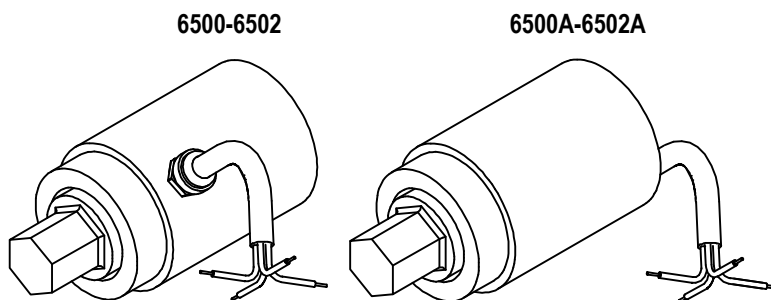
Ref. Item*	Capacities	H1	H2	ØD1	M	ØD2	S	F (N)	CL (m)
650x-A / 650xA-A	2 - 20 N·m	70	15	35	4 x M3	22	13	40 - 80	0.5
6500-C / 6500A-B	50 - 300 N·m	70	15	54	4 x M6	38	24	200 - 1300	1.5
6500-G / 6500A-C	500 - 750 N·m	85	17	62	6 x M8	48	24	1600 - 2200	3

*Material : 6500 / 6500A : stainless steel; 6502 / 6502A : aluminium

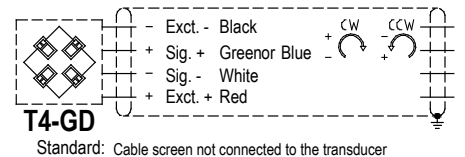
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



Wiring



Load direction



6500B

REACTION TORQUE METERS

Non-rotating torque meters with hexagonal head.



Model 6500B - 500 N·m



Features

- o Wide range of capacities: from 2 to 1000 N·m
- o Cable output with radial connector (see drawing)
- o Mechanical fastening by collar (see drawing)
- o Protection class: IP54
- o Material: stainless steel

Most popular options (see more in ANNEX)



Ex i



Application(s)

SENSY's torque meters 6500B are perfectly designed for the following applications:

- Calibration of industrial torque wrench with torque control,
- Servo control or torque limitation in industrial process.

Capacities

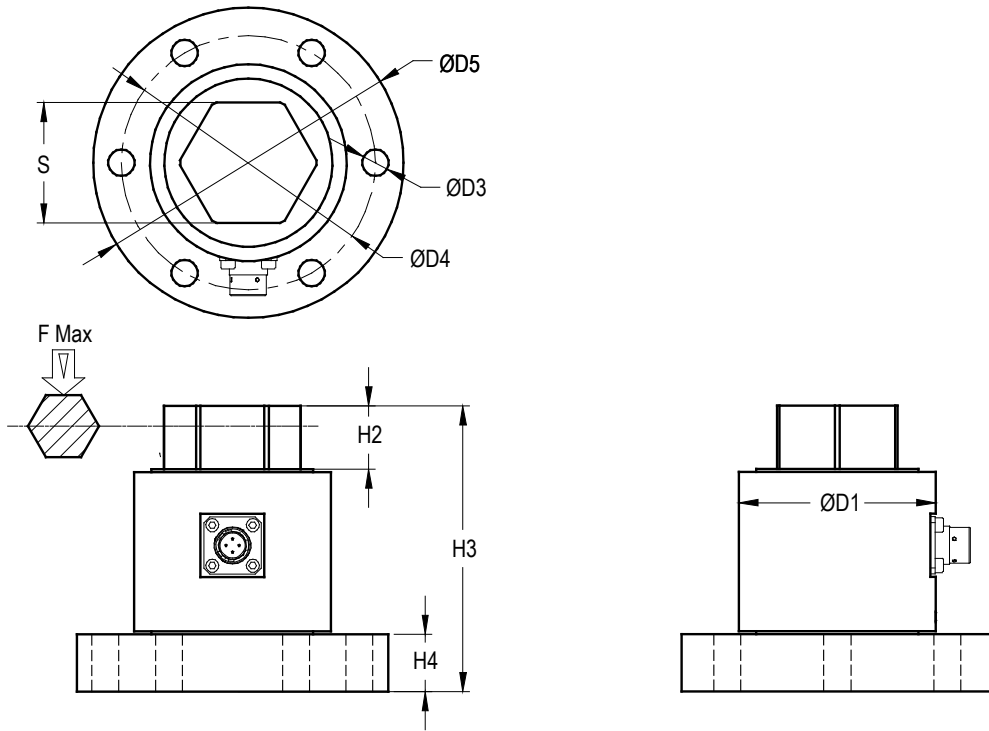
6500B: 2 - 5 - 10 - 20 - 50 - 100 - 200 - 300 - 500 - 750 - 1000 N·m

Specifications	0.25 %	
Combined error (non-linearity + hysteresis)	<± 0.25	% F.S.*
Repeatability error	<± 0.1	% F.S.*
Creep error over 30 min.	<± 0.1	% F.S.*
Zero shift after loading	<± 0.025	% F.S.*
Reference temperature	23	°C
Compensated temperature range	-10...+45	°C
Service temperature range	-30...+70	°C
Storage temperature range	-50...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	% F.S./10°C
Temperature coefficient of zero signal	<± 0.035	% F.S./10°C
Zero balance	± 0.02	mV/V
Nominal sensitivity	1.5	mV/V
Sensitivity tolerance	<± 0.3	%
Input resistance	350 ± 2	ohm(s)
Output resistance	350 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	Mohm(s)
Reference excitation voltage	10	VDC
Permissible nominal range of excitation voltage	3...12	VDC
Safe load limit	120	% F.S.*
Breaking load	>300	% F.S.*
Permissible dynamic loading	40	% F.S.*
Static lateral force limit	10	% F.S.*

* F.S. : Full Scale.

Specifications subject to change without notice.

6500B > STANDARD DIMENSIONS

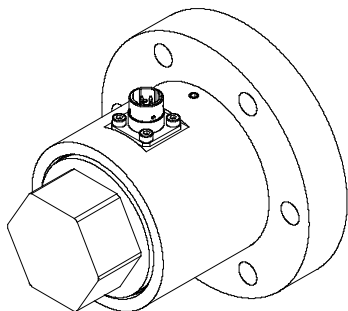


Ref. Item	Capacities	H2	H3	H4	ØD1	ØD3	ØD4	ØD5	S	F (N)	CL (m)
6500B-A	2 - 20 N·m	15	78	8	35	4x4.2	45	54	13	40	3
6500B-B	50 - 300 N·m	15	81	11	54	4x6.5	68	79	24	200	3
6500B-C	500 - 750 N·m	17	85	16	62	6x8.5	80	98	24	1600	3
6500B-D	1000 N·m	20	90	18	62	6x8.5	80	98	38	3000	6

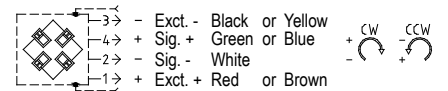
Other capacities and dimensions available on request

Dimensions in mm

Other view



Wiring



JAEM-GD

Standard: Cable screen not connected to the transducer

Load direction



62100-62200

NON-CONTACT ROTARY TORQUE SENSORS

General purpose, low-cost, non-contact rotary torque sensors with square or round shaft.



Features

- o Bidirectional
- o Cost effective solution
- o Measurement range up to 500 N·m
- o Rotating speed up to 5000 rpm
- o Round or square shafts (see drawing)
- o Integrated signal conditioning
- o Analogue output signal (see Wiring table)
- o Cable length: 5 m (other lengths available on request)

Model 62100 - 500 N·m



Application(s) SENSY's torque sensors 62100 and 62200 are perfectly designed for the following applications:

- Torque measurement on test benches,
- Torque measurement on production lines,
- Torque measurement on rotating machines.

Capacities

62100-62200: 2.5 - 5 - 7.5 - 17.5 - 75 - 175 - 250 - 500 N·m

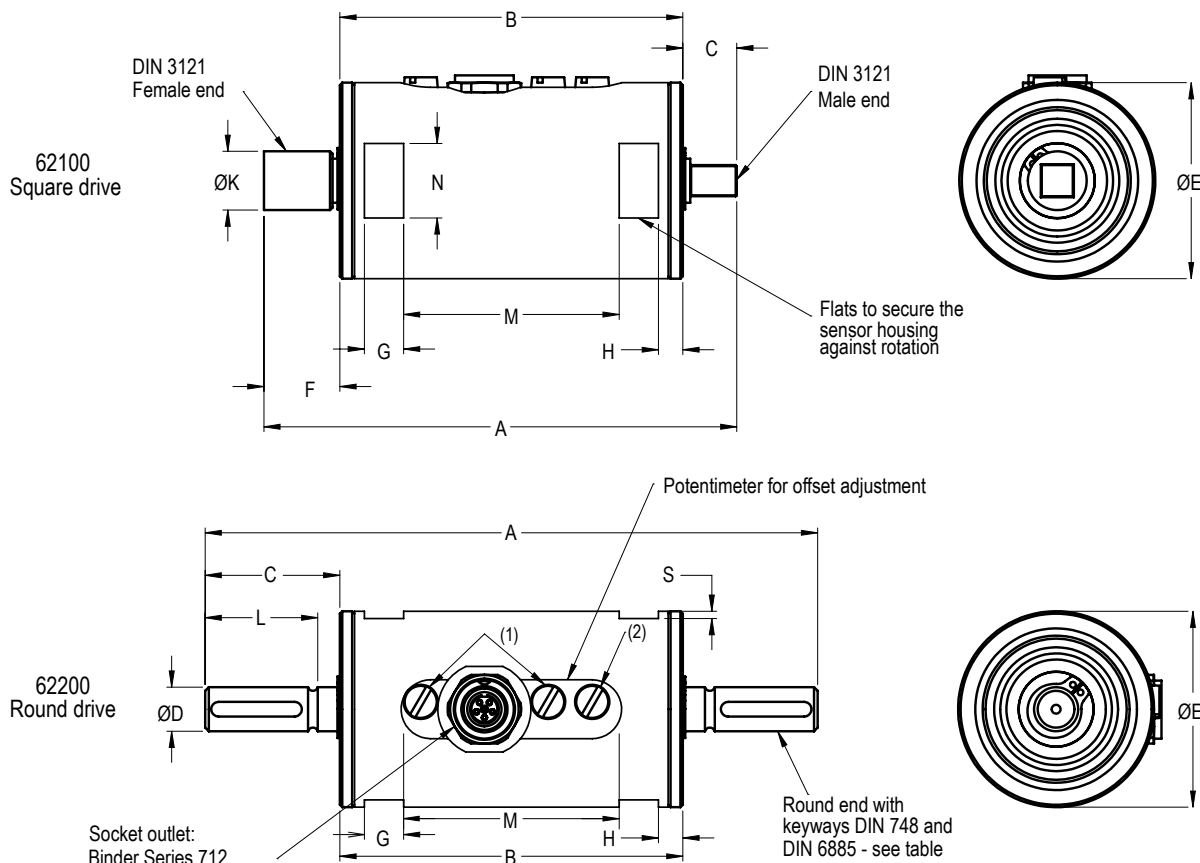
Specifications	62100	62200	
Shaft	Square	Round with key stone	-
Combined error (non-linearity + hysteresis)	<± 1**	<± 1**	% F.S.*
Repeatability error	<± 0.05	<± 0.05	% F.S.*
Rotational signal uniformity	<± 1	<± 1	% F.S.*
Compensated temperature range	+15...+35	+15...+35	°C
Service temperature range	-40...+85	-40 ... +85	°C
Storage temperature range	-40 ... +85	-40 ... +85	°C
Temperature coefficient of the sensitivity	< 0.5	< 0.5	% F.S./10°C
Temperature coefficient of zero signal	< 0.5	< 0.5	% F.S./10°C
Nominal sensitivity	± 2**	± 2**	V
Zero signal	2.5	2.5	V
Power supply	6...15 VDC	6...15 VDC	-
Consumption (max.)	10	10	mA
Start-up current	< 40	< 40	mA
Maximum rotational speed	1000	5000	rpm
Safe load limit	130	130	% F.S.*
IP rating	IP50	IP50	-

*F.S. : Full Scale.

** : See individual calibration sheet.

Specification subject to change without notice..

62100-62200 > STANDARD DIMENSIONS



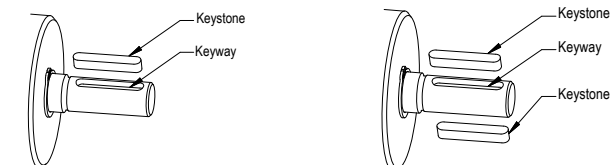
(1) (2) Do not loosen or tighten the assembly screws

Ref. Item	Capacities	Dimensions														
		Square drive shaft (inch)	A	B	C	ØD	ØE	F	G	H	ØK	L	M	N	P	S
(62100)																
62100-A	2.5 / 5.0 / 7.5 / 17.5 N·m	1/4"	95.5	70	9.5	/	40	16	8	5	12	/	43.9	15	37	1.5
62100-B	75 N·m	3/8"	107	70	13	/	50	24	8	5	18	/	43.9	18	47	1.5
62100-C	175 / 250 N·m	1/2"	123.5	70	18.5	/	50	35	8	5	24	/	43.9	18	47	1.5
62100-D	500 N·m	3/4"	146	87	29.6	/	60	29.6	10.5	2	33.5	/	61.4	19	57	1.5
(62200)																
62200-A	2.5 / 5.0 / 7.5 / 17.5 N·m	Ø 9	125	70	27.5	9	40	/	8	5	/	23	43.9	15	37	1.5
62200-B	75 N·m	Ø 14	139	70	34.5	14	50	/	8	5	/	30	43.9	18	47	1.5
62200-C	175 / 250 N·m	Ø 19	179	70	54.5	19	50	/	8	5	/	50	43.9	18	47	1.5
62200-D	500 N·m	Ø 25	220	87	66.6	25	60	/	10.5	2	/	/	61.4	19	57	1.5

→ Other capacities and dimensions available on request

Dimensions in mm

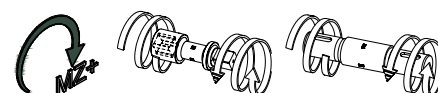
Accessories



Wiring

Pin	Colour	Description	Value
1	White	Supply Voltage V _{cc}	6 - 15 V
2	Brown	Analogue output signal	
3	Black	Ground GND	
4	Blue	Not used	
5	Grey	Reference Voltage V _{ref}	2.5 V

Load direction



Round drive	Dimensions Keyway (mm)			Keystones		
	Width	Depth	Length	Height	Length	Quantity
Ø 9 mm	3	1.8	18.5	3	18	1
Ø 14 mm	5	3	25.5	5	25	1
Ø 19 mm	6	3.5	45.5	6	45	1
Ø 25 mm	8	4	50.5	8	50	2



62300

NON-CONTACT ROTARY TORQUE SENSORS

General purpose, high rotating speed, non-contact rotary torque sensors with round shaft.



Features

- o Bidirectional
- o Maintenance free
- o Round shafts (see drawing)
- o Measurement range up to 100 N·m
- o Max. rotating speed:
 - Round shaft: 10 000 rpm
- o Integrated signal conditioning
- o Analogue output signal (see Wiring table)
- o Cable length: 5 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 62300 - 20 N·m



Application(s) SENSY's torque sensors 62300 are perfectly designed for the following applications:

- Torque measurement on test benches,
- Torque measurement on production lines,
- Torque measurement on rotating machines.

Capacities

62300: 1 - 2.5 - 5 - 10 - 20 - 50 - 100 N·m

Specifications	62300	
Combined error (non-linearity + hysteresis)	<± 0.5	% F.S.*
Repeatability error	<± 0.05	% F.S.*
Rotational signal uniformity	<± 0.5	% F.S.*
Compensated temperature range	+15...+35	°C
Service temperature range	-30 ... +85	°C
Storage temperature range	-30 ... +85	°C
Temperature coefficient of the sensitivity	< 0.1	% F.S./10°C
Temperature coefficient of zero signal	< 0.1	% F.S./10°C
Nominal sensitivity	± 4**	V
Zero signal	5	V
Power supply	5...28 VDC	-
Consumption (max.)	37...45	mA
Start-up current	< 100	mA
Safe load limit	130	% F.S.*
IP rating	IP50	-

*F.S.: Full Scale.

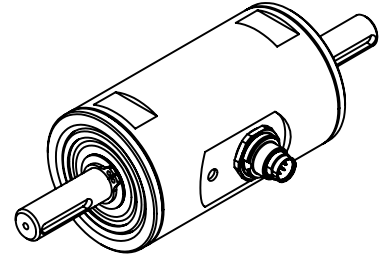
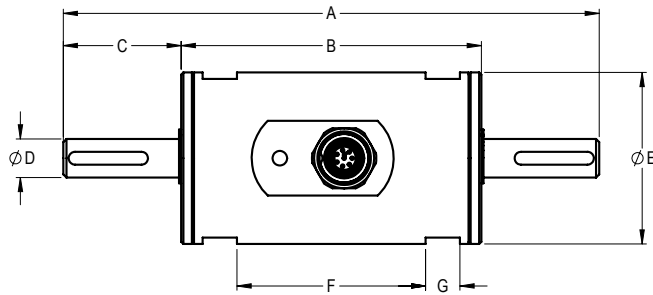
** : See individual calibration sheet

Specification subject to change without notice..

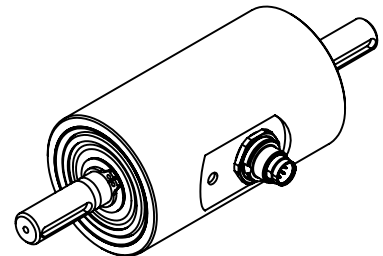
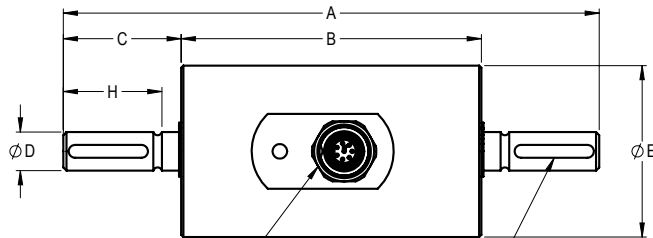
62300 > STANDARD DIMENSIONS



62300-A



62300-B to C



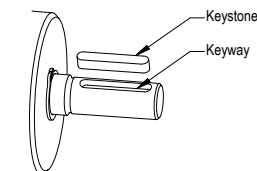
Socket outlet: Binder 09-0427-30-08
 Round end with feather key
 DIN 748 and DIN 6885

Ref. Item	Capacities	Shaft	Dimensions									
			A	B	C	ØD	ØE	F	G	H	I	J
62300-A	1 N·m	Round Ø 8 mm	125	70	27.5	8g6	40	44	8	/	/	/
62300-B	2.5 - 5 - 10 - 20 N·m	Round Ø 9 mm	125	70	27.5	9g6	40	/	/	23	/	20
62300-C	50 -100 N·m	Round Ø 15 mm	139	70	35	15g6	50	/	/	/	/	20

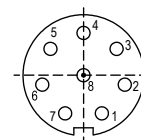
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

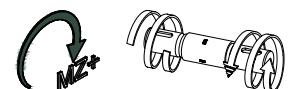


Wiring



Pin	Colour	Description	Value
1	White	USB/CAN-Bus	D-/H
2	Brown	USB/CAN-Bus	D+/L
3	Green	Optional - Angle Channel A	0...5 V
4	Yellow	Optional - Angle Channel B	0...5 V
5	Grey	Analogue GND	-
6	Pink	Analogue output signal	0...10 V
7	Blue	Ground GND	-
8	Red	Supply VCC	5...28 V

Load direction



Dimensions Keyway (mm)				Keystones		
Round drive	Width	Depth	Length	Height	Length	Quantity
Ø 8 mm	3	1.3	18.5	3	18	1
Ø 9 mm	3	1.8	18.5	3	18	1
Ø 15 mm	5	3	25.5	5	25	1



General purpose, high-accuracy non-contact rotary torque sensors.



Features

- o Bidirectional
- o Measurement range up to 2000 N·m
- o Combined error (non-linearity + hysteresis):
 - 63000: $\pm 0.2\%$ F.S.*
 - 64000: $\pm 0.1\%$ F.S.*
- o Rotational signal uniformity:
 - 63000: $\pm 0.2\%$ F.S.*
 - 64000: $\pm 0.1\%$ F.S.*
- o Integrated signal conditioning
- o Analogue output signal (see Wiring table)
- o Cable length: 5 m (other lengths available on request)

Most popular options (see more in ANNEX)



Model 63000 - 250 N·m



Application(s) SENSY's torque sensors 63000 and 64000 are perfectly designed for the following applications:

- Torque measurement on test benches, production lines and rotating machines.

Capacities

63000: 50 - 100 - 250 - 500 - 1000 - 2000 N·m

64000: 50 - 100 - 250 - 1000 N·m

Specifications	63 / 64000-A	63 / 64000-B	63 / 64000-C	
Capacities	50 - 100 N·m	250 - 500 N·m	1000 - 2000 N·m***	-
Repeatability error	$\leq \pm 0.05$	$\leq \pm 0.05$	$\leq \pm 0.05$	% F.S.*
Compensated temperature range	+15...+35	+15...+35	+15...+35	°C
Service temperature range	-40...+85	-40...+85	-40...+85	°C
Storage temperature range	-40...+85	-40...+85	-40...+85	°C
Temperature coefficient of the sensitivity	< 0.5	< 0.5	< 0.5	% F.S./10°C
Temperature coefficient of zero signal	< 0.2	< 0.2	< 0.2	% F.S./10°C
Nominal sensitivity	$\pm 4^{**}$	$\pm 4^{**}$	$\pm 4^{**}$	V
Zero signal	5	5	5	V
Power supply	11...28 VDC	11...28 VDC	11...28 VDC	-
Consumption (max.)	150	150	150	mA
Start-up current	< 200	< 200	< 200	mA
Maximum rotational speed	10000	8000	5000	rpm
Safe load limit	130	130	130	% F.S.*
Breaking load	300	300	300	% F.S.*
IP rating	IP50	IP50	IP50	-

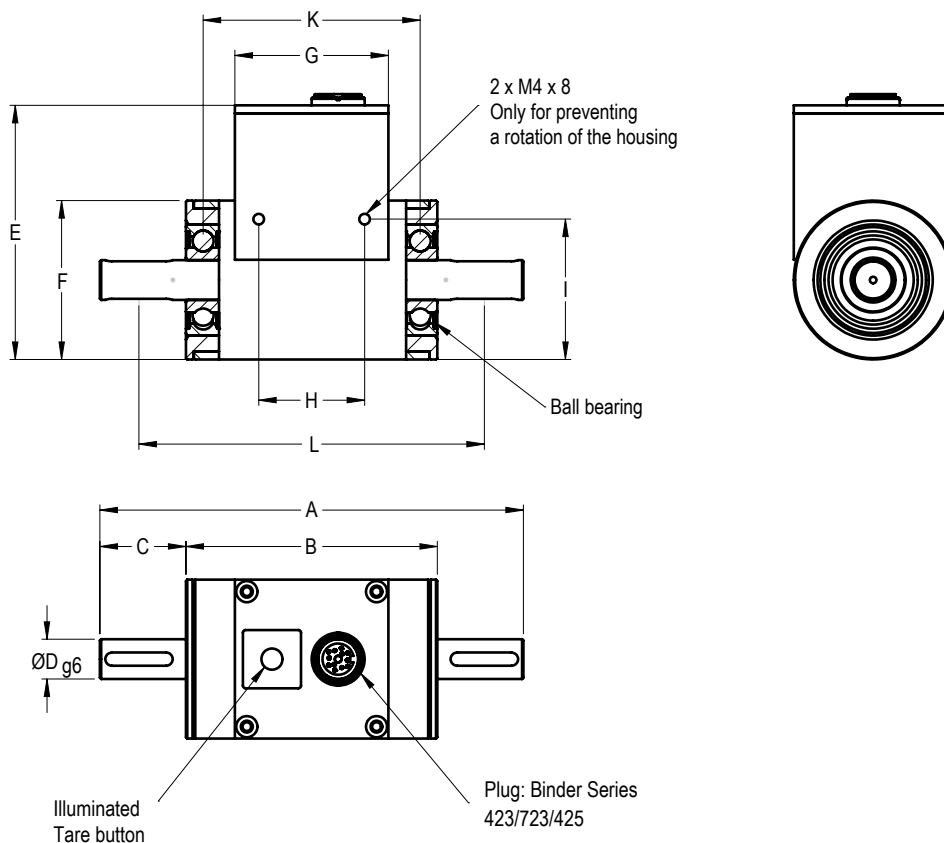
*F.S. : Full Scale.

** : See individual calibration sheet.

*** : 2000 N·m only for model 63000.

Specification subject to change without notice..

63000-64000 > STANDARD DIMENSIONS



Ref. Item	Capacities	Dimensions (mm):								
		A	B	C	Ø D	E	F	G	H	I
63 / 64000-A	50 - 100 N·m	160	93	33.5	15	96	60	61	40	57
63 / 64000-B	250 - 500 N·m	220	101	59.5	25	106	70	61	40	67
63 / 64000-C	1 kN·m - 2 kN·m	350	130	110	40	126	90	80	60	87

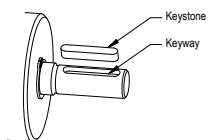
* 2 kN·m only for model 63000

Ball bearing							
Shaft ending	Distance K	Outer diameter	Inner diameter	Max. rotation of bearing (rpm)	Loading rating (kN)		
					Dyn. C	Stat. C ₀	
Ø 15 mm	82.0	35	15	25.000	7.8	3.8	
Ø 25 mm	84.8	52	25	16.000	13.8	7.65	
Ø 40 mm	114.6	68	40	11.000	17.8	11.6	

→ Other capacities and dimensions available on request

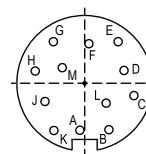
Dimensions in mm

Accessories



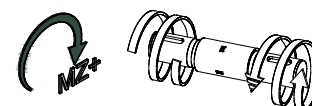
Dimensions of keystone groove (mm)				Keystone DIN 6885			Keystone position
Shaft ending (mm)	Width	Depth	Length	Height	Length	Quantity	Distance L
Ø 15	5N9	3	25.5	5	25	1	130.5
Ø 25	8N9	4	50.5	7	50	2	165.5
Ø 40	12N9	5	90.5	8	90	2	252.0

Wiring



Pin	Colour	Description	Value
A	White	Supply Voltage V _{cc}	11 V...28 V
B	Brown	Ground GND	
C	Green	Analogue out	0 V...10 V
D	Yellow	Analogue GND	
E	Grey	Analogue out	4-20 mA
F	Pink	Optional - Angle Channel A	0 V...5 V
G	Blue	Optional - Angle Channel I	0 V...5 V
H	Red	Optional - Angle Channel B	0 V...5 V
I	Black	-	
K	Violet	For internal use only	RX (TTL Pegel)
L	Grey-Pink	For internal use only	RX (TTL Pegel)
M	Red-Blue	Digital GND	

Load direction



65000

HIGH-CAPACITY NON-CONTACT ROTARY TORQUE SENSORS

General purpose, high capacity non-contact rotary torque sensors.



Features

- o Bidirectional
- o Measurement range up to 25 kN·m (>25 kN·m on request)
- o Rotating speed up to 8000 rpm
- o Integrated signal conditioning
- o Analogue output signal (see Wiring table)
- o Cable length: 5 m

Most popular options (see more in ANNEX)



Model 65000 - 10 kN·m



Application(s) The SENSY's torque sensors 65000 are perfectly designed to the following applications:

- Torque measurement on test benches, production lines and rotating machines.

Capacities

65000: 10 - 15 - 20 - 25 kN·m

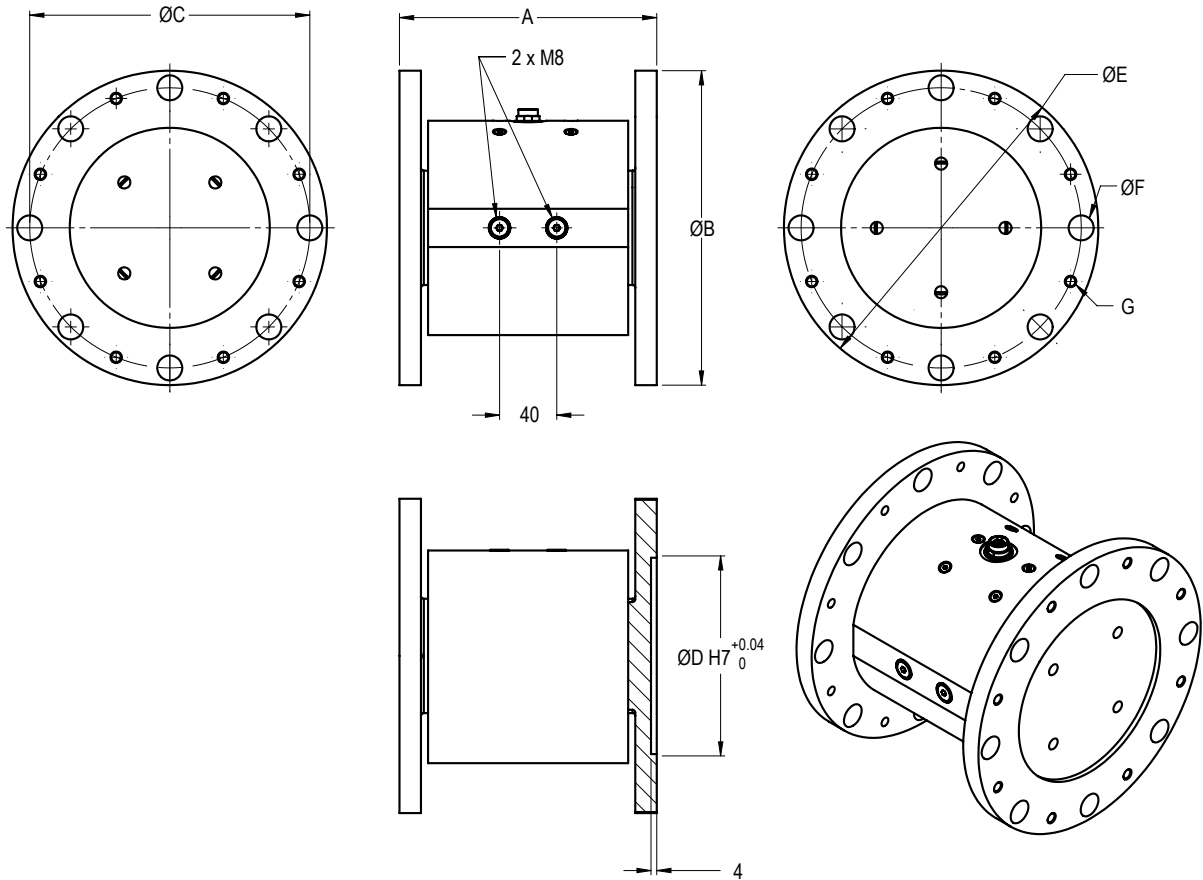
Specifications	65000-A	65000-B	
Capacities	10 - 15 kN·m	20 - 25 kN·m	-
Combined error (non-linearity + hysteresis)	<± 0.5	<± 0.5	% F.S.*
Repeatability error	<± 0.1	<± 0.1	% F.S.*
Rotational signal uniformity	<± 0.5	<± 0.5	% F.S.*
Compensated temperature range	+15...+35	+15...+35	°C
Service temperature range	-40...+85	-40...+85	°C
Storage temperature range	-40...+85	-40...+85	°C
Temperature coefficient of the sensitivity	< 0.5	< 0.5	% F.S./10°C
Temperature coefficient of zero signal	< 0.5	< 0.5	% F.S./10°C
Nominal sensitivity	± 4**	± 4**	V
Zero signal	5	5	V
Power supply	9...28 VDC	9...28 VDC	-
Consumption (max.)	40	40	mA
Start-up current	< 100	< 100	mA
Maximum rotational speed	8000	5000	rpm
Torque limit	20	30	kN·m
IP rating	IP50	IP50	-

*F.S. : Full Scale.

** : See individual calibration sheet.

Specification subject to change without notice..

65000 > STANDARD DIMENSIONS

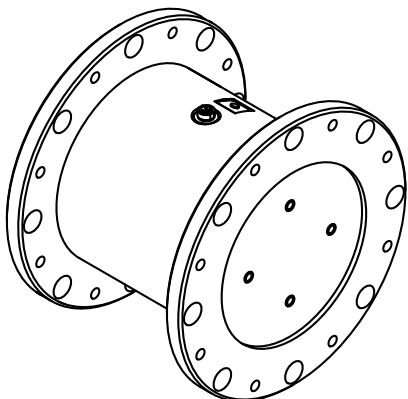


Ref. Item	Capacities	Dimensions								
		A	$\varnothing B$	$\varnothing C$	$\varnothing D$	$\varnothing E$	F	G	Screw	Tightening torque (N·m)
65000-A	10 - 15 kN·m	170	150	196	140	220	17	-	8 x M16, 10.9	145
65000-B	20 - 25 kN·m	200	190	288	174	326	19	M8	16 x M18, 10.9	500

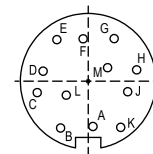
Other capacities and dimensions available on request

Dimensions in mm

Other view



Wiring



Pin	Colour	Description	Value
A	Blanc	CAN / USB	H / D-
B	Brown	CAN / USB	L / D+
C	Green	Optional - Angle Channel A	0...5 V
D	Yellow	Optional - Angle Channel B	0...5 V
E	Grey	Analogue GND	-
F	Pink	Analogue voltage	0...10 V
		Analogue current	4...20 mA
G	Blue	Ground GND	-
H	Red	Supply Voltage Vcc	9...28 V
J	Black	USB GND	-
K	Violet	-	-
L	Grey-Pink	USB	5 V
M	Red-Blue	-	-

Load direction



67000

NON-CONTACT ROTARY TORQUE SENSORS

General purpose, non-contact rotary torque sensors with flanges or PTO shaft.



Model 67000 3 kN·m



Features

- o Bidirectional
- o Measurement range up to 5 kN·m
- o Rotating speed up to 3600 rpm
- o Integrated signal conditioning
- o Analogue output signal (see Wiring table)
- o Cable length: 5 m (other lengths available on request)
- o Torque limit 5000 N·m

Most popular options (see more in ANNEX)



IP65
Not for Angle Sensor



Application(s) SENSY's torque sensors 67000 are perfectly designed for the following applications:

- Torque measurement on machines for agriculture or forestry,
- Torque measurement on test benches, production lines and rotating machines.

Capacities

67000: 3 - 5 kN·m

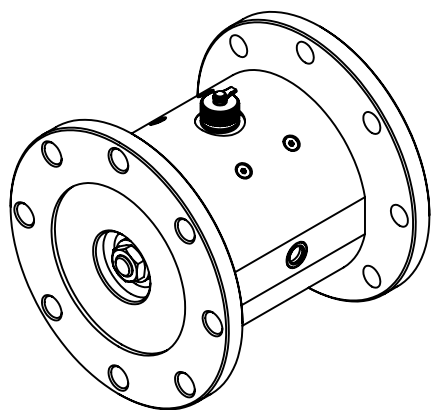
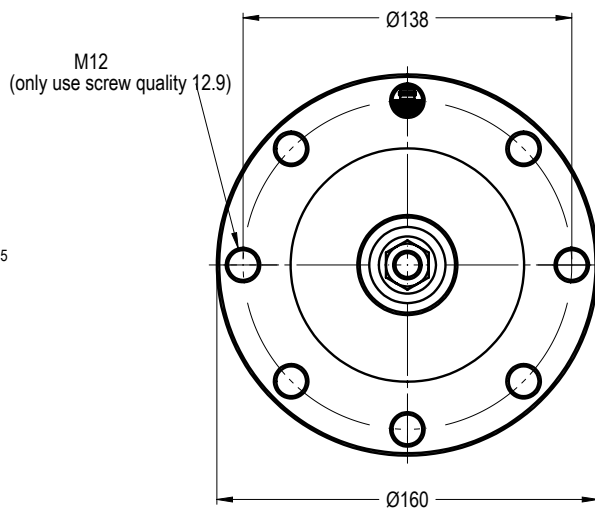
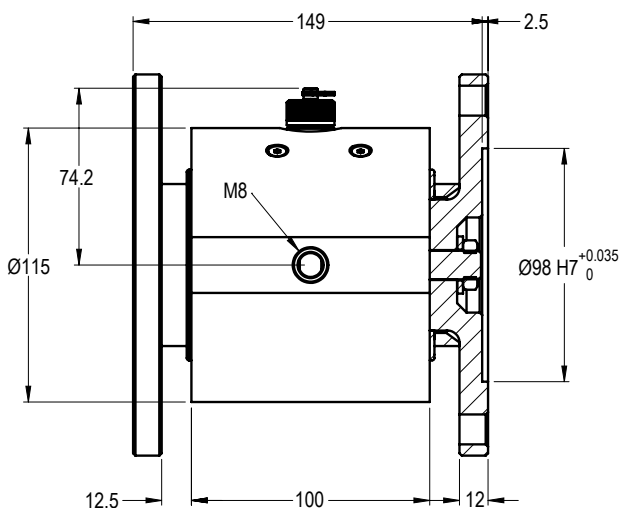
Specifications	67000	
Combined error (non-linearity + hysteresis)	<± 0.5	% F.S.*
Repeatability error	<± 0.05	% F.S.*
Rotational signal uniformity	<± 0.5	% F.S.*
Compensated temperature range	+15...+35	°C
Service temperature range	-40...+85	°C
Storage temperature range	-40...+85	°C
Temperature coefficient of the sensitivity	< 0.5	% F.S./10°C
Temperature coefficient of zero signal	< 0.5	% F.S./10°C
Nominal sensitivity	± 4**	V
Zero signal	5	V
Power supply	9...28 VDC	-
Consumption (max.)	100	mA
Start-up current	< 150	mA
IP rating	IP50	-

* F.S. : Full Scale.

** : see individual calibration sheet

Specification subject to change without notice..

