

**UK Type Examination Certificate CML 22UKEX2432X Issue 0****United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **5560-SCHL**
- 3 Manufacturer **SENSY S.A**
- 4 Address **Allée Centrale - 6040  
JUMET - BELGIUM**

- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

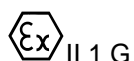
The examination and test results are recorded in the confidential reports listed in Section 12.

- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018

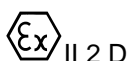
EN 60079-11:2012

- 10 The equipment shall be marked with the following:



Ex ia IIC T6 Ga

Ta= -20°C to +60°C



Ex ia IIIC T<sub>50</sub> 80°C Db

Ta= -20°C to +60°C





CML 22UKEX2432X  
Issue 0

## 11 Description

The 5560-SCHL is a tension sensor that measures the traction force on cables. The equipment consists of a stainless steel enclosure with encapsulated components.

The intrinsic safety parameters are as follows:

$U_i = 25.2 \text{ V}$

$I_i = 100 \text{ mA}$

$P_i = 630 \text{ mW}$

$C_i = 62 \text{ nF}$

$L_i = 15 \text{ uH}$

$C_o = 45 \text{ nF}$

$L_o = 3.54 \text{ mH}$

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	08 Feb 2023	R15559E/00	Prime Release

Note: Drawings that describe the equipment are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

## 14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- i. The metallic enclosure shall be connected to the earth
- ii. When the apparatus is used in dust atmosphere, suitably certified cable gland shall be used with a minimum protection degree of at least IP6X.

## Certificate Annex

**Certificate Number** CML 22UKEX2432X  
**Equipment** Strength Sensor Model 5560-SCHL  
**Manufacturer** SENSY S.A



The following documents describe the equipment defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
ET-5560-SCHL-EXI	1 of 1	2	08 Feb 2023	Etiquette Filtre "Ex I" Du 5560-SCHL Plan 1/1 Label for Filter "EX I" 5560-SCHL DWG 1/1
100207973D	1 to 3	AE	08 Feb 2023	Cable, 6-core 75' Extension Cable
Filtre RF - Schematic	1 to 3	0	08 Feb 2023	Filtre RF Du 5560-SCHL
Ci-5510	1 of 1	0	08 Feb 2023	Circuit De Correction 5510 Plan 1/1
MO-5560-SCHL-30T-DAD	1 of 1	1	08 Feb 2023	Procedure De Montage 5560-SCHL-30T-DAD
NO-5560S-FILT	1 of 1	0	08 Feb 2023	Nomenclature Filtre 5560S
ATEX 5560-SCHL - EN	1 to 5	27/07/2022	08 Feb 2023	ATEX Certification Specification File for 5660-SCHL

**UK Type Examination Certificate CML 22UKEX2430X Issue 0****United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **Option I4, I6, C6 , C7 and C8 Load Cells**
- 3 Manufacturer **SENSY S.A**
- 4 Address **Allée Centrale – 6040  
JUMET - BELGIUM**

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

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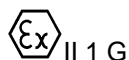
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.
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- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018

EN 60079-11:2012

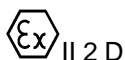
- 10 The equipment shall be marked with the following:

Options I4, I6, C6 & C8



Ex ia IIC T2 Ga

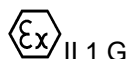
Ex ia IIC T4 or T6 Ga



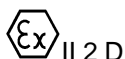
Ex ia IIIC T<sub>50</sub>200°C Db

Ex ia IIIC T<sub>50</sub>80°C Db

Options C7



Ex ia IIB T6 Ga



Ex ia IIIB T<sub>50</sub>80°C Db

For ambient temperature range refer to section 11 Description





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Issue 0

## 11 Description

The I4, I6, C6, C7 and C8 load cell modules are intrinsically safe circuits that can be installed within suitable load cell enclosures, refer to table below:

There are five options of load cell, I4, I6, C6, C7 and C8.

