

Load cell PR 6241 and mounting kits PR 6041/PR 6043/PR 6044

For the precise weighing of process vessels



! Benefits

- Ultra-precise for high-accuracy dosing applications
- Wide load range
- Made of stainless steel
- Suitable mounting kits for perfect installation

The PR 6241 series compression S-type load cells are specially designed for weighing small and medium process vessels and for high-precision dosing.

The solution for maximum accuracy in dosing and filling

- ① Maximum precision thanks to the combination of a "real" shearing force principle and pendulum support principle
- ① With a wide load range from 100 kg to 5 t, small and medium process vessels can be weighed
- ① Stainless steel ensures durability even under demanding conditions
- ① Mounting kits with integrated constrainer compensate for lateral forces such as those from mixers

Technical specifications

| Load cell PR 6241 | | | | | | |
|--|--|--------------------|---|---------------------------|---------------------------|-----------------------|
| Parameter | Description | Abbr. | D1 | C3 | C6 | Unit |
| Accuracy class | | | 0.04 | 0.015 | 0.008 | %E _{max} |
| Minimum dead load | Lowest limit of specified measuring range | E _{min} | 0 | 0 | 0 | %E _{max} |
| Maximum capacity | Highest limit of specified measuring range | E _{max} | See Ordering information table | | | kg |
| Safe load limit | Maximum load without irreversible damage | E _{lim} | 150 | 150 | 150 | %E _{max} |
| Destructive load | Danger of mechanical destruction | E _d | > 300 | > 300 | > 300 | %E _{max} |
| Minimum load cell verification interval (OIML) For NTEP, see separate table | Minimum load cell verification interval, V _{min} = E _{max} /Y | Y | 5,000 | 14,000 | 20,000 | |
| Deadload output return | Factor for deadload output return after load (DR=1/2*E _{max} /Z) | Z | 1,000 | 3,000 | 8,000 | |
| Rated output | Relative output at maximum capacity | C _n | 2 | 2 | 2 | mV/V |
| Tolerance on rated output | Permissible deviation from rated output | d _c | <0.25 | <0.07 | <0.07 | %C _n |
| Zero output signal | Load cell output signal under unloaded condition | S _{min} | 0±1.0 | 0±1.0 | 0±1.0 | %C _n |
| Reproducibility | Max. change in load cell output for repeated loading | e _R | <0.01 | <0.005 | <0.005 | %C _n |
| Creep | Max. change of output signal at E _{max} for 30 min. | d _{cr} | <0.03 | <0.015 | <0.008 | %C _n |
| Non-linearity ¹⁾ | Max. deviation from best straight line through zero | d _{lin} | <0.03 | <0.01 | <0.01 | %C _n |
| Hysteresis ¹⁾ | Max. difference in LC output between loading and unloading | d _{hy} | <0.04 | <0.015 | <0.008 | %C _n |
| Temperature effect on S _{min} | Max. change of S _{min} in B _T | TK _{Smin} | <0.028 | <0.01 | <0.007 | %C _n /10 K |
| Temperature effect on C ¹⁾ | Max. change of C in B _T | TK _C | <0.03 | <0.01 | <0.005 | %C _n /10 K |
| Input impedance | Between supply terminals | R _{LC} | 650 ± 6 | 650 ± 6 | 650 ± 6 | Ω |
| Output impedance | Between measuring terminals | R _O | 610 ± 1 | 610 ± 0.5 | 610 ± 0.5 | Ω |
| Insulation impedance | Between measuring circuit and housing at 100 V _{DC} | R _{IS} | > 5,000 × 10 ⁶ | > 5,000 × 10 ⁶ | > 5,000 × 10 ⁶ | Ω |
| Insulation voltage | Between circuit and housing (PR 6241/..E only) | | 500 | 500 | 500 | V |
| Recommended supply voltage | To hold the specified performance | B _u | 4...24 | 4...24 | 4...24 | V _{DC} |
| Max. supply voltage | Permissible for continuous operation without damage | U _{max} | 28/(EX versions: 25) | | | V _{DC} |
| Nominal ambient temp. range | To hold the specified performance | B _T | -10...+55 | -10...+55 | -10...+55 | °C |
| Usable ambient temp. range | Permissible for continuous operation without damage | B _{Tu} | -40...+95 | -40...+95 | -40...+95 | °C |
| Storage temperature range | Without electrical and mechanical stress | B _{Ti} | -40...+95 | -40...+95 | -40...+95 | °C |
| Permissible eccentricity | Permissible displacement from nominal load line | S _{ex} | 5 | 5 | 5 | mm |
| Vibration resistance | Resistance against oscillations (IEC 68-2-6 Fc) | | 20 g, 100 h, 10...150 Hz | | | |
| Barometric pressure influence | Influence of barometric pressure on output | PK _{Smin} | <0.005 | <0.0025 | <0.0025 | %C _n /kPa |
| Nominal deflection | Max. elastic deformation under maximum capacity | S _{nom} | < 0.3 for E _{max} < 5 t / < 0.5 for E _{max} = 5 t | | | mm |
| Material (sensor) | Stainless steel 1.4542 | | | | | |
| Protection class | PR 6241: IP68*/IP69 Connexx®: IP65/IP68** | | | | | |
| Cable | Length: 5 m Diameter: 5 mm Cross section: 4 × 0.35 mm ² Material cable sheath: TPE | | | | | |
| Bending radius | ≥ 25 mm at fixed installation ≥ 75 mm at flexible installation | | | | | |
| Connexx® | | | | | | |
| Nominal ambient temp. range | To hold the specified performance | B _T | -10...+40 | | | °C |
| Usable temperature range | Permissible for continuous operation without damage | B _{Tu} | -30...+60 | | | °C |
| Storage temperature range | Without electrical and mechanical stress | B _{Ti} | -30...+70 | | | °C |

