



# RT-N3221

ZoneControl

MULTITASK PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	Part no.
RT-N3221	1063162

Other models and accessories → [www.sick.com/ZoneControl](http://www.sick.com/ZoneControl)

## Detailed technical data

### Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	Background suppression
<b>Dimensions (W x H x D)</b>	20.6 mm x 99.2 mm x 48.9 mm
<b>Sensing range max.</b>	60 mm ... 900 mm
<b>Sensing range</b>	60 mm ... 900 mm
<b>Focus</b>	7°
<b>Type of light</b>	Infrared light
<b>Light source</b>	LED <sup>1)</sup>
<b>Light spot size (distance)</b>	Ø 20 mm (500 mm)
<b>Angle of dispersion</b>	7°
<b>Adjustment</b>	Potentiometer, 9 turns
<b>Special applications</b>	ZoneControl

<sup>1)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

### Mechanics/electronics

<b>Supply voltage U<sub>B</sub></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	20 mA <sup>3)</sup>
<b>Switching output</b>	NPN

<sup>1)</sup> Limit values.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Without load and valve deenergized.

<sup>4)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>5)</sup> C = interference suppression.

<sup>6)</sup> D = outputs overcurrent and short-circuit protected.

<b>Switching mode</b>	Light/dark switching
<b>Signal voltage NPN HIGH/LOW</b>	Approx. $V_S$ / < 2.0 V
<b>Output current <math>I_{max}</math></b>	$\leq 100$ mA
<b>Response time</b>	2 ms
<b>Switching frequency</b>	250 Hz
<b>Connection type</b>	Male connector M12, 4-pin
<b>Circuit protection</b>	A <sup>4)</sup> C <sup>5)</sup> D <sup>6)</sup>
<b>Protection class</b>	III
<b>Weight</b>	175 g
<b>Housing material</b>	Plastic, ABS
<b>Enclosure rating</b>	IP67
<b>Shock and vibration resistance</b>	According to IEC 68
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E189383 & NRKH7.E189383

<sup>1)</sup> Limit values.

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> Without load and valve deenergized.

<sup>4)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>5)</sup> C = interference suppression.

<sup>6)</sup> D = outputs overcurrent and short-circuit protected.

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	1,525 years
<b>DC<sub>avg</sub></b>	0 %

## Classifications

<b>ECLASS 5.0</b>	27270904
<b>ECLASS 5.1.4</b>	27270904
<b>ECLASS 6.0</b>	27270904
<b>ECLASS 6.2</b>	27270904
<b>ECLASS 7.0</b>	27270904
<b>ECLASS 8.0</b>	27270904
<b>ECLASS 8.1</b>	27270904
<b>ECLASS 9.0</b>	27270904
<b>ECLASS 10.0</b>	27270904
<b>ECLASS 11.0</b>	27270904
<b>ECLASS 12.0</b>	27270903
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719

