SERRATA
INSTRUMENTS

Operation Instruction Manual

High Temperature Humidity Transmitter

THA-70

PRODUCT OVERVIEW

- Full range calibration of temperature and humidity, reliable accuracy.
- Max operating temperature of the sensitive capacitors can reach 180 ℃
- Press buttons, LCD, Relay Outputs, for transmitter
- 2 x 4-20 mA or Rs485 Modbus for data connection
- Full metal structure is sturdy and reliable, suitable for harsh working conditions.
- Fast humidity response, small lag time, long-term stable accuracy, strong anti-pollution ability.

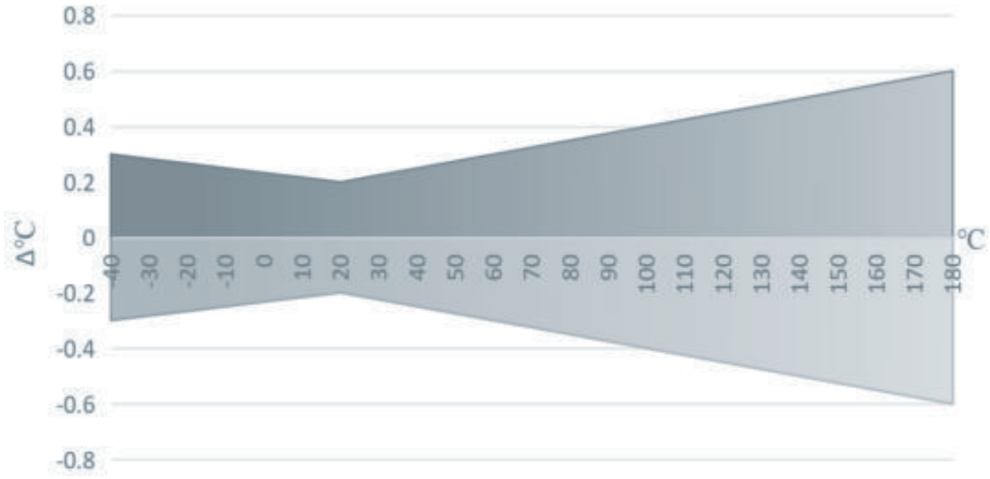
DESCRIPTON

THA-70 Temperature and Humidity transmitter is a highly reliable product developed for enough accuracy temperature and humidity measurement in fundamental industrial applications and climate control fields. Its split probe can work in environments with temperatures up to 180 ℃. The high-temperature humidity sensitive capacitor has long-term stability, strong anti pollution ability. Comparing to other HVAC transmitters, the innovative metal structure design gives THA-70 the advantage of stronger structure and longer duration in harsh working conditions.

