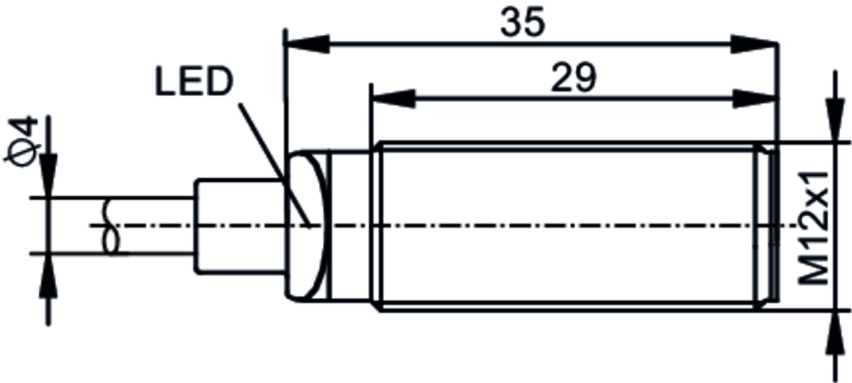


# MFS228



## Magnetic sensor

MFB3060-BPKG/AM/G/ZH



| Product characteristics                         |       |                                               |
|-------------------------------------------------|-------|-----------------------------------------------|
| Electrical design                               |       | PNP                                           |
| Output function                                 |       | normally open                                 |
| Sensing range                                   | [mm]  | 60; (referred to magnet M 4.0)                |
| Housing                                         |       | Threaded type                                 |
| Dimensions                                      | [mm]  | M12 x 1 / L = 35                              |
| Application                                     |       |                                               |
| System                                          |       | Full-metal housing                            |
| Pressure rating                                 | [bar] | 50                                            |
| Electrical data                                 |       |                                               |
| Operating voltage                               | [V]   | 10...30 DC; (cULus - Class 2 source required) |
| Rated insulation voltage                        | [V]   | 60                                            |
| Current consumption                             | [mA]  | < 10                                          |
| Protection class                                |       | III                                           |
| Reverse polarity protection                     |       | yes                                           |
| Max. power-on delay time                        | [ms]  | 50                                            |
| Outputs                                         |       |                                               |
| Electrical design                               |       | PNP                                           |
| Output function                                 |       | normally open                                 |
| Max. voltage drop switching output DC           | [V]   | 2.5                                           |
| Permanent current rating of switching output DC | [mA]  | 200                                           |
| Switching frequency DC                          | [Hz]  | 5000                                          |
| Short-circuit protection                        |       | yes                                           |
| Type of short-circuit protection                |       | yes (non-latching)                            |
| Overload protection                             |       | yes                                           |

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| Monitoring range              |                    |                                                                                  |
|-------------------------------|--------------------|----------------------------------------------------------------------------------|
| Sensing range                 | [mm]               | 60; (referred to magnet M 4.0)                                                   |
| Magnetic sensitivity          | [mT]               | 1.2                                                                              |
| Accuracy / deviations         |                    |                                                                                  |
| Hysteresis                    | [% of Sr]          | 1...10                                                                           |
| Switch-point drift            | [% of Sr]          | < 10                                                                             |
| Repeatability                 | [% of Sr]          | < 10                                                                             |
| Operating conditions          |                    |                                                                                  |
| Ambient temperature           | [°C]               | -25...75                                                                         |
| Protection                    |                    | IP 67                                                                            |
| Degree of soiling             |                    | 3                                                                                |
| Tests / approvals             |                    |                                                                                  |
| EMC                           | EN 61000-4-2       | 4 kV CD / 8 kV AD                                                                |
|                               | EN 61000-4-3       | 10 V/m                                                                           |
|                               | EN 61000-4-4       | 2 kV                                                                             |
|                               | EN 61000-4-5       | 0,5 kV line to line, Ri: 2 Ohm                                                   |
|                               | EN 61000-4-6       | 10 V                                                                             |
|                               | EN 55011           | class B                                                                          |
|                               | DIN ISO 11452-2    | 100 V/m                                                                          |
|                               | EN 60068-2-6 Fc    | 20 g 50 sweep cycles per frequency; 1 octave per minute in 3 axes / 10...3000 Hz |
| Vibration resistance          | EN 60068-2-27 Ea   | 100 g 11 ms half-sine; 3 shocks each in every direction of the 3 coordinate axes |
| Shock resistance              | EN 60068-2-52 Kb   | severity level 5 (4 test cycles)                                                 |
| Salt spray test               |                    |                                                                                  |
| MTTF                          | [years]            | 1445                                                                             |
| UL approval                   | Ta                 | -25...70 °C                                                                      |
|                               | Enclosure type     | Type 1                                                                           |
|                               | UL approval number | C023                                                                             |
|                               | File number UL     | E174191                                                                          |
| Mechanical data               |                    |                                                                                  |
| Weight                        | [g]                | 69.4                                                                             |
| Housing                       |                    | Threaded type                                                                    |
| Dimensions                    | [mm]               | M12 x 1 / L = 35                                                                 |
| Thread designation            |                    | M12 x 1                                                                          |
| Material                      |                    | housing: stainless steel (316L / 1.4404); cable plug: PEI; lock nuts: brass      |
| Full-metal housing            |                    | yes                                                                              |
| Displays / operating elements |                    |                                                                                  |
| Display                       | Switching status   | 1 x LED, yellow                                                                  |
| Accessories                   |                    |                                                                                  |
| Items supplied                |                    | lock nuts: 2                                                                     |
| Remarks                       |                    |                                                                                  |
| Remarks                       |                    | voltage supply to EN50178, SELV, PELV                                            |
| Pack quantity                 |                    | 1 pcs.                                                                           |

# MFS228



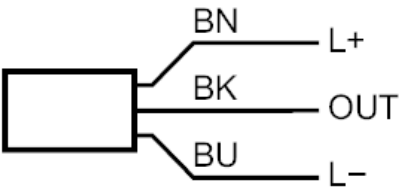
## Magnetic sensor

MFB3060-BPKG/AM/G/ZH

### Electrical connection

Cable: 2 m, PUR; 3 x 0.34 mm<sup>2</sup>

### Connection



|      |       |
|------|-------|
| BN : | brown |
| BK:  | black |
| BU:  | blue  |

|     |             |
|-----|-------------|
| BN: | L+          |
| BK: | OUT DO (NO) |
| BU: | L-          |