* The load cell can be submerged in water at a depth of 1.5 m for 10,000 hours.

** The module can be submerged in water at a depth of 1.5 m for 100 hours.

¹⁾ The data for Non-linearity, hysteresis and TKC are typical values. For OIML R60 or NTEP approved load cells the sum of these values is within the permissible cumulative error

NTEP classification PR 6241

| NTEP | | | NTEP minimum load cell verification interval, v_{min} | | | | | | | | |
|----------------------|-----------------|---------------------|---|--------|--------|--------|-----|-----|-----|-------|------|
| Maximum capacity | with OIML class | divisions n_{max} | 100 kg | 200 kg | 300 kg | 500 kg | 1 t | 2 t | 3 t | 5 t | Unit |
| Class III Multiple | D1 | 2,000 | 20 | 40 | 60 | 100 | 200 | 400 | 600 | 1,000 | g |
| Class III Multiple | C3 | 5,000 | -- | 14.3 | 21 | 36 | 71 | 143 | 214 | 357 | g |
| Class III Multiple | C6 | 8,000 | -- | 10 | 15 | 25 | 50 | 100 | 150 | -- | g |
| Class III L Multiple | D1 | 5,000 | 6.7 | 13.3 | 20 | 33 | 67 | 133 | 200 | 333 | g |
| Class III L Multiple | C3 | 10,000 | -- | 5 | 7.1 | 12 | 24 | 48 | 71 | 119 | g |
| Class III L Multiple | C6 | 10,000 | -- | 3 | 5 | 8 | 17 | 33 | 50 | -- | g |

Mounting kits PR 6041/PR 6043/PR 6044

| Maximum capacity of load cell PR 6241 | Mounting kit/accessories | Material | Description/comments | Mounting screws | Installation height (mm) | Max. permissible horizontal force (kN) | Horizontal destructive force [kN] | Max. permissible lift-off force [kN] | Max. permissible vertical load without load cell |
|---------------------------------------|--------------------------|---|----------------------|-----------------|--------------------------|--|-----------------------------------|--------------------------------------|--|
| 100 kg–500 kg | PR 6041/04N | | Elastomeric bearing | M12 | 53 | / | / | / | / |
| 100 kg–2 t | PR 6041/30N | Electrogalvanised steel S235, passivated and sealed | Plate mounting kit | M8-5.8 | 92 | / | / | / | / |
| | PR 6041/30S | Stainless steel 1.4301 (AISI 304) | Plate mounting kit | M8-A2-70 | | / | / | / | / |
| | PR 6043/30N | Electrogalvanised steel S235, passivated and sealed | MiniFLEXLOCK | M8-8.8 | | 6 | 20 | / | 2 t |
| | PR 6043/30S | Stainless steel 1.4301 (AISI 304) | MiniFLEXLOCK | M8-A2-70 | | 6 | 20 | / | 2 t |
| | PR 6044/00S | | Plate mounting kit | M8-A2-70 | | / | / | 10 | 2 t |
| | PR 6044/10S | | MaxiFLEXLOCK | M8-A2-70 | | 6 | 20 | 10 | 2 t |
| | PR 6041/51S | | Platform base | / | | 44 | / | / | / |
| | PR 6043/31S | | Load disc kit | / | / | / | / | / | / |
| 3 t–5 t | PR 6041/40N | Electrogalvanised steel S235, passivated and sealed | Plate mounting kit | M12-5.8 | 130 | / | / | / | / |
| | PR 6041/40S | Stainless steel 1.4301 (AISI 304) | Plate mounting kit | M12-A2-70 | | / | / | / | / |
| | PR 6043/40N | Electrogalvanised steel S235, passivated and sealed | MiniFLEXLOCK | M12-8.8 | | 18 | 50 | / | 5 t |
| | PR 6043/40S | Stainless steel 1.4301 (AISI 304) | MiniFLEXLOCK | M12-A2-70 | | 18 | 50 | / | 5 t |
| | PR 6044/01S | | Plate mounting kit | M12-A2-70 | | / | / | 20 | 5 t |
| | PR 6044/11S | | MaxiFLEXLOCK | M12-A2-70 | | 18 | 50 | 20 | 5 t |

