

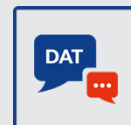
Load cell Pendeo[®] Process and mounting kits

Digital weighing technology for maximum transparency and precision



! Advantages

- Easy commissioning
- Efficient use
- Quick repair and maintenance
- Extremely resistant
- High flexibility



The digital compression load cells in the Pendeo[®] Process series are specially designed for silo and process vessel weighing. In combination with 'DAT – Digital Assistance Technology' from Minebea Intec, digital load cells provide new insights into the weighing process: from the load distribution in the container to temperature measuring.

Proven Minebea Intec technology for a wide range of applications

- ! **Robust design** ensures insensitivity to vibration and enables load capacities from 2 to 50 tonnes.
- ! **High corrosion resistance** due to high quality steel alloys ensures extremely long service life.
- ! **Faster commissioning and shorter service times** thanks to digital data processing
- ! **Perfectly matched weighing electronics** complete the digital measurement chain.

Technical specifications

PR 6204 – Load cell Pendeo® Process					
Parameter	Description	Abbr.	C3	C6	Unit
Accuracy class			0.0125	0.008	%E _{max}
Minimum dead load	Lowest limit of specified measuring range	E _{min}	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		%E _{max}
Destructive load	Danger of mechanical destruction	E _d	300		%E _{max}
Minimum LC verification	Minimum load cell verification interval, $V_{min} = E_{max}/Y$	Y	14,000	20,000	
	For E _{max} = 2000 kg	Y	10,000	/	
Deadload output return	Factor for deadload output return after load (DR = 1/2 * E _{max} / Z)	Z	3,000	8,000	
Rated output	Relative output at maximum capacity	C _n	Standardised to E _{max} in (t)		
Tolerance on rated output	Permissible deviation from rated output	d _c	<0.07	<0.07	%C _n
Zero output signal	Load cell output signal under unloaded condition	S _{min}	<0.7	<0.7	%C _n
Reproducibility	Max. change in load cell output for repeated loading	ε _R	<0.005	<0.005	%C _n
Creep	Max. change of output signal at E _{max} for 30 min.	d _{cr}	<0.0125	<0.008	%C _n
Non-linearity ¹⁾	Max. deviation from best straight line through zero	d _{lin}	<0.01	<0.01	%C _n
Hysteresis ¹⁾	Max. difference in LC output between loading and unloading	d _{hy}	<0.0125	<0.008	%C _n
Temperature effect (TK) on S _{min}	Max. change of S _{min} in B _T	TK _{Smin}	<0.01	<0.007	%C _n /10 K
Temperature effect (TK) on parameter ¹⁾	Max. change of C in B _T	TK _C	<0.01	<0.005	%C _n /10 K
Insulation impedance	Between measuring circuit and housing at 50 V _{DC}	R _{IS}	> 1,000 × 10 ⁶		Ω
Recommended supply voltage	To hold the specified performance	B _U	20...28		V _{DC}
Nominal ambient temp. range	To hold the specified performance	B _T	-10...+40		°C
Usable ambient temp. range	Permissible for continuous operation without damage	B _{TU}	-30...+70		°C
Storage temperature range	Without electrical and mechanical stress	B _{Ti}	-40...+95		°C
Permissible eccentricity	Permissible displacement from nominal load line	S _{ex}	For 2 t...10 t: 10 For 25 t...50 t: 5		mm
Vibration resistance	Resistance against oscillations (IEC 60068-2-6 Fc)		20 g, 100 h, 10...150 Hz		
Barometric pressure influence	Influence of barometric pressure on output	PK _{Smin}	2 t: <200 5 t, 10 t: <320 From 25 t: 420		g/kPa
Nominal deflection	Max. elastic deformation under maximum capacity	S _{nom}	Up to 25 t: <0.5 Up to 50 t: <0.8		mm
Material (housing)	Stainless steel 1.4301				
Protection class	IP68 / IP69				
Cable	Length: for E _{max} ≤ 10 t: 5 m, for E _{max} > 10 t: 12 m Diameter: 5.8 mm Cross-section: 4 × 0.35 mm ² Cable sheath material: TPE				
Bending radius	≥ 30 mm in case of fixed installation ≥ 70 mm in case of flexible installation				

¹⁾ The data for non-linearity (d_{lin}), hysteresis (d_{hy}) and temperature effect on C (TK_C) are typical values. For OIML R60 or NTEP approved load cells, the sum of these values is within the permissible cumulative error limits.

