

IRTN-P210E41S08

ZoneControl

PHOTOELECTRIC SENSORS





Ordering information

Туре	part no.
IRTN-P210E41S08	1063113

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
Actuator	Pneumatic, valve on board
Max. number of sensors	Approx. 30 ¹⁾ Approx. 50 ²⁾
Logical principle of operation	Single accumulation
Type of Release	Single release, block (slug) release
Dimensions (W x H x D)	50 mm x 147.4 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 ³⁾
Light spot size (distance)	Ø 20 mm (500 mm)
Angle of dispersion	7°
Adjustment	Potentiometer, 9 turns
Special applications	ZoneControl

 $^{^{1)}\,\}mathrm{When}$ powerd from the end of the IR daisy chain.

 $^{^{2)}\,\}mathrm{When}$ powerd from center of the IR daisy chain.

 $^{^{3)}}$ Average service life: 100,000 h at TU = +25 °C.

Mechanics/electronics

Supply voltage U _B 19.2 ∨ DC 27.6 ∨ DC. ¹¹ Ripple < 5 ∨ _{pp} ²¹ Current consumption 20 mA ²¹ Switching output PNP Signal voltage PNP HIGH/LOW Approx. ∨ _s − 0.5 ∨ / 0 ∨ Output current I _{max} . ≤ 100 mA Response time 2 ms Switching frequency 250 Hz Time functions Switch on delay Delay time Switch on delay, 0 s 5 s Connection type Male connector M12, 4-pin Connection type for daisy chain Cable with female connector, M12, 4-pin 2.5 m Circuit protection A ⁴¹ C °¹ C °¹ D °¹ C Protection class III Weight 175 g Special device ✓ Housing material Plastic, ABS Special device ✓ Housing to persistance According to IEC 68 Ambient operating temperature According to IEC 68 Ambient temperature, storage −40 ° C +55 ° C C UL File No. NRKH, E189383 & NRKH7, E189383 Medium for valves Compressed air or neutral ga		
Current consumption 20 mA 30 Switching output PNP Signal voltage PNP HIGH/LOW Approx. V _S = 0.5 V / 0 V Output current I _{max.} \$ 100 mA Response time 2 ms Switching frequency 250 Hz Time functions Switch on delay. 0 s 5 s Connection type Connection type Gradiay chain Clable with female connector, M12, 4-pin 2.5 m Circuit protection A ⁴⁰ C ⁹⁾ D ⁹ Protection class III Weight 175 g Special device	Supply voltage U _B	19.2 V DC 27.6 V DC $^{1)}$
Switching output Signal voltage PNP HIGH/LOW Approx. V _S − 0.5 V / 0 V Output current I _{max.} ≤ 100 mA Response time 2 ms Switching frequency 250 Hz Time functions Switch-on delay, 0 s 5 s Connection type Connection type for daisy chain Circuit protection A ⁴ C ⁹ D ⁹ Protection class III Weight 175 g Special device Housing material Enclosure rating Ple5 Shock and vibration resistance According to IEC 68 Ambient operating temperature Ambient temperature, storage UL File No. NRKH.E189383 & NRKH7.E189383	Ripple	< 5 V _{pp} ²⁾
Signal voltage PNP HIGH/LOW Output current I _{max} . \$ 100 mA Response time 2 ms Switching frequency 250 Hz Time functions Switch on delay Delay time Connection type Male connector M12, 4-pin Connection type for daisy chain Circuit protection A 40 C 5) D 6) Protection class III Weight 175 g Special device Housing material Enclosure rating Shock and vibration resistance Ambient operating temperature Ambient temperature, storage -40 ° C +75 ° C UL File No. MRKH.E189383 & NRKH7.E189383 Medium for valves Design solenoid valve Mode of operation solenoid valve Compressed air or neutral gases filtered, non-lubricated or lubricated Shork and vibration resistance Air to Brake (NO) Connection type solenoid valve Approx. 20 Nl/min Ventilation capacity Approx. 130 Nl/min	Current consumption	20 mA ³⁾
Output current I _{max} . ≤ 100 mA Response time 2 ms Switching frequency 250 Hz Time functions Switch-on delay Delay time Switch-on delay, 0 s 5 s Connection type Male connector M12, 4-pin Connection type for daisy chain Cable with female connector, M12, 4-pin 2.5 m Circuit protection A ⁴ , C 5, D 6) D 6) III Weight 175 g Special device ✓ Housing material Plastic, ABS Enclosure rating IP65 Shock and vibration resistance According to IEC 68 Ambient temperature, storage -10 ° C +55 ° C Ambient temperature, storage -40 ° C +75 ° C UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated Design solenoid valve Air to Brake (NO) Connection type solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coll ratings 24 V D C 1 W Air flow rate Approx. 230 Nl/min	Switching output	PNP