67000 > STANDARD DIMENSIONS

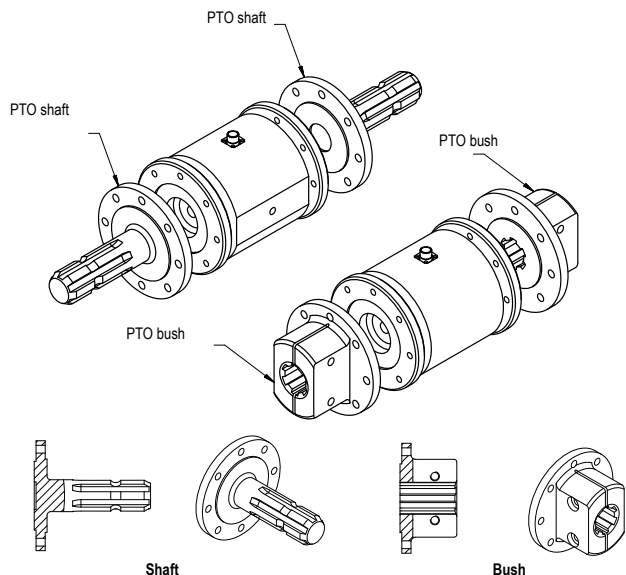


Ref. Item	Capacities	PTO shaft and bush	
		Shaft	Bush
67000-A	3 kN·m	PTO shaft 6 teeth (1 3/8") ≤ 2.5 kN·m	≤ 5 kN·m
67000-B	3 - 5 kN·m	PTO shaft 6 teeth (1 3/4") ≤ 4.5 kN·m	≤ 5 kN·m
67000-C	3 kN·m	PTO shaft 21 teeth (1 3/8") ≤ 3 kN·m	≤ 5 kN·m
67000-D	3 - 5 kN·m	PTO shaft 20 teeth (1 3/4") ≤ 5 kN·m	≤ 5 kN·m

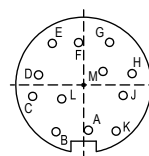
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

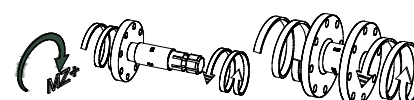


Wiring



Pin	Colour	Description	Value
A	White	CAN / USB	H / D-
B	Brown	CAN / USB	L / D+
C	Green	Optional - Angle Channel A	0...5 V
D	Yellow	Optional - Angle Channel B	0...5 V
E	Grey	Analogue GND	-
F	Pink	Analogue voltage	0...10 V
		Analogue current	4...20 mA
G	Blue	Ground GND	-
H	Red	Supply Voltage Vcc	9...28 V
J	Black	USB GND	-
K	Violet	-	-
L	Grey-Pink	USB	5 V
M	Red-Blue	-	-

Load direction



ACCESSORIES



LOAD CELL
MANUFACTURER



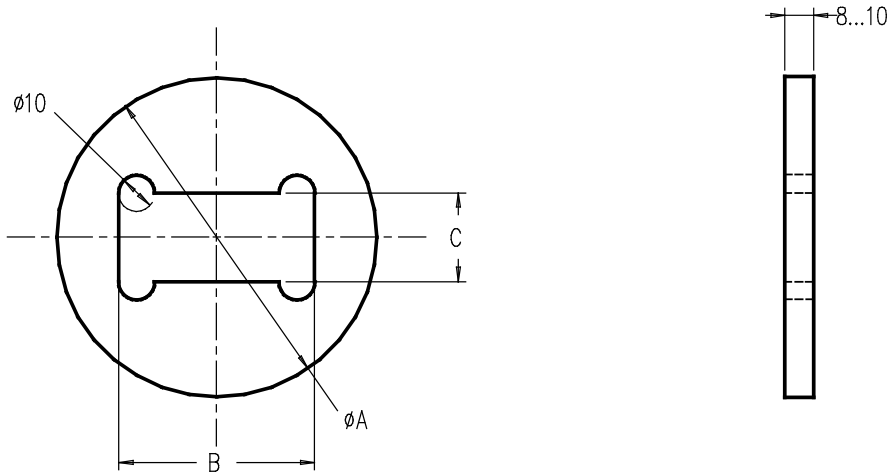
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PRODUCTS OVERVIEW

ACCESSORIES

	MODELS																		
	2000S	2600	2710-2715	2712	2712-ISO	2715-ISO	2960-2962-2965	3100P	3115-ISO	3300	3500	4500	5100-5105	5105-ISO	5510	5900		5930-5932	5950
F2000S	●																		p. 44
I2000S-I2005S	●																		p. 45
D2600-D2605		●																	p. 55
I2600-I2605		●																	p. 54
C2712			●	●	●	●													p. 194
T2960-T2962-T2965						●													p. 15
H3100P							●												p. 60
I3100P-I3105P							●												p. 61
M3100P-M3105P							●												p. 63
C3300									●										p. 66
K3300								●											p. 67
I3500-I3505										●									p. 71
I4500-I4505											●								p. 75
F5510														●					p. 82
I5510-I5515														●					p. 83
R5510														●					p. 85
A5900																●			p. 30
R5900																●			p. 31
A5950																		●	p. 90
I5950-I5955																		●	p. 91
M5950																		●	p. 93
APPUI			●	●	●	●	●												p. 195
CASE-F / CASE-P																			Available for each model on request p. 200 / 201
EMBOF	●												●	●				●	p. 196
EMBOM	●		●	●	●	●	●												p. 197
PADIN									●				●	●					p. 198
SUPOR			●	●	●	●	●		●				●	●					p. 199

C2712 > STANDARD DIMENSIONS



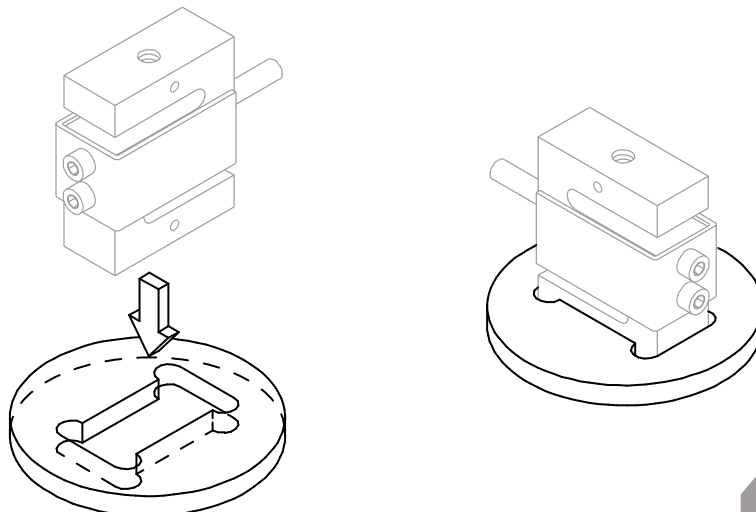
Ref. Item*	ϕA	B	C
C2712-ABC	89	55	25
C2712-D	109	70	30
C2712-G	139	98	38
C2712-H	179	118	56

* Material: aluminium

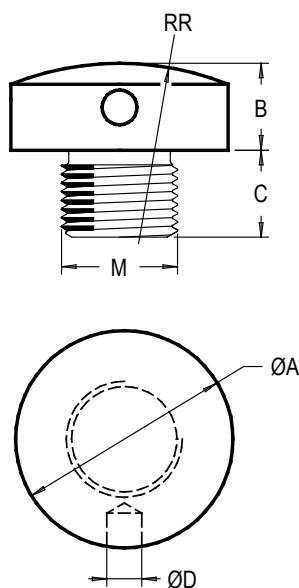
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



APPUI > STANDARD DIMENSIONS

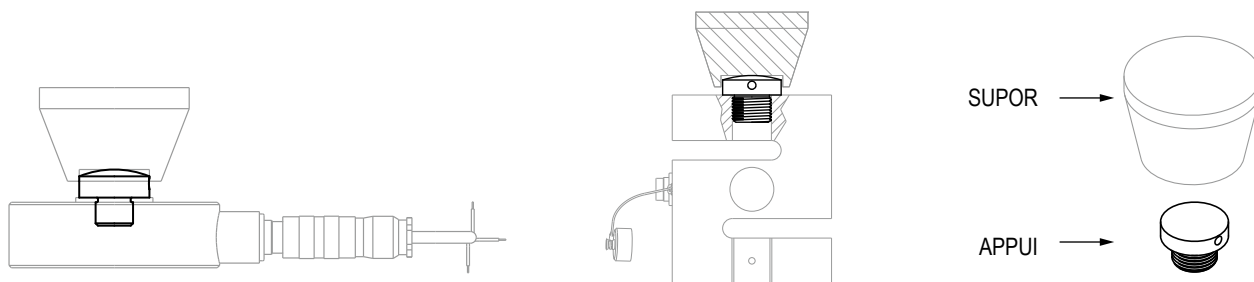


Ref. Item*	M	ØA	B	C	ØD	RR	Weight (kg)
APPUI-6	M 6	12	7	8	3 (1x)	16	0.02
APPUI-8	M 8	20	7	8	3 (1x)	25	0.02
APPUI-10	M 10	20	7	10	3 (1x)	25	0.02
APPUI-12	M 12	20	10	10	3 (1x)	35	0.03
APPUI-16	M 16	30	12	12	4 (1x)	50	0.08
APPUI-16B	M 16	36	12	12	5 (1x)	100	0.11
APPUI-20x1.5	M 20 x 1.5	36	12	15	5 (1x)	70	0.12
APPUI-24x2	M 24 x 2	36	12	18	5 (1x)	60	0.15
APPUI-30x2	M 30 x 2	45	15	20	6 (2x)	100	0.28
APPUI-36x3	M 36 x 3	56	20	24	6 (2x)	150	0.55
APPUI-36Bx3	M 36 x 3	69	20	35	6 (2x)	250	0.84
APPUI-45x3	M 45 x 3	64	20	30	6 (2x)	200	0.84
APPUI-56x4	M 56 x 4	90	24	35	8 (2x)	300	1.8
APPUI-60x4	M 60 x 4	90	27	40	10 (2x)	350	2.14
APPUI-64x4	M 64 x 4	90	27	40	10 (2x)	350	2.27
APPUI-90x4	M 90 x 4	125	33	50	12 (2x)	450	5.46

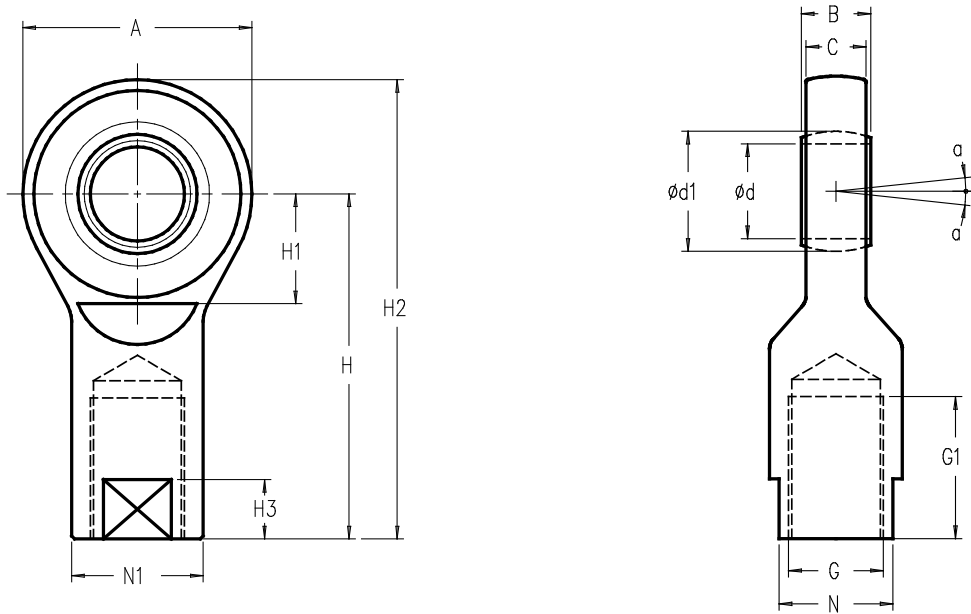
* Material: stainless steel

Dimensions in mm

Other views



EMBOF > STANDARD DIMENSIONS



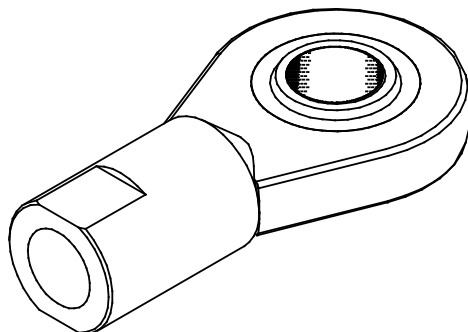
Ref. Item*	Dimension G	Capacities (N)		Ød	A	B	C	H	a (degree)	Ød1	G1	H1	H2	H3	N	N1	Weight (kg)
		Dynamic	Static														
EMBOF-M6-BA	M6	3600	9000	6	21	6	4.3	30	13	10	11	10.5	40.5	8	9	11	0.017
EMBOF-M8-BA	M8	5850	14600	8	24	8	6	36	15	13	15	12	48	10	11	13	0.034
EMBOF-M10-BA	M10	8560	21600	10	29	9	7	43	12	16	15	14	57.5	11	14	16	0.060
EMBOF-M12-BA	M12	11400	28500	12	34	10	8	50	10	18	18	17.5	67	12	17	19	0.095
EMBOF-M16-BA	M16	22400	52000	17	46	14	11	67	10	25	24	23	90	15	22	25	0.23
EMBOF-M24x2-BA	M24x2	51000	102000	25	64	20	17	94	7	35.5	36	32	126	18	30	35	0.62
EMBOF-M30x2-BA	M30x2	65500	134000	30	73	22	19	110	6	40.7	45	35	146.5	19	36	42	0.97
EMBOF-M36x3-PTFE	M36x3	112000	143000	35	82	25	21	125	6	47	60	42	166	15	50	47	1.4
EMBOF-M45x3-PTFE	M45x3	220000	280000	50	112	35	30	160	6	66	68	60	216	20	65	62	3.55
EMBOF-M56x4-PTFE	M56x4	440000	630000	70	160	49	42	200	6	92	80	84	280	20	85	80	8.3
EMBOF-M64x4-PTFE	M64x4	570000	780000	80	180	55	47	230	6	105	85	100	320	25	100	95	13

* Material: BA - bronze auto-lubricated; PTFE - polytetrafluoroethylene

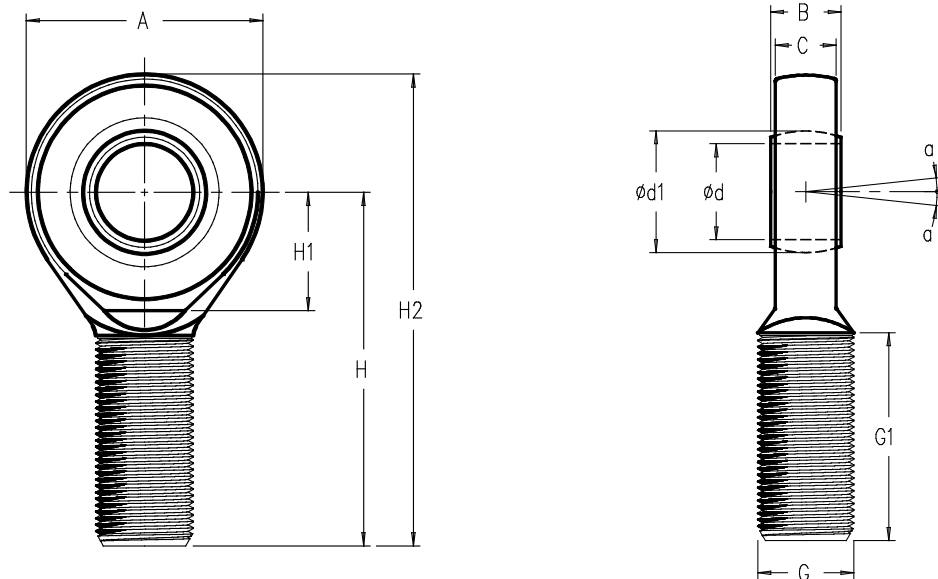
→ Other capacities and dimensions available on request

Dimensions in mm

Other view



EMBOM > STANDARD DIMENSIONS



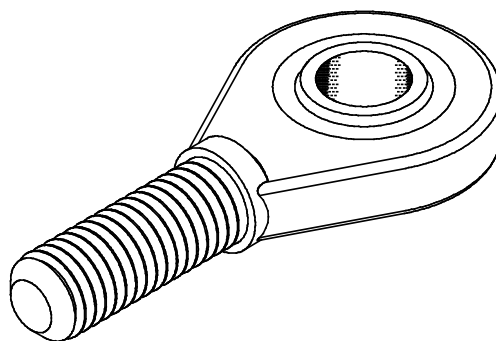
Ref. Item*	Dimension G	Capacities (N)		Ød	A	B	C	H	a (degree)	Ød1	G1	H1	H2	Weight (kg)
		Dynamic	Static											
EMBOM-M6-BA	M6	3600	9000	6	21	6	4.3	36	13	10	16	14	46.5	0.013
EMBOM-M8-BA	M8	5850	14600	8	24	8	6	42	15	13	21	14	54	0.025
EMBOM-M10-BA	M10	8560	21600	10	29	9	7	48	12	16	26	17	62.5	0.043
EMBOM-M12-BA	M12	11400	28500	12	34	10	8	54	10	18	28	18	71	0.065
EMBOM-M16-BA	M16	22400	52000	17	46	14	11	69	10	25	36	23	92	0.17
EMBOM-M20x1.5-BA	M20x1.5	31500	70000	20	53	16	13	78	9	29	43	25	104.5	0.28
EMBOM-M24x2-BA	M24x2	51000	102000	25	64	20	17	94	7	35.5	53	32	126	0.5
EMBOM-M30x2-BA	M30x2	65500	134000	30	73	22	19	110	6	40.7	65	33	146.5	0.83
EMBOM-M36x3-PTFE	M36x3	112000	143000	35	82	25	21	140	6	47	82	42	181	1.4
EMBOM-M45x3-PTFE	M45x3	220000	280000	50	112	35	30	185	6	66	104	60	241	3.55
EMBOM-M56x4-PTFE	M56x4	440000	630000	70	160	49	42	235	6	92	125	87	315	7.9
EMBOM-M60x4-PTFE	M60x4	345000	440000	60	135	44	38	225	6	80	120	70	292.5	6.25
EMBOM-M64x4-PTFE	M64x4	570000	780000	80	180	55	47	270	6	105	140	100	360	12

* Material: BA - bronze-auto lubricated ; PTFE - polytetrafluoroethylene

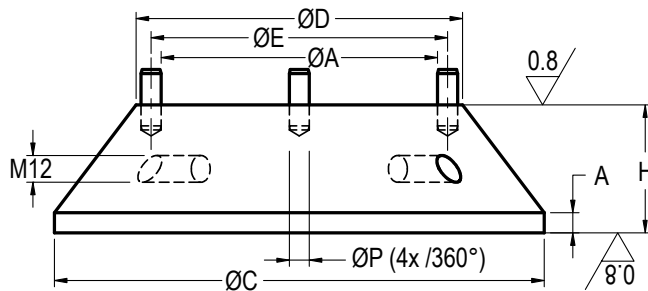
→ Other capacities and dimensions available on request

Dimensions in mm

Other view



PADIN > STANDARD DIMENSIONS

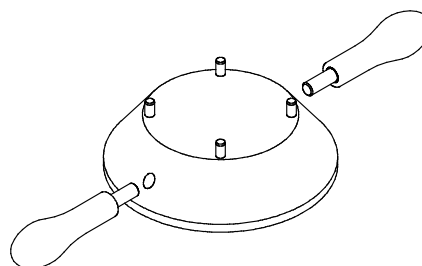
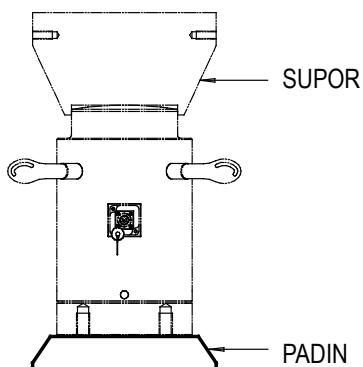
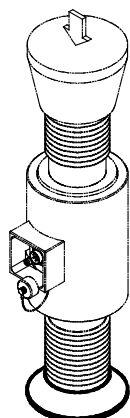


Ref. Item	Types	ØA	ØC	ØD	ØE	ØP	A	H	M12	Weight (kg)
PADIN-24	24	25	59	36	29	4	3	22	/	0.34
PADIN-30	30	31	64	40	35	4	3	22	/	0.4
PADIN-42	42	43	74	52	47	4	3	20	/	0.53
PADIN-45	45	46	79	56	50	4	3	21	/	0.64
PADIN-64	64	65	99	75	69	4	3	22	/	1.1
PADIN-64E	64E	65	129	75	69	4	4	25	/	1.8
PADIN-100A	100A	91	129	110	95	4	4	25	/	2.3
PADIN-100B	100B	100	129	110	104	4	4	25	/	2.3
PADIN-110E	110E	111	195	130	119	8	8	51	2x / 360°	9.4
PADIN-125AA	125AA	120	158	144	128	8	6	25	/	3.7
PADIN-125AB	125AB	126	158	144	134	8	6	25	/	3.7
PADIN-125B	125B	126	195	150	134	8	8	45	2x / 360°	9
PADIN-160	160	162	248	180	170	8	11	60	2x / 360°	18.6
PADIN-200A	200A	202	308	235	214	12	12	67	2x / 360°	32.9
PADIN-200B	200B	202	353	235	214	12	12	90	4x / 360°	52.5
PADIN-210	210	207	248	225	215	8	6	30	2x / 360°	11
PADIN-230	230	232	353	262	244	12	8	80	2x / 360°	50
PADIN-250	250	252	438	280	264	12	10	80	4x / 360°	69.75
PADIN-300	300	296	353	325	308	12	6	35	2x / 360°	25.8
PADIN-330	330	333	438	370	349	16	8	60	4x / 360°	62
PADIN-330A	330A	333	503	370	349	16	8	115	4x / 360°	140
PADIN-365	365	367	503	400	379	12	8	80	4x / 360°	105
PADIN-400A	400A	403	594	448	423	20	8	120	4x / 360°	205
PADIN-445	445	448	594	485	464	16	8	85	4x / 360°	156
PADIN-495	495	501	694	548	521	20	8	110	4x / 360°	266
PADIN-540	540	546	795	613	576	30	8	130	4x M16 / 360°	405

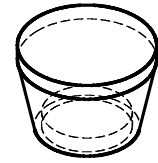
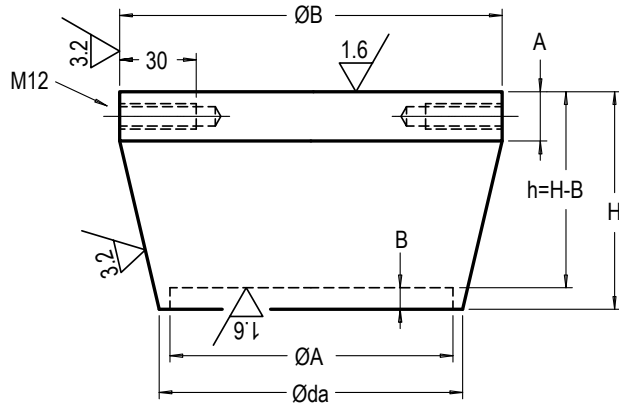
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



SUPOR > STANDARD DIMENSIONS

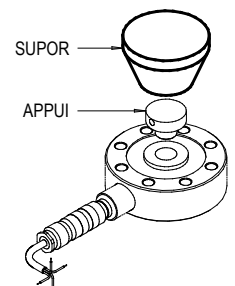
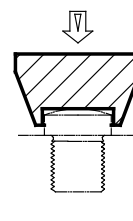
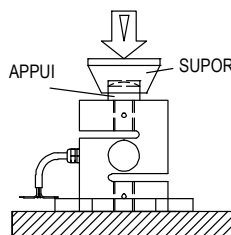
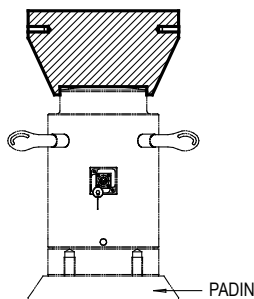
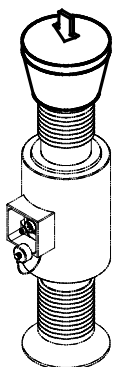


Ref. Item	Types	ØA	ØB	Øda	A	B	H	h	M12 L=30 (degree)	Weight (kg)
SUPOR-12	12	12	34	20	7	4	23	19	NO	0.12
SUPOR-20	20	20	49	30	8	5	31	26	NO	0.33
SUPOR-24	24	24	59	35	9	6	36	30	NO	0.55
SUPOR-30	30	30	64	40	9	6	41	35	NO	0.74
SUPOR-36	36	36	69	46	10	7	46	39	NO	0.98
SUPOR-45	45	45	79	56	11	12	53	41	NO	1.5
SUPOR-56	56	56	79	66	12	8	48	40	NO	1.5
SUPOR-64	64	64	99	75	12	17	64	47	NO	2.8
SUPOR-64E	64E	64	114	75	12	17	75	58	NO	4.14
SUPOR-69	69	69	79	75	12	12	52	40	NO	1.6
SUPOR-90	90	90	129	100	15	17	79	62	NO	6
SUPOR-90B	90B	90	164	100	15	17	109	92	NO	12.2
SUPOR-110	110	110	195	135	20	19	109	90	2x to 180	18.7
SUPOR-125A	125A	125	158	135	20	19	94	75	2x to 180	11.3
SUPOR-125B	125B	125	195	135	20	19	109	90	2x to 180	18.3
SUPOR-160	160	160	248	±170	30	20	146	126	2x to 180	40
SUPOR-200A	200A	200	308	±210	30	20	175	155	2x to 180	73
SUPOR-200B	200B	200	353	±210	30	20	200	180	4x to 90	103
SUPOR-230	230	230	353	±270	50	35	211.5	176.5	4x to 90	125
SUPOR-250A	250A	250	438	±290	40	30	250	220	6x to 60	209
SUPOR-250B	250B	250	503	±290	40	30	285	255	6x to 60	294
SUPOR-300A	300A	300	594	±340	50	40	337	297	6x to 60	481
SUPOR-330A	330A	330	503	±370	50	50	301.5	251.5	6x to 60	341
SUPOR-360A	360A	360	694	±401	100	50	397	347	6x M24 / 360	818
SUPOR-400A	400A	400	594	±440	50	55	352	297	6x to 60	555
SUPOR-430A	430A	430	795	±470	±100	50	448	398	6x M30 / 360	1209

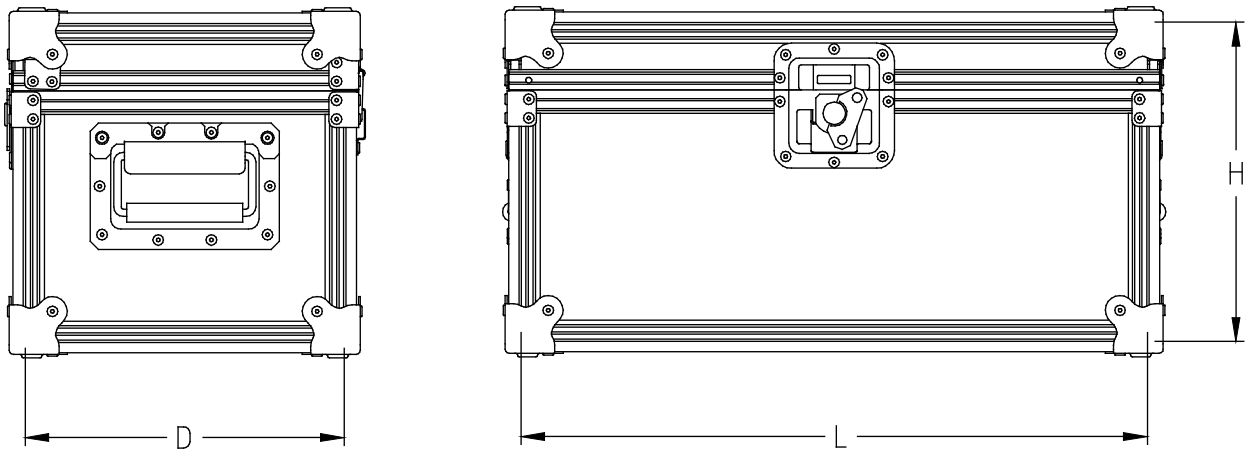
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



→ CASE-F > STANDARD DIMENSIONS

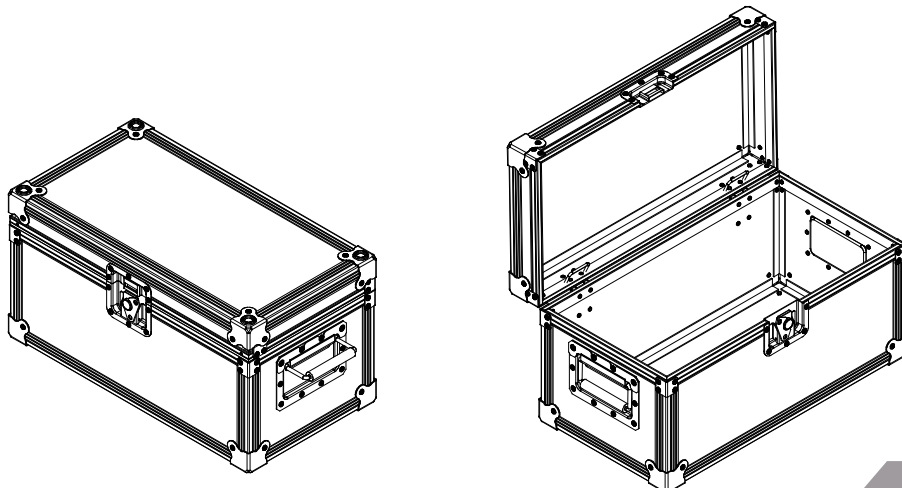


Ref. Item	Type	L (internal)	D (internal)	H (internal)	Weight (kg)
CASE-F410	F410	410	340	250	±7
CASE-F530	F530	530	270	270	±7
CASE-F590	F590	590	480	210	±12
CASE-F1000	F1000	1000	350	190	±11

→ Other capacities and dimensions available on request

Dimensions in mm

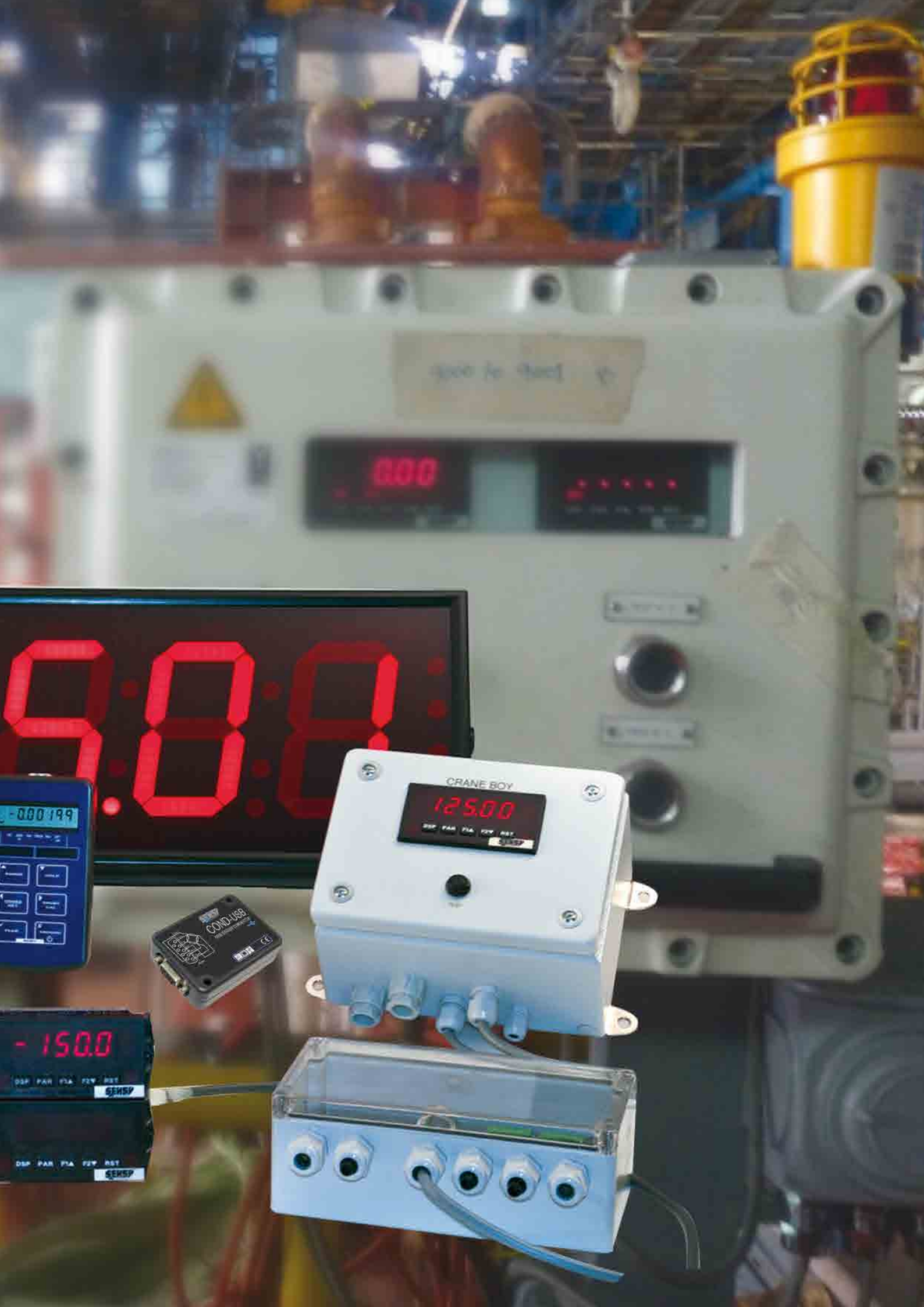
Other views



INSTRUMENTATION



LOAD CELL
MANUFACTURER



Load of hook

000

900

-000199

COND-USB

CRANE BOY
125.00

-150.00
GENSP

GENSP

PRODUCTS OVERVIEW

INSTRUMENTATION

FORCE, TORQUE AND WEIGHING

MODEL	DESCRIPTION		
	INDI-PAXS	Intelligent and programmable panel meters - 5 digits 14 mm height - 16 points scaling for linearisation	<u>Input signal:</u> - Wheatstone bridge (mV/V) p. 210
	DISP-PAXP	- Power supply 85...250 VAC or 24 VAC and 10...36 VDC	<u>Input signal:</u> - 4(0)...20 mA, 0...10 V p. 210
	DISP-PAXD	<u>Options:</u> - Analogue output 4(0)...20 mA or 0...10 V - 2 or 4 set-points with relay outputs - RS-232 digital output - RS-485 digital output - Fieldbus digital output	<u>Input signals:</u> - 0.2 mA...2 A - 200 mV...300 VDC p. 210
	DISP-PAXDP	<u>Explosion-proof version available on request:</u> - INDI-PAXS-Exd (IIB / IIC) - INDI-PAXS-12-Exd (IIB / IIC) - DISP-PAXP-Exd (IIB / IIC) - DISP-PAXP-12-Exd (IIB / IIC) - DISP-PAXD-Exd (IIB / IIC) - DISP-PAXDP-Exd (IIB / IIC) - DISP-PAXDP-12-Exd (IIB / IIC)	<u>Input signals:</u> - Dual 4(0)...20 mA or 0...10 VDC - Math function of both inputs p. 212
MODEL	DESCRIPTION		
	INDI-MAXS	Universal panel meters with large display to be used with transducer and process signal - 5 digits 38 mm height	<u>Input signal:</u> - Wheatstone bridge (mV/V) p. 214
	DISP-MAXP	- 16 points scaling for linearisation - Power supply 85...250 VAC or 24 VAC and 10...36 VDC	<u>Input signal:</u> - 4(0)...20 mA, 0...10 V p. 214
	DISP-MAXD	<u>Options:</u> - Analogue output 4(0)...20 mA or 0...10 V - 2 or 4 set-points with relay outputs - RS-232 digital output - RS-485 digital output - Fieldbus digital output	<u>Input signals:</u> - 0.2 mA...2 A - 200 mV...300 VDC p. 214
MODEL	DESCRIPTION		
	INDI-PAXS2	Panel meters with dual line display 6 digits (18 mm) and 9 digits (8.9 mm) for Wheatstone bridge sensors or electrical analogue measurements.	<u>Input signal:</u> - Wheatstone bridge (mV/V) p. 218
	DISP-PAXP2	Universal power supply (AC/DC)	<u>Input signals:</u> - 0.2 mA...2 A - 200 mV...300 VDC p. 218
	DISP-PAXD2	<u>Options:</u> - Analogue output 4(0)...20 mA or 0...10 V - 2 or 4 set-points with relay outputs - RS-232 digital output - RS-485 digital output - Fieldbus digital output	
MODEL	DESCRIPTION		
	DISP-60	Display for rotary torque sensor 1 torque sensor input (0...10 V) 1 angle encoder input or speed sensor input USB output (Windows-compatible software) SD card slot 2 relays output	p. 220
MODEL	DESCRIPTION		
	COND-SGA	Conditioner - amplifier for Wheatstone bridge (mV/V) Power supply: 18...24 VDC or 115/230 VAC	p. 222
		<u>Available outputs:</u> - 4(0)...20 mA source or drain - 0...10 V, -10...0...+10 V	

PRODUCTS OVERVIEW

INSTRUMENTATION

FORCE, TORQUE AND WEIGHING

MODEL	DESCRIPTION	
 COND-A420	Conditioner - amplifier for Wheatstone bridge (mV/V). Power supply: 115/230 VAC <u>Available outputs:</u> - 4(0)...20 mA source - 0...10 V	<u>Explosion-proof version available on request:</u> p. 226 - COND-A420-Exd (IIB / IIC)
MODEL	DESCRIPTION	
 COND-USB	Conditioner – amplifier for Wheatstone bridge (mV/V) with USB digital output (plug and play)	p. 228
MODEL	DESCRIPTION	
 JBOX-4	Junction box for weighing systems Up to 4 load cells Protection class: IP66 Polycarbonate enclosure	p. 230
MODEL	DESCRIPTION	
 JBOX-AJB-4	Junction boxes for weighing systems Protection class: IP67 Stainless steel enclosure	Up to 4 load cells p. 230
 JBOX-AJB-6	With corner adjustment	Up to 6 load cells p. 230
MODEL	DESCRIPTION	
 JBOX-4EXia	Ex i certified junction box for 2 to 4 strain gauge transducers	On request
MODEL	DESCRIPTION	
 CONV-EX2-4Z	Zener barriers for 1 or 2 sensors (350 ohms)	With 4 wires connection On request
 CONV-EX2-6Z		With 6 wires connection (sense) On request
MODEL	DESCRIPTION	
 CONV-EX420P	Ex i certified isolated barrier for 4...20 mA signal	On request
MODEL	DESCRIPTION	
 INDI-5250	Very high accuracy digital indicator designed for legal-for-trade or high-accuracy weighing applications 10.000 d approved 6 digit display <u>Explosion proof version available on request:</u> - INDI-5250-Ex d (IIB/IIC)	p. 234
MODEL	DESCRIPTION	
 INDI-PSD	Hand-held indicator for Wheatstone bridge (mV/V) 7 digits LCD display Tare, hold, peek and resistor calibration by front keys	p. 236

PRODUCTS OVERVIEW


INSTRUMENTATION

FORCE, TORQUE AND WEIGHING




MODEL	DESCRIPTION			
	WI-T24TR-ACM	Radio transmitters for analogue signal: mV/V, 4...20 mA or 0...10 V High accuracy High resolution	Range: up to 800 m Dimensions: 164 x 84 x 57 mm Protection class: IP67	p. 238
	WI-T24TR-ACMI		Range: up to 800 m Dimensions: 80 x 62 x 34 mm Protection class: IP67	p. 238
	WI-T24TR-ACMM		Range: up to 500 m Dimensions: 76 x 35 x 20 mm Protection class: IP50	p. 238
MODEL	DESCRIPTION			
	WI-T24RE-HS	Hand-held indicators displaying the data transmitted by a sensor equipped with a radio transmitter Range: 800 m open field	Displays one channel	p. 240
	WI-T24RE-HA	High accuracy High resolution: 7 digits	Displays each channel and the sum of a selection of several channels	p. 240
	WI-T24RE-HR		Displays all the transmitters within its range (roaming)	p. 240
MODEL	DESCRIPTION			
	WI-T24RE-AO1	Radio receivers providing an analogue signal transmitted by the WI-T24TR-ACM range <u>Output signal:</u> - Voltage: 0...5 V, 0...10 V, -5...0...+5 V, -10...0...+10 V - Current: 4...20 mA, 0...20 mA source and sink	Range: up to 100 m Dimensions: 146 x 88 x 25 mm Protection class: IP50	p. 242
	WI-T24RE-AO11		Range: up to 800 m Dimensions: 164 x 84 x 57 mm Protection class: IP67	p. 242
MODEL	DESCRIPTION			
	WI-T24RE-BSI	Radio receivers providing a digital signal transmitted by the WI-T24TR-ACM range	Output: USB, RS-232 or RS-485 Range: up to 800 m Dimensions: 164 x 84 x 57 mm Protection: IP67	p. 244
	WI-T24RE-BSU		Output: USB Range: up to 500 m Dimensions: 76 x 35 x 20 mm Protection: IP50	p. 244
	WI-T24RE-BSUE		Output: USB Range: up to 800 m Dimensions: 80 x 62 x 34 mm Protection: IP67	p. 244
	WI-T24RE-SO		Output: RS-232, RS-485 Range: up to 800 m Dimensions: 164 x 84 x 57 mm	p. 246
MODEL	DESCRIPTION			
	WI-DXBTR-9NS-Exi	Transmitter module for sensor (Wheatstone bridge) Ex i certified for operation in hazardous area.		On request

PRODUCTS OVERVIEW INSTRUMENTATION



FORCE, TORQUE AND WEIGHING

	MODEL	DESCRIPTION	
	WI-DXBRE-PAXP	Receiver with display for wireless signal from WI-DXBTR-9NS-Ex i module with analogue and digital output (options).	On request

STANDARD REFERENCE INDICATORS

	MODEL	DESCRIPTION	
	INDI-00	Classes 1 and 0,5 High-accuracy indicator for standard reference force transducers (ISO 376) RS-232 or RS-485 output	<u>Input signal:</u> Wheatstone bridge (mV/V) p. 248
	MODEL	DESCRIPTION	
	INDI-ISO376	Class 00 High-accuracy indicator for standard reference force transducers (ISO 376) RS-232 or RS-485 output MODBUS RTU Protocol	<u>Input signal:</u> Wheatstone bridge (mV/V) p. 250
	MODEL	DESCRIPTION	
	INDI-12390	Digital indicator for 3115-12390 standard reference force transducers (EN-12390-4) With 4 digital indicators (5 digits) RS-232 or RS-485 outputs	<u>Input signal:</u> Wheatstone bridge (mV/V) x 4 p. 252

CRANE OVERLOAD PROTECTION

	MODEL	DESCRIPTION	
	BRIDGE-BOY	Economical analogic crane overload protection electronics with 1 or 3 set-points Din rail mounting Power supply: 45, 115 or 240 VAC	<u>Input signal:</u> Wheatstone bridge (mV/V) p. 254
	MODEL	DESCRIPTION	
	INDI-BOY INDI-BOY12	Intelligent and programmable crane overload protection electronics - 3 set-points with relay (3 A) - To be mounted in existing cabinet (no housing delivered)	<u>Input signal:</u> Wheatstone bridge (mV/V) p. 258
	DISP-BOYP DISP-BOYP12	- Display 5 digits 14 mm height - 16 points scaling for linearisation - Power supply 85...250 VAC (INDI-xx or DISP-xx)	<u>Input signal:</u> 4...20 mA amplified signal p. 258
	DISP-BOYDP DISP-BOYDP24	- Power supply 85...250 VAC (INDI-xx or DISP-xx) or 24 VAC and 10...36 VDC (INDI-xx12 or DISP-xx12)	<u>Input signals:</u> dual 4...20 mA with math function of both inputs p. 262
	DISP-SUMD DISP-SUMD12	<u>Options:</u> - analogue output 4(0)...20 mA or 0...10 V - RS-232 digital output - RS-485 digital output - Fieldbus output - Digital output	0...200 mA from 4 (0) 20 mA outputs for sum limitation p. 270

PRODUCTS OVERVIEW

INSTRUMENTATION




CRANE OVERLOAD PROTECTION

MODEL	DESCRIPTION		
	CRANE-BOY CRANE-BOY12	Intelligent and programmable crane overload protection electronics: - Protection class IP54 - Metal housing - 3 set-points with relay (3 A) - Display 5 digits 14 mm height - 16 points scaling for linearisation - Power supply 85..250 VAC (CRANE-xx) or 24 VAC and 10..36 VDC (CRANE-xx12)	
	CRANE-BOYPD CRANE-BOYPD24	Options: - analogue output 4(0)..20 mA or 0...10 V - 2 or 4 set-points with relay outputs - RS-232 digital output - RS-485 digital output - Fieldbus digital output - Protection class IP67	<u>Input signal:</u> p. 266 Wheatstone bridge (mV/V)
	CRANE-BOYP CRANE-BOYP12		<u>Input signal:</u> p. 266 4...20 mA amplified signal
	CRANE-SUMD CRANE-SUMD12		<u>Input signals:</u> p. 262 dual 4...20 mA with math function of the 2 inputs
<hr/>			
	CRANE-BOY-Exd CRANE-BOY12-Exd	Correspond to INDI-BOY or DISP-BOYP mounted in an explosion-proof housing: - Power supply 85..250 VAC (CRANE-xx) or 24 VAC and 10...36 VDC (CRANE-xx12).	
	CRANE-BOYP-Exd CRANE-BOYP12-Exd		<u>Input signal:</u> p. 274 Wheatstone bridge (mV/V) Ready to be connected with Ex i load cells
	CRANE-BOY-Exd-5050 CRANE-BOY12-Exd-5050		<u>Input signal:</u> p. 274 4...20 mA amplified signal Ready to be connected with Ex i load cells
	CRANE-BOYP-Exd-5050 CRANE-BOYP12-Exd-5050		<u>Input signal:</u> On request Wheatstone bridge (mV/V) Ready to be connected with Ex d load cells
	CRANE-BOY-Exd-5050 CRANE-BOY12-Exd-5050		<u>Input signal:</u> On request 4...20 mA amplified signal Ready to be connected with Ex d load cells
<hr/>			
	CABIN-2xB1SUMD	Crane overload protection electronics system for 2 hoisting devices and their sum Contains 2 x INDI-BOY's or 2 x DISP-BOYP's connected with 1 x DISP-SUMD <u>Explosion-proof version available on request:</u> CABIN-2xB1SUMD-Exd (IIB / IIC)	p. 276
<hr/>			
	CABIN-4xB1SUMD	Crane overload protection electronics system for 4 hoisting devices and their sum Contains 4 x INDI-BOY's or 4 x DISP-BOYP's connected with 1 x DISP-SUMD <u>Explosion-proof version available on request:</u> CABIN-4xB1SUMD-Exd (IIB / IIC)	p. 278
<hr/>			
	JBOX-LCI	Smart junction box with monitoring load cells integrity Up to 4 load cells (mV/V)	<u>Input signal:</u> p. 280 - Wheatstone bridge


PRODUCTS OVERVIEW

INSTRUMENTATION



CRANE OVERLOAD PROTECTION

MODEL	DESCRIPTION	
 SAFETY-BOY	Overload protection electronics for hoisting devices with certification for performance level PL d according to EN ISO 13849-1: <ul style="list-style-type: none"> - redundant channels with constant comparing of both signals - Calibration by push buttons and display - Display of hoisted loads and input signals - Internal monitoring system of the load cells integrity 	<u>Input signal:</u> - Wheatstone bridge p. 282
MODEL	DESCRIPTION	
 COACH-II	Data recording and management system for EOT cranes: <ul style="list-style-type: none"> - Up, down, short and long movements recording - Hoisted loads recording - Safe Working Period (SWP) calculation <u>Explosion-proof version available on request:</u> COACH-II-IP65-Exd (IIB / IIC)	p. 284
MODEL	DESCRIPTION	
 DISP-F	Large digital display Digits: 4 or 6 Height of digits: 57, 102, 150, 200, 300 or 400 mm Analogue input: 0...10 V or 4(0)...20 mA Serial input: RS-232 or RS-485	p. 286

TENSIOMETERS

MODEL	DESCRIPTION	
 DISP-RLT	Indicator for running line tensiometer displaying: <ul style="list-style-type: none"> - Force - Speed - Payout Data transmission RS-232	<u>Options:</u> - Data transmission RS-485 or Profibus - Data logging p. 288

OPTIONS FOR TRANSDUCERS

MODEL	DESCRIPTION	
 ANALOGUE AMPLIFIERS	Amplified output signals 4...20 mA or 0...10 V Integrated in the transducer or mounted on the cable	p. 290
MODEL	DESCRIPTION	
 DIGITAL CONVERTERS	Digital output signals RS-232, RS-485, Fieldbus Can be integrated in the transducer or mounted on the cable	p. 292

INDI-PAXS
DISP-PAXx

ANALOGUE INPUT PANEL METERS

Universal panel meters to be used with transducers and process signals



Features

- o Strain gauge, process, voltage and current inputs
- o Intuitive and easy programming (high flexibility)
- o 16 points scaling for linearisation
- o Programmable function keys/user inputs
- o Variable intensity display

Available option(s)

- Analogue output 4 (0)...20 mA or 0...10 V
- 2 or 4 set-points with relay outputs
- RS-232, RS-485, USB or fieldbus capabilities
- NEMA 4X / IP67 (transparent protection cover - Option "COVER PAX")
- Desktop or industrial steel housing
- Rail DIN adaptor

INDI-PAXS / DISP-PAXx



Application(s) SENSY's INDI-PAXS and DISP-PAXx are perfectly designed for the following applications:

- Industrial weighing,
- Force or torque measurement,
- Remote display.

Function(s)

- Reset (tare), maximum and minimum memories, smart filter,
- Totalisation of several measurements, protection code, ...

