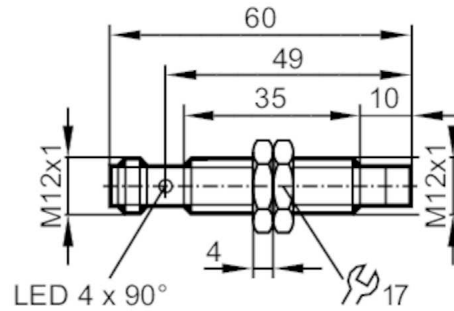


IFP201



Inductive sensor

IFK3004-FRKG/V4A/IO/US-104



Product characteristics

| | |
|-------------------------|--|
| Electrical design | PNP/NPN; (configurable) |
| Output function | normally open / closed; (configurable) |
| Communication interface | IO-Link |
| Housing | Threaded type |
| Dimensions [mm] | M12 x 1 / L = 60 |

Application

| | |
|--|-----------------------|
| System | Magnetic-field immune |
| Magnetic-field immune | yes |
| Max. electromagnetic field immunity [mT] | 300 |

Electrical data

| | |
|-----------------------------|------------|
| Operating voltage [V] | 10...30 DC |
| Current consumption [mA] | < 20 |
| Protection class | III |
| Reverse polarity protection | yes |

Outputs

| | |
|--|--|
| Electrical design | PNP/NPN; (configurable) |
| Output function | normally open / closed; (configurable) |
| Max. voltage drop switching output DC [V] | 2.5 |
| Permanent current rating of switching output DC [mA] | 100 |
| Switching frequency DC [Hz] | 75 |
| Short-circuit protection | yes |
| Overload protection | yes |

Monitoring range

| | |
|------------------------------|------------|
| Switch point IO-Link [mm] | 0.8...3.88 |
| Measuring range IO-Link [mm] | 0.4...4 |

Accuracy / deviations

| | |
|---------------|---------|
| Repeatability | < 10 µm |
|---------------|---------|

IFP201



Inductive sensor

IFK3004-FRKG/V4A/IO/US-104

| Factory calibration (target: aluminium, 36x36 mm) | | |
|--|---------------------------|---|
| Resolution | [μm] | 5 |
| Temperature drift | | $\pm 1,6 \mu\text{m/K}$ |
| Linearity deviation | | $\pm 10 \mu\text{m}$ |
| application calibration (1-point calibration; target: steel, 36x36 mm) | | |
| Resolution | [μm] | 5 |
| Temperature drift | | $\pm 4 \mu\text{m/K}$ |
| Linearity deviation | | $\pm 75 \mu\text{m}$ |
| Application calibration (3-point calibration; target: steel, 24x24 mm) | | |
| Resolution | [μm] | 5 |
| Temperature drift | | $\pm 4 \mu\text{m/K}$ |
| Linearity deviation | | $\pm 50 \mu\text{m}$ |
| Interfaces | | |
| Communication interface | | IO-Link |
| Transmission type | | COM2 (38,4 kBaud) |
| IO-Link revision | | 1.1 |
| SDCI standard | | IEC 61131-9 CDV |
| Profiles | | Smart Sensor: Device Identification; Device Diagnosis; Device Teach Channel; Binary Data Channel; Process Data Variable |
| SIO mode | | yes |
| Required master port class | | A |
| Min. process cycle time | [ms] | 3.2 |
| Supported DeviceIDs | | |
| | Type of operation | DeviceID |
| | default | 1705 |
| Operating conditions | | |
| Ambient temperature | [$^{\circ}\text{C}$] | -25...70 |
| Protection | | IP 65; IP 66; IP 67; IP 68; IP 69K |
| Tests / approvals | | |
| EMC | EN 61000-4-2 ESD | 4 kV CD / 8 kV AD |
| | EN 61000-4-3 HF radiated | 10 V/m |
| | EN 61000-4-4 Burst | 2 kV |
| | EN 61000-4-6 HF conducted | 10 V |
| | EN 55011 | class B |
| Vibration resistance | EN 60068-2-6 Fc | 20 g (10...3000 Hz) / 50 sweep cycles per frequency; 1 octave per minute in 3 axes |
| Shock resistance | EN 60068-2-27 Ea | 100 g 11 ms half-sine; 3 shocks each in every direction of the 3 coordinate axes |
| Continuous shock resistance | EN 60068-2-27 Eb | 40 g 6 ms; 4000 shocks each in every direction of the 3 coordinate axes |
| Fast temperature changes | EN 60068-2-14 Na | TA = -25 $^{\circ}\text{C}$; TB = 70 $^{\circ}\text{C}$; t1 = 30 min; t2 = < 10 s; 50 cycles |
| MTTF | [years] | 1341 |
| Embedded software included | | yes |

