

1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception



IND. CONT. EQ
 4R97
 for use in the secondary of
 a class 2 source of supply



Basic features

| | |
|------------------------|--------------------------|
| Approval/Conformity | CE cULus WEEE |
| Basic standard | IEC 60947-5-2 |
| Principle of operation | Photoelectric sensor |
| Series | R020K |
| Style | Square Connection 60° |

Display/Operation

| | |
|---------|--|
| Display | LED green: Power LED yellow: Light received |
|---------|--|

Electrical connection

| | |
|-----------------------------|----------------------|
| Cable diameter D | 2.40 mm |
| Cable length L | 2 m |
| Conductor cross-section | 0.09 mm ² |
| Connection | Cable, 2.00 m, PVC |
| Number of conductors | 3 |
| Polarity reversal protected | yes |
| Short-circuit protection | yes |

Electrical data

| | |
|-------------------------------------|-------------|
| No-load current I_0 max. at U_e | 20 mA |
| Operating voltage U_b | 10...30 VDC |
| Protection class | III |
| Rated insulation voltage U_i | 50 V DC |
| Rated operating current I_e | 50 mA |
| Rated operating voltage U_e DC | 24 V |
| Ripple max. (% of U_e) | 20 % |
| Switching frequency | 800 Hz |
| Turn-off delay t_{off} max. | 0.63 ms |
| Turn-on delay t_{on} max. | 0.63 ms |
| Voltage drop U_d max. at I_e | 2.5 V |

Environmental conditions

| | |
|---------------------|-------------|
| Ambient temperature | -25...50 °C |
| Protection degree | IP67 |

Functional safety

| | |
|--------------|--------|
| MTTF (40 °C) | 3378 a |
|--------------|--------|

Material

| | |
|--------------------------|------|
| Housing material | ABS |
| Material jacket | PVC |
| Material sensing surface | PMMA |

Mechanical data

| | |
|-----------|----------------------|
| Dimension | 7.7 x 26.8 x 13.5 mm |
| Mounting | Screw M3 |

Optical features

| | |
|--------------------------------|---------------------------|
| Ambient light max. | 5000 Lux |
| Light spot size | Ø 2 mm at 8 mm |
| Light type | LED, red light |
| Principle of optical operation | Diffuse sensor, HGA fixed |
| Special optical feature | Background suppression |
| Switching function, optical | dark-on |
| Wave length | 660 nm |

Output/Interface

| | |
|------------------|--------------------------|
| Switching output | NPN normally closed (NC) |
|------------------|--------------------------|

Range/Distance

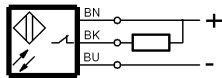
| | |
|--------------------------------|-----------|
| Range | 1...15 mm |
| Rated operating distance S_n | 15 mm |

Remarks

The sensor is functional again after the overload has been eliminated.
Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.
For additional information, refer to user's guide.
Order accessories separately.
For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

Wiring Diagrams



Opto Symbols