Mounting kit PR 6001

Maximum capacity of load cell PR 6204	Mounting kit/ accessories	Material	Description/ comments	Mounting screws	Installation height (mm)	Max. permissible horizontal force (kN)	Max. permissible lift-off force (kN)	Max. permissible eccentricity	Max. permissible vertical load without load cell	Max. permissible load for jack-up	CE approval according to EN 1090
500 kg–10 t	PR 6001/00N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	Mounting kit including upper load disc	M12-8.8	190.5	10	20	±5	25 t	1.5 t	Yes
	PR 6001/00S	Stainless steel 1.4301 (AISI 304)	Mounting kit incl. upper and lower load disc	M12-A2-70		/					
	PR 6001/10N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	MaxiFLEXLOCK	M12-8.8		25					Yes
	PR 6001/10S	Stainless steel 1.4301 (AISI 304)	MaxiFLEXLOCK	M12-A2-70	/						
	PR 6001/20N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	MaxiFLEXLOCK	M16-8.8	50	Yes					
	PR 6001/20S	Stainless steel 1.4301 (AISI 304)	MaxiFLEXLOCK	M16-A2-70		/					
	PR 6001/30N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	High-load mounting kit incl. upper load disc	M20-8.8	250.5	200	180	±5	25 t	1.5 t	Yes
20 t–50 t	PR 6001/01N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	Mounting disc incl. upper load disc	M12-8.8	190.5	10	30	±5	25 t	/	Yes
	PR 6001/01S	Stainless steel 1.4301 (AISI 304)	Mounting kit incl. upper and lower load disc	M12-A2-70		/					
	PR 6001/11N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	MaxiFLEXLOCK	M12-8.8		25					Yes
	PR 6001/11S	Stainless steel 1.4301 (AISI 304)	MaxiFLEXLOCK	M12-A2-70	/						
	PR 6001/21N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	MaxiFLEXLOCK	M16-8.8	50	Yes					
	PR 6001/21S	Stainless steel 1.4301 (AISI 304)	MaxiFLEXLOCK	M16-A2-70		/					
	PR 6001/26N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	MaxiFLEXLOCK	M20-8.8	250.5	50	180	±5	25 t	/	Yes
	PR 6001/31N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	High-load mounting kit incl. upper load disc	M20-8.8		200					Yes

Mounting kit PR 6143

Maximum capacity of load cell PR 6204	Mounting kit/ accessories	Material	Description/ comments	Mounting screws	Installation height (mm)	Max. permissible horizontal force (kN)	Max. permissible lift-off force (kN)**	CE approval according to EN 1090
500 kg-10 t	PR 6143/24S	Stainless steel 1.4542	Base	/	/	/	/	/
20 t-50 t	PR 6143/54S	Stainless steel 1.4542	Base	/	/	/	/	/
500 kg-50 t	PR 6143/50N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	Upper load disc	/	/	/	/	/
	PR 6143/50S	Stainless steel 1.4542	Upper load disc	/	/	/	/	/
	PR 6143/00N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	MiniFLEXLOCK incl. upper load disc	M12-8.8	190.5	25	32	Yes
	PR 6143/00S	Stainless steel 1.4301 (AISI 304)	MiniFLEXLOCK incl. upper and lower load disc*	M12-A2-70				/
	PR 6143/10N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	MiniFLEXLOCK incl. upper load disc	M16-8.8		50	50	Yes
	PR 6143/10S	Stainless steel 1.4301 (AISI 304)	MiniFLEXLOCK incl. upper and lower load disc*	M16-A2-70				/

* Lower load disc only for 0.5 t-10 t;
for 20 t-50 t please order PR 6143/54S base separately

** With separate threaded rod

Mounting kit PR 6144

Maximum capacity of load cell PR 6204	Mounting kit/ accessories	Material	Description/ comments	Mounting screws	Installation height (mm)	Max. permissible horizontal force (kN)	Max. permissible lift-off force (kN)**	Max. permissible vertical load without load cell	CE approval according to EN 1090
5 t-50 t	PR 6144/54N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	Seismic Mount incl. load cell dummy	M30-8.8	217	370	400	16 t	Yes

** With separate threaded rod

Fixed bearing PR 6101

Maximum capacity of load cell PR 6204	Fixed bearing	Material	Mounting screws	Installation height (mm)	Max. usable load	Permissible horizontal force (kN)
5 t	PR 6101/53N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	M12-8.8	190.5	5 t	15
					10 t	12
	PR 6101/53S	Stainless steel 1.4301 (AISI 304)	M12-A2-70		5 t	10
					10 t	8.5
20 t	PR 6101/24N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	M12-8.8	190.5	20 t	45
					40 t	35
	PR 6101/24S	Stainless steel 1.4301 (AISI 304)	M12-A2-70		20 t	30
					40 t	20
50 t	PR 6101/54N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	M12-8.8	190.5	50 t	100
					75 t	80
	PR 6101/54S	Stainless steel 1.4301 (AISI 304)	M12-A2-70		50 t	50
					75 t	20

Mounting kit PR 6145

Maximum capacity of load cell PR 6204	Mounting kit/ accessories	Material	Description/ comments	Mounting screws	Installation height (mm)	CE approval according to EN 1090
500 kg–50 t	PR 6145/00N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	Plate mounting kit incl. upper load disc	M12-8.8	190.5	Yes
	PR 6145/00S	Stainless steel 1.4301 (AISI 304)	Plate mounting kit incl. upper and lower load disc*	M12-A2-70		/

* Lower load disc only for 0.5 t–10 t;
for 20 t–50 t please order PR 6143/54S base separately

