Electr. Dual Level Switch

BLS2000

- Resolution: 8 or 12 mm
- Redundant measurement system
- Direct measurement
- Capable of measuring media of density > 0.6g/cm³ that is compatible with float material e.g. hydraulic oils, water, coolants even with foaming
- Total length (L0): 250 - 3000 mm
- Max. 2 switch points
- Analogue output 4 - 20 mA or 0 - 10 V
- Rotatable 320° display & electrical connection
- Menu navigation refers to VDMA standard



Applications

- Level control for
  - Hydraulics
  - Lubrication system
  - Cooling

Technical Data

Sensor element:	Reed switch
Materials: Wetted parts: Stem (Fitting, Tube): Float: Seals: Electronics housing:	 Brass NBR foam FKM, EPDM or NBR Stainless steel, mat. no. VA2A, PA / PC
Operating elements:	3 easy-response pushbuttons
System of protection:	IP65/IP67
Protection class:	III
Electrical connection:	Plug M12 x 1 mm, 4-pin / 5-pin (depending on output code)
Process connection:	see order code
Float BN30 Density Medium: Depth of immersion:	 min. 0.60 g/cm³ 20 ± 2 mm at density 1, Ø30 mm, height 44 mm
Dimension:	110 x 41 mm (without plug connector and probe)
Weight:	approx. 350 g, without probe
Total length (L0):	250 mm, 370 mm, 410 mm, 1000 mm others on request
Repeatability:	± 1 digit (without turbulence) including temperature influence
Resolution:	8 or 12 mm
Max. pressure:	15 bar
Temperature range: Medium: Ambient: Storage:	 -25 °C... +80 °C -20 °C... +70 °C -30 °C... + 80 °C
Power supply:	15... 32 V DC, reversed polarity protected (SELV, PELV)
Digital display:	4-digit 14-segment LED display, red, digit height 9 mm
Error display:	LED red and alphanumeric display
Power consumption:	approx. 50 mA (without load)
Analog output: Current output: Load: Scanning rate: Voltage output: Rating: Adjustment range:	 4...20 mA max. RI = (Ub-12V) / 20 mA RI = 600 Ohm at Ub = 24 V DC 2 ms 0...10 V DC max. 10 mA 25 %... 100 % f. s.

Units: Distance: Volume:	 %, mm, cm, m, inch, feet, liter, m³, gallon	
Transistor switchting outputs / IO-Link:		
Switching function:	Normally open/normally closed, standard / window mode and diagnosis function adjustable	
Adjustment range for switching point and hysteresis:	0 %... 125 % f. s.	
Switching frequency:	max. 100 Hz	
Load	max. 500 mA, short-circuit proof IO-Link: max. 250 mA	
Delay	0.0 s ... 50 s adjustable	
Status display(s):	LED(s) red	
Interfaces		
Communication interface:	IO-Link	
Transmission type:	COM2 (38,4 kBaud)	
IO-Link revision:	1.1	
SDCI standard:	IEC 61131-9	
Profiles:	Smart Sensor	
SIO mode:	yes	
Device type:	Class A	
Process data variable:	1	
Binary data channel:	2	
Min. process cycle time [ms]	2.5	
Device ID:	0x051 ...	
EMV	EN 61000-4-2 ESD	4 kV CD/8 kV AD
	EN 61000-4-3 HF radiated	10 V/m
	EN 61000-4-4 Burst	2 kV
	EN 61000-4-5-Surge	1/2 kV
	EN 61000-4-6 HF conducted	10 V
Shock resistance	DIN EN 60028-2-27	50 g (11 ms)
Vibrations resistance	DIN EN 60028-2-26	20 g (10...2000 Hz)
Approvals:	on request	

