



sartorius

PR 1250 LevelMaster

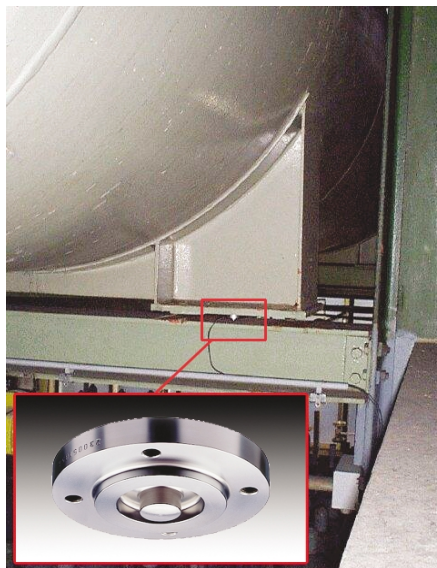


- Complete System for typical level control applications
- Particularly easy to install and to commission: „Plug-and-Weigh“
- 100 % Maintenance free
- Accuracy not influenced by product
- Non-intrusive
- Robust and reliable
- Very economic
- Easy to retrofit
- For virtually all vessels with 3 or 4 legs
- Patent pending DE 101 50 641 A1

Product profile

The LevelMaster System PR 1250 is specifically designed for typical level control applications in tanks and silos. It is easy to operate and requires virtually no maintenance.

The ultra low-profile design of the PanCake Level Sensors make them ideal for retrofitting of existing tanks and silos. Typical system accuracy is in the range of 0.5 % to 2 %. The combination of sensor and indicator allow a calibration of the system without moving a single test weight (Smart Calibration). The PanCake LevelCell is hermetically sealed to IP 68 standards and keeps its calibration for many years without any drift or the need for recalibration. The indicator is protected by a robust field housing and sealed to IP65 standard.

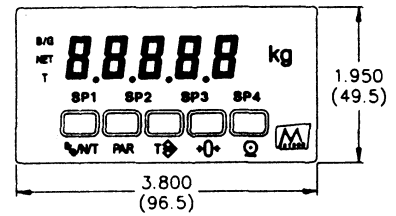
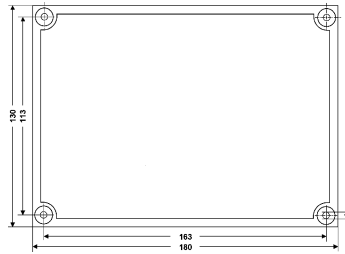


Due to the gravimetric measuring principle the accuracy is totally unaffected by the product in the vessel. Whether liquids or solids, whether dust or foam- the sensors reliably indicate the correct content. As the sensors are not in contact with the product this method completely avoids any contamination of the vessel contents or mechanical or chemical abrasion of the sensors by the product.

The simple mechanical application of the PanCake LevelCell provides perfect results with many tank shapes and sizes.

The complete system consists of several components that are:

- Indicating unit PR 1250 in IP65 field housing
- Connection Module "Plug-and-Weigh"
- 1 or 2 PanCake LevelCells PR 6251 with integrated cable and plug
- Extension cable with two plugs (5... 50 m)



Digital display in field housing:

The indicating unit of the LevelMaster System is a combination of a modern digital industrial process indicator and a robust IP 65 field housing. Both components are also available separately.

Power Supply: 85-250 V \sim , 50/60 Hz
 Electrical protection class: II
 Integrated Sensor Supply: 24 V =, 100 mA max.
 Power Consumption: 15 V_A max.
 Depth, including transparent lid: 150 mm
 Operating Temperature Range: 0... +40° C
 Storage Temperature Range: -40... +85° C
 Ingress protection: IP 65

Digital Indicator

The digital process indicator is compact and precise instrument. It allows adjustment of zero signal and span. Additional function like min/max peak detection is available. Optional input/output cards are available to tailor the instruments to the specific requirements of the individual application. A choice of limits (relay or transistor), serial interfaces (RS-232 or RS-485) or an analogue output card (0/4... 20 mA and 0/2... 10 V) provide the necessary flexibility for easy integration into existing processes. Weight < 500 g

Technical Data for Digital display in field housing

Display settings

Display range: -19,999 to 99,999
 Dezimal point: 0 to 0.0000
 Accuracy at 18-28° C: 0.02 %
 Accuracy at 0-50° C: 0.12 %

