SHRIDHAN®

Automate Your Field

HYDROSTATIC LEVEL TRANSMITTERS

HYDROSTATIC LEVEL TRANSMITTERS - HLX

APPLICATIONS

Liquid / continuous level measurement:

- Level control in pumping station
- Water treatment
- In a ballast water tank for ship building
- In the sewage sector
- In splash water containers for swimming pools
- In chloride-containing media

SPECIAL FEATURES

- Highly resistant to chemicals thanks to the titanium version
- Measuring ranges from 100 mbar relative pressure and 600 mbar
- Absolute pressure are available
- Proven piezoresistive silicon sensor
- Approval marks

BRIEF DESCRIPTION

The level probe is used for the continuous hydrostatic level measurement in ventilated tanks. Measuring is carried out unaffected by electrical medium features or any foam formation.

Approvals are needed for particular ship building requirements and explosion protection.

The level probe can be readily used in depths from as low as 1 mWs and has been designed for application in liquids with media containing chlorides. These may be found in ship building, swimming pools, or water and sewage water management.

The surrounding pressure is compensated for using a cable with an integrated pressure equalization hose. The cost-optimized titanium level probe with a front-flush membrane offers an alterative in highly viscous media. The screwable protective cap protects the membrane.

The level probe is equipped with a reverse-polarity protection mechanism which prevents incorrect polarity during startup.

Another benefit to the measuring system is the extensive range of accessories for an optimum design.

Hydrostatic Level Transmitters-HLX

CUSTOMER BENEFITS

- Improved plant availability
- Standardized signal processing
- Resistant to climate due to improved moisture and vibration protection
- Measurements in very harsh and highly viscous media thanks to the front-flush membrane
- Prevention of build up of resistance
- A complete solution for measurement points thanks to the extensive range of accessories
- Reverse-polarity protection mechanism

TECHNICAL DATA

GENERAL INFORMATION

Reference conditions	According to DIN 16086 and DIN 61298
Measuring principle	Piezoresistive sensor with titanium membrane
Pressure transfer medium	Synthetic oil
Admissible load changes	>10 million, 0°% to 100% measuring range
Mounting	Vertical / hanging from the cable

OUTPUT

Analog output Current Output 405	4 to 20mA, 2-wire HART & MODBUS(RS485) OPTIONAL
Step response t_{90}	2ms
Burden Current 4 to 20 mA, 2-wire	RL≤(UB-16 V) ÷ 0.022 A (Ω)

AUXILIARY POWER

Voltage supply U_B [a]	For basic type DC 16-28V Nominal 24V
Reverse voltage protection	Yes
Max. current conlsumption	23 mA
Electrical circuit	SELV

The voltage peaks must not exceed the specified voltage supply values!

CABLE

6-core, shielded cable with integrated pressure compensation hose, AWG 24 with ferrules

Material	
Outer sheath	FEP
Compensation hose	PA
Color	Black
Outer diameter	Approx. 8.4 mm
Conductor cross section	0.25 mm²
Bending radius	
Moving	min. 140 mm
Fixed	min. 70 mm
Tensile force	4000 N
Mass	≈90 g/m
Admissible temperatures	-40 to +70 °C (depending on the medium)
UV resistance	Yes, according to DIN ISO 4892-2

MECHANICAL FEATURES

Ensure the medium durability of the material	
Material	
Protective cap	PVC
Process connection	Titanium grade 2
Measuring membranes	Titanium grade 2
Case	Titanium grade 2
Shrink tubing	Polyolefin
Mass (without cable)	109 g
Diameter	27 mm

ENVIRONMENTAL INFLUENCES

Admissible temperatures		
Medium	0 to 50 °C The level probe must not freeze in the medium A restriction may be required depending on the medium.	
	Ignition protection type Gb	
	Temperature class	Ambient temperature TA
	T4	-40 to +85 °C
	T5	-40 to +70 °C
	T6	-40 to +55 °C
	Ignition protection type Db	
	Temperature class	Ambient temperature TA
	T 100 °C	40 to +85 °C
	T 85 °C	40 to +70 °C
	T 70 °C	40 to +55 °C
Storage	-20 to +70 °C, dry	
Electromagnetic Compatibility[a] Interference emission Interference immunity	 Class B[b] Industrial requirements	
Protection type[c]	IP68	