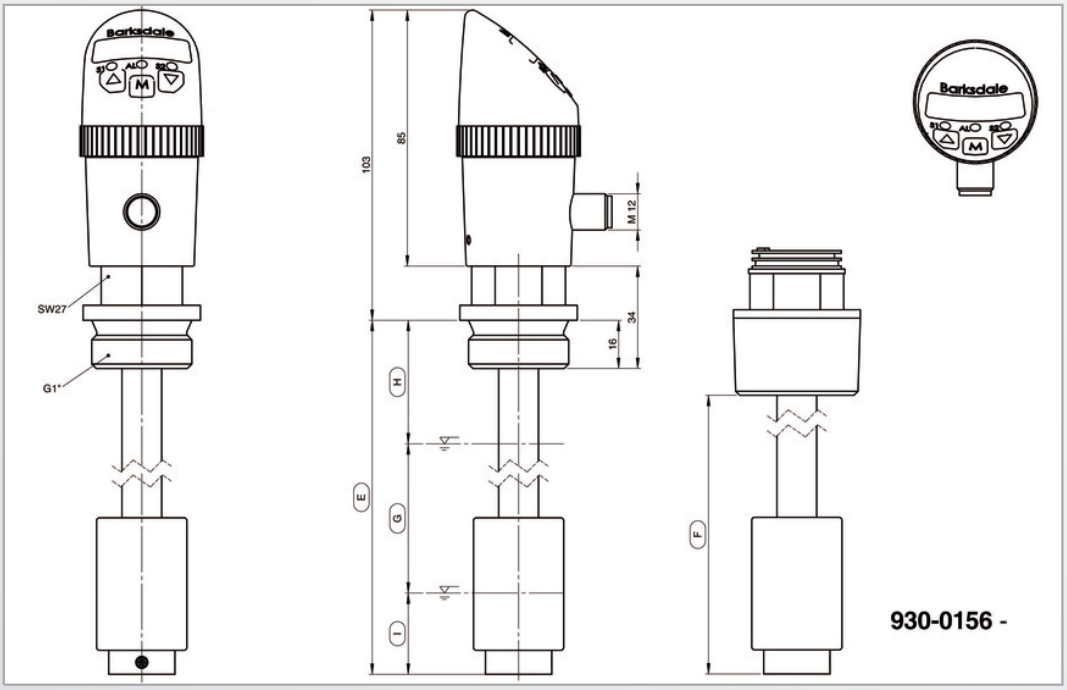
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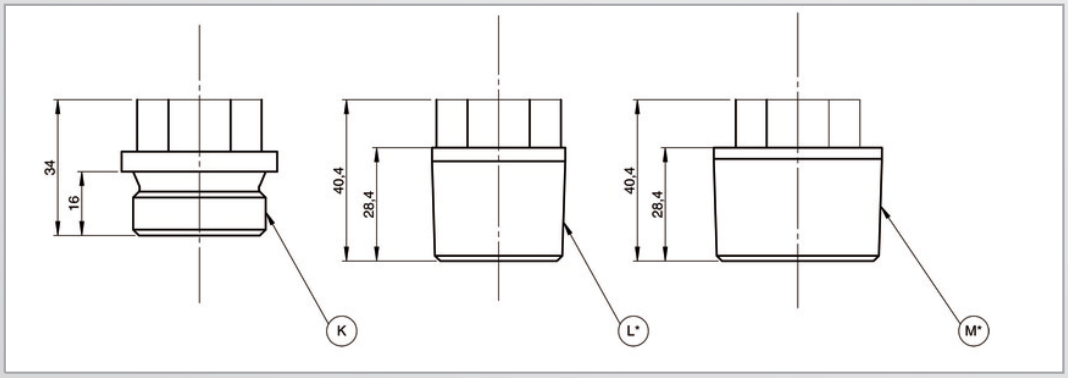
Accessories

Order Number	Description
907-0357	Plug connector M12 x 1, 4-pin, with screw terminals, angled (IP65)
907-0185	Plug connector M12 x 1, 5-pin, with screw terminals (IP65)
908-0361	Plug connector M12 x 1, 5-pin, with moulded cable (IP67), 2 m length

Dimensions (mm / *inch*)



Process connection

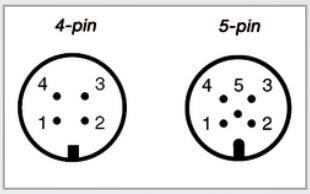


Legend

E	L0 = total length for G&M threads
F	L0 = total length for NPT threads
G	LM = L0 -(To+Tu)
H	To = dead band top
I	Tu = dead band bottom

Fitting	Dead band	
	To (top)	Tu (bottom)
G1"	41 ±3 [1.22 ±0.12]	27 ±3 [1.06 ±0.12]
1" NPT	25 ±3 [0.51 ±0.12]	
1¼" NPT		

Plug



Electrical Connection

Pin	Signal Order Coder 1,7, A, G	Signal Order Code 2, 3, B, C	Signal Order Code 4, 5, 8, D, E, H
1	+Ub	+Ub	+Ub
2	SP2	Signal	Signal
3	0V	0V	0V
4	SP1 / IO-Link*	SP1	SP1 IO-Link*
5	-	-	SP2

* only code 7, 8, G and H

Order Code

BLS2000							
BLS2							Base Model*
	Output						
	8-mm resolution		**12-mm resolution**				
	1		**A**				2 switch points
	2		**B**				4…20 mA and 1 switch points
	3		**C**				0…10 V DC and 1 switch points
	4		**D**				4…20 mA and 2 switch points
	5		**E**				0…10 V DC and 2 switch points
	7		**G**				IO-Link / 2 switch points (PNP, NPN, PP)
	8		**H**				IO-Link / 2 switch points (PNP, NPN, PP) / Analog Output
		Process Connection					
		K					G1" male
		L*					1"NPT male, without sealing (sealing code X)
		M*					1¼"NPT male, without sealing (sealing code X)
			Sealing				
			X				without sealing
			V*				FKM (DIN 3869)
			E*				EPDM (DIN 3869)
			B*				NBR (DIN 3869)
				Electrical Connection			
				M			M12 x 1 mm (4 / 5 pin)
					Total Length L0		
					0 2 5 0 M		250 mm
					0 3 7 0 M		370 mm
					0 4 1 0 M		410 mm
					1 0 0 0 M		1000 mm
					0 9 . 8 Z		9.8 inch
					1 4 . 6 Z		14.6 inch
					1 6 . 1 Z		16.1 inch
					3 9 . 4 Z		39.4 inch
Example:							
BLS2	**D**	K	**X**	M	**0 4 1 0 M**		

*Special design upon request