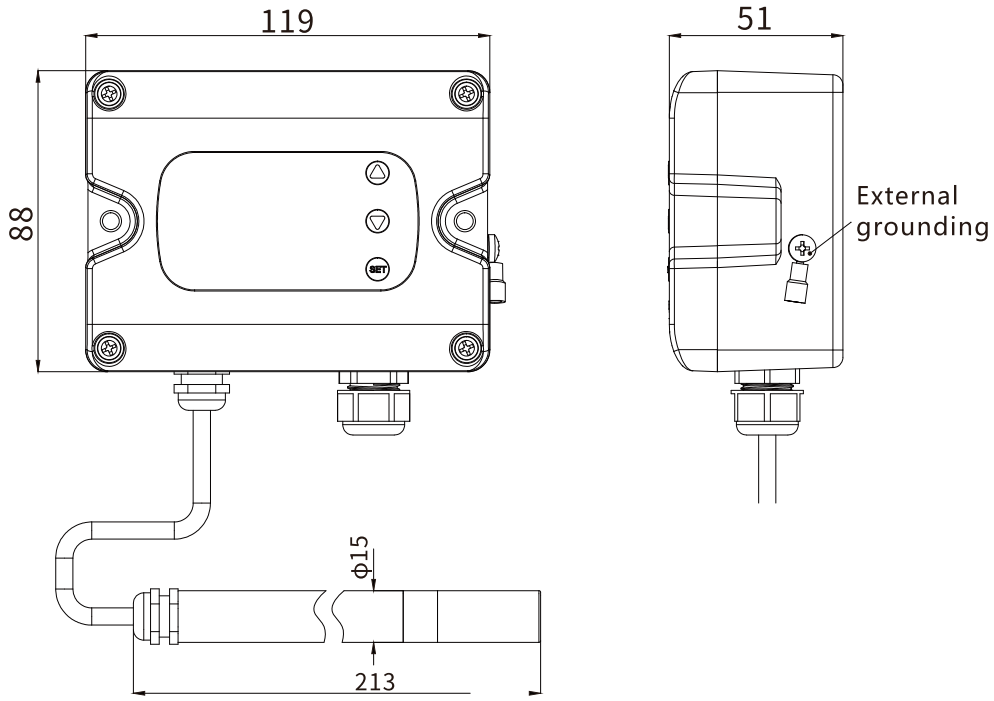
TECHNICAL PARAMETERS

	THA-70-A	THA-70-M
Humidity Measuring Range	0-100 %RH (Typical) (10-95 RH% non-condensing)	
Humidity Accuracy	±2 %RH (< 90 %RH @ 20℃)	
Temperature Range (as probe working)	-40...+180 ℃	
Temperature Accuracy	± 0,3 ℃ (@ 20℃)	
Response Time (Humidity)	<12 second	
Probe Material and Filter Cap	304 SS - Sintered Metal	
Probe Dimension and cable	200 mm lenght - 15 mm dia, 2 meter integrated cable	
Transmitter Output	2 x 4-20 mA	Rs485 Modbus
Alarm	2 x Relay (3A - 30 Vdc or 250 Vac)	
Power	15...35 Vdc	
Transmitter Electronic	Aluminium case (120x88x51 mm), -20...+50 ℃ working temp, 2 row LCD	

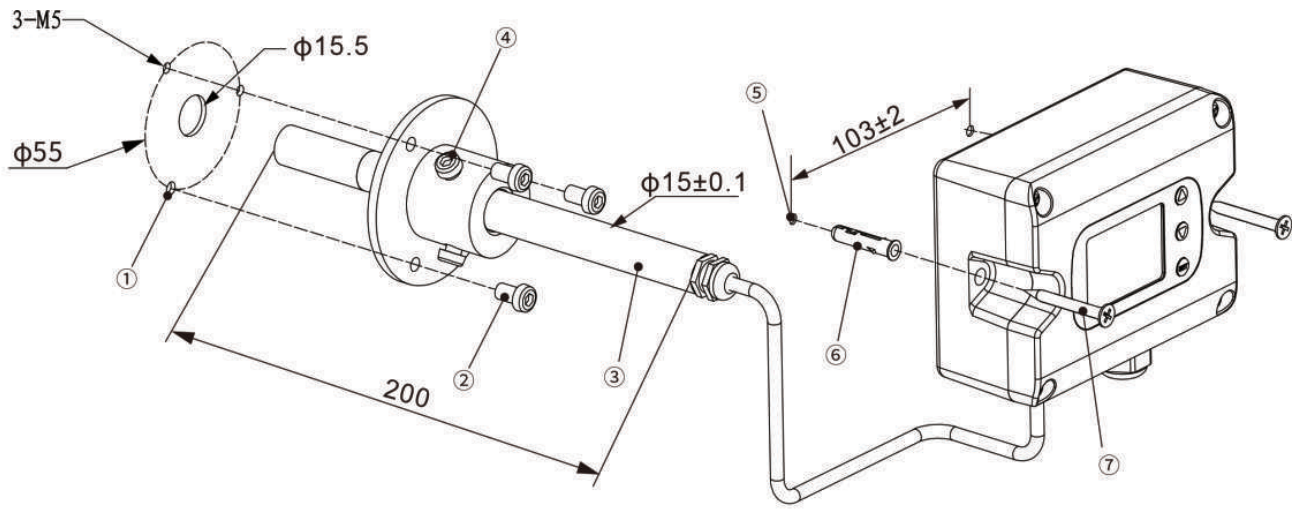
TEMPERATURE ACCURACY CURVE



DIMENSION



INSTALLATION

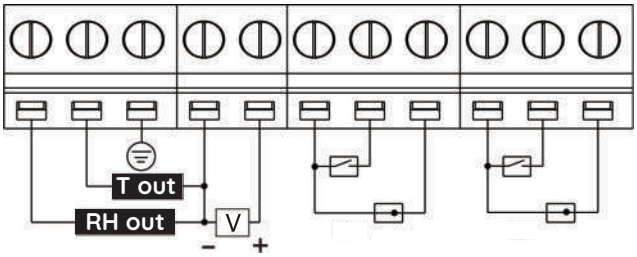


Air duct: ① open holes, ② install the flange, lock the screw, ③ install the air pipe and adjust the size, ④ lock the screw
Transmitter box: ⑤ open holes, ⑥ into the expansion tube, ⑦ install the body, locking screws