Response time 2 ms Switching frequency 250 Hz Time functions Switch-on delay Delay time Switch-on delay, 0 s 5 s Connection type Male connector M12, 4-pin Connection type for daisy chain Cable with female connector, M12, 4-pin 2.5 m Circuit protection A 4 0 C 5 D 6 D 6 D 6 D 7 D 6 D 7 D 7 D 7 D 7 D 7	Signal voltage PNP HIGH/LOW	Approx. V _S - 0.5 V / 0 V
Switching frequency 250 Hz Time functions Switch-on delay Delay time Switch-on delay, 0 s 5 s Connection type Male connector M12, 4-pin Connection type for daisy chain Cable with female connector, M12, 4-pin 2.5 m Circuit protection A 4)	Output current I _{max.}	≤ 100 mA
Time functions Delay time Switch-on delay, 0 s 5 s Connection type Male connector M12, 4-pin Connection type for daisy chain Circuit protection A 4) C 5) D 6) Protection class III Weight 175 g Special device Housing material Enclosure rating Shock and vibration resistance According to IEC 68 Ambient operating temperature A-10 °C +75 °C Ambient temperature, storage UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Design solenoid valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Approx. 20 Nl/min Ventilation capacity Approx. 130 Nl/min	Response time	2 ms
Delay time Switch-on delay, 0 s 5 s Connection type Male connector M12, 4-pin Connection type for dalsy chain Cable with female connector, M12, 4-pin 2.5 m Circuit protection A 40 C 50 D 60 Protection class III Weight 175 g Special device ✓ Housing material Plastic, ABS Enclosure rating IP65 Shock and vibration resistance According to IEC 68 Ambient operating temperature -10 ° C +55 ° C Ambient temperature, storage -40 ° C +75 ° C UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated Design solenoid valve Ajz way valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 V D C 1 W Air flow rate Approx. 20 Nl/min Ventilation capacity Approx. 130 Nl/min	Switching frequency	250 Hz
Connection type Connection type for daisy chain Cable with female connector, M12, 4-pin 2.5 m Circuit protection A A 4) C 5) D 6) Protection class III Weight 175 g Special device Housing material Enclosure rating IP65 Shock and vibration resistance According to IEC 68 Ambient operating temperature -10 °C +55 °C Ambient temperature, storage UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated Design solenoid valve Mode of operation solenoid valve Connection type solenoid valve Connection type solenoid valve Approx. 20 Nl/min Ventilation capacity Approx. 130 Nl/min	Time functions	Switch-on delay
Connection type for daisy chain Circuit protection A 4 1 C 5 D 6 0 Protection class III Weight 175 g Special device Housing material Enclosure rating Shock and vibration resistance According to IEC 68 Ambient operating temperature -10 ° C +55 ° C Ambient temperature, storage UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated Design solenoid valve Mode of operation solenoid valve Connection type solenoid valve Connection type solenoid valve Approx. 20 Nl/min Ventilation capacity Approx. 130 Nl/min	Delay time	Switch-on delay, 0 s 5 s
Circuit protection A 4) C 5) D 6) Protection class III Weight 175 g Special device ✓ Housing material Enclosure rating Shock and vibration resistance According to IEC 68 Ambient operating temperature -10 ° C +55 ° C Ambient temperature, storage UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated Design solenoid valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Approx. 20 NI/min Ventilation capacity Approx. 130 NI/min	Connection type	Male connector M12, 4-pin
C 5 D 6 D 6 D 6 D 6 D 6 D 6 D 6 D 7 D 6 D 7 D 6 D 7 D 6 D 7 D 7	Connection type for daisy chain	Cable with female connector, M12, 4-pin 2.5 m
Weight 175 g Special device ✓ Housing material Plastic, ABS Enclosure rating IP65 Shock and vibration resistance According to IEC 68 Ambient operating temperature −10 °C +55 °C Ambient temperature, storage −40 °C +75 °C UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated Design solenoid valve 3/2-way valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 V DC 1 W Air flow rate Approx. 20 Nl/min Ventilation capacity Approx. 130 Nl/min	Circuit protection	c ⁵⁾
