

Load cell Pendeo[®] Process and mounting kits

Digital weighing technology for maximum transparency and precision



Digital Assistance
Technology



German Quality

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. High-quality steel alloys and Minebea Intec's own German Quality guarantee an exceptionally long service life.

The right solution for all of these applications:



Weighing



Fill quantity
control

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
Minimum LC verification	Minimum load cell verification interval, $V_{min} = E_{max}/Y$ For E _{max} = 2000 kg	Y	14,000	20,000	
		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	Max. deviation from best straight line through zero	d _{lin}	<0.01	<0.01	%C _n
Hysteresis	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	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
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}	10		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}	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				

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	50	/					
	PR 6001/20N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	MaxiFLEXLOCK	M16-8.8		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	50	/					
	PR 6001/21N	Steel electrogalvanised, chromated and sealed (ROHS compliant)	MaxiFLEXLOCK	M16-8.8		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

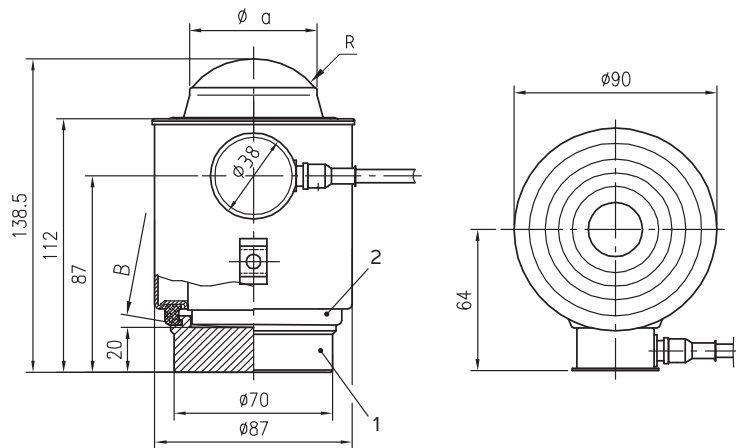
Parameter	PR 6024/62S
Material	1.4301, AISI 304
Protection class	IP66 / IP68 / IP69
ATEX approval	Zone 2/22
Usable temperature range	-30 °C...+80 °C
Usable temperature range in EX area	-20 °C...+50 °C
Storage and transport	-30 °C...+80 °C
Supply voltage	100...240 V _{AC} ±10%, 50/60 Hz
Power consumption	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	$\leq 57 \Omega/\text{km}$	/
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