Specifications	INDI-PAXS	INDI-PAXS12	DISP-PAXP	DISP-PAXP12	DISP-PAXD	
Type	Single strain gauge bridge input meter	Single strain gauge bridge input meter	Single process input meter	Single process input meter	Single voltage or current meter	-
Input range	± 24 mVDC / ± 240 mVDC**	± 24 mVDC / ± 240 mVDC**	20 mA (-2 to +26 mA) / 10 VDC (-1 to +13 VDC)**	20 mA (-2 to +26 mA) / 10 VDC (-1 to +13 VDC)**	± 0.2 mA, ± 2 mA, ± 20 mA, ± 200 mA, ± 2 A, ± 0.2 VDC, ± 2 VDC, ± 20 VDC, ± 300 VDC**	-
Sensor excitation	10 VDC @ 125 mA max***	10 VDC @ 125 mA max***	24 VDC $\pm 5\%$ @ 50 mA max.	24 VDC $\pm 5\%$ @ 50 mA max.	24 VDC $\pm 5\%$ @ 50 mA max.	-
Display	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	-
Accuracy	0.1	0.1	0.1	0.1	0.1	% F.S.*
A/D converter	16 bits	16 bits	16 bits	16 bits	16 bits	-
Converter rate	Up to 20 readings/s	Up to 20 readings /s	Up to 20 readings /s	Up to 20 readings /s	Up to 20 readings /s	-
Service temperature range	0...+50	0...+50	0...+50	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	-40...+60	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W), 24 VAC (15 VA)	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W), 24 VAC (15 VA)	85...250 VAC, 50/60 Hz (15 VA)*****	-
IP rating	IP54****	IP54****	IP54****	IP54****	IP54****	-

* F.S. : Full Scale

** : configurable at user level

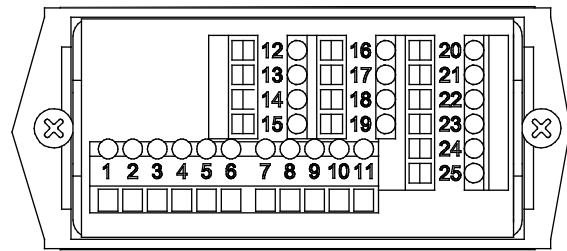
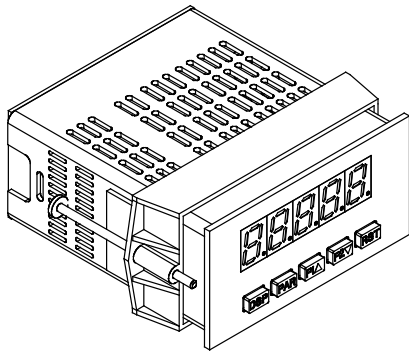
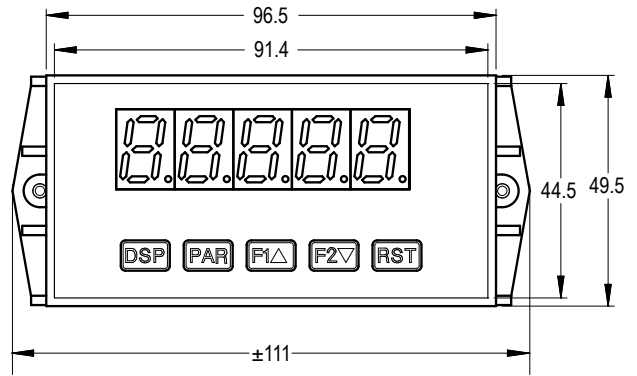
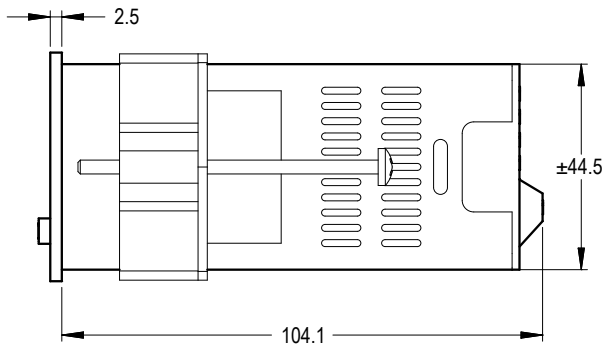
*** : 5 VDC @65 mA max (jumper selectable)

**** : IP rating only for front panel

***** : also available in 11...36 VDC (11 W), 24 VAC (15 VA) - Ref. : DISP-PAXD12

Specifications subject to change without notice..

INDI-PAXS DISP-PAXx > STANDARD DIMENSIONS



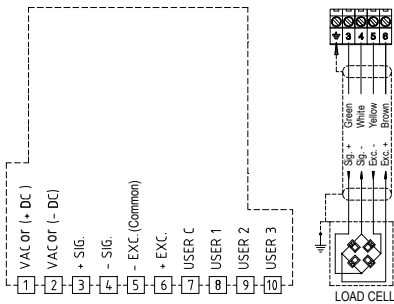
→ For options please consult page 303

Note: recommended min. clearance (behind the panel) for mounting is 140 mm deep and 53.4 mm high. Panel cut-out 92 mm (-0+0.8) 45 mm (-0+0.5)

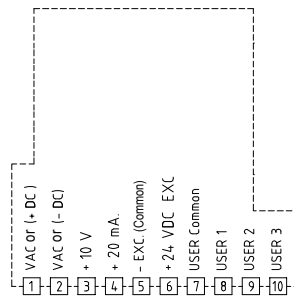
Dimensions in mm

Terminals

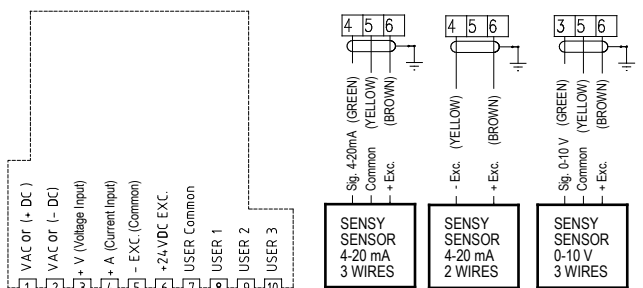
INDI-PAXS



DISP-PAXP



DISP-PAXD



DISP-PAXDP

DUAL INPUT DISPLAYS

Dual independent process input meters.



DISP-PAXDP + Option "COVER PAX"



Features

- o A math function can be performed on both signals.
- o Any of the 3 meter values can have alarms, analogue output or comms by adding optional card.
- o Intuitive and easy programming (high flexibility)
- o Variable intensity display
- o 16 points scaling for linearisation
- o Programmable function keys/user inputs

Available option(s)

- Analogue output 4 (0)...20 mA or 0...10 V
- 2 or 4 set-points with relay outputs
- RS-232, RS-485, USB or fieldbus capabilities
- NEMA 4X / IP67 (transparent protection cover - Option "COVER PAX")
- Desktop or industrial steel housing
- Rail DIN adaptor

Application(s)

SENSY's DISP-PAXDP are perfectly designed for the following applications:

- Industrial weighing,
- Force or torque measurement,
- Mass flow measurement (weight*speed).

Function(s)

Reset (tare), maximum and minimum memories, smart filter, totalisation of several measurements, protection code, ...

Specifications	DISP-PAXDP	DISP-PAXDP24	
Type	Dual process input meter	Dual process input meter	-
Input range	2 x 20 mA (-26 to +26 mA) / 2 x 10 VDC (-13 to +13 VDC)****	2 x 20 mA (-26 to +26 mA) / 2 x 10 VDC (-13 to +13 VDC)****	-
Sensor excitation	18 VDC \pm 20% @ 70 mA max. per input channel	18 VDC \pm 20% @ 70 mA max. per input channel	-
Display	5 digits (14.2 mm)	5 digits (14.2 mm)	-
Accuracy	0.1	0.1	% F.S.*
A/D converter	16 bits	16 bits	-
Converter rate	Up to 20 readings /s	Up to 20 readings /s	-
Service temperature range	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (21 VA)	18...36 VDC (13 W), 24 VAC (16 VA)	-
IP rating	IP54***	IP54***	-

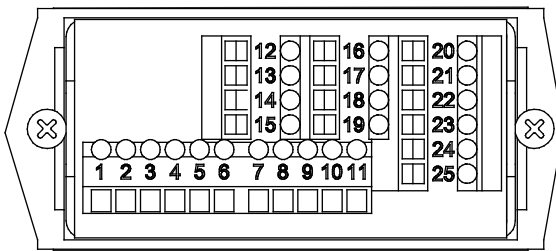
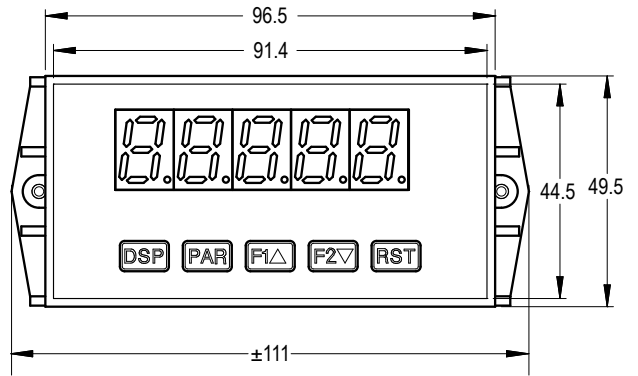
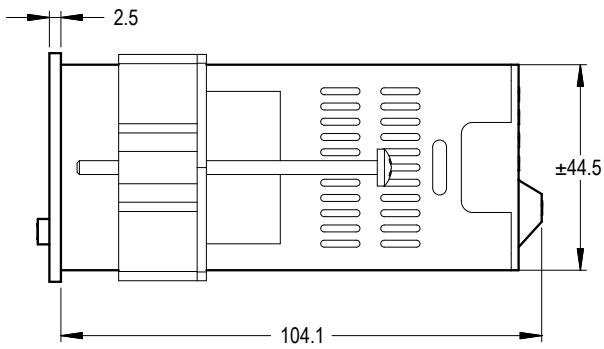
*F.S. : Full Scale

** : configurable at user level

*** : IP rating only for front panel

Specifications subject to change without notice..

DISP-PAXDP > STANDARD DIMENSIONS

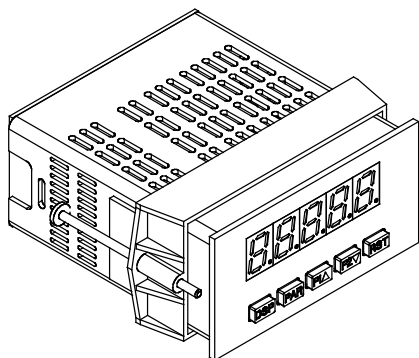


→ For options please consult page 303

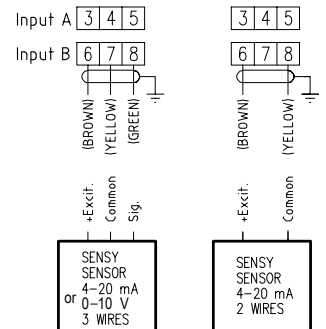
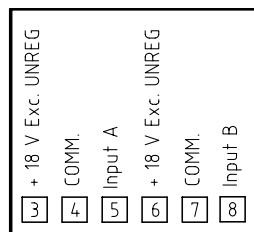
Note: recommended min. clearance (behind the panel) for mounting is 140 mm deep and 53.4 mm high. Panel cut-out 92 mm (-0+0.8) 45 mm (-0+0.5)

Dimensions in mm

Other view



Terminals



INDI-MAXS
DISP-MAX

ANALOGUE INPUT LARGE PANEL METERS

Large panel meters to be used with transducers and process signals



Features

- o Strain gauge, process, voltage and current inputs
- o 5 digits of 38 mm height
- o Intuitive and easy programming (high flexibility)
- o 16 points scaling for linearisation
- o Programmable function keys/user inputs
- o Variable intensity display

Available option(s)

- Analogue output 4 (0)...20 mA or 0...10 V
- 2 or 4 set-points with relay outputs
- RS-232, RS-485, fieldbus capabilities
- HOUSE-MAX: Housing
- HOUSE-MAX-IP: Housing with protection class IP64

INDI-MAXS / DISP-MAX



Application(s) SENSY's INDI-MAXS and DISP-MAX are perfectly designed for the following applications:

- Industrial weighing,
- Force or torque measurement,
- Remote display.

Function(s)

- Reset (tare), maximum and minimum memories, smart filter,
- Totalisation of several measurements, protection code, ...

Specifications	INDI-MAXS	INDI-MAXS24	DISP-MAXP	DISP-MAXP24	DISP-MAXD	
Type	Single strain gauge bridge input meter	Single strain gauge bridge input meter	Single process input meter	Single process input meter	Single voltage or current meter	-
Input range	± 24 mVDC / ± 240 mVDC**	± 24 mVDC / ± 240 mVDC**	20 mA (-2 to +26 mA) / 10 VDC (-1 to +13 VDC)	20 mA (-2 to +26 mA) / 10 VDC (-1 to +13 VDC)**	± 0.2 mA, ± 2 mA, ± 20 mA, ± 200 mA, ± 2 A, ± 0.2 VDC, ± 2 VDC, ± 20 VDC, ± 300 VDC	-
Sensor excitation	10 VDC @ 125 mA max***	10 VDC @ 125 mA max***	24 VDC $\pm 5\%$ @ 50 mA max.	24 VDC $\pm 5\%$ @ 50 mA max.	24 VDC $\pm 5\%$ @ 50 mA max.	-
Display	5 digits (38 mm)	5 digits (38 mm)	5 digits (38 mm)	5 digits (38 mm)	5 digits (38 mm)	-
Accuracy	0.1	0.1	0.1	0.1	0.1	% F.S.*
A/D converter	16 bits	16 bits	16 bits	16 bits	16 bits	-
Converter rate	Up to 20 readings/s	Up to 20 readings/s	Up to 20 readings /s	Up to 20 readings /s	Up to 20 readings /s	-
Service temperature range	0...+50	0...+50	0...+50	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	-40...+60	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (18 VA)	11...36 VDC (14 W), 24 VAC (18 VA)	85...250 VAC, 50/60 Hz (18 VA)	11...36 VDC (14 W), 24 VAC (18 VA)	85...250 VAC, 50/60 Hz (18 VA)*****	-
IP rating	IP54****	IP54****	IP54****	IP54****	IP54****	-

*F.S. : Full Scale

** : configurable at user level

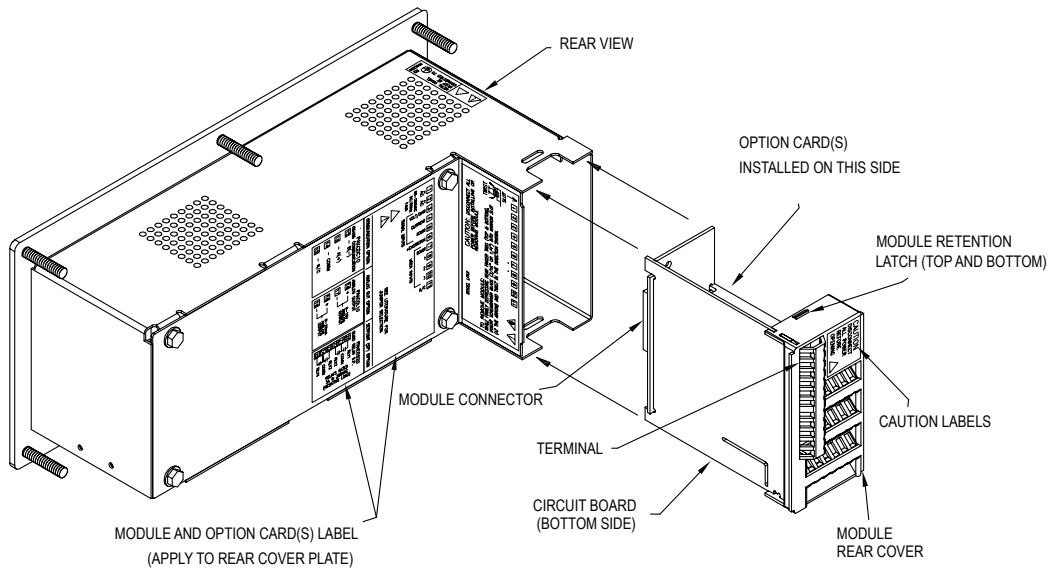
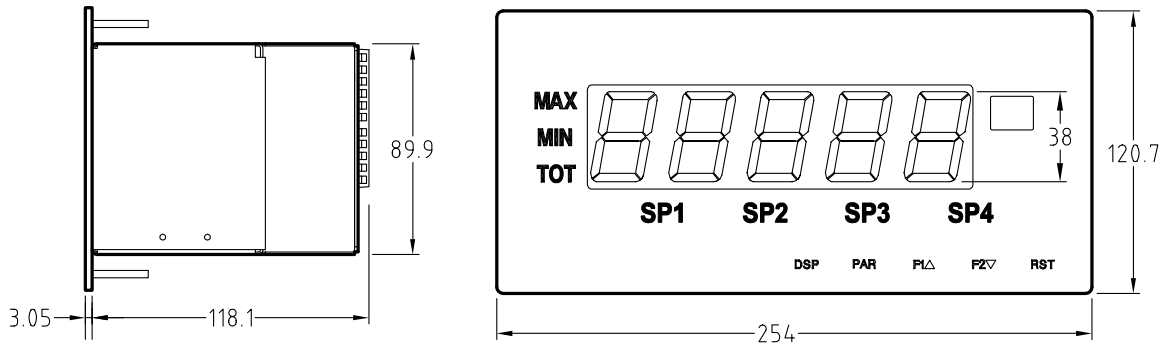
*** : 5 VDC @65 mA max (jumper selectable)

**** : IP rating for front panel only

***** : also available with 11...36 VDC (14 W), 24 VAC (18 VA) - Ref. : DISP-MAXD24

Specifications subject to change without notice..

INDI-MAXS DISP-MAX > STANDARD DIMENSIONS



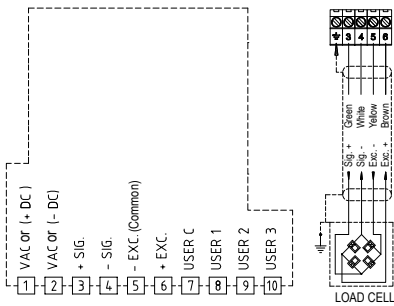
→ For options please consult page 303

Note: recommended min. clearance (behind the panel) for mounting is 120 mm deep. Panel cut-out 240 mm (-0+0.8) 106.7 mm (-0+0.5)

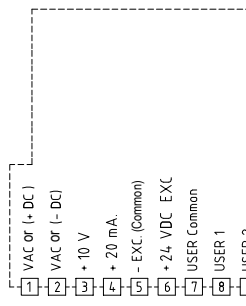
Dimensions in mm

Terminals

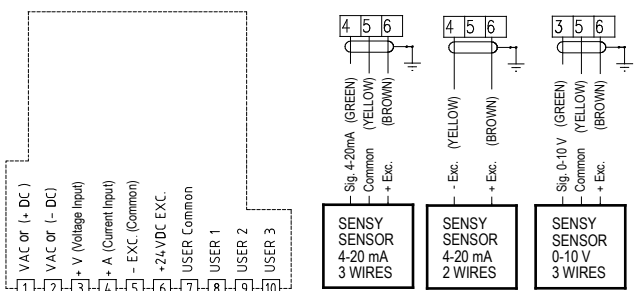
INDI-MAXS



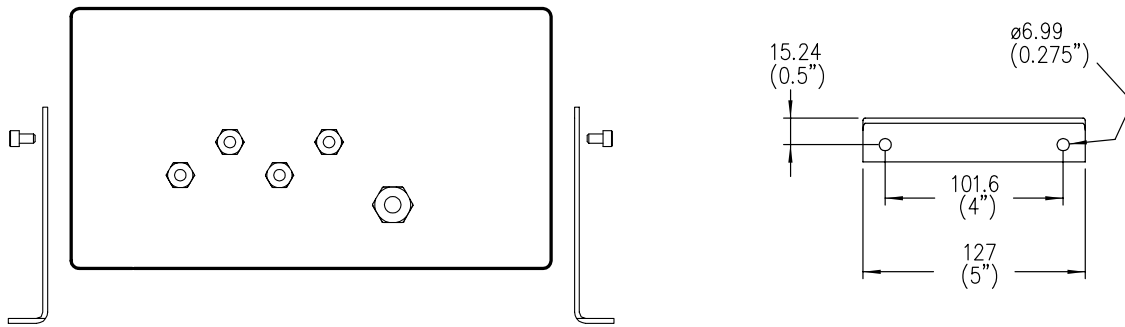
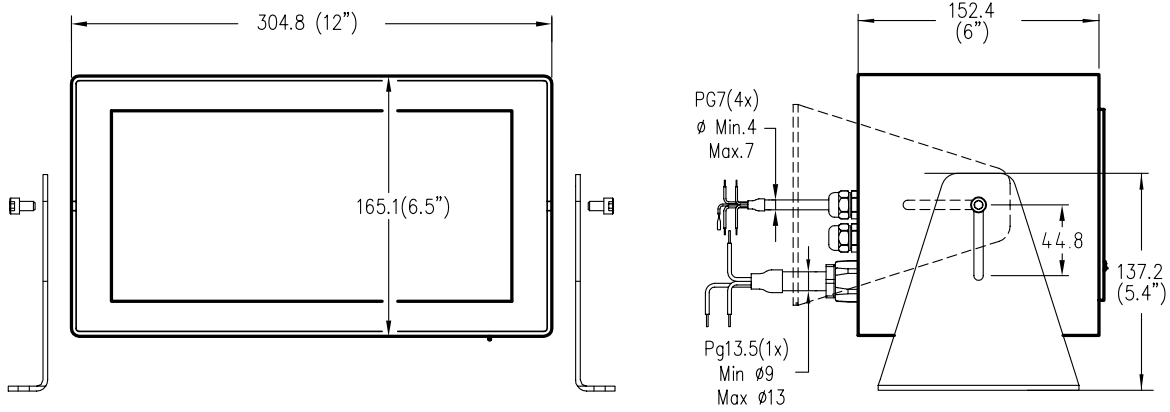
DISP-MAXP



DISP-MAXD

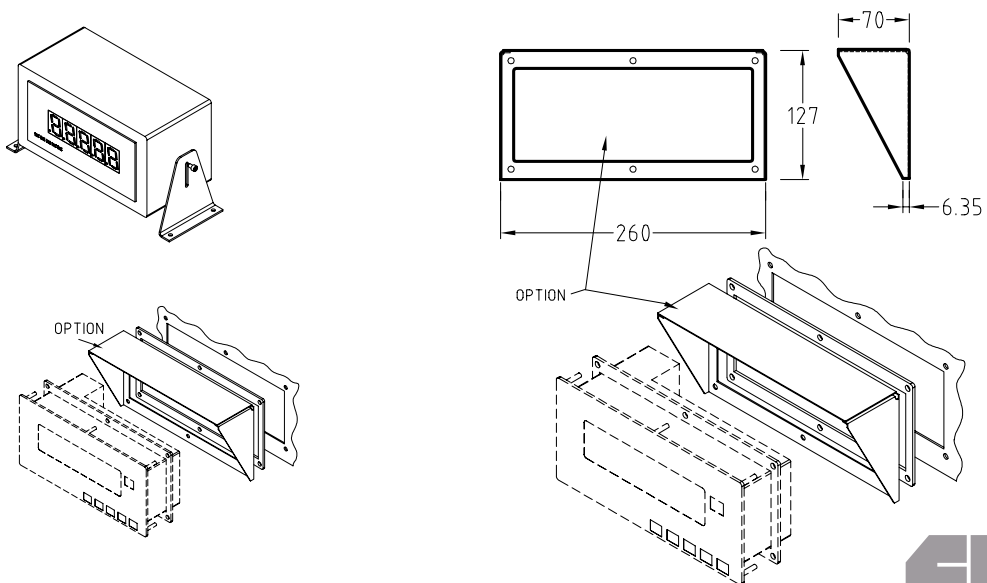


HOUSE-MAX-IP > STANDARD DIMENSIONS

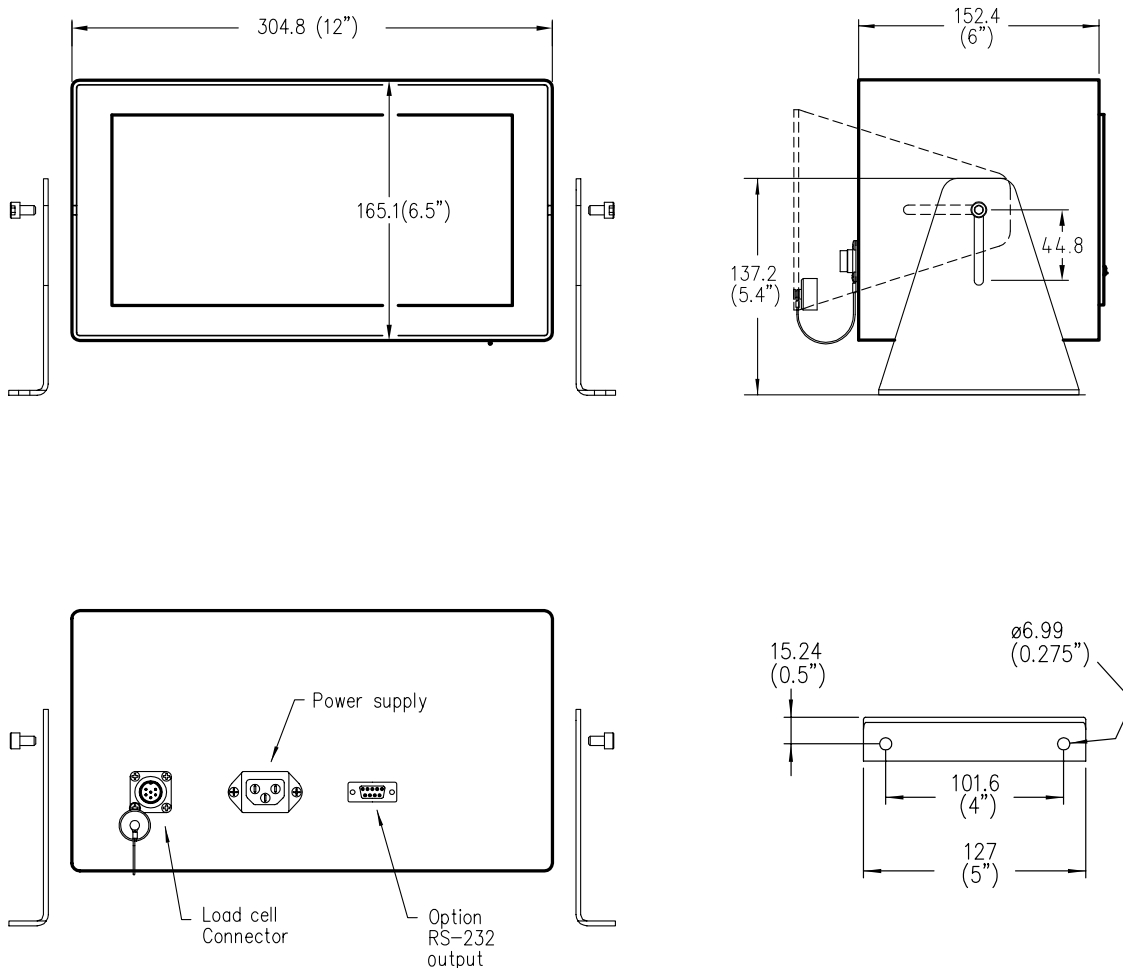


Dimensions in mm

Other views

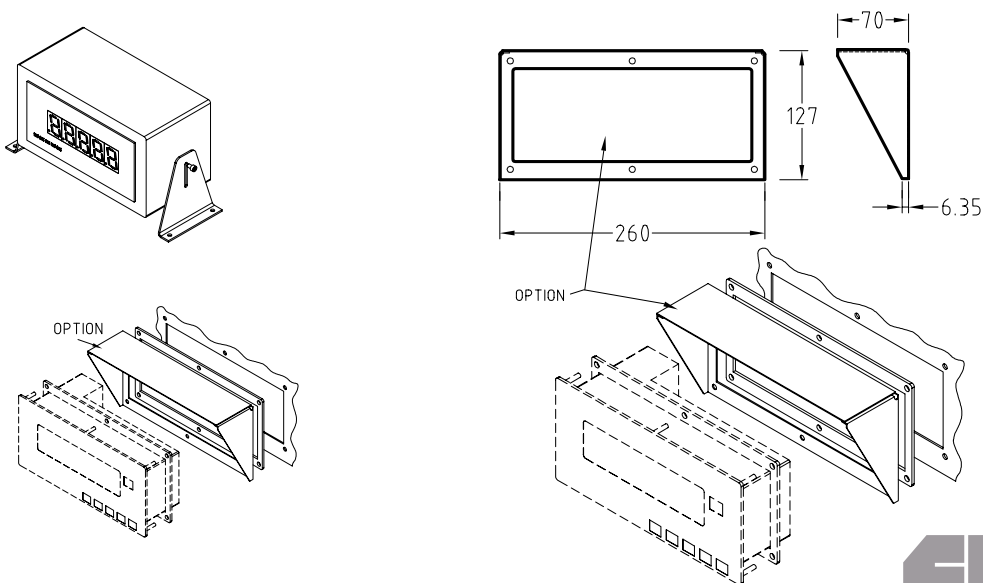


HOUSE-MAX > STANDARD DIMENSIONS



Other views

Dimensions in mm



INDI-PAXS2
DISP-PAXx2

ANALOGUE INPUT PANEL METERS WITH DUAL LINE DISPLAY

Panel meters with two display lines for Wheatstone bridge sensors or electrical analogue measurements



Features

- o Dual line display 6 digits (18 mm) and 9 digits (8.9 mm)
- o Tricolour display
- o Universal power supply (AC/DC)
- o Up to 160 measurements per second
- o Built-in USB programming port unit configuration

Available option(s)

- Analogue output 4 (0)...20 mA or 0...10 V
- 2 or 4 set-points with relay outputs
- RS-232, RS-485 or fieldbus capabilities
- NEMA 4X / IP67 (transparent cover - Option "COVER PAX")
- Desktop or industrial steel housing
- DIN rail adaptor

INDI-PAXS2 / DISP-PAXx2



Application(s) SENSY's INDI-PAXS2 and DISP-PAXx2 are perfectly designed for the following applications:

- Weighing batches with individual and cumulative weights,
- Weighing with net and gross weight display.

Function(s)

- Linearisation (15 points max.), intelligent filter, totaliser, security code
- Maximum and minimum memory
- Simultaneous display in 2 different units (e.g.: kg and N)
- Display of the input signal and the corresponding measurement

Specifications	INDI-PAXS2	DISP-PAXx2	
Type	Wheatstone bridge input meter	Current or voltage input meter	-
Input range	± 24 mVDC / ± 240 mVDC**	± 0.25 mA, ± 2.5 mA, ± 25 mA, ± 250 mA, ± 2 A, ± 0.25 VDC, ± 2 VDC, ± 10 VDC, ± 25 VDC, ± 100 VDC, ± 200 VDC***	-
Sensor excitation	10 VDC @ 125 mA*** 5 VDC @ 65 mA***	18 VDC @ 50 mA	-
Display	6 digits (18 mm) 9 digits (8.9 mm)	6 digits (18 mm) 9 digits (8.9 mm)	-
Accuracy	0.1	0.1	% F.S.*
A/D converter	24 bits	24 bits	-
Converter rate	Up to 160/s	Up to 160/s	-
Service temperature range	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	°C
Power supply	40...250 VAC 50/60 Hz (20 VA), 21.6...250 VDC (8 W)	40...250 VAC 50/60 Hz (20 VA), 21.6...250 VDC (8 W)	-
IP rating	IP20 / IP65****	IP20 / IP65****	-

*F.S. : Full Scale

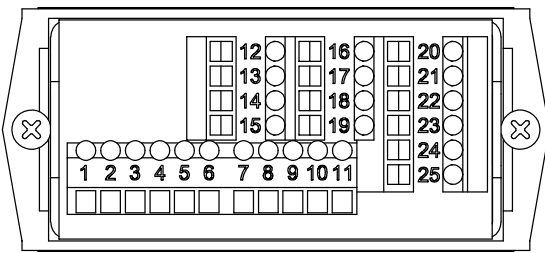
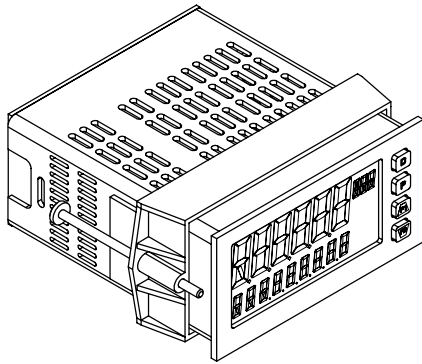
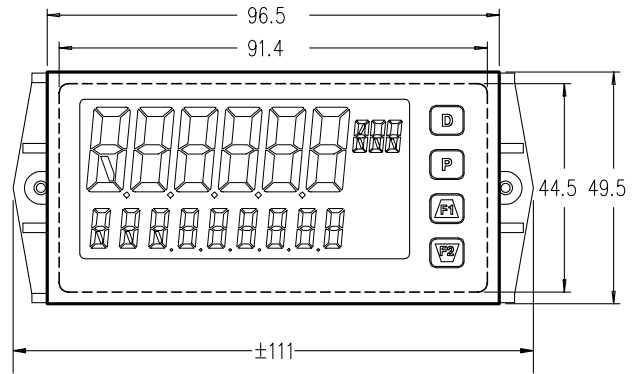
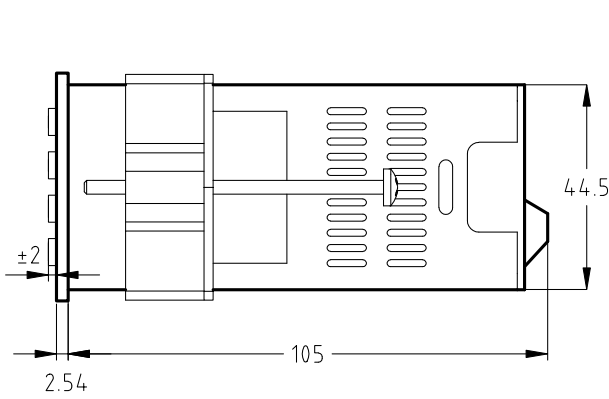
** : configurable at user level

*** : jumper selectable. By default: DISP-PAXx2: DISP-PAXP2 = +25 mA or +10 VDC / DISP-PAXD2 = +250 mA

**** : IP rating only for front panel

Specifications subject to change without notice..

INDI-PAXS2 DISP-PAXx2 > STANDARD DIMENSIONS

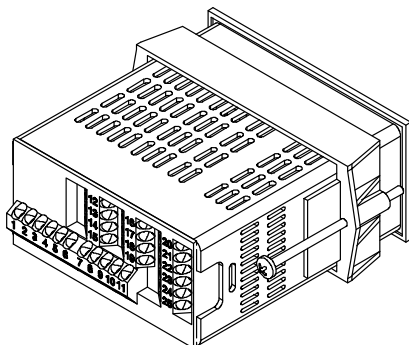


→ For options please consult page 303

Note: recommended min. clearance (behind the panel) for mounting is 140 mm deep and 53.4 mm high. Panel cut-out 92 mm (-0+0.8) 45 mm (-0+0.5)

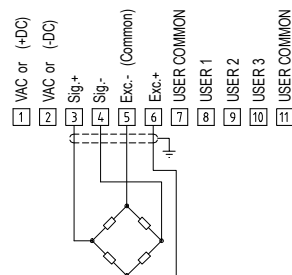
Dimensions in mm

Other view

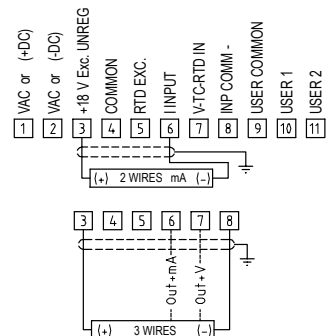


Terminals

INDI-PAXS2



DISP-PAXA2



DISP-60

DISPLAY FOR ROTARY TORQUE SENSOR

The DISP-60 is a display specially designed to be connected with a non-contact rotary torque sensor of the SENSY 60000 series.



Features

- o 1 torque sensor input 0...10 V
- o 1 angle encoder input (A/B) or speed sensor input (A)
- o 2 x digital input
- o 2 x relay output
- o USB interface (2.0 HID - Windows ® compatible software included)
- o SD card slot (SD / SD HC)
- o Acquisition interval: 10 ms...1 h

DISP-60



Application(s) SENSY's DISP-60 is perfectly designed for the following applications:

- Torque measurement on test benches, production lines or rotating machines.

Function(s)

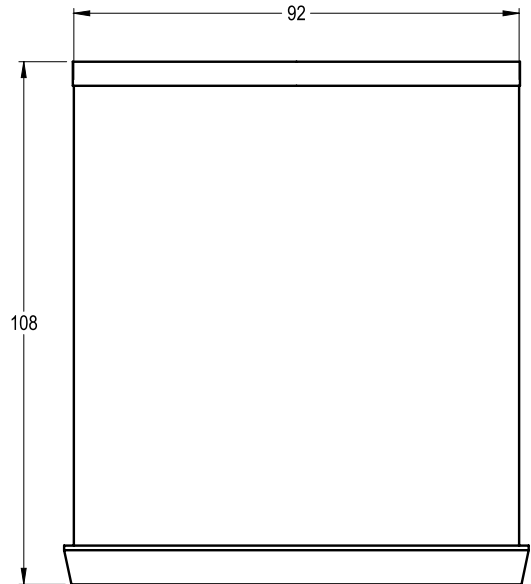
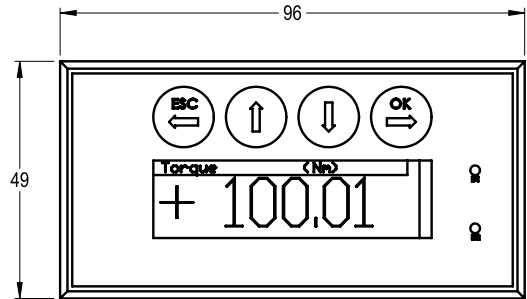
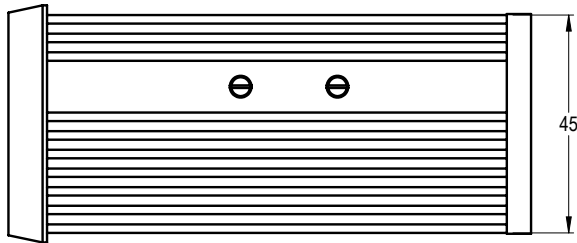
The DISP-60 is a multifunctional read-out unit dedicated for the non-contact rotary torque sensors of the SENSY 60000 series. One unit can be connected to one torque sensor. The unit will then supply the power to the sensor. The analogue output (0...5 V or 0...10 V) of the sensor and/or its optional angle encoder should be connected to the unit. Torque, angle or speed can be displayed. The measurement data can be stored on an inserted SD flash memory card or directly sent to a computer via a USB interface in real time (Windows® software included).

Specifications	DISP-60	
Input range	0...10 V	-
Sensor excitation	12 VDC	-
Display	122 x 32 px	-
Accuracy	<±0.05	% F.S.*
A/D converter	100 Hz	-
Internal resolution	2.5 mV / 12 bits	-
Service temperature range	+5...+50	°C
Power supply	15...30 VDC	-
Consumption	200 mA	-
Qty of relay	2	-
Relay type	"Form A" (SPST) 1 A @ 125 VAC or 2 A @ 30 VDC	-
Dimensions	H 45 x W 92 x L 108 (front H 49 x W 96)	mm
Weight	0.33	kg
IP rating	IP40	-

* F.S. : Full Scale.

Specifications subject to change without notice..

DISP-60 > STANDARD DIMENSIONS

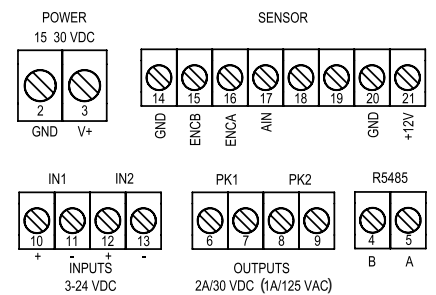


Dimensions in mm

Other view



Terminals



COND-SGA

CONDITIONERS - AMPLIFIERS FOR STRAIN-GAUGE-BASED TRANSDUCERS

The COND-SGA conditioners - amplifiers provide standardised signals in current and voltage from every load cell, force transducer and torque sensor based on strain-gauge technology.



Features

- o Input: Wheatstone bridge 0.1 to 30 mV/V
- o Output: 4(0)...20 mA, -10...0...+10 V
- o Power supply:
 - COND-SGA-A: 115...230 VAC / 18...24 VDC
 - COND-SGA-D: 18...24 VDC
- o Low-cost
- o Enclosure: ABS case 164 x 84 x 57 mm

COND-SGA



Application(s) SENSY's COND-SGA are perfectly designed for the following applications:

- Industrial weighing,
- Industrial force and torque measurement.

Function(s)

- Zero point and full scale by internal dip-switches and potentiometers
- With internal shunt calibration resistor of 120 kohms
- Direct connection to PLC, display unit, industrial instrumentation, chart recorder or computer

Specifications	COND-SGA-A	COND-SGA-D	
Type	Strain-gauge conditioner (mV/V)	Strain-gauge conditioner (mV/V)	-
Input range	0.1...30 mV/V	0.1...30 mV/V	-
Sensor excitation	5 / 10 VDC (Zmin.: 85 ohms)	5 / 10 VDC (Zmin.: 85 ohms)	-
Non-linearity error	< 0.03	< 0.03	% F.S.*
Low pass filter	1...5000	1...5000	Hz
Bandwidth	DC...6000	DC...6000	Hz
Service temperature range	-10...+50	-10...+50	°C
Storage temperature range	-20...+70	-20...+70	°C
Temperature coefficient of the sensitivity	<± 0.07	<± 0.07	% F.S./10°C
Temperature coefficient of zero signal	<± 0.02	<± 0.02	% F.S./10°C
Power supply	110...230 VAC / 18...24 VDC	18...24 VDC**	-
Output tension	0...10 / -10...0...+10 (load R. >= 5 kohms)	0...10 / -10...0...+10 (load R. >= 5 kohms)	V
Output current	0...20 / 4...20 (load R. <= 500 ohms)	0...20 / 4...20 (load R. <= 500 ohms)	mA
IP rating	IP67	IP67	-

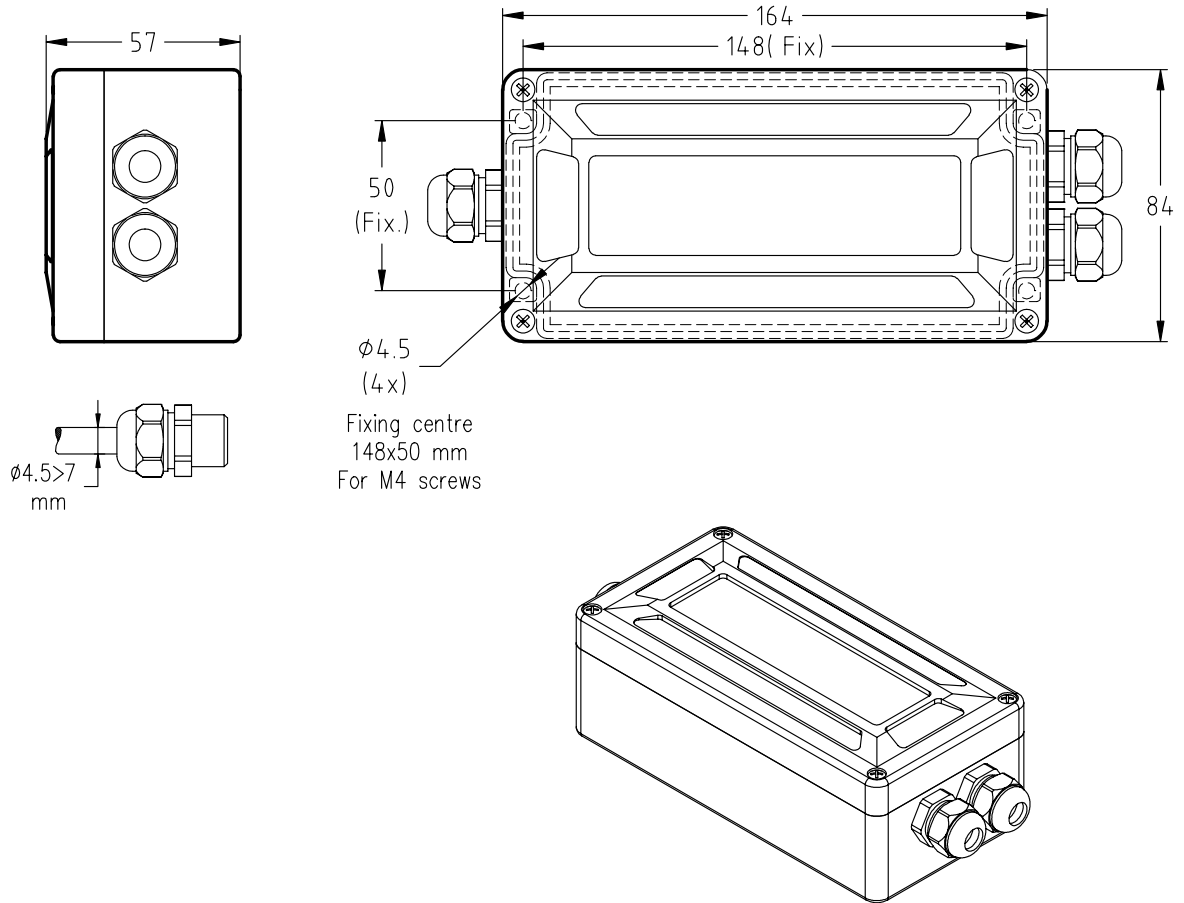
*F.S. : Full Scale.