Display

5-digit, 14 mm high red LED,
 Unit user selectable

Power supply

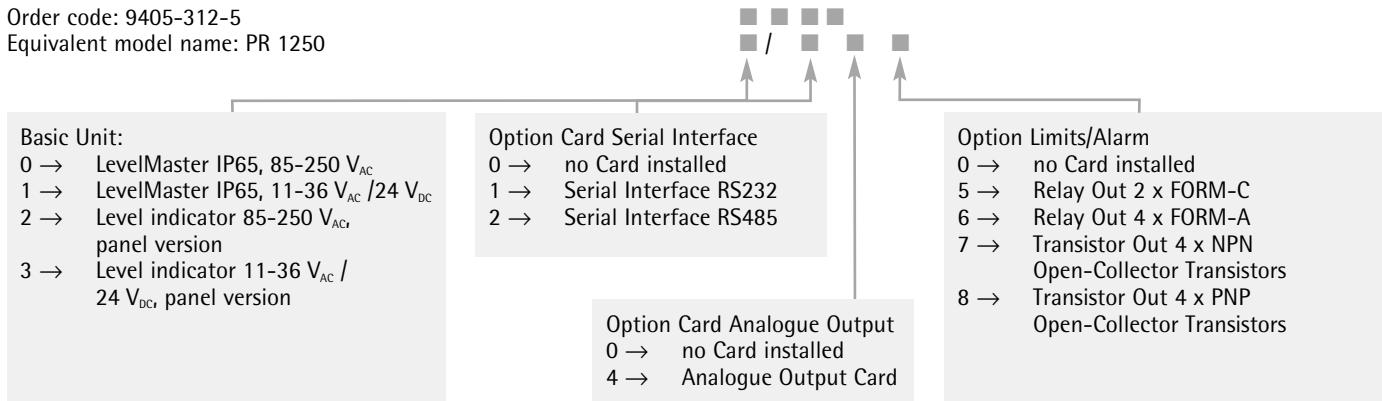
85 to 250 V_{AC} 50/60 Hz 15 V_A
 Option: 11 to 36 V_{DC}, 11 W or
 24 V_{AC}, +/-10 %, 50/60 Hz, 15 V_A

Ingress Protection

Front splash proof and dust proof to IP 65

Order Information

Order code: 9405-312-5
 Equivalent model name: PR 1250



Serial Interfaces RS 232 (PR 1256/31) or RS 485 (PR 1256/32)

Fully galvanically isolated from sensor and other I/O circuits
 configuration: Databits: 7/8,
 Baudrate: 300-19,200, Parity:
 none/odd/even
 Bus Address: selectable 0-99;
 max. 32 Indicators (RS 485)
 Max cable length: RS 232: up to 15 m
 RS 485: up to 1,200 m

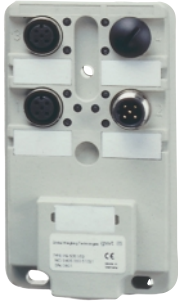
Option cards for indicator

Analogue output PR 1256/20
 2 Analogue Outputs:
 0/4-20 mA or 0/2-10 V_{DC}
 Accuracy: 0.17 % FSD (18 to 28° C)
 Resolution: 1/3500

Relais Output PR 1256/10

Type: 2 FORM-C Relays
 Max. current: 5 A at 120/240 V_{AC} or 28 V_{DC}
 Limit alarm Gross/Net user selectable

Connection Module PR 6051/02



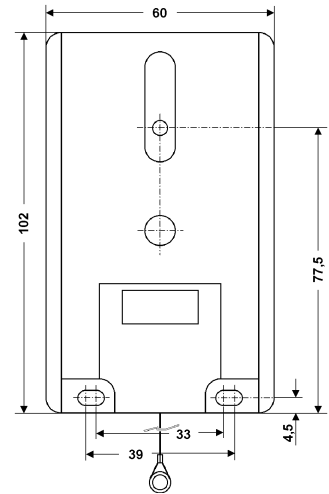
With the connection module all components are optimal connected. All system components are fitted with plugs /bushings. Over integrated LED's you can control the right connection and working of all components. A mix up of the connections is impossible because the plugs/bushings are mechanically coded.

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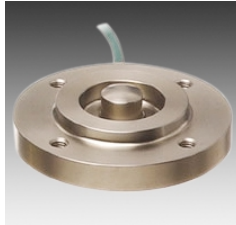
This system is right for one or two level sensors with integrated amplifier and switches automatically between 2... 10 mA/ 4... 20 mA according to the number of sensors. The connection to the indicating unit is realized with assembled feed lines.

Advantages of the connection module:

- easy to connect without any soldering in the field
- wrong connection of the wires is nearly impossible
- easy test of the system
- easy exchange of components with out any wiring knowledge



"Level-by-Weight"-Sensor

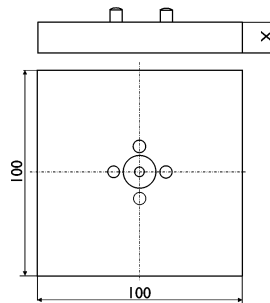


Type: PanCake, Optimized Level-sensor for fill level measuring of vessels. Easy mounting at one or two vessel feet at smallest height

- easy mounting
- only 25/35 mm installation height
- hermetically welded IP 68 (NEMA 6)
- full stainless steel construction
- direct 4... 20 mA output

