



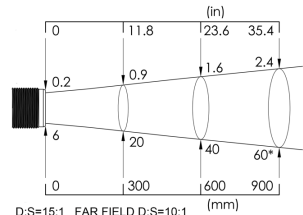
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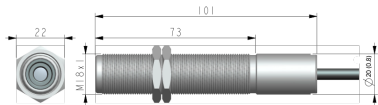
\*Note: Read the manual carefully before the initial start-up. The producer reserves the right to change the herein described specifications in case of technical advance of the product.

**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 obstrades.



**4. Dimensions**



**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.

**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 ±1.5% of reading or ±1.5°C, which is greater<sup>1)2)3)</sup>

Repeatability ±0.5% of reading or ±1°C, which is greater<sup>2)</sup>

Emissivity 0.100 ~ 1.100 (PC software adjustable)

<sup>1)</sup> At 23°C ± 5°C, emissivity = 0.95  
<sup>2)</sup> Object temperature > 0°C  
<sup>3)</sup> ±2°C (object temperature ≤ 0°C)  
<sup>4)</sup> ±3.5°C (object temperature ≤ 0°C)

**2.2 Electrical Specifications**  
Power Supply 24 VDC ±20%,  
Analog Output 4~20mA  
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%

**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 outouts of your own design. For easy mounting and aligning the sensor to the measured object, an optional fixed or adjustable mounting bracket is available.

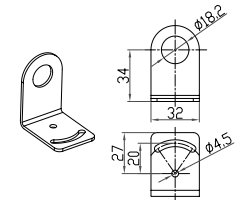
**5.2 Wiring**

- A2 (4~20mA 2-wire)**  
red----- 4~20mA Loop (+)  
black---- 4~20mA Loop (-)  
yellow--- TX (TTL)  
grey---- RX (TTL)  
green--- GND (TTL)  
bare----- Shield Ground

- A4 (4~20mA Output)**  
red----- 24VDC power (+)  
black---- 24VDC power (-)  
white--- 0~5V/4~20mA signal (+)  
green--- 0~5V/4~20mA signal (-)  
yellow--- RS485 (T+/A)  
grey---- RS485 (T-/B)  
bare----- Shield Ground

**6. Accessories**

**6.1 Fixed Mounting Bracket**



**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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# NS18 紅外線測溫器



操作手冊



## 目錄

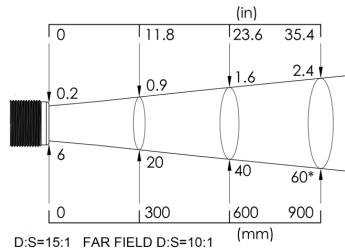
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注意：使用儀器前請詳細閱讀本手冊，製造商保留因產品技術升級更改本說明書權利。

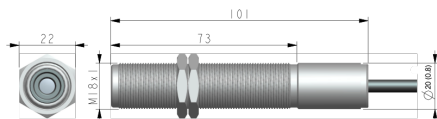
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## 3 光學路徑

光學路徑圖可顯示被測物體大小與測量距離之間的關係  $D:S = 15:1$ ，指出探頭與目標的距離 (D) 所能測量到目標物 (S) 的大小比例。為了避免發生溫度測量的誤差，被測物體面積一定不能小於光學路徑圖所要求的光點直徑 (S)。



## 4 外型尺寸



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## 5 安裝

### 5.1 固定方式

NS18 外殼材質為不鏽鋼 SS304，附有兩個固定螺帽，可直接安裝探頭於現場，也可選購 L 型固定架進行安裝，或選購可調式固定架方便調整探頭準確瞄準被測物。安裝探頭時，須確認鏡頭的光學路徑不可被任何物體所遮擋，以避免影響到 NS18 測量溫度的準確性。

### 5.2 連接線標示

**A2 (4~20mA 2線)**  
 紅---- 4~20mA Loop (+)  
 黑---- 4~20mA Loop (-)  
 黃---- TX (TTL)  
 灰---- RX (TTL)  
 綠---- GND (TTL)  
 裸線---- 遮蔽線 (Gnd)

