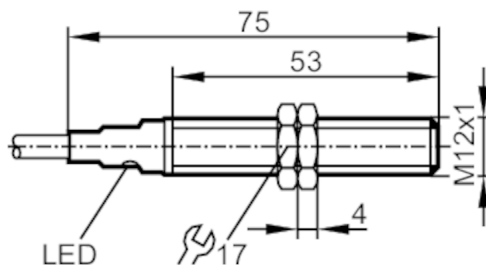


# IFM220



## Inductive sensor

IFK3004BANKG/M/4M/ZH



### Product characteristics

|                    |                  |
|--------------------|------------------|
| Electrical design  | NPN              |
| Output function    | normally open    |
| Sensing range [mm] | 4                |
| Housing            | threaded type    |
| Dimensions [mm]    | M12 x 1 / L = 75 |

### Application

|                 |                                      |
|-----------------|--------------------------------------|
| Special feature | Increased sensing range              |
| Application     | Use in mobile and harsh applications |

### Electrical data

|                             |            |
|-----------------------------|------------|
| Operating voltage [V]       | 10...36 DC |
| Current consumption [mA]    | < 10       |
| Protection class            | II         |
| Reverse polarity protection | yes        |

### Outputs

|                                                      |               |
|------------------------------------------------------|---------------|
| Electrical design                                    | 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] | 300           |
| Switching frequency DC [Hz]                          | 400           |
| Short-circuit protection                             | yes           |
| Type of short-circuit protection                     | pulsed        |
| Overload protection                                  | yes           |

### Detection zone

|                         |          |
|-------------------------|----------|
| Sensing range [mm]      | 4        |
| Operating distance [mm] | 0...3.24 |
| Increased sensing range | yes      |

### Accuracy / deviations

|                      |                                                                             |
|----------------------|-----------------------------------------------------------------------------|
| Correction factor    | steel: 1 / stainless steel: 0.7 / brass: 0.5 / aluminium: 0.5 / copper: 0.4 |
| Hysteresis [% of Sr] | 1...20                                                                      |

# IFM220



## Inductive sensor

IFK3004BANKG/M/4M/ZH

| Operating conditions          |                                                                                                             |                                                                                                |
|-------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Ambient temperature           | [°C]                                                                                                        | -40...85                                                                                       |
| Protection                    |                                                                                                             | IP 67; IP 69K                                                                                  |
| Tests / approvals             |                                                                                                             |                                                                                                |
| 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 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                                                                                        |
| Vibration resistance          | EN 60068-2-6 Fc                                                                                             | 20 g (10...3000 Hz) / -20...50 °C                                                              |
| 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...50 °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 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]                                                                                                     | 638                                                                                            |
| Mechanical data               |                                                                                                             |                                                                                                |
| Weight                        | [g]                                                                                                         | 206.5                                                                                          |
| Housing                       |                                                                                                             | threaded type                                                                                  |
| Mounting                      |                                                                                                             | flush mountable                                                                                |
| Dimensions                    | [mm]                                                                                                        | M12 x 1 / L = 75                                                                               |
| Thread designation            |                                                                                                             | M12 x 1                                                                                        |
| Materials                     |                                                                                                             | housing: stainless steel; sensing face: LCP natural; LED window: PEI; lock nuts: brass         |
| Displays / operating elements |                                                                                                             |                                                                                                |
| Display                       | switching status                                                                                            | LED, yellow                                                                                    |
| Accessories                   |                                                                                                             |                                                                                                |
| Items supplied                |                                                                                                             | lock nuts: 2                                                                                   |
| Remarks                       |                                                                                                             |                                                                                                |
| Pack quantity                 |                                                                                                             | 1 pcs.                                                                                         |

# IFM220



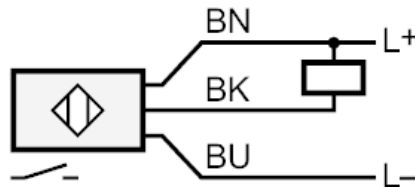
## Inductive sensor

IFK3004BANKG/M/4M/ZH

### Electrical connection

Cable: 4 m, PUR; burning behaviour to ECE R118 rev. 2; 3 x 0.5 mm<sup>2</sup>

### Connection



|      |                |
|------|----------------|
| BK = | Core colours : |
| BN = | black          |
| BU = | brown          |
|      | blue           |