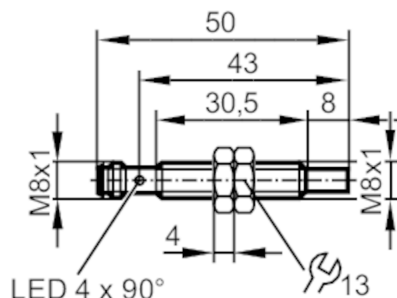


## Inductive sensor with IO-Link

IEK3006-FRKG/IO/AS



## Product characteristics

|                         |                                                    |
|-------------------------|----------------------------------------------------|
| Electrical design       | PNP/NPN; (parameterisable)                         |
| Output function         | normally open / normally closed; (parameterisable) |
| Communication interface | IO-Link                                            |
| Housing                 | threaded type                                      |
| Dimensions [mm]         | M8 x 1 / L = 50                                    |

## Application

|                 |                      |
|-----------------|----------------------|
| Special feature | Gold-plated contacts |
|-----------------|----------------------|

## Electrical data

|                             |            |
|-----------------------------|------------|
| Operating voltage [V]       | 10...30 DC |
| Current consumption [mA]    | < 15       |
| Protection class            | III        |
| Reverse polarity protection | yes        |

## Outputs

|                                                      |                                                    |
|------------------------------------------------------|----------------------------------------------------|
| Electrical design                                    | PNP/NPN; (parameterisable)                         |
| Output function                                      | normally open / normally closed; (parameterisable) |
| Max. voltage drop switching output DC [V]            | 2.5                                                |
| Permanent current rating of switching output DC [mA] | 100                                                |
| Switching frequency DC [Hz]                          | 600                                                |
| Short-circuit protection                             | yes                                                |
| Overload protection                                  | yes                                                |

## Detection zone

|                              |                                |
|------------------------------|--------------------------------|
| Switch point IO-Link [mm]    | 1.13...5.61; (parameterisable) |
| Measuring range IO-Link [mm] | 0.6...6                        |

## Accuracy / deviations

|                             |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| Correction factor           | steel: 1 / stainless steel: 0.7 / brass: 0.5 / aluminium: 0.5 / copper: 0.4 |
| Hysteresis [% of Sr]        | 3...15                                                                      |
| Note on hysteresis          | parameterisable                                                             |
| Linearity error IO-Link [%] | ± 3; (of the final value of the measuring range)                            |
| Repeatability IO-Link [%]   | ± 2; (of the final value of the measuring range)                            |



## Inductive sensor with IO-Link

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|                   |                                                     |
|-------------------|-----------------------------------------------------|
| Temperature drift | ± 10 %; (of the final value of the measuring range) |
|-------------------|-----------------------------------------------------|

| Interfaces                      |                                                                                                                                         |                   |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Communication interface         | IO-Link                                                                                                                                 |                   |
| Transmission type               | COM2 (38,4 kBaud)                                                                                                                       |                   |
| IO-Link revision                | 1.1                                                                                                                                     |                   |
| SDCI standard                   | IEC 61131-9                                                                                                                             |                   |
| Profiles                        | Smart Sensor: Identification and diagnosis; Multi-channel, two setpoint switching sensor, type 0 Generic Profiled Sensor; Teach Channel |                   |
| SIO mode                        | yes                                                                                                                                     |                   |
| Required master port type       | A                                                                                                                                       |                   |
| Min. process cycle time [ms]    | 3.2                                                                                                                                     |                   |
| IO-Link process data (cyclical) | <b>function</b>                                                                                                                         | <b>bit length</b> |
|                                 | process value                                                                                                                           | 16                |
|                                 | device status                                                                                                                           | 4                 |
|                                 | binary switching information                                                                                                            | 2                 |
| IO-Link functions (acyclical)   | switching cycles counter; switch-on cycle counter; operating hours counter; internal temperature; application specific tag              |                   |
| Supported DeviceIDs             | <b>Type of operation</b>                                                                                                                | <b>DeviceID</b>   |
|                                 | default                                                                                                                                 | 1274              |
| Note                            | For further information please see the IODD PDF file under "Downloads"                                                                  |                   |

| Operating conditions     |                                                                       |  |
|--------------------------|-----------------------------------------------------------------------|--|
| Ambient temperature [°C] | -40...75                                                              |  |
| Protection               | IP 65; IP 66; IP 67; IP 68; IP 69K; (with ifm socket duly screwed on) |  |

| 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, 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 change     | EN 60068-2-14 Na          | TA = -40 °C; TB = 85 °C; t1 = 30 min; t2 = < 10 s; 50 cycles                     |
| Salt spray test             | EN 60068-2-52 Kb          | severity level 5 (4 test cycles)                                                 |
| MTTF [years]                | 778                       |                                                                                  |
| Embedded software included  | yes                       |                                                                                  |
| UL approval                 | Ta                        | -25...70 °C                                                                      |
|                             | Enclosure type            | Type 1                                                                           |
|                             | power supply              | Limited Voltage/Current                                                          |
|                             | UL Approval no.           | A031                                                                             |
|                             | File number UL            | E174191                                                                          |

| Mechanical data |               |  |
|-----------------|---------------|--|
| Weight [g]      | 15.3          |  |
| Housing         | threaded type |  |

IE5456



Inductive sensor with IO-Link

IEK3006-FRKG/IO/AS

|                        |                                                                                                                      |
|------------------------|----------------------------------------------------------------------------------------------------------------------|
| Mounting               | non-flush mountable                                                                                                  |
| Dimensions [mm]        | M8 x 1 / L = 50                                                                                                      |
| Thread designation     | M8 x 1                                                                                                               |
| Materials              | stainless steel (316L/1.4404); sensing face: LCP white;<br>LED window: PEI; lock nuts: stainless steel (316L/1.4404) |
| Tightening torque [Nm] | A = 5 mm: < 3 Nm; B: < 5 Nm                                                                                          |

Displays / operating elements

|         |                  |                        |
|---------|------------------|------------------------|
| Display | switching status | 4 x LED, yellow lights |
|---------|------------------|------------------------|

Accessories

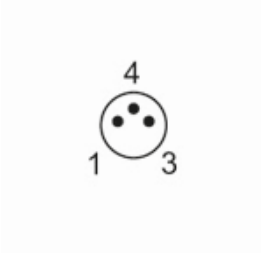
|                |              |
|----------------|--------------|
| Items supplied | lock nuts: 2 |
|----------------|--------------|

Remarks

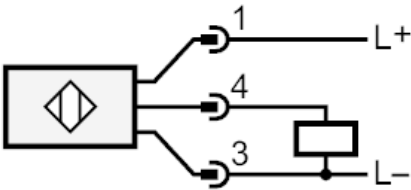
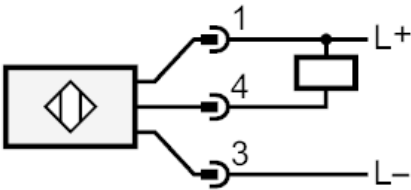
|               |        |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

Electrical connection - plug

Connector: 1 x M8; coding: A; Contacts: gold-plated



Connection



# IE5456



## Inductive sensor with IO-Link

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### Diagrams and graphs

#### Installation