XXXX-I4 Resistive compensation cell -- standard version

XXXX-I6 Resistive compensation cell -- bridge of 1000  $\Omega$  or higher

XXXX-C6 Cell with integrated 4-20 mA amplifier

XXXX-C7 Cell with external 4-20 mA amplifier

XXXX-C8 Cell with cable and certified external 4-20 mA Amplifier

### Ratings for XXXX-I4

The input supplies are from dual channel barriers for a total of 4 AC lines, each line has the following parameters:

Power Supply:

$U_i = 12 \text{ Vac}$

$I_i = 160 \text{ mA}$

$P_i = 0.96 \text{ W}$

Signal:

$U_i = 9 \text{ Vac}$

$I_i = 26 \text{ mA}$

$P_i = 0.2 \text{ W}$

The maximum capacitance and inductance that can be connected to either line is:

$C_o = 14 \text{ nF}$  -  $L_o = 10 \text{ }\mu\text{H}$

Ambient ranges and Temperature classes for the option I4 load cells

Ambient Temperature Range	Temperature Class for gas (Ga)	Temperature Class for dust (Da)
-40°C to +60°C	T6	T80°C
-40°C to +60°C	T4	T80°C
-40°C to +180°C	T2	T200°C

### Rating for the XXXX-I6 versions

The input supplies are from dual channel barriers for a total of 6 AC lines, each line has the following parameters:

Power:

$U_i = 9 \text{ Vac}$

$I_i = 26 \text{ mA}$

$P_i = 0.2 \text{ W}$



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Signal:

$U_i = 9\text{Vac}$

$I_i = 26\text{ mA}$

$P_i = 0.2\text{ W}$

Sense Supply:

$U_i = 9\text{ Vac}$

$I_i = 26\text{ mA}$

$P_i = 0.2\text{ W}$

The maximum capacitance and inductance that can be connected to them are:

$C_o = 14\text{ nF}$  -  $L_o = 10\text{ }\mu\text{H}$

Ambient ranges and Temperature classes for the options I6 load cells

Ambient Temperature Range	Temperature Class for gas (Ga)	Temperature Class for dust (Da)
-40°C to +60°C	T6	T80°C
-40°C to +180°C	T2	T200°C

Ratings for XXXX-C6, XXXX-C7 and XXXX-C8 with signal conditioning

$U_i = 28\text{ V}$

$I_i = 100\text{ mA}$

$P_i = 700\text{ mW}$

The maximum capacitance and inductance that can be connected to them are:

	C6 (For IIC)	C7 (For IIB)	C8 (For IIC)
$C_o$	53 nF	273 nF	33 nF
$L_o$	150 $\mu\text{H}$	14.18 mH	3 mH

The C6 model can have an RF-Filter connected in line with the input, which will change the IS parameters to:

Filter models:

$U_i = 25.2\text{ V}$

$I_i = 100\text{ mA}$

$P_i = 0.63\text{ W}$

$C_i = 62\text{ nF}$

$L_i = 15\text{ }\mu\text{H}$

$C_o = 45\text{ nF}$

$L_o = 3.54\text{ mH}$

The load cell enclosures are made from stainless-steel with the IS apparatus being bonded into position and then sealed into place with a silicone encapsulation and a sealing/closing plate which is used to as a cover, being glued into place. These load cells have resistive correction circuits that vary in resistance depending on the number of strain gauges used. These circuits are also housed within the encapsulation.

This certificate shall only be copied  
in its entirety and without change

[www.CMLEx.com](http://www.CMLEx.com)



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**Issue 0**

Model C6 has the amplifier integrated within the encapsulated enclosure.

Model C7 has an external encapsulated amplifier that connects to the strain gauges through a wire.

Model C8 has an external encapsulated amplifier which is separately certified and connected to the strain gauge via a wire.

Ambient ranges and T classes for the options C6, C7 & C8 load cells

Ambient Temperature Range	Temperature Class for gas (Ga)	Temperature Class for dust (Da)
-40°C to +60°C	T6	T80°C

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	30 Mar 2023	R15559B/00	Issue of Prime Certification

Note: Drawings that describe the equipment are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

## 14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- i. The metallic enclosure shall be connected to the earth
- ii. In the case of models C7 and C8, the separate amplifier is housed in an enclosure that is made from aluminium and contains light alloys. All precautions shall be taken to avoid all impact or friction with other metallic surfaces.
- iii. The equipment is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC 60079-11. This shall be taken into account when installing the equipment.
- iv. When the apparatus is used in dust atmosphere, the connection plug shall have a protection degree of at least IP6X
- v. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.

