

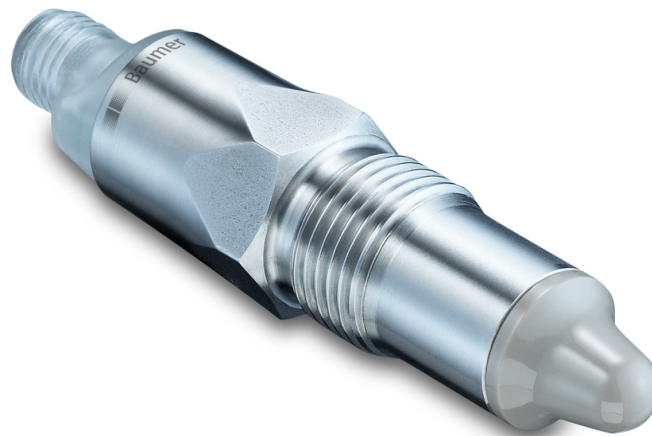
LBFH

Explosion-proof point level detection in the hygiene sector

LBFH-21.###.A03020.#.###3.0

Overview

- Optionally with adaptive trigger
- ATEX, IECEx and CCC certified for dust and gas
- 3-A- and FDA-compliant, EHEDG-certified
- Problem solver for adhesions
- Two adjustable switching outputs
- 360° visible multicolor LED
- IO-Link interface



Technical data

Performance characteristics

Measuring principle	CleverLevel level switches (Frequency Sweep)
Hysteresis	± 1 mm
Media characteristics	DC > 1.5
Step response time	0.04 s , typ.
Trigger modes	Window trigger Adaptive trigger
Damping	0 ... 10 s , adjustable
Repeatability	± 1 mm

Process conditions

Process temperature	-40 ... 115 °C , continuous @ Tamb < 50 °C -40 ... 135 °C , < 1 h @ Tamb < 50 °C
Process pressure	-1 ... 10 bar -1 ... 5 bar , T = 135 °C

Process connection

Connection variants	Refer to section "Dimensional drawings"
Mounting position	Any, top, bottom, side
Wetted parts material	PEEK Natura AISI 316L (1.4404)
Surface roughness wetted parts	Ra ≤ 0.8 µm

Ambient conditions

Operating temperature range	-40 ... 85 °C
Storage temperature range	-40 ... 85 °C

Ambient conditions

Degree of protection (EN 60529)	M12-A connector, polycarbonate and stainless steel: IP67 , with appropriate cable IP69K , with appropriate cable
Humidity	< 98 % RH , condensing
Vibration (sinusoidal) (EN 60068-2-6)	KingCrown M12-A connector (proTect+): IP68 , with appropriate cable IP69K , with appropriate cable

Output signal

Output type	PNP NPN Digital (push-pull)
Switching logic	Normally open (NO) Normally closed (NC) Active high Active low
Voltage drop	PNP: (+Vs -0.5 V) ± 0.2 V, Rload ≥ 10 kΩ NPN: (+0.4 V) ± 0.2 V, Rload ≥ 10 kΩ
Current rating	100 mA , max.
Off leak current	100 µA , max.
Short circuit protection	Yes
Interface	IO-Link 1.1

Housing

Style	Compact transmitter
Overall size	Refer to section "Dimensional drawings"
Material	Stainless steel

Electrical connection

Connector	M12-A, 4-pin, polycarbonate M12-A, 4-pin, stainless steel
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Power supply

Voltage supply range	8 ... 36 V DC
Current consumption (no load)	25 mA , typ. 40 mA , max.
Power-up time	< 3 s
Reverse polarity protection	Yes

Factory settings

QTeach	Activated
Switching logic SW1	Normally open (NO)
Switching logic SW2	Normally closed (NC)
Switching range (dielectric constant DC)	< 75 % , DC > 2
Range hysteresis	2.4 %
Damping	0.1 s

Factory settings – Adaptive trigger

Switching logic	Normally open (NO)
Advanced setup	Disabled
Set point high	100 %
Damping	0 ms
Trigger distance	3.0 %
Startup Level	0.0 %
Steady detection	Active

IECEX / ATEX II 1D Ex - ta IIIC T100 °C Da / CCC - Ex tD A20 IP67 T100°

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 / CCC - 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 ec IIC T4 Gc / CCC - 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

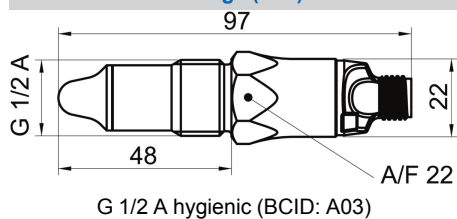
 Hygiene 3-A (74-07)
EHEDG EL Class I
FDA (21 CFR 177.2415)

 Safety cULus listed, E365692
WHG (overfill, leakage)

 Explosion protection IECEX / ATEX II 1D Ex - ta IIIC T100 °C Da / CCC - Ex tD A20 IP67 T100°C
IECEX / ATEX II 1G / CCC - Ex ia IIC T4 Ga
IECEX / ATEX II 3G - Ex ec IIC T4 Gc / CCC - Ex nA IIC T4 Gc

Pharma USP Class VI (PEEK material)

Dimensional drawings (mm)



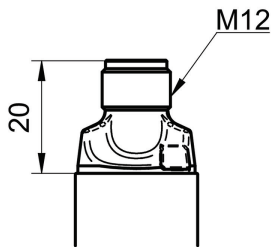
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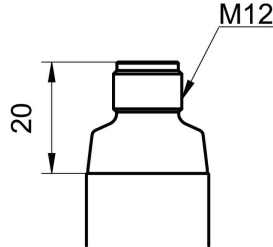
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Dimensional drawings (mm)

Housing



Connector M12-A, 4-pin, polycarbonate (with LED)



Connector M12-A, 4-pin, stainless steel (without LED)

Electrical connection

Output type	Electrical connection	Equivalent circuit	Function	Pin assignment								
Programmable output IO-Link PNP			<table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>SW1 (IO-Link)</td><td>4</td></tr> <tr><td>SW2</td><td>2</td></tr> <tr><td>GND (0 V)</td><td>3</td></tr> </table>	+Vs	1	SW1 (IO-Link)	4	SW2	2	GND (0 V)	3	
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Ordering information

Ordering key - Configuration possibilities see website

	LBFH	-	2	1	.	###	.	A030	2	0	.	#	.	#	##	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											
Process connection material																			
AISI 316L (1.4404)									2										
Gasket																			
Without										0									
Output type																			
PNP																			1
NPN																			2
Digital (push-pull)																			3
Explosion protection																			
Without																			0
ATEX ec																			3
IECEX / ATEX ia + ta																			4
Industrial approvals																			
Standard																			00
WHG																			11
Special approvals																			
3-A / EHEDG																			3
Configuration																			
Factory settings																			0
Customer-specific																			1

Remarks orderkey /9271: Upgrade to adaptive trigger
 /9306: CCC ia + tD
 /9309: CCC nA