

1) Mode settings, 2) Optical axis receiver, 3) Optical axis emitter, 4) Power indicator, 5) stability, 6) Sn



**Basic features**

<b>Approval/Conformity</b>	cULus CE UKCA WEEE
<b>Principle of operation</b>	Photoelectric sensor
<b>Series</b>	R090K
<b>Style</b>	Square Connection 90°

**Display/Operation**

<b>Adjuster</b>	6-turn potentiometer Rotary switch 2 positions
<b>Display</b>	Output function- LED yellow Stability - LED green
<b>Setting</b>	Rated switching distance (Sn) Light-on/dark-on

**Electrical connection**

<b>Connection</b>	Connector, M8x1, 4-pin
<b>Polarity reversal protected</b>	yes
<b>Short-circuit protection</b>	yes

**Electrical data**

<b>No-load current I<sub>o</sub> max. at U<sub>e</sub></b>	20 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Rated operating current I<sub>e</sub></b>	100 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Ready delay t<sub>v</sub> max.</b>	300 ms
<b>Ripple max. (% of U<sub>e</sub>)</b>	10 %
<b>Switching frequency</b>	1000 Hz
<b>Turn-off delay t<sub>off</sub> max.</b>	0.5 ms
<b>Turn-on delay t<sub>on</sub> max.</b>	0.5 ms
<b>Voltage drop U<sub>d</sub> max. at I<sub>e</sub></b>	2 V

**Environmental conditions**

<b>Ambient temperature</b>	-30...55 °C
<b>IP rating</b>	IP67

Photoelectric Sensors  
**BOS R090K-NU-RH10-S75**  
Order Code: BOS029L

**BALLUFF**

**Functional safety**

MTTF (40 °C) 92 a

**Interface**

Switching output NPN normally open/normally closed (NO/NC)

**Material**

Housing material PC  
PBT  
Material sensing surface PMMA

**Mechanical data**

Dimension 10.7 x 43.5 x 19.5 mm  
Mounting part Screw M3  
Tightening torque max. 0.5 Nm

**Optical features**

Ambient light max. 10000 Lux  
Beam characteristic Focus, typical at 90 mm  
Light spot size Ø 4.5 mm at 60 mm  
Light type LED, red light  
Principle of optical operation Diffuse sensor, triangulation  
Special optical feature Background suppression  
Switching function, optical dark-on/light-on  
Wave length 660 nm

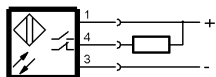
**Range/Distance**

Range 20...350 mm  
Rated operating distance  $S_n$  350 mm Adjustable

**Connector Drawings**



**Wiring Diagrams**



**Opto Symbols**

