

NS20 Infrared Sensor



Operator's Manual



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*Note: Read the manual carefully before the initial start-up. The producer reserves the right to change the herein described specifications in case of technical advance of the product.

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1. Description

1.1 Basics of Infrared thermometry

The NS20 is a non-contact infrared temperature sensor. The electronics are protected by a rugged IP66 aluminium alloy housing. They calculate the surface temperature based on the emitted infrared energy of objects and convert the energy into temperature signal.

1.2 Scope of Delivery

- NS20
- Mounting nut x 1
- 2m preinstalled connection cable
- User manual

1.3 Maintenance

Keep the lens clean at all times. Any foreign matter on the lens would affect measurement accuracy. Blow off loose particles using clean compressed air. The lens surface can be cleaned with a soft, humid tissue moistened with water or a water based glass cleaner. Never use cleaning compounds which contain solvents for the lens.

1.4 Electrical Interference

Keep away from strong EMF. Avoid static electricity, arc welders, and induction heaters. Avoid abrupt changes of the ambient temperature. To avoid ground loops, make sure that only one point is earth grounded.

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2. Technical Data

2.1 Measurement Specifications

Temperature Range	0°C ~ 500°C
Optics Resolution	D:S = 15:1 (90% energy)
Response Time	150ms (95%)
Spectral response	8 ~ 14 μm
Accuracy*1	±1.5% of reading or ±1.5°C, which is greater (V/A)
Repeatability*1	±1.5% of reading or ±3°C, which is greater (TC) ±0.5% of reading or ±1°C, which is greater (V/A)
Emissivity	±0.5% of reading or ±2°C, which is greater (TC) 0.100 ~ 1.100 (PC software adjustable) Factory setting 0.950
Transmissivity	0.100 ~ 1.000 (PC software adjustable) Factory setting 0.950

2.2 Electrical Specifications

Power Supply	24 VDC ±20%
Analog Output	4~20mA (2 / 4 - wire), 0-5V, Type K / J

2.3 General Specification

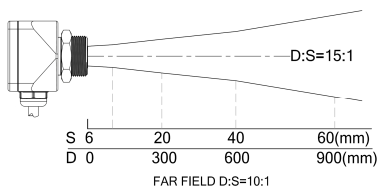
Environmental Rating	IP 66 (NEMA-4)
Ambient Temperature	-10°C ~ 70°C
Storage Temperature	-20°C ~ 80°C
Relative Humidity	10% ~ 95%, non-condensing
Cable Temperature	-20°C ~ 80°C
Cable Length	2 m (standard), 5m or 10m
Weight	210g (2 m standard)

*1 At 23°C ± 5°C emissivity = 0.95

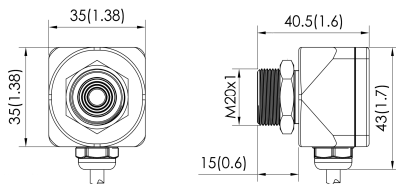
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3. Optical Chart

The optical diagrams indicate the target spot diameter at any given distance between the target object and the sensing head. The spot size will change in longer distance corresponding to the following drawing. In order to prevent measuring errors the object must be as least as big as the spot size.

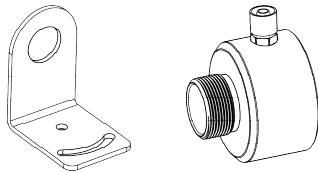


4. Dimensions



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5. Accessories (Option)



Fixed Mounting Bracket

Air Purge Collar

6. Installation

6.1 Mechanical Installation

The NS20 comes with a standard 2 m cable and 1 mounting nut. You can mount the sensor in brackets or cutouts of your own design. For easy mounting and aligning the sensor to the measured object a fixed or adjustable mounting bracket is available.

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6.2 Wiring

(0 ~ 5V or 4 ~ 20mA output)

red----- 24VDC power (+)
black----- 24VDC power (-)
white----- 0 ~ 5V/4 ~ 20mA signal(+)
green----- 0 ~ 5V/4 ~ 20mA signal(-)
yellow----- TX (TTL), optional
grey----- RX (TTL), optional
blue----- GND (TTL), optional
bare----- Shield Ground

(4 ~ 20mA, 2-wire)

red----- Loop (+)
black----- Loop (-)
yellow----- TX (TTL), optional
grey----- RX (TTL), optional
green----- GND (TTL), optional
bare----- Shield Ground

(Type K or J output)

red----- 24VDC power (+)
white----- 24VDC power (-)
yellow----- Type K / J signal(+)
green----- Type K signal(-)
brown----- Type J signal(-)
orange----- TX (TTL), optional
purple----- RX (TTL), optional
blue----- GND (TTL), optional
bare----- Shield Ground

7. Warranty

Each product passes through a quality process. Nevertheless, if a failure occurs please contact the customer service at once. The period of warranty starts from the date of delivery of the product to the customer and shall cover a period of 12 months. This warranty shall not apply to fuses, batteries, or any product that has been subject to misuse, neglect, accident, or abnormal conditions of operation.

The manufacturer shall not be liable for any special, incidental or consequential damages, whether in contract, tort, or otherwise. If a failure occurs during the warranty period, the product will be replaced, calibrated or repaired without further charges. The freight costs will be paid by the sender. The manufacturer reserves the right to exchange components of the product instead of repairing it.

If the failure results from misuse, neglect, accident, or abnormal conditions of operation or storage, the user has to pay for the repair. In that case you may ask for a cost estimate beforehand.

Test Standards:
- EN 61010-1:2010
- EN 61326-1:2013



Complies with the following relevant provisions:
- EC Low Voltage Directive (2014/35/EU)
- EC Electromagnetic Compatibility Directive (2014/30/EU)

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