** : Power supply 9...36 VDC available on request.

Specifications subject to change without notice..

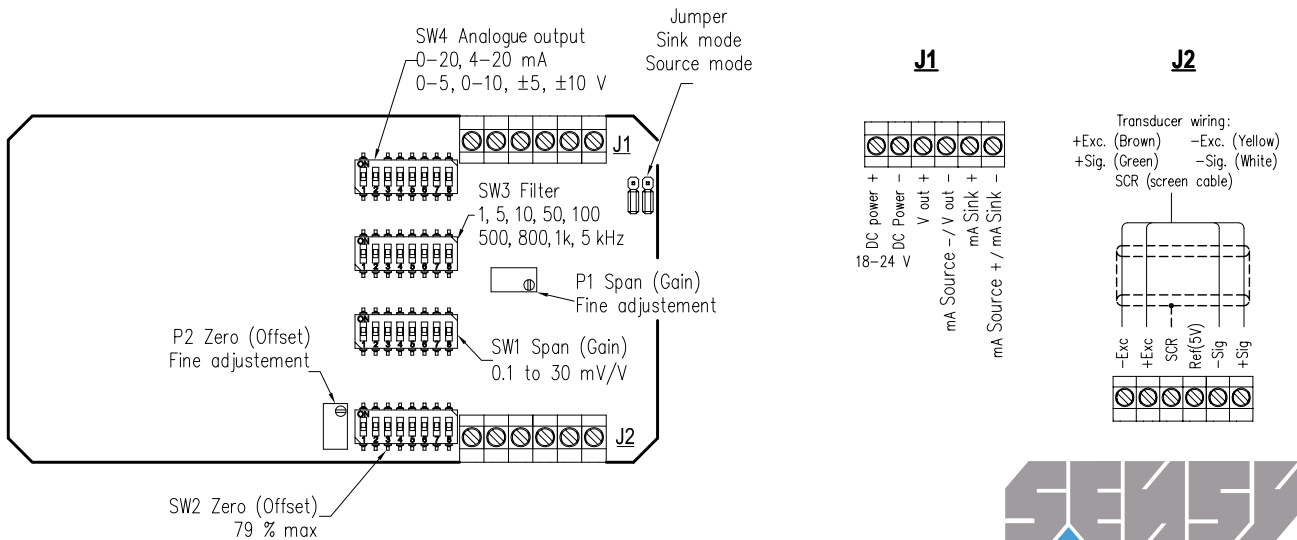
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COND-SGA-D > STANDARD DIMENSIONS



Dimensions in mm

Terminals



COND-A420

CONDITIONERS - AMPLIFIERS FOR STRAIN-GAUGE-BASED TRANSDUCERS

The COND-A420 conditioners - amplifiers provide standardised signals in current and voltage from every load cell, force transducer and torque sensor based on strain-gauge technology.



COND-A420



Features

- o Input range: Wheatstone bridge (4 or 6 wires connection (sense))
- o Output: 4(0)...20 mA and 0...10 V (simultaneously)
- o Sensor excitation: 10 V (120 mA max.) available for up to 4 x 350 ohms. Load cells connected in parallel
- o DIN rail mounting

Application(s) SENSY's COND-A420 are perfectly designed for the following application:

- Industrial weighing.

Function(s)

- Zero-point and full-scale adjustment by potentiometers (20 turns) on the front panel
- Correction of the influence of transducer cable length (6-wire technology)

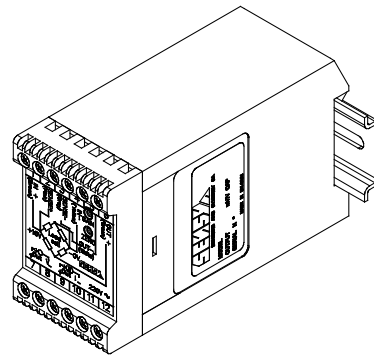
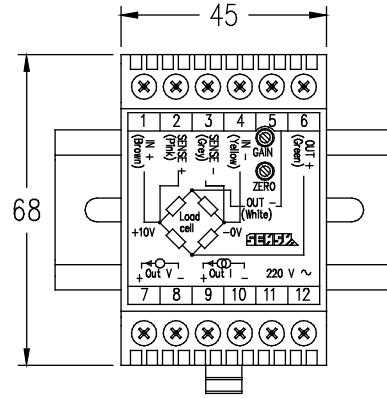
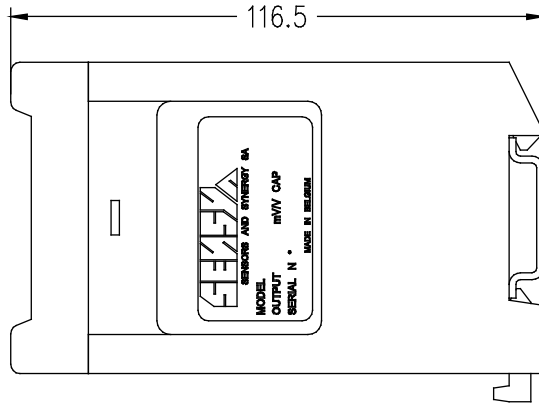
Specifications	COND-A420	COND-A420-DC	
Type	Strain-gauge conditioner (mV/V)	Strain-gauge conditioner (mV/V)	-
Input range	0.5...2 mV/V	0.5...2 mV/V	-
Sensor excitation	10 VDC (120 mA max.)	10 VDC (120 mA max.)	-
Non-linearity error	<± 0.01	<± 0.01	% F.S.*
Display	-	-	-
Bandwidth	0...10	0...10	Hz
Service temperature range	-10...+60	-10...+60	°C
Storage temperature range	-30...+80	-30...+80	°C
Temperature coefficient of the sensitivity	<± 0.06	<± 0.06	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.2	<± 0.2	% F.S.*10°C
Power supply	230 VAC** (50 / 60 Hz) (3 VA)	24 VDC (5 W)	-
Output tension	0...10 (load R. >= 1000 ohms)	0...10 (load R. >= 1000 ohms)	V
Output current	0...20 / 4...20 (load R. <= 800 ohms)	0...20 / 4...20 (load R. <= 800 ohms)	mA
IP rating	IP20	IP20	-

*F.S. : Full Scale.

** : 110 VAC available on request.

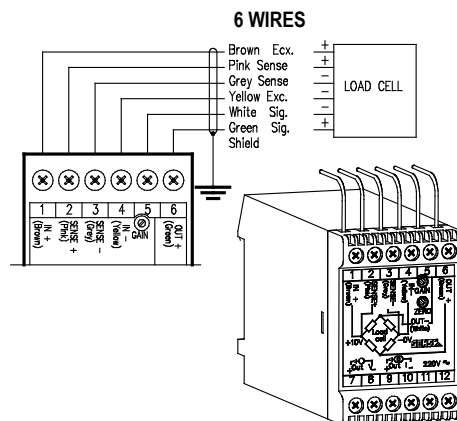
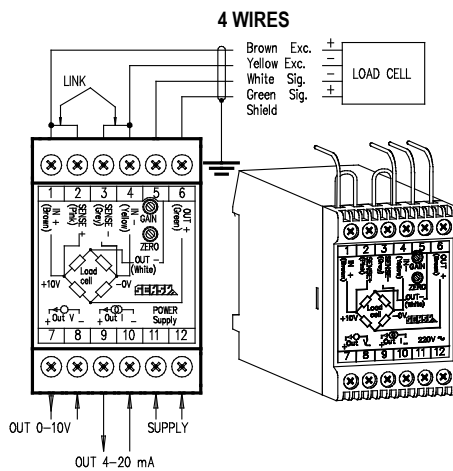
Specifications subject to change without notice..

COND-A420 > STANDARD DIMENSIONS



Dimensions in mm

Terminals



COND-USB

STRAIN-GAUGE BRIDGE TO USB CONVERTER

The COND-USB converts the signal from a Wheatstone bridge (mV/V) into a USB signal.



Features

- o High accuracy
- o Very high resolution
- o Linearisation of transducer signal available
- o Toolkit software included
- o ABS IP50 enclosure
- o DB9 socket @ load cell side
- o Micro USB socket with 1.5 m cable

COND-USB



Application(s) SENSY's COND-USB is perfectly designed for the followings applications:

- Force / torque measurement, weighing with display on computer / laptop.

Function(s)

- Scaling of output signal in measuring unit
- Easy connection to computer or PLC
- No need for additional power supply

Specifications	COND-USB	
Input range	±3 mV/V	-
Sensor excitation	4.5...5.25 VDC	-
Non-linearity error	<=± 0.0025	% F.S.*
Impedance of Wheatstone bridge	85...5000	ohm(s)
Baud rate	115...200 kbps	-
A/D converter	50 000...200 000 div.***	-
Protocol	ASCII	-
Bandwidth	1...100	Hz
Service temperature range	-40...+85****	°C
Temperature coefficient of the sensitivity	<± 0.005	% F.S./10°C
Temperature coefficient of zero signal	<± 0.004	% F.S./10°C
Consumption (max.)	68**	mA
Dimensions	74.5 x 51 x 20	mm
IP rating	IP50	-

*F.S. : Full Scale.

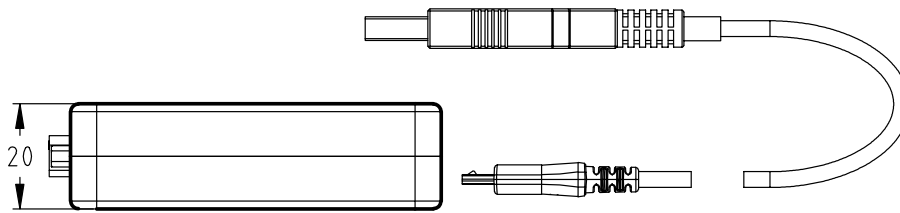
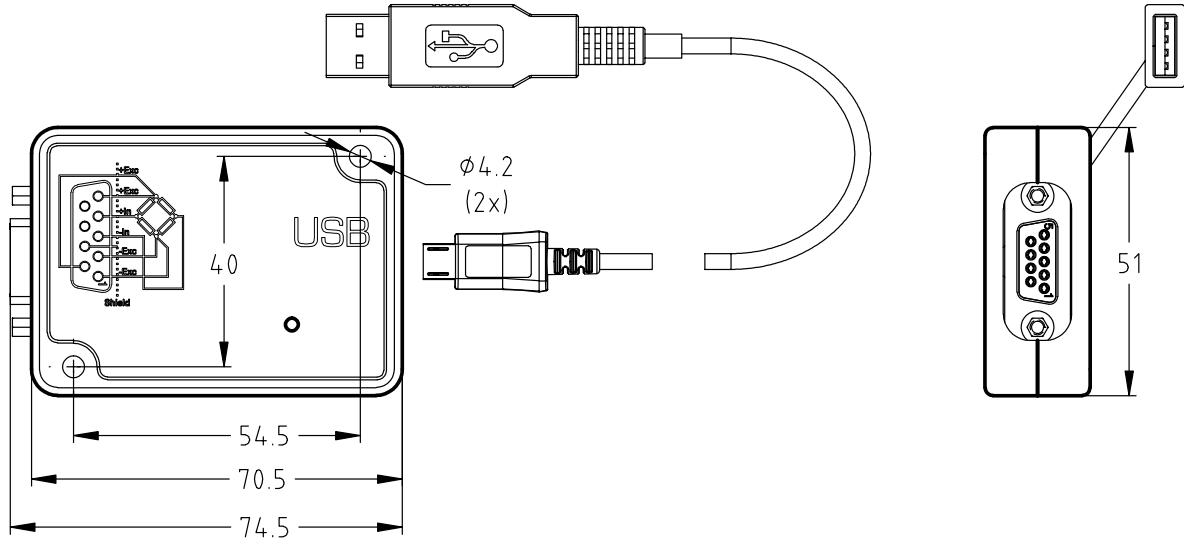
** : with Wheatstone bridge of 350 ohms.

*** : according to reading frequency.

**** : 95% relative humidity.

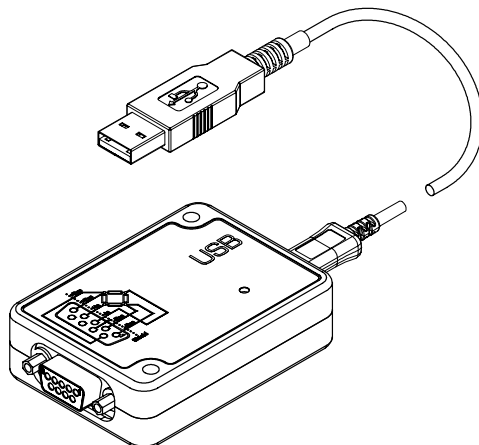
Specifications subject to change without notice..

COND-USB > STANDARD DIMENSIONS

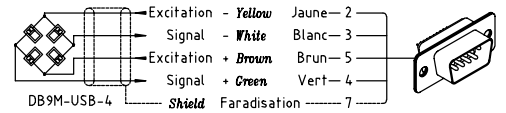


Dimensions in mm

Other view



Terminals



JBOX

JUNCTION BOXES FOR WEIGHING SYSTEMS

Junction boxes designed to connect several load cells in parallel to the same electronics with corner adjustment.



Features

- o 4 or 6 inputs
- o Connection in 4 or 6 wires
- o Cabling of load cells and electronics by screw terminals
- o Waterproof

JBOX-4 / JBOX-AJB



Application(s) SENSY's JBOX are perfectly designed for the following applications:

- Legal for trade or industrial weighing,
- Scales and balances.

Function(s)

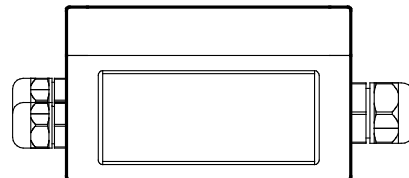
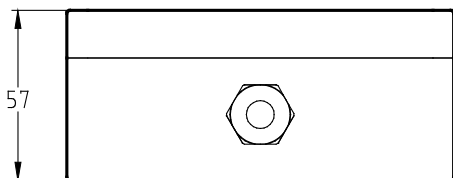
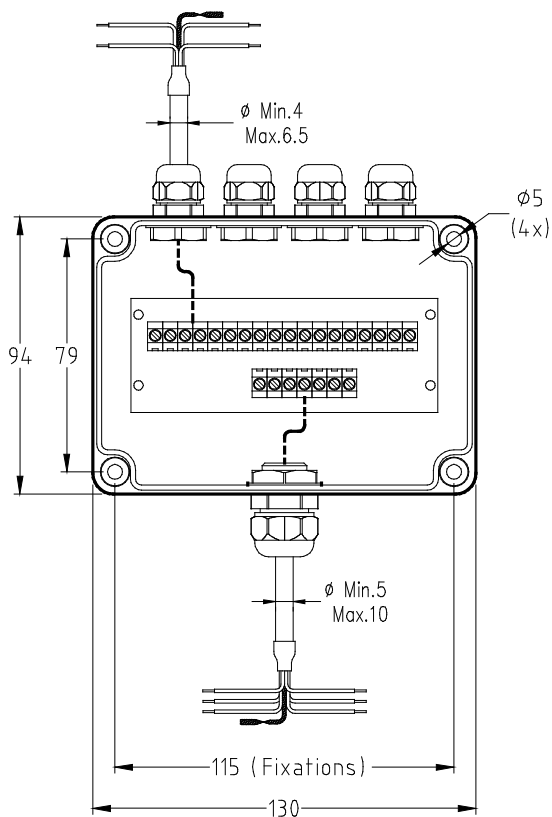
- User-friendly configuration
- Sturdy design
- JBOX-4: 4 load cells - low-cost
- JBOX-AJB-4: 4 load cells - corner adjustments - surge protection
- JBOX-AJB-6: 6 load cells - corner adjustments - surge protection

Specifications	JBOX-4	JBOX-AJB-4	JBOX-AJB-6	
Qty of load cells max.	4	4	6	-
Corner adjustment	No	Yes	Yes	-
Service temperature range	-10...+40	-10...+40	-10...+40	°C
Storage temperature range	-30...+70	-30...+70	-30...+70	°C
Qty of cable glands	5	5	7	-
Material	Polycarbonate	Stainless steel	Stainless steel	-
IP rating	IP66	IP67	IP67	-

*F.S. : Full Scale.

Specifications subject to change without notice..

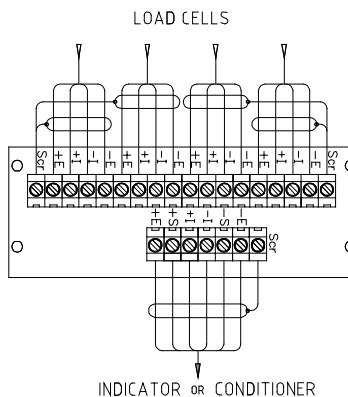
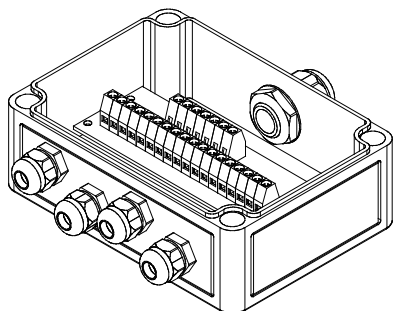
JBOX-4 > STANDARD DIMENSIONS



Dimensions in mm

Other view

Terminals



- SCR=CABLE SCREEN
- E=Exc.- (YELLOW)
- S=Sense - (GREY)
- I=Sig.- (WHITE)
- +I=Sig.+ (GREEN)
- +S=Sense + (PINK)
- +E=Exc.+ (BROWN)



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INDI-5250

WEIGHING INDICATOR

Very-high-accuracy digital indicator designed for weighing applications.



Features

- o Approved for 10.000 d OIML
- o Up to 70 measurements per second
- o Alibi-memory for 10.000 records
- o Parallel connection of up to 10 strain-gauge load cells (350 ohms)
- o Display resolution up to 99.000 d
- o Bright, 6-digit, red LED display (14 mm)
- o Serial RS-232 port for connection to serial printer, computer or remote display
- o Desktop or industrial housing
- o 1 digital input (programmable as tilt input or to tare scale remotely or others)
- o 2 digital outputs (programmable as weight set-points or as other control outputs)

Available option(s)

- analogue output 4(0)...20 mA or 0.02...10 V

INDI-5250



Application(s) SENSY's INDI-5250 is perfectly designed for the following applications:

- Legal for trade weighing,
- Accurate industrial weighing.

Function(s)

- Zero, tare, tare recall, print, total
- Automatic zero tracking, no motion detection

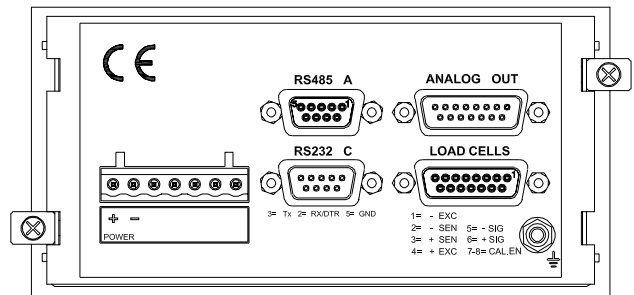
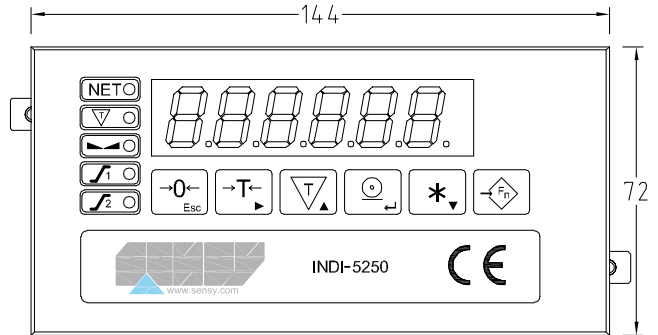
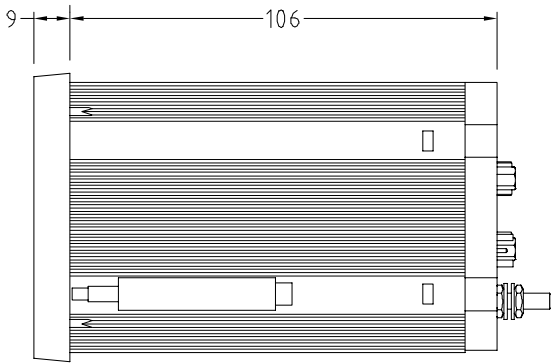
Specifications	INDI-5250	
Type	Strain-gauge input (mV/V)	-
Accuracy class	10 000 d OIML	-
Input range	1...4 mV/V	-
Sensor excitation	±5 VDC switched polarity or +5 VDC, with sense	-
Non-linearity error	<= 0.01	% F.S.*
Display	6 digits	-
Internal resolution	550 000 div.	-
Service temperature range	-10...+40	°C
Storage temperature range	-10...+70	°C
Temperature coefficient of the sensitivity	< 0.02	% F.S.*10°C
Temperature coefficient of zero signal	< 0.02	% F.S.*10°C
Power supply	9...15 VDC (adapter 230 VAC included)	-
IP rating	IP40 (IP54**)	-

*F.S. : Full Scale.

** : front panel only.

Specifications subject to change without notice..

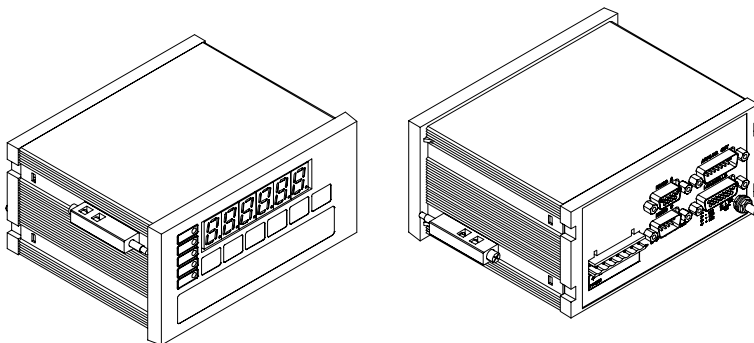
INDI-5250 > STANDARD DIMENSIONS



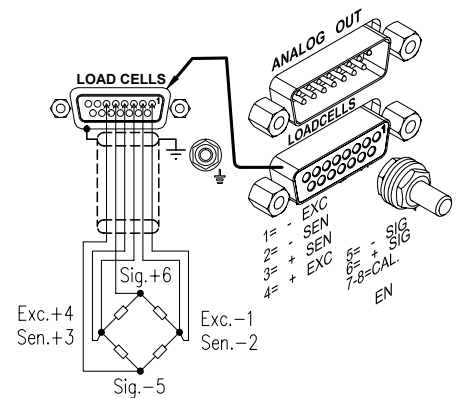
Note: panel cut-out 136.5 mm (-0+0.8) 66.5 mm (-0+0.5)

Dimensions in mm

Other views



Terminals



Note: If used with a 4 wires load cell, you must shunt pins 1-2 and pins 3-4.

INDI-PSD

HAND-HELD DISPLAYS FOR STRAIN-GAUGE-BASED TRANSDUCERS

The INDI-PSD are hand-held indicators for load cells, force transducers or torque meters based on strain-gauge technology.



Features

- o 7 digit LCD display
- o High resolution
- o Light (250 g)
- o Dual range
- o Large autonomy (450 h in power save mode)
- o TEDS enabled
- o RS-232 output (INDI-PSD232 only)

Available option(s)

- CASE-PSD: leather case with shoulder strap and clear viewing
- BATT-PSD: rechargeable batteries with charging unit (230 VAC)



INDI-PSD

Application(s) SENSY's INDI-PSD are perfectly designed for the following applications:

- Force and torque measurement,
- Mobile weighing.

Function(s)

- Tare, hold, peak, through and shunt calibration functions by front keys
- Easy calibration by front keys
- Automatic calibration by TEDS

Specifications	INDI-PSD	INDI-PSD232	
Type	Strain-gauge hand-held indicator	Strain-gauge hand-held indicator	-
Input range	$\pm 5 \text{ mV/V}$	$\pm 5 \text{ mV/V}$	-
Sensor excitation	5 VDC (59 mA max.)***	5 VDC (59 mA max.)***	-
Non-linearity error	$<\pm 0.005$	$<\pm 0.005$	% F.S.*
Display	7 digits LCD (8.8 mm)	7 digits LCD (8.8 mm)	-
A/D converter	250 000 pts@1 Hz / 65 000 pts@10 Hz	250 000 pts@1 Hz / 65 000 pts@10 Hz	-
Communication	-	RS-232	-
Service temperature range	-10...+50	-10...+50	°C
Storage temperature range	-40...+65	-40...+65	°C
Temperature coefficient of the sensitivity	$<\pm 0.005$	$<\pm 0.005$	% F.S./10°C
Temperature coefficient of zero signal	$<\pm 0.007$	$<\pm 0.007$	% F.S./10°C
Power supply	2 x AA alkaline batteries**	2 x AA alkaline batteries**	-
IP rating	IP65	IP65	-

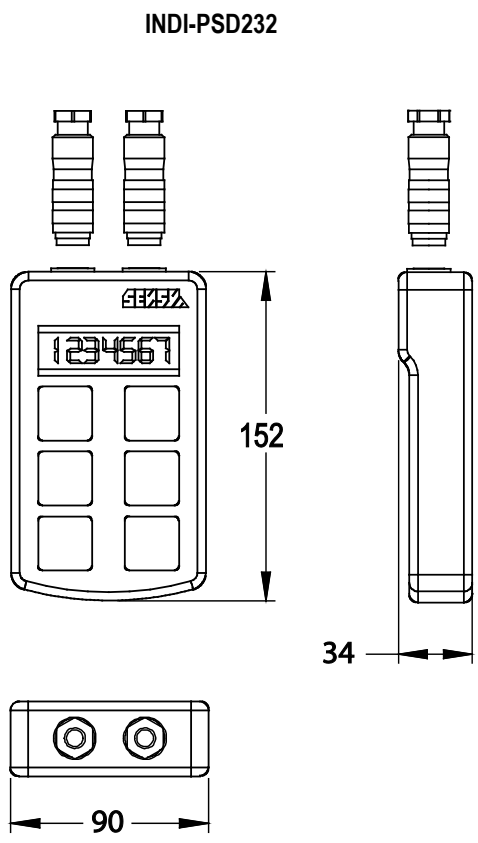
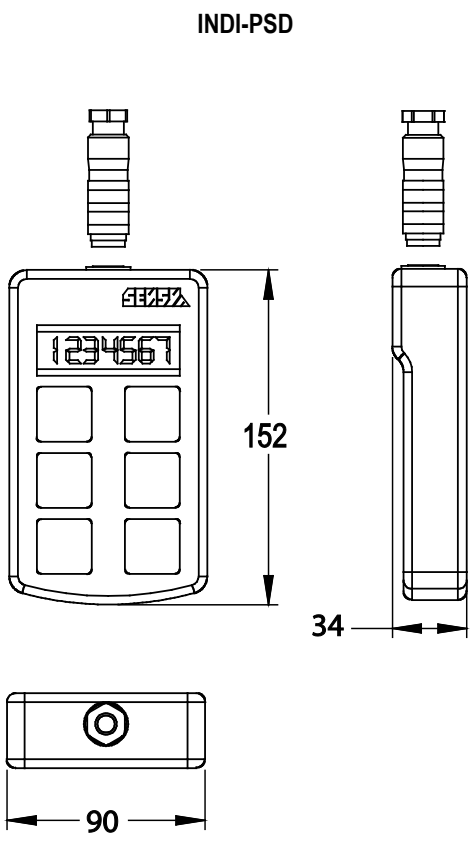
*F.S. : Full Scale.

** : Battery life : 35 h (450 h in low power mode) with transducer of 350 ohms.

*** : Transducer impedance of 85...5000 ohms.

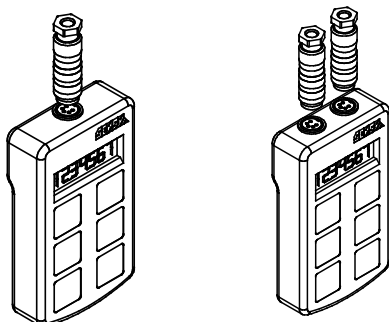
Specifications subject to change without notice..

INDI-PSD > STANDARD DIMENSIONS



Dimensions in mm

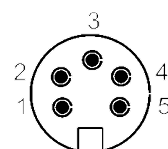
Other views



Terminals

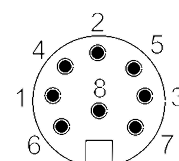
Sensor connections
5 pin 723 series Binder connector

- Pin 1 + Excitation
- Pin 2 - Excitation & TEDS Common
- Pin 3 + Signal
- Pin 4 - Signal
- Pin 5 TEDS



RS232 Port
8 pin 723 series Binder connector

- Pin 1 Tx
- Pin 2 Rx
- Pin 3 Gnd



WI-T24TR-ACM

RADIO TRANSMITTERS FOR ANALOGUE SIGNAL

The WI-T24TR-ACM is a wireless radio transmitter for analogue measurement signals. It is available in 3 housing versions and for 3 kinds of input signals (mV/V, V and mA).



Features

- o Frequency: 2.4 GHz
- o Power: 10 mW (licence: exemption)
- o Range: 800 m (exception for WI-T24TR-ACMM: 500 m)
- o High accuracy, high resolution
- o Type:
 - WI-T24TR-ACM:
 - housing: 164x84x57 mm, protection class IP67
 - power supply: from 5 to 18 VDC or 2 x D cells (2 x 1.5 VDC)
 - autonomy: with 2 alkaline 10 Ah cells: 280 days**
 - WI-T24TR-ACMI:
 - housing: 80x62x34 mm, protection class IP67
 - power supply: 2 x AA cells (2 x 1.5 VDC)
 - autonomy with 2 alkaline 2.2 Ah cells: 60 days**
 - WI-T24TR-ACMM:
 - housing: 76x35x20 mm, protection class IP50
 - power supply: 2 x AAA cells (2 x 1.5 VDC)
 - see option WI-T24TR-ACMM-BATT on technical drawings
 - autonomy with 2 alkaline 1 Ah cells: 28 days**
- o Antenna: integrated

WI-T24TR-ACM



Application(s)

SENSY's WI-T24TR-ACM, -ACMI and -ACMM are perfectly designed for the following application:

- Wireless transmission of the sensor signal mounted on mobile equipment or a mobile crane.

Function(s)

- Linearisation of the transducer signal.
- Stand-by and activation by radio.
- Remote-control batteries.

Specifications	WI-T24TR-ACM(x)-SA***	WI-T24TR-ACM(x)-IA***	WI-T24TR-ACM(x)-VA***	
Input range	±3.2 mV/V	0...21 mA	0...10 V	-
Sensor excitation	4.5...5.25 VDC	-	-	-
Non-linearity error	< 0.0025	< 0.0025	< 0.0025	% F.S.*
Impedance of Wheatstone bridge	85...5000	-	-	ohm(s)
A/D converter	250 000	10 000	11 000	-
Internal resolution	16 000 000	16 000 000	16 000 000	-
Converter rate	10...1000 ms	10...1000 ms	10...1000 ms	-
Service temperature range	-20...+55	-20...+55	-20...+55	°C
Temperature coefficient of the sensitivity	< 0.004	< 0.05	< 0.05	% F.S./10°C
Temperature coefficient of zero signal	< 0.005	< 0.0005	< 0.0005	% F.S./10°C
Input resistance		47	100 000	ohm(s)

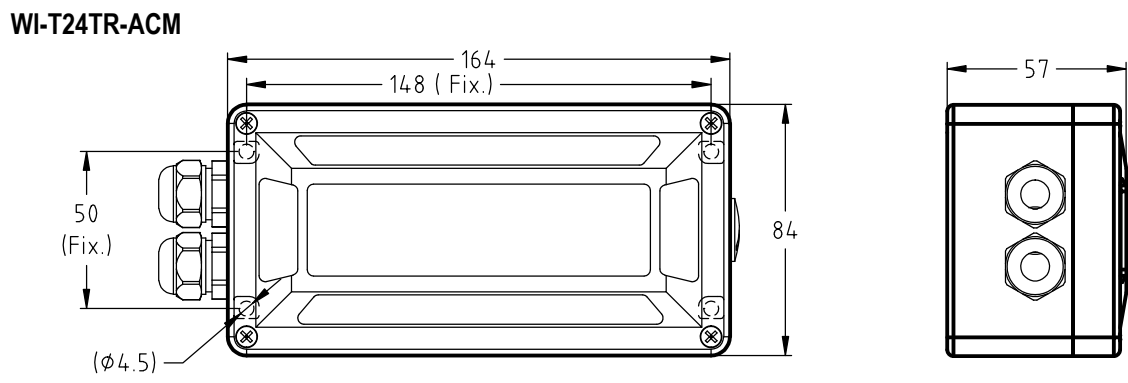
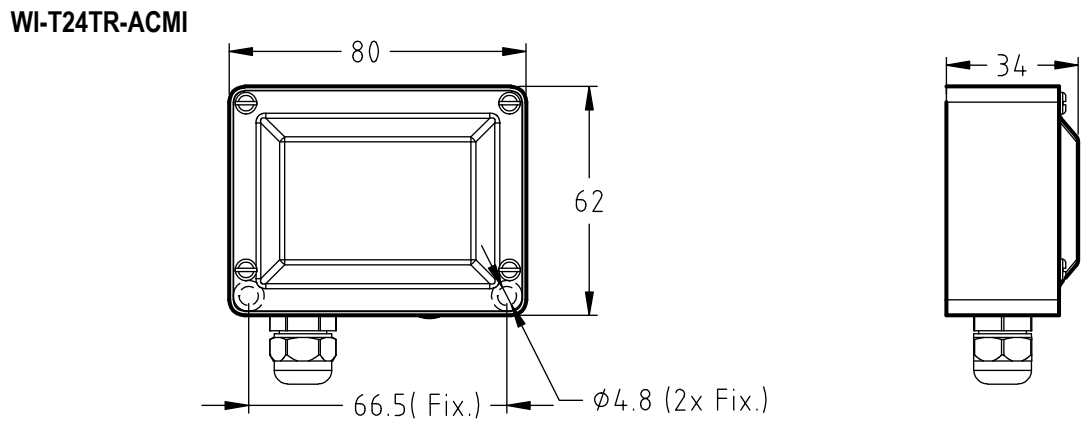
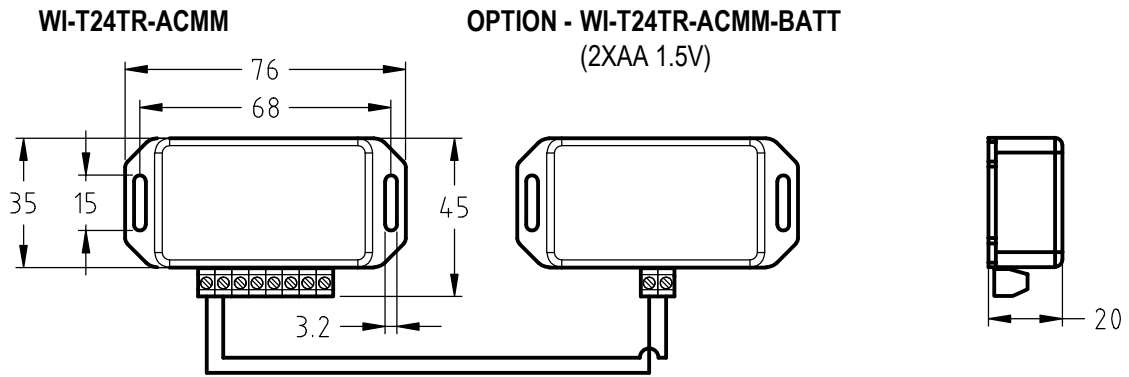
*F.S. : Full Scale.

** : 1 measure./s. 24h/24. Sample time: 10 ms. (WI*-SA: Wheatstone bridge: 1 kohm / WI*-IA: and WI*-VA: signal generator powered by external power supply. Low power mode)

*** (x): According to housing versions (-ACM, ACMI, -ACMM)

Specifications subject to change without notice..

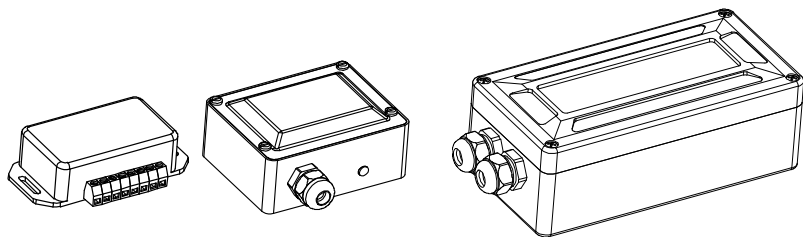
WI-T24TR-ACM > STANDARD DIMENSIONS



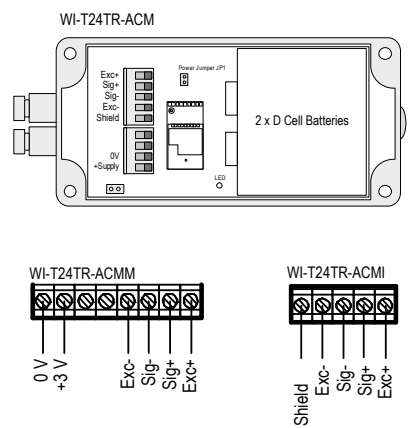
Dimensions in mm



Other views



Terminals



WI-T24RE-Hx

HAND-HELD RADIO RECEIVERS WITH DISPLAY

The WI-T24RE-HS, WI-T24RE-HA and WI-T24RE-HR are hand-held indicators for sensors equipped with a radio transmitter.



WI-T24RE-Hx



Features

- o Frequency: 2.4 GHz
- o Licence: exemption
- o Range: up to 800 m open field
- o Antenna: integrated
- o High resolution: 7 digits
- o Channels:
 - WI-T24RE-HS: 1
 - WI-T24RE-HA: up to 12
 - WI-T24RE-HR: displays all transmitters within its range (roaming)

Available option(s)

- leather carry case with clear viewing window and shoulder strap (CASE-PSD)

Application(s)

SENSY's WI-T24RE-HS, -HA and -HR are perfectly designed for the following applications:

- Display of force or torque from transducer installed on mobile equipment,
- Remote display of the lifted load on cranes.

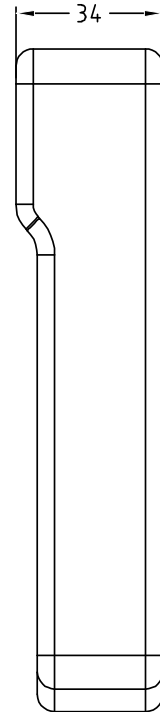
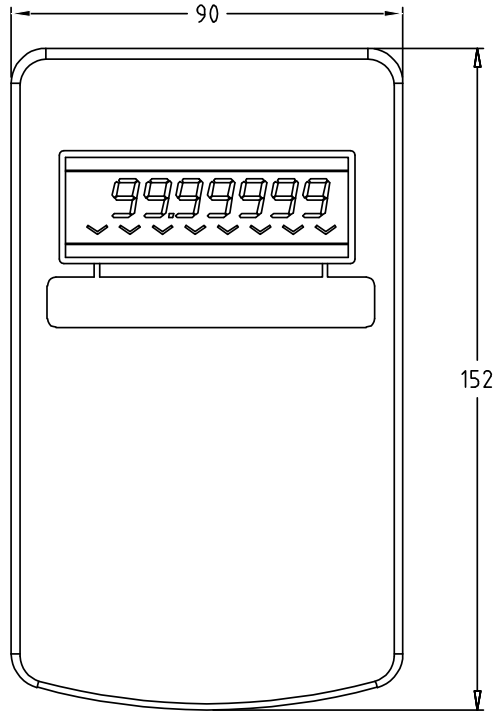
Function(s)

- WI-T24RE-HS provides a point-to-point connection to a single transmitter.
- WI-T24RE-HA provides either a sum total from all selected transmitters or the possibility to view individual transmitters.
- WI-T24RE-HR is a roaming hand-held device allowing the operator to cycle the display between all transmitters within its range.
- Reset (tare) by push button
- Auto "power off" and "power on" for remote transmitter module

Specifications	WI-T24RE-HS	WI-T24RE-HA	WI-T24RE-HR	
Type	Handheld indicator (1 sensor)	Handheld indicator (up to 12 sensors)	Handheld indicator (unlimited (roaming))	-
Display	7 digits LCD of 8.8 mm high	7 digits LCD of 8.8 mm high	7 digits LCD of 8.8 mm high	-
Service temperature range	-10...+50	-10...+50	-10...+50	°C
Storage temperature range	-40...+85	-40...+85	-40...+85	°C
Power supply	2.5 up to 3.6 VDC (2 AA alkaline batteries)	2.5 up to 3.6 VDC (2 AA alkaline batteries)	2.5 up to 3.6 VDC (2 AA alkalines batteries)	-
Autonomy @ normal mode (2 batteries)	35 hours	35 hours	35 hours	-
Autonomy @ "Powered off" mode	18 months	18 months	18 months	-
Dimensions	152 x 90 x 34	152 x 90 x 34	152 x 90 x 34	mm
IP rating	IP67 / NEMA 4	IP67 / NEMA 4	IP67 / NEMA 4	-

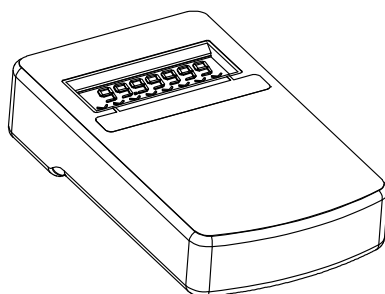
Specifications subject to change without notice..

WI-T24RE-Hx > STANDARD DIMENSIONS



Dimensions in mm

Other view



Terminals

N.A.

WI-T24RE-AO1

WIRELESS ANALOGUE OUTPUT RECEIVER MODULES

WI-T24RE-AO1 and WI-T24RE-AO1I convert data from a WI-T24TR-ACM module into an analogue output.



WI-T24RE-AO1



Features

- o Voltage and current output
- o Frequency: 2.4 GHz
- o Licence: exemption
- o Up to 2000 updates / s
- o High accuracy
- o High resolution
- o Industrial (WI-T24RE-AO1I) and desktop (WI-T24RE-AO1) versions available

Application(s) SENSY's WI-T24RE-AO1 and -AO1I are perfectly designed for the following applications:

- Reception of an analogue signal transmitted by a load cell with WI-T24TR-ACM option,
- Wireless reception of a process signal (4..20 mA or 0..10 V) from mobile equipment.

Function(s)

- One to one transmission
- WI-T24RE-AO1 and WI-T24RE-AO1I provide both output signals:
 - o Voltage: 0..5 V, 0..10 V, -5..0..+5 V, -10..0..+10 V
 - o Current: 4..20 mA, 0..20 mA source and sink

Specifications	WI-T24RE-AO1 (V)	WI-T24RE-AO1 (mA)	WI-T24RE-AO1I (V)	WI-T24RE-AO1I (mA)	
Non-linearity error	± 0.01	± 0.02	± 0.01	± 0.02	% F.S.*
A/D converter	16 bits	16 bits	16 bits	16 bits	-
Internal resolution	65 000 div.	65 000 div.	65 000 div.	65 000 div.	-
Output signal	0..10 V, ± 10 V**	4 (0)..20 mA	0..10 V, ± 10 V**	4 (0)..20 mA	-
Load resistance	>= 5000	<= 500	>= 5000	<= 500	ohm(s)
Range	Up to 100 m	Up to 100 m	Up to 800 m	Up to 800 m	-
Service temperature range	-20...+55	-20...+55	-20...+55	-20...+55	°C
Storage temperature range	-40...+85	-40...+85	-40...+85	-40...+85	°C
Temperature coefficient of the sensitivity	± 0.15	± 0.3	± 0.15	± 0.3	% F.S./10°C
Temperature coefficient of zero signal	± 0.15	± 0.2	± 0.15	± 0.2	% F.S./10°C
Power supply	9...32 VDC	9...32 VDC	9...32 VDC	9...32 VDC	-
Consumption	100 mA (typ.)	100 mA (typ.)	100 mA (typ.)	100 mA (typ.)	-
IP rating	IP50	IP50	IP67	IP67	-

*F.S. : Full Scale.

