

# IES224



## Inductive sensor

IEB2006-ARKG/V4A/AS



### Product characteristics

|                    |                 |
|--------------------|-----------------|
| Electrical design  | PNP/NPN         |
| Output function    | normally open   |
| Sensing range [mm] | 6               |
| Housing            | Threaded type   |
| Dimensions [mm]    | M8 x 1 / L = 30 |

### Application

|             |                                                                                                |
|-------------|------------------------------------------------------------------------------------------------|
| System      | gold-plated contacts; Increased sensing range                                                  |
| Application | Suitable for industrial, mobile, cooling and lubricating applications; Industrial applications |

### Electrical data

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

### Outputs

|                                                      |               |
|------------------------------------------------------|---------------|
| Electrical design                                    | PNP/NPN       |
| Output function                                      | normally open |
| Max. voltage drop switching output DC [V]            | 2.5           |
| Max. leakage current [mA]                            | 0.5           |
| Permanent current rating of switching output DC [mA] | 100           |
| Switching frequency DC [Hz]                          | 800           |
| Short-circuit protection                             | yes           |
| Overload protection                                  | yes           |

### Monitoring range

|                               |               |
|-------------------------------|---------------|
| Sensing range [mm]            | 6             |
| Real sensing range $S_r$ [mm] | $6 \pm 10 \%$ |
| Operating distance [mm]       | 0...4.86      |
| Increased sensing range       | yes           |

### Accuracy / deviations

|                   |                                                                            |
|-------------------|----------------------------------------------------------------------------|
| Correction factor | steel: 1 / stainless steel: 0.7 / brass: 0.5 / aluminum: 0.5 / copper: 0.4 |
|-------------------|----------------------------------------------------------------------------|

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|                    |           |          |
|--------------------|-----------|----------|
| Hysteresis         | [% of Sr] | 1...15   |
| Switch-point drift | [% of Sr] | -10...10 |

### Operating conditions

|                     |                                                                       |          |
|---------------------|-----------------------------------------------------------------------|----------|
| Ambient temperature | [°C]                                                                  | -40...85 |
| 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 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             | 40 g 6 ms; 4000 shocks each in every direction of the 3 coordinate axes            |
| Fast temperature changes    | 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]                   | 1682                                                                               |
| Embedded software included  |                           | yes                                                                                |
| UL approval                 | Ta                        | -25...80 °C                                                                        |
|                             | Enclosure type            | Type 1                                                                             |
|                             | voltage supply            | Limited Voltage/Current                                                            |
|                             | UL approval number        | A017                                                                               |
|                             | File number UL            | E174191                                                                            |

### Mechanical data

|                    |      |                                                                                                                       |
|--------------------|------|-----------------------------------------------------------------------------------------------------------------------|
| Weight             | [g]  | 2.8                                                                                                                   |
| Housing            |      | Threaded type                                                                                                         |
| Mounting           |      | non-flush mountable                                                                                                   |
| Dimensions         | [mm] | M8 x 1 / L = 30                                                                                                       |
| Thread designation |      | M8 x 1                                                                                                                |
| Material           |      | stainless steel (1.4404 / 316L); sensing face: LCP white; LED window: PEI; lock nuts: stainless steel (1.4404 / 316L) |
| Tightening torque  | [Nm] | A = 5 mm: 2 Nm; B: 5 Nm                                                                                               |

### Displays / operating elements

|         |                  |                     |
|---------|------------------|---------------------|
| Display | Switching status | 4 x 90° LED, yellow |
|---------|------------------|---------------------|

### Accessories

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

### Remarks

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

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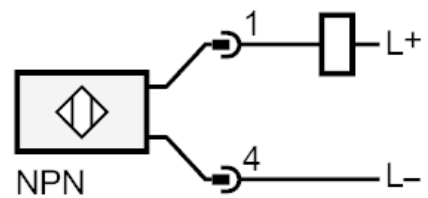
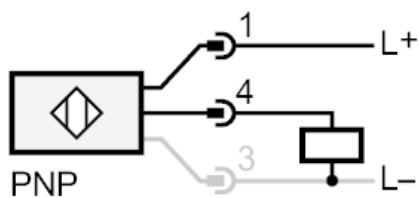
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### Electrical connection



### Connection



### Electrical connection - plug

Connector: 1 x M8; Contacts: gold-plated

### Diagrams and graphs

#### Installation

