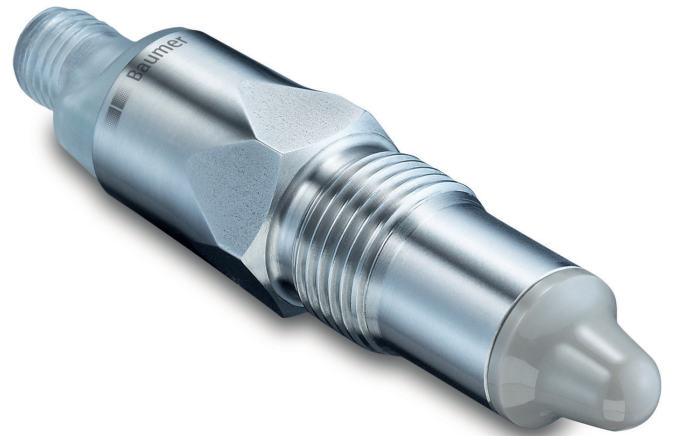


Overview

- 3-A- and FDA-compliant, EHEDG-certified
- Foam detection or suppression
- Problem solver for adhesions
- Two adjustable switching outputs
- 360° visible multicolor LED
- IO-Link interface



Technical data

Performance characteristics		Output signal	
Measuring principle	CleverLevel level switches (Frequency Sweep)	Output type	PNP NPN Digital (push-pull)
Media characteristics	DC > 1.5	Switching logic	Normally open (NO) Normally closed (NC) Active high Active low
Hysteresis	± 1 mm	Voltage drop	PNP: (+Vs - 0.5 V) ± 0.2 V, Rload ≥ 10 kΩ NPN: (+0.4 V) ± 0.2 V, Rload ≥ 10 kΩ
Repeatability	± 1 mm	Current rating	100 mA , max.
Response time	0.04 s , typ.	Off leak current	< 100 µA , max.
Damping	0... 10 s , adjustable	Short circuit protection	Yes
Process conditions		Interface	IO-Link 1.1
Process pressure	-1 ... 10 bar -1 ... 5 bar , T = 135 °C	Housing	
Process temperature	-40 ... 115 °C , continuous @ Tamb < 50 °C -40 ... 135 °C , < 1 h @ Tamb < 50 °C	Overall size	Refer to section "Dimensional drawings"
Process connection		Style	Compact transmitter
Mounting position	Any, top, bottom, side	Material	Stainless steel
Connection variants	Refer to section "Dimensional drawings"	Electrical connection	
Wetted parts material	PEEK Natura AISI 316L (1.4404)	Connector	M12-A, 4-pin, polycarbonate M12-A, 4-pin, stainless steel
Surface roughness wetted parts	Ra ≤ 0.8 µm	Power supply	
Ambient conditions		Current consumption (no load)	25 mA , typ. 40 mA , max.
Vibration (sinusoidal) (EN 60068-2-6)	1.6 mm p-p (2 ... 25 Hz), 4 g (25 ... 100 Hz), 1 octave / min.	Reverse polarity protection	Yes
Degree of protection (EN 60529)	IP 67 IP 69K , with appropriate cable	Power-up time	< 3 s
Humidity	< 98 % RH , condensing	Voltage supply range	8 ... 36 V DC
Operating temperature range	-40 ... 85 °C	Factory settings	
Storage temperature range	-40 ... 85 °C	qTeach	activated
		Switching logic SW1	Normally open (NO)
		Switching logic SW2	Normally closed (NC)
		Switching range (dielectric constant DC)	< 75 % , DC > 2

LBFH

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Technical data

Factory settings

Range hysteresis	2.4 %
Damping	0.1 s

IECEX / ATEX II 1D Ex - ta IIIC T100 °C Da

Voltage supply range, Un	30 V DC , max.
Current rating, In	100 mA
Degree of protection for cable accessories	IP 67
Temperature class T100 °C	-40 < Tamb < 85 °C

IECEX / ATEX II 1G - Ex ia IIC T4 Ga

Maximum values for barrier selection, Ui	30 V DC , max.
Maximum values for barrier selection, Ii	100 mA
Maximum values for barrier selection, Pi	750 mW
Internal capacitance, Ci	63 nF
Internal inductance, Li	617 µH
Temperature class, T1 ... T4	-40 < Tamb < 85 °C

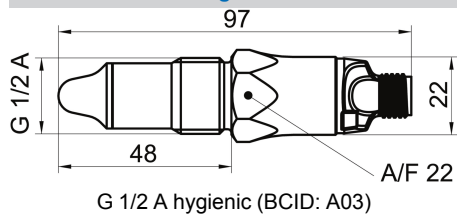
IECEX / ATEX II 3G - Ex nA IIC T4 Gc

Voltage supply range, Un	30 V DC , max.
Current rating, In	100 mA
Degree of protection for cable accessories	IP 67
Temperature class, T1 ... T4	-40 < Tamb < 85 °C

Compliance and approvals

EMC Emission	EN 61326, installed in a closed metal tank
EMC Immunity	EN 61326, installed in a closed metal tank
Explosion protection	ATEX II 1G Ex ia IIC T4 Ga ATEX II 1D Ex ta IIIC T100 °C Da ATEX II 3G Ex nA IIC T4 Gc IECEX Ex ia IIC T4 Ga IECEX Ex ta IIIC T100 °C Da IECEX Ex nA IIC T4 Gc
Hygiene	3-A (74-07) EHEDG FDA (21 CFR 177.2415)
Safety	cULus listed, E365692

Dimensional drawings



LBFH

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Electrical connection

Process connection

Output type	Electrical connection	Equivalent circuit	Function	Pin assignment
Programmable output IO-Link PNP			+Vs	1
			SW1 (IO-Link)	4
			SW2	2
			GND (0 V)	3
Programmable output IO-Link NPN			+Vs	1
			SW1 (IO-Link)	4
			SW2	2
			GND (0 V)	3
Programmable output IO-Link Digital (push-pull)			+Vs	1
			SW1 (IO-Link)	4
			SW2	2
			GND (0 V)	3
Programmable output IO-Link PNP			+Vs	1
			SW1 (IO-Link)	4
			SW2	2
			GND (0 V)	3
			Frame Ground	Plug thread
Programmable output IO-Link NPN			+Vs	1
			SW1 (IO-Link)	4
			SW2	2
			GND (0 V)	3
			Frame Ground	Plug thread
Programmable output IO-Link Digital (push-pull)			+Vs	1
			SW1 (IO-Link)	4
			SW2	2
			GND (0 V)	3
			Frame Ground	Plug thread

Ordering information

Ordering key - Configuration possibilities see website

	LBFH - 2 1 . ### . A030 2 0 . # . # 00 3 . #
Product	LBFH
Version	Programmable output, IO-Link 2
Housing	AISI 316L (1.4404) 1
Electrical connection	M12-A, 4-pin, polycarbonate (with LED) 010 M12-A, 4-pin, stainless steel (without LED) 020
Process connection	G 1/2 A hygienic (A03) A030
Wetted parts material	AISI 316L (1.4404) 2
Gasket	Without 0

LBFH

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Ordering key - Configuration possibilities see website

LBFH - 2 1 . ### . A030 2 0 . # . # 00 3 . #

Output type

PNP	1
NPN	2
Digital (push-pull)	3

Explosion protection

Without	0
IECEX / ATEX nA	3
IECEX / ATEX ia + ta	4

Industrial approvals

Standard	00
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Special approvals

3-A / EHEDG	3
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Configuration

Factory settings	0
Customer-specific	1