## Certificate Annex

**Certificate Number** CML 22UKEX2430X  
**Equipment** Option I4, I6, C6 , C7 and C8 Load Cells  
**Manufacturer** SENSY S.A



The following documents describe the equipment defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
ET-EXI-GD-T2	1 of 1	1	30 Mar 2023	Etiquette capteurs "Ex I" GAZ T2 Et poussiere max 200°C Label for "Ex i" Load Cell Gas T2 and Dust max 200°C
ET-EXI-GD-T4	1 of 1	1	30 Mar 2023	Etiquette capteurs "Ex i" GAZ T4 Et poussiere max 80°C Label for "Ex i" Load Cell Gas and Dust max 80°C
ET-EXI-GD-T6	1 of 1	1	30 Mar 2023	Etiquette capteurs "Ex i" GAZ T6 Et poussiere max 80°C Label for "Ex i" Load Cell T6 Gas and Dust max 80°C
ET-EXI-GD-T6-C7	1 of 1	0	30 Mar 2023	Etiquette capteurs "Ex i" GAZ IIB T6 & poussiere IIB max 80°C (option C7) Label for "Ex i" Loadcells Gas IIB T6 & Dust IIB max 80°C (Option C7)
C6 Option	1 of 1	0	30 Mar 2023	Control Drawing for C6 option
CA-420mA-2fils	1 of 1	0	30 Mar 2023	Schema de cablage capteur 4/20 mA 2 Fils securite intrinseque
C7 and C8 Options	1 of 1	0	30 Mar 2023	Control Drawing for C7 & C8 option
DT-BET-Amplifying boxes footprint	1 of 1	0	30 Mar 2023	Footprint drawing of ATEX enclosure for C7 option (ICA5A amplifier) & C8 option (ICA5ATEX amplifier)
I4 & I6 Options	1 of 1	0	30 Mar 2023	Controls drawing for I4 & I6 Options
Principle for mounting and cabling	1 to 9	1	30 Mar 2023	Principle for mounting and cabling
Bill of materials	1 of 1	1	30 Mar 2023	Bill of materials
Filtre RF-Schematic	1 to 3	0	30 Mar 2023	Filtre RF du 5560-SCHL
C6 & CC6 Options	1 of 1	01	30 Mar 2023	Control Drawing for C6 & CC6 Options
DT-BET-BOM_Illustration	1 to 3	01	30 Mar 2023	Bill of materials (Summary & Drawings)
ET-EXI-Warning Light Metal	1 of 1	1	30 Mar 2023	Warning Label for Potentially sparking material
General design guide for intrinsic safety in load cells	1 to 31	1	30 Mar 2023	General design guide for intrinsic safety in load cells



**UK Type Examination Certificate CML 22UKEX1428X Issue 0****United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **Load Cell of type 5050/5350**
- 3 Manufacturer **SENSY S.A**
- 4 Address **Z.I de Jumet, Allée Centrale  
6040 Jumet,  
Belgium**

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

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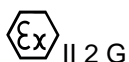
8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018

EN 60079-1:2014

10 The equipment shall be marked with the following:



Ex db IIB T6 Gb

Ta=-35°C<Ta<+70°C



**CML 22UKEX1428X**  
**Issue 0**

## 11 Description

The load cell comprises a solid body that is stressed by the load to be measured. Regarding its geometry and under the stress of the load, that body loses its shape. A stress bridge, cemented on the body, generates an electric signal. That signal is proportional to the applied stress and it may be amplified and treated to be used by external devices. The electronic supply and the signal are wired through an electric cable.

The shape and the dimension of the cell are suitable for the application. Criteria are:

- Capacity.
- Direction of the load.
- The integration of the cell in its environment.
- Supply voltage varies from 7 VDC to 28 VDC. Current varies from 20-25 mA to 45 mA.
- The cell is provided with a permanently connected cable

### Notes:

- ISSeP10ATEX052 is superseded by this certificate.
- The product covered by Issue 0 of this certificate remains identical to that previously covered by ISSeP10ATEX052.
- Where ISSeP10ATEX052 is specified in other product certification, or other technical specifications, this certificate reference for the product shall be used in its place; updating of the other product certificate or technical specification is not required.

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	11 Oct 2022	R15559A/00	Issue of Prime Certificate

Note: Drawings that describe the equipment are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

## 14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- The flameproof joints shall not be repaired.

## Certificate Annex

**Certificate Number** CML 22UKEX1428X  
**Equipment** Load Cell of type 5050/5350  
**Manufacturer** SENSY S.A



The following documents describe the equipment defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
Ex d – CE 02	1 of 1	-	11 Oct 2022	Ex d Corps D' Erpreuve 02 (Load Cell body)
Ex d – DOC 02	1 of 1	-	11 Oct 2022	ATEX Ex d – Design 02
Ex d - NO 02	1 of 1	-	11 Oct 2022	Ex d nomenclature
Ex d - SF 02	1 of 1	-	11 Oct 2022	Ex d – Couvercle 02
GR-AXE-EXD-CML	1 of 1	1	11 Oct 2022	Example De gravure pour axe 5050/5350 ATEX D (Certification CML)

