

# RT-P2420S03

ZoneControl

**PHOTOELECTRIC SENSORS** 





# Ordering information

Туре	part no.
RT-P2420S03	1063133

Other models and accessories → www.sick.com/ZoneControl

Illustration may differ



#### Detailed technical data

## **Features**

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

 $<sup>^{1)}</sup>$  Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

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

<sup>&</sup>lt;sup>1)</sup> Limit values

 $<sup>^{2)}\,\</sup>mbox{May}$  not fall below or exceed  $\mbox{U}_{\mbox{\sc V}}$  tolerances.

 $<sup>^{</sup>m 3)}$  Without load and valve deenergized.

 $<sup>^{4)}</sup>$  Do not bend below 0 °C.

 $<sup>^{5)}</sup>$  A = V<sub>S</sub> connections reverse-polarity protected.

 $<sup>^{6)}</sup>$  C = interference suppression.

 $<sup>^{7)}</sup>$  D = outputs overcurrent and short-circuit protected.

Switching mode	Dark switching
Signal voltage PNP HIGH/LOW	Approx. V <sub>S</sub> – 0.5 V / 0 V
Output current I <sub>max.</sub>	≤ 100 mA
Response time	2 ms
Switching frequency	250 Hz
Connection type	Cable with M8 male connector, 4-pin, 625 mm <sup>4)</sup>
Circuit protection	A <sup>5)</sup> C <sup>6)</sup> D <sup>7)</sup>
Protection class	III
Weight	175 g
Special device	<b>√</b>
Housing material	Plastic, ABS
Enclosure rating	IP67
Shock and vibration resistance	According to IEC 68
Ambient operating temperature	-40 °C +60 °C
Ambient temperature, storage	-40 °C +75 °C
UL File No.	NRKH.E189383 & NRKH7.E189383

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

# Safety-related parameters

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

## Certificates

EU declaration of conformity	✓
China RoHS	✓

## Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904

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 $<sup>^{5)}</sup>$  A = V<sub>S</sub> connections reverse-polarity protected.

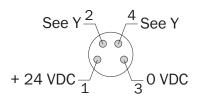
 $<sup>^{6)}</sup>$  C = interference suppression.

<sup>7)</sup> D = outputs overcurrent and short-circuit protected.

ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

## PIN assignment

M8



	$\begin{array}{l} Rx\text{-}(\underline{P/N})Y22x \\ Rx\text{-}(\underline{P/N})Y32x \\ Rx\text{-}(\underline{P/N})Y42x \end{array}$	$\underline{P} = PNP$ $\underline{N} = NPN$	Rx-( <u>P / N</u> )Y23x Rx-( <u>P / N</u> )Y33x Rx-( <u>P / N</u> )Y43x	$\frac{P}{N} = PNP$ $\frac{N}{N} = NPN$	Rx- <u>B</u> Y2 <u>2</u> x Rx- <u>B</u> Y3 <u>2</u> x Rx- <u>B</u> Y4 <u>2</u> x	$\underline{B} = PNP / NPN$
Y	PIN4	PIN2	PIN4	PIN2	PIN4	PIN2
1	Q <sub>LO</sub>	not connected	not connected	$Q_{LO}$	$QP_{LO}$	$QN_{LO}$
2	Q <sub>DO</sub>	not connected	not connected	Q <sub>DO</sub>	$QP_{DO}$	QN <sub>DO</sub>
3	Q <sub>LO</sub>	$Q_{DO}$	$Q_{DO}$	Q <sub>LO</sub>	-	-
4	Q <sub>LO</sub>	Alarm	Alarm	$Q_{LO}$	-	-
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>	-	-

# Connection diagram Cd-254

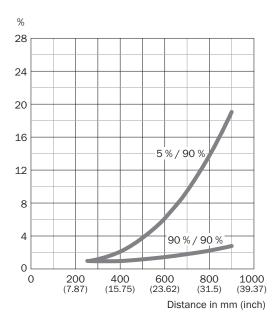
BN 
$$\frac{1}{2}$$
 + (L+)

BK  $\frac{1}{4}$  Qbo

WH  $\frac{1}{2}$  not connected

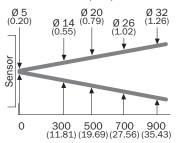
BU  $\frac{3}{4}$  - (M)

## Characteristic curve



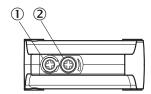
# Light spot size

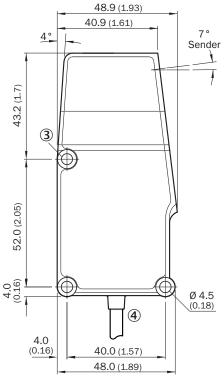
Diameter in mm (inch)

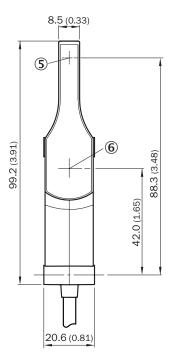


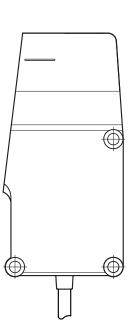
Distance in mm (inch)

## Dimensional drawing R cable









Dimensions in mm (inch)

- ① LED
- ② Potentiometer
- 3 fixing hole
- 4 cable
- ⑤ Center of optical axis, sender
- 6 Center of optical axis, receiver

## Recommended accessories

Other models and accessories → www.sick.com/ZoneControl

	Brief description	Туре	part no.
Mounting sy	ystems		
000	Description: Mounting bracket     Material: Steel     Details: Steel, zinc coated     Items supplied: Mounting hardware included	BEF-WN-RT/IRT	2074621
0 0	Description: Mounting bracket     Material: Steel     Details: Steel, zinc coated     Items supplied: Mounting hardware included     Usable for: WTR/WLR, IRT	BEF-WK-WTR	2051786
6	<ul> <li>Description: Plate N11N for universal clamp bracket</li> <li>Material: Stainless steel</li> <li>Details: Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li> <li>Items supplied: Universal clamp (5322627), mounting hardware</li> <li>Usable for: DeltaPac, Glare, WTD20E</li> </ul>	BEF-KHS-N11N	2071081
connectors	and cables		
W.	<ul> <li>Connection type head A: Female connector, M8, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YF8U14-050VA3XLEAX	2095889
	<ul> <li>Connection type head A: Male connector, M8, 4-pin, straight, A-coded</li> <li>Description: Unshielded</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: 0.14 mm² 0.5 mm²</li> </ul>	STE-0804-G	6037323
The second	Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-050UA3XLEAX	2094792

# 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

