ATO

SA50AE Non-contact Infrared Temperature Sensor with Display Instructions

ATO

Contents

Note: Please read this manual carefully before using the instrument. The manufacturer reserves the right to change this manual due to product technology upgrades.

1 Product Introduction

1.1 Principle Introduction

SA series infrared thermometer is a single-body structure. It includes optical lens, temperature sensor, electronic circuit and LCD display screen assembled in an aluminum alloy (A6061) gold ring tube. The surface is hardened, wear-resistant and not easy to scratch. The probe meets the environmental protection IP65/NEMA-4 level. It can meet the requirements of installation in various occasions.

1.2 Package Contents

- SA temperature probe
- Fixing nut x2
- 3m quick-connect cable (A2-two cores, V/A4-four cores)
- Operation manual

1.3 Maintenance Instructions

The optical lens of the SA must be kept clean to avoid dust, oil smoke and other sweat stains that may cause temperature measurement errors or even damage the lens. To clean the lens, use the camera's lens cleaning paper and dip it in clean water.

1.4 Precautions

To avoid high-frequency interference, avoid installing the probe near electrical devices that generate high frequencies, such as frequency converters, electric welding and high-frequency heating. Stay away from EMF (electromagnetic fields), such as electric motors, frequency converters, motors, high-power cables, etc. Avoid rapid changes in ambient temperature. The shielding wire of the temperature probe must be well grounded.

2 Product Specifications

2.1 Technical Specifications

Temperature range: 0℃~500℃ (LT)
Optical resolution: D:S= 20:1 (90% energy)
Response wavelength: 8~14 μm
Response time: 150ms (95%)
Accuracy*1: ±1% of reading or ±1.5℃, whichever is greater
Repeatability*1: ±0.5% of reading or ±1℃, whichever is greater
Emissivity: 0.100~1.000 (adjustable)

2.2 Electrical Characteristics

Working power supply: 24 VDC ±20%, <50 mA
Signal output: 0~5V or 4~20mA
Digital Communication: TTL
Minimum load: 10KΩ (voltage output)
Maximum load: 500Ω (current output)

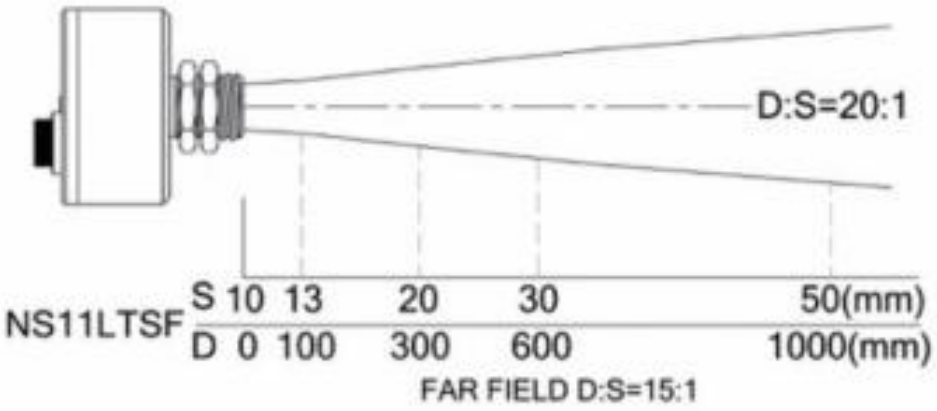
2.3 Mechanical Parameters

Protection grade: IP65 (NEMA-4)
Ambient temperature: 0℃~70℃
Storage temperature: 20℃~85℃
Relative humidity: 10%~95% (no condensation)
Connecting wire temperature resistance: -20℃~80℃
Cable length: 3m (standard), 5m or 10m
Weight: 200g

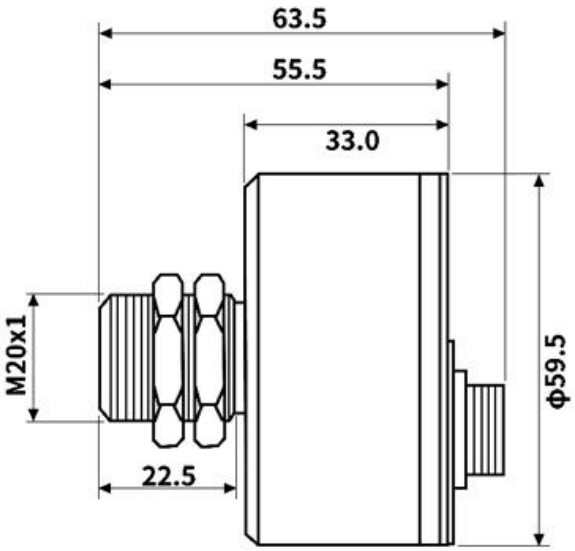
* 1Ambient temperature = 23℃±5℃, emissivity = 0.95

3 Optical Path

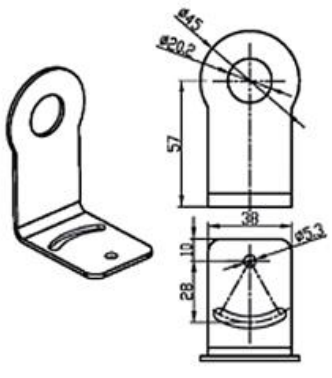
The optical path diagram can show the relationship between the size of the object being measured and the measurement distance D:S = 20:1, indicating that the distance between the probe and the target (D) can measure the size of the target (S). In order to avoid temperature measurement errors, the area of the object being measured must not be smaller than the spot diameter (S) required by the optical path diagram.