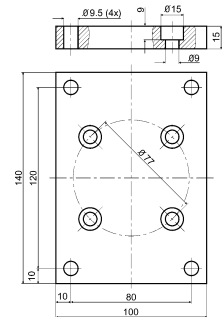
Base Plate

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



Transition Plate

PR 6051/00S



Technical Data

			LA/LAC	
Accuracy class			0.5	%
Minimum dead load	lowest limit of specified measuring range	E_{min}	5	% E_{max}
Rated capacity	highest limit of specified measuring range	E_{max}	s. order data P. 4	
Safe overload	upper limits for measurement	E_u	100	% E_{max}
Destructive load	danger of mechanical destruction	E_d	300	% E_{max}
Tolerance on rated output	permissible deviation from rated output	d_c	< 4	% C_n
Repeability error	max. change in load cell output for repeated loading	ϵ_R	< 0.1	% C_n
Creep, during 30 min.	max. change in load cell output under nominal load	d_{cr}	< 0.1	% C_n
Non-Linearity	max. deviation from best straight line through zero	d_{lin}	< 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	% C_n
Nominal ambient temp. range	to hold the specified performance	B_T	-10... +55	° C
Usable ambient temp. range	permissible for continuous operation without damage	B_{Tu}	-30... +70	° C
Permissible eccentricity	permissible displacement from nominal load line	S_{ex}	10	mm
Vibration resistance	resistance against oscillation (IEC 68-2-6 Fc)	-	20 g, 100 h, 10... 150 Hz	
Air pressure effects	influence of ambient air pressure on S_{min}	PK_{Smin}	≤ 20	g/kPa
Nominal deflection	max. elastic deformation under nominal load	s_{nom}	up to 10 t < 0.1/16 t < 0.2	mm

Definitions acc. VDI /VDE 2637

Recommended preference types, for most applications:

Type	Description	Order code
PR 1250/000	Digital indicator in field housing, 85–250 V _{AC} , without options	9405 312 50000
PR 1250/045	Digital indicator in field housing, 85–250 V _{AC} , with options: Analogue output and relay card with 2 x changeover contacts	9405 312 50045
PR 1250/105	Digital indicator in field housing, 85–250 V _{AC} , with options: Serial interface RS232 and relay card with 2 x changeover contacts	9405 312 50105
PR 1250/205	Digital indicator in field housing, 85–250 V _{AC} , with options: Serial interface RS232 and relay card with 2 x changeover contacts	9405 312 50205
PR 1252/000	Digital indicator, 85–250 V _{AC} , without options	9405 312 52000

Order codes for Level Sensor

Type	Description	Order code	Type	Description	Order code
PR 6251/52LAC	PanCake 500 kg with fitted plug	9405 551 19150	PR 6251/53LAC	PanCake 5000 kg with fitted plug	9405 551 19250
PR 6251/13LAC	PanCake 1000 kg with fitted plug	9405 551 19210	PR 6251/14LAC	PanCake 10000 kg with fitted plug	9405 551 19310
PR 6251/23LAC	PanCake 2000 kg with fitted plug	9405 551 19220	PR 6251/24LAC	PanCake 16000 kg with fitted plug	9405 551 19316
PR 6251/33LAC	PanCake 3000 kg with fitted plug	9405 551 19230			

Order code for additional option cards:

Type	Description	Order code
PR 1256/31	RS 232 serial interface (TXD, RXD, COM)	9408 800 30311
PR 1256/32	RS 485 serial interface (A+, B-, COM)	9408 800 30321
PR 1256/20	Analogue output card, 2 outputs 0/4–20 mA, 0–10 V	9408 800 30201
PR 1256/10	Relay card with 2 x changeover contacts (FORM C)	9408 800 30101
PR 1259/000	IP 65 field housing only without digital indicator	9405 312 59000

Connection Module

Type	Description	Order code
PR 6051/02	Connection module for 1 or 2 sensors	9405 360 51021
PR 6051/01	Connection cable for direct connection for only 1 sensor to digital display in Field housing	9405 360 51011

Connection Cable

The connection cable is used to link the indicating unit to the connection module. Two types are available: C2 with 2 connectors and C1 with 1 connector. The C1 type has to be chosen if the panel meter without the field housing is used instead of the complete indicating unit!

Connection cable with two plugs, to connect connection module with Digital display in field housing.

Type	Description	Order code
PR 6151/05C2	Connection cable 5 m	9405 361 51052
PR 6151/11C2	Connection cable 10 m	9405 361 51102
PR 6151/21C2	Connection cable 20 m	9405 361 51202
PR 6151/31C2	Connection cable 30 m	9405 361 51302
PR 6151/51C2	Connection cable 50 m	9405 361 51502

Connection cable with one plug, to connect connection module with Digital indicator.

Type	Order code	Description
PR 6151/05C1	9405 361 51051	Connection cable 5 m
PR 6151/11C1	9405 361 51101	Connection cable 10 m
PR 6151/21C1	9405 361 51201	Connection cable 20 m
PR 6151/31C1	9405 361 51301	Connection cable 30 m
PR 6151/51C1	9405 361 51501	Connection cable 50 m