

NS18 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 NS18 is a non-contact infrared temperature sensor. The electronics are protected by a rugged IP66 stainless steel (SS304) 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

- NS18
- Mounting nut x 2
- 2m connection cable (standard)
- 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	-20°C ~ 500°C
Optics Resolution	D:S = 15:1 (90% energy)
Response Time	150ms (95%)
Spectral response	8 ~ 14 μm
Accuracy	(V/A) ±1.5% of reading or ±1.5°C, which is greater ¹⁾ 23) (TC) ±1.5% of reading or ±3°C, which is greater ¹⁾²⁾ 4)
Repeatability	(V/A) ±0.5% of reading or ±1°C, which is greater ²⁾ (TC) ±0.5% of reading or ±2°C, which is greater ²⁾
Emissivity	0.100~1.100 (PC software adjustable)
Transmissivity	0.100~1.000 (PC software adjustable)

¹⁾ At 23°C ± 5°C, emissivity = 0.95

²⁾ object temperature > 0°C

³⁾ ±3°C (object temperature ≤ 0°C)

⁴⁾ ±3.5°C (object temperature ≤ 0°C)

2.2 Electrical Specifications

Power Supply	24 VDC ±20%,
Analog Output	0 ~ 5 V, 4~20mA, Type K / J
Digital Output	RS485, TTL (4~20mA 2-wire)

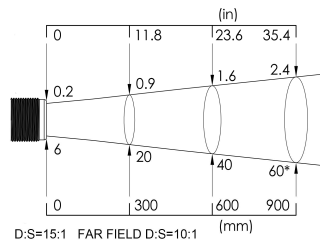
2.3 General Specification

Environmental Rating	IP 66
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	170g ±5%

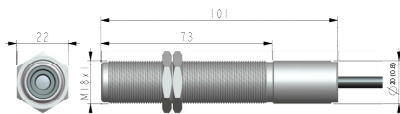
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3. Optical Chart

The optical diagram indicates 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. And make sure to keep the optical path clear of any obstracles.



4. Dimensions



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5. Installation

5.1 Mechanical Installation

The NS18 has rugged stainless steel 304 housing, comes with a standard 2 m cable and 2 mounting nuts. You can mount the sensor in a bracket or cutouts of your own design. For easy mounting and aligning the sensor to the measured object, an optional fixed or adjustable mounting bracket is available.

5.2 Wiring

V/A4 (0~5V or 4~20mA output)	A2 (4~20mA 2-wire)
red----- 24VDC power (+)	red----- 4~20mA, Loop (+)
black---- 24VDC power (-)	black---- 4~20mA Loop(-)
white---- 0~5V / 4~20mA signal (+)	yellow---- TX (TTL)
green--- 0~5V/ 4~20mA signal (-)	grey---- RX (TTL)
yellow--- RS485 (T+/A)	green--- GND (TTL)
grey---- RS485 (T-/B)	bare---- - Shield Ground
bare---- - Shield Ground	

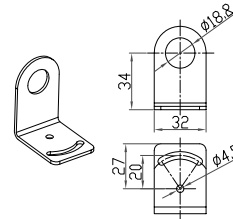
Type K/J output

red----- 24VDC power (+)
white---- 24VDC power (-)
yellow--- Type K/J signal (+)
green--- Type K signal (-)
brown--- Type J signal (-)
orange--- RS485 (T+/A)
purple --- RS485 (T-/B)
bare---- - Shield Ground

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6. Accessories

6.1 Fixed Mounting Bracket



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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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