PR 6024 cable junction box

Parameter	PR 6024/64S	PR 6024/68S
Number of load cells	1...4	1...8
Material	1.4301, AISI 304	1.4301, AISI 304
Protection class	IP66 / IP68 / IP69	IP66 / IP68 / IP69
ATEX approval	Zone 2/22	Zone 2/22
Usable ambient temp. range	-30 °C...+80 °C	-30 °C...+80 °C
Usable temperature range in EX area	-20 °C...+60 °C	-20 °C...+60 °C
Storage and transport	-30 °C...+80 °C	-30 °C...+80 °C
Supply voltage	24 V _{DC}	24 V _{DC}

PR 6024/62S power supply unit

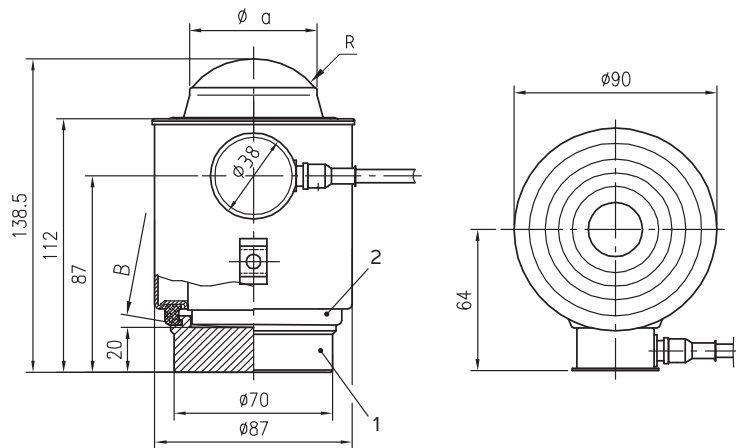
Parameter	PR 6024/62S
Material	1.4301, AISI 304
Protection class	IP66 / IP68 / IP69
ATEX approval	Zone 2/22
Usable temperature range	-30 °C...+80 °C
Usable temperature range in EX area	-20 °C...+50 °C
Storage and transport	-30 °C...+80 °C
Supply voltage	100...240 V _{AC} ±10%, 50/60 Hz
Power consumption	Max. 35 VA
Output voltage	24 V _{DC}

Supply and data cable PR 6124

Parameter	PR 6124/xxD	PR 6124/xxP
Cable type	Data cable	Supply cable
Cable diameter	5.8 mm	5.2 mm
Cable inductivity	A/C: 0.5 μ H/km A/A: 0.7 μ H/km	/
Bending radii	Fixed installation: 30 mm Repeated bends: 70 mm	Fixed installation: 25 mm Repeated bends: 60 mm
Cable capacity	A/C: <110 pF/m A/A: <60 pF/m	/
Conduction resistance	$\leq 57 \Omega$ /km	/
Operation and storage temperature range	Operation: -30 °C...+90 °C Storage: -40 °C...+90 °C Briefly up to +125 °C	Operation: -30°C...+90°C Storage: -40°C...+90°C Briefly up to +125°C
Test voltage	A/C: 800 V A/A: 1200 V VDE 0472 part 509 test type B	/
Oil resistance	VDE 0472 part 803	VDE 0472 part 803
Flame resistance	EN 60332 1-2	EN 60332 1-2

