°C
%RH
SHIMADEN

Series TH71A/H71A/T71A
SHIMADEN Wall mounting type sensor (Temperature/Humidity)

SERIES TH71A
TEMPERATURE / HUMIDITY SENSOR

SERIES H71A HUMIDITY SENSOR

SERIES T71A TEMPERATURE SENSOR

COMMON SPECIFICATIONS

❏ *Material (Case and Base): Resin based plastic*

❏ *External Dimensions: 70 (H) x 110 (W) x 42 (D) mm*

❏ *Mounting Method: Wall mounting*

❏ *Mounting Measurement: 86.5mm 2-φ4 (Mounting screw space)*

❏ *RoHS directive supported*

TEMPERATURE/HUMIDITY SENSOR

TH71A SERIES

Features

■ The humidity detection section incorporates a relative humidity detector using a polymer humidity sensor and a linearizer, and linearized DC voltage or current output is obtained.

■ Only built-in detection sections are available.

■ The temperature detection section uses a platinum resistance thermometer, and the output signal can be selected from either DC voltage output or resistance output using a three-wire system.

■ RoHS directive supported

Horizontal Mounting Type

Vertical Mounting Type
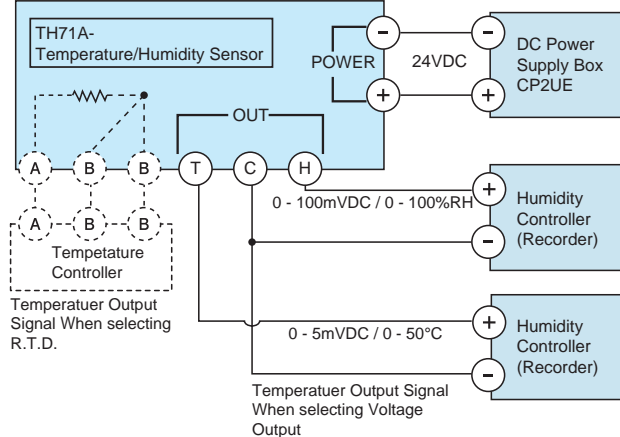
SPECIFICATIONS

Humidity Sensing Element:	Marcromolecule humidity sensor
Operating Ambient Temperature Range:	0 to 50°C
Humidity Measuring Range:	0 to 100% RH (practical range 20 to 90% RH)
Measuring Accuracy:	±3% RH (20-90% RH at 25°C)
Humidity Output Signal	See ordering information.
Temperature Sensing Element:	R.T.D. Pt100 1mA
Temperature Measuring Range:	0 to 50°C
Power Supply:	24V DC±10%
Current Consumption:	Approx. 3mA: when temperature = resistance output and humidty = voltage output
Approx.	6mA: when both temperature and humidity = voltage output
Approx.	22mA: when temperature = resistance output and humidty = current output
Applicable standards:	RoHS directive supported
Stock Temperature:	- 10 to 60°C
Insulation Between Terminal and Case:	500V DC 20MΩ
Weight:	Approx. 150g

Please do not use in the environment of the following gases.

1. Organic gas: Alcohols, Aldehyde, Ketone, Glycol, etc.
2. Inorganic gas: Sulfur dioxide, Hydrochloric Acid and Ammonia
3. Salty gas

TERMINAL ARRANGEMENT & WIRING EXAMPLE
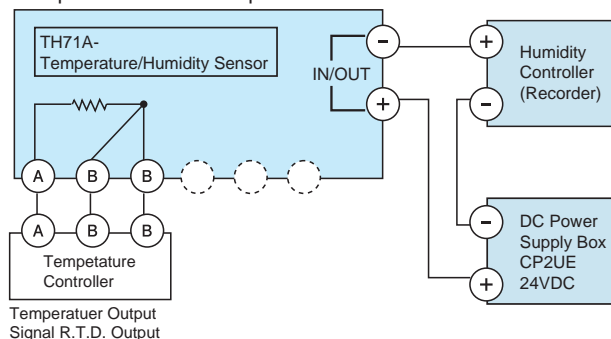
Output Signal
Voltage Output
Temperatuer Voltage or R.T.D. Output

TH71A-
Temperature/Humidity Sensor

POWER   24VDC   DC Power Supply Box CP2UE

OUT

A B B   T C H

A B B

Tempetature Controller

Temperatuer Output Signal When selecting R.T.D.