Grounding method selection: 1. Internal PCB reserved grounding terminal for grounding;
2. Client wiring harnessWhen separated from the grounding wire, the grounding wire is connected to the reserved grounding position outside the shell

WIRING

THA-70-A : 2 x 4-20 mA output version

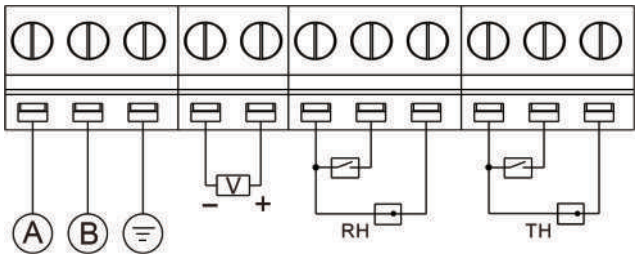


Power
15...35 Vdc

Relay 1
Humidity
NO and NC

Relay 2
Temperature
NO and NC

THA-70-M : Rs485 Modbus version



Rs485
Digital
Communication
(Slave)

Power
15...35 Vdc

Relay 1
Humidity
NO and NC

Relay 2
Temperature
NO and NC

FUNCTION INTRODUCTION

Button Description

SET Menu Confirm

1. Press and hold the SET key for 3 second to enter Parameter Settings
2. In parameter setting interface, press the S key once to select the current parameter setting in order to modify the parameters. The modifiable parameters will be flashing on the screen
3. Long press to this button to return you to the Home page.

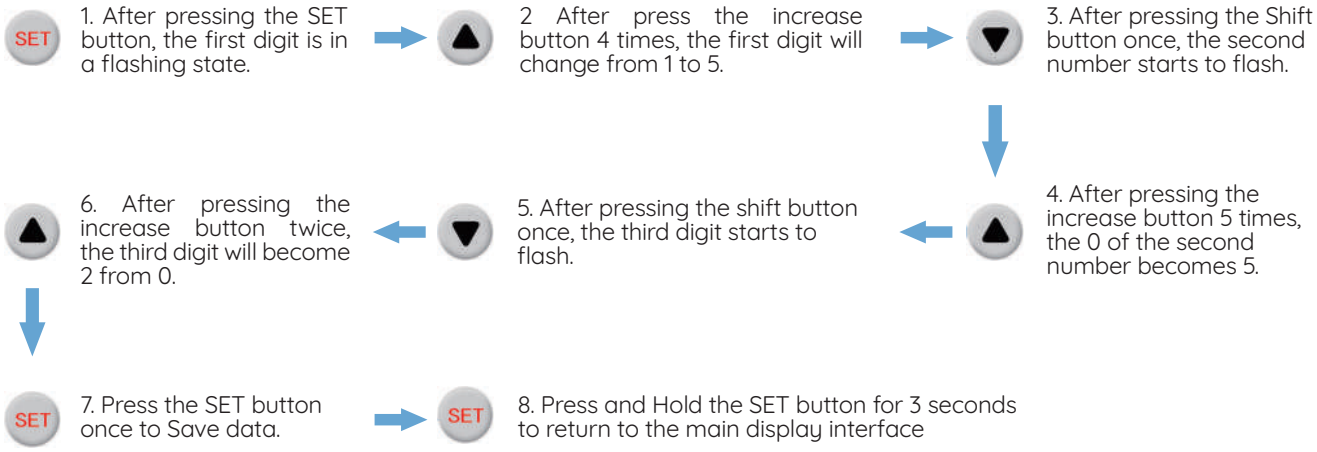
Value Increasing

1. Press this button to add 1 to the current parameter to be modified. After adding it to 9, press this button again to change the current value to 0. Press this button again to change the current parameter to 1... and cycle through this process.

Page Down and Shifting

1. Press this button to select the parameter interface to be modified.
2. Press this button to move the flashing status to the next number.

FUNCTION INTRODUCTION



Slave address setting interface (Addr) (it is appear on RS485 version only)

Long press the S button to enter the setting interface, adjust to the slave address setting interface, and the second line of the main display area will display "Addr"

Short press the S button and the second line of the screen will flash to display the current slave address. The range of slave addresses that can be set is between 1-255, and the **default address is 1**. The slave address consists of three digits, and the first digit will flash.