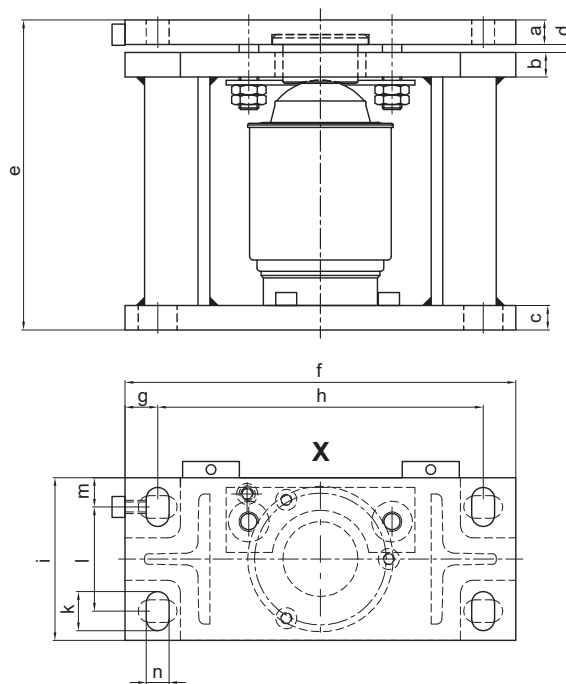
PR 6204 load cell – Pendeo® Process



Pos.	Designation
1	Lower load disc
2	Support ring

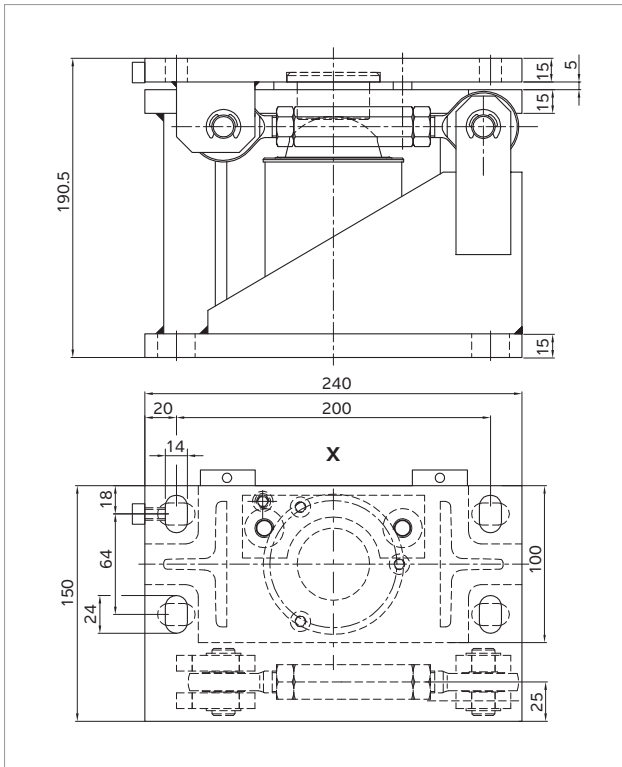
Model	B [mm]	ϕa [mm]	R [mm]
PR 6204/2 t	150	24	15
PR 6204/5 t... 10 t	150	34	15
PR 6204/25t... 50t	220	56	35

Mounting kit PR 6001

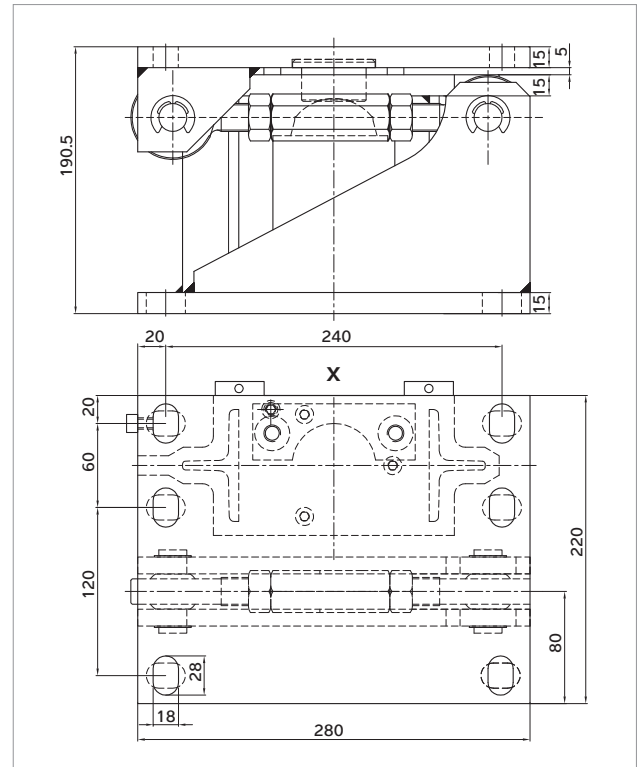


Mounting kit	a	b	c	d	e	f	g	h	i	k	l	m	n
PR 6001/00	15	15	15	5	190.5	240	20	200	100	24	64	18	14
PR 6001/01	15	15	15	5	190.5	240	20	200	100	24	64	18	14