MEASURING RANGE AND ACCURACY

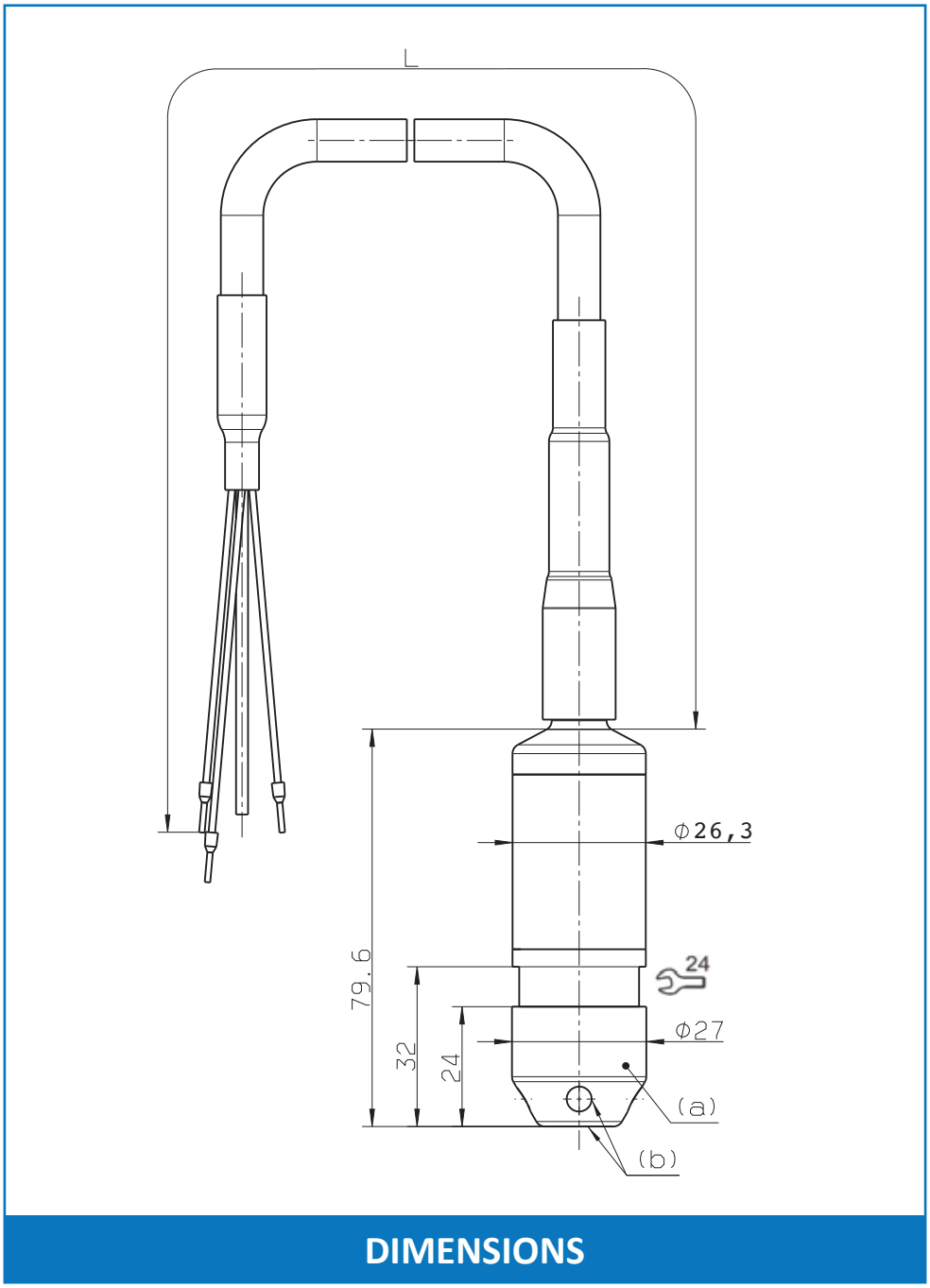
Measuring range bar 0	Linearitya % MSP[d]	Accuracy at 20 °Cc % MSP	10 to 50 °Cd % MSP	Long-term stabilityb % MSP per year	Overload capacity bar	Burst pressure bar
0 bar to 0.1 bar relative pressure	0.2	1.2	1.9	≤0.4	0.3	0.4
0 bar to 0.16 bar relative pressure	0.2	0.8	1.8		0.48	0.64
0 bar to 0.25 bar relative pressure	0.2	0.8	1.7	≤0.3	0.75	1
0 bar to 0.4 bar relative pressure	0.2	0.7	1.7		1.2	1.6
0 bar to 0.6 bar relative/absolute pressure	0.2	0.7	1.6	≤0.2	1.8	2.4
0 bar to 1 bar relative/absolute pressure	0.2	0.6	1.3		3	4
0 bar to 1.6 bar relative/absolute pressure	0.25	0.5	1.3		4.8	6.4
0 bar to 2.5 bar relative/absolute pressure	0.25	0.5	1.2		7.5	10
0 bar to 4 bar relative/absolute pressure	0.25	0.5	1.2		12	16
0 bar to 6 bar relative/absolute pressure	0.25	0.5	1.2		18	24
0 bar to 10 bar relative/absolute pressure	0.25	0.5	1		30	40

