Level Probe BLP2

The level transmitter BLP2 is designed for continuous level measurement in water or waste water applications.

Two versions are available:

- a) with ceramic sensor
- b) with stainless steel sensor

accuracy according to IEC 60770:

0.5 % FSO (ceramic)

0.1 % / 0.35 % / 0.5 % FSO ( stainless steel)

Suitable for all fluids which are compatible with media wetted materials. Different cable and elastomer matierals can be offered according to the customer-specific operating conditions.

#### **Features:**

Nominal pressure from 0 ... 4 mH₂O up to 0 ... 250 mH₂O (ceramic) from 0 ... 1 mH₂O up to 0 ... 250 mH₂O (stainless steel)

Output signals 2-wire: 4 ... 20 mA

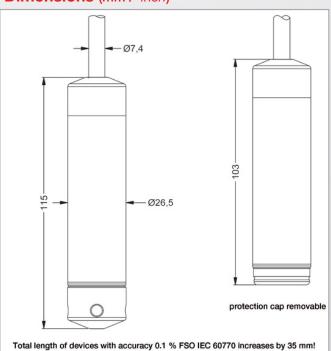
3-wire: 0 ... 20 mA / 0 ... 10 V

- ▶ Diameter 27 mm (ceramic), 26.5 mm (stainless steel)
- ▶ Good linearity
- Good long term stability

# **Applications**

Ballast containers Fuel and oil tanks Service and waste water tanks

# Dimensions (mm / inch)

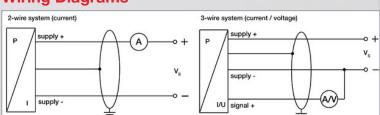




## **Connection Chart**

Pin configuration	Electrical connections Cable colors (IEC 60757)
Supply +	white
Supply –	brown
Signal + (only 3-wire)	green
Shield	green-yellow