After pressing the button, the second digit will flash. After pressing the button again, the third digit will flash. When the number is in a flashing state, press the button and the number will + 1. After the slave address is modified, press the **S** button to save the data, and the display will return to "Addr"

If you want to continue modifying other parameters, you can continue to press the buttons to select the interface to be modified. If you don't need modify other parameters, press and hold the **S** key to return to the data display interface. Modification of other parameters is the same method as the modification of the slave address.

Baud Rate Setting Interface (bAud) (it is appear on RS485 version only)

After entering the Baud Rate Setting interface on the display screen, the second line of the screen will display “bAud”

The second line of the screen flashes to display the current baud rate parameters, with four options for baud rate selection : 1 / 2 / 3 / 4

1. 9600 (default)
2. 19200
3. 38400
4. 115200

The default Baud Rate is 9600, and the default parameter is 1. The modification of parameters is same method as the modification of the slave address, please refer to previous point.

FUNCTION INTRODUCTION

Temperature Range Scale High (Tr-H) (it is appear on Analog Output version only)

When the display screen shows the temperature range high point setting interface, and the first line of the screen will display “TR-H”.

The second line of the screen will flash to display the current range of the Scale High.

The setting range for 20 mA is between -40 and +180 ℃

Default is 60 ℃

Temperature Range Scale Low (Tr-L) (it is appear on Analog Output version only)

When the display screen shows the temperature range low point setting interface, and the first line of the screen will display “TR-L”.

The second line of the screen will flash to display the current range of the Scale Low.

The setting range for 4 mA must be less than the high point value.

Default is -20 ℃

Alarm enable setting interface (ALEn)

When the display screen shows alarm enable setting interface, the first line of the screen will display “ALEn”.

The second line of the screen will flash to display the current alarm enable parameter.

There are Two Options, for alarm enable setting : OFF and On

Default is OFF

FUNCTION INTRODUCTION

Temperature Unit Setting Interface (Tu)

When the display screen shows the temperature unit setting interface, and the first line of the screen will display “Tu”.

The second line of the screen will flash to display the current temperature unit, with a setting range of ℃ / ℉, representing Celcius and Fahrenheit temperature units respectively.

Humidity Parameter Setting (Hn)

When the display screen shows the Humidity Parameter setting interface, and the first line of the screen will display “Hn”.

The second line of the screen will flash to display the current Humidity Parameters, with a setting range of RH / Td / Tf, representing Relative Humidity, Dew Point Temperature and Frost Point Temperature respectively.

Humidity Alarm High Point Setting Interface (HA)

When the display screen shows the Alarm High Point Setting interface, the first line of the screen will display “HA”.

The second line of the screen will flash to display the current alarm High Point Parameter, with a setting range of 10-90 %RH

The default alarm high point set value is 90 %RH
(The if Humidity parameter selected as Dew Point or Frost Point temperature, display may be “tA”

Note : The set value of the alarm high point must be less than or equal to range high point value.

Humidity Alarm Return Difference Setting Interface (HH)

When the display screen shows the Alarm Low Point Setting interface, the first line of the screen will display “HH”.

The second line of the screen will flash to display the current alarm return parameter.

The setting range for this return is 0-15 %RH

The default return set value is 5 %RH
(The if Humidity parameter selected as Dew Point or Frost Point temperature, display may be “tH”

FUNCTION INTRODUCTION

Temperature Offset Setting Interface

When the display screen shows the Offset setting interface, and the first line of the screen will display “ToFF”.

The second line of the screen will flash to display the current Offset, with a setting range of -9,9..... +9,9 ℃

The Default is 0

Quick Cancel the an occured Alarm

When measured value of the transmitter meets the conditions and gives an alarm, you can press and hold the key for 3 seconds to Cancel the current alarm.

When the measured value falls below the lower limit of the alarm, the temporary cancellation terminates, and the product continues to monitor the measured value.

COMMON FAULTS

Fault	Solution
No output or No Display	Check if the power supply is normal and in the positive and negative directions.
Incorrect Product Output	Check the output type short circuit cap of the main control board.
Product Error Code	Check for strong interference in the surrounding environment. If not, shall be return to the reseller for maintenance.
No or garbled product display	Check the wiring of screen and restart. If no, shall be return to the reseller for maintenance.
Alarm Relay not acting	Check the alarm parameter settings, whether the alarm enable is configured correctly, and whether the quick cancellation alarm function is used.