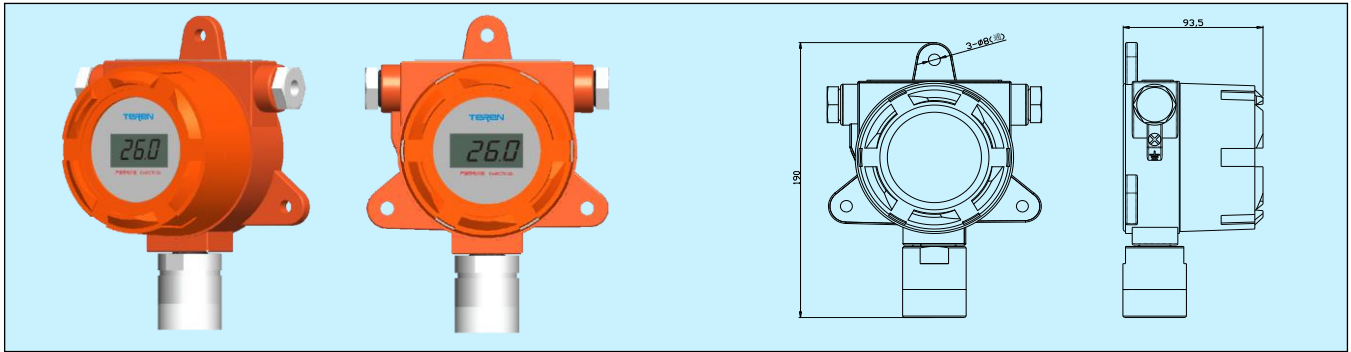


## H3Ex Explosion-Proof Temperature/Humidity Transmitter



### Applications & Features

- T/RH measurement in harsh and combustible, explosive or toxic areas. Moisture and corrosion resistant, IP66
- Industrial die cast aluminum housing, with the sensor placed in the separated metal chamber, ensure electrically isolated. The sensor assembly is easy to maintain or replace
- High-performance temperature/humidity sensor and circuit, accurate measurement and compensation, high accuracy, fast response, good long-term stability
- Meet Explosion Proof standards GB 3836.1-2010 and GB 3836.2-2010 with certificate Exd II CT6Gb. Suitable for Zone 1 & 2 hazardous areas where there are explosive mixtures of IIA, IIB, IIC, T1-T6 combustible gas, vapor and air

### Specifications

|                        | Hum.                     | Temp.                |
|------------------------|--------------------------|----------------------|
| <b>Range</b>           | 0~100%RH                 | 0~50°C etc.          |
| <b>Accuracy</b>        | Typ. 3% @25°C, 20~80%RH  | Typ. ±0.5°C @ 0~50°C |
| <b>Hys. &amp; Rep.</b> | <±0.8%RH @ 25°C          | ±0.1°C               |
| <b>Response</b>        | <60s (25°C, in slow air) | <3min                |
| <b>Drift</b>           | <±0.25%RH/year           | <±0.1°C /year        |

**Sensor:** High precision digital sensor

**Power:** 18.5~35VDC

**Output:** 2x 4~20mA (3 wires), RS485/Modbus

**Range:** humidity 0~100%RH; temperature 0~50(default)/100/-20~80/-40~60°C, selected by switch

**Load:** ≤500Ω (4~20mA)

**Display:** LCD, with backlight

**Operating condition:** -20~60°C, 5~95%RH(Non-cond.)

**Housing:** die cast aluminum housing, SS probe and SS mesh filter

**Protection:** IP66

**Approval:** CE, Exd II CT6Gb, EMC(2014/30/EU, EN50270)

**Weight:** 1.8kg

### Models

| Model         | H3Ex | Ex-proof Temp. /Hum. Transmitter |
|---------------|------|----------------------------------|
| <b>Output</b> | 2    | 2 x 4~20mA(3 wires)              |
|               | 8    | RS485/Modbus                     |

### Safety Attentions

**Warning: It is strictly forbidden to open the cover of the detector at the protected area.**

- Must comply with local regulations and protected area operating procedures.
- Any operation must be executed by professional.
- Make sure the wiring is correct before power on.
- The time interval between power off and power on must be more than 5 seconds.
- Turn off the power before connecting the device and adding nodes.
- The detector should be grounded safely through the ground terminal, if the power input does not have ground wire.