**UK Type Examination Certificate CML 22UKEX1428X Issue 0****United Kingdom Conformity Assessment**

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- 2 Equipment **Load Cell of type 5050/5350**
- 3 Manufacturer **SENSY S.A**
- 4 Address **Z.I de Jumet, Allée Centrale  
6040 Jumet,  
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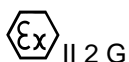
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EN 60079-1:2014

10 The equipment shall be marked with the following:



Ex db IIB T6 Gb

Ta=-35°C<Ta<+70°C



**CML 22UKEX1428X**  
**Issue 0**

## 11 Description

The load cell comprises a solid body that is stressed by the load to be measured. Regarding its geometry and under the stress of the load, that body loses its shape. A stress bridge, cemented on the body, generates an electric signal. That signal is proportional to the applied stress and it may be amplified and treated to be used by external devices. The electronic supply and the signal are wired through an electric cable.

The shape and the dimension of the cell are suitable for the application. Criteria are:

- Capacity.
- Direction of the load.
- The integration of the cell in its environment.
- Supply voltage varies from 7 VDC to 28 VDC. Current varies from 20-25 mA to 45 mA.
- The cell is provided with a permanently connected cable

### Notes:

- ISSeP10ATEX052 is superseded by this certificate.
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## Certificate Annex

**Certificate Number** CML 22UKEX1428X  
**Equipment** Load Cell of type 5050/5350  
**Manufacturer** SENSY S.A



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### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
Ex d – CE 02	1 of 1	-	11 Oct 2022	Ex d Corps D' Erpreuve 02 (Load Cell body)
Ex d – DOC 02	1 of 1	-	11 Oct 2022	ATEX Ex d – Design 02
Ex d - NO 02	1 of 1	-	11 Oct 2022	Ex d nomenclature
Ex d - SF 02	1 of 1	-	11 Oct 2022	Ex d – Couvercle 02
GR-AXE-EXD-CML	1 of 1	1	11 Oct 2022	Example De gravure pour axe 5050/5350 ATEX D (Certification CML)

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- 3 Manufacturer **SENSY S.A**
- 4 Address **Z.I de Jumet, Allée Centrale  
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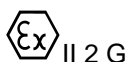
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- 10 The equipment shall be marked with the following:



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**CML 22UKEX1428X**  
**Issue 0**

## 11 Description

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The shape and the dimension of the cell are suitable for the application. Criteria are:

- Capacity.
- Direction of the load.
- The integration of the cell in its environment.
- Supply voltage varies from 7 VDC to 28 VDC. Current varies from 20-25 mA to 45 mA.
- The cell is provided with a permanently connected cable

### Notes:

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## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	11 Oct 2022	R15559A/00	Issue of Prime Certificate

Note: Drawings that describe the equipment are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

## 14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- The flameproof joints shall not be repaired.



## Certificate Annex

**Certificate Number** CML 22UKEX1428X  
**Equipment** Load Cell of type 5050/5350  
**Manufacturer** SENSY S.A



The following documents describe the equipment defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
Ex d – CE 02	1 of 1	-	11 Oct 2022	Ex d Corps D' Erpreuve 02 (Load Cell body)
Ex d – DOC 02	1 of 1	-	11 Oct 2022	ATEX Ex d – Design 02
Ex d - NO 02	1 of 1	-	11 Oct 2022	Ex d nomenclature
Ex d - SF 02	1 of 1	-	11 Oct 2022	Ex d – Couvercle 02
GR-AXE-EXD-CML	1 of 1	1	11 Oct 2022	Example De gravure pour axe 5050/5350 ATEX D (Certification CML)

**UK Type Examination Certificate CML 22UKEX1426X Issue 1****United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **Top-Drive Sub Wireless type 9TDS-WI**
- 3 Manufacturer **SENSY S.A.**
- 4 Address Av. Centrale 1-90,  
6040 Jumet (Charleroi),  
Belgium

- 5 The equipment is specified in the description of this certificate and the documents to which it refers.

- 6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

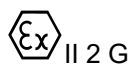
The examination and test results are recorded in the confidential reports listed in Section 12.

- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018

EN 60079-1:2014

- 10 The equipment shall be marked with the following:



Ex db IIB T4 Gb

Ta= -40°C to +70°C



**CML 22UKEX1426X**  
**Issue 1**

## 11 Description

The Top-Drive Sub Wireless type 9TDS-WI is a flameproof battery powered wireless load/torque transducer used to measure tension/compression and torque.