Special device Housing material Plastic, ABS Enclosure rating IP65 Shock and vibration resistance According to IEC 68 Ambient operating temperature -10 °C +55 °C Ambient temperature, storage -40 °C +75 °C UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated Design solenoid valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 ∨ DC 1 W Air flow rate Approx. 20 NI/min Ventilation capacity Approx. 130 NI/min	Protection class	III
Housing material Plastic, ABS Inclosure rating Plo5 Shock and vibration resistance According to IEC 68 Ambient operating temperature -10 °C +55 °C Ambient temperature, storage -40 °C +75 °C UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated Design solenoid valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 V DC 1 W Approx. 20 NI/min Ventilation capacity Approx. 130 NI/min	Weight	175 g
Enclosure rating Shock and vibration resistance According to IEC 68 Ambient operating temperature -10 °C +55 °C Ambient temperature, storage -40 °C +75 °C UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated 3/2-way valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 V DC 1 W Approx. 20 NI/min Ventilation capacity Approx. 130 NI/min	Special device	✓
Shock and vibration resistance According to IEC 68 Ambient operating temperature -10 ° C +75 ° C Ambient temperature, storage -40 ° C +75 ° C UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated 3/2-way valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 V DC 1 W Air flow rate Approx. 20 Nl/min Ventilation capacity According to IEC 68 -10 ° C +75 ° C -40 ° C	Housing material	Plastic, ABS
Ambient operating temperature -10 °C +55 °C -40 °C +75 °C UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated 3/2-way valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Coil ratings 24 V DC 1 W Approx. 20 NI/min Ventilation capacity -10 °C +55 °C -40 °C +75 °C NRKH.E189383 NRKH7.E189383 NRK	Enclosure rating	IP65
Ambient temperature, storage -40 °C +75 °C UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated 3/2-way valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 V DC 1 W Air flow rate Approx. 20 NI/min Ventilation capacity Approx. 130 NI/min	Shock and vibration resistance	According to IEC 68
UL File No. NRKH.E189383 & NRKH7.E189383 Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated 3/2-way valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 V DC 1 W Air flow rate Approx. 20 NI/min Ventilation capacity Approx. 130 NI/min	Ambient operating temperature	-10 °C +55 °C
Medium for valves Compressed air or neutral gases filtered, non-lubricated or lubricated Design solenoid valve 3/2-way valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 V DC 1 W Air flow rate Approx. 20 NI/min Ventilation capacity Approx. 130 NI/min	Ambient temperature, storage	-40 °C +75 °C
Design solenoid valve Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Coil ratings 24 V DC 1 W Air flow rate Approx. 20 NI/min Ventilation capacity 3/2-way valve Air to Brake (NO) Compressed air 2 x 8 mm diameter, output line 4 mm diameter 24 V DC 1 W Approx. 130 NI/min	UL File No.	NRKH.E189383 & NRKH7.E189383
Mode of operation solenoid valve Air to Brake (NO) Connection type solenoid valve Compressed air 2 x 8 mm diameter, output line 4 mm diameter Coil ratings 24 V DC 1 W Air flow rate Approx. 20 Nl/min Ventilation capacity Approx. 130 Nl/min	Medium for valves	Compressed air or neutral gases filtered, non-lubricated or lubricated
Connection type solenoid valve Coil ratings 24 V DC 1 W Air flow rate Approx. 20 NI/min Ventilation capacity Compressed air 2 x 8 mm diameter, output line 4 mm diameter 24 V DC 1 W Approx. 20 NI/min	Design solenoid valve	3/2-way valve
Coil ratings 24 V DC 1 W Air flow rate Approx. 20 NI/min Ventilation capacity Approx. 130 NI/min	•	
Air flow rate Approx. 20 NI/min Ventilation capacity Approx. 130 NI/min		
Ventilation capacity Approx. 130 NI/min		
Operating pressure range 2 bar 8 bar		
	Operating pressure range	2 bar 8 bar