## **Wiring Diagrams**



# Level

# Level Probe BLP2

#### Ceramic Sensor

### **Technical Data**

Stainless steel 1,4404 (316L)   FKM, EPDM   Ceramics Al <sub>2</sub> O <sub>3</sub> 96 %   POM   Protection caps:   Protection caps:   IP68	lecililical Data										
Measuring range:   Measuring range:   No.4   0.6   1   1.6   2.5   4   6   10   16   25	Seals: Diaphragm:	FKM, EPDM ceramics Al <sub>2</sub> O <sub>3</sub> 96 %									
Measuring range:   Nominal pressure PN [bar] rel.:   0.4   0.6   1   1.6   2.5   4   6   10   16   25   25   25   25   25   25   25   2	Protection class:	IP68									
Nominal pressure PN [bar] rel.:   Level [mH₂O]:   4	Weight (without cable):	approx. 250 g									
Output signal: Standard: Option 3-wire: 3-wire: 0 20 mA Option 3-wire:  \$\frac{2}{2}\text{-wire: 4 20 mA}\$ \$\frac{3}{2}\text{-wire: 10 mA}\$ \$\frac{1}{2}\text{-wire: 10 mA}\$ \$\frac{1}{2}\te	Level [mH <sub>2</sub> O]: Overpressure [bar]	4 2	6 2	10	16 4	25 4	40 10	60 10	100	160 40	250 40
Permissible load:		2-wire: 4 20 mA									
$ \begin{array}{c} \text{current 3-wire: } R_{\text{max}} = 500 \ \Omega \\ \text{voltage 3-wire: } R_{\text{min}} = 10 \ \text{k} \ \Omega \\ \hline \\ \text{Influence effects:} \\ \text{Supply:} \\ \text{Load:} \\ & \leq \pm 0.05\% \ \text{FSO} \ / \ 10 \ \text{V} \\ & \leq \pm 0.05\% \ \text{FSO} \ / \ \text{k} \Omega \\ \hline \\ \text{Response time}^1 \\ \hline \\ \text{Seponse time}^1 \\ \hline \\ Seponse time$	Accuracy:	≤ ±0.5%	6 FSO								
Supply:       ≤ ±0.05% FSO / 10 V         ≤ ±0.05% FSO / kΩ       ≤ ±0.05% FSO / kΩ         Response time¹       ≤ 10 msec         Electrical connection:       PVC (-5 70° C) grey         Cable with sheath material²:       PVR (-10 70°C) black         FEP³ (-10 70°C) black       FEP³ (-10 70°C) black         Auxiliary energy:       Operating voltage: V <sub>S</sub> = 8 32 V DC         Option 3-wire:       Operating voltage: V <sub>S</sub> = 8 32 V DC         Temperature error       (offset and span):         ≤ ±0.2 % FSO / 10 K in compensated range: -25 70 °C         Temperature range:       Operating temperature:         Operating temperature:       -10 °C +70 °C         Storage:       -10 °C +70 °C         Current consumption:       signal output current: max 25 mA signal output voltage: max. 7 mA         Mounting accessories (not included in the scope of delivery):       Mounting clamp Mounting flange for fixing submersible level transmitter made of stainless steel DN25 / PN40	Permissible load:	current 3-wire: $R_{max} = 500 \Omega$									
Electrical connection:  Cable with sheath material²:  PVC (-5 $70^{\circ}$ C) grey PUR (-10 $70^{\circ}$ C) black FEP³ (-10 $70^{\circ}$ C) black  Auxiliary energy: Standard: Operating voltage: $V_S = 8$ $32$ V DC Option 3-wire:  Option 3-wire:  Operating voltage: $V_S = 8$ $32$ V DC  V <sub>S</sub> = 14 $30$ V DC  Temperature error (offset and span):  ≤ ±0.2 % FSO / 10 K in compensated range: -25 $70^{\circ}$ C  Temperature range: Operating temperature: Storage:  Operating temperature: Storage:  -10 °C +70 °C -25 °C +70 °C  Current consumption: signal output current: max 25 mA signal output voltage: max. $7$ mA  Mounting accessories (not included in the scope of delivery): Mounting flange for fixing submersible level transmitter made of stainless steel DN25 / PN40	Influence effects: Supply: Load:										
Cable with sheath material <sup>2</sup> : $PVC (-5 70^{\circ} C) \text{ grey } PUR (-10 70^{\circ} C) \text{ black } FEP^3 (-10 70^{\circ} C) \text{ black } $ Auxiliary energy: $Standard: Operating voltage: V_S = 8 32 \text{ V DC}$ Option 3-wire: $V_S = 14 30 \text{ V DC}$ Temperature error (offset and span): $\le \pm 0.2 \% \text{ FSO } / 10 \text{ K}$ in compensated range: $-25 70 \% C$ $Temperature range: Operating temperature: -10 \% C +70 \% C$ Storage: $-10 \% C +70 \% C$ Current consumption: signal output current: max 25 mA signal output voltage: max. 7 mA  Mounting accessories (not included in the scope of delivery): Mounting flange for fixing submersible level transmitter made of stainless steel DN25 / PN40	Response time <sup>1</sup>	≤ 10 msec									
Standard: Option 3-wire: Operating voltage: $V_S = 8 \dots 32 \text{ V DC}$ $V_S = 14 \dots 30 \text{ V DC}$ Temperature error (offset and span): $\leq \pm 0.2 \text{ % FSO } / 10 \text{ K}$ in compensated range: $-25 \dots 70 \text{ °C}$ Temperature range: Operating temperature: Storage: Operating temperature: $-10 \text{ °C } \dots +70 \text{ °C}$ $-25 \text{ °C } \dots +70 \text{ °C}$ Signal output current: max $25 \text{ mA}$ signal output voltage: max. $7 \text{ mA}$ Mounting accessories (not included in the scope of delivery):  Mounting submersible level transmitter made of stainless steel DN25 / PN40	Electrical connection: Cable with sheath material <sup>2</sup> :	PUR (-10 70 °C) black									
(offset and span):  ≤ ±0.2 % FSO / 10 K in compensated range: -25 70 °C  Temperature range: Operating temperature: Storage:  -10 °C +70 °C -25 °C +70 °C  -25 °C +70 °C  Signal output current: max 25 mA signal output voltage: max. 7 mA  Mounting accessories (not included in the scope of delivery):  Mounting submersible level transmitter made of stainless steel DN25 / PN40											
Operating temperature: Storage:  -10 °C +70 °C -25 °C +70 °C  Current consumption:  signal output current: max 25 mA signal output voltage: max. 7 mA  Mounting accessories (not included in the scope of delivery):  Mounting flange for fixing submersible level transmitter made of stainless steel DN25 / PN40	Temperature error (offset and span):										
signal output voltage: max. 7 mA  Mounting accessories (not included in the scope of delivery):  Mounting clamp Mounting flange for fixing submersible level transmitter made of stainless steel DN25 / PN40	Operating temperature:										
delivery):  Mounting flange for fixing submersible level transmitter made of stainless steel DN25 / PN40	Current consumption:	_									
CE-conformity: EMC Directive: 2014/30/EU	Mounting accessories (not included in the scope of delivery):	Mounting flange for fixing submersible level transmitter made of stainless steel							eel		
	CE-conformity:	EMC D	irective: 2	2014/30/	EU						