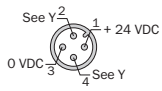
UNSPSC 16.0901

39121528

### Connection diagram

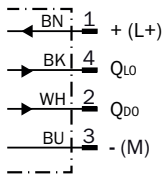
PIN assignment

M12

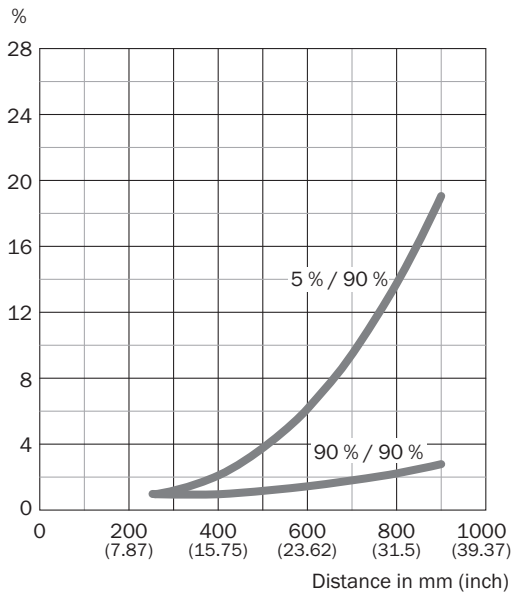


	Rx-(P/N)Y22x Rx-(P/N)Y32x Rx-(P/N)Y42x	β = PNP β = NPN	Rx-(P/N)Y23x Rx-(P/N)Y33x Rx-(P/N)Y43x	β = PNP β = NPN	Rx-BY22x Rx-BY32x Rx-BY42x	β = PNP / NPN
Y	PIN4	PIN2	PIN4	PIN2	PIN4	PIN2
1	Q <sub>Lo</sub>	not connected	not connected	Q <sub>Lo</sub>	QP <sub>Lo</sub>	QN <sub>Lo</sub>
2	Q <sub>Do</sub>	not connected	not connected	Q <sub>Do</sub>	QP <sub>Do</sub>	QN <sub>Do</sub>
3	Q <sub>Lo</sub>	Q <sub>Do</sub>	Q <sub>Lo</sub>	Q <sub>Do</sub>	-	-
4	Q <sub>Lo</sub>	Alarm	Alarm	Q <sub>Lo</sub>	-	-
5	Q <sub>Lo</sub>	Health	Health	Q <sub>Lo</sub>	-	-
6	Q <sub>Do</sub>	Alarm	Alarm	Q <sub>Do</sub>	-	-
7	Q <sub>Do</sub>	Health	Health	Q <sub>Do</sub>	-	-

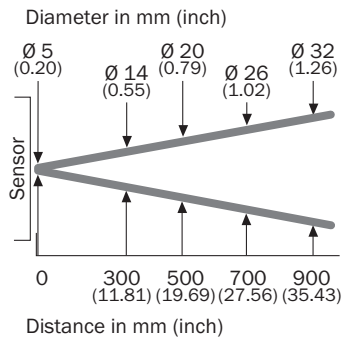
Cd-255



### Characteristic curve

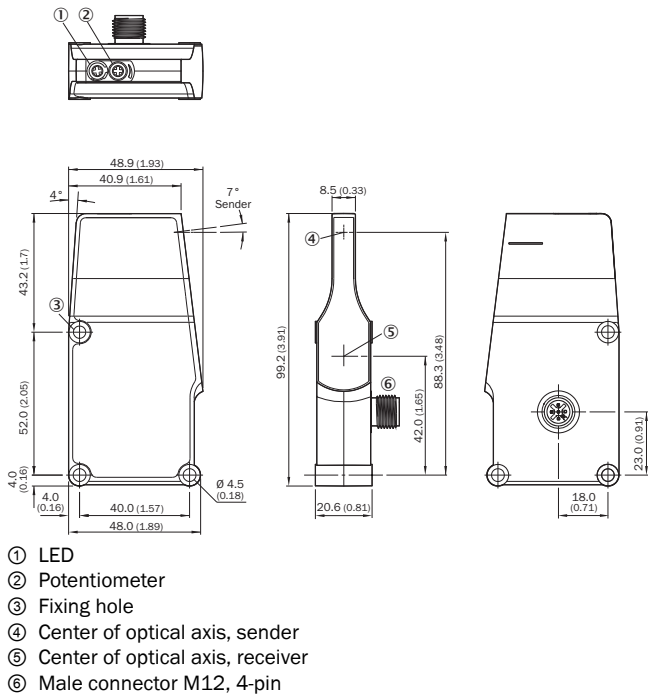


### Light spot size




### Dimensional drawing (Dimensions in mm (inch))




R / IR without valve



### Recommended accessories

Other models and accessories → [www.sick.com/ZoneControl](http://www.sick.com/ZoneControl)

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket, steel, zinc coated, mounting hardware included	BEF-WK-WTR	2051786

	Brief description	Type	Part no.
		BEF-WN-RT/IRT	2074621
Plug connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>	STE-1204-G	6009932

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)