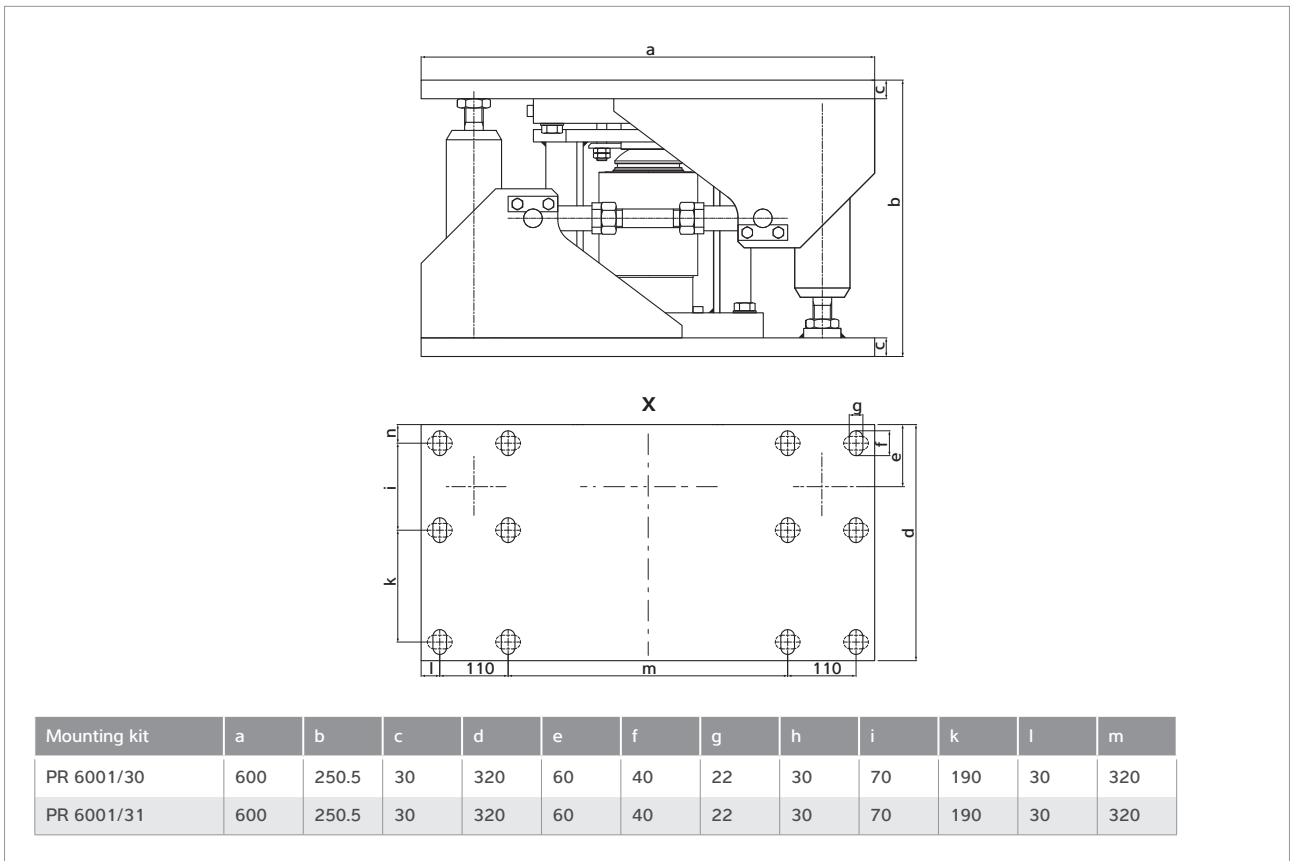
Mounting kits PR 6001/00N+S, PR 6001/01N+S



