



Fields of application

> Level measurements in vessels, tanks, water technology plants

Description

The economical level probe DP-LM has been designed for measuring standard levels and filling levels in water plants, in oil or other non-aggressive mediums. Measurements can be carried out in a water depth of up to 250 meters.

Optionally, a version of the level probe covered with platinum membrane or other special coating is available for measurements in aggressive liquids.

The level probe can be handled easily, it is very stable and is delivered with an stainless steel casing and connected cable (integrated pressure compensation).

2 variants of cap configuration are available (as weight made of steel and as plastic cap).

The transmitters are characterized by a good long-term stability. Optionally they can be delivered with 0.25 % FS or 0.1 % FS.

Options

- PTFE cable
- overvoltage protection for lightning protection
- temperature measurement

Safety information

During installation, putting into service and operation of these pressure sensors, it is necessary to observe the relevant safety regulations that are in force in the country of the user (as for example, VDE 0100).



Technical data

Measuring range (bar) from 1 m W.G. up *)	0,10 16,0	0,25 25,0	0,40	1,0	1,6	2,5	4,0	6,0	10,0	
Overload range *)	2 times from 500 bar up: 1.2 times									
Bursting pressure *)	3 times from 500 bar up: 1.5 times									
Pressure type	 relative pressure absolute pressure 									
Pressure connection *)	G 1/4 " form E with weight									
Materials used										
Material of parts with contact to measuring medium:	parts are made from CrNiCuNb 17-4 PH , silicon, O-ring > stainless steel for > 1 bar > plastics for < 1 bar hermetically tight welded									
Sensor element:	stainless steel membrane (without oil receiver) thin-film technology (Poly-Si on SiO ₂)									
Weight	550 g (without connecting cable)									
Cable	PUR with pressure compensating tube, electr. connection with Deutsch-plug, mixed signal ASIC with PIC-controller									
Electrical parameters										
Output signals *)	$ \frac{A}{V_{s} = 12} $	mA 30	4 V _s = 12	B 20 mA 2 30 V		C 0 10 V _s = 12	0 V 30 V	1 . V _s = 1	D 5V 230V	
	/ 20 m	A tors	20 3 cond) mA luctors	3	conduc	tors	3 cone	ductors	
Insulation resistance at 50 V	100 M Ω							1		
Linearity error at RT *)	± 0.5 % FS ≻ max. (with setting of boundary points) 0.25 % FS - BFSL (PWM - 500 Hz, f = 0.2 kHz to 1.2 kHz)									
Ambient values										
 compensated range storage temperature temperature of medium 	- 10 + 65 °C - 30 + 80 °C + 5 + 70 °C									
Total error temperature *) ****) ****)	-10 +65 °C typ. <± 0.7 % FS max. 1% FS									
Electromagnetic compatibility Testing acc. to DIN EN 55022 and DIN EN 61000-4-3	25 V / m									
Type of protection	IP 68 up to	IP 68 up to 250 m submergence								
Special features	load-dump protection EMV-proof up to 300 V / m									

*) others on request
 ***) integral deviation of lineriaty (FS = Full Scale, BFSL = Best Fit Straight Line)
 ***) total error contains non-linearity, hysteresis, reproducibility and temperature influence
 ****) special versions with optionally higher accuracy on client's request



Electrical Mounting

- All wiring should conform to local codes and must be carried out by authorised personal only. Keep high and low voltage wiring separated. For applications in critical industrial environment use special cables.
- Observe without fail the connecting information labeled on the transmitter or laid down in the operating instructions while connecting the pressure transmitter.

В

- Ensure that the cables routed without crushing.



2-wire current transmitter Voltage measurement across a resistor





2-wire current transmitter Current measurement

R_v =< (U_B-10 V) / 20 mA



D



3-wire current transmitter Voltage measurement across the load resistor

$R_v + R_M = < (U_B - 9 V) / 28 mA$

- DTM pressure transmitter (DP-LM)
- R_v serial resistor (advisable)
- R_M Resistor for measurement
- U_B Batterie voltage
- R_L load resistor

DTM Out Rload

Pressure transmitter with voltage output Voltage measurement across the load resistor

R_L >= 4,7 kOhm für DST-3x.x R_L >= U_{OUTmax} / 2 mA für DST-20.x

Cable colors to type Childlife

Default: (A) + white,- brown, yellow / green housing (B, C,D) + white, - brown, out yellow, green housing



Application



Cable Connection:

(A) DP-LM 10. 0 4...20 mA, 2 wires

(B,C,D) DP-LM 20.0 / 30.0, 3 wires



Errors excepted; subject to alterations in the sense of technical improvement.