Technical diagrams

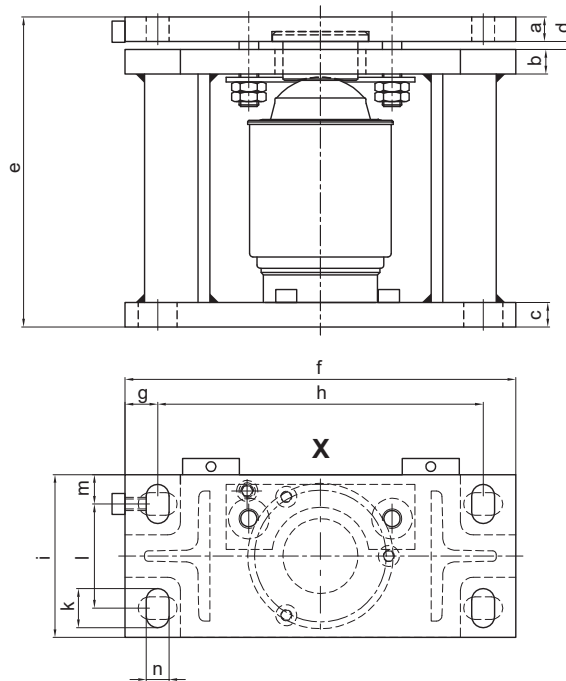
PR 6204 load cell – Pendeo® Process



Pos.	Designation
1	Lower load disc
2	Support ring

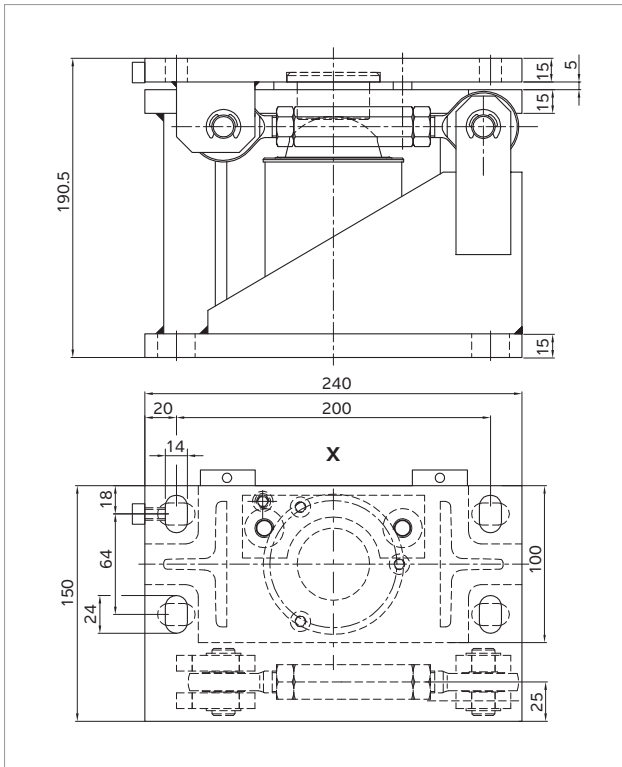
Model	B [mm]	ϕa [mm]	R [mm]
PR 6204/2 t	150	24	15
PR 6204/5 t... 10 t	150	34	15
PR 6204/25t... 50t	220	56	35