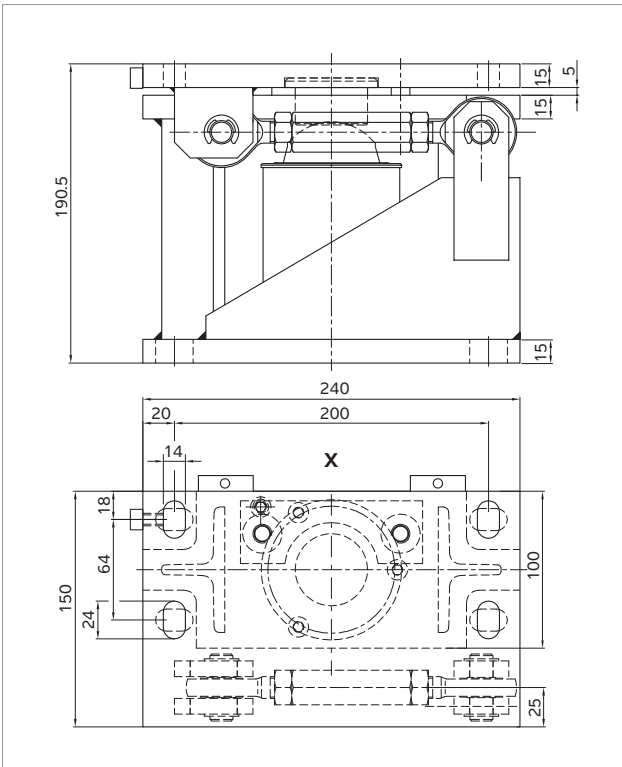
Mounting kit PR 6001/10N+S



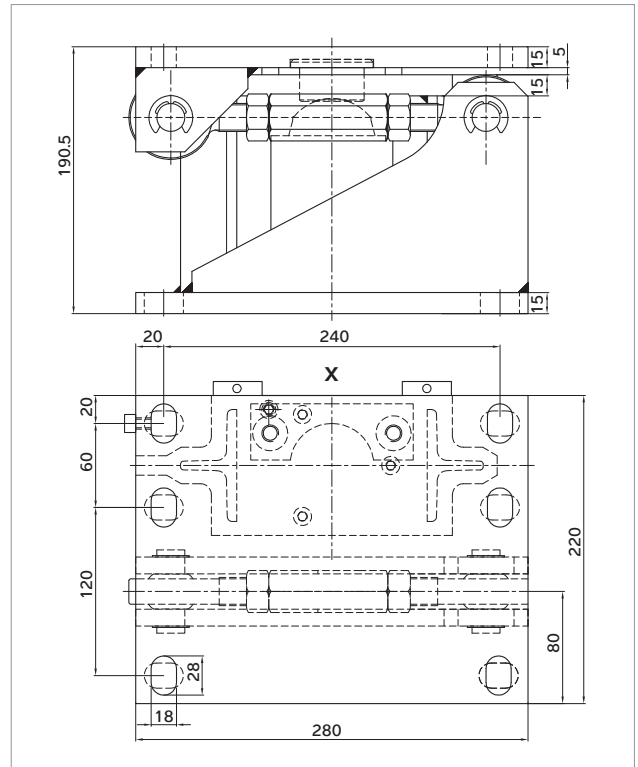
Mounting kit PR 6001/20N+S



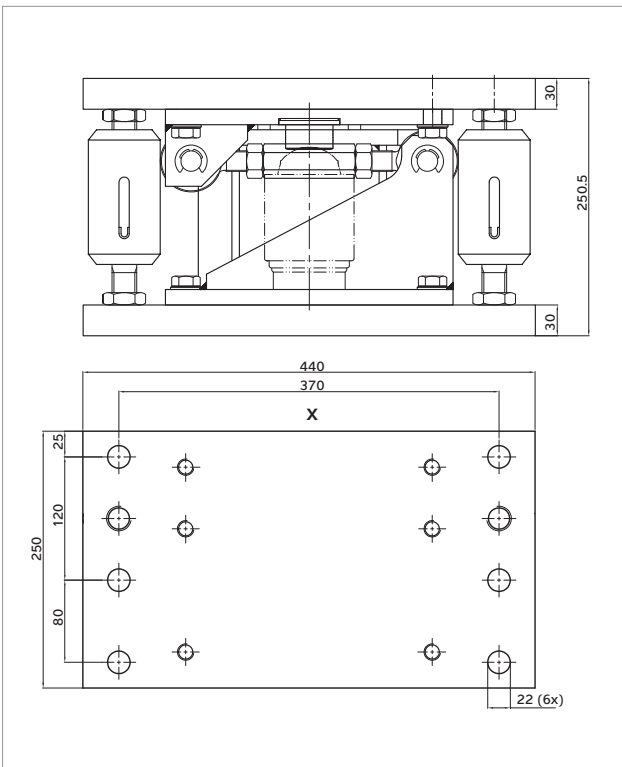
Mounting kits PR 6001/30N, PR 6001/31N



Mounting kit PR 6001/11N+S

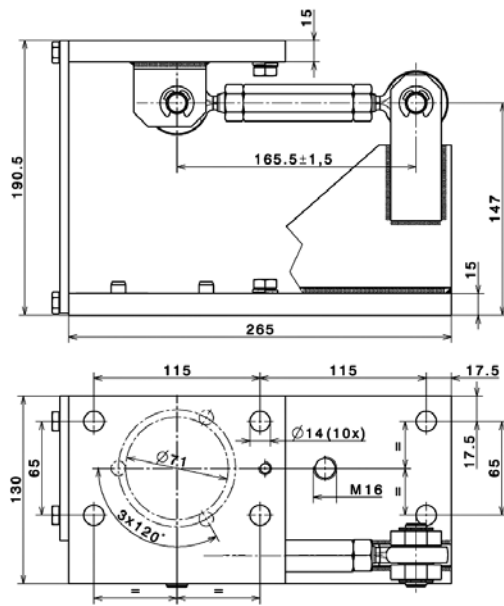


Mounting kit PR 6001/21N+S

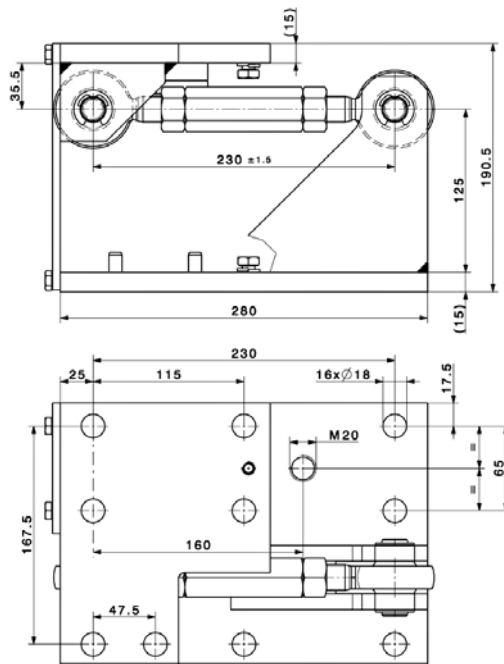


Mounting kit PR 6001/26N

Mounting kit PR 6143

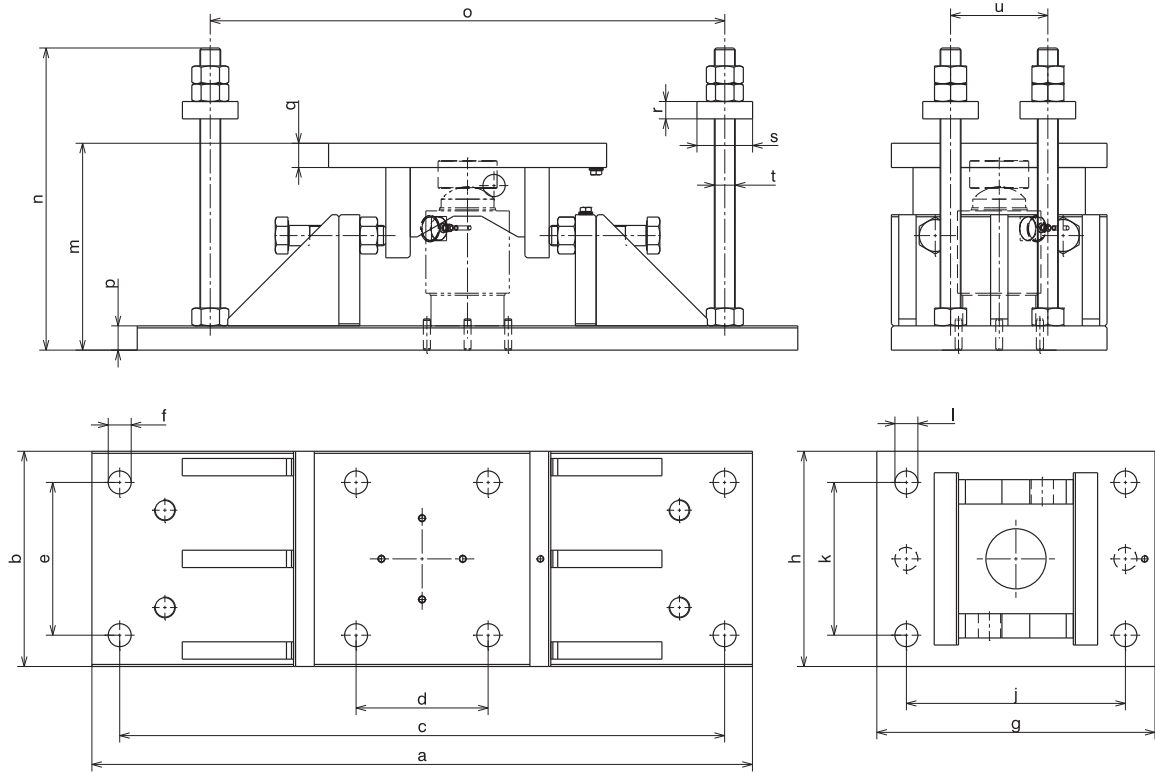


