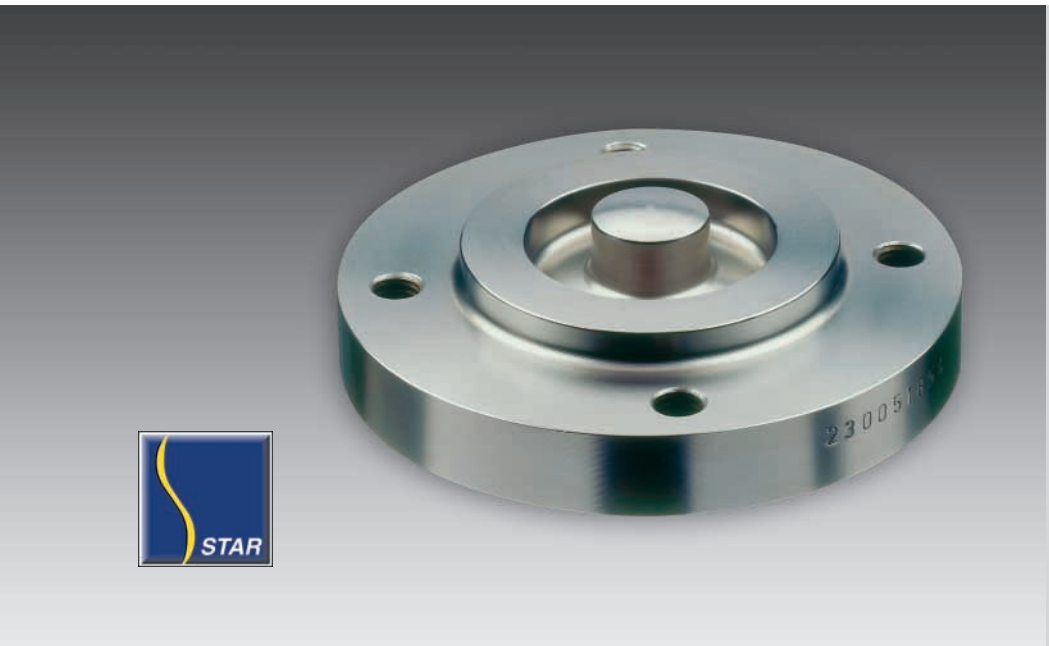
PR 6251

PanCake® Level Sensor



500 kg... 16 t L/LA/LE/LAC

- Easy mounting
- Stainless steel construction
- Hermetically welded sealed, IP68 (depth of 1.5m for 10,000 hrs.), IP 69K
- Ex-version available (LE)
- Direct 4... 20 mA output (LA)
- Only 25/35 mm installation height
- Application
  - Level control for liquid and bulk materials

Product Profile

The PR 6251 range of load cells is specially designed for easy weighing of silos and horizontal tanks.
The unique design principle ensures a very compact construction.
As a result, existing applications can also be upgraded very easily.
The range distinguishes itself above all for its unmatched reliability, robustness and stability, which enable trouble-free operation without adjustment, year after year.

Special measuring element geometry ensures that the transmission of force into the sensor is always at the optimum level.
This minimizes the effect on measurement accuracy whilst a high overload range, high repeatability and good linearity are maintained.
There is a particularly wide working temperature range attributable to special resistance strain gauge technology. The hermetically sealed enclosure and special TPE cable allow the unit to be used even under extreme operating conditions in harsh production environments.

The entire measurement chain can be calibrated without the use of a reference weight.
A version is also available with a direct output of 4...20 mA. This facilitates easy and cost-effective integration into an existing application.
An explosion-proof (Ex) version of this range of load cells is also available, as an option, for use in intrinsically safe environments.

Load cell construction
Hermetically sealed, welded stainless steel construction, filled with Polyurethane

Material
500 kg... 10 t 1.4021 (DIN 17440),
420 S 37 (B.S.)
16 t 1.4542 (DIN 17440),
S 604/S 622 (B.S.), 17-4 PH (Int.)

Protection
IP68, IEC 529, equivalent to NEMA 6.
The load cell can be submerged in water to a depth of 1.5 m for 10,000 hours.

Cable
Robust, flexible, screened
Sheath: Thermopl. Elastomere,
Colour: grey (LE: blue, LA/LAC: green)
Diameter: 5 mm, wires 4 x 0.35 mm^2
Length: 5 m

Bending radius
Fixed installation: ≥ 50mm
Flexible installation: ≥ 150mm

Certificate of conformity
Feature:
II 1G EEx ia IIC T6, II 1D IP65 85°C
Registration number:
PTB 02 ATEX 2059, TÜV 03 ATEX 2301x