### A4 (4~20mA 輸出)

紅---- 24VDC 電源 (+)  
 黑---- 24VDC 電源 (-)  
 白---- 0~5V/4~20mA 信號輸出 (+)  
 綠---- 0~5V/4~20mA 信號輸出 (-)  
 黃---- RS485 (T+/A)  
 灰---- RS485 (T-/B)  
 裸線---- 遮蔽線 (Gnd)

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## 1 產品介紹

### 1.1 原理簡介

NS18 非接觸式紅外線測溫器利用光學鏡頭攝取物體表面所散發出紅外線輻射能量的強弱來測量溫度，安全、迅速又準確的測量難以接近或移動中物體表面溫度。NS18 系列紅外線測溫器為單體式紅外線測溫器，包含光學鏡頭、溫度感應器及電子線路共同組裝在一個體型小巧的金屬不鏽鋼 (SS 304) 管表，探頭符合環境保護 IP66 等級，可滿足安裝在各種場合的使用要求。

### 1.2 包裝內容

- NS18 測溫探頭
- 固定螺帽 x 2
- 2m 連接線 (標準)
- 操作手冊

### 1.3 保養須知

NS18 的光學鏡頭必須保持清潔，避免因粘有灰塵、油煙等汙染物，而導致溫度測量誤差甚至損壞鏡頭，清潔鏡頭可用相機的擦鏡紙蘸清水擦拭。

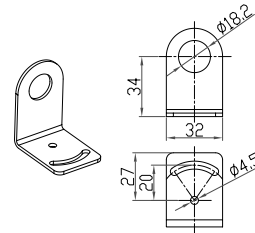
### 1.4 注意事項

為避免高頻干擾，安裝探頭時避免接近變頻器、電焊和高週波加熱等會產生高頻率的電氣裝置。遠離 EMF (電磁場)，例如：電動機、馬達、大功率電纜等。避免環境溫度急遽的變化，探頭的遮蔽線必須良好接地。

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## 6 配件

### 6.1 L 型固定架



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## 2 產品規格

### 2.1 技術規格

測溫範圍	-20°C ~ 500°C
光學解析	D:S = 15:1 (90% 能量)
頻譜響應	8 ~ 14 μm
反應時間	150ms (95%)
精確度	±1.5% 讀值或 ±1.5(°C) 取大值 <sup>1) 2) 3)</sup>
重複性	±0.5% 讀值或 ±1 (°C) 取大值 <sup>2)</sup>
放射率	0.100~1.100 (軟體可調)

<sup>1)</sup> At 23°C ±5°C emissivity = 0.95

<sup>2)</sup> 目標溫度大於 0°C

<sup>3)</sup> ±3°C (目標溫度 ≤ 0°C)

<sup>4)</sup> ±3.5°C (目標溫度 ≤ 0°C)

### 2.2 電氣特性

工作電源	24 VDC ±20%
信號輸出	4~20mA
數位通訊	RS485, TTL (4~20mA 兩線式)

### 2.3 機械參數

防護等級	IP 66
操作溫度	-10°C ~ 70°C
儲存溫度	-20°C ~ 80°C
相對濕度	10% ~ 95% (無凝結)
連接線耐溫	-20°C ~ 80°C
連接線長度	2m (標準), 5m 或 10m
重量	170g ±5%

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## 7 售後服務

每具紅外線測溫器都經過了嚴格品質管制的流程，如果產品出現故障請立即和客服部門聯絡，產品保固期限為自出貨之日起 12 個月。

保固期間不適用由於因人為操作使用不當造成的損壞，製造商不對衍生性原因造成的損壞負責。保固期內產品出現故障，製造商有權更換零件，製造商只提供更換、校正和維修服務，運輸費由寄件人承擔。

如因使用不當造成的損壞，由用戶承擔維修費用，用戶可以事先與客服部門聯絡，詢問預估的維修費用。

### Test Standards:

- EN 61010-1:2013

- EN 61326-1:2013

Complies with the following relevant provisions:

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