0 - 100mVDC / 0 - 100%RH   Humidity Controller (Recorder)

0 - 5mVDC / 0 - 50°C   Humidity Controller (Recorder)

Temperatuer Output Signal When selecting Voltage Output

Output Signal
Humidity Current Output
Temperatuer R.T.D. Output

TH71A-
Temperature/Humidity Sensor

IN/OUT   Humidity Controller (Recorder)

A B B

A B B

Tempetature Controller

Temperatuer Output Signal R.T.D. Output

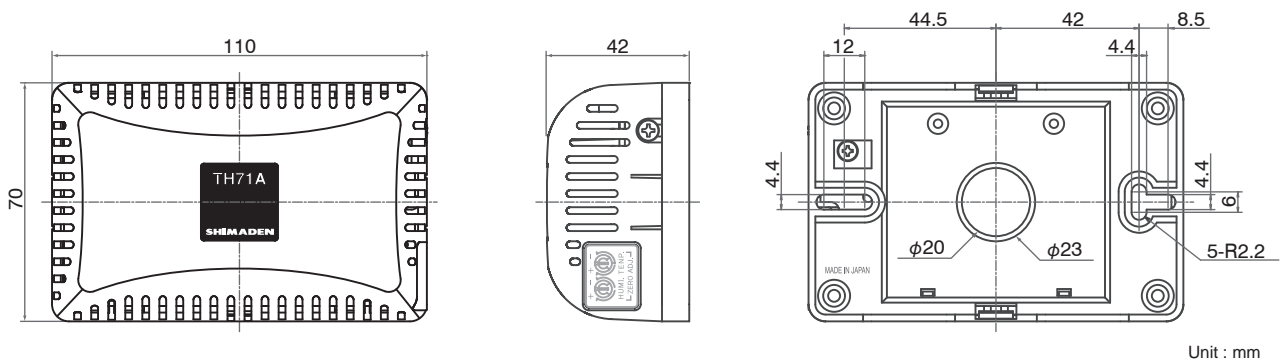DC Power Supply Box CP2UE 24VDC

＊Temperatuer output signal is either
A, B, B, (R.T.D. output) or T, C (Voltage output)

ORDERING INFORMATION

ITEMS	CODE		SPECIFICATIONS
SERIES	TH71A-		Temperature/Humidity Sensor (Sensing element self-contained type)
HUMIDITY OUTPUT SIGNAL		1	0 to 10mV DC/0 to 100%RH Output Resistance: 10Ω (linearized output)
		2	0 to 100mV DC/0 to 100%RH Output Resistance: 100Ω (linearized output)
		3	0 to 1V DC/0 to 100%RH Output Resistance: 1kΩ (linearized output)
		6	4 to 20mA DC/0 to 100%RH Load Resistance: 600Ω max. Temperature output signal only applies to 8: Pt100 (Class B)
		9	Others (Please consult before ordering)
TEMPERATURE OUTPUT SIGNAL		1	0 to 5mV DC/0 to 50°C Output Resistance: 10Ω (linearized output)
		2	0 to 50mV DC/0 to 50°C Output Resistance: 100Ω (linearized output)
		3	0 to 0.5V DC/0 to 50°C Output Resistance: 1kΩ (linearized output)
		8	Pt100/DIN (three lead wire output) Class B
		9	Others (Please consult before ordering.)
MOUNTING DIRECTIONS (FACEPLATE DIRECTION ONLY)		1	Horizontal Direction
		2	Vertical Direction
REMARKS		0	Without
		9	With (Please consult before ordering.)

