

Electronic Dual Level Switch

BLS3000

Features

- ▶ Signal resolution: 1/5" (5 mm)
- ▶ Redundant measurement system ensures reliable output
- ▶ Total length (L0): 9.8"-39.4" (250 mm-1000 mm)
- ▶ One or two switch points
- ▶ Analog output: 4 - 20 mA or 0 - 10 V
- ▶ Rotatable 320° display & electrical connection
- ▶ Easy menu navigation

Applications

- ▶ Level control for:
 - ▮ Hydraulics
 - ▮ Lubrication system
 - ▮ Cooling



General Specifications*

Sensor element:	Reed switch	Digital display:	4-digit 14-segment LED display, red, digit height 0.35 inches (9 mm)
Materials:		Error display:	LED RED and alphanumeric display
Wetted parts:		Analog output:	4-20 mA
Stem (Fitting, Tube):	Stainless steel 316Ti	Current output:	max. RI = (Ub-12V) / 20 mA
Float:	NBR (BUNA-N) foam	Load:	RI = 600 Ohm at Ub = 24 V DC
Seals:	FKM, EPDM or NBR (BUNA-N)	Scanning rate:	2 ms
Electronic housing:	Stainless steel 316Ti, PBT, elastomer	Voltage output:	0 to 10 V DC
Operating elements:	3 easy-response push-buttons	Rating:	max. 10 mA
Enclosure rating:	Type 1 / Type 4X (IP65) / Type 6 (IP67)	Adjustment range:	25% to 100% f. s.
Protection class:	III	Units:	
Electrical connection:	Plug M12 x 1, 4-pin / 5-pin / 8-pin (depending on Output selection)	Distance:	% , mm, cm, m, inch, feet,
Process connection:	See Product Configurator for process connection options (page 2)	Volume:	liter, m³, gallon
Float BN17:		Transistor switching outputs:	
Density medium:	min. 0.02 lb/in³ (0.60 g/cm³)	Switching function:	Normally open/normally closed, standard / window mode and adjustable functions
Depth of immersion:	0.59" ± 0.07" (15 ± 2 mm) (water) 0.74" ± 0.07" (19 ± 2 mm) (oil 0.75) Ø0.70", height 0.98" (Ø17.8 mm, height 25 mm)	Switching output:	PNP
Dimensions enclosure:	1.6 Ø x 4.5 inches (41 x 110 mm) For 1/2" NPT (without M12 connector or probe). Contact factory for other sizes.	Adjustment range for switching point and hysteresis:	0 % to 125 % f. s.
Weight:	Approx. 0.77 lb (350 g) (for G1/2" size and 250 mm L0, for exact weight, contact factory)	Switching frequency:	Max. 100 Hz
Total length (L0):	9.8" (250 mm), 14.6" (370 mm), 16.1" (410 mm), others on request up to 39.4" (1000 mm)	Load	Max. 500 mA, short-circuit proof
Accuracy:	± 1 digit (without turbulence) including temperature influence and repeatability	Delay	0.0 s to 50 s adjustable
Resolution:	1/5" (5 mm)	Status display(s):	LED(s) red
Max. pressure:	43.5 psi (3 bar)	EMI:	EN 61000-4-2 ESD 4 kV CD / 8 kV AD
Temperature range:			EN 61000-4-3 HF radiated 10 V/m
Medium:	-13 °F to +176 °F (-25 °C... +80 °C)		EN 61000-4-4 Burst 2 kV
Ambient/Operating:	-4 °F to +158 °F (-20 °C... + 70 °C)		EN 61000-4-5-Surge 1/2 kV
Storage:	-22 °F to +176 °F (-30 °C... + 80 °C)		EN 61000-4-6 HF conducted 10 V
Power supply:	15 to 28 V DC, reversed polarity protected (SELV, PELV)	Shock resistance	DIN EN 60028-2-27 50 g (11 ms)
Power consumption:	Approx. 50 mA (without load) Approx. 80 mA (Output Code 6)	Vibrations resistance	DIN EN 60028-2-26 20 g (10...2000 Hz)
		Approvals:	cULus¹

