

# 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).



Model 3115-ISO - 3 MN



### 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



### 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        | mVV         |
| Nominal sensitivity                              | 1.5           | 1.5           | 1.5           | mVV         |
| 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.

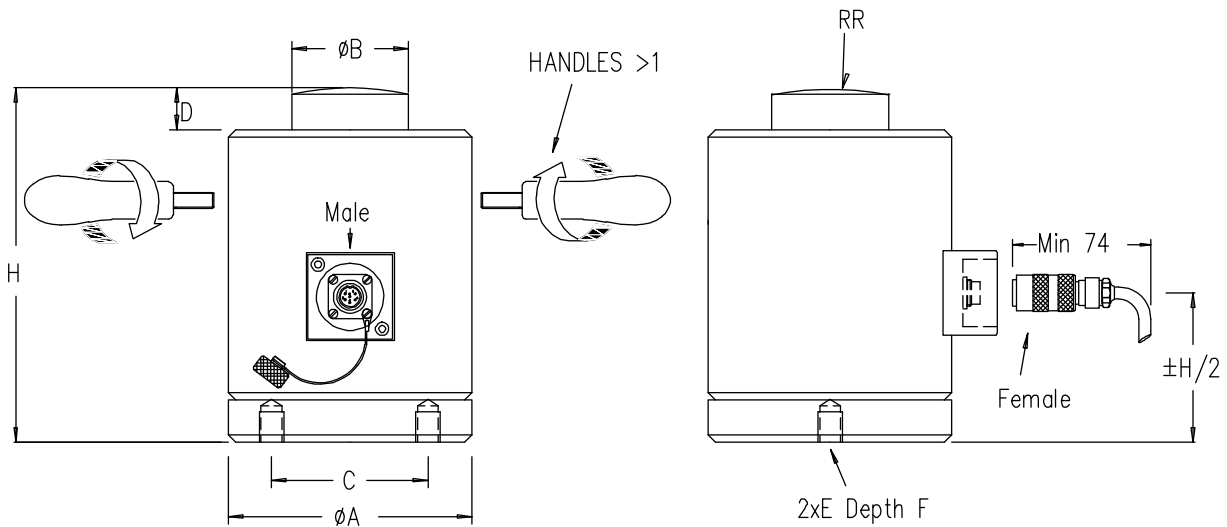
\*\* : M.V. is the measured value. The mentioned values are only valid if M.V. >= 10 % of full scale.

Specifications subject to change without notice.



ISO 9001 certified

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        |

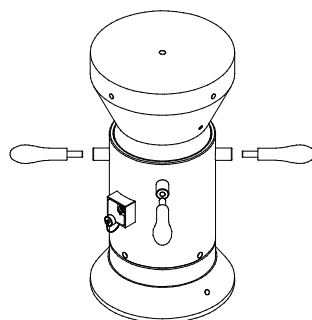
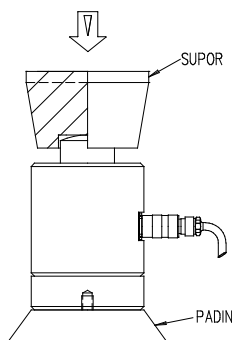
Note: 2 - 50 MN (200 - 5000 t) according to customer's design specification.

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

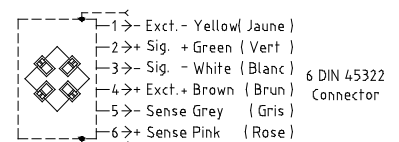
→ Other capacities and dimensions available on request

Dimensions in mm

Accessories

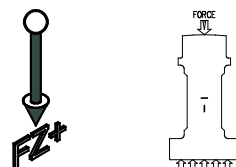


Wiring

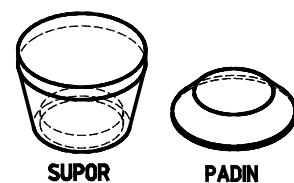
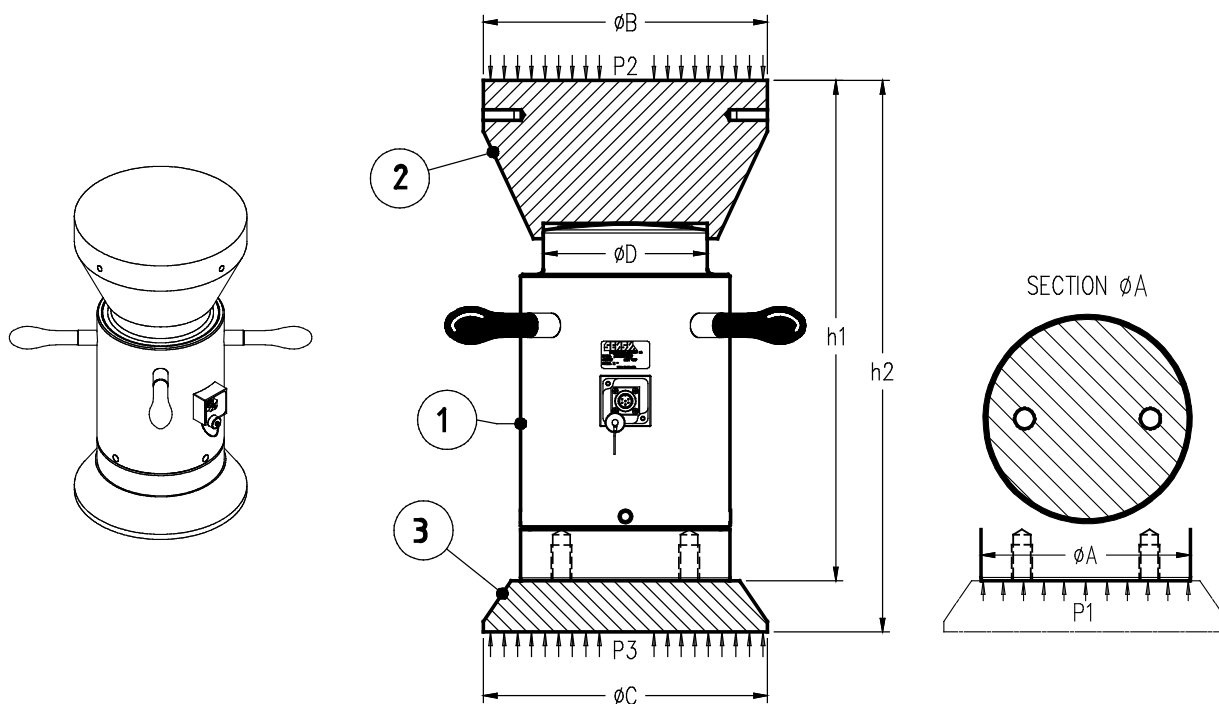