IFP201



Inductive sensor

IFK3004-FRKG/V4A/IO/US-104

| | | |
|-------------|--------------------|-------------------------|
| UL approval | Ta | -25...70 °C |
| | Enclosure type | Type 1 |
| | voltage supply | Limited Voltage/Current |
| | UL approval number | A005 |
| | File number UL | E174191 |

Mechanical data

| | | |
|--------------------|------|---|
| Weight | [g] | 53.9 |
| Housing | | Threaded type |
| Mounting | | flush mountable |
| Dimensions | [mm] | M12 x 1 / L = 60 |
| Thread designation | | M12 x 1 |
| Material | | housing: stainless steel (1.4404 / 316L); sensing face: LCP white; LED window: PEI; lock nuts: stainless steel (1.4404 / 316L) |
| Tightening torque | [Nm] | 7 |

Displays / operating elements

| | | |
|---------|------------------------------------|--------------------|
| Display | Switching status | 4 x LED, yellow |
| | SIO mode | |
| | output stage supplied with current | LED, yellow lights |
| | IO-Link mode | |
| | target in measuring range | LED, yellow lights |

Accessories

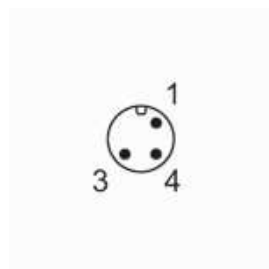
| | |
|----------------|--------------|
| Items supplied | lock nuts: 2 |
|----------------|--------------|

Remarks

| | |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

Electrical connection - plug

Connector: 1 x M12; coding: A



Inductive sensor

IFK3004-FRKG/V4A/IO/US-104

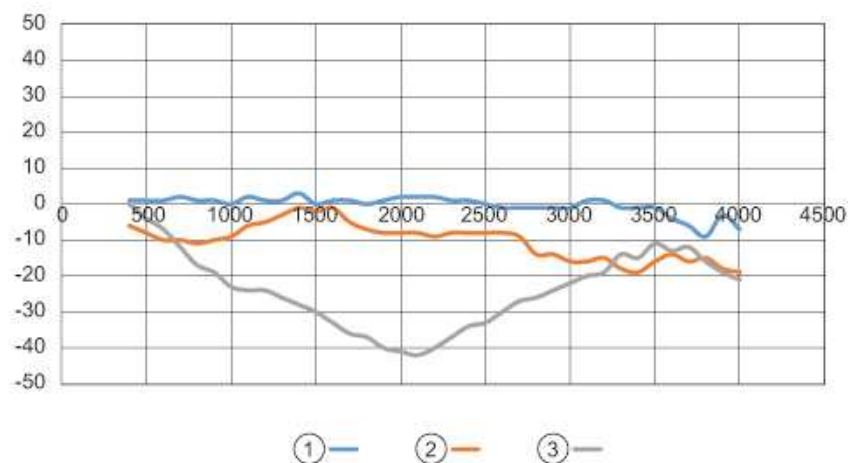
Connection



4: OUT / IO-Link

Diagrams and graphs

Linearity deviation



- x Measured value [μm]
- y Linearity deviation [μm]
- 1 Factory calibration (target: aluminium, 36x36 mm)
- 2 application calibration (1-point calibration; target: steel, 36x36 mm)
- 3 Application calibration (3-point calibration; target: steel, 24x24 mm)