The sensor is made of a solid body "proof body" subjected to the load and torque to be measured. Due to its geometry and under the influence of applied forces, this body is deformed. Two strain gauge bridges are bonded to the body and each generates an electrical signal proportional to applied forces. These signals are then transmitted via a wireless transmitter.

A protection sleeve, completed with two lids and a crown, closes the sensor and creates the envelope that will provide explosion protection.

### Variation 1

- i. Addition of alternate battery pack options

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	01 Sep 2022	R15559D/00	Issue of the prime certificate. CML 18ATEX1033X, Issue 1 is attached and shall be referred to in conjunction with this certificate.
1	16 Apr 2024	R17420A/00	Introduction of Variation 1

Note: Drawings that describe the equipment are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- ii. To comply with the certification, the volume of air inside the envelope shall never exceed 2000 cm<sup>3</sup>. It may be achieved by filling the volume with compound.

## 14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- i. The flameproof joints shall not be repaired. For further information, consult the manufacturer.
- ii. The crown is manufactured from a polymer that shall be protected from UV light when installed.
- iii. To avoid potential electrostatic charging hazard, clean only with a damp cloth.

## Certificate Annex

**Certificate Number** CML 22UEKX1426X  
**Equipment** Top-Drive Sub Wireless type 9TDS-WI  
**Manufacturer** SENSY S.A.



The following documents describe the equipment defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
NO-TD-CERTIF-EXD	1 of 1	0	01 Sep 2022	Nomenclature Tope Drive pour certification ExD
ET-9-TDS-EXD-80x50-1	1 of 1	1	01 Sep 2022	ETIQUETTE INOX CAPTEURS 9TDS-WI ATEX EXD 80X50
9TDS-WI	1 to 11	0	13 June 2018	Dossier de conception 9TDS-WI Top-Drive Sub Wireless pour atmosphère explosive
NO-PROT-FORC11-VPP1E	1 of 1	0	13 June 2018	Nomenclature volume pack pile 1 élément taille d
SF-PROT-FORC011-VPP	1 of 1	1	13 June 2018	Simulation volume pack pile connecteur intégré

### Issue 1

Drawing No	Sheet s	Rev	Approved date	Title
9TDS-WI (English)	1 to 14	2	16/04/2024	Design specification for 9TDS-WI Top-Drive Sub Wireless in explosive atmosphere
9TDS-WI (French)	1 to 14	2	16/04/2024	Dossier de conception 9TDS-WI Top-Drive Sub Wireless pour atmosphère explosive
NO-BATT-PACK-9TDS-WI	1 of 1	2	16/04/2024	Nomenclature pack pile (avec connecteur intégré)
NO-TD-CERTIF-EXD	1 of 1	1	16/04/2024	NOMENCLATURE TOP DRIVE POUR CERTIFICATION ExD



## EU Type Examination Certificate CML 22ATEX2431X Issue 0

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **5560-SCHL**
- 3 Manufacturer **SENSY S.A**
- 4 Address **Allée Centrale - 6040  
JUMET - BELGIUM**
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 67386717, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.  
  
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018

EN 60079-11:2012

- 10 The equipment shall be marked with the following:



II 1 G

Ex ia IIC T6 Ga

Ta= -20°C to +60°C



II 2 D

Ex ia IIIC T<sub>50</sub> 80°C Db

Ta= -20°C to +60°C



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S. Roumbedakis  
Technical Manager



CML 22ATEX2431X  
Issue 0

## 11 Description

The 5560-SCHL is a tension sensor that measures the traction force on cables. The equipment consists of a stainless steel enclosure with encapsulated components.

The intrinsic safety parameters are as follows:

$U_i = 25.2 \text{ V}$

$I_i = 100 \text{ mA}$

$P_i = 630 \text{ mW}$

$C_i = 62 \text{ nF}$

$L_i = 15 \text{ uH}$

$C_o = 45 \text{ nF}$

$L_o = 3.54 \text{ mH}$

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	08 Feb 2023	R15559E/00	Prime Release

Note: Drawings that describe the equipment or component are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

## 14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

- i. The metallic enclosure shall be connected to the earth
- ii. When the apparatus is used in dust atmosphere, suitably certified cable gland shall be used with a minimum protection degree of at least IP6X.

