

FSA30

Electronic Level Switch and Transmitter

- up to 2 switch points
- analogue output 4...20 mA or 0...10 V
- IO-Link communication interface
- rotatable 320° display & electrical connection
- resolution: 8 or 12 mm
- redundant measurement system, direct measurement
- suitable for media of density > 0.6 g/cm³
- applicable for foam formation
- max. temperature: 80 °C
max. pressure 15 bar
- measuring lengths: 250...3000 mm



Description:

The level transmitters of the type series FSA30 operate according to the float principle with magnetic transmission. The float is lifted by the rising liquid level in the tank and actuates the contacts of a reed contact / resistance chain in the sliding tube by the magnetic field of the permanent magnet located in the float.

The output signal is a voltage proportional to the level. Due to the electronics used, up to two switching points, an analogue signal (current or voltage) and IO-Link are available for data use.

Typical applications:

The sensor is used wherever small to medium fill levels of even aggressive media are measured. The measuring length between 250 and 3000 mm allows flexible use in many containers.

The nature of the FSA30 level switch and transmitter makes it particularly suitable for use in hydraulic, lubrication and cooling systems.

Because of their on-site display, the FSA30 are also ideal for installation at process-relevant points for visual inspection.

Technical Data:

Sensor element:	Reed switch
Materials:	
Wetted parts:	
Stem (fitting, tube):	brass
Float:	NBR foam
Seals:	FKM, EPDM or NBR
Electronics housing:	stainless steel 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:	min 0,60 g/cm ³
Depth of immersion:	20 ± 2 mm at density 1, Ø 30 mm, height 44 mm
Dimension:	110 x 41 mm (without plug connector and sliding tube)
Weight:	appr. 350 g (without sliding tube)
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:	-25 °C... +80 °C
Ambient:	-20 °C... +70 °C
Storage:	-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)
Analogue output:	
Current output:	4...20 mA
Load:	max. RI = (U _b -12V) / 20 mA RI = 600 Ohm bei U _b = 24 V _{DC}
Scanning rate:	2 ms
Voltage output:	0...10 V _{DC}
Rating:	max. 10 mA
Adjustment range:	25 %...100 % f. s.
Units:	
Distance:	%, mm, cm, m, inch, feet,
Volume:	liter, m ³ , gallon

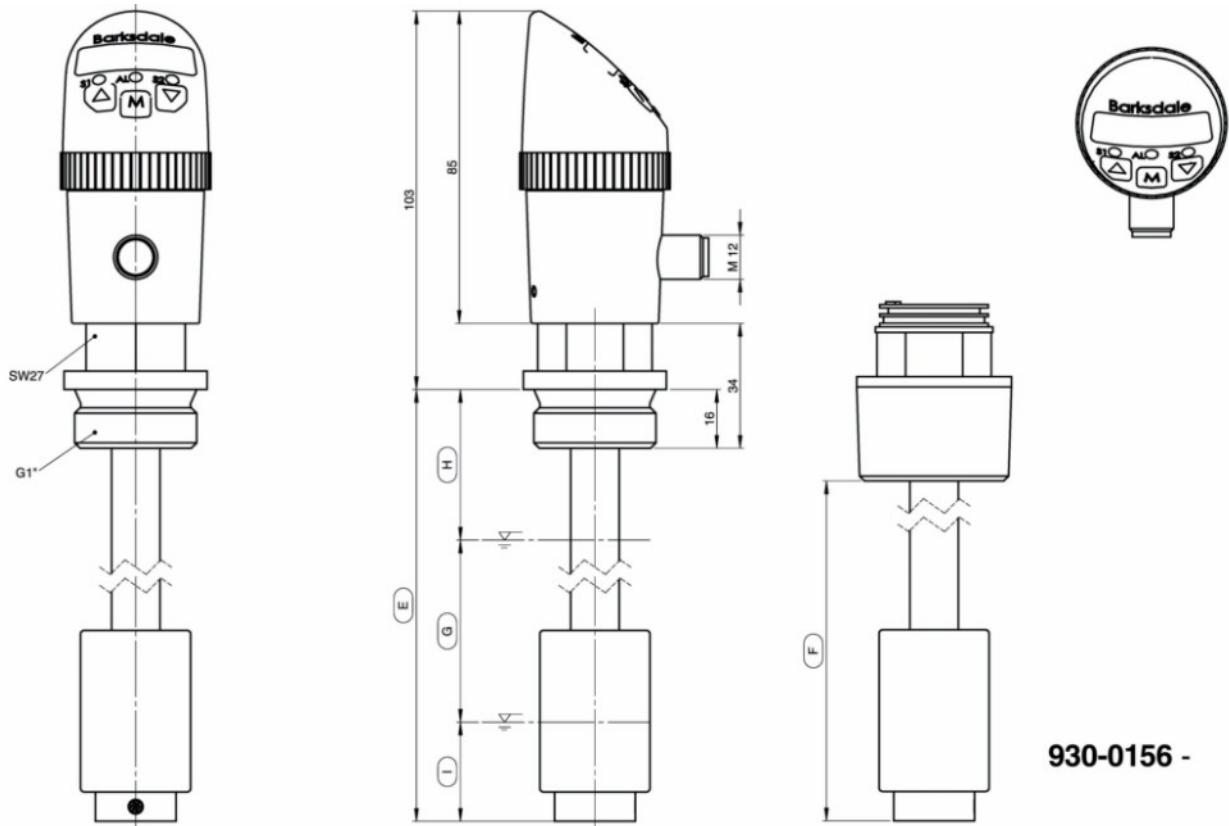
Transistor switching outputs / IO-Link:

Switching function:	Normally open/normally closed, standard / window mode and diagnosis function adjustable
Switching output: (auch de)	PNP; IO-Link: PNP / NPN / PP
Adjustment range switch 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:

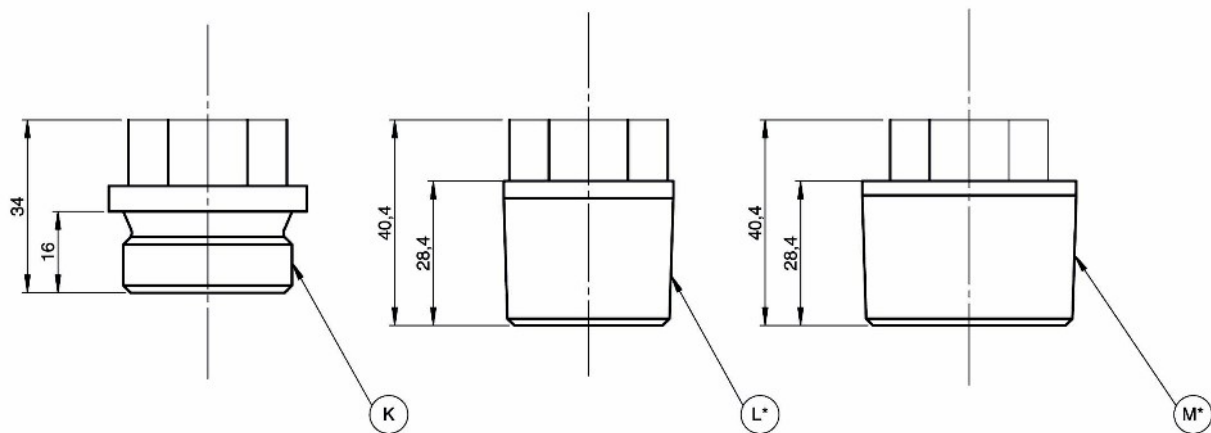
Communication interface:	IO-Link
Transmission type:	COM2 (38,4 kBaud)
IO-Link revision:	1.1
SCDI standard:	IEC 61131-9
Profile:	Smart Sensor
SIO mode:	yes
Device type:	Class A
Process data variable:	1
Binary data channel:	2
Min. process cycle time:	2,5 ms
Device ID:	0x051...
EMV / ESD:	EN 61000-4-2 4 kV CD / 8 kV AD EN 61000-4-3 10 V/m HF radiated EN 61000-4-4 2 kV Burst EN 61000-4-5-1/2 kV Surge EN 61000-4-6 10 V HF, conducted
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

Dimensions [mm]:



930-0156 -

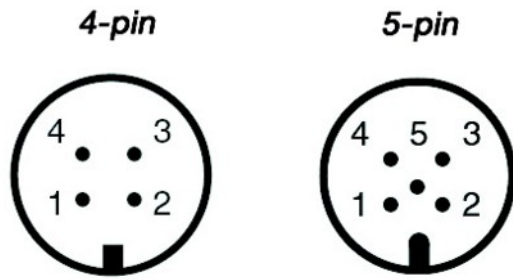
Process Connections [mm]:



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)
G 1 AG	41 ±3 [1.22 ±0.12]	27 ±3 [1.06 ±0.12]
1" NPT	25 ±3 [0.51 ±0.12]	
1 ¼" NPT		

Electrical Connection:



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

* only code 7, 8, G and H

Order Code:

BLS2000

Order number: FSA30-BLS2 1 K X M 0250M

Electronic level switch and transmitter

Output:

8 mm resolution:

1 = 2 switch points
2 = 4...20 mA and 1 switch point
3 = 0...10 V_{DC} and 1 switch point
4 = 4...20 mA and 2 switch points
5 = 0...10 V_{DC} and 2 switch points
7 = IO-Link / 2 switch points (PNP, NPN, PP)
8 = IO-Link / 2 switch points (PNP, NPN, PP) /
analogue output

12 mm resolution:

A = 2 switch points
B = 4...20 mA and 1 switch point
C = 0...10 V_{DC} and 1 switch point
D = 4...20 mA and 2 switch points
E = 0...10 V_{DC} and 2 switch points
G = IO-Link / 2 switch points (PNP, NPN, PP)
H = IO-Link / 2 switch points (PNP, NPN, PP) /
analogue output

Process connection:

K = G 1 male
L* = 1" NPT male, without sealing (code X)
M* = 1 1/4" NPT male, without sealing (code X)

Sealing:

X = without sealing
V* = FKM (DIN 3869)
E* = EPDM (DIN 3869)
B* = NBR (DIN 3869)

Electrical connection:

M = M12x1 plug, (4/5 pole)

Total length L0:

0250M = 250 mm
0370M = 370 mm
0410M = 410 mm
1000M = 1000 mm
09.8Z = 9,8 inch
14.6Z = 14,6 inch
16.1Z = 16,1 inch
39.4Z = 39,4 inch

*Special design upon request

Accessories:

Plug connector M12 x 1, 4-pin, with screw terminals, angled (IP65)

Plug connector M12 x 1, 5-pin, with screw terminals, angled (IP65)

Plug connector M12 x 1, 5-pin, with sharpened cable (IP67)