### Installation

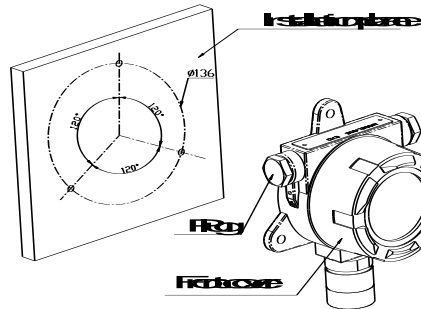
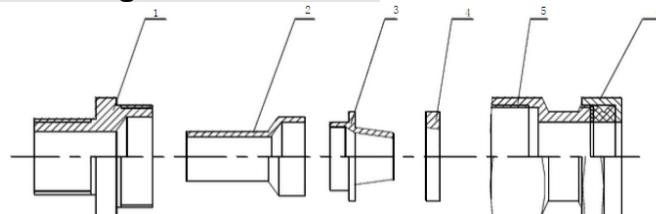


Figure 1

- Confirm the power is OFF and select the appropriate installation position. As shown in Figure 1 above, the detector should be wall mount with the probe downward vertically. Embed 3 expansion bolts of 6 mm diameter and fix the detector properly.
- Open the front cover as Figure 2 below, and feed the cable through the stuffing box (if there is a dust plug on the right side, please remove it), tighten and seal the stuffing box to prevent any gases from entering the enclosure and causing dangerous.
- Wire according to the wiring diagram, close and tighten the front cover. Appropriate greases should be applied on the explosion proof thread surface when tighten the front cover to ensure the explosion proof sealing of the whole enclosure.

### Explosion proof cable stuffing box installation

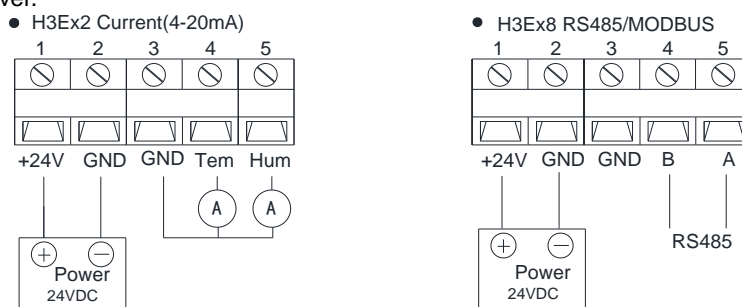


1. Base 2. Packing bushing 3. Cone 4. Tight ring 5. Stuffing box 6. Nut  
Figure 2

- Use the appropriate explosion proof cable according to the stuffing box specifications.
- Remove appropriate external part armor of the cable end and handle the cable.
- Feed the handled cable through 5 and 6, then set the sealing ring of 6 on the sheath of the cable (refer to Figure 2).
- The metal armored portion is turned over through 4 to ground the cable, then feed the cable cores through 3 and 2.
- Add the filler into the gap and surrounding of the cable cores to make it close to the inner diameter of the part 2, and also add a proper amount of filler to the cavity of the part 3.
- Insert the cone of part 3 into the armor and put part 2 onto part 3.
- Screw part 1 onto the inlet hole of the explosion proof enclosure, feed the cable (that has passed through part 2-6) through part 1, and then screw part 5 onto part 1. Thus, the part 4 is pressed against the metal armor and the cone of the part 3, and the part 2 and the part 3 are fastened.
- Tighten part 6 onto part 5, thus the sealing ring in the part 6 is fastened to the outer sheath of the cable.
- After the stuffing box is installed, ensure that the packing bushing is filled with filler and no air bubbles.

### Electrical Connection

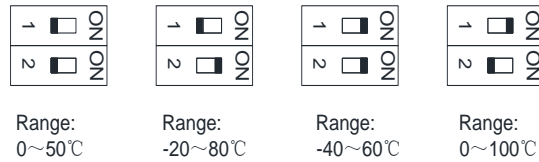
Different models have different electrical terminals. Please wire specific model according to the wiring diagram on the inside back of the front cover.



1. Confirm the power is OFF. Choose the appropriate wires according to the number of detectors and the distance (recommend the wire greater than 2 mm<sup>2</sup>). Wire according to the wiring diagram, then close and tighten the front cover.
2. For RS485/MODBUS communication, please refer to "H3Ex Explosion-Proof Temperature/Humidity Transmitter MODBUS Communication Manual". RS485 terminal resistance jumper J8 is described as follows:  
Terminal resistance 120 Ω: the jumper J8 is at position "on". Terminal resistance 0 Ω(None): the jumper J8 is at position "off"  
As shown below:



**Range set for temperature**



**Power ON detector**

1. Before power on, it must be checked and confirmed that all wiring is correct and all fasteners must be tightened in accordance with the installation requirements.
2. After power on, it has a warm up time of at least 2 hours, then the detector can work normally.

**Attentions and Cautions**

- Do NOT open the cover in the explosion proof environment.
- Power off the detector during installation and wiring.
- The power supply should NOT exceed the specified rate. Do NOT use AC power, otherwise, it may cause permanent damage.
- Perform zero-point and full-scale calibration on the product regularly.
- Do not install the detector in the following situations:
  1. Where the temperature and humidity exceed the working conditions.
  2. Where there are any strong corrosive gases.
  3. Where there is direct vibration or impact.

**Warranty**

- It has limited warranty for eighteen (18) months after the production date.

**Failure code**

| Code | Failure description                | Solution  |
|------|------------------------------------|---|
| ER1  | Temperature Sensor detection error | Power off, check if the sensor is plugged in with good connection |
| ER2  | Humidity Sensor detection error    | Power off, check if the sensor is plugged in with good connection |



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