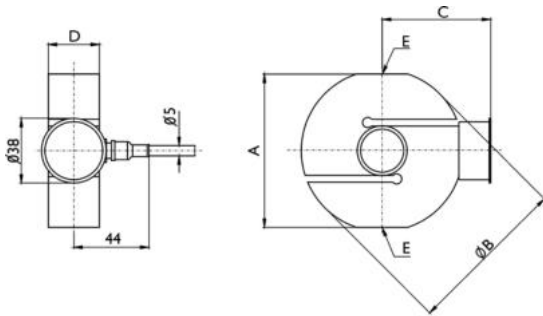


Fitted with the converter Connexx®, the load cell PR 6241 offers a whole host of possibilities:

- The digital version guarantees fast signalling times for reliable dosing processes.
- Thanks to the use of field bus communication, the cable junction box is no longer needed.
- The standard interface CANopen ensures straightforward installation and calibration.
- CANopen allows for extra-long communication paths of up to 200 m.
- Weight values can also be generated individually – per load cell – meaning that defective load cells can be identified more easily.

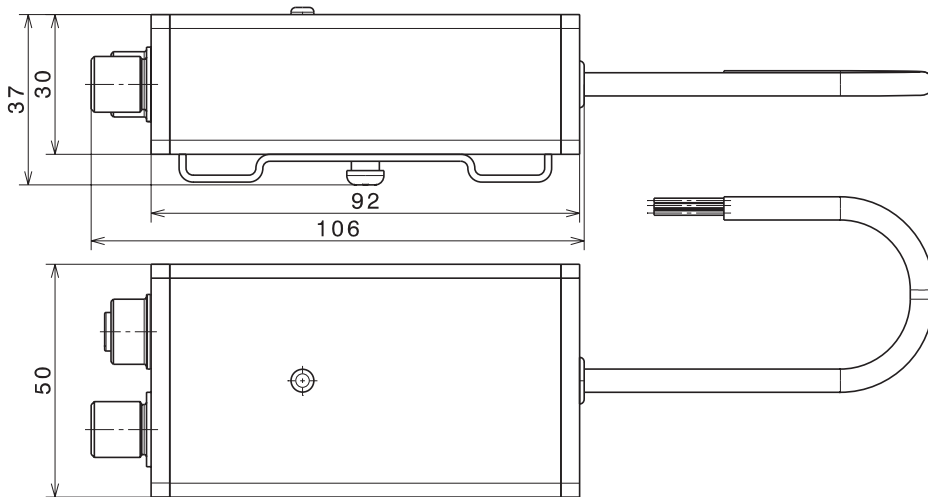
Technical diagrams

Compression S-type load cell PR 6241



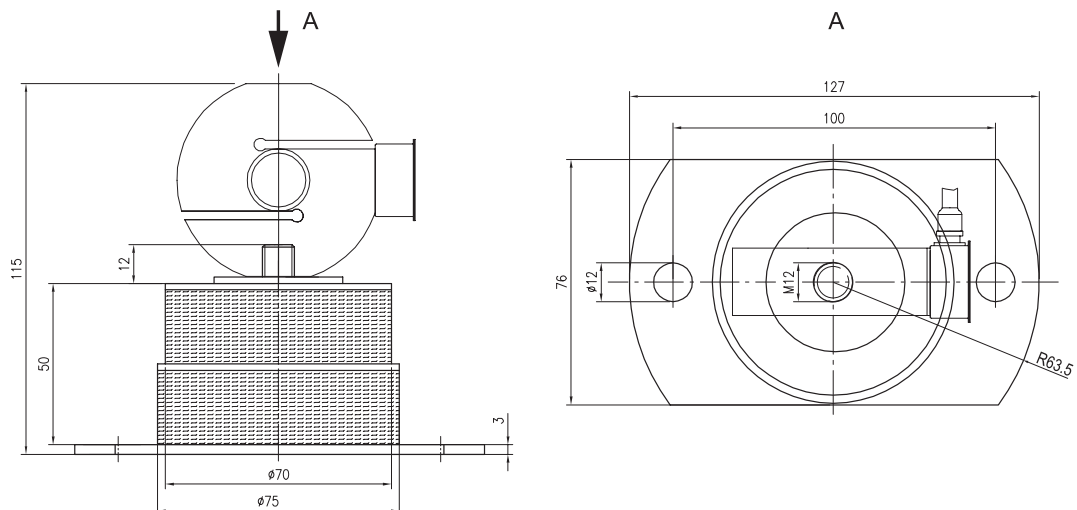
| Model | A [mm] | B [mm] | C [mm] | D [mm] | E [mm] |
|-----------------|--------|--------|--------|--------|-----------|
| PR 6241/12...52 | 60 | 65 | 50 | 23 | M12 |
| PR 6241/13...23 | 60 | 65 | 50 | 30 | M12 |
| PR 6241/33 | 90 | 95 | 64 | 30 | M20 × 1.5 |
| PR 6241/53 | 90 | 95 | 64 | 35 | M20 × 1.5 |