[a] Linearity according to limit point setting

[b] Includes: linearity, hysteresis, repeatability, deviation from measuring range start (offset), and measuring range end

[c] Includes: linearity, hysteresis, repeatability, deviation from measuring range start (offset) and measuring range end, thermal influences on measuring range start (offset), and measuring span

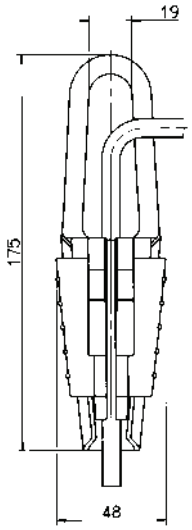
[d] MSP = measuring span



DIMENSIONS

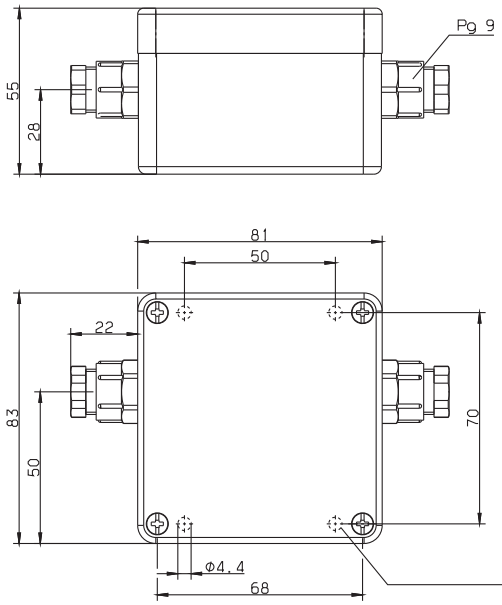
L	Cable length according to customer preference
(a)	Protective cap
(b)	5 bore holes for every Ø 5mn

Accessory Dimensions

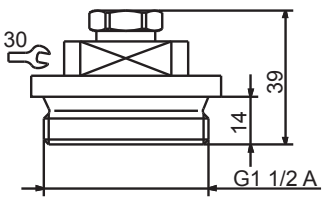


CABLE CLAMP

Terminal box with pressure compensation



(1) Fastening hole



SEALING SCREW

CONNECTION DIAGRAM

The connection diagram in the data sheet provides preliminary information about the connection options. For the electrical connection, only when the installation instructions or the operating manual. The knowledge and the correct technical compliance with the safety information and warnings contained in these documents are mandatory for mounting, electrical connection, and startup as well as for safety during operation.

CONNECTION	TERMINAL ASSIGNMENT
	
	Cable

4 to 20 mA, 2-wire

Rated voltage supply DC 24 V	U_B/S+[a] O V/S-	White Gray

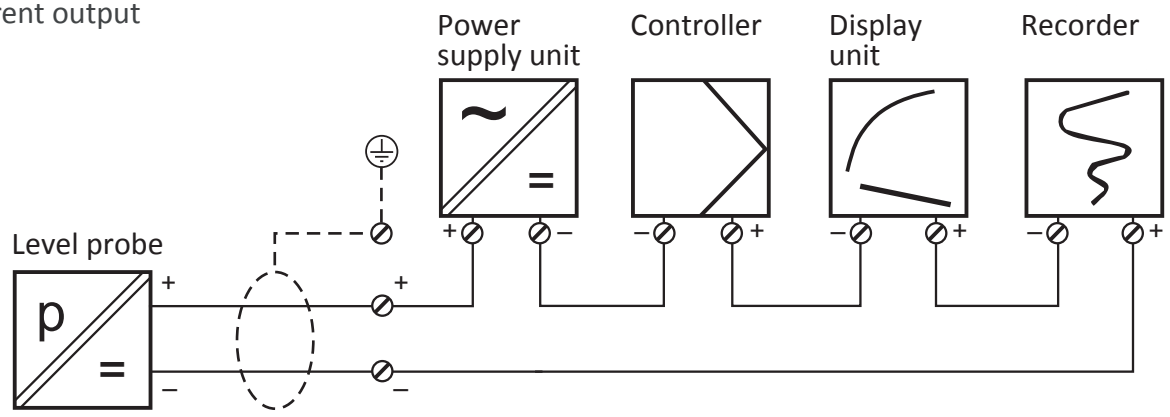
Shielding

Caution: Ground the device! Ground all connected devices (such as pumps and valves) to the same potential!	Black

[a] The voltage peaks must not exceed or fall below the specified voltage supply values!

CONNECTION EXAMPLE

Current output



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