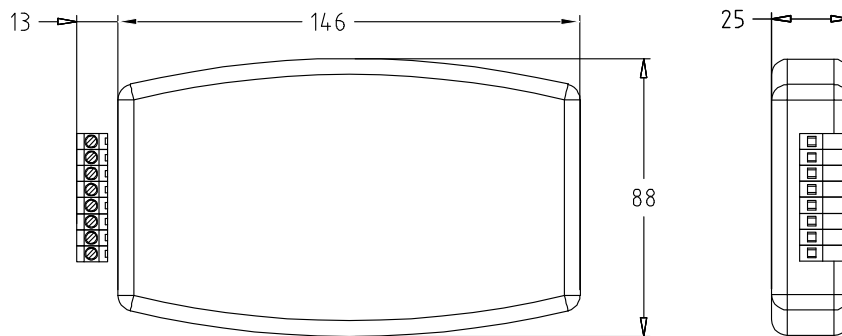
** : 0..5 V, ±5 V also available.

Specifications subject to change without notice..

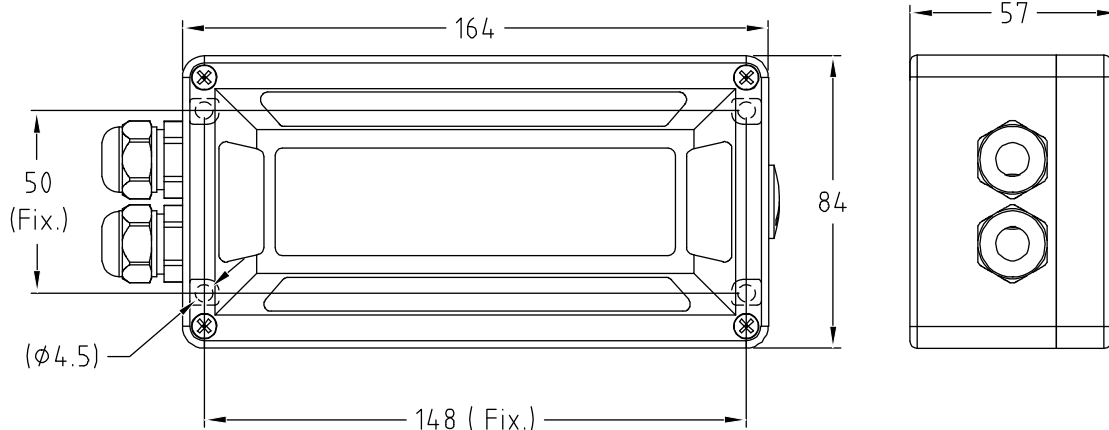
WI-T24RE-AO1 > STANDARD DIMENSIONS



Desktop version (WI-T24RE-AO1)

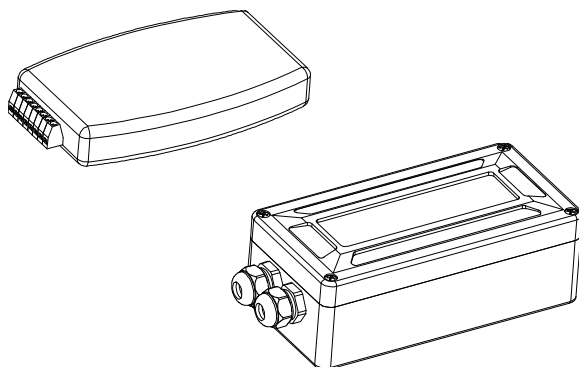


Industrial version (WI-T24RE-AO1I)

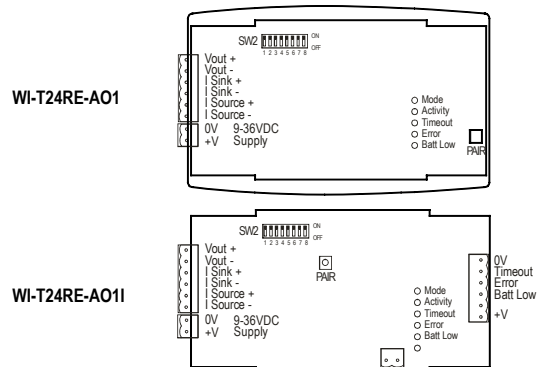


Dimensions in mm

Other views



Terminals



WI-T24RE-BSx

WIRELESS RECEIVERS WITH DIGITAL OUTPUTS

WI-T24RE-BSU, -BSUE and -BSI are base stations designed to connect every transducer provided by a wireless transmitter (WI-T24TR-ACM-xA) to a PC or a PLC in order to achieve its configuration, calibration and data acquisition.



Features

- o Frequency: 2.4 GHz
- o Power: 10 mW
- o Licence: exemption
- o Range: up to 800 m open field
- o Antenna: integrated

WI-T24RE-BSx



Application(s) SENSY's WI-T24RE-BSU, -BSUE and -BSI are perfectly designed for the following applications:

- Wireless transmission to a computer or a PLC of the signal emitted by a load cell or a torque transducer mounted on mobile equipment,
- Remote transmission of the load indicated on crane.

Function(s)

- Data logging and visualisation software available for PC (Windows®)

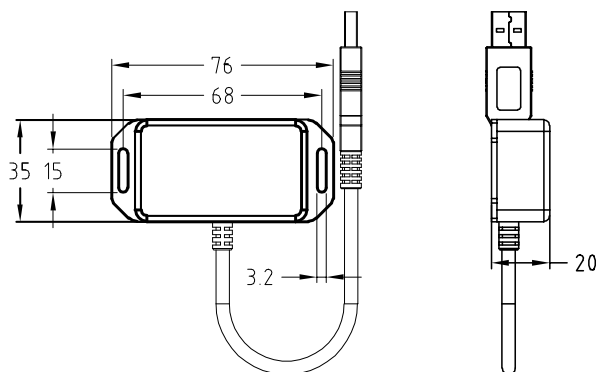
Specifications	WI-T24RE-BSU	WI-T24RE-BSUE	WI-T24RE-BSI	
Communication	USB	USB	USB, RS-232, RS-485	-
Service temperature range	-20...+55	-20...+55	-20...+55	°C
Storage temperature range	-40...+85	-40...+85	-40...+85	°C
Power supply	4.875...5.125 VDC (USB)	4.875...5.125 VDC (USB)	9...32 VDC	-
Consumption	-	-	100 mA @ 12 V	-
Dimensions	76 x 35 x 20	80 x 62 x 34	164 x 84 x 57	mm
IP rating	IP50	IP67	IP67	-
Humidity	0...95	0...95	0...95	% RH

Specifications subject to change without notice..

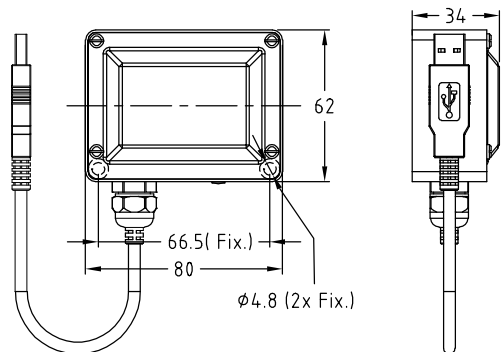
WI-T24RE-BSx > STANDARD DIMENSIONS



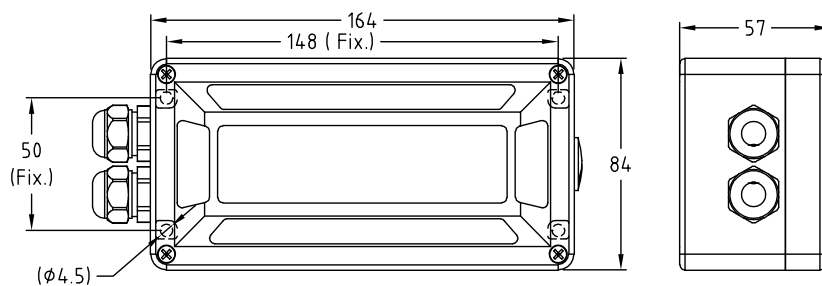
WI-T24RE-BSU



WI-T24RE-BSUE



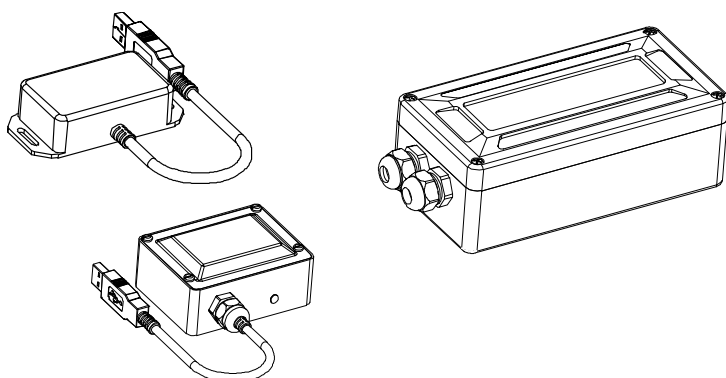
WI-T24RE-BSI



Fixing centre
148x50 mm
For M4 screws

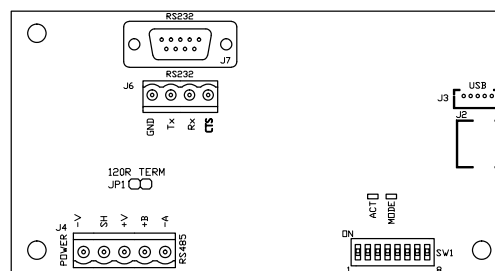
Dimensions in mm

Other views



Terminals

WI-T24RE-BSI



WI-T24RE-SO

MULTICHANNEL WIRELESS RECEIVER WITH DIGITAL OUTPUT

The WI-T24RE-SO is a base station designed to connect up to 8 transducers provided by a wireless transmitter WI-T24TR-ACM-xA to a PC or a PLC. It achieves configuration, calibration and data acquisition of each one or all of them.



Features

- o Frequency: 2.4 GHz
- o Power: 10 mW
- o License: exemption
- o Range: up to 800 m open field
- o Antenna: integrated

WI-T24RE-SO



Application(s) SENSY's WI-T24RE-SO is perfectly designed for the following applications:

- Wireless transmission to a computer or a PLC of the signals emitted by several load cells or torque sensors mounted on mobile equipment,
- Monitoring of multiple winches in theaters.

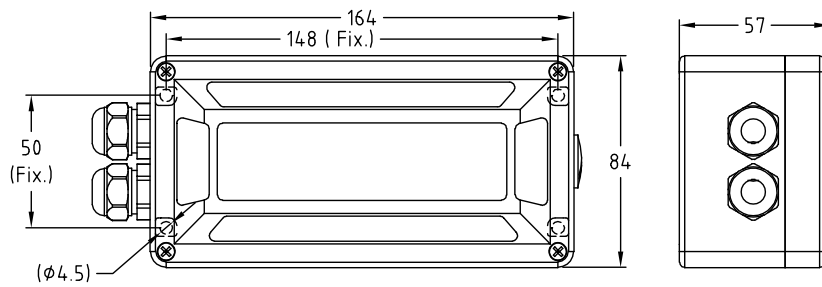
Function(s)

- Data logging and visualisation software available for computer (Windows®)
- Communication protocols available for connection to PLC

Specifications	WI-T24RE-SO	
Communication	RS-232, RS-485	-
Service temperature range	-20...+55	°C
Storage temperature range	-40...+85	°C
Power supply	9...32 VDC	-
Consumption	100 mA @ 12 V	-
Dimensions	164 x 84 x 57	mm
IP rating	IP67	-
Humidity	0...95	% RH

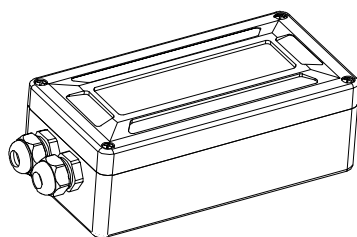
Specifications subject to change without notice..

WI-T24RE-SO > STANDARD DIMENSIONS

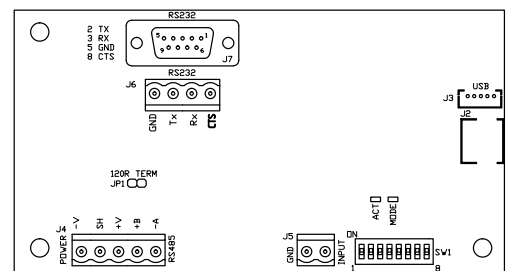


Dimensions in mm

Other view



Terminals



INDI-00

DISPLAY FOR STANDARD REFERENCE FORCE TRANSDUCERS

The INDI-00 is a high-accuracy portable indicator designed to be used in combination with standard reference force transducers with accuracy classes 1, 0,5 and 00*** according to ISO 376 standard.



Features

- o High accuracy: 0.01%
- o High resolution: 5 1/2 digits
- o 6-wire connection
- o RS-232 output

Available option(s)

- acquisition and management software
- working with rechargeable battery (charger included)

INDI-00



Application(s) SENSY's INDI-00 is perfectly designed for the following application:

Calibration of test equipment and load cells / force transducers.

Function(s)

- Tension, compression switch
- Calibration resistance switch

Specifications	INDI-00	
Type	Strain-gauge input (mV/V)	-
Accuracy class	Classes 1, 05 and 00 compatible	-
Input range	-0.25...2 / -0.25...4 mV/V	-
Sensor excitation	+5 VDC switched polarity or + 5 VDC with "sense"	-
Non-linearity error	<= 0.01	% F.S.*
Display	6 digits	-
Internal resolution	550 000 div.	-
Service temperature range	-10...+40	°C
Storage temperature range	-10...+70	°C
Temperature coefficient of the sensitivity	< 0.02	% F.S./10°C
Temperature coefficient of zero signal	< 0.02	% F.S./10°C
Power supply	230 VAC**	-
Weight	6.7	kg

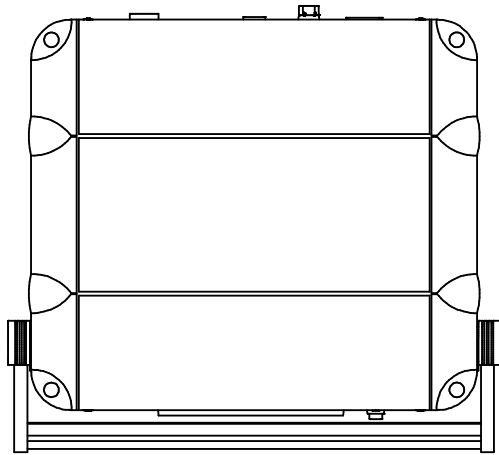
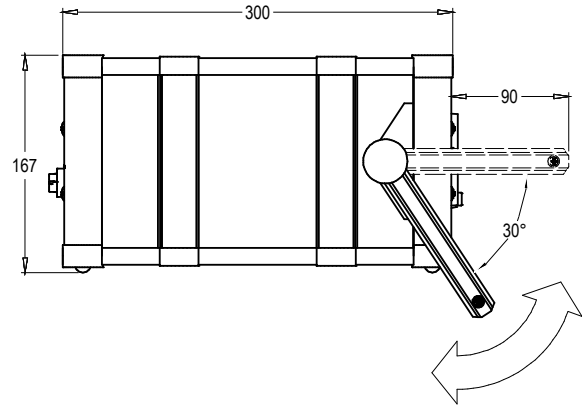
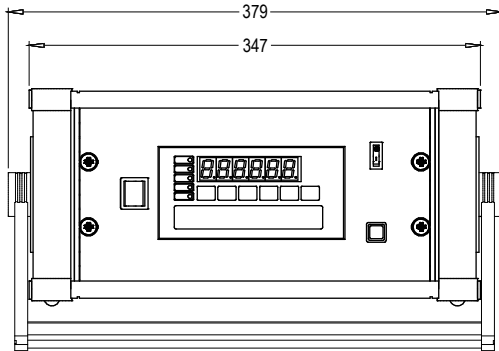
*F.S. : Full Scale.

** : internal rechargeable battery (option).

*** : with a calibration in mV/V or on request.

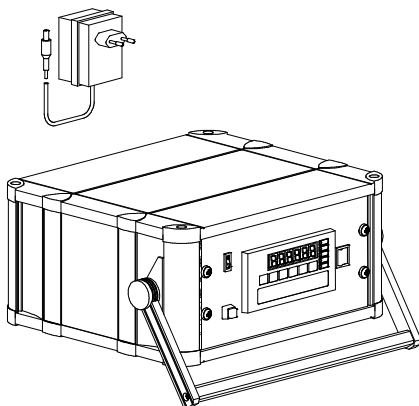
Specifications subject to change without notice..

INDI-00 > STANDARD DIMENSIONS



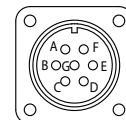
Dimensions in mm

Other view



Terminals

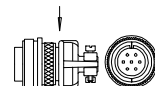
STANDARD AMPHENOL MS 3102 A 16S-15
(FEMALE ON CASE)



- A Sig. +Green (Vert)
- B Exct. - Yellow(Jaune)
- C Exct. Brown (Brun)
- D Sig. - White (Blanc)
- E Cable screen (Faradisation)
- F Sense + Pink (Rose)
- G Sense - Grey (Gris)

LOAD CELL INPUT

MALE CONNECTOR ON CABLE MS 3106A 16S-1P



INDI-ISO376

INDICATOR FOR STANDARD REFERENCE FORCE TRANSDUCERS

The INDI-ISO376 is a very high-accuracy portable indicator designed to be used in combination with standard reference force transducers with accuracy classes 1, 0,5 or 00 according to ISO 376 standard.



Features

- o High accuracy: 0.01%
- o High resolution
- o 6-wire connection

Available option(s)

- acquisition and management software

INDI-ISO376



Application(s) SENSY's INDI-ISO376 is perfectly designed for the following application:

Calibration of test equipment and load cells / force transducers.

Function(s)

- Peak function
- Hold function
- RS-232, RS-485 output / MODBUS RTU protocol

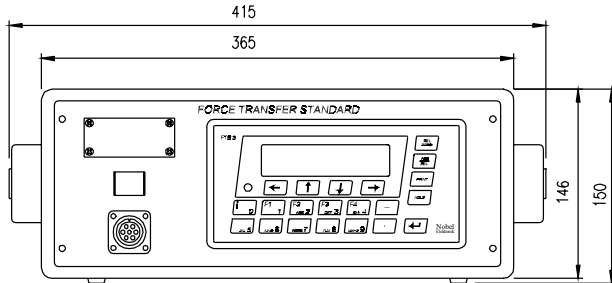
Specifications	INDI-ISO376	
Type	Strain-gauge input (mV/V)	-
Accuracy class	Classes 1, 05 and 00 compatible	-
Input range	± 3.3 mV/V	-
Sensor excitation	10 VDC	-
Non-linearity error	≤ 0.002	% F.S.*
Display	6 digits	-
Internal resolution	10 000 / 1 000 000 div.	-
Service temperature range	-10...+50	°C
Storage temperature range	-25...+85	°C
Temperature coefficient of the sensitivity	< 0.0015	% F.S./10°C
Temperature coefficient of zero signal	< 0.001	% F.S./10°C
Power supply	110 / 240 VAC	-
IP rating	IP54	-

*F.S. : Full Scale.
Specifications subject to change without notice..

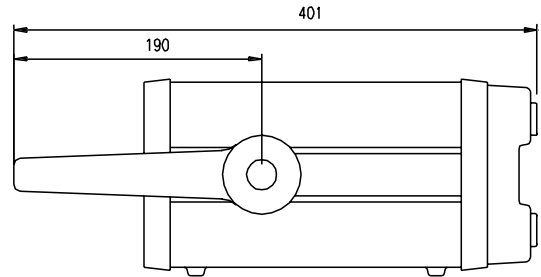
INDI-ISO376 > STANDARD DIMENSIONS



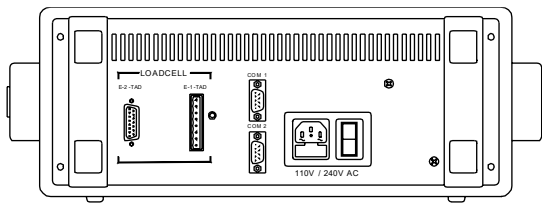
FRONT VIEW (HANDLE NOT SHOWN)



SIDE VIEW (SHOWING HANDLE)



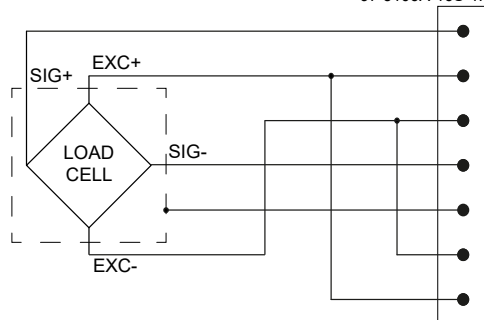
REAR VIEW (HANDLE NOT SHOWN)



Dimensions in mm

Terminals

CABLE MOUNTED PLUG
97-3106A-16S-1P



- A Signal- White
- B Excitation+ Brown
- C Excitation- Yellow
- D Signal+ Green
- E Shielding
- F Sense- Grey
- G Sense+ Pink

97-3102A-16S-1S
CHASSIS MOUNTED SOCKET

INDI-12390

LOAD CELL INDICATOR FOR TESTING MACHINE CONTROL

Standard reference indicator specially designed to display the 4 signals generated by the 3115F-12390 load cell. It is designed for the control of concrete testing machines according to EN12390-4 and DIN 51302-2 standards.



Features

- Compliant with EN 12390-4 and DIN 51302-2 standards
- 4 independent displays
- Resolution: 5 digits
- Robust industrial housing
- Digital output: RS-485

Available option(s)

- o analogue output: 0...10 V or 4...20 mA

INDI-12390



Application(s) SENSY's INDI-12390 is perfectly designed for the following application:

- Control of testing machines for the compressive strength of hardened concrete measurement according to EN 12390-4 and DIN 51302-2.

Function(s)

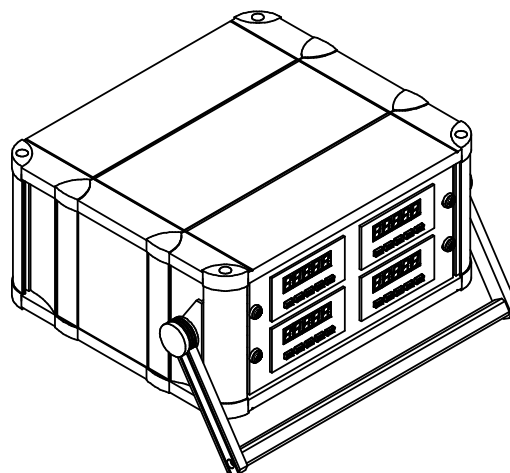
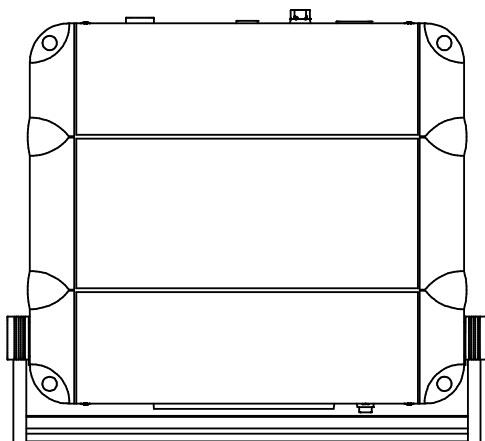
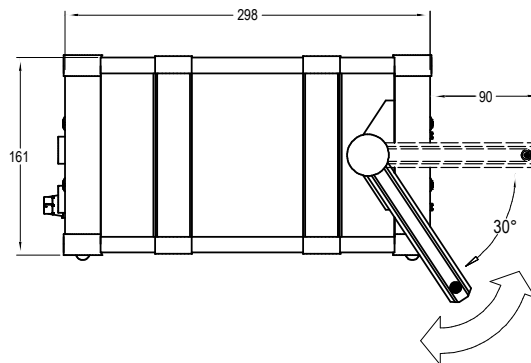
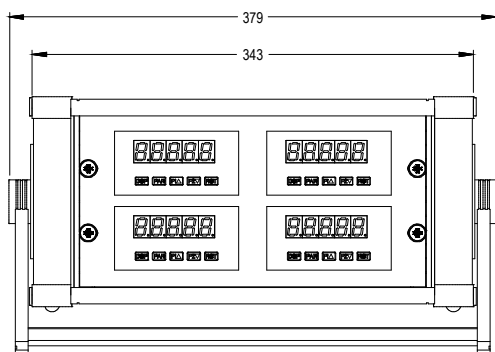
- Peak memories

Specifications	INDI-12390	
Type	4 x strain-gauge input	-
Input range	4 x ± 24 mVDC / 4 x ± 240 mVDC	-
Combined error (non-linearity + hysteresis)	< 0.1	% F.S.*
Sensor excitation	4 x 10 VDC	-
Display	4 x 5 digits (14.2 mm)	-
A/D converter	16 bits	-
Converter rate	20/s	-
Service temperature range	0...+50	°C
Storage temperature range	-40...+60	°C
Power supply	85...250 VAC (60 VA)	-

*F.S. : Full Scale.

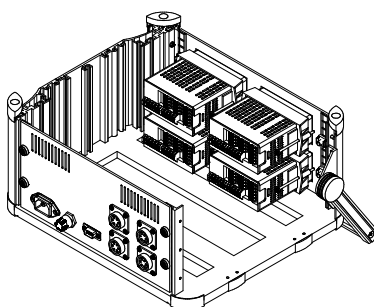
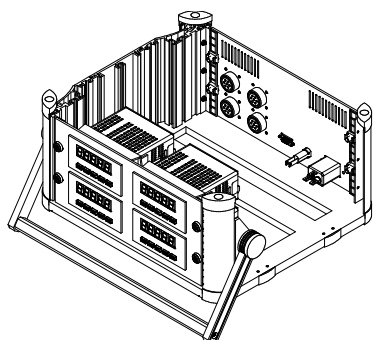
Specifications subject to change without notice..

INDI-12390 > STANDARD DIMENSIONS



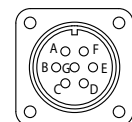
Dimensions in mm

Other views



Terminals

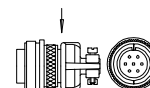
STANDARD AMPHENOL MS 3102 A 16S-1S
(FEMALE ON CASE)



- A Sig. +Green (Vert)
- B Exct. - Yellow(Jaune)
- C Exct. Brown (Brun)
- D Sig. - White (Blanc)
- E Cable screen (Faradisation)
- F Sense + Pink (Rose)
- G Sense - Grey (Gris)

LOAD CELL INPUT

MALE CONNECTOR ON CABLE MS 3106A 16S-1P



BRIDGE-BOY

EOT CRANE OVERLOAD PROTECTION ELECTRONICS WITH 1 OR 3 SET-POINTS

Electronics with 1 or 3 set-points designed, in combination with a load cell, to limit the load and/or to detect slack cable on a hoisting device (EOT cranes).



Features

- o Low cost
- o 1 or 3 independent set-points
- o Set-points 1 and 2 configured for load limitation
- o Set-point 3 configured by default for slack cable detection
- o Adjustments by potentiometers
- o Analogue outputs: 0...10 V and 4...20 mA
- o Din rail mounting (TS 35)
- o 115 VAC available by internal jumper

BRIDGE-BOY-1R



Application(s) SENSY's BRIDGE-BOY is perfectly designed for the following applications:

- Load limitation on: overhead cranes, container cranes, gantry cranes.

Function(s)

- Internal monitoring system of load cell integrity and load limitation electronics (fail safe)
- Overloads visualisation by a LED lamp at the front panel
- Test button at the front panel
- Hysteresis
 - Overload : default value : 20% (0% or 5% possible if specified when ordering)
 - Slack cable detection : 0%

Specifications	BB-48VAC-1R	BB-230VAC-1R	BB-48VAC-3R	BB-230VAC-3R	
Type	Load limiter with single strain-gauge input	Load limiter with single strain-gauge input	Load limiter with single strain-gauge input	Load limiter with single strain-gauge input	-
Input range	0.4...2 mV/V**	0.4...2 mV/V**	0.4...2 mV/V**	0.4...2 mV/V**	-
Sensor excitation	10...28 mA (11 V max)***	10...28 mA (11 V max)***	10...28 mA (11 V max)***	10...28 mA (11 V max)***	-
Accuracy	± 0.5	± 0.5	± 0.5	± 0.5	% F.S.*
Service temperature range	-20...+60	-20...+60	-20...+60	-20...+60	°C
Storage temperature range	-40...+70	-40...+70	-40...+70	-40...+70	°C
Power supply	48-110 VAC (50 / 60 Hz, 4 VA)	115-230 VAC (50 / 60 Hz, 3 VA)	48-110 VAC (50 / 60 Hz, 4 VA)	115-230 VAC (50 / 60 Hz, 3 VA)	-
Qty of relay	1	1	3	3	-
Relay type	"Form C" activated in safe situation	"Form C" activated in safe situation	"Form C" activated in safe situation	"Form C" activated in safe situation	-
Contact rating	6 A @ 250 VAC	6 A @ 250 VAC	6 A @ 250 VAC	6 A @ 250 VAC	-
Adjustable delay	60 ms...1 s***	60 ms...1 s***	60 ms...1 s***	60 ms...1 s***	-
Output tension	0..10 (load resistance >= 2.5 kohms)	0..10 (load resistance >= 2.5 kohms)	0...10 (load resistance >= 2.5 kohm)	0..10 (load resistance >= 2.5 kohms)	V
Output current	4...20 mA (load resistance <= 500 ohms)	4...20 mA (load resistance <= 500 ohms)	4...20 mA (load resistance <= 500 ohms)	4...20 mA (load resistance <= 500 ohms)	mA
IP rating	IP20	IP20	IP20	IP20	-

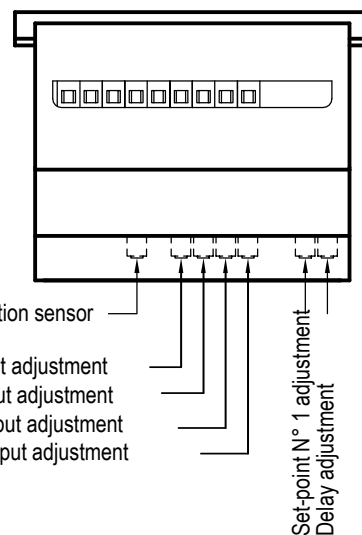
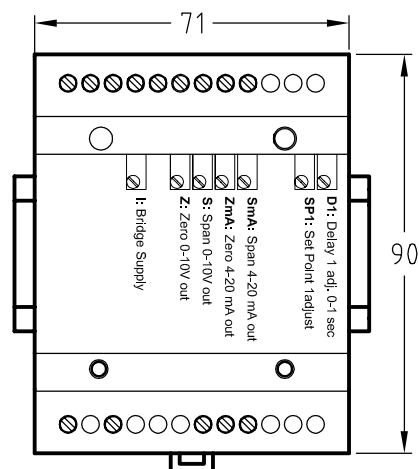
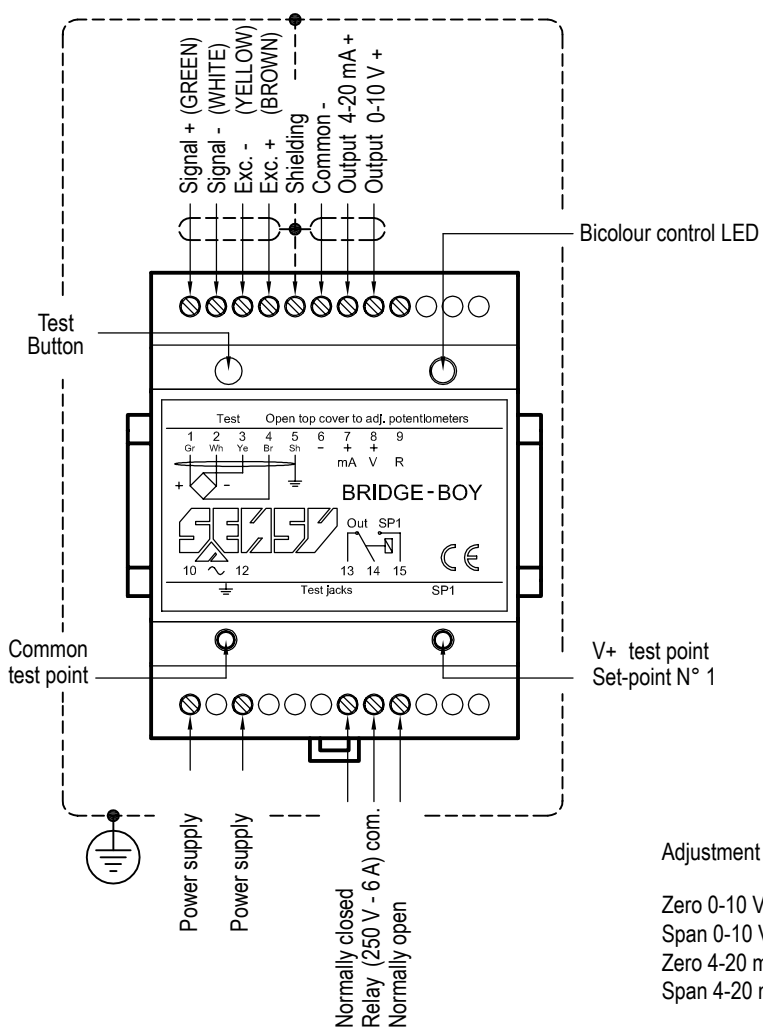
*F.S. : Full Scale.

** : Wheatstone bridge >= 350 ohms.

*** : adjustable by multi-turn potentiometer.

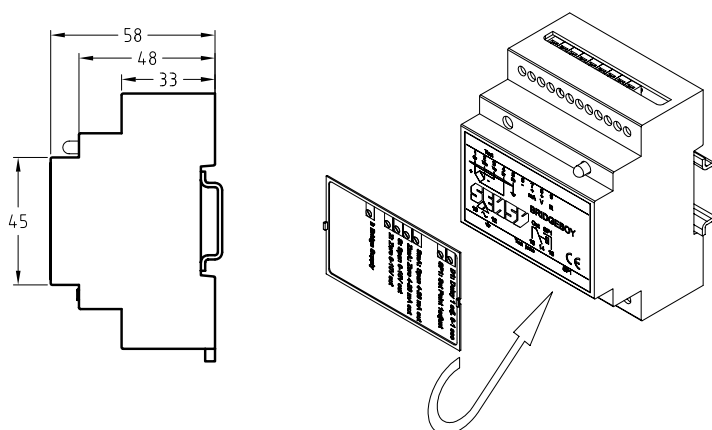
Specifications subject to change without notice..

BRIDGE-BOY-1R > STANDARD DIMENSIONS



Dimensions in mm

Other views



Terminals

See drawing

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INDI-BOY DISP-BOYP

CRANE OVERLOAD PROTECTION ELECTRONICS

Crane overload protection electronics with 3 set-points and display to be installed on a front panel.



Features

- o Easy and intuitive calibration
- o Display of hoisted load and input signal
- o Internal monitoring system of load cell integrity and load limitation electronics (fail safe)

Available option(s)

- Analogue output 4 (0)...20 mA or 0...10 V
- RS-232, RS-485 or fieldbus capabilities
- NEMA 4X / IP67 (transparent protection cover + Option "COVER PAX")
- rail DIN adaptor
- power supply: 48 VAC / 24 VDC (see INDI-BOY2 and DISP-BOYP2 products)
- also available with industrial metallic housing (see CRANE-BOY / CRANE-BOYP products)

INDI-BOY / DISP-BOYP



Application(s) SENSY's INDI-BOY and DISP-BOYP are perfectly designed for the following applications:

- Overload protection and slack rope detection of: overhead cranes, container cranes, gantry cranes and OEM .

Function(s)

- Internal survey system of the load cell and the electronics (fail safe)
- Test button to check the correct working of the detection system
- Secret code prohibiting programming by unauthorised users
- Intelligent filter with quick reaction to overload while not reacting to a transitory non-significant overload
- Maximum and minimum memories

Specifications	INDI-BOY	INDI-BOY12	DISP-BOYP	DISP-BOYP12	
Type	Load limiter for single load cell	Load limiter for single load cell	Load limiter for single load cell	Load limiter for single load cell	-
Input range	± 24 mVDC / ± 240 mVDC	± 24 mVDC / ± 240 mVDC	20 mA (-2 to +26 mA)	20 mA (-2 à +26 mA)	-
Sensor excitation	10 VDC @ 125 mA max**	10 VDC @ 125 mA max**	24 VDC ± 5 % @ 50 mA max.	24 VDC ± 5 % @ 50 mA max.	-
Display	5 digits (14.2 mm)	5 digits (14.2 mm)		5 digits (14.2 mm)	-
Accuracy	0.1	0.1	0.1	0.1	% F.S.*
A/D converter	16 bits	16 bits	16 bits	16 bits	-
Converter rate	Up to 20 readings/s	Up to 20 readings /s	Up to 20 readings/s	Up to 20 readings /s	-
Service temperature range	0...+50	0...+50	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W), 24 VAC (15 VA)	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W), 24 VAC (15 VA)	-
Qty of relay	3	3	3	3	-
Relay type	"Form A"- potential free	"Form A"- potential free	"Form A"- potential free	"Form A"- potential free	-
Contact rating	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	-
IP rating	IP54***	IP54***	IP54***	IP54***	-

*F.S. : Full Scale.

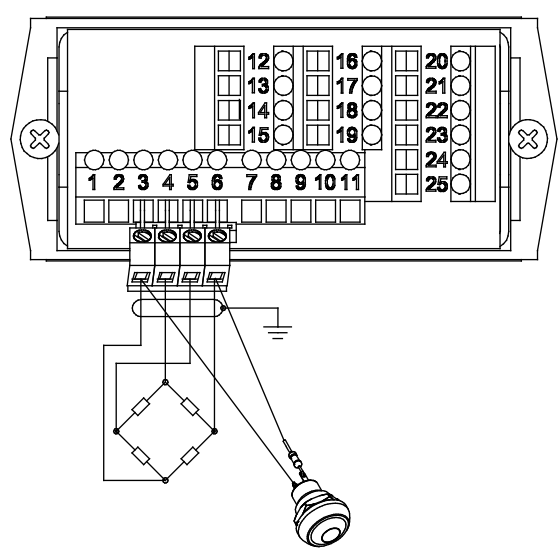
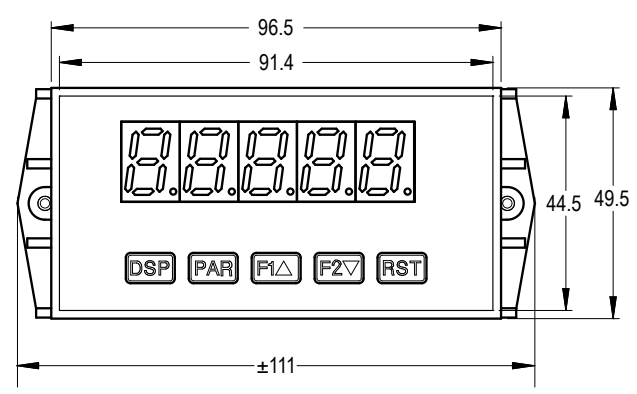
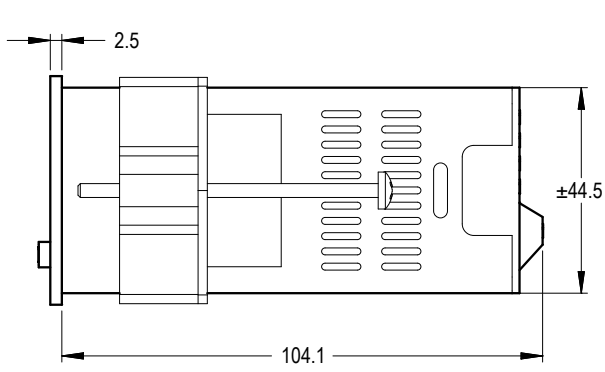
** : 5 VDC @ 65 mA max (jumper selectable).

*** : IP rating for front panel only.

**** : we recommend the INDI-BOY2 and DISP-BOYP2 for use in 24 VDC.

Specifications subject to change without notice..

INDI-BOY > STANDARD DIMENSIONS

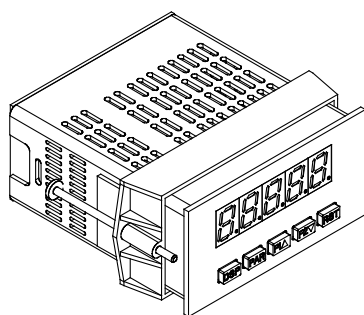


→ For options please consult page 303

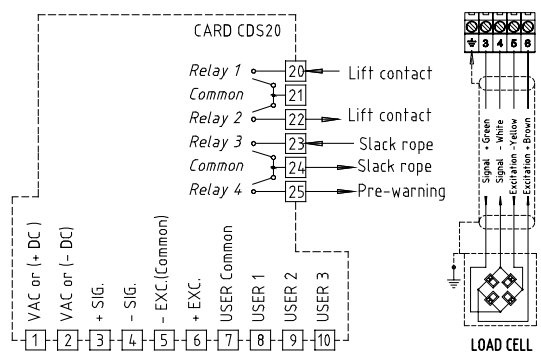
Note: recommended min. clearance (behind the panel) formounting is 140 mm deep and 53.4 mm high. Panel cut-out 92 mm (-0+0.8) 45 mm (-0+0.5)

Dimensions in mm

Other view



Terminals



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DISP-BOYDP
CRANE-BOYDP

CRANE OVERLOAD PROTECTION ELECTRONICS FOR 2
HOISTING DEVICES

Electronics ensuring the individual limitation of loads lifted by 2 hoisting systems and limitation of the function of these loads (sum, difference, multiplication, ratio)



CRANE-BOYDP



Features

- o Type:
 - DISP-BOYDP: to be installed on the front panel
 - CRANE-BOYDP: with industrial metallic housing
- o Easy and intuitive calibration
- o Display of hoisted loads and input signals
- o Internal monitoring system of the integrity of load cells and load limitation electronics (fail safe)

Available option(s)

- Analogue output 4 (0)...20 mA or 0...10 V
- RS-232, RS-485 or fieldbus capabilities
- NEMA 4X/IP67 (transparent protection cover + Option "COVER PAX")
- rail DIN adaptor
- stainless steel housing

Application(s) SENSY's DISP-BOYDP and CRANE-BOYDP are perfectly designed for the following applications:

- OEM - overload protection and slack rope detection of: overhead cranes, container cranes, gantry cranes.

Function(s)

- Internal survey system of the load cell and electronics (fail safe)
- "TEST" button to check the correct working of the detection system
- Secret code prohibiting programming by unauthorised users
- Intelligent filter with quick reaction to overload while not reacting to transitory non-significant overload
- Maximum and minimum memories, smart filter
- A math function (+, -, * or /) can be performed on both signals

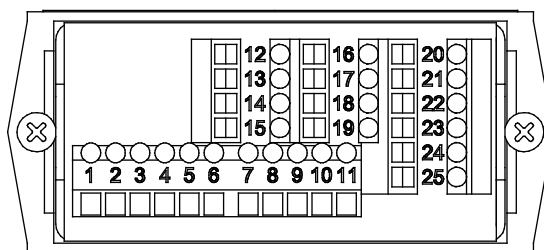
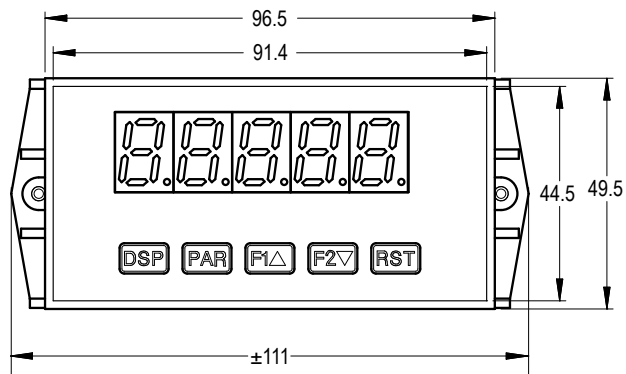
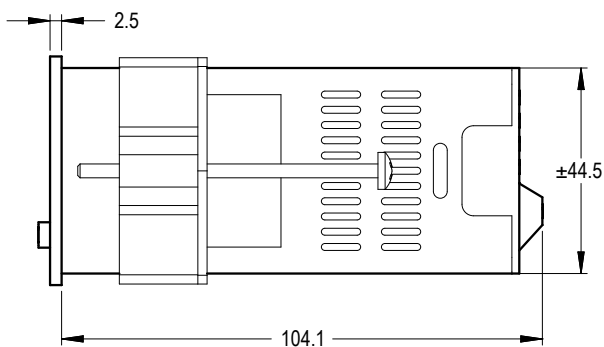
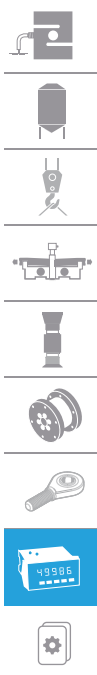
Specifications	DISP-BOYDP	DISP-BOYDP24	CRANE-BOYDP	CRANE-BOYDP24	
Type	Load limiter for dual 4...20mA load cell	Load limiter for dual 4...20 mA load cell	Load limiter for dual 4...20 mA load cell	Load limiter for dual 4...20mA load cell	-
Input range	2 x 20 mA (-26 to +26 mA)	2 x 20 mA (-26 to +26 mA)	2 x 20 mA (-26 to +26 mA)	2 x 20 mA (-26 to +26 mA)	-
Sensor excitation	18 VDC ± 20 % @ 70 mA max. per input channel	18 VDC ± 20 % @ 70 mA max. per input channel	18 VDC ± 20 % @ 70 mA max. per input channel	18 VDC ± 20 % @ 70 mA max. per input channel	-
Display	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	-
Accuracy	0.1	0.1	0.1	0.1	% F.S.*
A/D converter	16 bits	16 bits	16 bits	16 bits	-
Converter rate	Up to 20 readings /s	Up to 20 readings /s	Up to 20 readings /s	Up to 20 readings /s	-
Service temperature range	0...+50	0...+50	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (21 VA)	18...36 VDC (13 W), 24 VAC (16 VA)	85...250 VAC, 50/60 Hz (21 VA)	18...36 VDC (13 W), 24 VAC (16 VA)	-
Qty of relay	3	3	3	3	-
Relay type	"Form A"- potential free	"Form A"- potential free	"Form A"- potential free	"Form A"- potential free	-
Contact rating	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	-
IP rating	IP54**	IP54**	IP54	IP54	-

*F.S. : Full Scale.

