

# Inductive analog sensor

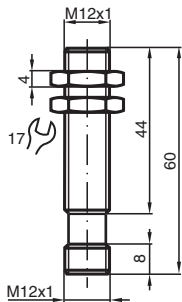
## IA6-12GM50-IU-V1



- Inductive analog sensor
- Analog output 0 V ... 10 V/4 mA ... 20 mA
- 0...6 mm quasi flush



### Dimensions



### Technical Data

#### General specifications

|                              |   |
|------------------------------|---|
| Output type                  | Analog current output or analog voltage output                              |
| Installation                 | quasi flush   |
| Output polarity              | DC  |
| Actuating element            | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>18 mm x 18 mm x 1 mm |
| Reduction factor $r_{Al}$    | 0.33  |
| Reduction factor $r_{Cu}$    | 0.28  |
| Reduction factor $r_{304}$   | 0.8   |
| Reduction factor $r_{Brass}$ | 0.43  |
| Measuring range              | 0 ... 6 mm  |
| Output type                  | 4-wire  |

#### Nominal ratings

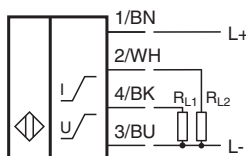
|                         |       |
|-------------------------|-------|
| Installation conditions |       |
| A                       | 2 mm  |
| B                       | 12 mm |
| C                       | 18 mm |

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## Technical Data

|   |       |  |
|---|-------|--|
| F   |       | 14 mm  |
| Operating voltage                               | $U_B$ | 15 ... 30 V , residual ripple 20 % $U_B$                                     |
| Limit frequency (3dB)                           |       | 1000 Hz  |
| Reverse polarity protection                     |       | yes  |
| Short-circuit protection                        |       | yes  |
| Repeat accuracy                                 | R     | $\pm 0.32$ mm  |
| Resolution                                      |       | 0 ... 1 $\mu$ m  |
| No-load supply current                          | $I_0$ | $\leq 10$ mA   |
| <b>Functional safety related parameters</b>     |       |  |
| MTTF <sub>d</sub>                               |       | 551 a  |
| Diagnostic Coverage (DC)                        |       | 0 %  |
| <b>Analog output</b>                            |       |  |
| Output type                                     |       | 0 ... 10 V / 4 ... 20 mA   |
| Load resistor                                   |       | Current output A2: 0.4 k $\Omega$ ( $U_B=15V$ ) / 1 k $\Omega$ ( $U_B=30V$ ) |
| Load current                                    |       | Voltage output A1: $\leq 15$ mA  |
| Recovery time                                   |       | 20 ms  |
| Adjustment tolerance zero point                 |       | $\leq \pm 10$ % of full-scale value  |
| Temperature drift                               |       | $\pm 5$ % (0 ... 70 °C)<br>$\pm 10$ % (-25 ... 0 °C)                         |
| Residual ripple                                 |       | 20 %   |
| <b>Compliance with standards and directives</b> |       |  |
| Standard conformity                             |       |  |
| Standards                                       |       | EN IEC 60947-5-2   |
| <b>Approvals and certificates</b>               |       |  |
| CCC approval                                    |       | CCC approval / marking not required for products rated $\leq 36$ V           |
| <b>Ambient conditions</b>                       |       |  |
| Ambient temperature                             |       | -25 ... 70 °C (-13 ... 158 °F)   |
| <b>Mechanical specifications</b>                |       |  |
| Connection type                                 |       | Connector plug   |
| Housing material                                |       | chromium plated brass  |
| Sensing face                                    |       | PBT  |
| Degree of protection                            |       | IP67   |
| Connector                                       |       |  |
| Threading                                       |       | M12 x 1  |
| Number of pins                                  |       | 4  |
| Mass  |       | 27 g   |
| Dimensions                                      |       |  |
| Length  |       | 60 mm  |
| Diameter  |       | 12 mm  |

## Connection



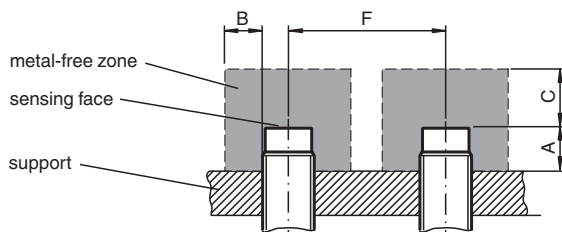
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

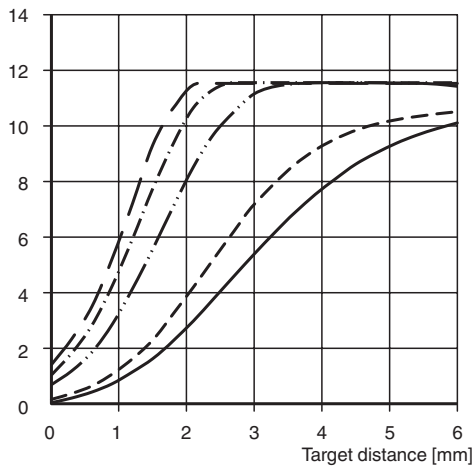
## Installation Conditions



## Characteristic Curve

### Output characteristics

Output value [V]



- Steel FE 360
- - - Stainless steel V2A
- Copper
- · - Aluminum
- · · Brass

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