Converter Connex[®]



Converter Connex[®]

Mounting kits PR 6041/PR 6043/PR 6044



Elastomeric bearing PR 6041/04N

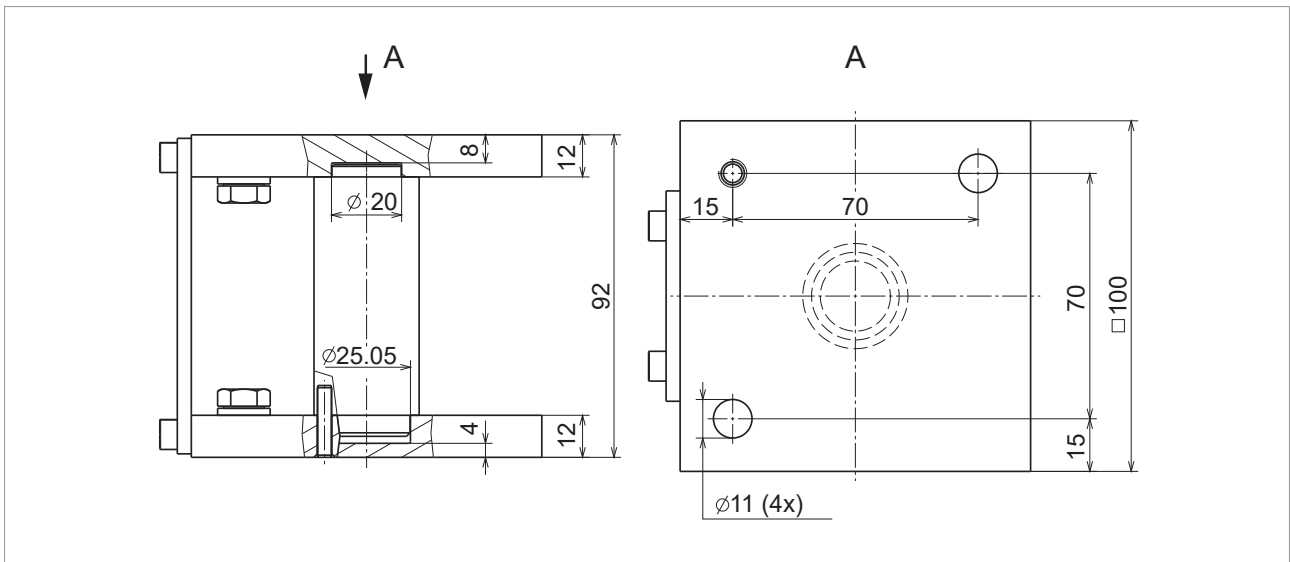