Standard : Cable screen not connected to transducer / Faradisation non connectée au capteur

Load direction



3115-ISO > CHOICE OF LOADING PADS

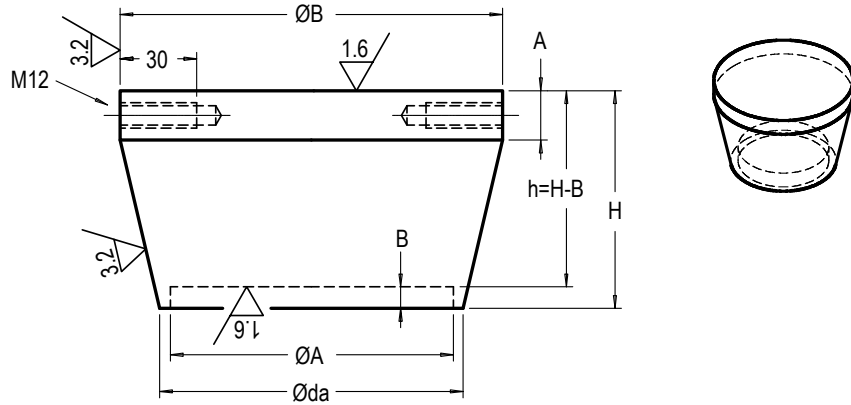


| Ref. Item  | Force<br>① | ØD  | ØA  | Section<br>ØA<br>mm <sup>2</sup> | Pressure<br>P1<br>N/mm <sup>2</sup> | Section<br>ØB<br>mm <sup>2</sup> | Pressure<br>P2<br>N/mm <sup>2</sup> | Section<br>ØC<br>mm <sup>2</sup> | Pressure<br>P3<br>N/mm <sup>2</sup> | h1     | h2  | Total<br>weight<br>(kg) | ACCESSORIES |         |            |                  |
|------------|------------|-----|-----|----------------------------------|-------------------------------------|----------------------------------|-------------------------------------|----------------------------------|-------------------------------------|--------|-----|-------------------------|-------------|---------|------------|------------------|
|            |            |     |     |                                  |                                     |                                  |                                     |                                  |                                     |        |     |                         | SUPOR ②     | PADIN ③ |            |                  |
| 311x-ISO-B | 200 kN     | 36  | 64  | 2670                             | 75                                  | 69                               | 3739                                | 53                               | /                                   | /      | /   | 174                     | /           | 3.2     | SUPOR-36   | NOT<br>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

SUPOR > STANDARD DIMENSIONS

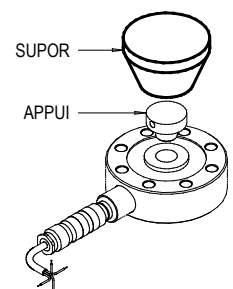
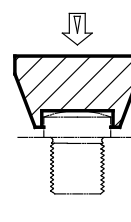
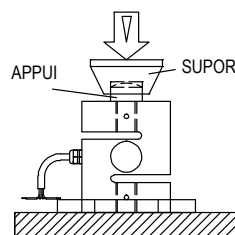
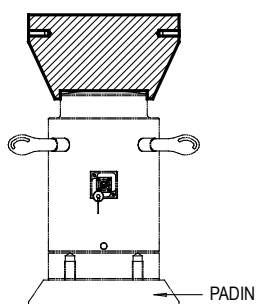
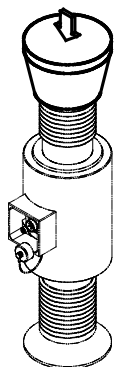


| Ref. Item  | Types | ØA  | ØB  | Øda  | A    | B  | H     | h     | M12 L=30 (degree) | Weight (kg) |
|------------|-------|-----|-----|------|------|----|-------|-------|-------------------|-------------|
| SUPOR-12   | 12    | 12  | 34  | 20   | 7    | 4  | 23    | 19    | NO                | 0.12        |
| 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        |

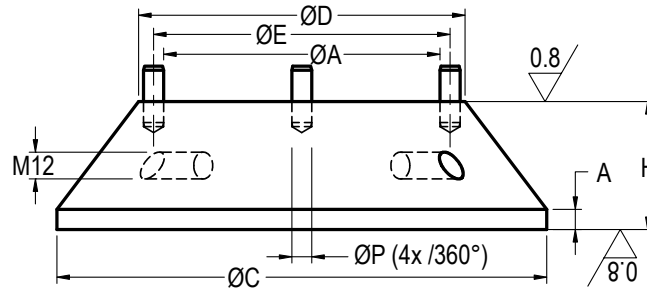
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



↳ 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