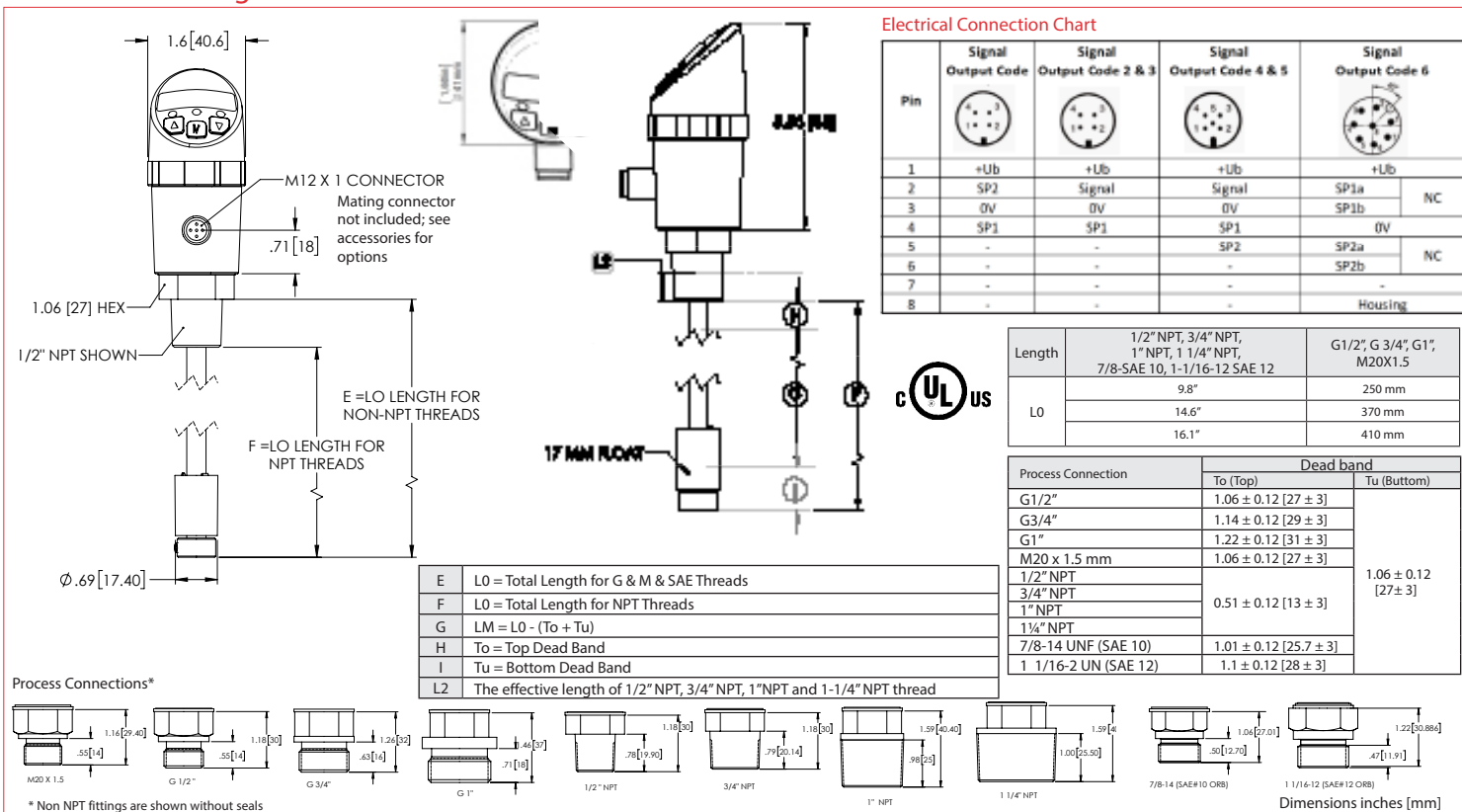
* See product configurator for additional options.

1) Conditions of use: 140 °F (60 °C) max. ambient, power supply max. 28 V DC

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Technical Drawings



Product Configurator

Example: BLS3 1 6 X M 14.6Z

Series: BLS3 Series BLS3000, electronic dual level switch

Output:

Output	Description
1	Dual switch point
2	Single switch point plus 4-20mA
3	Single switch point plus 0-10V
4	Dual switch point plus 4-20mA
5	Dual switch point plus 0-10V
6	Dual switch point (1x NO SPST / 1x NC SPST), non UL

Process Connections:

Process Connection	Description
2	G1/2" male, with seal (seal code V, E or B)
3	1/2" NPT male, without seal (seal code X)
5	G3/4" male, with seal (seal code V, E or B)
6	3/4" NPT male, without seal (seal code X)
A	G1" male, with seal (seal code V, E or B)
B	1" NPT male, without seal (seal code X)
C	1 1/4" NPT male, without seal (seal code X)
H	M20 x 1.5 mm male, with seal (seal code V, E or B)
I ¹	7/8-14 UNF (SAE 10) male, (seal code V, E or B)
J ¹	1 1/16-12 UN (SAE 12) male, (seal code V, E or B)

Total Sensor Length L0³:

Length	Description
0250M ⁴	250 mm (process con. code 2, 5, A & H)
0370M ⁴	370 mm (process con. code 2, 5, A & H)
0410M ⁴	410 mm (process con. code 2, 5, A & H)
1000M ⁴	1000 mm (process con. code 2, 5, A and H)
09.8Z ⁵	9.8 inch (process con. code 3, 6, B, C, I, & J)
14.6Z ⁵	14.6 inch (process con. code 3, 6, B, C, I, & J)
16.1Z ⁵	16.1 inch (process con. code 3, 6, B, C, I, & J)
39.4Z ⁵	39.4 inch (process con. code 3, 6, B and C)

Electrical Connection:

M² M12 x 1 mm (4 or 5 pin)

Accessories

Order Number	Description
239535-1M-R-S ⁶	4 Pin M12 Female Right Angle Plug Molded Cable, 3.28 Feet (1 Meter), Shielded
239535-1M-S ⁶	4 Pin M12 Female Straight Plug Molded Cable, 3.28 Feet (1 Meter), Shielded
239537	4 Pin M12 Female Straight Connector
239236	4 Pin M12 Female Right Angle Connector
239546-1M-R-S ⁶	5 Pin M12 Female Right Angle Molded Cable, 3.28 Feet (1 Meter), Shielded
239546-1M-S ⁶	5 Pin M12, Female Straight Plug Molded Cable, 3.28 Feet (1 Meter), Shielded
239548-S	5 Pin M12 Female Straight Connector
239548-R	5 Pin M12 Female Right Angle Connector

Note: 1. Subject to minimum order quantity of 10 pieces; consult factory for lead time.
2. Mating connector not included with unit; mating connectors are available and can be ordered as an accessory.
3. Custom length available up to 39.4" (1000 mm); minimum quantities may apply.
4. Available only for G & M thread.
5. Available only for NPT, UNF & UN thread.

6. See Cable Connectors & Accessories for more options.