Plate mounting kit PR 6041/30N+S

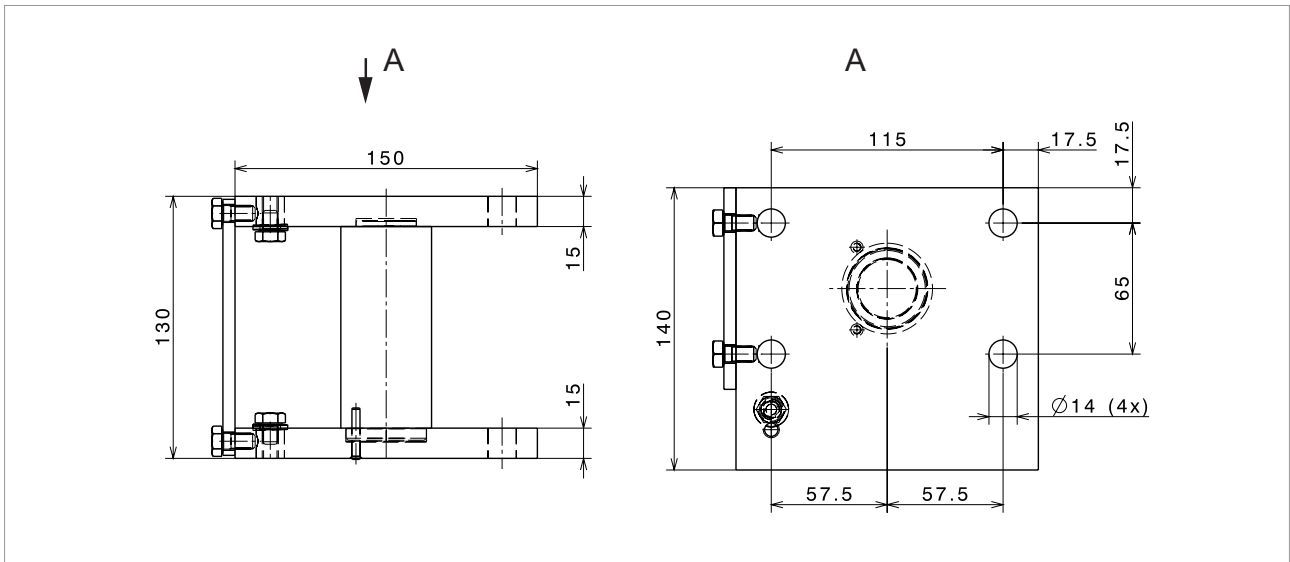
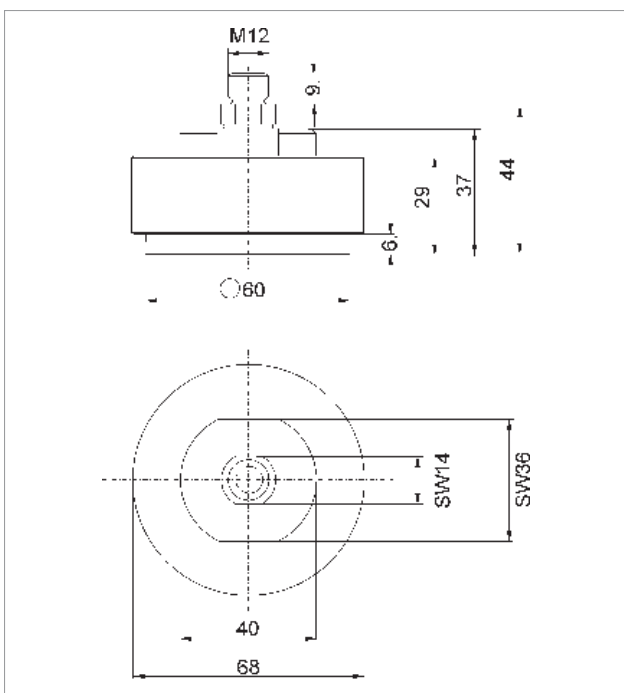
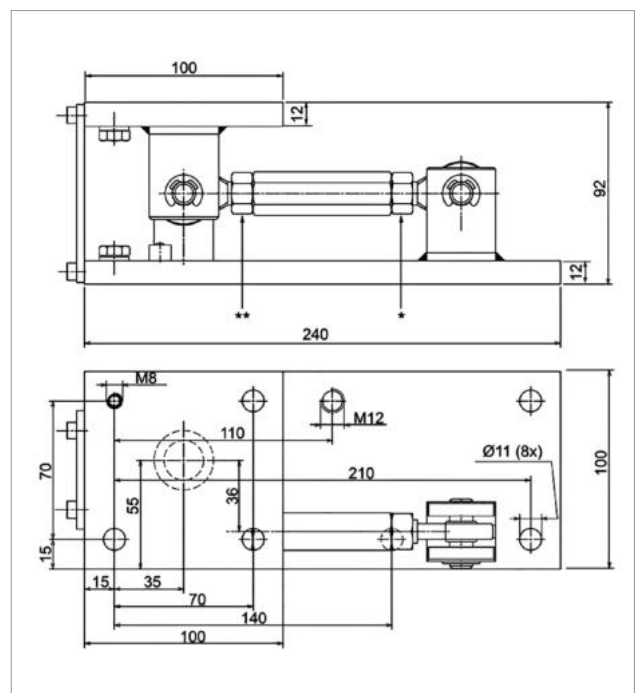


