

LBFS Hanging

Point level detection, hanging, for solids in silos

LBFS-##52#.0

Overview

- All wetted parts in stainless steel
- IP68 optional
- ATEX approved
- Built with standard LBFS-xx52x.x



Picture similar



Technical data

Performance characteristics

| | |
|-----------------------|--|
| Measuring principle | CleverLevel level switches (Frequency Sweep) |
| Hysteresis | ± 1 mm |
| Media characteristics | DC > 1.5 |
| Step response time | 0.1 s , typ. 0.2 s , max. |
| Damping | 0 ... 10 s , adjustable |
| Repeatability | ± 1 mm |

Process conditions

| | |
|---------------------|---------------|
| Process temperature | -25 ... 80 °C |
|---------------------|---------------|

Process connection

| | |
|-----------------------|---|
| Connection variants | Refer to section "Dimensional drawings" |
| Wetted parts material | AISI 316L (1.4404) PEEK Natura |

| | |
|--------------------------------|-------------|
| Surface roughness wetted parts | Ra ≤ 0.8 µm |
|--------------------------------|-------------|

Ambient conditions

| | |
|---------------------------------------|---|
| Operating temperature | -25 ... 80 °C , when cable is unmoved -5 ... 80 °C , when cable is moved |
| Storage temperature range | -40 ... 85 °C |
| Degree of protection (EN 60529) | IP 67 , standard IP 68 (336 h @ 10 mH2O) , optional |
| Humidity | < 98 % RH , condensing |
| Cable bending radius | r ≥ 59 mm |
| Vibration (sinusoidal) (EN 60068-2-6) | 1.6 mm p-p (2 ... 25 Hz) , 4 g (25 ... 100 Hz) , 1 octave / min. |

Output signal

| | |
|-----------------|--|
| Output type | PNP NPN |
| Switching logic | Normally closed (NC) Normally open (NO) |

Output signal

| | |
|--------------------------|--|
| Voltage drop | PNP: (+Vs -1.5 V) ± 0.5 V, Rload = 10 kΩ NPN: (+1.5 V) ± 0.5 V, Rload = 10 kΩ |
| Current rating | 20 mA , max. |
| Off leak current | < 100 µA , max. |
| Short circuit protection | Yes |

Housing

| | |
|--------------|---|
| Style | Hanging version |
| Overall size | Refer to section "Dimensional drawings" |
| Material | AISI 316L (1.4404) |

Electrical connection

| | |
|-------------|--------------------------|
| Cable | 4-wire, shielded, PUR |
| Cable gland | M16x1.5, stainless steel |

Power supply

| | |
|-------------------------------|------------------------------|
| Voltage supply range | 12 ... 30 V DC |
| Current consumption (no load) | 25 mA , typ. 50 mA , max. |
| Power-up time | < 2 s |
| Reverse polarity protection | Yes |

Factory settings

| | |
|--|-------------------|
| Switching range (dielectric constant DC) | < 75.3 % , DC > 2 |
| Range hysteresis | 2.4 % |
| Damping | 0.1 s |

IECEx / CCC / 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 |

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Technical data

ATEX II 1D Ex ta IIIC T100 °C Da

Voltage supply range, U_n 30 V DC , max.

SEPR_26463_Current rating, I_n 100 mA , max.

Degree of protection for cable accessories IP 67

Temperature class T100 °C $-25 < T_{amb} < 70$ °C , with cable outlet

ATEX II 1G Ex ia IIC T4/T5 Ga

Maximum values for barrier selection, U_i 30 V DC

Maximum values for barrier selection, I_i 100 mA

Maximum values for barrier selection, P_i 750 mW

Internal capacitance, C_i 43 nF
Add 0.20 nF/meter for cable lengths above 1.5 meters

Internal inductance, L_i 10 μ H
Add 1.13 μ H/meter for cable lengths above 1.5 meters

ATEX II 1G Ex ia IIC T4/T5 Ga

Recommended barrier for output type PNP PROFSI3-B25100-ALG-LS

Temperature class, T1 ... T5 $-25 < T_{amb} < 70$ °C , with cable outlet

ATEX II 1G Ex ia IIC T4/T5 Ga

Voltage supply range, U_n 30 V DC , max.

Current rating, I_n 100 mA , max.

