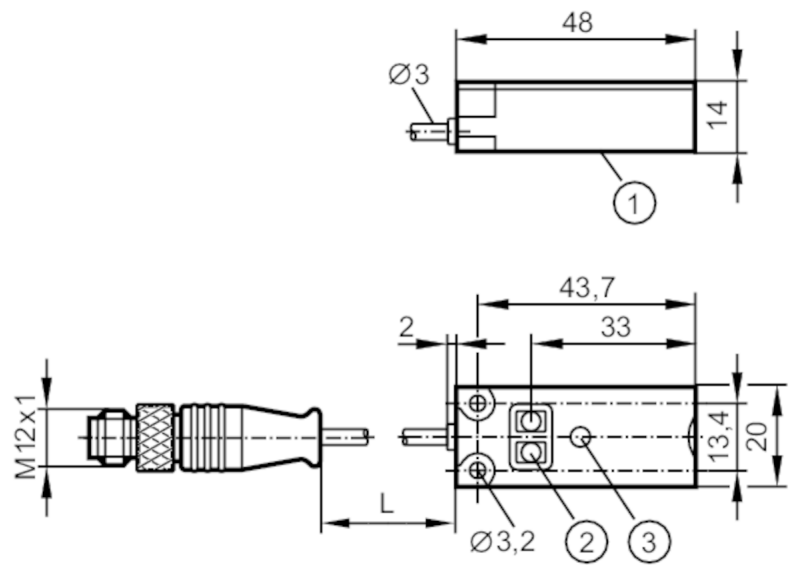


# KQ6016



## Capacitive sensor

KQ-3120NFNKG/2T/2M/US



- 1 Sensing face
- 2 programming buttons
- 3 LED



### Product characteristics

|                         |                                               |
|-------------------------|-----------------------------------------------|
| Electrical design       | NPN                                           |
| Output function         | normally open / normally closed; (selectable) |
| Sensing range [mm]      | 12                                            |
| Communication interface | IO-Link                                       |
| Housing                 | rectangular                                   |
| Dimensions [mm]         | 20 x 14 x 48                                  |

### Application

|              |                                                                  |
|--------------|------------------------------------------------------------------|
| Installation | detection through non-metallic container wall or on bypass pipes |
| Media        | dry bulk material; liquids                                       |

### Electrical data

|                             |            |
|-----------------------------|------------|
| Operating voltage [V]       | 10...30 DC |
| Current consumption [mA]    | < 17       |
| Protection class            | III        |
| Reverse polarity protection | yes        |
| Measuring principle         | capacitive |

### Outputs

|                                                      |                                               |
|------------------------------------------------------|-----------------------------------------------|
| Electrical design                                    | NPN                                           |
| Output function                                      | normally open / normally closed; (selectable) |
| Max. voltage drop switching output DC [V]            | 2.5                                           |
| Permanent current rating of switching output DC [mA] | 100                                           |
| Switching frequency DC [Hz]                          | 10                                            |
| Short-circuit protection                             | yes                                           |

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## Capacitive sensor

KQ-3120NFKG/2T/2M/US

|                               |                                                                                           |                                                                                                  |
|-------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Overload protection           | yes                                                                                       |                                                                                                  |
| Detection zone                |                                                                                           |                                                                                                  |
| Sensing range                 | [mm]                                                                                      | 12                                                                                               |
| Real sensing range Sr         | [mm]                                                                                      | 12 ± 10 %                                                                                        |
| Accuracy / deviations         |                                                                                           |                                                                                                  |
| Hysteresis                    | [% of Sr]                                                                                 | 1...15                                                                                           |
| Switch point drift            | [% of Sr]                                                                                 | -20...20                                                                                         |
| Interfaces                    |                                                                                           |                                                                                                  |
| Communication interface       | IO-Link                                                                                   |                                                                                                  |
| Transmission type             | COM1 (4,8 kBaud)                                                                          |                                                                                                  |
| IO-Link revision              | 1.1                                                                                       |                                                                                                  |
| SDCI standard                 | IEC 61131-9 CDV                                                                           |                                                                                                  |
| Profiles                      | Smart Sensor                                                                              |                                                                                                  |
| SIO mode                      | yes                                                                                       |                                                                                                  |
| Min. process cycle time       | [ms]                                                                                      | 100.8                                                                                            |
| Supported DeviceIDs           | Type of operation                                                                         | DeviceID                                                                                         |
|                               | default                                                                                   | 371                                                                                              |
| Operating conditions          |                                                                                           |                                                                                                  |
| Ambient temperature           | [°C]                                                                                      | -25...80                                                                                         |
| Note on ambient temperature   | for UL application: ...50 °C                                                              |                                                                                                  |
| Protection                    | IP 65; IP 67; IP 69K                                                                      |                                                                                                  |
| Tests / approvals             |                                                                                           |                                                                                                  |
| EMC                           | EN 61000-4-2 ESD                                                                          | 30 kV AD                                                                                         |
|                               | EN 61000-4-3 HF radiated                                                                  | 10 V/m                                                                                           |
|                               | EN 61000-4-4 Burst                                                                        | 2 kV                                                                                             |
|                               | EN 61000-4-6 HF conducted                                                                 | 3 V                                                                                              |
|                               | EN 55011                                                                                  | class B                                                                                          |
| Shock resistance              | EN 60068-2-27                                                                             | 30 g 6 shocks / 11 ms half-sine (x, y, z)                                                        |
| Vibration resistance          | EN 60068-2-6                                                                              | (10...55 Hz) / 1 mm amplitude, oscillation period 5 min., 30 min. per axis at resonance or 55 Hz |
| MTTF                          | [years]                                                                                   | 634                                                                                              |
| UL approval                   | Ta                                                                                        | -25...50 °C                                                                                      |
|                               | Enclosure type                                                                            | Type 1                                                                                           |
|                               | power supply                                                                              | Limited Voltage/Current                                                                          |
| Mechanical data               |                                                                                           |                                                                                                  |
| Weight                        | [g]                                                                                       | 57.5                                                                                             |
| Housing                       | rectangular                                                                               |                                                                                                  |
| Mounting                      | non-flush mountable                                                                       |                                                                                                  |
| Dimensions                    | [mm]                                                                                      | 20 x 14 x 48                                                                                     |
| Materials                     | housing: PBT glass fibre reinforced; pushbuttons: TPE-U; cover: PC glass fibre reinforced |                                                                                                  |
| Displays / operating elements |                                                                                           |                                                                                                  |
| Display                       | switching status                                                                          | 1 x LED, yellow                                                                                  |
| Teach function                | yes                                                                                       |                                                                                                  |
| Electronic lock               | yes                                                                                       |                                                                                                  |

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### Remarks

Pack quantity

1 pcs.

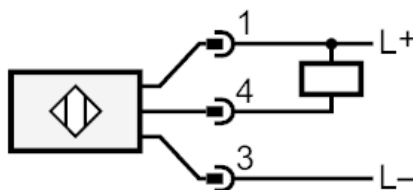
### Electrical connection - plug

Cable: 2 m, PVC, Ø 2.9 mm; 3 x 0.14 mm<sup>2</sup>

Connector: 1 x M12; coding: A



### Connection



4: OUT / IO-Link