EXTERNAL DIMENSIONS & MOUNTING DRAWING
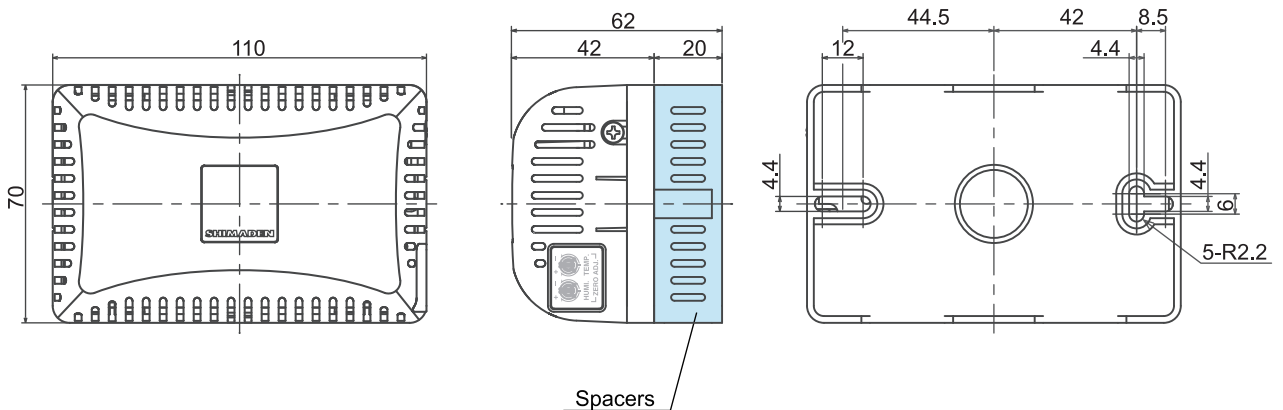

Unit : mm

Spacers (sold separately)

Product Outline

In the case the sensor is subject to the influence of humidity/temperature from the wall surface on which the sensor is mounted, the spacer lifts up the sensor by 20 mm from the wall surface, contributing to more precise measurements

CODE	QTS001

External dimensions of the TH71A/T71A/H71A series sensors with spacers

Spacers

Unit : mm

Features

■ Wall-mounted resistance thermometer for general air conditioning

■ RoHS directive supported

Horizontal Mounting Type
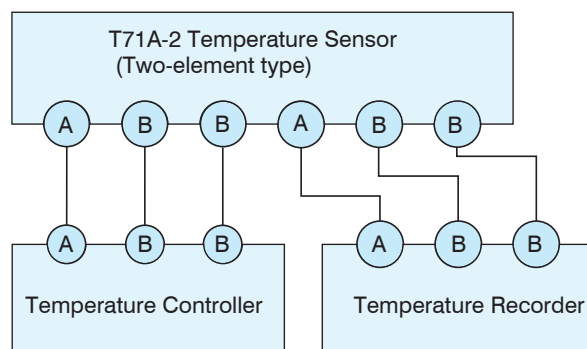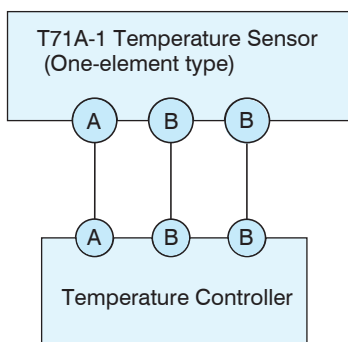
Vertical Mounting Type

SPECIFICATIONS

Sensing Element:	R.T.D., Pt100
Applicable Temperature Range:	-10 to 60°C
Applicable standards:	RoHS directive supported
Insulation Between Terminal and Case:	500V DC 20MΩ
Weight:	Approx. 100g

Please do not use in the environment of the following gases.

1. Organic gas: Alcohols, Aldehyde, Ketone, Glycol, etc.

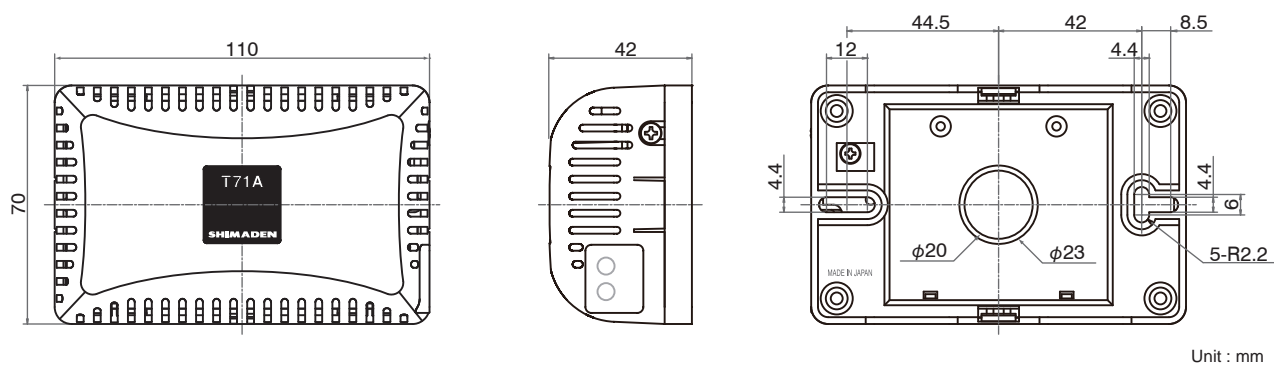2. Inorganic gas: Sulfur dioxide, Hydrochloric Acid and Ammonia