Mounting kit PR 6001

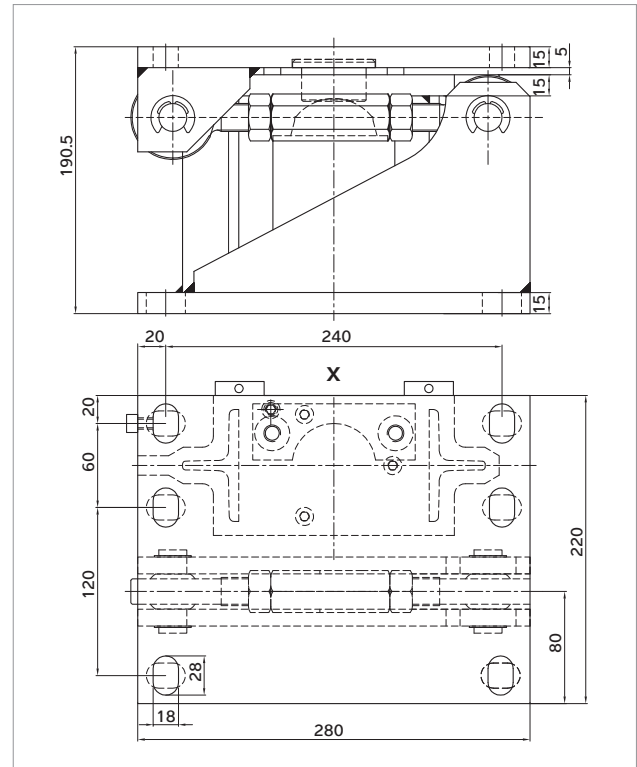


Mounting kit	a	b	c	d	e	f	g	h	i	k	l	m	n
PR 6001/00	15	15	15	5	190.5	240	20	200	100	24	64	18	14
PR 6001/01	15	15	15	5	190.5	240	20	200	100	24	64	18	14

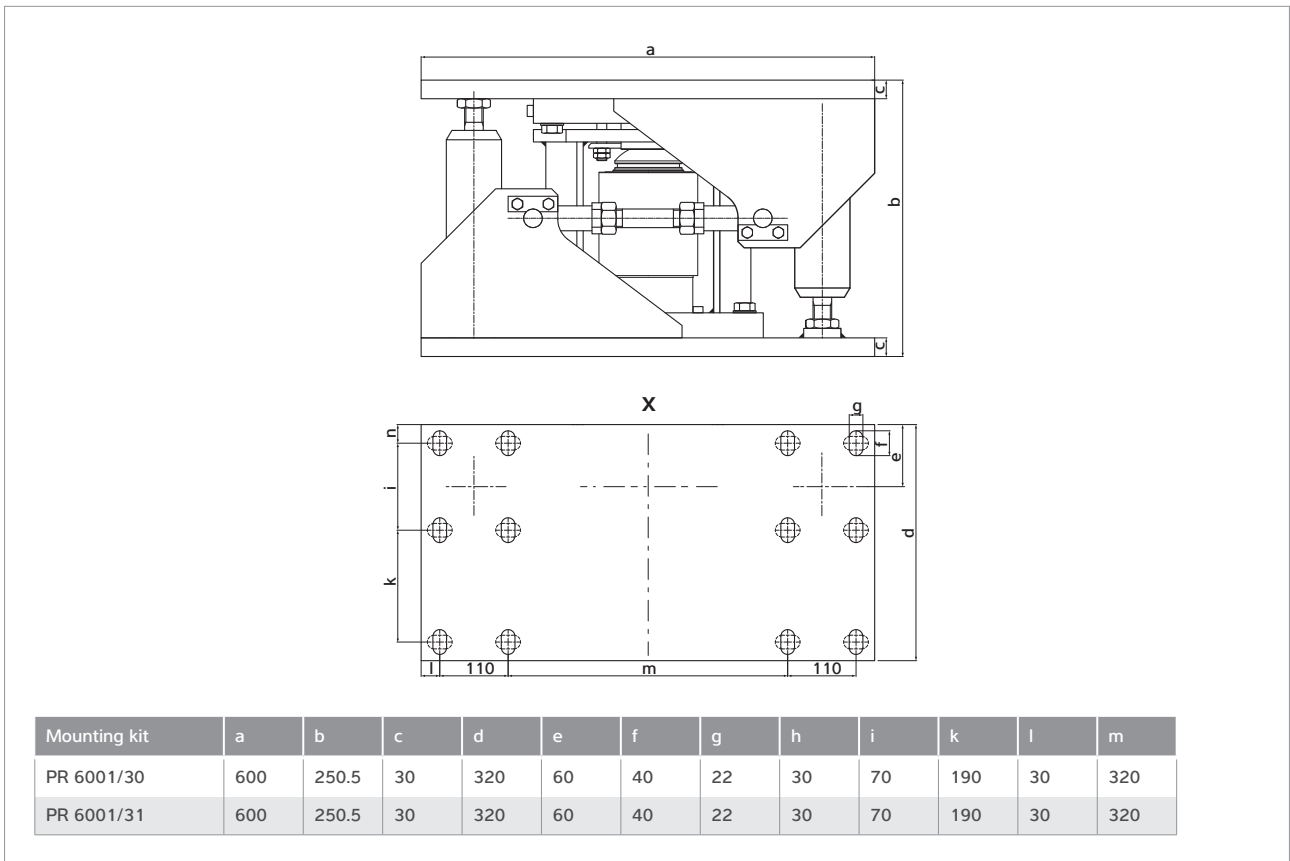
Mounting kits PR 6001/00N+S, PR 6001/01N+S