** : IP rating for front panel only.

Specifications subject to change without notice..

DISP-BOYDP > STANDARD DIMENSIONS

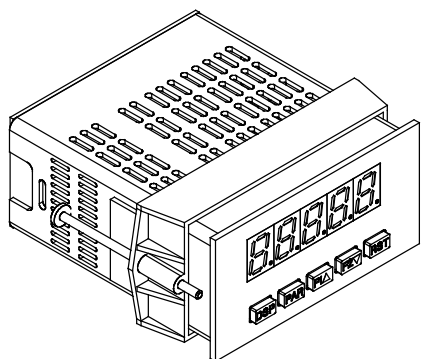


→ For options please consult page 303

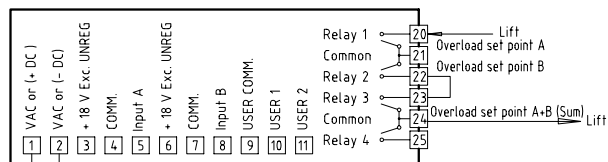
Note: recommended min. clearance (behind the panel) for mounting is 140 mm deep and 53.4 mm high. Panel cut-out 92 mm (-0+0.8) 45 mm (-0+0.5)

Dimensions in mm

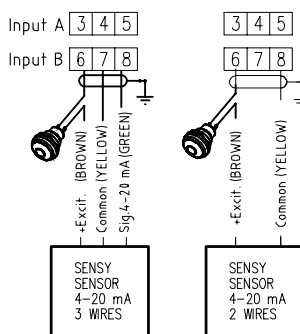
Other view



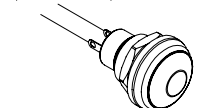
Terminals



POWER SUPPLY

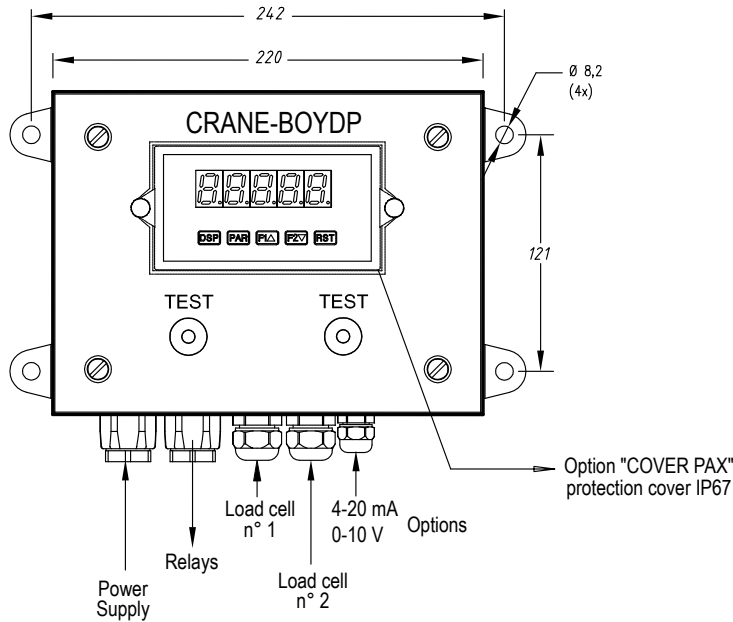
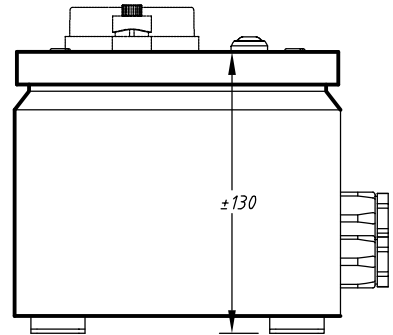
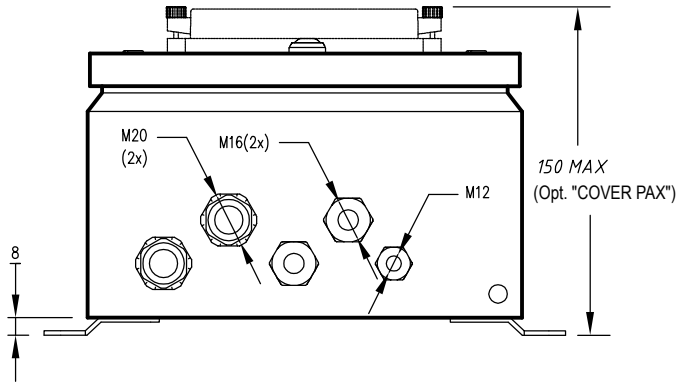


TEST BUTTON (delivered) (NC Contact)



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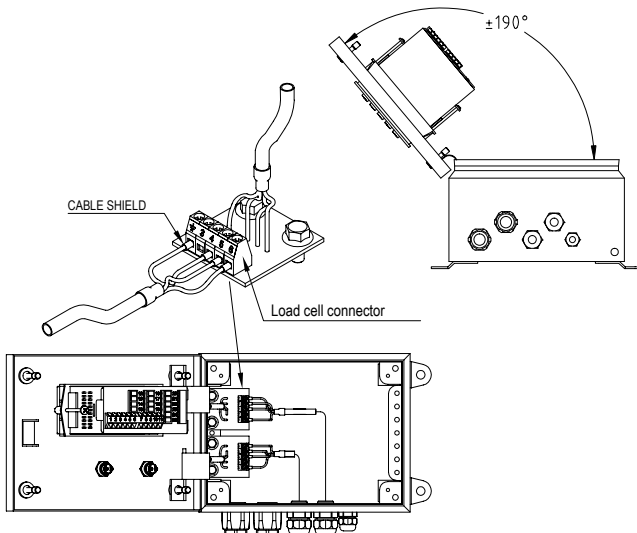
CRANE-BOYDP > STANDARD DIMENSIONS



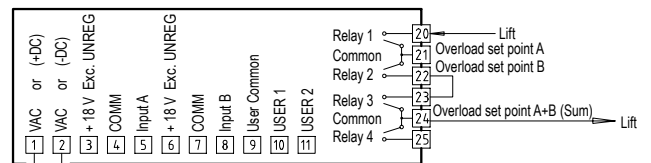
→ For options please consult page 303

Dimensions in mm

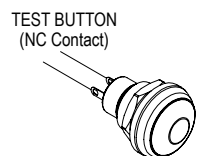
Other view



Terminals



POWER SUPPLY



CRANE-BOY CRANE-BOYP

CRANE OVERLOAD PROTECTION ELECTRONICS

Crane overload protection electronics with 3 set-points and display



CRANE-BOY CRANE-BOYP



Features

- o Easy and intuitive calibration
- o Display of hoisted load and input signal
- o Internal monitoring system of load cell integrity and load limitation electronics (fail safe)
- o Test button on front cover
- o Also available without industrial metallic housing (see INDI-BOY, DISP-BOYP and DISP-SUMD)

Available option(s)

- Analogue output 4 (0)...20 mA or 0...10 V
- RS-232, RS-485 or fieldbus capabilities
- NEMA 4X / IP67 (transparent protection cover + Option "COVER PAX")
- Power supply: 48 VAC / 24 VDC (see CRANE-BOY2 and CRANE-BOYP2 products)
- Stainless steel housing

Application(s)

SENSY's CRANE-BOY and CRANE-BOYP are perfectly designed for the following applications:

- Overload protection and slack rope detection of: overhead cranes, container cranes, gantry cranes.

Function(s)

- Internal survey system of the load cell and electronics (fail safe)
- "TEST" button to check the correct working of the detection system
- Secret code prohibiting programming by unauthorised users
- Intelligent filter with quick reaction to overload while not reacting to transitory non-significant overload
- Maximum and minimum memories, smart filter

Specifications	CRANE-BOY	CRANE-BOY12	CRANE-BOYP	CRANE-BOYP12	
Type	Load limiter for single load cell	Load limiter for single load cell	Load limiter for single 4-20 mA load cell	Load limiter for single 4-20 mA load cell	-
Input range	± 24 mVDC / ± 240 mVDC	± 24 mVDC / ± 240 mVDC	20 mA (-2 to +26 mA)	20 mA (-2 to +26 mA)	-
Sensor excitation	10 VDC @ 125 mA max**	10 VDC @ 125 mA max**	24 VDC ± 5 % @ 50 mA max.	24 VDC ± 5 % @ 50 mA max.	-
Display	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	-
Accuracy	0.1	0.1	0.1	0.1	% F.S.*
A/D converter	16 bits	16 bits	16 bits	16 bits	-
Converter rate	Up to 20 readings /s	Up to 20 readings /s	Up to 20 readings /s	Up to 20 readings /s	-
Service temperature range	0...+50	0...+50	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W), 24 VAC (15 VA)***	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W), 24 VAC (15 VA)***	-
Qty of relay	3	3	3	3	-
Relay type	"Form A" - potential free	"Form A" - potential free	"Form A" - potential free	"Form A" - potential free	-
Contact rating	3A @250 VAC / 30VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	-
IP rating	IP54	IP54	IP54	IP54	-

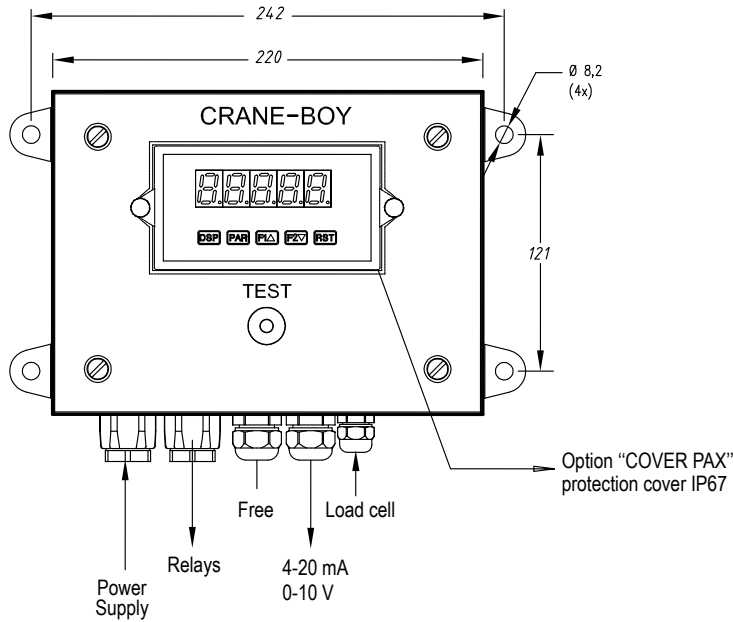
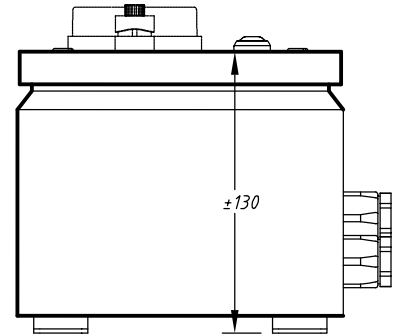
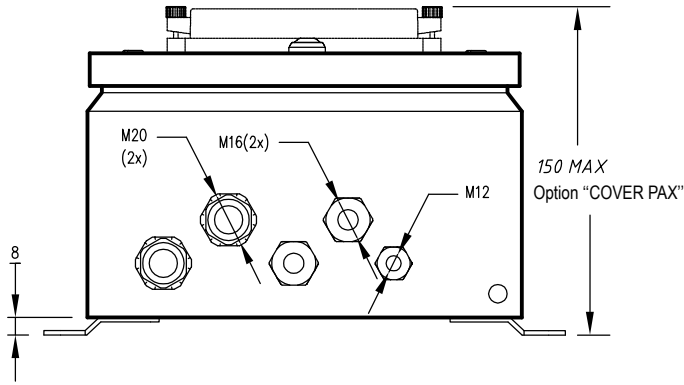
*F.S. : Full Scale.

** : 5 VDC @ 65 mA max (jumper selectable).

*** : we recommend the CRANE-BOY2 and CRANE-BOYP2 for use in 24 VDC.

Specifications subject to change without notice..

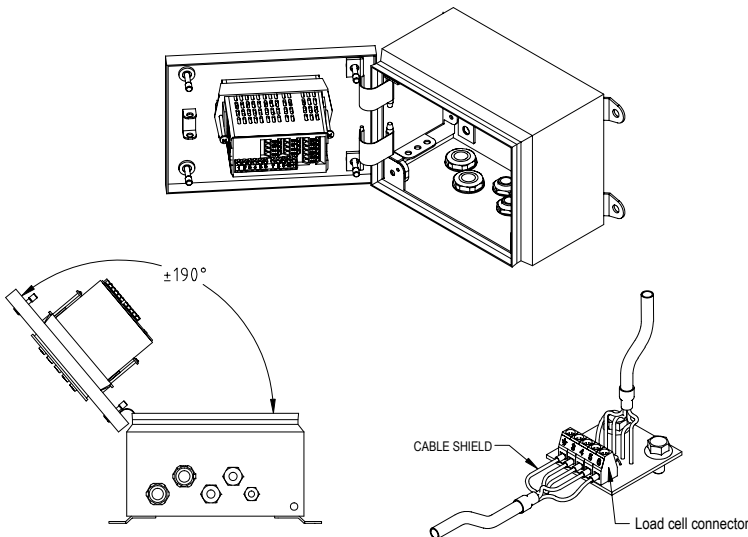
CRANE-BOY > STANDARD DIMENSIONS



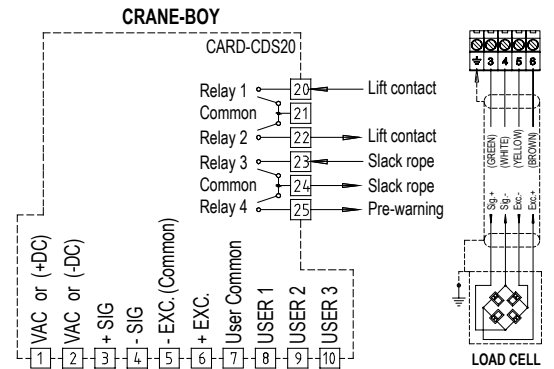
→ For options please consult page 303

Dimensions in mm

Other views

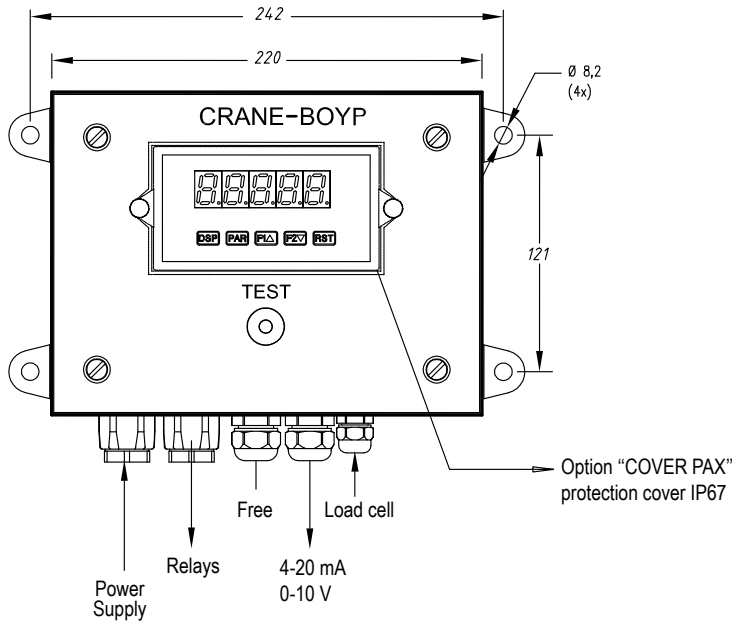
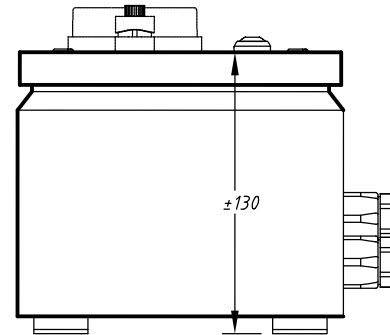
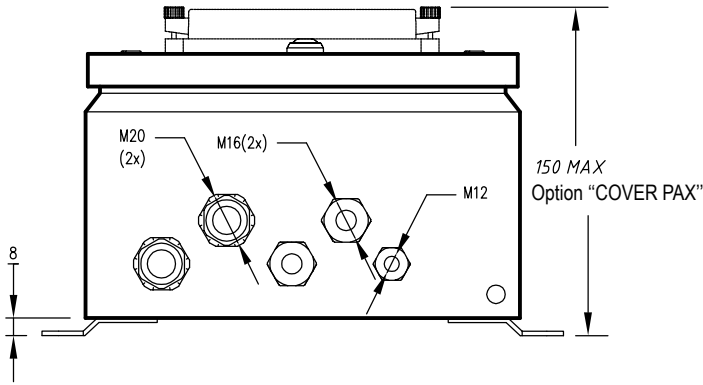


Terminals



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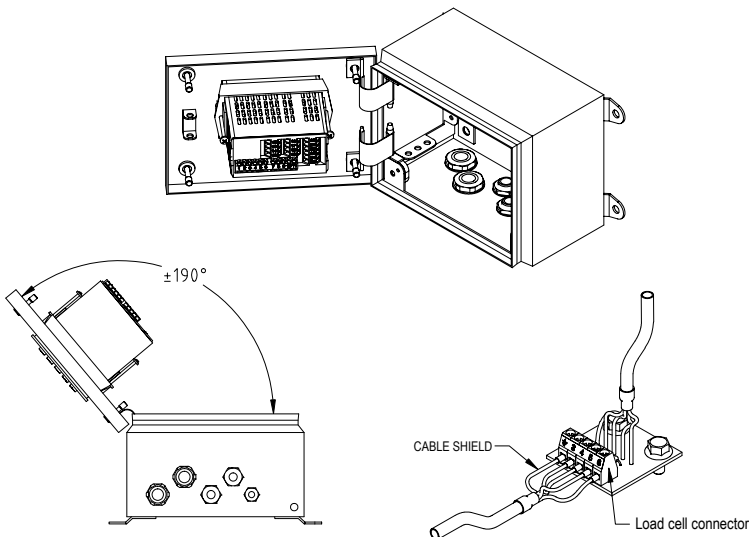
CRANE-BOYP > STANDARD DIMENSIONS



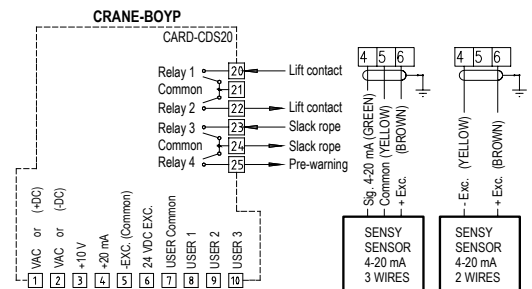
→ For options please consult page 303

Dimensions in mm

Other views



Terminals



CRANE-SUMD DISP-SUMD

CRANE OVERLOAD PROTECTION ELECTRONICS FOR THE SUM OF SEVERAL CHANNELS

CRANE-SUMD and DISP-SUMD are designed to limit the sum of the load of several hoisting devices already equipped with their own load limitation device.



CRANE-SUMD / DISP-SUMD



Features

- o Type:
 - CRANE-SUMD: with industrial metallic housing
 - DISP-SUMD: to be installed on the front panel
- o Connected to the analogue output (4...20 mA) of the load limitation electronics BRIDGE-BOY, CRANE-BOY, INDI-BOY, DISP-BOYP, etc. (CARD-CDL10 option)
- o Easy and intuitive calibration
- o Display of hoisted load and input signal

Available option(s)

- analogue output 4(0)...20 mA / 0...10 V
- RS-232, RS-485 or fieldbus output
- power supply: 48 VAC / 24 VDC (see CRANE-SUMD2 and DISP-SUMD2 products)
- stainless steel housing
- NEMA 4X / IP67 (transparent protection cover - Option "COVER PAX")
- rail DIN adaptor

Application(s)

SENSY's CRANE-SUMD and DISP-SUMD are perfectly designed for the following applications:

- CRANE-SUMD and DISP-SUMD are designed to overload protection of the sum of loads, of up to 8 independent hoists (e.g.: 2 trolleys each limited to 10 t installed on an EOT crane limited to 15 t).

Function(s)

- Internal survey system of input signal and electronics (fail safe)
- "TEST" buttons to check the correct working of the detection system
- Secret code prohibiting programming by unauthorised users
- Intelligent filter with quick reaction to overload while not reacting to transitory non-significant overload
- Maximum and minimum memories

Specifications	CRANE-SUMD	CRANE-SUMD12	DISP-SUMD	DISP-SUMD12	
Type	Load limiter of the sum	Load limiter of the sum	Load limiter of the sum	Load limiter of the sum	-
Input range	±20 mA, ±200 mA	±20 mA, ±200 mA	±20 mA, ±200 mA	±20 mA, ±200 mA	-
Display	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	-
Accuracy	0.1	0.1	0.1	0.1	% F.S.*
Service temperature range	0...+50	0...+50	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W) 24 VAC (15 VA)***	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W) 24 VAC (15 VA)***	-
Qty of relay	3	3	3	3	-
Relay type	Form A - potential free	Form A - potential free	Form A - potential free	Form A - potential free	-
Contact rating	3 A @ 250 VAC / 30 VDC Resistive load	3 A @ 250 VAC / 30 VDC Resistive load	3 A @ 250 VAC or 30 VDC Resistive load	3 A @ 250 VAC or 30 VDC Resistive load	-
IP rating	IP54	IP54	IP54**	IP54**	-

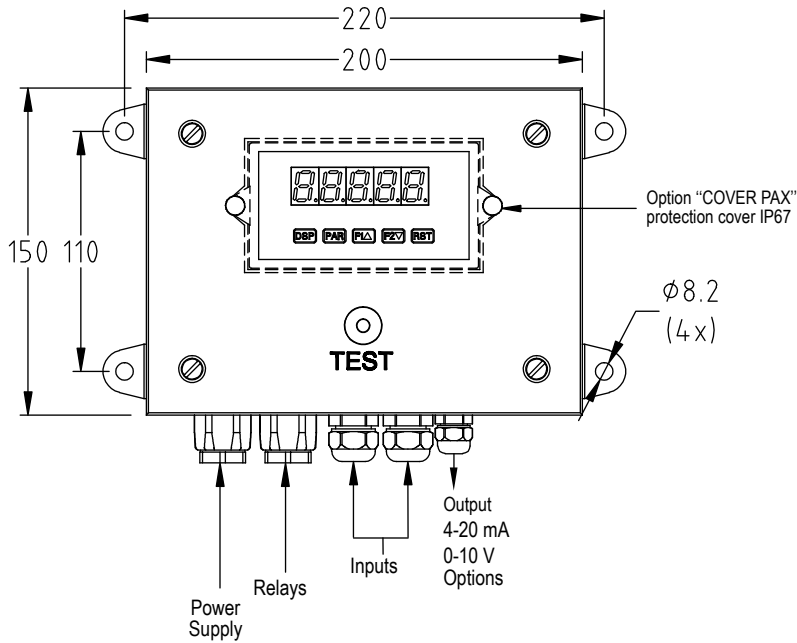
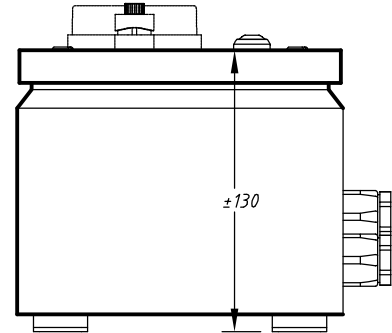
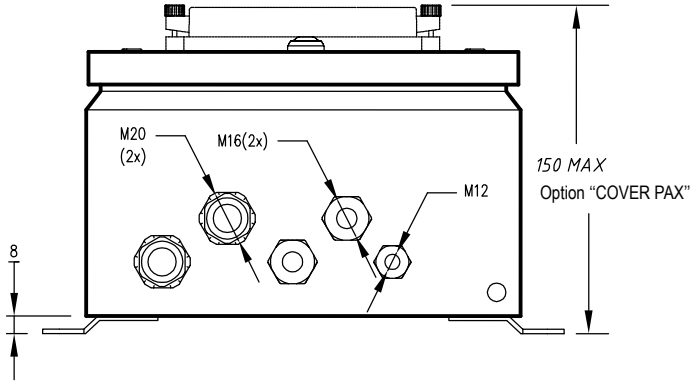
*F.S. : Full Scale.

** : IP rating for front panel only.

*** : we recommend the CRANE-SUMD2 and DISP-SUMD2 for use in 24 VDC.

Specifications subject to change without notice..

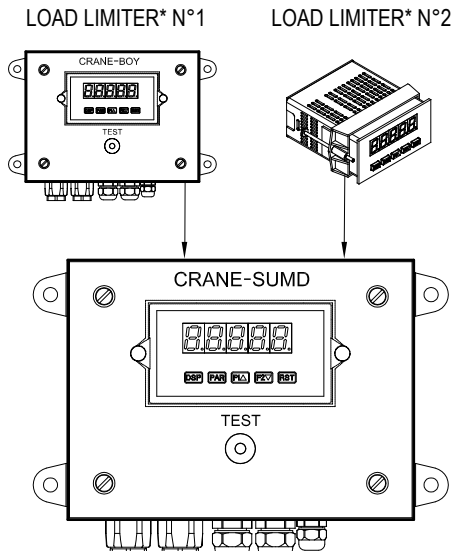
CRANE-SUMD > STANDARD DIMENSIONS



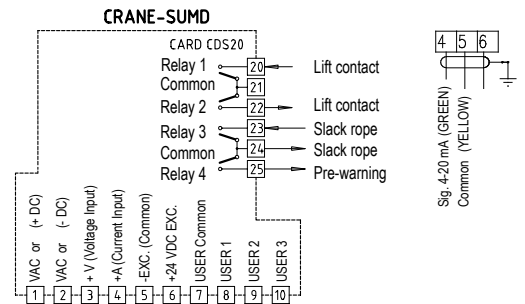
→ For options please consult page 303

Dimensions in mm

Other view



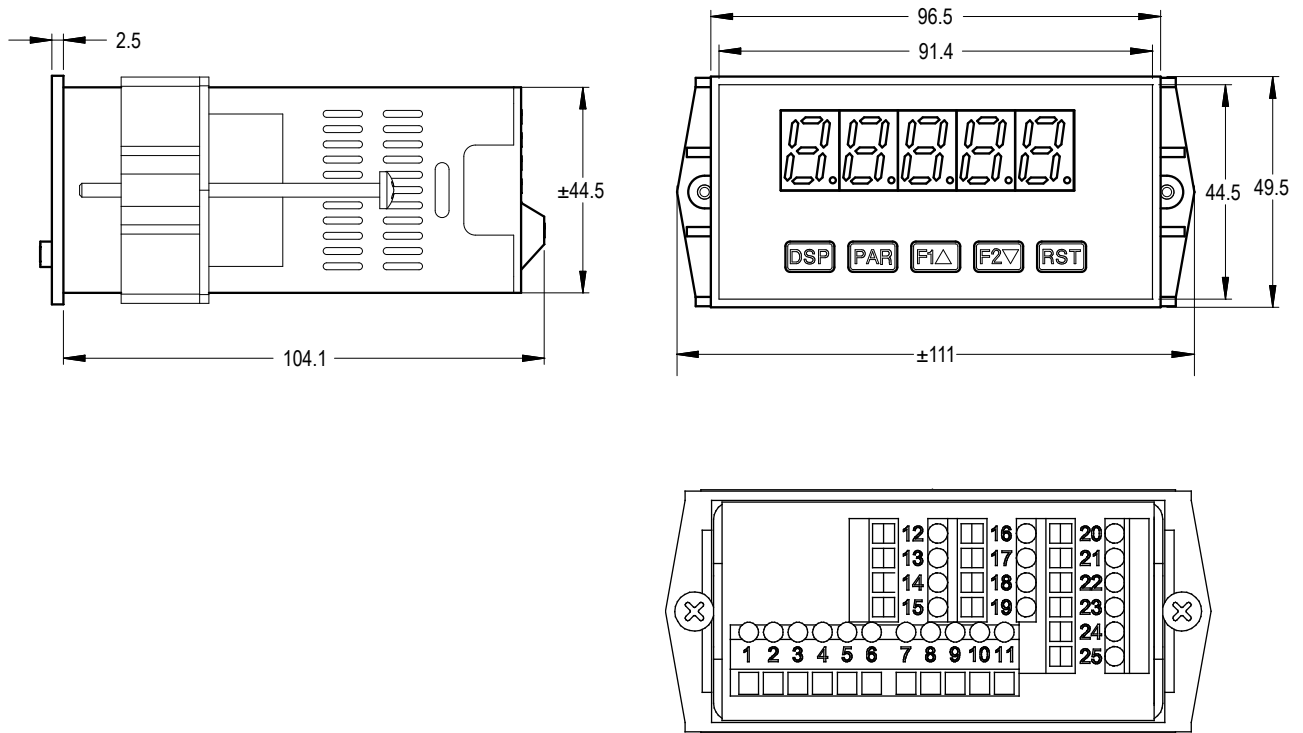
Terminals



*: INDI-BOY, DISP-BOY, CRANE-BOY, ...

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DISP-SUMD > STANDARD DIMENSIONS



→ For options please consult page 303

Note: recommended min. clearance (behind the panel) for mounting is 140 mm deep and 53.4 mm high. Panel cut-out 92 mm (-0+0.8) 45 mm (-0+0.5)

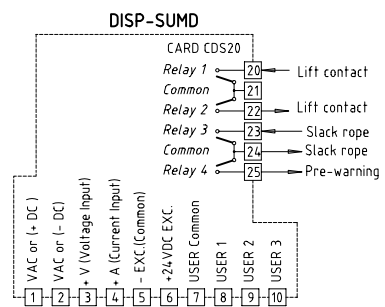
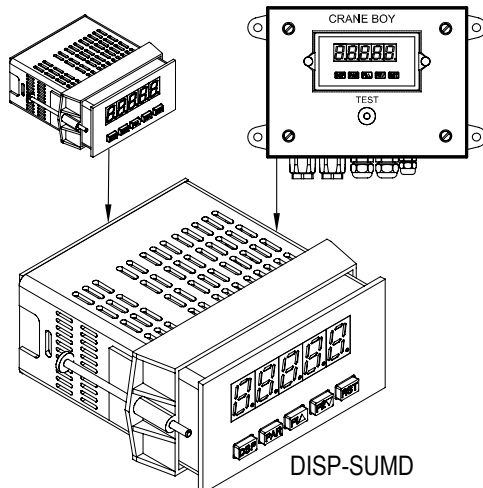
Dimensions in mm

Other view

Terminals

LOAD LIMITER* N°1

LOAD LIMITER* N°2



*: INDI-BOY, DISP-BOY, CRANE-BOY, ...

**CRANE-BOY-Exd
CRANE-BOYP-Exd**

**CRANE OVERLOAD PROTECTION ELECTRONICS
(explosion-proof)**

CRANE-BOY-Exd and CRANE-BOYP-Exd are CRANE-BOY mounted in an explosion-proof housing to be used in an hazardous area. They are equipped and standardised with Zener barriers in order to be connected to an Ex i certified flood cell.



CRANE-BOY-Exd (Ex II2G Ex d IIB T6)



Features

- o Certified for IIB group (also available for IIC group)
- o Easy and intuitive calibration
- o Display of hoisted load and input signal
- o Internal monitoring system of load cell integrity and load limitation electronics (fail safe)
- o Also available without Zener barrier for using with Ex d certified load pins: CRANE-BOY-Exd-5050

Available option(s)

- Analogue output 4 (0)...20 mA or 0...10 V
- RS-232, RS-485, fieldbus capabilities

Application(s)

SENSY's CRANE-BOY-Exd CRANE-BOYP-Exd are perfectly designed for the following applications:

Overload protection and slack rope detection in hazardous area on overhead cranes, container cranes, gantry cranes, BOP cranes.

Function(s)

- Internal survey system of the load cell and the electronics (fail safe)
- Test button to check the correct working of the detection system
- Secret code prohibiting programming by unauthorised users
- Intelligent filter with quick reaction to overload while not reacting to transitory non-significant overload
- Maximum and minimum memories

Specifications	CRANE-BOY-Exd	CRANE-BOY12-Exd	CRANE-BOYP-Exd	CRANE-BOYP12-Exd	
Type	Load limiter for single load cell	Load limiter for single load cell	Load limiter for single 4...20 mA load cell	Load limiter for single 4...20 mA load cell	-
Input range	± 24 mVDC / ± 240 mVDC	± 24 mVDC / ± 240 mVDC	20 mA (-2 to +26 mA)	20 mA (-2 to +26 mA)	-
Sensor excitation	10 VDC @ 125 mA max**	10 VDC @ 125 mA max**	24 VDC ± 5 % @ 50 mA max.	24 VDC ± 5 % @ 50 mA max.	-
Display	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	5 digits (14.2 mm)	-
Accuracy	0.1	0.1	0.1	0.1	% F.S.*
A/D converter	16 bits	16 bits	16 bits	16 bits	-
Converter rate	Up to 20 readings /s	Up to 20 readings /s	Up to 20 readings /s	Up to 20 readings /s	-
Service temperature range	0...+50	0...+50	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W), 24 VAC (15 VA)***	85...250 VAC, 50/60 Hz (15 VA)	11...36 VDC (11 W), 24 VAC (15 VA)***	-
Qty of relay	3	3	3	3	-
Relay type	"Form A"- potential free	"Form A"- potential free	"Form A"- potential free	"Form A"- potential free	-
Contact rating	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	-
IP rating	IP65	IP65	IP65	IP65	-

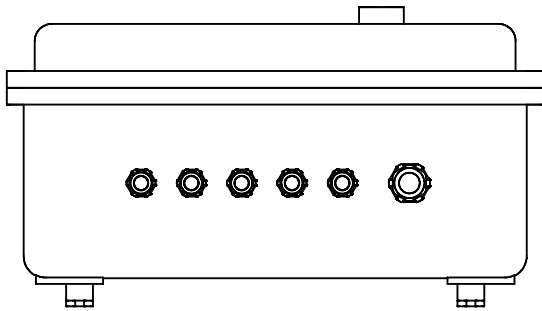
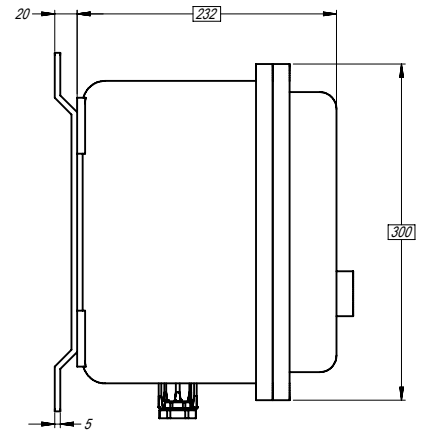
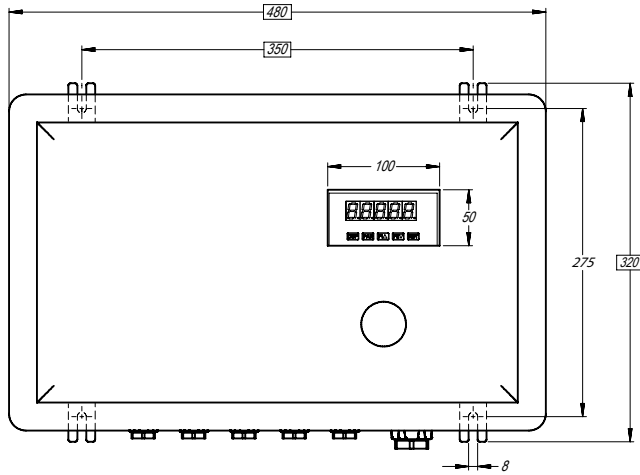
*F.S. : Full Scale.

** : 5 VDC @ 65 mA max (jumper selectable).

*** : we recommend the CRANE-BOY2-Exd and CRANE-BOYP2-Exd for use in 24 VDC.

Specifications subject to change without notice..

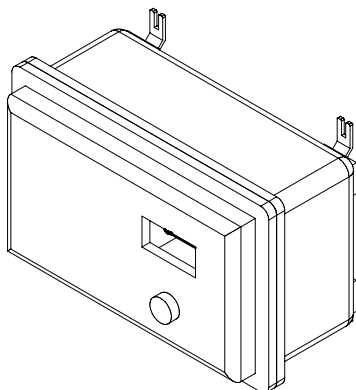
CRANE-BOY-Exd / CRANE-BOYP-Exd > STANDARD DIMENSIONS



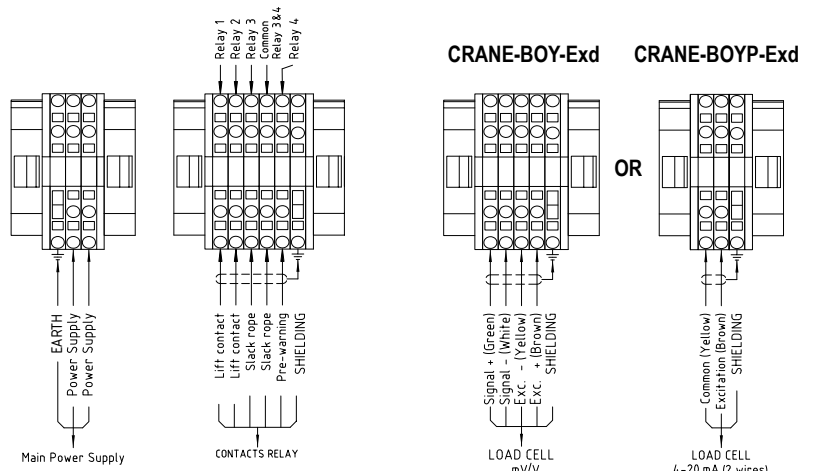
→ For options please consult page 303

Dimensions in mm

Other view



Terminals



CABIN-2xB1SUMD

CRANE OVERLOAD PROTECTION ELECTRONICS FOR 2 CHANNELS + SUM

The CABIN-2IB1SUMD and CABIN-2DB1SUMD are crane overload protection systems designed to manage 2 hoisting devices as well as the sum of the loads.



CABIN-2xB1SUMD



Features

- x = input:
 - I: mV/V or
 - D: process input 4(0)...20 mA
- o Display of hoisted loads and input signals
- o Monitoring system of load cell integrity and electronics (fail safe)

Available option(s)

- analogue output 4(0)...20 mA or 0...10 V
- RS-232, RS-485, USB or fieldbus capabilities
- NEMA 4X /IP67 (transparent protection cover - option "COVER PAX")
- power supply: 48 VAC / 24 VDC (see CABIN-2xB1SUMD2 products)
- stainless steel cabinet

Application(s) SENSY's CABIN-2xB1SUMD is perfectly designed for the following applications:

The 2IB1SUMD and 2DB1SUMD provide housing for integrating 2 x INDI-BOY or 2 x DISP-BOYP associated with 1 x DISP-SUMD. They are designed to ensure overload protection and slack rope detection of 2 independent hoists as well as the sum of these loads.

Function(s)

- Internal survey system of load cells and electronics (fail safe)
- "TEST" buttons to check the correct working of the detection system
- Secret code prohibiting programming by unauthorised users
- Intelligent filter with quick reaction to overload while not reacting to transitory non-significant overload
- Maximum and minimum memories
- Parameters and functions configurable at user level

Specifications	CABIN-2IB1SUMD	CABIN-2IB1SUMD12	CABIN-2DB1SUMD	CABIN-2DB1SUMD12	
Type	Load limiter for 2 load cells	Load limiter for 2 load cells	Load limiter for 2 load cells	Load limiter for 2 load cells	-
Input range	± 24 mVDC ± 240 mVDC	± 24 mVDC / ± 240 mVDC	20 mA (-2 to +26 mA)	20 mA (-2 to +26 mA)	-
Sensor excitation	10 VDC @ 125 mA (max)**	10 VDC @ 125 mA (max)**	24 VDC $\pm 5\%$ @ 50 mA (max)	24 VDC $\pm 5\%$ @ 50 mA (max)	-
Display	3 x 5 digits (14.2 mm)	3 x 5 digits (14.2 mm)	3 x 5 digits (14.2 mm)	3 x 5 digits (14.2 mm)	-
Accuracy	0.5	0.5	0.5	0.5	% F.S.*
Service temperature range	0...+50	0...+50	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (45 VA)	11...36 VDC (33 W) 24 VAC (45 VA)***	85...250 VAC, 50/60 Hz (45 VA)	11...36 VDC (33 W) 24 VAC (45 VA)***	-
Qty of relay	2 x 3 + 4	2 x 3 + 4	2 x 3 + 4	2 x 3 + 4	-
Relay type	"Form A"- potential free	"Form A"- potential free	"Form A"- potential free	"Form A"- potential free	-
Contact rating	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	3 A @ 250 VAC / 30 VDC	-
IP rating	IP54	IP54	IP54	IP54	-

*F.S. : Full Scale.

** : 5 VDC @ 65 mA max (jumper selectable).

*** : we recommend the CABIN-2xB1SUMD2 for use in 24 VDC.

Specifications subject to change without notice..

CABIN-4xB1SUMD

CRANE OVERLOAD PROTECTION ELECTRONICS FOR 4 CHANNELS + SUM

The CABIN-4IB1SUMD and CABIN-4DB1SUMD are crane overload protection systems designed to manage 4 hoisting devices as well as the sum of the loads.



CABIN-4IB1SUMD (without window)



Features

- x = input:
 - I: mV/V or
 - D: process input 4(0)...20 mA
- o Easy and intuitive calibration
- o Display of hoisted loads and input signals
- o Internal monitoring system of load cell integrity and load limitation electronics (fail safe)

Available option(s)

- Analogue output 4 (0)...20 mA or 0...10 V
- RS-232, RS-485, USB or fieldbus capabilities
- NEMA 4X / IP67 (transparent protection cover - option "COVER PAX")
- power supply: 48 VAC / 24 VDC (see CABIN-4xB1SUMD2 products)
- stainless steel cabinet

Application(s)

SENSY's CABIN-4xB1SUMD is perfectly designed for the following applications:

The 4IB1SUMD and 4DB1SUMD provide housing for integrating 4 x INDI-BOY or 4 x DISP-BOYP associated with 1 x DISP-SUMD. They are designed to ensure overload protection and slack rope detection of 4 independent hoists as well as the sum of these loads.