3. Salty gas

TERMINAL ARRANGEMENT & WIRING EXAMPLE

T71A-1 Temperature Sensor
(One-element type)

(A) (B) (B)

(A) (B) (B)

Temperature Controller

T71A-2 Temperature Sensor
(Two-element type)

(A) (B) (B) (A) (B) (B)

(A) (B) (B)   (A) (B) (B)

Temperature Controller   Temperature Recorder

ORDERING INFORMATION

ITEMS	CODE	SPECIFICATIONS				
SERIES	T71A-	Temperature Sensor				
NUMBER OF ELEMENT	1	1 (One element)				
	2	2 (Two element)				
STANDARD		F	Pt100 /DIN (New JIS)			
CLASS			S	Class B		
			Q	Class A		
			X	Others (Please consult before ordering.)		
MOUNTING DIRECTIONS				1	Horizontal Direction	
(FACEPLATE DIRECTION ONLY)				2	Vertical Direction	
REMARKS					0	Without
					9	With (Please consult before ordering)

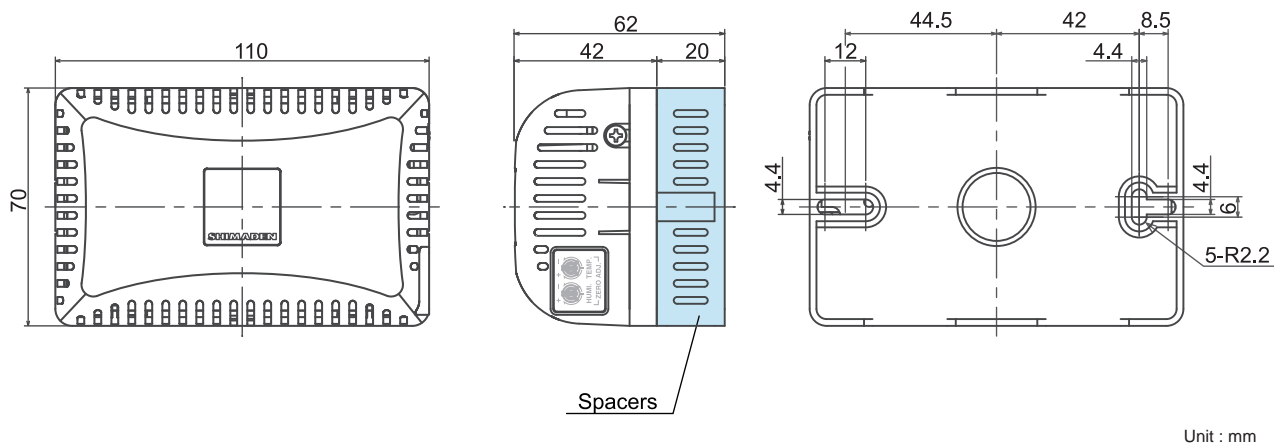## EXTERNAL DIMENSIONS & MOUNTING DRAWING

Unit : mm

SPACERS (sold separately)

Product Outline

In the case the sensor is subject to the influence of humidity/temperature from the wall surface on which the sensor is mounted, the spacer lifts up the sensor by 20 mm from the wall surface, contributing to more precise measurements

CODE	QTS001

External dimensions of the TH71A/T71A/H71A series sensors with spacers

Unit : mm

Features

■ **The humidity detection unit incorperates a relative humidity sensor using polymer technology and a linearizer, providing linearized DC voltage or current output.**