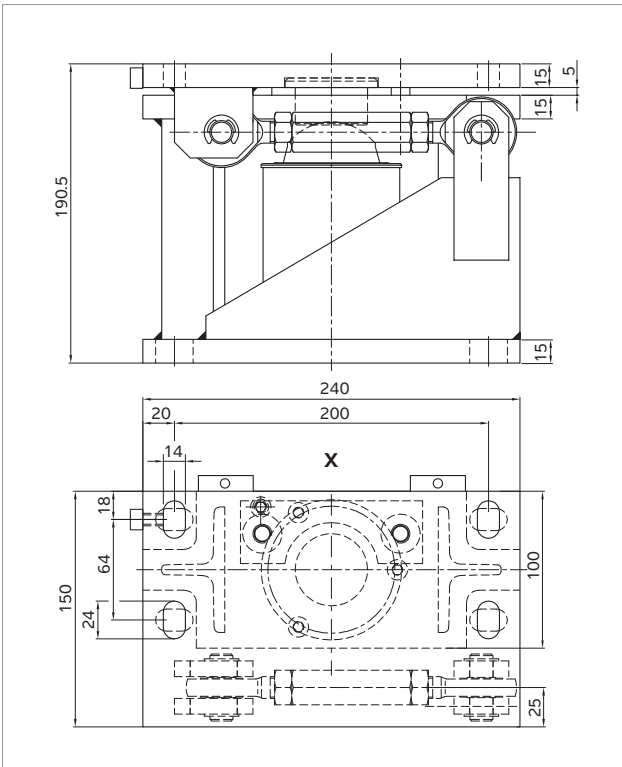
Mounting kit PR 6001/10N+S



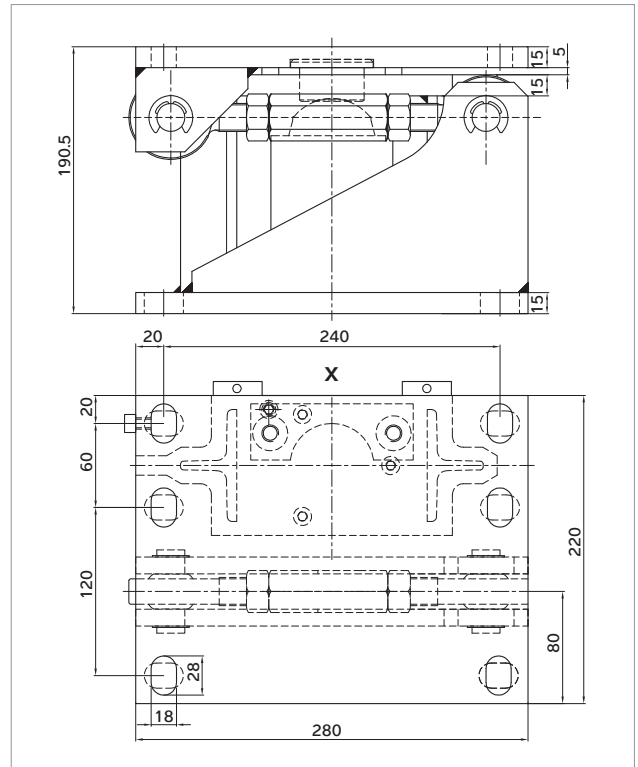
Mounting kit PR 6001/20N+S



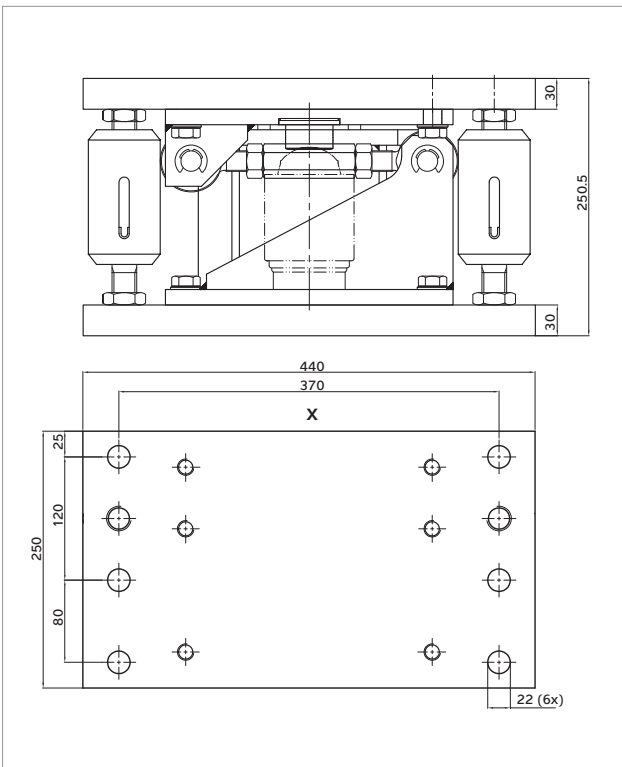
Mounting kits PR 6001/30N, PR 6001/31N



Mounting kit PR 6001/11N+S

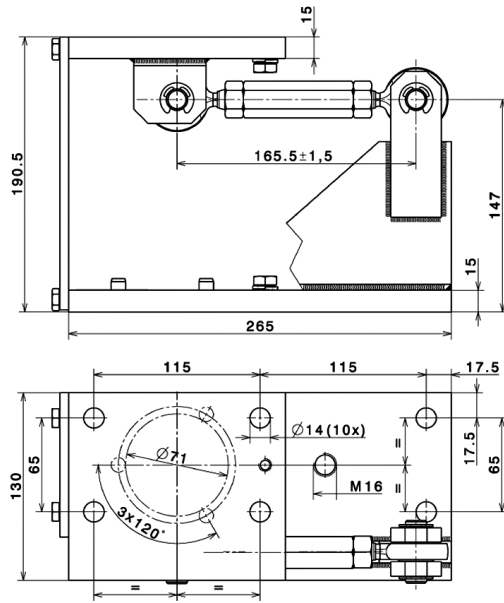


Mounting kit PR 6001/21N+S

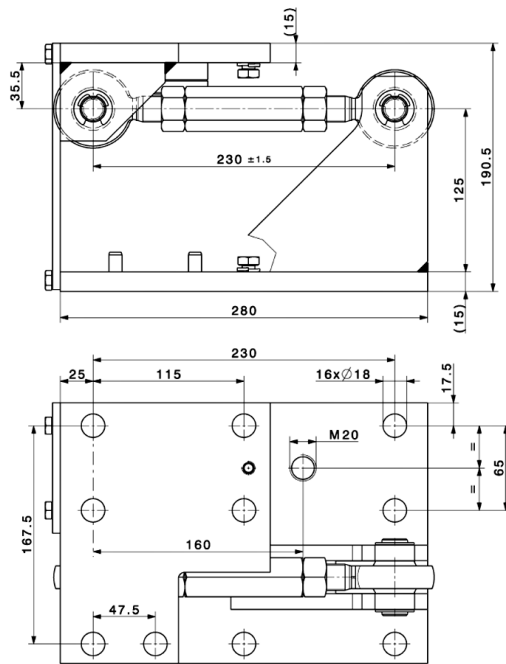