<sup>&</sup>lt;sup>1</sup> accuracy according to IEC 60770 - limit point adjustment (non-linearity, hysteresis, repeatability)

 $<sup>^{\</sup>rm 2}$  shielded cable with integrated air tube for atmospheric pressure reference

<sup>&</sup>lt;sup>3</sup> do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected

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# Level Probe BL

#### Stainless Steel Sensor

# **Technical Data**

Materials: Housing: Seals: Diaphragm: Protection cap:	FKM, stainle POM-	stainless steel 1.4404 (316L) FKM, EPDM stainless steel 1.4435 (316L) POM-C												
Protection class:	IP68	IP68												
Weight (without cable):	appro	approx. 200 g												
Measuring range:														
Nominal pressure PN [bar] rel.:	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	25	
Level [mH <sub>2</sub> O]:	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	
Overpressure [bar]	0.5	1	1	2	5	5	10	10	20	40	40	80	80	
Burst pressure [bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120	
Output signal / Supply		2-wire: 4 20 mA 3-wire: 0 20 mA												
Accuracy: Standard: Option: Permissible load:	nomin all nor	nominal pressure < 0.4 bar: $\le \pm 0.5$ % FSO nominal pressure $\ge 0.4$ bar: $\le \pm 0.35$ % FSO all nominal pressure: $\le \pm 0.1$ % FSO, on request												
T CHINOSIDIC TOUGH	curren	current 2-wire: $R_{max}$ = [( $V_S$ - $V_S$ min) / 0.02 A] $\Omega$ current 3-wire: $R_{max}$ = 500 $\Omega$ voltage 3-wire: $R_{min}$ = 10 k $\Omega$												
Influence effects: Supply: Load:		$\leq$ ± 0.05% FSO / 10 V $\leq$ ± 0.05% FSO / k $\Omega$												
Long term stability:	≤ <b>±</b> 0.1	I% FSC	/ year	at refe	rence	condi	tions							
Response time <sup>1</sup>		≤ 10 msec (2-wire) ≤ 3 msec (3-wire)												
Electrical connection: Cable with sheath material <sup>2</sup> :	PUR (	PVC (-5 70° C) grey PUR (-10 70°C) black FEP <sup>3</sup> (-10 70°C) black												
Auxiliary energy: Standard: Option 3-wire:	ndard: Operating voltage: V <sub>S</sub> = 8 32 V DC													
Temperature error:														
Nominal pressure PN [bar] :		< 0.40 ≥ 0.40												
Tolerance band [% FSO]:		≤ ± 0.1 ≤ ± 0.75												
in compensated range [°C]:		070												
Temperature range: Operating temperature: Storage:		-10 °C +70 °C -25 °C +70 °C												
Current consumption:		signal output current: max 25 mA signal output voltage: max. 7 mA												
Mounting accessories (not included in the scope of delivery):	Mount	ting clar ting flan DN25 / F	ge for f	ixing s	ubme	rsible	level t	transn	nitter	made	of sta	inless	<b>3</b>	
CE-conformity:	EMC I	Directive	e: 2014/	/30/EU										

<sup>&</sup>lt;sup>1</sup> accuracy according to IEC 60770 - limit point adjustment (non-linearity, hysteresis, repeatability)

<sup>&</sup>lt;sup>2</sup> shielded cable with integrated air tube for atmospheric pressure reference

<sup>&</sup>lt;sup>3</sup> do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected

BLP2

# **Level Probe**

# **Order Code**

BLP2								Base model
								Sensor type
	С							Ceramic sensor 0.5% FSO
	Р							SS (Piezo) sensor 0.5/0.35% FSO
								Range
		mWs	bar					
		1	0.1					01 mWs (00.1 bar) - piezo sensor only
		1.6	0.16					01,6 mWs (00.16 bar) - piezo sensor only
		2.5	0.25					02,5 mWs (00.25 bar) - piezo sensor only
		4	0.4					04 mWs (00.4 bar)
		6	0.6					06 mWs (00.6 bar)
		10	1					010 mWs (01 bar)
		16	1.6					016 mWs (01.6 bar)
		25	2.5					025 mWs (02.5 bar)
		40	4					040 mWs (04 bar)
		60	6					060 mWs (06 bar)
		100	10					0100 mWs (010 bar)
		160	16					0160 mWs (016 bar)
		250	25					0250 mWs (025 bar)
								Electrical Connection
				PVxM				PVC cable x meter
				PUxM				PUR cable x meter
								Sealing
					F			FKM
					Output			
			-	4-20 mA (2-wires)				
							20	0-20 mA (3-wires)
							10	0-10 V (3-wires)
Order code example:								
BLP2 /	C /	6mWs	/	PU10M /	F	/	20	