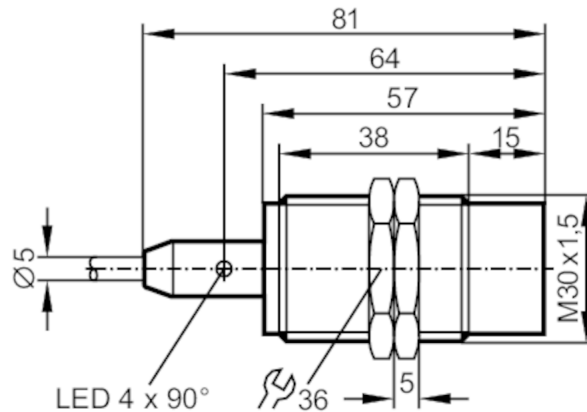


## Inductive sensor

IHK3022-BPKG/M/60V/6M/ZH



## Electrical data

|                             |      |                                         |
|-----------------------------|------|-----------------------------------------|
| Operating voltage           | [V]  | 10...60 DC; ("supply class 2" to cULus) |
| Current consumption         | [mA] | < 10                                    |
| Protection class            |      | II                                      |
| Reverse polarity protection |      | yes                                     |

## Outputs

|                                                 |      |               |
|-------------------------------------------------|------|---------------|
| Electrical design                               |      | PNP           |
| Output function                                 |      | normally open |
| Max. voltage drop switching output DC           | [V]  | 2.5           |
| Permanent current rating of switching output DC | [mA] | 200           |
| Switching frequency DC                          | [Hz] | 100           |
| Short-circuit protection                        |      | yes           |
| Type of short-circuit protection                |      | pulsed        |
| Overload protection                             |      | yes           |

## Detection zone

|                         |      |           |
|-------------------------|------|-----------|
| Sensing range           | [mm] | 22        |
| Real sensing range Sr   | [mm] | 22 ± 10 % |
| Operating distance      | [mm] | 0...17.82 |
| Increased sensing range |      | yes       |

## Accuracy / deviations

|                    |           |                                                                               |
|--------------------|-----------|-------------------------------------------------------------------------------|
| Correction factor  |           | steel: 1 / stainless steel: 0.7 / brass: 0.5 / aluminium: 0.45 / copper: 0.35 |
| Hysteresis         | [% of Sr] | 1...20                                                                        |
| Switch point drift | [% of Sr] | -10...10                                                                      |

## Operating conditions

|                     |      |               |
|---------------------|------|---------------|
| Ambient temperature | [°C] | -40...85      |
| Protection          |      | IP 67; IP 69K |



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| Tests / approvals             |                                                                                      |                                                                                        |                                                                                                |                     |    |    |    |    |
|-------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------|----|----|----|----|
| EMC                           | automotive area                                                                      |                                                                                        |                                                                                                |                     |    |    |    |    |
|                               | noise emission and noise interference according to the automotive directive 95/54/EC |                                                                                        | E1 type approval                                                                               |                     |    |    |    |    |
|                               | noise immunity according to DIN ISO 11452-2                                          |                                                                                        | 100 V/m                                                                                        |                     |    |    |    |    |
|                               | conducted interference acc. to ISO 7637-2                                            |                                                                                        |                                                                                                |                     |    |    |    |    |
|                               | pulse                                                                                |                                                                                        | 1                                                                                              | 2                   | 3a | 3b | 4  | 5  |
|                               | severity level                                                                       |                                                                                        | IV                                                                                             | IV                  | IV | IV | IV | IV |
|                               | failure criterion                                                                    |                                                                                        | C                                                                                              | C                   | A  | A  | A  | 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                                                                                        |                     |    |    |    |    |
| Vibration resistance          | EN 60068-2-6 Fc                                                                      |                                                                                        | 20 g (10...3000 Hz) / -20...50 °C                                                              |                     |    |    |    |    |
|                               |                                                                                      |                                                                                        | 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 60068-2-29 Eb                                                                     |                                                                                        | 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]                                                                              | 900                                                                                    |                                                                                                |                     |    |    |    |    |
| UL approval                   | Ta                                                                                   |                                                                                        | 0...40 °C                                                                                      |                     |    |    |    |    |
|                               | Enclosure type                                                                       |                                                                                        | Type 1                                                                                         |                     |    |    |    |    |
|                               | voltage supply                                                                       |                                                                                        | Class 2                                                                                        |                     |    |    |    |    |
|                               | File number UL                                                                       |                                                                                        | E174191                                                                                        |                     |    |    |    |    |
| Mechanical data               |                                                                                      |                                                                                        |                                                                                                |                     |    |    |    |    |
| Weight                        | [g]                                                                                  | 367.5                                                                                  |                                                                                                |                     |    |    |    |    |
| Housing                       |                                                                                      | threaded type                                                                          |                                                                                                |                     |    |    |    |    |
| Mounting                      |                                                                                      | non-flush mountable                                                                    |                                                                                                |                     |    |    |    |    |
| Dimensions                    | [mm]                                                                                 | M30 x 1.5 / L = 81                                                                     |                                                                                                |                     |    |    |    |    |
| Thread designation            |                                                                                      | M30 x 1.5                                                                              |                                                                                                |                     |    |    |    |    |
| Materials                     |                                                                                      | housing: stainless steel; sensing face: LCP natural; LED window: PEI; lock nuts: brass |                                                                                                |                     |    |    |    |    |
| Displays / operating elements |                                                                                      |                                                                                        |                                                                                                |                     |    |    |    |    |
| Display                       |                                                                                      | switching status                                                                       |                                                                                                | 4 x 90° LED, yellow |    |    |    |    |
| Accessories                   |                                                                                      |                                                                                        |                                                                                                |                     |    |    |    |    |
| Accessories (supplied)        |                                                                                      | lock nuts: 2                                                                           |                                                                                                |                     |    |    |    |    |
| Remarks                       |                                                                                      |                                                                                        |                                                                                                |                     |    |    |    |    |
| Pack quantity                 |                                                                                      | 1 pcs.                                                                                 |                                                                                                |                     |    |    |    |    |

# IIM211



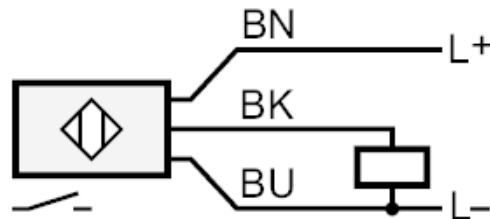
## Inductive sensor

IHK3022-BPKG/M/60V/6M/ZH

### Electrical connection

Cable: 6 m, PUR; burning behaviour to ECE R118 rev. 2; 3 x 0.5 mm<sup>2</sup>

### Connection



Core colours :

|      |       |
|------|-------|
| BK = | black |
| BN = | brown |
| BU = | blue  |