4 Dimensions



5 Accessories



L-Shaped Fixing Frame

6 Installation

6.1 Fixing Method

SA The housing is made of aluminum alloy A6061 and comes with two fixing nuts (M20 x1). The probe can be directly installed on site. You can also choose an L -shaped fixing bracket for installation. When installing the probe, make sure that the optical path of the lens is not blocked by any object to avoid affecting the accuracy of NS11 temperature measurement.

6.2 Connection Line Marking

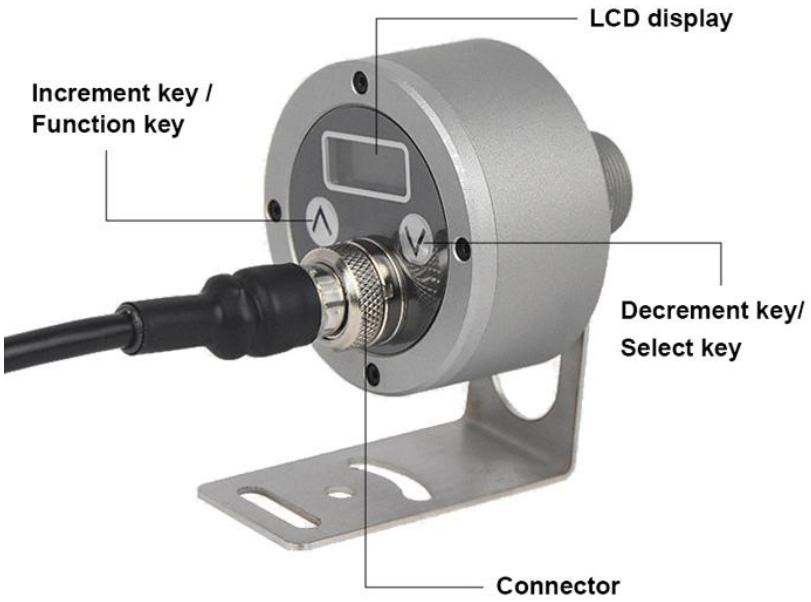
V/A4 (0~5V or 4~20mA output)

Red ----- 24VDC power supply (+)
Black ------ 24VDC power supply (-)
White ----- 0~5V/4~20mA signal output (+)
Green ------ 0~5V/4~20mA signal output (-)
Orange ------ TX digital signal (optional)
Gray --- RX digital signal (optional)
Blue ------ GND Digital signal (optional)
Bare wire --- shielded wire (Gnd)

A2 (two- wire 4~20mA output)

Red ----- LOOP (+)
Black ----- LOOP (-)
Orange ----- TX digital signal (optional)
Gray ------ RX digital signal (optional)
Blue ------ GND digital signal (optional)
Bare wire ---- shielded wire (Gnd)

7 Function Operation



1. In the temperature measurement state, please press (∧) and hold it, then press (∨) to enter the setting mode.

2. Press (∧) to select the item you want to modify.

3. After selecting the item you want to modify, press the (∨) key again so that a (-) symbol appears to the right of the item, indicating that you have entered the setting mode.

4. Press (∧) to increase or (∨) to decrease or change the set value.

5. After confirming that the item is set, if there is no action on the key after 7 seconds, the thermometer will automatically store the set parameter value and return to the temperature measurement state.

* Restore to factory settings: In the temperature measurement state, press and hold the minus key (∨) and then press and hold the plus key (∧). When the LCD screen displays (INIT), it is confirmed that the factory settings have been restored.

Display	Description [Example]	Setting content
E 0.950	Emissivity	0.100~1.000 (adjustable)
A 0.2	Signal output average time	(0.0~600.0s)
P 0.0	Signal output maximum value hold (not started)	(0.0~600.0s)
V 0.0	Signal output minimum value hold (not started)	(0.0~600.0s)
AP OFF	Peak hold start (ON) / switch (OFF)	Press the (∨) or (∧) key to switch
AP 0	Peak hold trigger value	Can be finalized according to demand
Note: P (highest), V (lowest) and AP (peak) signal outputs are retained and only one of them can be selected.		
L 0	Output signal corresponding → 0V/4mA corresponding output signal	0℃~500℃
H 500	Upper limit temperature → 5V/20mA corresponding output signal	
Unit C	Temperature Units	℃ /℉

8 After-sales Service

Each infrared thermometer has undergone a strict quality control process. If the product fails, please contact the customer service department immediately. The product warranty period is 12 months from the date of manufacture.

The manufacturer is not responsible for damage caused by improper use during the warranty period. If the product fails during the warranty period, the manufacturer has the right to replace parts. The manufacturer only provides replacement,calibration and repair services, and the shipping fee is borne by the sender.

If the damage is caused by improper use, the user shall bear the repair costs. The user can chat with the customer service department in advance to ask for an estimated repair cost.