Technical Data			**L/LE**	**LA/LAC**	
Accuracy class			0.5	0.5	%
Minimum dead load	lowest limit of specified measuring range	E_{min}	0	5	% E_{max}
Rated capacity	highest limit of specified measuring range	E_{max}	s. table	s. table	
Safe overload	upper limit for measurements	E_u	150	120	% E_{max}
Destructive load	danger of mechanical destruction	E_d	300	300	% E_{max}
Rated output	relative output at nominal load	C_n	2.0	16 mA	mV/V
Tolerance on rated output	permissible deviation from rated output	d_c	< 4	< 4	% C_n
Tolerance on zero signal	load cell output signal under unloaded condition	S_{min}	< 4	4 mA	% C_n
Repeatability error	max. change in load cell output for repeated loading	ε_R	< 0.1	< 0.1	% C_n
Creep, during 30 min	max. change in load cell output under nominal load	d_{cr}	< 0.1	< 0.1	% C_n
Non-Linearity	max. deviation from best straight line through zero	d_{Lin}	< 0.25	< 0.25	% C_n
Hysteresis	max. difference in load cell output when loading from zero to nominal load and unloading back to zero	d_{hy}	< 0.15	< 0.15	% C_n
Temperature effect on zero	max. change of S_{min}/10 K D T over B_T referred to C_n	TK_{Smin}	< 0.15	< 0.15	% C_n/10K
Temperature effect on output	max. change of C /10 K D T over B_T referred to C_n	TK_c	< 0.1	< 0.1	% C_n/10K
Input impedance	between supply terminals	R_{LC}	645 ± 60	-	Ω
Output impedance	between measuring terminals	R_O	635 ± 15	-	Ω
Insulation impedance	between measuring circuit and housing 100 V_{DC}	R_{IS}	> 5,000	-	MΩ
Recommended supply voltage	to hold the specified performance	B_u	4... 24	20... 28	V
Max. supply voltage	permissible for continuous operation without damage	U_{max}	25	25	V
Nominal ambient temp. range	to hold the specified performance	B_T	-10... +70	-10... +55	° C
Usable ambient temp. range	permissible for continuous operation without damage	B_{Tu}	-30... +95	-30... +70	° C
Storage temperature range	Transportation and storage	B_{Tl}	-40... +95	-40... +80	° C
Permissible eccentricity	permissible displacement from nominal load line	S_{ex}	10	10	mm
Vibration resistance	resistance against oscillation (IEC 68-2-6 Fc)	-	20 g, 100 h, 10... 150 Hz	20 g, 100 h, 10... 150 Hz	
Air pressure effects	influence of ambient air pressure on S_{min}	PK_{Smin}	≤ 20	≤ 20	g/kPa
Nominal deflection	max. elastic deformation under nominal load	s_{nom}	up to 2 t <0.1/ 16 t < 0.2 mm	up to 2 t <0.1/ 16 t < 0.2 mm	

Definitions to VDI / VDE 2637
The technical data given here serve only as a product description and must not be interpreted as guaranteed characteristics in the legal sense.

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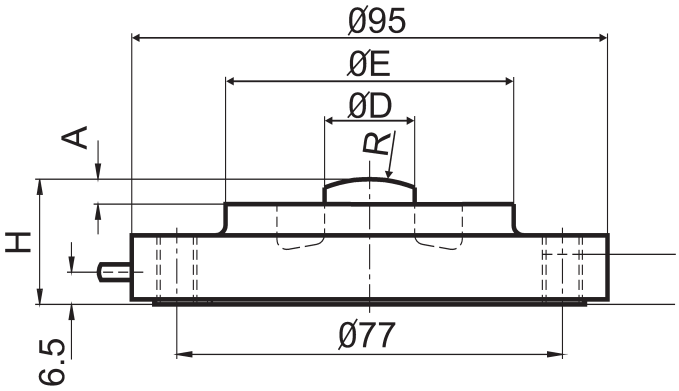
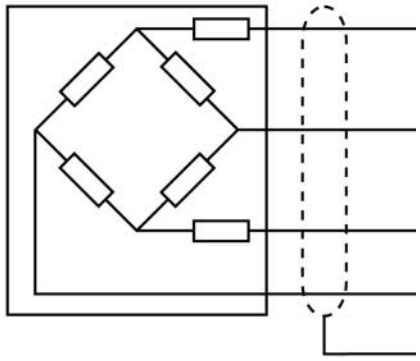
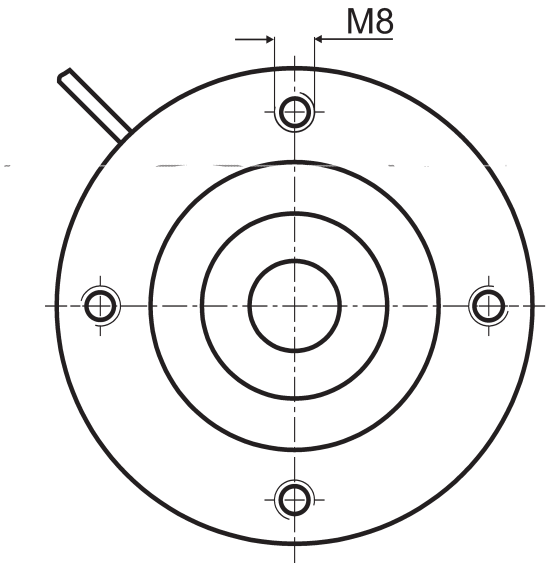
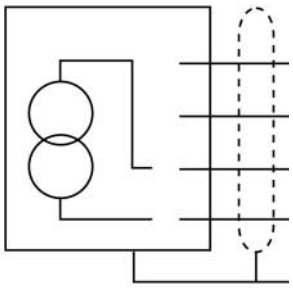