■ **The detection unit can be selected as either built-in or external.**
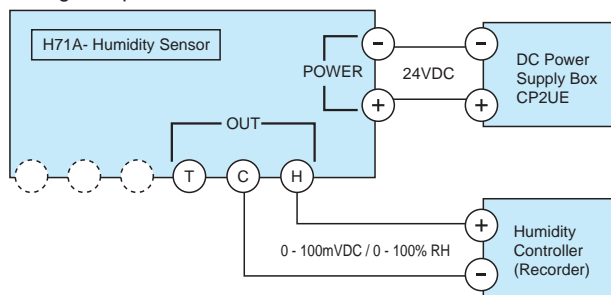
■ **RoHS directive supported**

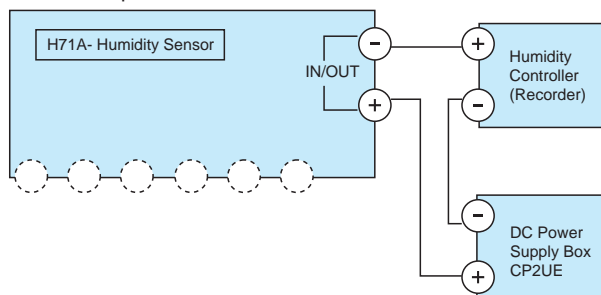**Horizontal Mounting Type**

Vertical Mounting Type

ProbeType Horizontal Mounting Only

SPECIFICATIONS

Humidity Sensing Element:	Macromolecule humidity sensor
Operating Ambient Temperature Range:	0 to 50℃
Humidity Measuring Range:	0 to 100% RH (practical range 20 to 90% RH)
Measuring Accuracy:	±3% RH (20-90% RH at 25℃)
Humidity Output Signal	See ordering information.
Input/Output signal line	Maximum 300m (when using 0.75mm2)
	However, this does not apply when the temperature output signal is a resistive output.
Power Supply:	24V DC±10%
Current Consumption:	Approx. 3mA/Voltage output/Approx. 22mA/Current output
Applicable standards:	RoHS directive supported
Stock Temperature:	- 10 to 60℃
Insulation Between Terminal and Case:	500V DC 20MΩ
Weight:	Approx. 150g

Please do not use in the environment of the following gases.

1. Organic gas: Alcohols, Aldehyde, Glycol, etc.

2. Inorganic gas: Sulfur dioxide, Hydrochloric Acid and Ammonia

3. Salty gas

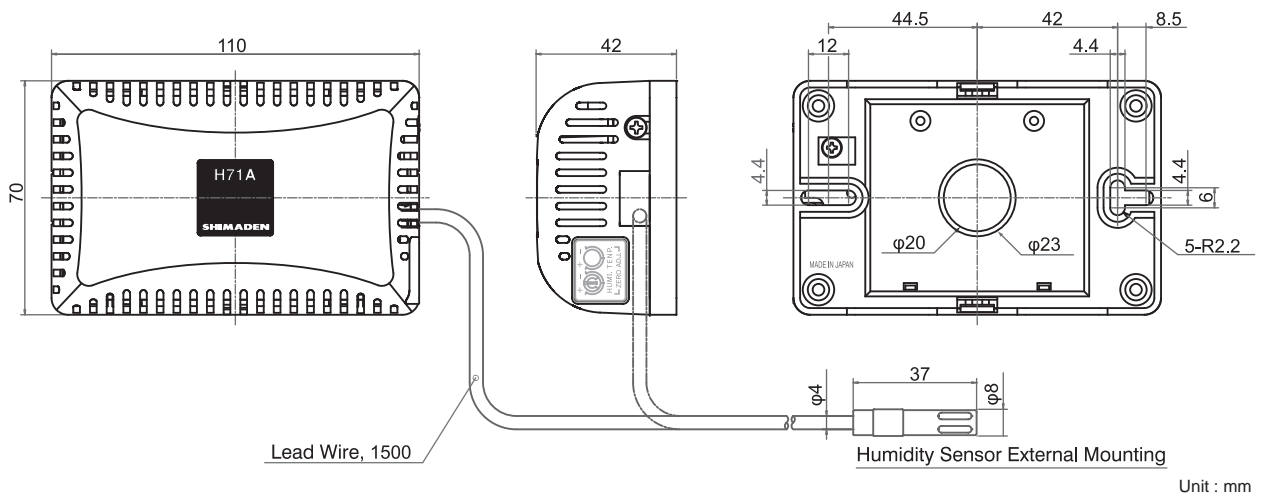## TERMINAL ARRANGEMENT & WIRING EXAMPLE

Output Signal
Voltage Output

H71A- Humidity Sensor

POWER   24VDC

DC Power Supply Box CP2UE

OUT

T C H

0 - 100mVDC / 0 - 100% RH

Humidity Controller (Recorder)