## Certificate Annex

**Certificate Number** CML 22ATEX2431X  
**Equipment** Strength Sensor Model 5560-SCHL  
**Manufacturer** SENSY S.A



The following documents describe the equipment or component defined in this certificate:

### Issue 0

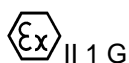
Drawing No	Sheets	Rev	Approved date	Title
ET-5560-SCHL-EXI	1 of 1	2	08 Feb 2023	Etiquette Filtre "Ex I" Du 5560-SCHL Plan 1/1 Label for Filter "EX I" 5560-SCHL DWG 1/1
100207973D	1 to 3	AE	08 Feb 2023	Cable, 6-core 75' Extension Cable
Filtre RF - Schematic	1 to 3	0	08 Feb 2023	Filtre RF Du 5560-SCHL
Ci-5510	1 of 1	0	08 Feb 2023	Circuit De Correction 5510 Plan 1/1
MO-5560-SCHL-30T-DAD	1 of 1	1	08 Feb 2023	Procedure De Montage 5560-SCHL-30T-DAD
NO-5560S-FILT	1 of 1	0	08 Feb 2023	Nomenclature Filtre 5560S
ATEX 5560-SCHL - EN	1 to 5	27/07/2022	08 Feb 2023	ATEX Certification Specification File for 5660-SCHL



## EU Type Examination Certificate CML 22ATEX2429X Issue 0

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **Option I4, I6, C6 , C7 and C8 Load Cells**
- 3 Manufacturer **SENSY S.A**
- 4 Address **Allée Centrale – 6040  
JUMET - BELGIUM**
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 67386717, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.  
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:  
EN IEC 60079-0:2018                      EN 60079-11:2012
- 10 The equipment shall be marked with the following:

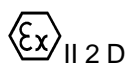
Options I4, I6, C6 & C8



II 1 G

Ex ia IIC T2 Ga

Ex ia IIC T4 or T6 Ga

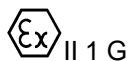


II 2 D

Ex ia IIIC T<sub>50</sub>200°C Db

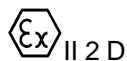
Ex ia IIIC T<sub>50</sub>80°C Db

Options C7



II 1 G

Ex ia IIB T6 Ga



II 2 D

Ex ia IIIB T<sub>50</sub>80°C Db

For ambient temperature range refer to section 11 Description







CML 22ATEX2429X  
Issue 0

## 11 Description

The I4, I6, C6, C7 and C8 load cell modules are intrinsically safe circuits that can be installed within suitable load cell enclosures, refer to table below:

There are five options of load cell, I4, I6, C6, C7 and C8.

XXXX-I4 Resistive compensation cell -- standard version

XXXX-I6 Resistive compensation cell -- bridge of 1000  $\Omega$  or higher

XXXX-C6 Cell with integrated 4-20 mA amplifier

XXXX-C7 Cell with external 4-20 mA amplifier

XXXX-C8 Cell with cable and certified external 4-20 mA Amplifier

### Ratings for XXXX-I4

The input supplies are from dual channel barriers for a total of 4 AC lines, each line has the following parameters:

Power Supply:

$U_i = 12 \text{ Vac}$

$I_i = 160 \text{ mA}$

$P_i = 0.96 \text{ W}$

Signal:

$U_i = 9 \text{ Vac}$

$I_i = 26 \text{ mA}$

$P_i = 0.2 \text{ W}$

The maximum capacitance and inductance that can be connected to either line is:

$C_o = 14 \text{ nF}$  -  $L_o = 10 \text{ } \mu\text{H}$

Ambient ranges and Temperature classes for the option I4 load cells

Ambient Temperature Range	Temperature Class for gas (Ga)	Temperature Class for dust (Da)
-40°C to +60°C	T6	T80°C
-40°C to +60°C	T4	T80°C
-40°C to +180°C	T2	T200°C

### Rating for the XXXX-I6 versions

The input supplies are from dual channel barriers for a total of 6 AC lines, each line has the following parameters:

Power:

$U_i = 9 \text{ Vac}$

$I_i = 26 \text{ mA}$

$P_i = 0.2 \text{ W}$



CML 22ATEX2429X  
Issue 0

Signal:

$U_i = 9\text{Vac}$

$I_i = 26\text{ mA}$

$P_i = 0.2\text{ W}$

Sense Supply:

$U_i = 9\text{ Vac}$

$I_i = 26\text{ mA}$

$P_i = 0.2\text{ W}$

The maximum capacitance and inductance that can be connected to them are:

$C_o = 14\text{ nF}$  -  $L_o = 10\text{ }\mu\text{H}$

Ambient ranges and Temperature classes for the options I6 load cells

Ambient Temperature Range	Temperature Class for gas (Ga)	Temperature Class for dust (Da)
-40°C to +60°C	T6	T80°C
-40°C to +180°C	T2	T200°C