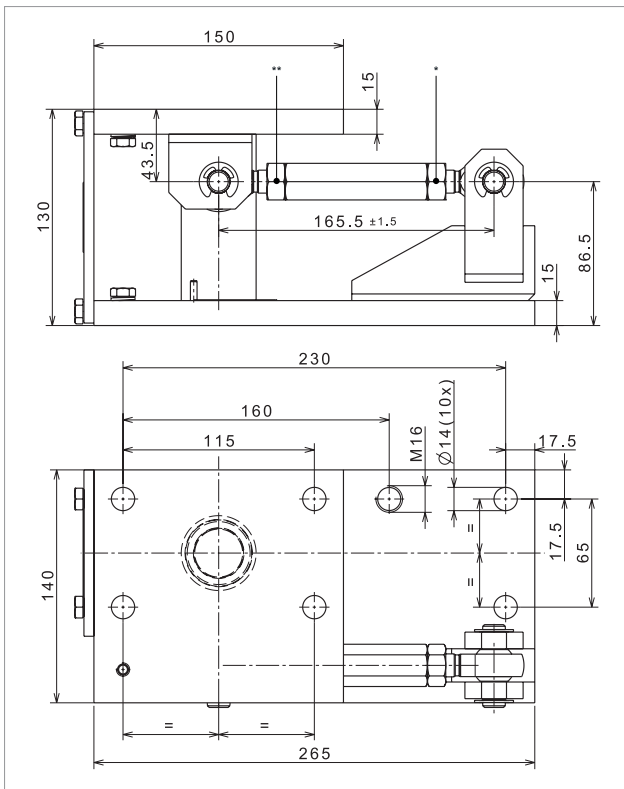
Plate mounting kit PR 6041/40N+S



Platform base PR 6041/51



MiniFLEXLOCK PR 6043/30N+S



MiniFLEXLOCK PR 6043/40N+S

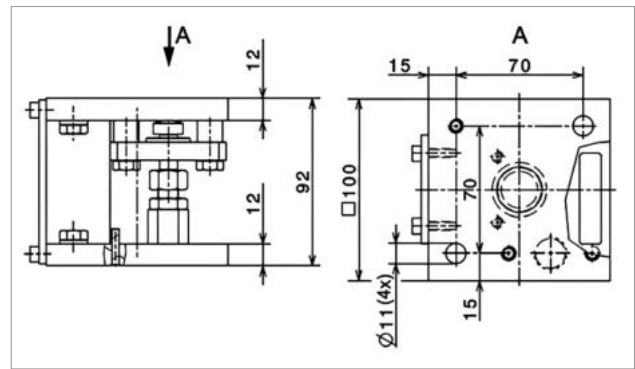


Plate mounting kit PR 6044/00S

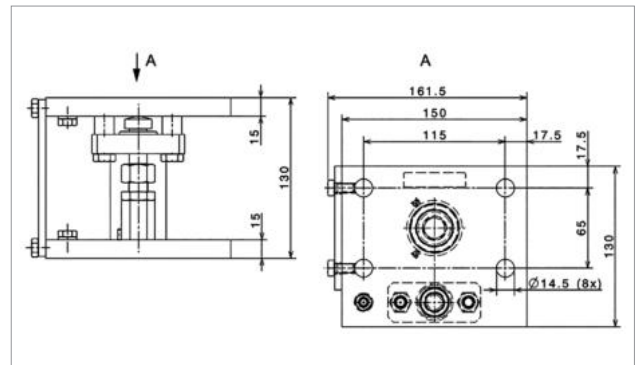
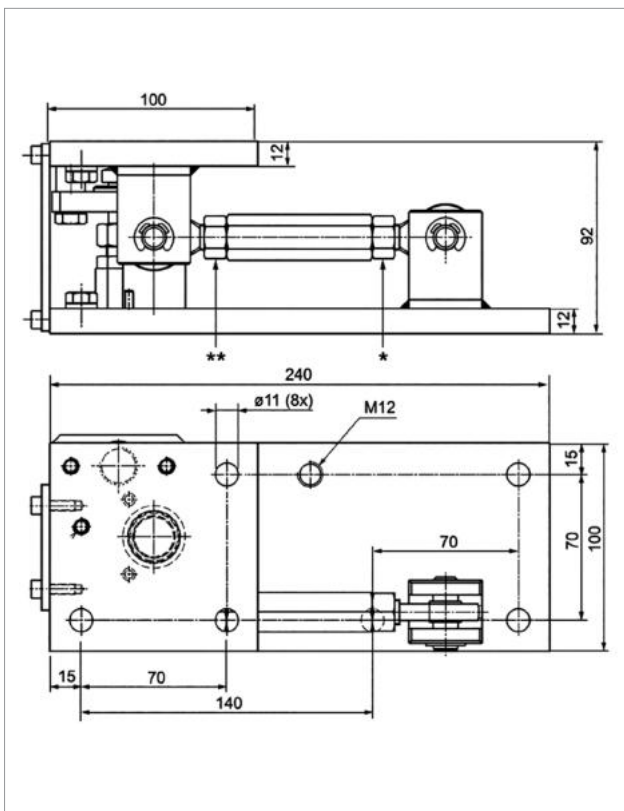
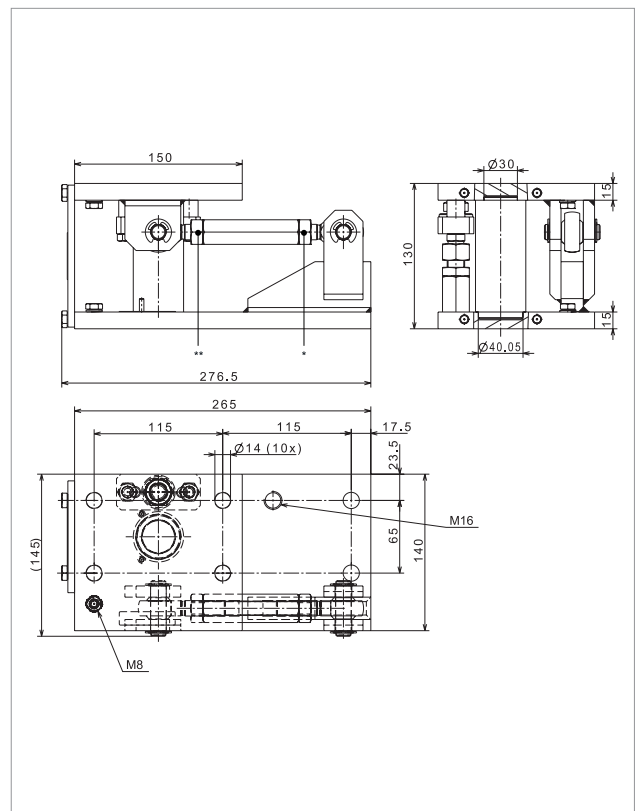