Function(s)

- Internal survey system of load cells and electronics (fail safe)
- "TEST" buttons to check the correct working of the detection system
- Secret code prohibiting programming by unauthorised users
- Intelligent filter with quick reaction to overload while not reacting to transitory non-significant overload
- Maximum and minimum memories

Specifications	CABIN-4IB1SUMD	CABIN-4IB1SUMD12	CABIN-4DB1SUMD	CABIN-4DB1SUMD12	
Type	Load limiter for 4 load cells	Load limiter for 4 load cells	Load limiter for 4 load cells	Load limiter for 4 load cells	-
Input range	± 24 mVDC / ± 240 mVDC	± 24 mVDC / ± 240 mVDC	20 mA (-2 to +26 mA)	20 mA (-2 to +26 mA)	-
Sensor excitation	10 VDC @ 125 mA (max)***	10 VDC @ 125 mA (max)***	24 VDC ± 5 % @ 50 mA (max)	24 VDC ± 5 % @ 50 mA (max)	-
Display	5 x 5 digits (14.2 mm)	5 x 5 digits (14.2 mm)	5 x 5 digits (14.2 mm)	5 x 5 digits (14.2 mm)	-
Accuracy	0.5	0.5	0.5	0.5	% F.S.*
Service temperature range	0...+50	0...+50	0...+50	0...+50	°C
Storage temperature range	-40...+60	-40...+60	-40...+60	-40...+60	°C
Power supply	85...250 VAC, 50/60 Hz (75 VA)	11...36 VDC (55 W) 24 VAC (75 VA)****	85...250 VAC, 50/60 Hz (75 VA)	11...36 VDC (55 W) 24 VAC (75 VA)****	-
Qty of relay	4 x 3 + 4	4 x 3 + 4	4 x 3 + 4	4 x 3 + 4	-
Relay type	"Form A" – potential free	"Form A" – potential free	"Form A" – potential free	"Form A" – potential free	-
Contact rating	3 A @ 250 VAC / 30VDC Resistive load	3 A @ 250 VAC / 30 VDC Resistive load	3 A @ 250 VAC / 30 VDC Resistive load	3 A @ 250 VAC / 30 VDC Resistive load	-
IP rating	IP54	IP54	IP54	IP54	-

*F.S. : Full Scale.

** : configurable at user's level.

*** : 5 VDC @ 65 mA max (jumper selectable).

**** : we recommend the CABIN-4xB1SUM2 for use in 24 VDC.

Specifications subject to change without notice..

JBOX-LCI

SMART JUNCTION BOX MONITORING LOAD CELL INTEGRITY

Smart junction box is designed for parallel connecting of 2 to 4 load cells to an electronic device and for ensuring the monitoring of their correct functioning.



JBOX-LCI



Features

- o Control of:
 - load cell out of pre-set balance range
 - load cell out of pre-set operating range
 - low / high excitation
 - open circuit to any load cell on each connection
 - short circuit on any load cell connection
 - internal load cell fault (bridge imbalance)
- o Ensure the positive safety of load limitation systems based on multiple load cells connected in parallel (hoisting devices)

Available option(s)

- ABS housing available with DIN rail mounting accessories
- PCB available without ABS housing

Application(s) SENSY's JBOX-LCI is perfectly designed for the following applications:

- Overload protection and slack rope detection for hoisting equipment based with multiple anchor points,
- Industrial weighing with improved reliability.

Function(s)

- Easy calibration by keys and 4-digit display
- Indication of the signal (mV) of each sensor, the average signal and error message (no. of sensors and types of error)
- Relay normally energised
- Parameters protected by a secret code

Specifications	JBOX-LCI	
Type	Smart junction box	-
Input range	1...5 mV/V	-
Sensor excitation	4...12 VDC (**)	-
Non-linearity error	<± 0.03	% F.S.*
Display	4 digits	-
Service temperature range	-10...+85	°C
Storage temperature range	-40...+95	°C
Temperature coefficient of the sensitivity	<± 0.02	% F.S./10°C
Temperature coefficient of zero signal	<± 0.2	% F.S./10°C
Power supply	4...12 VDC***	-
Qty of relay	1	-
Relay type	SPCO relay	-
Contact rating	0.5 A (50 VDC max.) / 1 A (24 VDC / 120 VAC)	-
IP rating	IP65	-

*F.S. : Full Scale.

** : provided by measurement electronics / 52 mA (except the consumption of the sensors).

*** : as SENSY JBOX-LCI is powered by the electronics on which it is connected, this electronics has to be able to provide an extra current supply in addition to the one required by the load cells. This means that, if necessary, a higher sensor impedance (e.g.: 700 or 1000 ohms) has to be provided. Example: In the case of use of a load cell with a CRANE-BOY (capacity of 125 mA at 10 V), the remaining current supply for the load cells is 75 mA. This will therefore be sufficient for 2 load cells of 350 ohms but not for 4 load cells of 350 ohms.

Specifications subject to change without notice..

SAFETY-BOY

FUNCTIONAL SAFETY CERTIFIED LOAD LIMITER ELECTRONICS

Overload protection electronics for hoisting devices with certification for performance level PL d according to EN ISO 13849-1.



Features

- o 2 redundant channels with constant comparing of both signals
- o PFHd 4.29 x 10E-08
- o Load limiter electronics certified for functional safety up to PL d Category 3, DC: medium
- o Display of hoisted load and input signal
- o Monitoring system of the integrity of load cells with continuous comparison of both channels and internal "watchdog" for the electronics
- o Analogue output: 2 x 4...20 mA

SAFETY-BOY



Application(s) SENSY's SAFETY-BOY is perfectly designed for the following applications:

- Overload protection of hoist for PL d cat. 3 requirement.

Function(s)

- Internal survey system of load cell and electronics
- Calibration with push buttons and display
- With pre-alarm and overload set-points on each channels
- Protection avoiding programming by unauthorised users
- Protection against inverted polarity of power supply
- Self-resetting fuse

Specifications	SAFETY-BOY	SAFETY-BOY24	SAFETY-BOY OEM	
Type	Load limiter with IP65 housing and AC power supply	Load limiter with IP65 housing and DC power supply	Load limiter without housing (DIN rail mount)	-
Input range	Up to 3.9 mV/V	Up to 3.9 mV/V	Up to 3.9 mV/V	-
Sensor excitation	4 VDC	4 VDC	4 VDC	-
Display	4 digits red LED, 7 mm high	4 digits red LED, 7 mm high	4 digits red LED, 7 mm high	-
Accuracy	0.03	0.03	0.03	% F.S.*
Low pass filter	Selectable 0.25...3	Selectable 0.25...3	Selectable 0.25...3	Hz
Internal resolution	24 bit	24 bit	24 bit	-
Service temperature range	-10...+50**	-10...+50**	-10...+50**	°C
Storage temperature range	-20...+60	-20...+60	-20...+60	°C
Power supply	100...240 VAC	10...30 VDC	10...30 VDC	-
Consumption	10 W	6 W	6 W	-
Qty of relay	4 cabled by 2	4 cabled by 2	4 cabled by 2	-
Relay type	"Form C"– Pre-cabled	"Form C"– Pre-cabled	"Form C"– Pre-cabled	-
Contact rating	2 A @ 48 VAC / 24 VDC (resistive load)	2 A @ 48 VAC / 24 VDC (resistive load)	2 A @ 48 VAC / 24 VDC (resistive load)	-
Dimensions	300 x 200 x 120	300 x 200 x 120	136 (171 with analogue output) x 125 x 57	mm
IP rating	IP65	IP65	-	-

*F.S. : Full Scale.

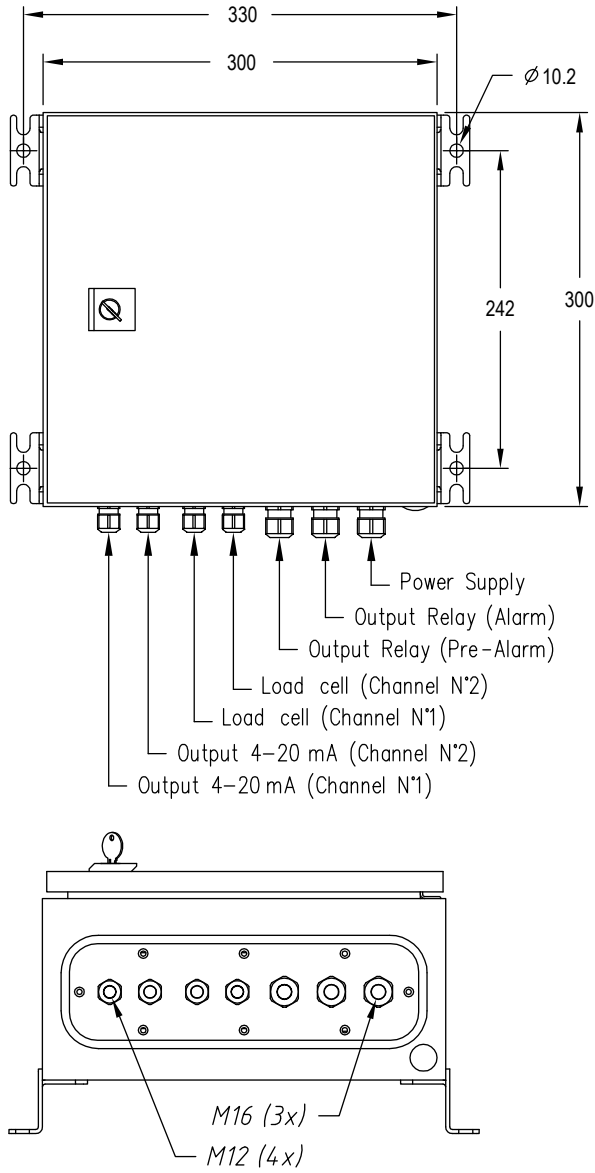
** : max 85% humidity non-condensing.

Specifications subject to change without notice..

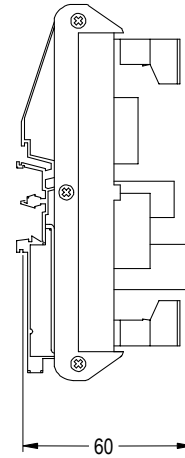
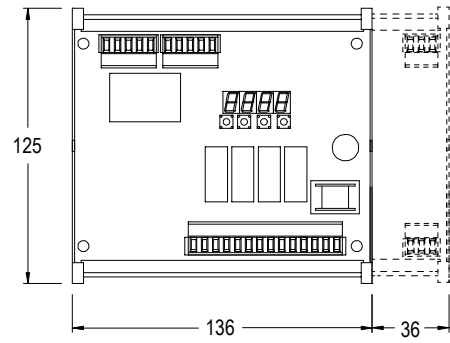
SAFETY-BOY > STANDARD DIMENSIONS



SAFETY-BOY

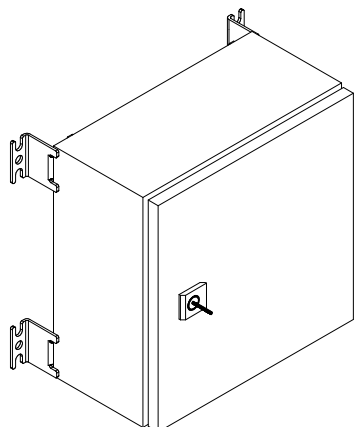


SAFETY-BOY OEM



Dimensions in mm

Other view



Terminals

On request

COACH-II

DATA RECORDING AND MANAGEMENT FOR EOT CRANES

The COACH-II is a data recording system specially dedicated to crane monitoring.



Features

- o The COACH-II is a new generation of electronic data logging, monitoring and management system for overhead travelling cranes (EOT), adaptable to other types of crane.
- o It is designed to optimise the maintenance with full knowledge of mechanical stress during use.
- o It can be used as a "black box" tracing the history of all recent movements.

COACH-II-IP65



Application(s) SENSY's COACH-II is perfectly designed for the following application:

- Survey and monitoring of overhead travelling cranes (EOT).

Function(s)

- Hourly recording on a duration of 25 years of:
 - upward (ascent), downward (descent), long travel (translatory) and short travel (trolley direction)
 - number of inchings
 - lifted load's spectrum and overloads
- Recording of sequences of recent movements (6 months)
- SWP (Safe Working Period) calculation
- Display on front colour touch screen (lifted load, movements, SWP, alarms, temperatures, etc.)
- Alarm detection and management (overloads, SWP, etc.) with activation of a relay
- Detection of wire break in the analogue input
- Protection against overvoltage and reverse polarity at the analogue input
- Coach-II programming and data retrieval via the USB stick or via Ethernet (option)
- Centralization of EOT cranes utilization data on a server accessible from any browser (GPRS option)
- COACH-II is supplied with COACH-VIEW software (configuration and analysis of the data by means of graphs and tables)

Specifications	COACH-II-PM	COACH-II-IP65	
Analog input	1 x 0...10 V / 4...20 mA	1 x 0...10 V / 4...20 mA	-
Digital input	4 **	4 **	-
Display	Touchscreen 5.7" colour	Touchscreen 5.7" colour	-
Accuracy	0.1	0.1	% F.S.*
Output signal	0...10 V / 4...20 mA (SWP)	0...10 V / 4...20 mA (SWP)	-
Internal memory	128 Mo***	128 Mo***	-
Service temperature range	0...+50	0...+50	°C
Storage temperature range	-20...+70	-20...+70	°C
Power supply	24 VDC *****	24 VDC / 100..240 VAC ****	-
Qty of relay	2	2	-
Contact rating	5 A @ 240 VAC / 28 VDC	5 A @ 240 VAC / 28 VDC	-
IP rating	IP20*****	IP65	-

*F.S. : Full Scale

** : potential free contact

*** : compact flash

**** : 48 VAC (option)

***** : IP rating of front panel : IP65

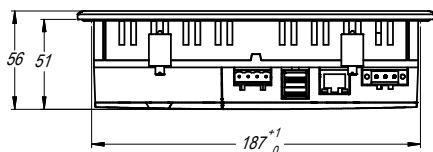
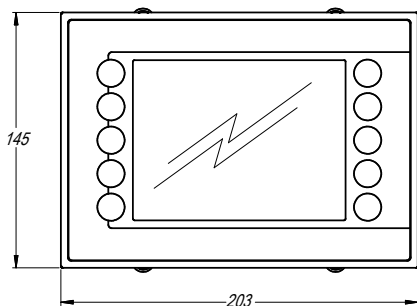
***** : 100..240 VAC --> 24VDC converter included

Specifications subject to change without notice..

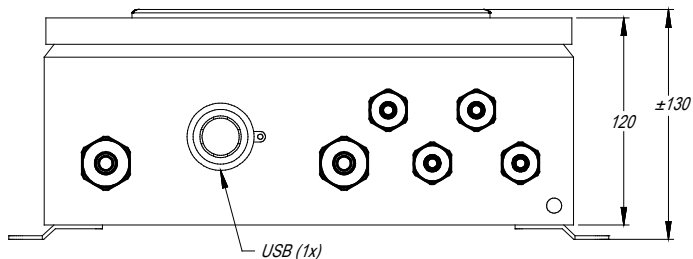
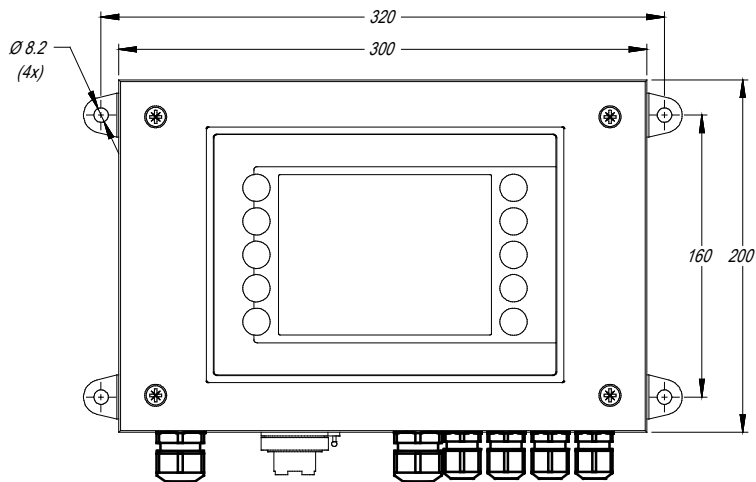
COACH-II > STANDARD DIMENSIONS



COACH-II-PM

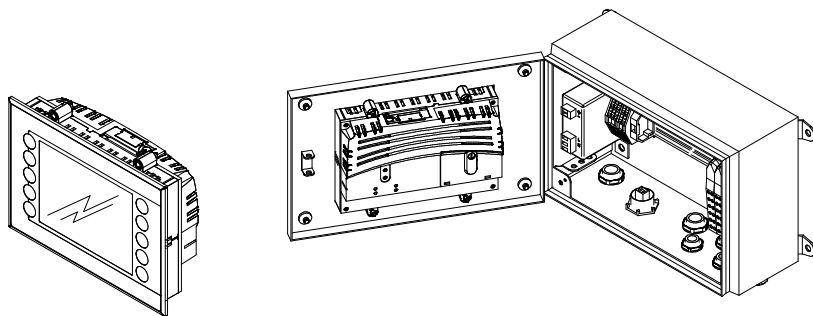


COACH-II-IP65

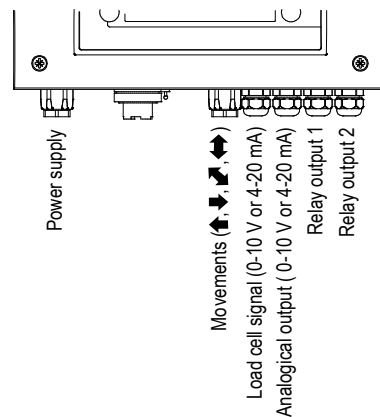


Dimensions in mm

Other views



Terminals



Large digital displays for distance reading.



Features

DISP-Fx-yz

x = input

- P: process input: 0...10 V and 4(0)...20 mA
- S2: RS-232
- S4: RS-485

y = Digits (4 or 6)

z = Digits height:

- DISP-Fx-y2: 57 mm
- DISP-Fx-y4: 102 mm
- DISP-Fx-y6: 150 mm
- DISP-Fx-y8: 200 mm
- DISP-Fx-y12: 300 mm
- DISP-Fx-y16: 400 mm
- other on request

DISP-F



Application(s) The SENSY's DISP-F is perfectly designed for the following applications:

- Load indication on overhead cranes,
- Weighing indication at long distance,
- Indication of measuring force or torque at a distance.

Function(s)

- Tare by front key or external contact
- Programmation by front key or external contacts

Specifications	DISP-Fx-yz-AC	DISP-Fx-yz-AC48	DISP-Fx-yz-DC	
Type	Large indicator	Large indicator	Large indicator	-
Non-linearity error	<± 0.05**	<± 0.05**	<± 0.05**	% F.S.*
Display	4 / 6 digits	4 / 6 digits	4 / 6 digits	-
Low pass filter	0...25**	0...25**	0...25**	Hz
Service temperature range	0...50***	0...50***	0...50***	°C
Storage temperature range	-20...70	-20...70	-20...70	°C
Temperature coefficient of the sensitivity	<± 0.025**	<± 0.025**	<± 0.025**	% F.S.*10°C
Temperature coefficient of zero signal	<± 0.03**	<± 0.03**	<± 0.03**	% F.S.*10°C
Power supply	100...240 VAC (40 VA)	48 VAC	11...30 VDC	-
IP rating	IP65****	IP65****	IP65****	-

*F.S. : Full Scale.

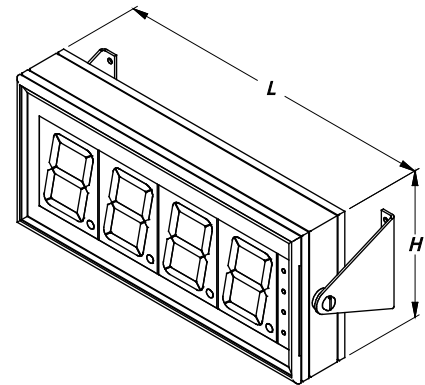
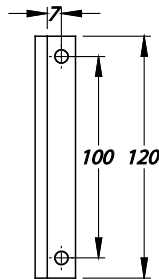
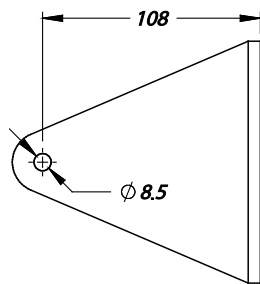
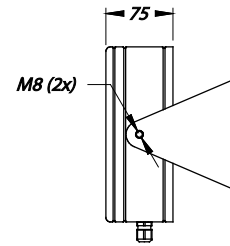
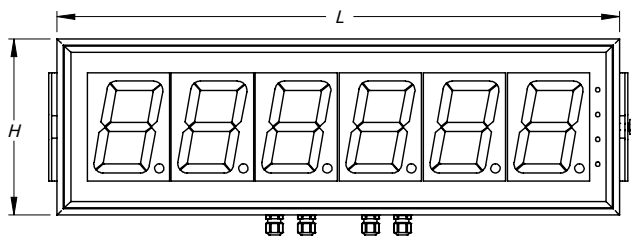
** : N.A . for DISP-FS2-yz and DISP-FS4-yz.

*** : option -25...+50°C (internal heating system).

**** : display mounted vertically.

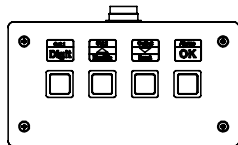
Specifications subject to change without notice..

DISP-F > STANDARD DIMENSIONS

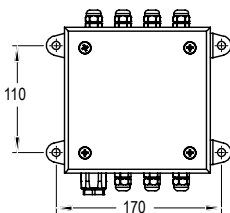


Ref. Item	Digits size		DISP-Fx-yz-AC / DC	DISP-Fx-yz-AC48	H (mm)	Viewing distance (m)
	inches	mm	L (mm) 4 digits / 6 digits	L (mm) 4 digits / 6 digits		
DISP-Fx-y2	2.25	57	279.5 / 376	376 / 504	154.5	25
DISP-Fx-y4	4	102	434 / 616	616 / 824	195.5	50
DISP-Fx-y6	6	150	580 / 820	820 / 1060	246	75
DISP-Fx-y8	8	200	750 / 1072	1072 / 1395	290	100
DISP-Fx-y12	12	300	1058 / 1540	1540 / 2022	408	140
DISP-Fx-y16	16	400	1368 / 2020	2020 / 2672	515	200

Options

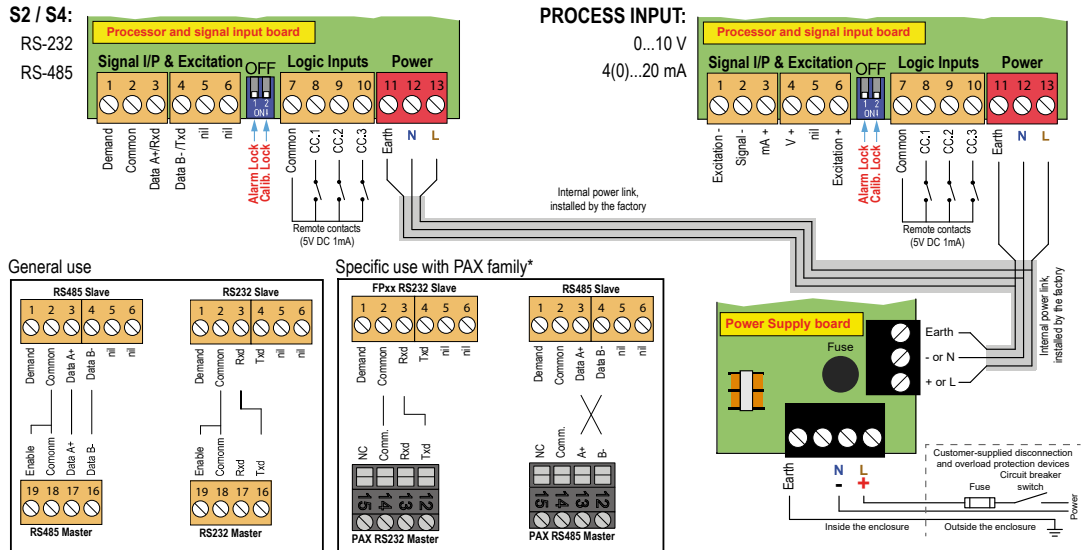


OPTION 1: PROGRAMMATION BOX (REF: PBOX-4B)



OPTION 2: JUNCTION BOX (REF: JBOX-FP)

Terminals



Dimensions in mm

*PAX family: INDI-PAX, IND-BOY, DISP-PAXDP, DISP-BOYDP, DISP-SUMD, CRANE-BOY, CRANE-SUMD

DISP-RLT

DISPLAY FOR RUNNING LINE TENSIO METERS

3-channel display specially designed to work in combination with SENSY running line tensiometers 5570, 5575, 5580 and 5585 for winches and running cables in order to display the tensile load, the speed and the pay-out.



DISP-RLT



Features

- o Inputs:
 - force transducer
 - payout sensor
- o Digital displays and bar graphs:
 - force
 - speed
 - payout
- o Data transmission

Available option(s)

- data logging (download by USB stick or Ethernet network)
- communication output RS-232, RS-485
- analogue output 4 (0)...20 mA or 0...10 V
- relay output 2 or 4 FORM-C (5 A, 230 VAC resistive load)
- power supply: 110 & 230 VAC (50 – 60 Hz)

Application(s) SENSY's DISP-RLT is perfectly designed for the following applications:

- Tension / payout / speed display and logging.

Function(s)

- Reset (tare)
- Peak and through memories
- Filter
- Power calculation (force * speed) (option)
- Possibility to add other functions (option)

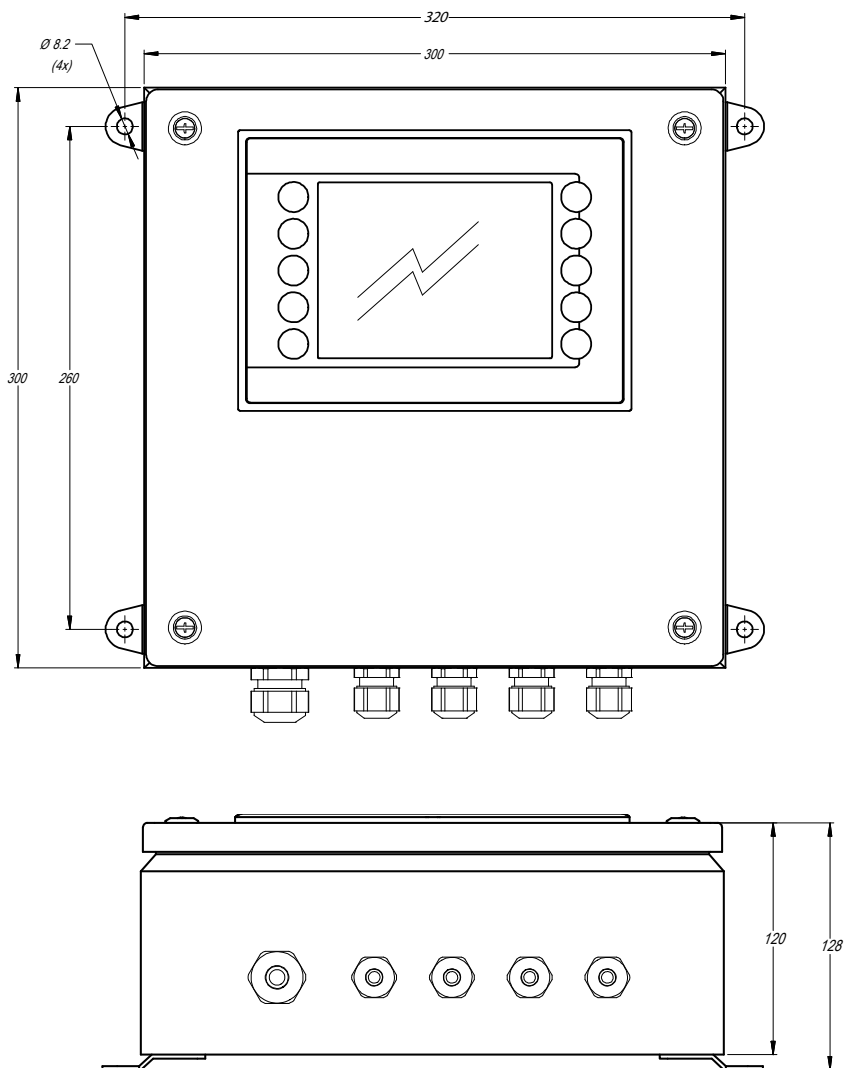
Specifications	DISP-RLT	
Input force signal	4...20 mA**	-
Input payout signal	Absolute encoder SSI**	-
Display	Touchscreen 5.7" color	-
Accuracy	0.1	% F.S.*
A/D converter	20 ms	-
Service temperature range	0...+50	°C
Storage temperature range	-20...+70	°C
Power supply	24 VDC +- 20 %	-
Dimensions	300 x 300 x 120	mm
IP rating	IP65	-

*F.S. : Full Scale.

** : powered 24 VDC.

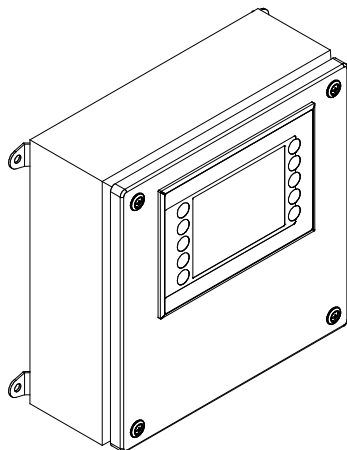
Specifications subject to change without notice..

DISP-RLT > STANDARD DIMENSIONS

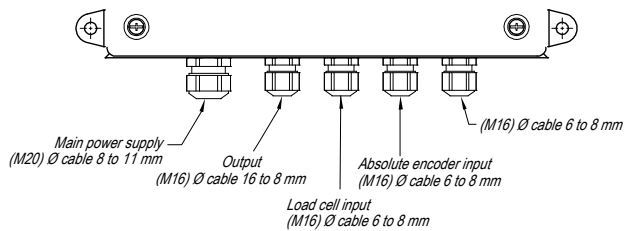


Dimensions in mm

Other view



Terminals



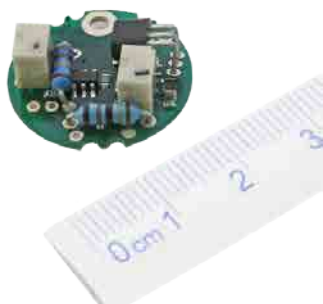
ANALOGUE AMPLIFIERS

STRAIN-GAUGE EMBEDDED ANALOGUE AMPLIFIERS

These analogue amplifiers convert the signal from a Wheatstone bridge (mV/V) into a robust industrial standardised analogue signal.



ANALOGUE AMPLIFIER



Features

- o Internal or external mounting depending on the size of the transducer
- o If external, cylindrical housing in nickel-plated brass (IP67) or rectangular box in aluminium (low-cost version) (IP65)
- o Available version with shifted zero for bidirectional utilisation for versions 4...20 mA and 0...10 V.
- o Protection against inversion of polarity
- o Cable length: 0.15 m between the amplifier housing and the transducer (max. 0.5 m)

Application(s) SENSY 's analogue amplifiers are perfectly designed for the following applications:

- Transmission of a weight measurement in an industrial site (4...20 mA),
- Acquisition of a force measurement in a PLC,
- Transmission of a load measurement through the festoon of an overhead crane (4...20 mA).

Function(s)

- Corresponds to the standardised analogue input signal of PLC and industrial measuring systems
- 4...20 mA version allows for a signal transmission of up to 1000 m with good immunity to electromagnetic disturbance

Specifications	4-20 mA 3 wires	4-20 mA 2 wires	4-20 mA C6	0...10 V	-10...0...+10 V	
Type	4-20 mA	4-20 mA	4-20 mA (ATEX and / or IECEx and / or CSA)	0...10 V	-10...0...+10 V	-
Wiring	3	2	2	3	3	wires
Input range	0.5...2.5...5.5 mV/V	0.5...2.5...5.5 mV/V	0.5...2.5...5.5 mV/V	0.5...2.5...5.5 mV/V	0.5...2.5 mV/V	-
Combined error (non-linearity + hysteresis)	<± 0.02	<± 0.02	<± 0.02	<± 0.02	<± 0.02	% F.S.*
Sensor excitation	5 ± 0.1 VDC	0.5...2***	0.5...2***	5 ± 0.1 VDC	5 ± 0.1 VDC	-
Impedance of Wheatstone bridge	350...5000	350...5000	1000...5000	350...5000	350...5000	ohm(s)
Output signal	4...20	4...20	4...20	0...10	-10...0...+10	-
Load resistance	<= 1000	<= 750	<= 750	> 5000	> 10 000	ohm(s)
Bandwidth	DC...1000	DC...1000	DC...1000	DC...1000	DC...1000	Hz
Reference temperature	23	23	23	23	23	°C
Compensated temperature range	-10...+45	-10...+45	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-40...+85	-40...+85	-40...+85	-40...+85	-40...+85	°C
Temperature coefficient of the sensitivity	0.02...0.051	0.07...0.14	0.07...0.14	0.02...0.051	0.02...0.051	% F.S.*10°C
Temperature coefficient of zero signal	0.004...0.0015	0.01...0.05	0.01...0.05	0.004...0.015	0.004...0.015	% F.S.*10°C
Power supply	10...30 VDC	7.5...30 VDC	7.5-9...28 VDC	13...30 VDC	15...18** VDC	-
Consumption (max.)	<= 45	Same as the measured signal	Same as the measured signal	<= 23	<= 25	mA

*F.S. : Full Scale.

** : 24 VDC is acceptable if impedance of the Wheatstone bridge >= 1000 ohms.

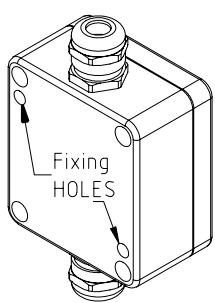
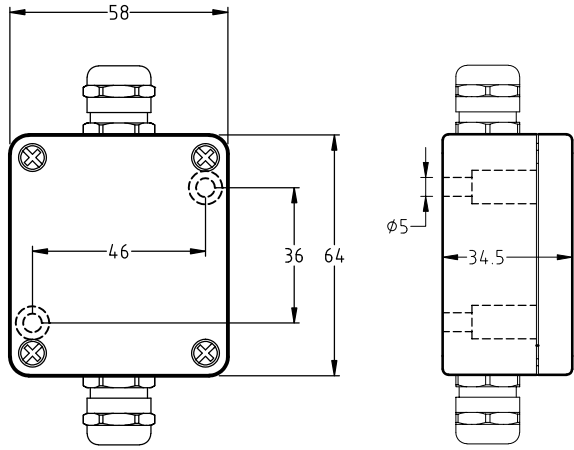
*** : according to the impedance of the Wheatstone bridge.

Specifications subject to change without notice..

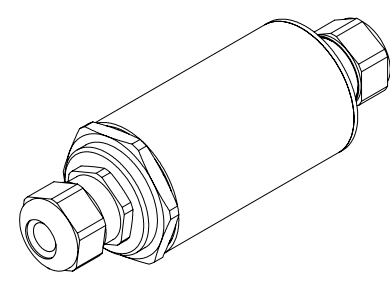
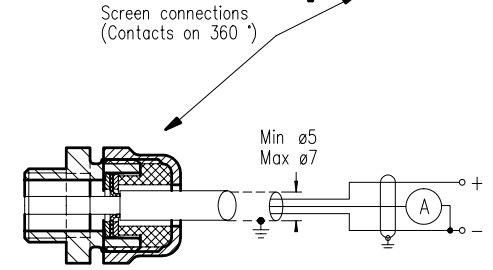
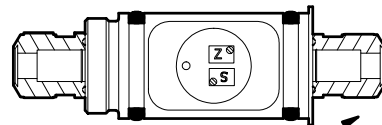
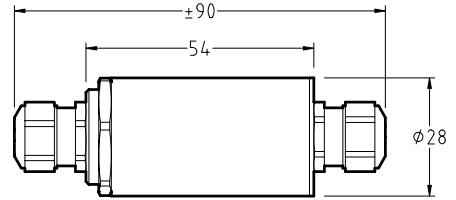
ANALOGUE AMPLIFIERS > STANDARD DIMENSIONS



Rectangular box - IP65
Aluminium



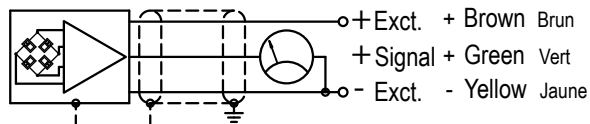
Cylindrical housing - IP67
Nickel-plated steel



Dimensions in mm

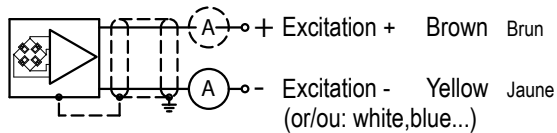
Terminals

WIRING S3-JT: (4-20 mA 3 wires, 0 - 10 V, -10...0...+10 V)



Cable screen connected to transducer
Faradisation connectée au capteur

WIRING C-C6: (4-20 mA 2 wires, 4-20 mA C6)



Cable screen connected to transducer
Faradisation connectée au capteur

DIGITAL CONVERTERS

STRAIN-GAUGE EMBEDDED DIGITAL CONVERTERS

These digital converters convert the signal from a Wheatstone bridge (mV/V) into a standardised digital signal RS-232, RS-485 or USB



DIGITAL CONVERTER



Features

- o Very high resolution
- o Linearisation of transducer signal available
- o High transmission speed
- o Internal or external mounting depending on the size of the transducer
- o When external, rectangular box in aluminium (protection class IP65)

Available option(s)

- temperature measurement with compensation of thermal drifts

Application(s) SENSY's digital converters are perfectly designed for the following applications:

- Connection of the load cell directly to a computer or a PLC,
- Digital linearisation and thermal compensation integrated in the transducer.

Function(s)

- Scaling of output signal in measuring unit
- Easy connection to PC or PLC
- For USB-ASC: Self powered by the port

Specifications	RS232-ASC	RS485-ASC	RS485-MOD	USB-ASC	
Input range	± 3 mV/V	± 3 mV/V	± 3 mV/V	3 mV/V	-
Sensor excitation	4.5...5.25 VDC	4.5...5.25 VDC	4.5...5.25 VDC	5 VDC	-
Non-linearity error	<=± 0.003	<=± 0.003	<=± 0.003	0.0025	% F.S.*
Impedance of Wheatstone bridge	320...5000	320...5000	320...5000	85...5000	ohm(s)
Baud rate	2.4...230 kbps	2.4...230 kbps	2.4...230 kbps	115...200 kbps	-
A/D converter	5000...66 000 div.***	5000...66 000 div.***	5000...66 000 div.***	50 000...200 000 div.***	-
Protocol	ASCII	ASCII	MODBUS	ASCII	-
Bandwidth	1...500	1...500	1...500	1...100	Hz
Service temperature range	-40...+85	-40...+85	-40...+85	-40...+85	°C
Temperature coefficient of the sensitivity	<± 0.05	<± 0.05	<± 0.05	0.005	% F.S./10°C
Temperature coefficient of zero signal	<± 0.01	<± 0.01	<± 0.01	0.004	% F.S./10°C
Power supply	5.6...12...18 VDC	5.6...12...18 VDC	5.6...12...18 VDC	USB	-
Consumption (max.)	60**	60**	60**	68**	mA

*F.S. : Full Scale.

** : with Wheatstone bridge of 350 ohms.

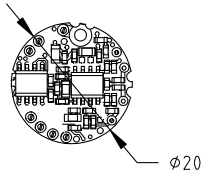
*** : according to reading frequency.

Specifications subject to change without notice..

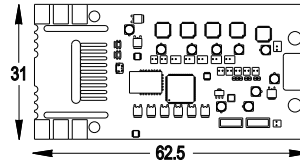
DIGITAL CONVERTERS > STANDARD DIMENSIONS

Internal mounting in transducer:

- RS485-ASC
- RS485-MOD

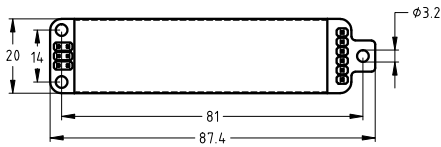


- USB-ASC

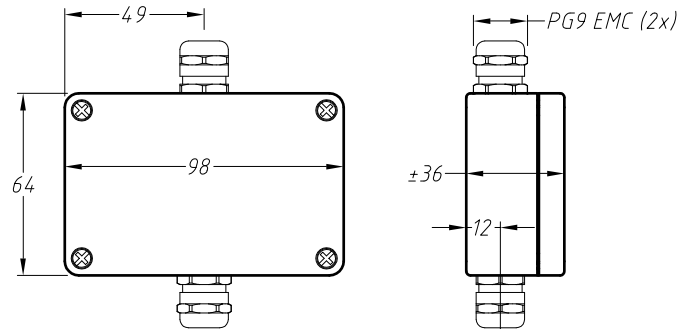


External mounting in housing:

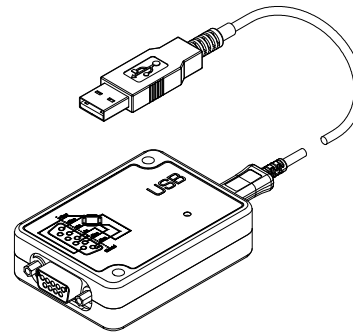
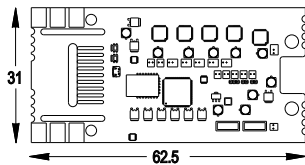
- RS232-ASC
- RS485-ASC
- RS485-MOD



Matching case:

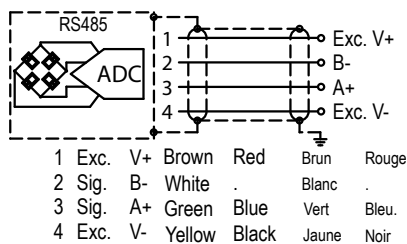


- USB-ASC

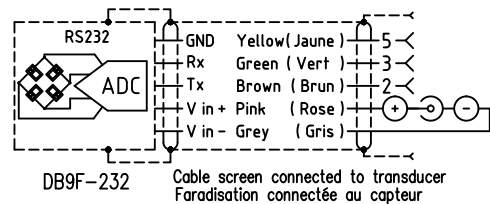


Dimensions in mm

Terminals



Shielding connected to housing connector
Faradisation connectée au corps du connecteur



ANNEXES

- Definitions: Most popular options	p. 296
- Option cards for PAX, CRANE-BOY, INDI-BOY, DISP-BOY family	p. 303
- Definitions: Certifications	p. 304
- Definitions: Technical features	p. 305
- SENSY software	p. 306
- Stainless steel screws: Features and references	p. 310
- IP codes (International Protection Marking)	p. 311

DESCRIPTION OF MOST USED OPTIONS

OPTION DESCRIPTION



Amplified output

Amplified output

Signal conditioners for strain gauges are high-performance amplifiers built into the load cell. They amplify and convert the input signal (mV) into an output signal (mA or V). The current amplifiers make it possible to maintain an accuracy higher than 0.1 % at the different temperatures used. Robust and small in design (with an optional housing), their installation is easy and their temperature range is -40°C to $+85^{\circ}\text{C}$. These analogue amplification boards are designed to work in an industrial environment and offer both high stability and fast response. The directly amplified force transducer can be applied where space, weight and cost are limited as well as in areas where there are many electromagnetic signal disturbances.

OPTION DESCRIPTION



Angle Measurement

Angle measurement

This allows the angle of rotation to be measured at the same time as the torque. This information is provided in the form of two square waveforms providing 360 periods per revolution and offset by a quarter of a period to determine the direction of rotation.

OPTION DESCRIPTION



Attachment arm

Articulated arm

This accessory makes it possible to fix the running line tensiometer to the structure while leaving it sufficient freedom to follow the movements of the rope.

OPTION DESCRIPTION



ASTM E74

ASTM E74

The ASTM E74 standard is unique to the USA and serves the same purpose as the international standard ISO 376, i.e.: "Calibration of force measuring instruments used for the verification of uniaxial testing machines". It deals more generally with the calibration methods which can be used to perform the calibration.

Two categories of force transducers are differentiated:

- class AA: for secondary force standard dynamometers, i.e. used as references for calibrating other dynamometers.
- class A: for dynamometers used for checking testing machines.

This distinction introduces differences in the calibration procedure. The results of the calibration are used to define the area of use in the category to which the dynamometer belongs. A key difference from ISO 376 is that the ASTM protocol is based in part on calibration uncertainty.

OPTION DESCRIPTION



Cable length

Cable length

Transducers are defined as standard with a typical cable length. (e.g. 8 m for the '5510' model). It is possible to modify this length on request. Note: the maximum length can be limited especially in particular:

- by the presence of electromagnetic disturbances which then require amplification of the signal at the transducer to convey a robust signal of type 4 ... 20 mA / 0...10 V;
- for Ex i-certified transducers for operation in explosive zones for which the solution is to use a local amplification (e.g.: option C6 - model 'ANALOGUE AMPLIFIER' - delivering a signal 4 ... 20 mA 2 wires) enabling the use of a loop insulator accepting longer cables than the Zener barriers.