Degree of protection for cable accessories IP 67

Temperature class, T1 ... T5 $-25 < T_{amb} < 70$ °C , with cable outlet

Compliance and approvals

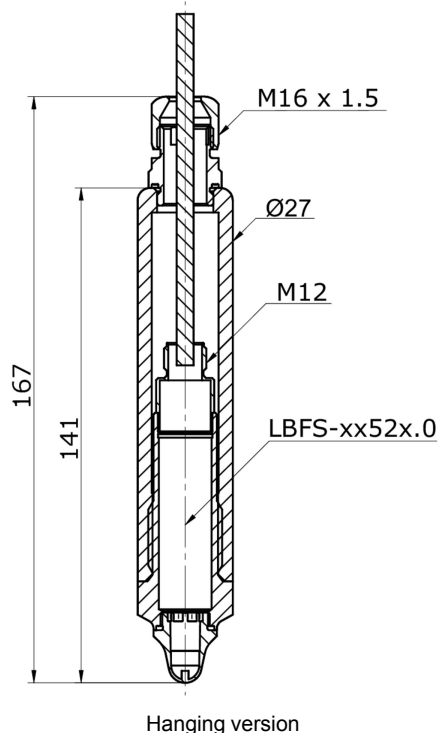
Hygiene FDA compliant

Safety WHG (overflow, leakage)

Explosion protection ATEX II 1D Ex ta IIIC T100 °C Da
ATEX II 1G Ex ia IIC T4/T5 Ga
ATEX II 3G Ex ec IIC T4/T5 Gc

Pharma USP Class VI (PEEK material)

Dimensional drawings (mm)

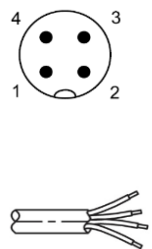
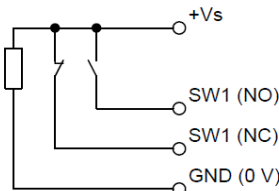
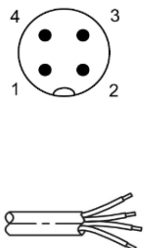
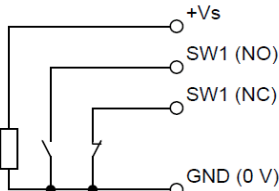


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Electrical connection

| Output type | Electrical connection | Equivalent circuit | Function | Pin assignment |
|---------------------------|--|---|---------------------------|----------------|
| PNP |  |  | +Vs | 1 |
| | | | SW1, Normally open (NO) | 4 |
| | | | SW1, Normally closed (NC) | 2 |
| | | | GND (0 V) | 3 |
| | | | +Vs | BN |
| | | | SW1, Normally open (NO) | BK |
| SW1, Normally closed (NC) | WH | | | |
| GND (0 V) | BU | | | |
| NPN |  |  | +Vs | 1 |
| | | | SW1, Normally open (NO) | 4 |
| | | | SW1, Normally closed (NC) | 2 |
| | | | GND (0 V) | 3 |
| | | | +Vs | BN |
| | | | SW1, Normally open (NO) | BK |
| SW1, Normally closed (NC) | WH | | | |
| GND (0 V) | BU | | | |

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Ordering information

Ordering key - Configuration possibilities see website

| | LBFS | - | # | #### | . | 5 | 2 | # | # |
|--|------|---|---|------|---|---|---|---|---|
| Product | LBFS | | | | | | | | |
| Compliance and approvals | | | | | | | | | |
| Standard | | | | | | | | | 0 |
| ATEX II 1G Ex ia IIC T5 Ga | | | | | | | | | 1 |
| ATEX II 1D Ex ta IIIC T100 °C | | | | | | | | | 2 |
| ATEX II 3G Ex ec IIC T5 | | | | | | | | | 3 |
| ATEX II 1G Ex ia IIC T5/T4 Ga/ATEX II 1D Ex ta IIIC T100°C Da | | | | | | | | | 4 |
| EAC (TR CU 020/2011) | | | | | | | | | B |
| Electrical Connection | | | | | | | | | |
| Hanging version with 1.5 m cable | | | | | | | | | A |
| Hanging version with 5 m cable | | | | | | | | | B |
| Hanging version with 10 m cable | | | | | | | | | C |
| Hanging version with 25 m cable | | | | | | | | | D |
| Hanging version with 1.5 m cable, IP68 | | | | | | | | | E |
| Hanging version with 5 m cable, IP68 | | | | | | | | | F |
| Hanging version with 10 m cable, IP68 | | | | | | | | | G |
| Process Connection | | | | | | | | | |
| G 1/2 A ISO 228-1 for reverse assembly (in-shell thread) (T10) | | | | | | | | | 5 |
| Process connection material | | | | | | | | | |
| Stainless Steel 1.4404 - AISI 316L | | | | | | | | | 2 |
| Output Configuration | | | | | | | | | |
| PNP output | | | | | | | | | 1 |
| NPN output | | | | | | | | | 2 |
| Configuration | | | | | | | | | |
| Factory settings | | | | | | | | | 0 |
| Customer-specific | | | | | | | | | C |