Plate mounting kit PR 6044/01S



MaxiFLEXLOCK PR 6044/10S



MaxiFLEXLOCK PR 6044/11S

Ex approval

Scope of validity:

PR 6241 (100 kg...5 t)



| Certificates for compression S-type load cell PR 6241 | | | |
|---|---|---|--|
| Zone | Labelling | Certificate number | For |
| 0 and 1 | II 1G Ex ia IIC T6 Ga Ex ia IIC T6 Ga 0Ex ia IIC T6 (") | BVS 16 ATEX E 005 IECEX BVS 16.0005 | PR 6241/..E only |
| 20 and 21 | II 1D Ex ta IIIC T160°C Da Ex ta IIIC T160°C Da Ex ta IIIC T160°C X (") | TÜV 03 ATEX 2301X IECEX TUN 17.0025X | PR 6241 with add-on ATEX-Zone 20/21 |
| 2 | II 3G Ex nA IIC T6 Gc | Manufacturer's declaration | PR 6241 with add-on ATEX-Zone 2 |
| 22 | II 3D Ex tc IIIC T85 °C Dc | Manufacturer's declaration | PR 6241 with add-on ATEX-Zone 22 |
| FMus | IS CL I, II, III, DIV 1, GP A, B, C, D, E, F, G Entity – 4012 101 5688 NI CL I, II, III, DIV 2, GP A, B, C, D, E, F, G NIFW – 4012 101 5688 T4A Ta= -30 °C to 70 °C; T5 Ta= -30 °C to 55 °C | FM17USO276 | PR 6241 with add-on FM |
| FMca | IS CL I, II, III, DIV 1, GP A, B, C, D, E, F, G Entity – 4012 101 5688 NI CL I, II, III, DIV 2, GP A, B, C, D, E, F, G NIFW – 4012 101 5688 T4A Ta= -30 °C to 70 °C; T5 Ta= -30 °C to 55 °C | FM17CA0138 | PR 6241 with add-on FM |

Ordering information

| Compression S-type load cells OIML R60, accuracy class D1 = 0.04% | | |
|--|------------------|--------------|
| Type | Maximum capacity | Order number |
| PR 6241/12D1 | 100 kg | 940526241121 |
| PR 6241/22D1 | 200 kg | 940526241221 |
| PR 6241/32D1 | 300 kg | 940526241321 |
| PR 6241/52D1 | 500 kg | 940526241521 |
| PR 6241/13D1 | 1 t | 940526241131 |
| PR 6241/23D1 | 2 t | 940526241231 |
| PR 6241/33D1 | 3 t | 940526241331 |
| PR 6241/53D1 | 5 t | 940526241531 |

| Compression S-type load cells OIML R60, accuracy class D1 = 0.04%, ex-version | | |
|--|------------------|--------------|
| Type | Maximum capacity | Order number |
| PR 6241/12D1E | 100 kg | 940566241121 |
| PR 6241/22D1E | 200 kg | 940566241221 |
| PR 6241/32D1E | 300 kg | 940566241321 |
| PR 6241/52D1E | 500 kg | 940566241521 |
| PR 6241/13D1E | 1 t | 940566241131 |
| PR 6241/23D1E | 2 t | 940566241231 |
| PR 6241/33D1E | 3 t | 940566241331 |
| PR 6241/53D1E | 5 t | 940566241531 |

| Precision compression S-type load cells OIML R60, accuracy class C3 = 0.015% | | |
|---|------------------|--------------|
| Type | Maximum capacity | Order number |
| PR 6241/22C3 | 200 kg | 940526241227 |
| PR 6241/32C3 | 300 kg | 940526241327 |
| PR 6241/52C3 | 500 kg | 940526241527 |
| PR 6241/13C3 | 1 t | 940526241137 |
| PR 6241/23C3 | 2 t | 940526241237 |
| PR 6241/33C3 | 3 t | 940526241337 |
| PR 6241/53C3 | 5 t | 940526241537 |

| Precision compression S-type load cells OIML R60, accuracy class C3 = 0.015%, ex-version | | |
|---|------------------|--------------|
| Type | Maximum capacity | Order number |
| PR 6241/22C3E | 200 kg | 940566241227 |
| PR 6241/32C3E | 300 kg | 940566241327 |
| PR 6241/52C3E | 500 kg | 940566241527 |
| PR 6241/13C3E | 1 t | 940566241137 |
| PR 6241/23C3E | 2 t | 940566241237 |
| PR 6241/33C3E | 3 t | 940566241337 |
| PR 6241/53C3E | 5 t | 940566241537 |