OPTION DESCRIPTION



Calculation note

Calculation note

Calculation note to demonstrate the mechanical strength and technical relevance of the design of a transducer according to its measurement range, its safety factor, the fatigue strength required and the characteristics of the material used.

OPTION DESCRIPTION



Calibration resistance









Calibration resistance

A resistor intended to be connected in parallel on one of the Wheatstone bridge branches in order to create a known imbalance and thus to simulate a known force or torque. This makes it possible to calibrate and verify the control electronics without applying a physical quantity to the force transducer or torque meter. A calibration resistor is therefore determined for a specific branch of a specific force transducer.




It can be internal to the transducer and activated by connecting two wires. It can also be external (supplied in a sachet).

DESCRIPTION OF MOST USED OPTIONS



OPTION	DESCRIPTION
	<p>CE hoisting</p> <p>CE Hoisting logo is SENSY specific. This means that the material is certified by SENSY to be integrated in the kinematic chain of a lifting system.</p> <p>To do this, SENSY provides a manufacturer folder which guarantees the overload resistance (breaking load coefficient of 5 for lifting systems and 10 for elevators) as well as the fatigue resistance.</p> <p>The CE Hoisting certification is not enough for the use of load cells in an overload protection systems. Indeed, in addition, a load cell used for crane overload protection must be conform to the concept of "fail safe"; namely that it must stop the lifting in case of any anomaly. This is for example not the case for load cells with wireless transmission like models: 5000-WI, 5000M-WI, 5050-WI and 5050M-WI...</p>
 Charpy certificate	<p>Charpy certificate</p> <p>This type of test makes it possible to control the impact resistance or the ductility of the proof body of a force transducer.</p> <p>The Charpy test is carried out on a specimen in the same material as that of the force transducer accompanied by a test report certified by an approved laboratory.</p>
	<p>Connector output</p> <p>As the standard, industrial and weighing transducers are generally equipped with a cable gland. This option replaces the latter with a connector so that it easy to disconnect from the cable. These connectors are chosen according to the transducer's environment. Some very specific connectors can also be used underwater (they can even be disconnected and connected underwater) while being subjected to high pressure.</p>
 Digital output	<p>Digital output</p> <p>The RS-232 and RS-485 options are high-performance digital amplifier boards for analogue / digital signal conversion which are typically used for high-accuracy transducers. The board has been developed for mounting in most of our strain gauge force transducers and provides a very stable RS-232 / RS-485 digital output signal in the MODBUS or ASCII protocol.</p>
 Dual Wheatstone bridge	<p>Dual Wheatstone bridge</p> <p>A double bridge force transducer is a transducer with two independent Wheatstone bridges equipped with strain gauges. In the context of high-risk industrial applications where, according to the Machine Directive, high levels of SIL (Safety Integrity Levels) or PL (Performance Levels) are required, safety is provided by an independent safety control device. The device's critical point of performance lies in its resistance to defects. This resistance depends on both the quality and reliability of the components, and in particular on its structure (or architecture). These safety devices are essentially built according to the well-known 'measurement signal / control logic / actuator' architecture. High SIL or PL levels can only be achieved by using the redundancy of the parts. Thanks to these double bridge measuring force transducers, SENSY technology enables the redundancy of the required measuring signal to be supplied to the safety control logic device. The monitoring and comparison of these redundant signals, performed by the control logic (safety PLC, configurable logic block 'fail-safe') provides the means of avoiding, detecting or tolerating defects. In this case, a fault in the measurement signal will be detected and processed before the next request for the safety function. Another reason to employ a second bridge is to have a spare bridge for very large capacity transducers or for transducers placed where mounting and accessibility are very difficult in order to facilitate dealing with the problem of signal drift or ripped cable.</p>
 Dye penetrant certificate	<p>Dye penetrant certificate</p> <p>Dye penetrant test certificate after machining.</p> <p>This type of test makes it possible to check the absence of any micro-cracks likely to cause the rupture of certain fatigue-rated transducers.</p>
 EN 12390 Accredited laboratory certificate	<p>EN 12390</p> <p>The EN 12390 and EN 12350 series of standards deal with concrete tests. The machines used for compressive strength testing of hardened concrete are tested according to the European standard EN 12390-4. The standard transducers manufactured by SENSY, have four separate gauge bridges to identify any parallelism anomaly on the machine. They may also be associated with an ISO 376 qualification and require an official certificate from a certified body based on tests carried out according to EN 12390-4.</p>
	<p>Ex i</p> <p>Type of protection is based on the limitation of electrical energy provided to an equipment and its wiring exposed to explosive atmosphere at a level below that which may cause ignition by a spark or thermal effect.</p> <p>Force transducers and torque meters equipped with this option are considered to be intrinsically safe, which allows them to work in explosives areas. SENSY load cells are ATEX Ex ia IIC T4 and T6, IECEx Ex ia IIC T6 and CSA (Canada and US) Class 1 Div 1 certified.</p>


DESCRIPTION OF MOST USED OPTIONS


OPTION	DESCRIPTION
Ex d	<p>Ex d</p> <p>This is an envelope (housing or proof body of the force transducer) enclosing components that can ignite an explosive gaseous atmosphere. The transducer structure is therefore designed to resist the pressure developed during an internal explosion of an explosive mixture and prevents the transmission of this one to the surrounding explosive atmosphere of the envelope.</p> <p>We offer this type of option on our load pin model '5050' or for some of our electronics (displays, load limiters, etc.). In the latter case, these are placed in suitable explosion-proof housings.</p>
 Up to 800 m	<p>External antenna</p> <p>Options for the wireless transmission of measurements have an internal antenna as standard. Depending on the application, it is sometimes necessary to increase the range of our wireless transmitters.</p> <p>We also offer external antennas for the industrial sector as well as for explosive areas with our Ex i wireless transmitters.</p>
20... 100 kHz Frequency output	<p>Frequency output</p> <p>This provides a signal in the form of frequency modulation to overcome electromagnetic disturbances.</p>
 High pressure resistance	<p>High-pressure resistance</p> <p>This option involves design and components (e.g. gaskets) that can withstand high pressures. It is therefore necessary to know the nature of the fluid under pressure (water, air, oil, etc. ...), the maximum pressure to which the transducer will be subjected as well as the duration of exposure to this pressure.</p>
 Hydraulic hose	<p>Hydraulic hose</p> <p>Mechanical protection of the cable by using a hydraulic sheath. This option is recommended in environments where the cable is subject to mechanical and chemical aggressions.</p>
IP64 Not for Angle Sensor	<p>IP64</p> <p>The protection rating of our force transducers is in accordance with the international standard of the International Electrotechnical Commission for waterproofing.</p>
IP65 Not for Angle Sensor	<p>IP65</p> <p>The protection rating of our force transducers is in accordance with the international standard of the International Electrotechnical Commission for waterproofing.</p> <p>In the case of IP65, this corresponds to total protection against dust and strong jets of water in all directions.</p>
IP67 MARINE	<p>IP67 MARINE</p> <p>The protection rating of our force transducers is in accordance with the international standard of the International Electrotechnical Commission for waterproofing. In the case of IP67 MARINE, this corresponds to total protection against dust and the effects of immersion (1 m max) with corrosion resistance adapted to marine environments.</p>
IP68	<p>IP68</p> <p>The waterproofness is such that it is possible to immerse the transducer without altering its performance.</p> <p>In order to optimise the protection techniques, it is necessary to know the depth to which the transducer will be immersed as well as the duration of immersion and the characteristics of the liquid.</p>


DESCRIPTION OF MOST USED OPTIONS




OPTION	DESCRIPTION
IP69K	<p>IP69K</p> <p>The protection rating of our force transducers is in accordance with the international standard of the International Electrotechnical Commission for waterproofing.</p> <p>In the case of the IP69K, this corresponds to protection against high-pressure cleaning, at high temperature and coming from several directions.</p>

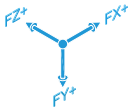
OPTION	DESCRIPTION
 Class 00	<p>ISO 376 - class 00</p> <p>The purpose of ISO 376 is to calibrate force-measuring instruments used for the static verification of uniaxial testing machines (e.g. tension/compression testing machines). It describes a procedure for classifying these instruments. These high-precision, so-called "transfer" standard transducers make the link between national metrology and testing machines that must be (re)-calibrated.</p> <p>The class of the instrument must be equal to or better than the class for which the machine is to be calibrated according to ISO 7500-1. With this option, these high-accuracy-transducers not only allow the calibration of scale machines in classes 05, 1 or 2 but also enable intercomparison tests between national standards.</p>


OPTION	DESCRIPTION
 Class 0,5	<p>ISO 376 - class 0,5</p> <p>The purpose of ISO 376 is to calibrate force-measuring instruments used for the static verification of uniaxial testing machines (e.g. tension/compression testing machines). It describes a procedure for classifying these instruments. These high-precision, so-called "transfer" standard transducers make the link between national metrology and testing machines that must be (re)-calibrated.</p> <p>The class of the instrument must be equal to or better than the class for which the machine is to be calibrated according to ISO 7500-1. This option allows for the calibration of scale machines in classes 0,5, 1 or 2.</p>

OPTION	DESCRIPTION
 Class 1	<p>ISO 376 - class 1</p> <p>The purpose of ISO 376 is to calibrate force-measuring instruments used for the static verification of uniaxial testing machines (e.g. tension/compression testing machines). It describes a procedure for classifying these instruments. These high-precision, so-called "transfer" standard transducers make the link between national metrology and testing machines that must be (re)-calibrated.</p> <p>The class of the instrument must be equal to or better than the class for which the machine is to be calibrated according to ISO 7500-1. This option allows for the calibration of scale machines in classes 1 or 2.</p>




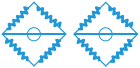



OPTION	DESCRIPTION
ISO 376 Accredited laboratory certificate	<p>ISO 376 - Accredited laboratory certificate</p> <p>The purpose of ISO 376 is the calibration of force-measuring instruments used for the static verification of uniaxial testing machines (e.g. tension/compression testing machines). It describes a procedure for classifying these instruments. These high-precision, so-called "transfer" standard transducers make the link between national metrology and testing machines that must be (re)-calibrated.</p>

OPTION	DESCRIPTION
 Magnetic certificate	<p>Magnetoscopic test certificate</p> <p>Magnetoscopic test certificate after machining.</p> <p>This method makes possible the detection of the presence of cracks that can cause the transducer to break.</p>

OPTION	DESCRIPTION
	<p>Multi-axis load cells</p> <p>For some types of proof bodies, it is possible to manufacture load cells with several gauge bridges in order to measure forces in different directions. In particular for load pins, it is allowed to measure the force in two orthogonal directions (Fx, Fy). This allows the resultant force to be calculated, without knowing the direction, by using the formula:</p> $F \text{ Result.} = \sqrt{(F_x^2 + F_y^2)}$

OPTION	DESCRIPTION
	<p>Multi-direction</p> <p>For some applications it is necessary to know both the forces and the moments in several directions: for example, a torque wrench for which the torque as well as the thrust have to be measured. This can be done using a single transducer equipped with several gauge bridges in an appropriate design.</p>

DESCRIPTION OF MOST USED OPTIONS

OPTION	DESCRIPTION
	Overload protection <p>Transducers associated with overload protection electronics (crane, EOT crane, lift, nacelle, etc.) are defined as "safety components placed on the market separately" and must comply with the essential requirements of the Machine Directive 2006/42/EC for safety component aspects and the Electromagnetic Compatibility Directive 2014/30/EU.</p> <p>They are the subject of specific strain studies and a choice of appropriate material of aeronautical quality, to prevent any risk of rupture. SENSY S.A. keeps the technical file certifying the said conformity at the disposal of the authorities throughout the legal period (in reality, the documents are kept for more than 30 years, although the lifespan of a transducer may be more than 50 years).</p>
 COVER	Protective cover <p>The cover is designed to improve the mechanical protection of a transducer which, as the norm, only has a silicone layer on the strain gauges.</p>
 Sheaves of synthetic material	REA synthetic option (tensiometer) <p>Use of sheaves made from synthetic materials instead of metal sheaves for particular applications (cable type, cable diameter, weight, etc.).</p>
 SIL 3 COMPLIANT	SIL (Safety Integrity Levels) / EN-61508 compliant <p>In the context of high-risk industrial applications where, according to the Machine Directive, high levels of SIL (Safety Integrity Levels – EN 62061 standard) or PL (Performance Levels – ISO 13849 standard) are required, safety is provided by an independent safety control device. The critical point of the device's performance lies in its resistance to defects. This depends on the quality and reliability of the components, and in particular its structure (or architecture). These safety devices are essentially built according to the well-known architecture (measurement signal / control logic / actuator). High SIL or PL levels can only be achieved by using the redundancy of the parts. Thanks to these double-bridge measuring transducers, SENSY technology enables the redundancy of the required measuring signal to be supplied to the safety control logic device. The monitoring and comparison of these redundant signals, performed by the control logic (safety PLC, configurable logic block 'fail-safe') provides the means of avoiding, detecting or tolerating defects. In this case, a fault in the measurement signal will be detected and processed before the next request for the safety function.</p>
 SOFTWARE AVAILABLE	Software <p>The signals from our force transducers can be used either through industrial displays or via acquisition software.</p> <p>SENSY has developed a range of specialized software either for computers (SOFT-ISO376, SOFT-ISO7500, SOFT-EN12390, ...) or for industrial PLCs. These applications make it possible to acquire the signals of one or more force transducers/load pins via different types of interfaces (RS-232, RS-485, USB, wireless, etc.).</p> <p>For example, when supplying a complete measuring system, we also regularly offer to develop customised applications.</p>
 Special Impedance	Special impedance <p>The force transducers and the torque meters are made from strain gauges connected via a Wheatstone bridge. The impedance of this bridge depends on the type of gauges (usually 350 Ω) and the number of these in each of the branches. As a result, there is a standard impedance for each force transducer which depends on the model, the measurement range and finally the required accuracy.</p> <p>This impedance can be adapted (700, 1000, 5000 Ω) for certain applications: need for low consumption (e.g. battery operation, amplifier 4 ... 20 mA 2 wires) or the need to limit heat dissipation (Ex i certified transducers (intrinsic safety), small transducers).</p>
 Speed sensor	Speed transducer <p>Measurement of the rotation speed.</p> <p>This option is proposed for rotating torque meters and tensiometers to measure the running speed of the cable.</p>
 Spider lubrication hole	Spider lubrication hole <p>In the case of load pins, to avoid wear due to friction, it is possible to provide a lubrication hole(s) to lubricate the areas where the forces are applied to limit wear and avoid seizure. This lubrication hole can be a 'spider' to improve the distribution of the lubricant over the entire contact area.</p>

DESCRIPTION OF MOST USED OPTIONS



OPTION

DESCRIPTION



STAINLESS STEEL

Stainless steel connector

4 poles miniature standardised connector with mechanical parts made of stainless steel to replace the standard connector (9 pins binder according to DIN 45322 with chromed brass mechanical parts).

OPTION

DESCRIPTION



Subsea load pin with 'wet mate' connector

This option allows the cable from a transducer to be connected or disconnected under water. This option is obviously expensive but is recommended for underwater applications where the connecting cable must be removable.

OPTION

DESCRIPTION



Submerged

Subsea load pin with 'submersible' connector

Waterproofness of the proof body and connector for immersing the load pin. It is necessary to specify the depth and duration of immersion to optimise the design and life of its components.

OPTION

DESCRIPTION

ANODISING
Surface treatment

Surface treatment: anodising

Anodising refers to an electrolytic treatment that creates a thin layer of oxide on the surface of a metal body. It is used in particular for aluminum and its alloys on which a layer of alumina of 10 to 50 microns increases its resistance to wear and corrosion. Anodising also improves the visual appearance of the force transducer or accessory.

OPTION

DESCRIPTION

CHROME
PLATING
Surface treatment

Surface treatment: chrome-plating

Application by electrolysis of a chromium layer on the surface of the proof body of a force transducer or its accessory to improve its resistance to corrosion. This operation enhances the product's visual appearance and makes it easier to clean (e.g. food industry).

OPTION

DESCRIPTION

NICKEL
MARINE
Surface treatment

Surface treatment: nickel marine

Additional surface treatment to the proof body of a force transducer or its accessory made of alloy steel to increase its corrosion resistance for use in the marine environment.

OPTION

DESCRIPTION



Passivation
treatment

Surface treatment: passivation

Passivation is a surface treatment intended to create a protective film against corrosion on the surface of a metal body. For example, in the case of stainless steel, a tight protective layer of chromium oxide will be formed in the presence of oxygen in the air which is able to regenerate in case of accidental deterioration of the surface.

OPTION

DESCRIPTION

TEFLON
Surface treatment

Surface treatment: teflon

Application of a Teflon (PTFE) layer to the surface of the proof body of a force transducer or its accessory to improve its resistance to friction and corrosion, even at high temperatures.

OPTION

DESCRIPTION



Teds linearity









TEDS (Transducer Electronic Data Sheet)

This technology is not only compatible with force transducers but has been designed to be used with all types of transducers (temperature, pressure, accelerometer, etc.). It consists of a digital circuit for transmitting the information necessary for its calibration to the measurement electronics.

Other information is stored in the memory of this chip: for example, transducer type, serial number, year of manufacture, manufacturer, etc. In this way, when the force transducer is connected to a TEDS-compatible indicator, it behaves like a fully 'plug and play' feature with automatic calibration which allows N, kg or t to be displayed directly, rather than mV.

Note: when necessary, and depending on the design of the transducer or application, it is also possible to improve the linearity of the transducer by integrating pairs of points and the corresponding adjustments into the memory.

DESCRIPTION OF MOST USED OPTIONS

OPTION	DESCRIPTION
 -30°C...+130°C -40°C...+180°C -50°C...+130°C -50°C...+150°C -50°C...+180°C	Temperature range When manufacturing force transducers or torque meters, SENSY takes into account three types of temperature range: <ul style="list-style-type: none">• The compensated temperature range where the thermal drift of the force transducer is corrected, optimised and verified during its manufacturing (standard: -10°C ... +45°C).• The nominal operating temperature range (standard: -30°C ... +70°C) for which the transducer has been designed and qualified but which is not subjected to systematic temperature control. Nevertheless, the drift remains substantially the same as over the compensated temperature range. As an option and depending on the models, we propose to extend the operating temperature from to -50°C ... +180°C and, if necessary, to compensate for a part or all these temperatures.• The storage temperature range (standard: -50°C ... +85°C) which is always adapted according to the chosen temperature option.
 Third inspection	Third inspection A request for an inspection by an authorised third party (e.g. Lloyd's) of an order during production and upon delivery.
 US control	US control Ultrasonic testing for fault detection within a material. This is based on ultrasonic waves transmission and reflection inside a material, such as the proof body of a transducer or loading accessory.
 USB	USB The COND-USB is a digital conditioner designed to convert the signal from the gauge bridge of our force transducers to a USB-type digital output. This product is totally 'plug and play' since it is directly powered by the USB port and no additional energy source is needed to power the force transducer. Thus, it is sufficient to connect it to a computer or PLC to recover the measurement of the force measured by the force transducer. The rugged metal housing on the converter equips the device for use in all indoor environments.
 Vacuum proof	Vacuum proof This option involves the use of materials capable of withstanding the vacuum in the long term and in particular not to be subjected to degassing. It is necessary to know the value of the vacuum (absolute pressure) as well as the duration of exposure to this vacuum for an optimal definition of the required components.
 Tightness certificate	Waterproofness certificate Waterproofness certificate: this type of test makes it possible, for example, to check the waterproofness of a load pin intended for underwater use.
 Wireless	Wireless Depending on the application, it may be interesting to recover the signals from force transducers or load pins by replacing the wiring with a wireless link. Our wireless options enable us to provide wireless communications in industrial environments as well as in explosive areas. The proposed solutions are suitable for measuring force as well as for lifting (for example, recovering the signal from load shackle on a portable indicator), but exclude safety functions such as overload protection. They are available as both single channel and multiplexed options to connect multiple transducers to the same wireless display.
 Xray proof	X-ray proof Withstand ionising radiation. This option involves the use of materials resistant to ionising radiation (radioactivity). It is necessary to know the type of radiation (alpha, beta, gamma or X), the dose rate as well as the total dose accumulated during the life of the transducer to obtain an optimal definition of the required components.

OPTIONAL CARDS

Communication cards (max. 1 choice)

CARD-CDC10

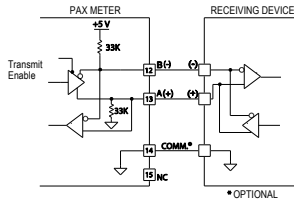


- RS-485 field bus communication interface

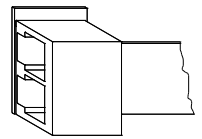
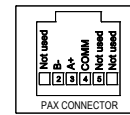
CARD-CDC1C



CARD-CDC10



CARD-CDC1C



CARD-CDC20

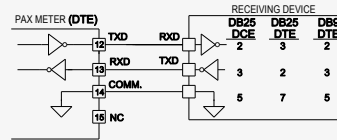


- RS-232 half-duplex communication interface
Available with crew terminals or DB9 connector

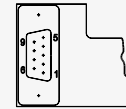
CARD-CDC2C



CARD-CDC20

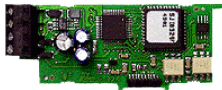


CARD-CDC2C



FEMALE
PIN 2 TXD
PIN 3 RXD
PIN 5 COMMON

CARD-CDC30



- DeviceNet communication interface

CARD-CDC40



- Modbus communication interface

CARD-CDC40 is not necessary for models:

INDI-PAXS2 DISP-PAXx2

INDI-BOYS2 DISP-BOYP2

CRANE-BOYS2 CRANE-BOYP2

CRANE-SUMD2 DISP-SUMD2

DISP-PAXDP, DISP-BOYDP, CRANE-BOYDP

CARD-CDC50 / CARD-CDC50-CRANE*



- Profibus-DP (EN 50170) communication interface

* As the CARD-CDC50 is too long for the housing of the CRANE-BOY, the CARD-CDC50-CRANE is supplied with a spacer to be insert between the front of the electronics and the housing.

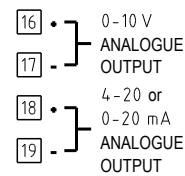
Analogue output card

CARD-CDL10



- Analogue output signal: 0-20 mA, 4-20 mA, 0-10 VDC

CARD-CDL10



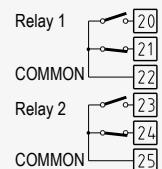
Relay cards (max. 1 choice)

CARD-CDS10 & CARD-CDS20

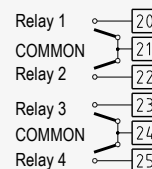


- 2 or 4 set-points activating each an independent relay

CARD-CDS10



CARD-CDS20



Cards already included

- Analogue output card:

CARD-CDL10

- Relay card:

CARD-CDS20 (4 set-points)

- Models:

CABIN-2xB1SUMD; CABIN-4xB1SUMD

- Models:

INDI-BOY DISP-BOYP; CRANE-BOY CRANE-BOYP; DISP-BOYDP
CRANE-BOYDP; CRANE-SUMD DISP-SUMD; CRANE-BOY-Exd;
CABIN-2xB1SUMD; CABIN-4xB1SUMD.

DEFINITIONS: CERTIFICATIONS

OPTION	DESCRIPTION
	<p>ATEX</p> <p>The ATEX (ATmosphère EXplosive in French) logo is specific to the European market and means that the material can be certified (option) to be used in an explosive environment.</p> <p>Most of the sensors can be Ex i certified (intrinsic safety) and some Ex d certified (explosion proof). The sensors with Ex i certification need to be connected to the electronics (located in a safe area) through Zener barriers or loop insulators that limit the transmitted energy. If the associated electronics need to function in an explosive environment, SENSY can integrate them in an explosion-proof certified housing.</p>
	<p>CE</p> <p>The CE logo means that the material corresponds to all the essential requirements for the different guidelines that are applicable in the European Union.</p>
	<p>CE Hoisting</p> <p>The CE Hoisting logo is SENSY-specific. This means that the material is certified by SENSY to be integrated in the kinematic chain of a lifting system.</p> <p>To do this, SENSY provides a manufacturer folder which guarantees the overload resistance (breaking load coefficient of 5 for lifting systems and 10 for elevators) as well as the fatigue resistance.</p> <p>The CE Hoisting certification is not sufficient for the use of load cells in an overload protection system. Indeed, in addition, a load cell used for crane overload protection must conform to the concept of "fail safe"; namely, it must stop the lifting in case of any anomaly. For example, this is not the case for load cells with wireless transmission, such as models: 5000-WI, 5000M-WI, 5050-WI and 5050M-WI...</p>
	<p>CSA</p> <p>The CSA logo is equivalent to the ATEX logo but is applicable to the North American markets (USA and Canada).</p>
	<p>IECEX</p> <p>The IECEX logo (International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres) is equivalent to the ATEX logo but is applicable for the global market.</p>
	<p>ISO 376</p> <p>The purpose of ISO 376 is the calibration of force-measuring instruments used for the static verification of uniaxial testing machines (e.g. tension/compression testing machines). It describes a procedure for classifying these instruments. These high-precision, so-called "transfer" standard transducers make the link between national metrology and testing machines that must be (re)-calibrated.</p>
	<p>OIML</p> <p>OIML is the International Organization of Legal Metrology.</p> <p>In the SENSY documentation, the OIML logo means that the load cell or the weighing electronics are certified by an internationally recognised Metrology institute (PTB, NMI, NWML, etc.) as compliant to the international recommendation OIML concerning the type of material in order to integrate the sensor into a "legal" weighing system designed to measure the mass in order to determine its price.</p> <p>It is the R60 for the load cells and the R76 for the electronics (non-automatic weighing).</p>
	<p>OVERLOAD PROTECTION</p> <p>Transducers associated with overload protection electronics (crane, EOT crane, lift, nacelle, etc.) are defined as "safety components placed on the market separately" and must comply with the essential requirements of the Machine Directive 2006/42/EC for safety component aspects and the Electromagnetic Compatibility Directive 2014/30/EU.</p> <p>They are the subject of specific strain studies and a choice of appropriate material of aeronautical quality to prevent any risk of rupture. SENSY keeps the technical file certifying the said conformity at the disposal of the authorities throughout the legal period (in reality, the documents are kept for more than 30 years, although the lifespan of a transducer may be more than 50 years).</p>
	<p>EN 12390</p> <p>The EN 12390 and EN 12350 series of standards deal with concrete tests. The machines used for compressive strength testing of hardened concrete are tested according to the European standard EN 12390-4. The standard transducers manufactured by SENSY, have four separate gauge bridges to identify any parallelism anomaly on the machine. They may also be associated with an ISO 376 qualification and require an official certificate from a certified body based on tests carried out according to EN 12390-4.</p>



DESCRIPTION

Carbon cable

These small-diameter cables are made of carbon-fibre-reinforced materials. As there are many varieties it is essential to specify the characteristics of the cable concerned.

DESCRIPTION

Steel cable

A steel cable is an assembly of strands which are themselves an assembly of steel wires arranged in helical form around their respective core and assembled to become one. The cable allows for transmitting, force, movement and energy in an assembly of mechanical parts.

DESCRIPTION

Synthetic cable

Cable made from synthetic fibres (high-molecular-weight polyethylene) braided into 12 strands, with a hollow core. Its advantages over steel are: 8 x lighter, easier to handle, can hoist over longer distances, low elasticity, and in case of cutting there is no whiplash so it is safer.

DESCRIPTION

Deflection

Deformation along the main axis of a proof body, observed between a situation when no load is applied and nominal loading.

DESCRIPTION

Loading accessories

In order to verify the force sensors used in calibration or reference machines, loading wedges are employed to transmit the load to the measuring instrument. In the case of a wedge with two flat surfaces, to avoid any errors during the test they must be flat and parallel. In addition, the pressure on the machine trays must remain at less than 100 N/mm². If necessary, it is possible to install intermediate plates with a force application diameter large enough to better distribute the pressure. Ideally, the effective height of a mounting compression accessory must be greater than or equal to half of the force application diameter of the latter. In addition, the cavity diameter of the accessory should be 0.1 to 0.2 mm greater than the diameter of the force-transmitting motor element to allow this part to be centred in the accessory without generating side contact between both parts.

DESCRIPTION

MTTFd

The reliability of components is obviously at the core of a system's ability to perform its security function. The lower the reliability of a component, the more likely it is that this component will cause failures (and therefore will be dangerous). However, it should be noted that it would be inconceivable to consider the reliability of a component as justification for achieving high levels of performance. Standard 13849 also provides a limit on the use of an MTTFd (100 years). This is because an MTTFd value is an average and does not reflect reality. It is therefore likely that a reliable product will fail, despite the small statistical probability. It is particularly true that, in the case of failure, this component will not immediately be identified as the probable cause of that failure.

DESCRIPTION

Wheatstone bridge

A Wheatstone bridge is an electrical circuit that can measure very small variations in electrical resistance. This technique is commonly used for strain gauge sensors because it accurately measures relative deformations of a few mm/m. If no force is applied to the sensor, the four gauges have the same resistance and the V. out output signal is zero.

If a force is applied in compression, gauges 1 and 4 become longer and consequently their resistance increases. Conversely, gauges 2 and 3 become shorter and their resistance decreases. As a result, the Wheatstone bridge is unbalanced and a positive V.out voltage can be measured. Conversely, this voltage becomes negative if a tension force is applied. If these relative variations are small (<1 %), we can consider that the relation (Force => Deformation => Resistance of the gauges => Electrical signal) is linear.

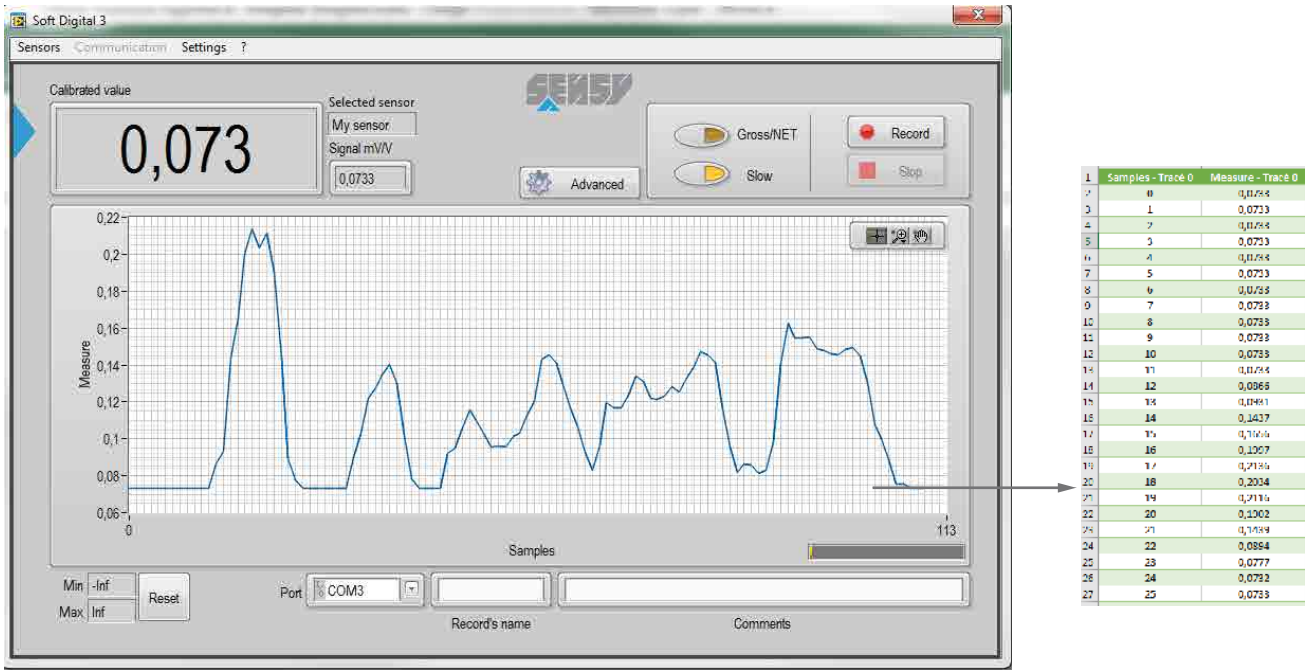
Furthermore, it should be noted that the output signal is also proportional to the supply voltage V. in. The sensitivity of the sensor is therefore expressed in mV/V where the denominator is equal to V. in. Thus for a sensor whose sensitivity is 2 mV/V and is supplied with 10 V, the output signal will evolve from 20 mV between zero and full scale. Typical sensitivities for metal gauge sensors change from 0.5 to 4 mV/V depending on:

- Principle of operation

For some sensors, the four gauges are deformed in the same proportion; for others, some gauges operate at 100 % and others at 30 % (Poisson's ratio).

- The required overload capacity, e.g. the breaking capacity must be 500 % for a hoisting device.
- Fatigue resistance.
- The type of material selected for the proof body.

SOFT-DIGITAL enables the reading, real-time display and recording of measurements of a SENSY load cell transmitted by the indicators for a standard reference force transducer called "INDI-00" and "INDI-ISO376", as well as the range of digital converters (USB, RS-232, RS-485) proposed by SENSY.

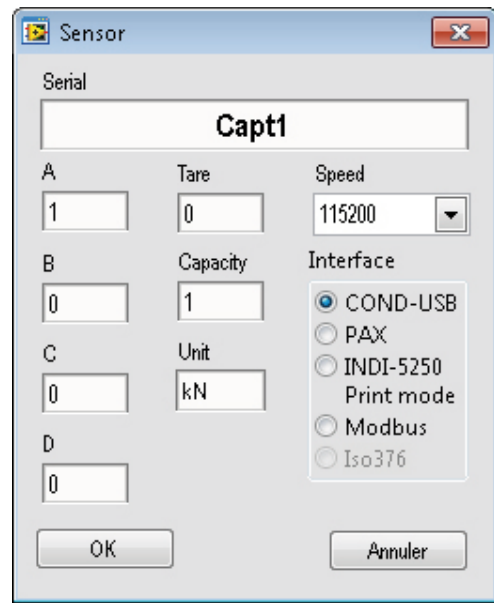
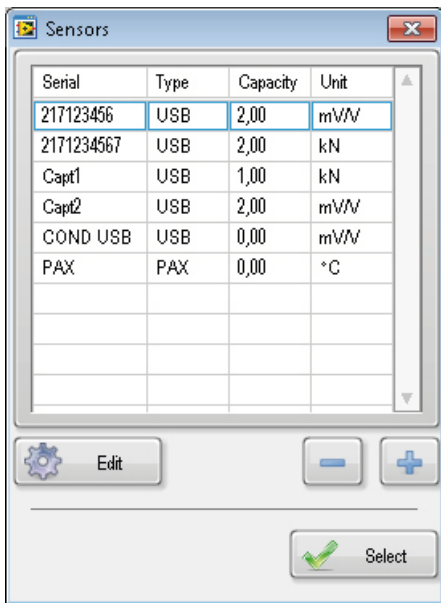


LOAD CELLS CALIBRATIONS

Define all the coefficients from calibration sheet of several standard reference transducers.

Each one uses the following equation: $F(x) = a \cdot x + b \cdot x^2 + c \cdot x^3$ Where F = force and x = electrical display signal .

The software calculates the applied force from the digitalised raw analogue signal x(mV/V) using the 3rd order function.



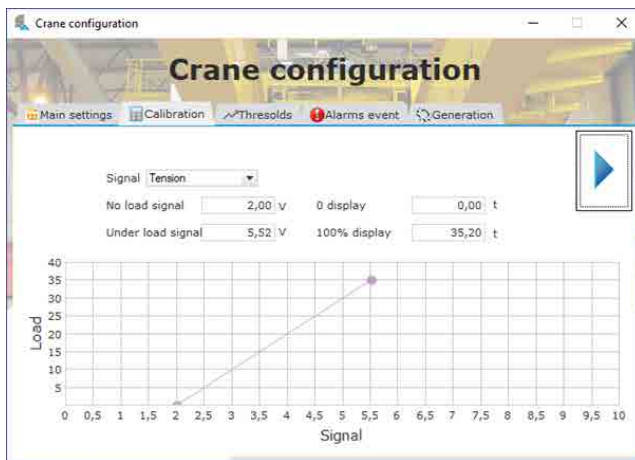
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The COACHVIEW software is delivered with the COACH-II (data logger dedicated to hoisting equipment).

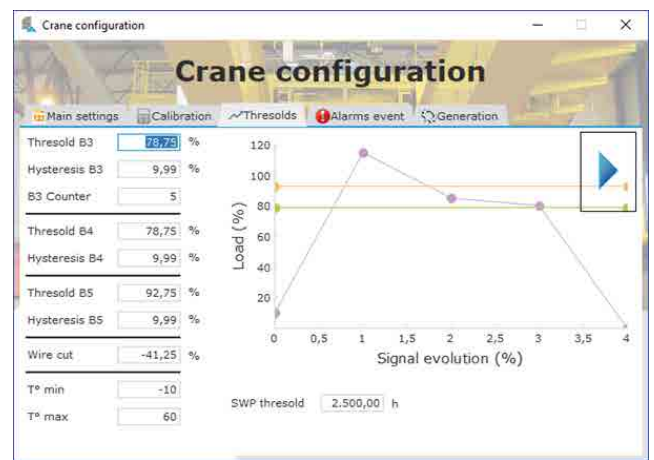
This very-user-friendly program allows for optimisation of the servicing schedule, the detection of downtimes and calculation of the FEM classification of the crane.

The main functions of COACHVIEW are:

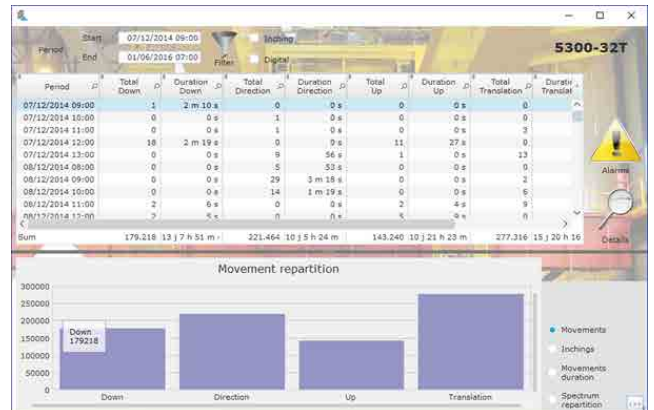
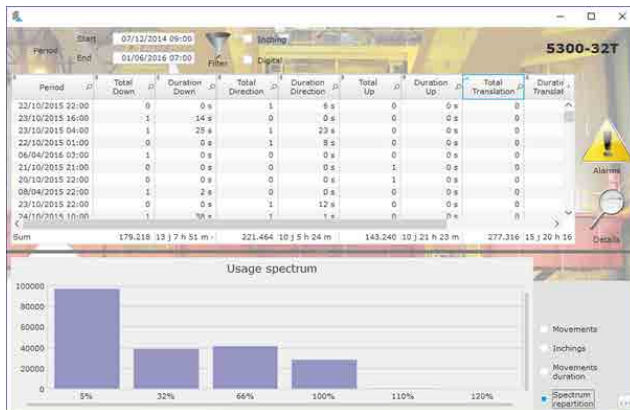
- Creation and management of configuration files for COACH-II (capacity, set-point, alarms, SWP),
- Analysis of the recordings performed by COACH-II,
- Generation of charts and tables.



Usage spectrum



Movement repartition



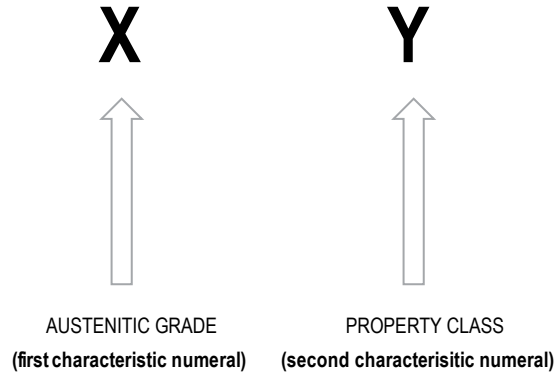
STAINLESS STEEL SCREWS > MECHANICAL AND CHEMICAL PROPERTIES

Mechanical properties of corrosion-resistant stainless steel fasteners:

- bolts, screws and studs (NF EN ISO 3506-2)
- nuts (NF EN ISO 3506-1)

SENSY mainly uses A2 and A4 stainless steels.

Mechanical properties of stainless steel screws are described below:



X: AUSTENITIC GRADE

First characteristic numeral	AISI nb	Properties
A2	A2	Good corrosion resistance in the open air and in fresh water
		Mainly used in food industry, chemical applications
A4	A4	Greater corrosion resistance in marine and coastal environment and chlorine pools
		Alloy steel with higher molybdenum concentration
		High resistance to alkaline and acidic solutions

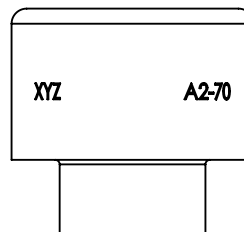
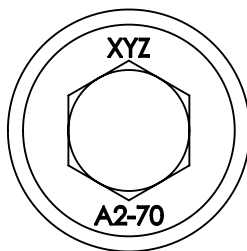
Y: PROPERTY CLASS⁽¹⁾

Second characteristic numeral	Characteristics	Field of use
70	Cold-worked	SENSY standard
80	High tensile strength	SENSY option (mandatory for load cells used in EX d environment)

⁽¹⁾ : the class represents the minimum tensile strength of the bolt divided by ten; for example 70 is equal to 1/10 of the minimal tensile strength Rm = 700 MPa (N/mm²).

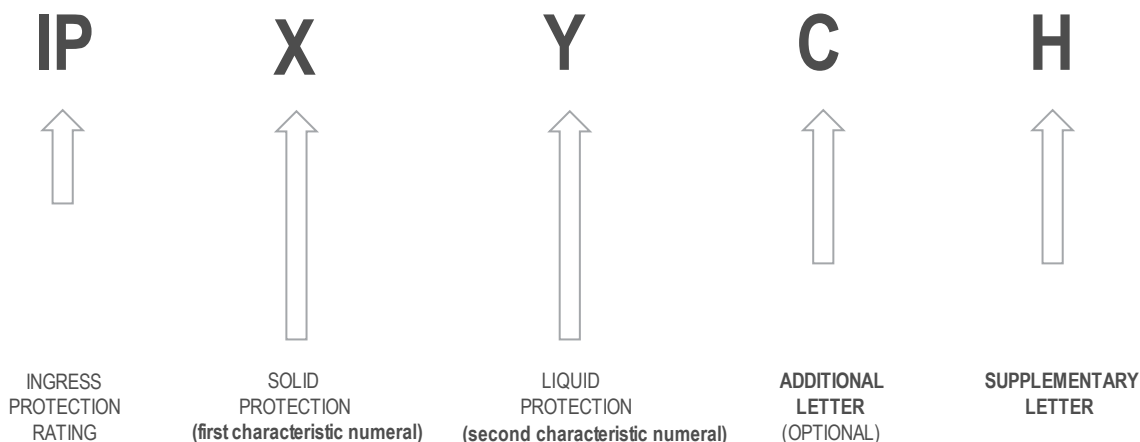
Screw marking:

Marking is mandatory for thread size ≥ 5mm



IP CODES > MEANING

International Protection Marking in accordance with DIN EN IEC 60529



First characteristic numeral	Description
0	Non-protected
1	Protected against solid foreign objects of 50 mm diameter or greater
2	Protected against solid foreign objects of 12.5 mm diameter or greater
3	Protected against solid foreign objects of 2.5 mm diameter or greater
4	Protected against solid foreign objects of 1 mm diameter or greater
5	Dust-protected
6	Dust-tight

Additional letter	Description
A	Protected against access with the back of the hand
B	Protected against access with a finger
C	Protected against access with a tool
D	Protected against access with a wire

Second characteristic numeral	Description
0	Non-protected
1	Protected against vertically falling water drops
2	Protected against vertically falling water drops when enclosure tilted up to 15°
3	Protected against spraying water
4	Protected against splashing water
5	Protected against water jets
6	Protected against powerful water jets
6K ⁽¹⁾	Protected against powerful water jets with increased pressure
7	Protected against the effects of temporary immersion in water (≤1m)
8	Protected against the effects of continuous immersion in water (>1m)
9K ⁽¹⁾	Protected against the effects of powerful water jets at high temperature

Supplementary letter	Description
H	High-voltage equipment
M	Device moving during water test
S	Device standing still during water test
W	Weather conditions

⁽¹⁾ : All tests with letter K are defined by ISO 20653 (replacing DIN 40050-9)

OUR MARKETS



KNOW HOW AND FLEXIBILITY THE WAY TO EXCELLENCE



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