



## Inductive sensor

IIC022-ASKG/M/US-104



## Product characteristics

|                    |                    |
|--------------------|--------------------|
| Electrical design  | PNP/NPN            |
| Output function    | normally open      |
| Sensing range [mm] | 22                 |
| Housing            | Threaded type      |
| Dimensions [mm]    | M30 x 1.5 / L = 70 |

## Application

|             |                                               |
|-------------|-----------------------------------------------|
| System      | gold-plated contacts; Increased sensing range |
| Application | Use in mobile and harsh applications          |

## Electrical data

|                             |                                  |
|-----------------------------|----------------------------------|
| Operating voltage [V]       | 10...36 DC                       |
| Current consumption [mA]    | < 10; (only in 3-wire operation) |
| Protection class            | II                               |
| Reverse polarity protection | yes                              |

## Outputs

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Electrical design                                    | PNP/NPN                         |
| Output function                                      | normally open                   |
| Max. voltage drop switching output DC [V]            | 2.5                             |
| Minimum load current [mA]                            | 2; (only in 2-wire operation)   |
| Max. leakage current [mA]                            | 0.5; (only in 2-wire operation) |
| Permanent current rating of switching output DC [mA] | 100                             |
| Switching frequency DC [Hz]                          | 100                             |
| Short-circuit protection                             | yes                             |
| Overload protection                                  | yes                             |

## Monitoring range

|                               |                |
|-------------------------------|----------------|
| Sensing range [mm]            | 22             |
| Real sensing range $S_r$ [mm] | $22 \pm 10 \%$ |
| Operating distance [mm]       | 0...17.82      |



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|                              |                                                                                                             |                                                                                                |
|------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Increased sensing range      |                                                                                                             | yes                                                                                            |
| <b>Accuracy / deviations</b> |                                                                                                             |                                                                                                |
| Correction factor            | steel: 1 / stainless steel: 0.7 / brass: 0.5 / aluminum: 0.45 / copper: 0.4                                 |                                                                                                |
| Hysteresis [% of Sr]         |                                                                                                             | 1...20                                                                                         |
| Switch-point drift [% of Sr] |                                                                                                             | -10...10                                                                                       |
| <b>Operating conditions</b>  |                                                                                                             |                                                                                                |
| Ambient temperature [°C]     |                                                                                                             | -40...85                                                                                       |
| Protection                   |                                                                                                             | IP 67; IP 69K                                                                                  |
| <b>Tests / approvals</b>     |                                                                                                             |                                                                                                |
| EMC                          | Automotive area                                                                                             |                                                                                                |
|                              | Noise emission and noise interference: ECE R10                                                              | E1 type approval                                                                               |
|                              | noise immunity according to DIN ISO 11452-2                                                                 | 100 V/m                                                                                        |
|                              | conducted interference in 24 V networks to ISO 7637-2: 2004 (pulse 1 to 4) and ISO16750-2: 2012 (load dump) |                                                                                                |
|                              | pulse                                                                                                       | 1 2a 2b 3a 3b 4 Load dump                                                                      |
|                              | Severity level                                                                                              | III III III III III Test A                                                                     |
|                              | Failure criterion                                                                                           | C A C A A C C                                                                                  |
|                              | 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 61000-4-5 Surge                                                                                          | 0,5 kV mains line to line                                                                      |
|                              | EN 61000-4-6 HF conducted                                                                                   | 10 V                                                                                           |
|                              | EN 55011                                                                                                    | class B                                                                                        |
|                              | EN 60068-2-6 Fc                                                                                             | 20 g (10...3000 Hz) / -20...50 °C                                                              |
| Vibration resistance         |                                                                                                             | 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 / -40...85 °C |
| Continuous shock resistance  | EN 60068-2-27                                                                                               | 40 g 6 ms; 4000 shocks each in every direction of the 3 coordinate axes / -20...50 °C          |
| 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]                 |                                                                                                             | 1089                                                                                           |
| UL approval                  | Ta                                                                                                          | 0...40 °C                                                                                      |
|                              | Enclosure type                                                                                              | Type 1                                                                                         |
|                              | voltage supply                                                                                              | Limited Voltage/Current                                                                        |
|                              | File number UL                                                                                              | E174191                                                                                        |
| <b>Mechanical data</b>       |                                                                                                             |                                                                                                |
| Weight [g]                   |                                                                                                             | 118.3                                                                                          |
| Housing                      |                                                                                                             | Threaded type                                                                                  |
| Mounting                     |                                                                                                             | non-flush mountable                                                                            |
| Dimensions [mm]              |                                                                                                             | M30 x 1.5 / L = 70                                                                             |
| Thread designation           |                                                                                                             | M30 x 1.5                                                                                      |



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|                   |                                                                                                   |    |
|-------------------|---------------------------------------------------------------------------------------------------|----|
| Material          | threaded sleeve: stainless steel; sensing face:<br>LCP natural; LED window: PEI; lock nuts: brass |    |
| Tightening torque | [Nm]                                                                                              | 50 |

| Displays / operating elements |                  |                     |
|-------------------------------|------------------|---------------------|
| Display                       | Switching status | 4 x 90° LED, yellow |

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

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

Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: gold-plated