¹⁾ Limit values.

Safety-related parameters

MTTF _D	762 years
DC _{avg}	0 %

 $^{^{2)}\,\}mbox{May}$ not fall below or exceed $\mbox{U}_{\mbox{\scriptsize V}}$ tolerances.

 $^{^{}m 3)}$ Without load and valve deenergized.

 $^{^{4)}}$ A = V_S connections reverse-polarity protected.

⁵⁾ C = interference suppression.

 $^{^{6)}}$ D = outputs overcurrent and short-circuit protected.

Pneumatic

Coil ratings	24 V DC 1 W
Medium for valves	Compressed air or neutral gases filtered, non-lubricated or lubricated
Design solenoid valve	3/2-way valve
Connection type solenoid valve	Compressed air 2 x 8 mm diameter, output line 4 mm diameter
Air flow rate	Approx. 20 NI/min
Ventilation capacity	Approx. 130 NI/min
Operating pressure range	2 bar 8 bar

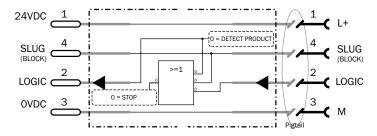
Certificates

EU declaration of conformity	✓
China RoHS	✓

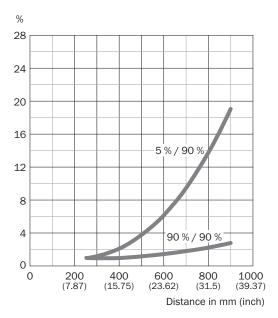
Classifications

TOU 400 T 0	07070004
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
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Connection diagram Cd-264

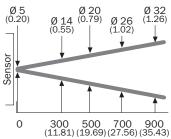


Characteristic curve



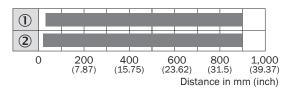
Light spot size

Diameter in mm (inch)



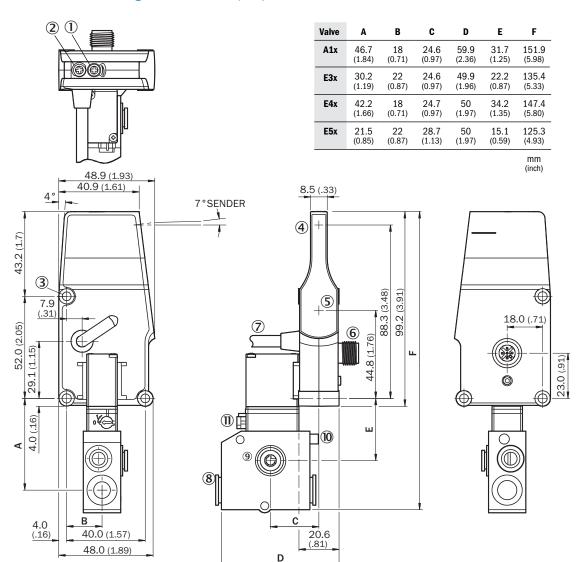
Distance in mm (inch)

Sensing range diagram



- Sensing range max.
- ① Sensing range to black, 5% remission factor
- ② Sensing range on white, 90% remission factor

Dimensional drawing IR, valve metric/imperial



Dimensions in mm (inch)

- ① Potentiometer
- ② LED
- 3 fixing hole
- ④ Center of optical axis, sender
- (5) Center of optical axis, receiver
- 6 male connector M12, 4-pin
- 7 series connection, cable with female connector

Recommended accessories

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

	Brief description	Туре	part no.
Mounting systems			
0,0	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
	 Description: Plate N11N for universal clamp bracket Material: Stainless steel Details: Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) Items supplied: Universal clamp (5322627), mounting hardware Usable for: DeltaPac, Glare, WTD20E 	BEF-KHS-N11N	2071081
connectors a	nd cables		
A.C.	 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-050VB3XLEAX	2096235
	 Connection type head A: Male connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932
No.	Connection type head A: Female connector, M12, 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	YF2A14-050UB3XLEAX	2095608

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