Output Signal
Current Output

H71A- Humidity Sensor

IN/OUT

Humidity Controller (Recorder)

DC Power Supply Box CP2UE

ORDERING INFORMATION

ITEMS	CODE		SPECIFICATIONS	
SERIES	H71A-		Humidity Sensor	
TYPE OF HUMIDITY SENSOR	1		Self-contained type	
	2		Probe type (with lead 1.5m)	
HUMIDITY OUTPUT SIGNAL	1		0 to 10mV DC/0 to 100%RH Output Resistance: 10Ω (linearized output)	
	2		0 to 100mV DC/0 to 100%RH Output Resistance: 100Ω (linearized output)	
	3		0 to 1V DC/0 to 100%RH Output Resistance: 1kΩ (linearized output)	
	6		4 to 20mA DC/0 to 100%RH Load Resistance: 600Ω max.	
	9		Others (Please consult before ordering.)	
MOUNTING DIRECTIONS (FACEPLATE DIRECTION ONLY)		1	Horizontal Direction	
		2	Vertical Direction	
REMARKS		0	Without	
		9	With (Please consult before ordering)	

EXTERNAL DIMENSIONS & MOUNTING DRAWING

Lead Wire, 1500

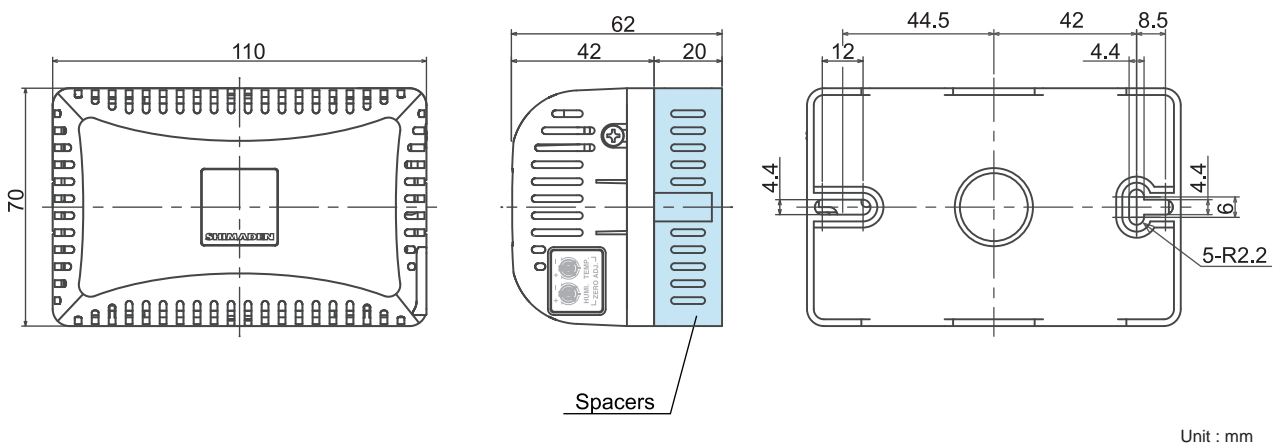Humidity Sensor External Mounting

Unit : mm

SPACERS (sold separately)

Product Outline

In the case the sensor is subject to the influence of humidity/temperature from the wall surface on which the sensor is mounted, the spacer lifts up the sensor by 20 mm from the wall surface, contributing to more precise measurements