Mounting kit PR 6001/26N

Mounting kit PR 6143

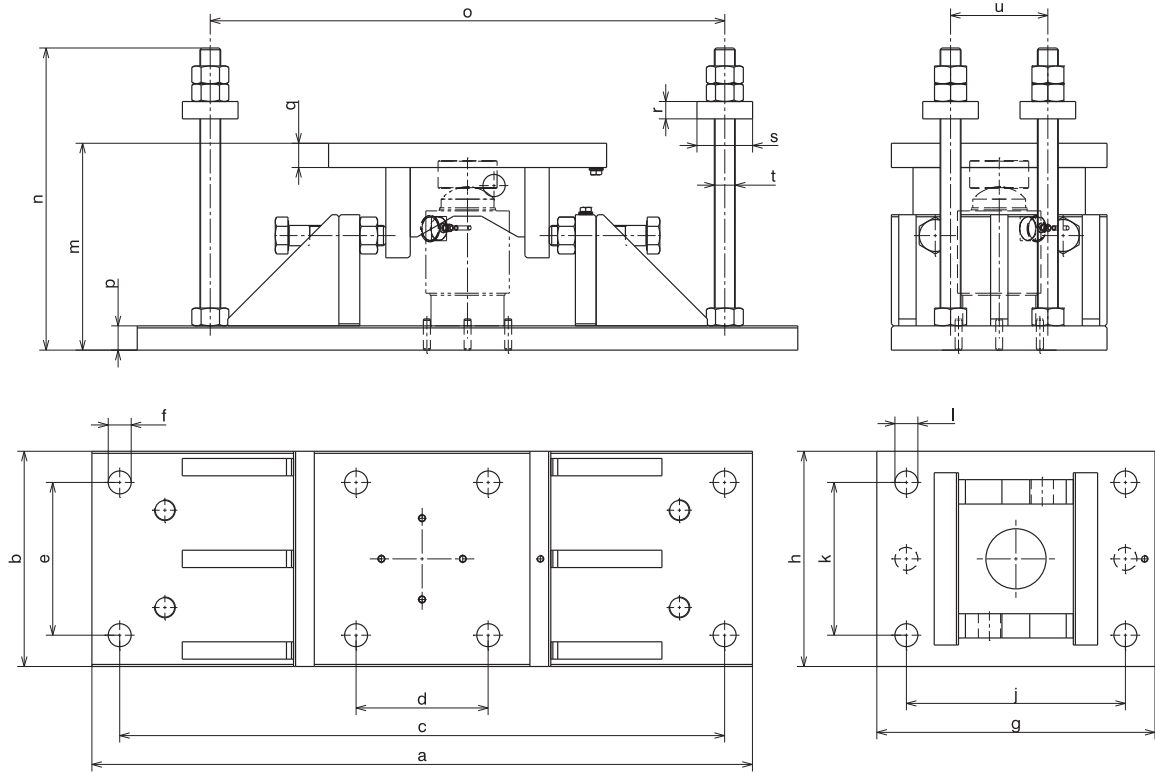


Mounting kit PR 6143/00N+S



Mounting kit PR 6143/10N+S

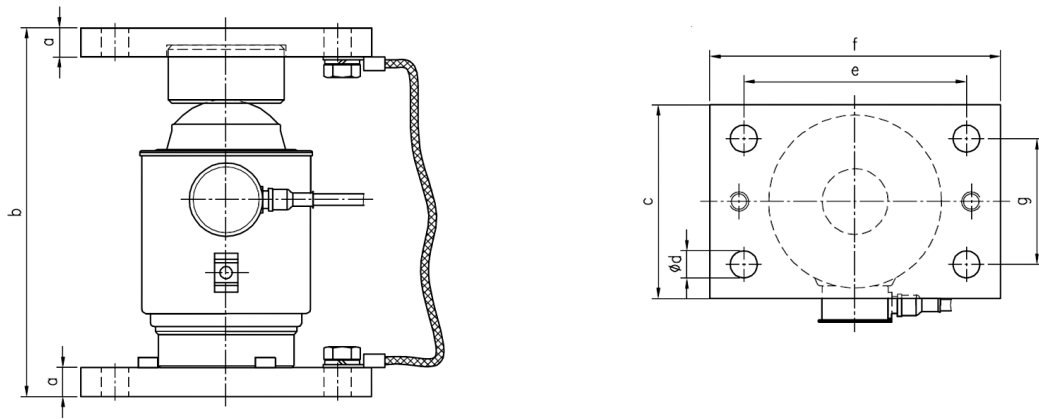
Mounting kit PR 6144



Model	a	b	c	d	e	f	g	h	j	k	l	m	n	o	p	q	r	s	t	u
PR 6144/54	820	240	740	160	160	Ø33	380	240	300	160	Ø33	217	350	620	30	30	25	Ø80	M30	120