Dimensions in mm

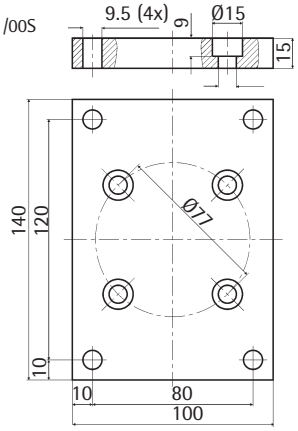
Order information

Type	Nominal Load E_{max}	Version	Packing Size mm	Weight gross/net	Dimensions (mm) A	D	E	H	R
PR 6251/52	500 kg	..L/LA/LE/LAC	220 x 215 x 135	1.2 kg/0.9 kg	5	18	57.5	25	025
PR 6251/13	1 t	..L/LA/LE/LAC	220 x 215 x 135	1.2 kg/0.9 kg	5	18	57.5	25	025
PR 6251/23	2 t	..L/LA/LE/LAC	220 x 215 x 135	1.2 kg/0.9 kg	5	18	57.5	25	035
PR 6251/33	3 t	..L/LA/LE/LAC	220 x 215 x 135	1.2 kg/0.9 kg	5	18	57.5	25	050
PR 6251/53	5 t	..L/LA/LE/LAC	220 x 215 x 135	1.2 kg/0.9 kg	5	18	57.5	25	050
PR 6251/14	10 t	..L/LA/LE/LAC	220 x 215 x 135	1.4 kg/1.1 kg	8	21.7	57.5	35	070
PR 6251/24	16 t	..L/LA/LE/LAC	220 x 215 x 135	1.4 kg/1.1 kg	5	23	67	35	100

Further Options

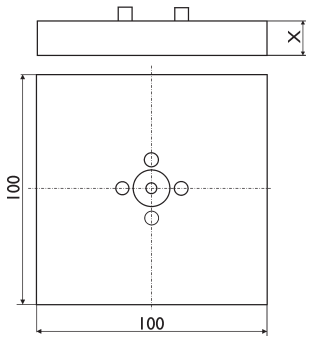
Type	Description	Dimensions W x H x D	Order numbers
PR 6051/10S	Baseplate for 500 kg – 5 t	100 x 100 x 15	9405 360 51102
PR 6051/11S	Baseplate for 10 t – 16 t	100 x 100 x 20	9405 360 51112
PR 6051/00S	Transition plate for 500 kg – 16 t	140 x 100 x 15	9405 360 51002

Transition plate PR 6051/00S



Dimensions in mm

Base plate
PR 6051/10S (500kg... 5t)
PR 6051/11S (10t... 16t)



Dimensions in mm

PR6130/08	Plastic Cable junction box	for all industrial applications, max. 8 load cells	250 x 180 x 90mm	9405 361 30081
PR6130/04	Cable junction box	Aluminium, grey painted, IP 68, for all industrial applications, max. 4 load cells	175 x 80 x 57mm	9405 361 30041
PR6130/64	Stainless steel cable junction box	material stainless steel 1.4301, IP 68, IP 69K, for all industrial, intrinsically safe and W&M applications, max. 4 load cells	195 x 114 x 59mm	9405 361 30642
PR6130/68	Stainless steel cable junction box	material stainless steel 1.4404, IP 68, for all industrial, applications, max. 8 load cells	200 x 160 x 60mm	9405 361 21682
PR6135	Extension cable	for all applications	D = 9mm	9405 361 35. . 2
PR6135/..A	Extension cable, armoured	for all applications, grey	D = 13mm	9405 361 35. . 9
PR6136	Extension cable	for intrinsically safe applications, blue	D = 11mm	9405 361 36. . 2
PR6136/..A	Extension cable, armoured	for intrinsically safe applications, blue	D = 13mm	9405 361 36. . 9
PR6151/05C1	Connection cable	with 1 connectors 5m		940536151051
PR6151/05C2	Connection cable	with 2 connectors 5m		940536151052
PR6151/11C1	Connection cable	with 1 connectors 10m		940536151101
PR6151/11C2	Connection cable	with 2 connectors 10m		940536151102
PR6151/21C1	Connection cable	with 1 connectors 20m		940536151201
PR6151/21C2	Connection cable	with 2 connectors 20m		940536151202
PR6151/31C1	Connection cable	with 1 connectors 30m		940536151301
PR6151/31C2	Connection cable	with 2 connectors 30m		940536151302
PR6151/51C1	Connection cable	with 1 connectors 50m		940536151501
PR6151/51C2	Connection cable	with 2 connectors 50m		940536151502
PR6051/02	Connection unit	for connection of 1 or 2 load cells with a digital display in field housing		940836051021

Specifications subject to change
without notice.
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