CODE	QTS001

External dimensions of the TH71A/T71A/H71A series sensors with spacers
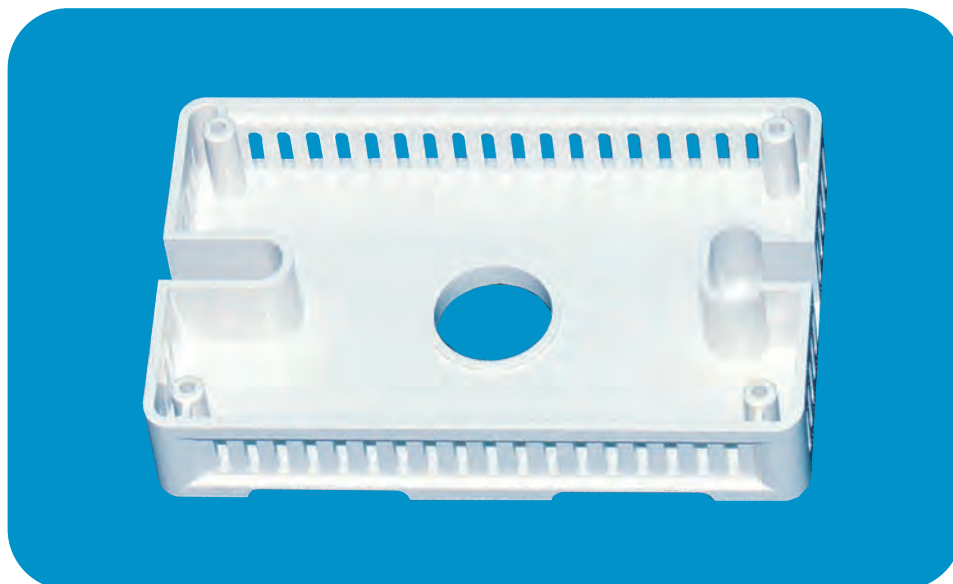

Spacers

Unit : mm

# SPACERS FOR TH71A/T71A/H71A

SPACERS (Sold Separately)

Product Outline

- ■ Spacers for TH71A/T71A/H71A (sold separately)

- ■ In the case the sensor is subject to the influence of humidity/temperature from the wall surface on which the sensor is mounted, the spacer lifts up the sensor by 20 mm from the wall surface, contributing to more precise measurements.

CODE : QTS001

External dimensions of the TH71A/T71A/H71A series sensors with spacers

Spacers
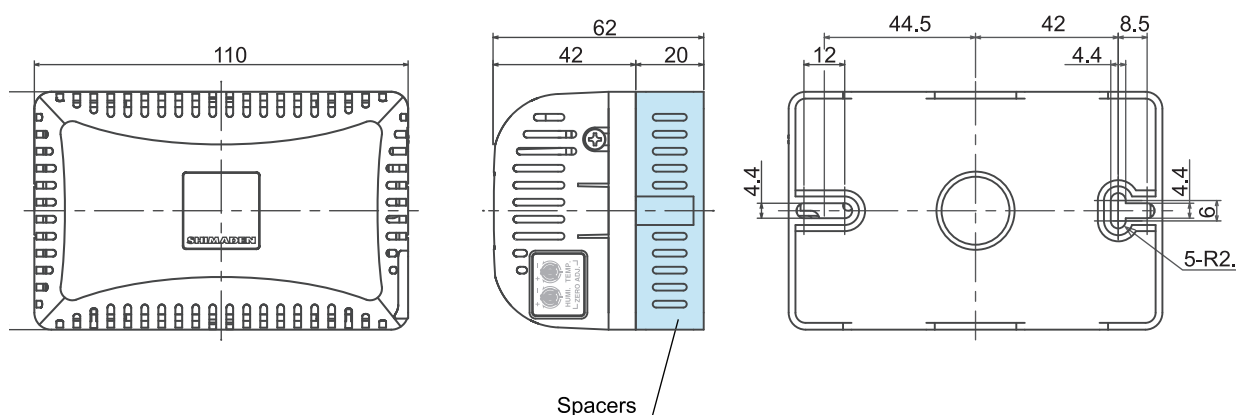
Unit : mm

■ The contents of this material are subject to change without notice.

⚠ WARNING	* Be sure to follow the instruction manual when operating this device. * This device is designed for industrial use to control temperature, humidity and other physical values. Avoid using it for control of devices upon which human life is dependent. * If the possibility of loss or damage to your system or property as a result of failure of any parts of the process exists, proper safety measures must be made before the instrument is put into use so as to prevent the occurrence of trouble.

Head Office & Saitama Factory
ISO 9001/ISO14001 Certification Obtained