Precision compression S-type load cells OIML R60, accuracy class C6 = 0.008%

| Type | Maximum capacity | Order number |
|--------------|------------------|--------------|
| PR 6241/22C6 | 200 kg | 940526241228 |
| PR 6241/32C6 | 300 kg | 940526241328 |
| PR 6241/52C6 | 500 kg | 940526241528 |
| PR 6241/13C6 | 1 t | 940526241138 |
| PR 6241/23C6 | 2 t | 940526241238 |
| PR 6241/33C6 | 3 t | 940526241338 |

Precision compression S-type load cells OIML R60, accuracy class C6 = 0.008%, ex-version

| Type | Maximum capacity | Order number |
|---------------|------------------|--------------|
| PR 6241/22C6E | 200 kg | 940566241228 |
| PR 6241/32C6E | 300 kg | 940566241328 |
| PR 6241/52C6E | 500 kg | 940566241528 |
| PR 6241/13C6E | 1 t | 940566241138 |
| PR 6241/23C6E | 2 t | 940566241238 |
| PR 6241/33C6E | 3 t | 940566241338 |

Precision compression S-type load cells OIML R60, converter Connexx®

| Type | Description | Order number |
|---------------------|---|--------------|
| PR 6241/DIGITAL KIT | The converter Connexx® can only be ordered with the above-mentioned load cells from the PR 6241 series. When ordering, both order numbers need to be given. | 940514100000 |

Additional information:

The converters Connexx® can be used with the Indicator X3.

To do this, the indicator X3 must be equipped with a CANopen interface card PR 5510/05 (940535510051).

Precision compression S-type load cells OIML R60, converter Connexx® – application sets

| Type | Description | Order number |
|------------|---|--------------|
| PR 6154/03 | Application set for 3 load cells. Includes: 2 × PR 6155/05, 1 × PR 6152/25, 1 × PR 6153/99 | 940536154031 |
| PR 6154/04 | Application set for 4 load cells. Includes: 3 × PR 6155/05, 1 × PR 6152/25, 1 × PR 6153/99 | 940536154041 |

Precision compression S-type load cells OIML R60, converter Connexx® – load cell accessories

| Type | Description | Order number |
|------------|---|--------------|
| PR 6152/10 | Connection cable between Connexx® and X3 (10 m) | 940536152101 |
| PR 6152/25 | Connection cable between Connexx® and X3 (25 m) | 940536152251 |
| PR 6152/40 | Connection cable between Connexx® and X3 (40 m) | 940536152401 |
| PR 6153/98 | Divided cable gland | 940536153981 |
| PR 6153/99 | Terminal resistor for Connexx®, M12 | 940536153991 |
| PR 6155/05 | Connection cable between Connexx® and Connexx® (5 m) | 940536155051 |
| PR 6155/10 | Connection cable between Connexx® and Connexx® (10 m) | 940536155101 |

Mounting kits PR 6041 without constrainer

| Type | Order number |
|-------------|--------------|
| PR 6041/04N | 940536041041 |
| PR 6041/30N | 940536041301 |
| PR 6041/30S | 940536041302 |
| PR 6041/40N | 940536041401 |
| PR 6041/40S | 940536041402 |
| PR 6041/51S | 940536041512 |

Mounting kits PR 6043 – MiniFLEXLOCK with integrated constrainer

| Type | Order number |
|-------------|--------------|
| PR 6043/30N | 940536043301 |
| PR 6043/30S | 940536043302 |
| PR 6043/40N | 940536043401 |
| PR 6043/40S | 940536043402 |

Mounting kits PR 6044 – MaxiFLEXLOCK with additional functions

| Type | Order number |
|-------------|--------------|
| PR 6044/00S | 940536044002 |
| PR 6044/10S | 940536044102 |
| PR 6044/01S | 940536044012 |
| PR 6044/11S | 940536044112 |

Mounting kits PR 6043 – load discs

| Type | Order number |
|-------------|--------------|
| PR 6043/31S | 940536043312 |

The products and solutions presented in this data sheet make major contributions in the following sectors:



Food and beverages

Pharmaceutical

Chemistry

Cosmetics

Machinery (OEM)

The technical data given serves as a product description only and should not be understood as guaranteed properties in the legal sense.

Specifications subject to change without notice.
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