Mounting kit PR 6143/00N+S



Mounting kit PR 6143/10N+S

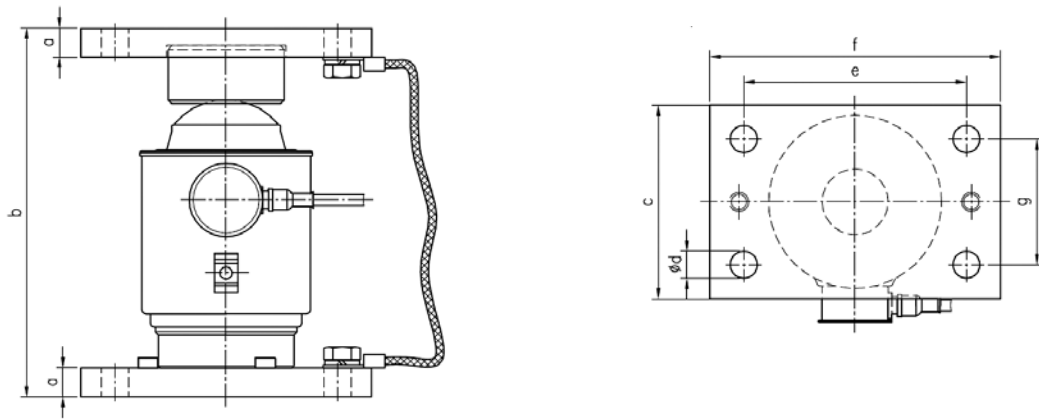
Mounting kit PR 6144



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

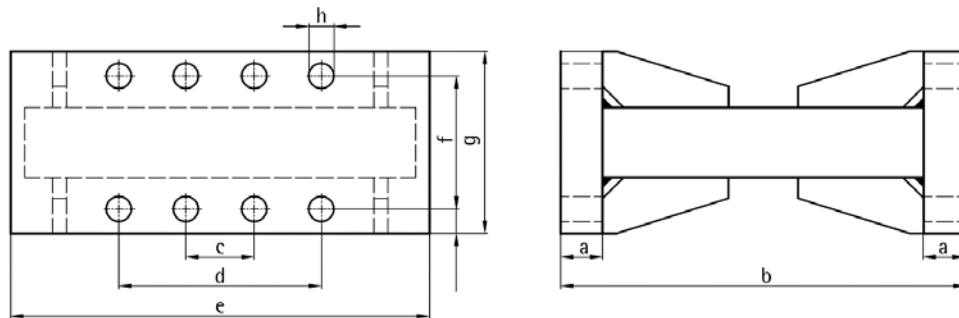
Mounting kit PR 6145/xx



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

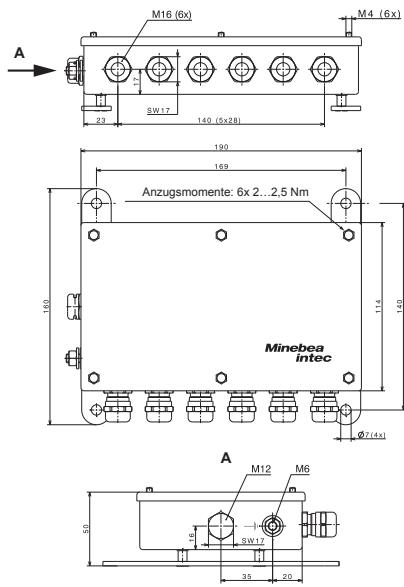
Fixed bearing PR 6101/xx



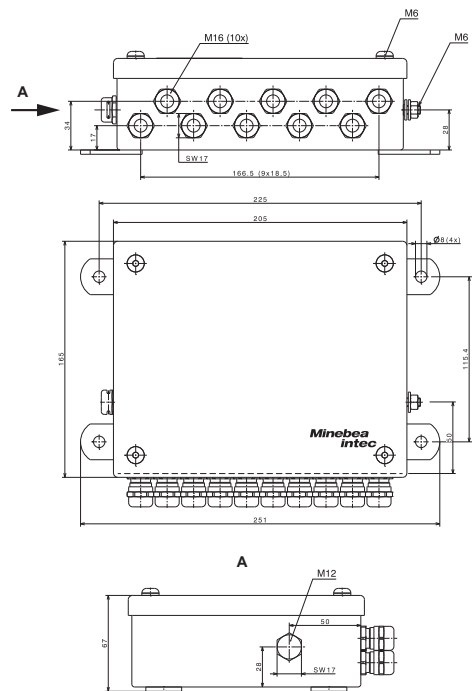
Model	a	b	c	d	e	f	g	h
PR 6101/53	15	190.5	-	115	150	65	100	14 (4×)