Ratings for XXXX-C6, XXXX-C7 and XXXX-C8 with signal conditioning

$U_i = 28\text{ V}$

$I_i = 100\text{ mA}$

$P_i = 700\text{ mW}$

The maximum capacitance and inductance that can be connected to them are:

	C6 (For IIC)	C7 (For IIB)	C8 (For IIC)
$C_o$	53 nF	273 nF	33 nF
$L_o$	150 $\mu\text{H}$	14.18 mH	3 mH

The C6 model can have an RF-Filter connected in line with the input, which will change the IS parameters to:

Filter models:

$U_i = 25.2\text{ V}$

$I_i = 100\text{ mA}$

$P_i = 0.63\text{ W}$

$C_i = 62\text{ nF}$

$L_i = 15\text{ }\mu\text{H}$

$C_o = 45\text{ nF}$

$L_o = 3.54\text{ mH}$

The load cell enclosures are made from stainless-steel with the IS apparatus being bonded into position and then sealed into place with a silicone encapsulation and a sealing/closing plate which is used to as a cover, being glued into place. These load cells have resistive correction circuits that vary in resistance depending on the number of strain gauges used. These circuits are also housed within the encapsulation.

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**CML 22ATEX2429X**  
**Issue 0**

Model C6 has the amplifier integrated within the encapsulated enclosure.

Model C7 has an external encapsulated amplifier that connects to the strain gauges through a wire.

Model C8 has an external encapsulated amplifier which is separately certified and connected to the strain gauge via a wire.

Ambient ranges and T classes for the options C6, C7 & C8 load cells

Ambient Temperature Range	Temperature Class for gas (Ga)	Temperature Class for dust (Da)
-40°C to +60°C	T6	T80°C

## 12 Certificate history and evaluation reports

0	30 Mar 2023	R15559B/00	Issue of Prime Certification
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Note: Drawings that describe the equipment or component are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

## 14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

- i. The metallic enclosure shall be connected to the earth
- ii. In the case of models C7 and C8, the separate amplifier is housed in an enclosure that is made from aluminium and contains light alloys. All precautions shall be taken to avoid all impact or friction with other metallic surfaces.
- iii. The equipment is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC 60079-11. This shall be taken into account when installing the equipment.
- iv. When the apparatus is used in dust atmosphere, the connection plug shall have a protection degree of at least IP6X
- v. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.

## Certificate Annex

**Certificate Number** CML 22ATEX2429X  
**Equipment** Option I4, I6, C6, C7 and C8 Load Cells  
**Manufacturer** SENSY S.A



The following documents describe the equipment or component defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
ET-EXI-GD-T2	1 of 1	1	30 Mar 2023	Etiquette capteurs "Ex I" GAZ T2 Et poussiere max 200°C Label for "Ex i" Load Cell Gas T2 and Dust max 200°C
ET-EXI-GD-T4	1 of 1	1	30 Mar 2023	Etiquette capteurs "Ex i" GAZ T4 Et poussiere max 80°C Label for "Ex i" Load Cell Gas and Dust max 80°C
ET-EXI-GD-T6	1 of 1	1	30 Mar 2023	Etiquette capteurs "Ex i" GAZ T6 Et poussiere max 80°C Label for "Ex i" Load Cell T6 Gas and Dust max 80°C
ET-EXI-GD-T6-C7	1 of 1	0	30 Mar 2023	Etiquette capteurs "Ex i" GAZ IIB T6 & poussiere IIB max 80°C (option C7) Label for "Ex i" Loadcells Gas IIB T6 & Dust IIB max 80°C (Option C7)
C6 Option	1 of 1	0	30 Mar 2023	Control Drawing for C6 option
CA-420mA-2fils	1 of 1	0	30 Mar 2023	Schema de cablage capteur 4/20 mA 2 Fils securite intrinseque
C7 and C8 Options	1 of 1	0	30 Mar 2023	Control Drawing for C7 & C8 option
DT-BET-Amplifying boxes footprint	1 of 1	0	30 Mar 2023	Footprint drawing of ATEX enclosure for C7 option (ICA5A amplifier) & C8 option (ICA5ATEX amplifier)
I4 & I6 Options	1 of 1	0	30 Mar 2023	Controls drawing for I4 & I6 Options
Principle for mounting and cabling	1 to 9	1	30 Mar 2023	Principle for mounting and cabling
Bill of materials	1 of 1	1	30 Mar 2023	Bill of materials
Filtre RF-Schematic	1 to 3	0	30 Mar 2023	Filtre RF du 5560-SCHL
C6 & CC6 Options	1 of 1	01	30 Mar 2023	Control Drawing for C6 & CC6 Options
DT-BET-BOM_Illustration	1 to 3	01	30 Mar 2023	Bill of materials (Summary & Drawings)
ET-EXI-Warning Light Metal	1 of 1	1	30 Mar 2023	Warning Label for Potentially sparking material
General design guide for intrinsic safety in load cells	1 to 31	1	30 Mar 2023	General design guide for intrinsic safety in load cells



