Level Switch LFFS

Wetted parts in acid-proof, stainless steel and PEEK

Compact, food compatible, hygienic design

Hygienic connections conform to 3-A standards, FDA demands and EHEDG guidelines

Precise switching point without calibration

Process temperature -40...200°C

Measures media with DK-values >1.5

Not influenced by foam

LED switch indicator

Maintenance free

Suitable for media separation measurement

Configurable by FlexProgrammer 9701

ATEX approval for gas and dust

Description

The Level Switch LFFS designed to detect levels in tanks, media separation and provide empty-pipe detection or dry-run protection for pumps.

A high frequency sweep signal is radiated from the sensor tip into the tank. The media will act as a virtual capacitor, which together with a coil in the sensor head, will form a circuit creating the switch point signal. This virtual capacity will depend of the di-electric value of the media.

By means of the Flex Programmer 9701 the output can be configured to either NPN, PNP or digital output signal. A damping of the output signal can be activated in case of a fluctuating media level, e.g. during tank filling.

The measurement is precise and unaffected by the mounting position in the tank. In the Flex-software a compensation for foam, bubbles and condensate as well as viscous media can be set.

The Flex-software also features an adjustment facility making the user able to adjust the sensor to a specific media.

The Level Switch LFFS measures liquids such as water and beer as well as viscous, sticky fluids, such as honey, youghurt, toothpaste and ketchup. Even dry medias can be measured, eg. sugar or flour.

The Level Switch LFFS is resistant against CIP and SIP agents.

Hygienic installation is also possible with the comprehensive range of accessories; see the overview at page 6.

Technical Data

Sensor

Radiated signal	100...180 MHZ
Process connection	Hygienic: G1/2, 3A/DN38 or sliding connection
Adapters	Refer to page 6
Insulating material	PEEK Natura

Mechanical data

Housing	Stainless Steel, W1.4301/AISI 304
Process connection	Stainless Steel, W1.4404/AISI 316 L
Amb. temperature	-40...85°C
Process temperature	
Sliding connection	-40...200°C (See curve 1)
Std. & 3A/DN38	-40...115°C (See curve 1)
< 1 hour, T_{mb} < 60°C	-40...140°C
Protection class	Std. & 3A/DN38: Max. 40 bar IP67 (IEC 529)
Media pressure	Sliding connection: Max. 16 bar
Vibrations	IEC 68-2-6, GL test2 (Std. & 3A/DN38)
Installation	Any position
Conformity	3-A standards (Std. & 3A/DN38)

Electrical connection

Cable gland M16	Plast or Nickel-plated brass
Plug M12	Nickel-plated brass

Other electrical data

Power supply	12...36 VDC, 35 mA max.
Damping	0...10 sec.
Power-up time	<2 sec.
Hysteresis	± 1 mm
Repeatability	± 1 mm
Reaction time	0.1 sec. max.

Disposal of product and packing

According to national laws or by returning to Baumer

EMC data

Immunity	EN 61326
Emission	EN 61326

Ex data (ia)

Internal inductivity	$L_i \leq 10$ µH
Internal capacity	$C_i \leq 33$ nF
Barrier data	U ≤ 30 VDC ; I ≤ 0.1 A ; P ≤ 0.75 W

Approval Ex ia IIC T5, ATEX II 1G (See table 1)

Supply range	24...30 VDC
Temperature class	T1...T5: -40 < T_{amb} < 85°C

Approval Ex tD A20 IP67 T100°C, ATEX II 1D (See table 1)

Supply range	12...30 VDC
Temperature class	T100°C: -40 < T_{amb} < 85°C

Approval Ex nA II T5, ATEX II 3G (See table 1)

Supply range	12...30 VDC
Temperature class	T1...T5: -40 < T_{amb} < 85°C

Output

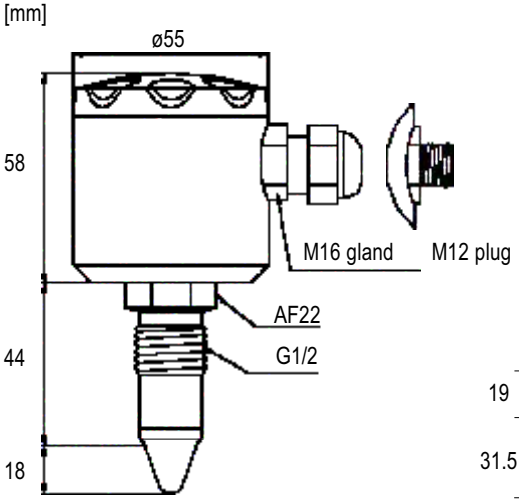
Output (active)	Max. 50 mA, short-circuit and high-temperature protected
Output type	PNP, NPN or Digital output (Push-pull)
Output polarity	See drawing
Active "Low"	NPN and Digital output (-VDC +2.5V) ± 0.5V ; Rload 1 kOhm
Active "High"	PNP and Digital output (VDC -2.5V) ± 0.5V ; Rload 1 kOhm
Three State Output	± 100µA Max.

Factory Settings

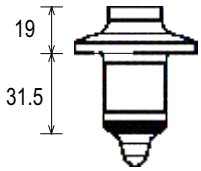
Output	PNP
Measure	DK value > 2
Damping	0.1 sec.

Dimensional Drawings

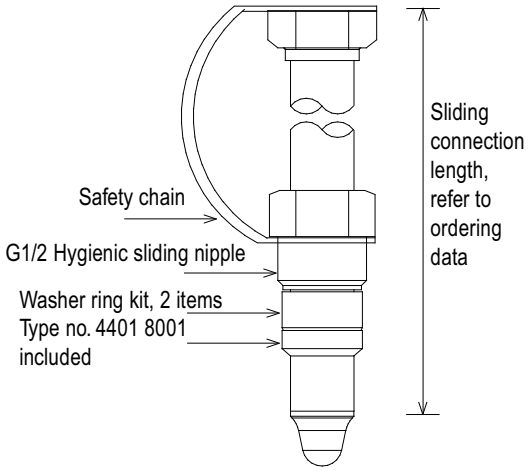
[mm]



G1/2 Hygienic connection



3A/DN38 Hygienic connection
O-ring EPDM incl.



G1/2 Hygienic,
Sliding connection

Authorised Dealer

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