PR 6101/24	15	190.5	-	115	150	65	100	14 (4×)
PR 6101/54	15	190.5	115	199	250	65	100	14 (8×)

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

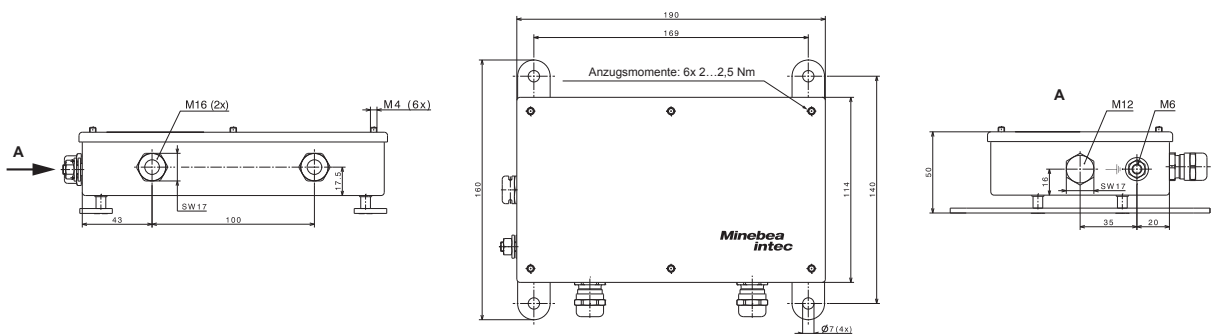
Cable junction box PR 6024



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



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	940520403220
PR 6204/5tC3	940520403250
PR 6204/10tC3	940520403310
PR 6204/25tC3	940520403325
PR 6204/50tC3	940520403350
PR 6204/25tC6	940520406325
PR 6204/50tC6	940520406350

Cable junction boxes

Type	Order number
PR 6024/68S	940536024684
PR 6024/64S	940536024644

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:



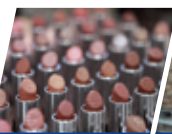
Food and beverages



Pharmaceutical



Agribusiness



Cosmetics



Building materials



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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