## EU Type Examination Certificate CML 18ATEX1033X Issue 2

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **Top-Drive Sub Wireless type 9TDS-WI**
- 3 Manufacturer **SENSY S.A.**
- 4 Address Av. Centrale 1-90,  
6040 Jumet (Charleroi), Belgium
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 67386717, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.

- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018

EN 60079-1:2014

- 10 The equipment shall be marked with the following:



II 2 G

Ex db IIB T4 Gb

Ta= -40°C to +70°C



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H M Amos  
Technical Specialist



**CML 18ATEX1033X**  
**Issue 2**

## 11 Description

The Top-Drive Sub Wireless type 9TDS-WI is a flameproof battery powered wireless load/torque transducer used to measure tension/compression and torque.

The sensor is made of a solid body "proof body" subjected to the load and torque to be measured. Due to its geometry and under the influence of applied forces, this body is deformed. Two strain gauge bridges are bonded to the body and each generates an electrical signal proportional to applied forces. These signals are then transmitted via a wireless transmitter.

A protection sleeve, completed with two lids and a crown, closes the sensor and creates the envelope that will provide explosion protection.

### Variation 1

- i. To review and update the equipment against the latest standard EN IEC 60079-0:2018.
- ii. Amendment to label drawing and instruction manual.
- iii. To replace the window assembly on closing tube with blanking plate.

### Variation 2

- i. Addition of alternate battery pack options

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	13 June 2018	R11584A/00	Issue of Prime Certificate
1	01 Sep 2022	R15559C/00	Introduction of Variation 1
2	16 Apr 2024	R17420A/00	Introduction of Variation 2

Note: Drawings that describe the equipment or component are listed in the Annex.

## 13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- ii. To comply with the certification, the volume of air inside the envelope shall never exceed 2000 cm<sup>3</sup>. It may be achieved by filling the volume with compound.

## 14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

- i. The flameproof joints shall not be repaired. For further information, consult the manufacturer.
- ii. The crown is manufactured from a polymer that shall be protected from UV light when installed.
- iii. To avoid potential electrostatic charging hazard, clean only with a damp cloth.

## Certificate Annex

**Certificate Number** CML 18ATEX1033X  
**Equipment** Top-Drive Sub Wireless type 9TDS-WI  
**Manufacturer** SENSY S.A.



The following documents describe the equipment or component defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
NO-9SUB-TD-5"1/2 FH	1 of 1	0	13 June 2018	Nomenclature Top Drive 5 1/2 FH
ET-9-TDS-EXD-80x50-1	1 of 1	0	13 June 2018	ETIQUETTE INOX CAPTEURS 9TDS-WI / ATEX EXD 80x50
9TDS-WI	1 to 11	0	13 June 2018	Dossier de conception 9TDS-WI Top-Drive Sub Wireless pour atmosphère explosive
NO-PROT-FORC11-VPP1E	1 of 1	0	13 June 2018	Nomenclature volume pack pile 1 élément taille d
SF-PROT-FORC011-VPP	1 of 1	1	13 June 2018	Simulation volume pack pile connecteur intégré

### Issue 1

Drawing No	Sheets	Rev	Approved date	Title
ET-9TDS-EXD-80X50-1	1 of 1	1	01 Sep 2022	ETIQUETTE INOX CAPTEURS 9TDS-WI ATEX EXD 80X50
NO-TD-CERTIF-EXD	1 of 1	0	01 Sep 2022	Nomenclature Tope Drive pour certification ExD

### Issue 2

Drawing No	Sheets	Rev	Approved date	Title
9TDS-WI (English)	1 to 14	2	16/04/2024	Design specification for 9TDS-WI Top-Drive Sub Wireless in explosive atmosphere
9TDS-WI (French)	1 to 14	2	16/04/2024	Dossier de conception 9TDS-WI Top-Drive Sub Wireless pour atmosphère explosive
NO-BATT-PACK-9TDS-WI	1 of 1	2	16/04/2024	Nomenclature pack pile (avec connecteur intégré)
NO-TD-CERTIF-EXD	1 of 1	1	16/04/2024	NOMENCLATURE TOP DRIVE POUR CERTIFICATION ExD