Mounting kit PR 6144/54N

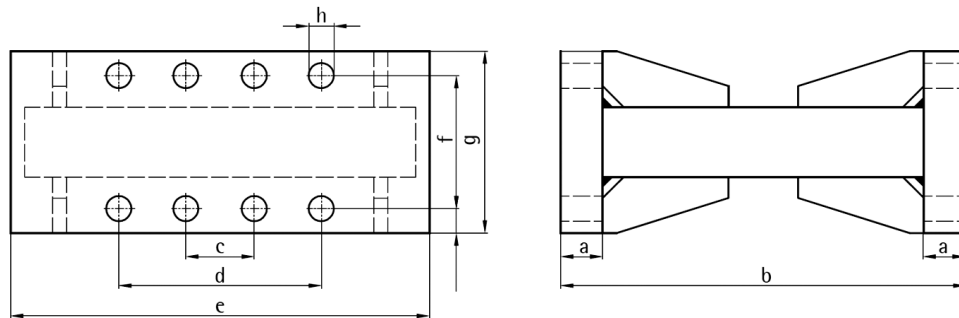
Mounting kit PR 6145/xx



Model	a	b	c	d	e	f	g
PR 6145/00	15	190.5	100	14	115	150	65

Mounting kit PR 6145/00N+S

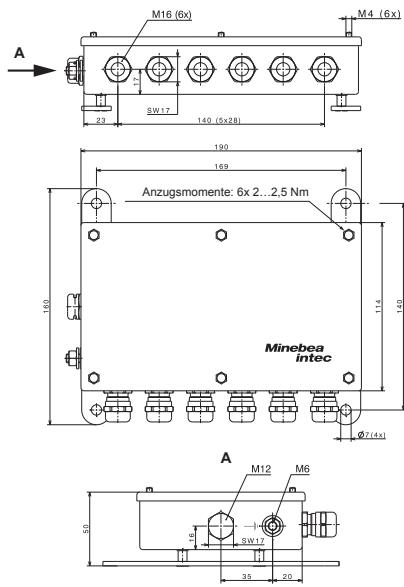
Fixed bearing PR 6101/xx



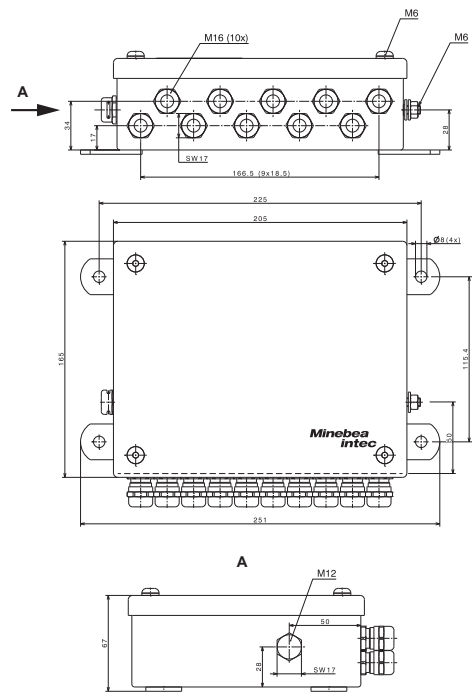
Model	a	b	c	d	e	f	g	h
PR 6101/53	15	190.5	-	115	150	65	100	14 (4×)
PR 6101/24	15	190.5	-	115	150	65	100	14 (4×)
PR 6101/54	15	190.5	115	199	250	65	100	14 (8×)

Fixed bearings PR 6101/53 / PR 6101/24 / PR 6101/54 / PR 6101/15 / PR 6101/25 / PR 6101/55

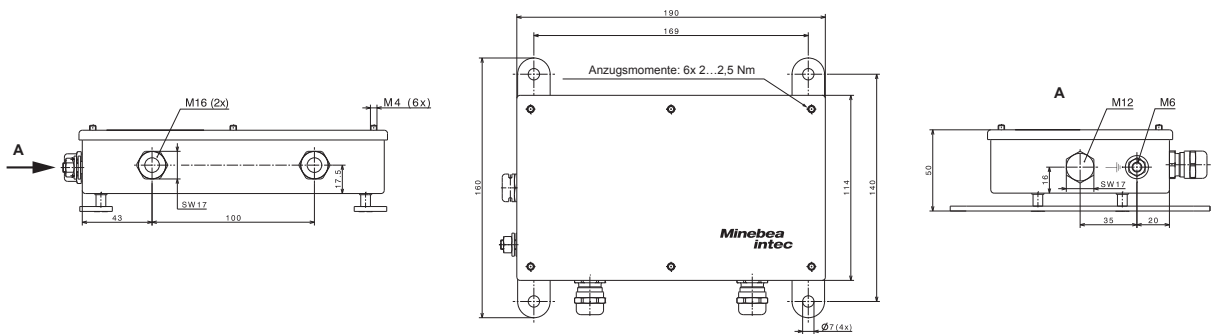
Cable junction box PR 6024



Cable junction box PR 6024/64S



Cable junction box PR 6024/68S



Power supply unit PR 6024/62S

Ex approval

Scope of validity:
PR 6204 / PR 6024



Explosion protection

Certificates for digital compression load cell Pendeo® Process

Zone	Labelling	Certificate number	For
2	II 3G Ex nA IIC T5 Gc	Manufacturer's declaration	All PR 6204/xx PR 6024/6x
22	II 3D Ex tc IIIC T90°C Dc		

Ordering information

Digital vessel scale load cells OIML R60 accuracy class C3 = 0.015%, C6 = 0.008%

Type	Order number
PR 6204/2tC3	940520423220
PR 6204/5tC3	940520423250
PR 6204/10tC3	940520423310
PR 6204/25tC3	940520423325
PR 6204/50tC3	940520423350
PR 6204/25tC6	940520426325
PR 6204/50tC6	940520426350

Cable junction boxes

Type	Order number
PR 6024/68S	940536024684

Power supply unit

Type	Order number
PR 6024/62S	940536024624

Data and electrical supply cables

Type	Order number
PR 6124/01D (1 m)	940536124013
PR 6124/01P (1 m)	940536124014
PR 6124/12D (100 m)	940536124123
PR 6124/12P (100 m)	940536124124
PR 6124/15D (150 m)	940536124153
PR 6124/15P (150 m)	940536124154
PR 6124/22P (200 m)	940536124224
PR 6124/31D (30 m)	940536124313
PR 6124/31P (30 m)	940536124314
PR 6124/51D (50 m)	940536124513
PR 6214/51P (50 m)	940536124514

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



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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