



LEFOO LFH10R Temperature And Humidity Transmitter User Manual

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LEFOO LFH10R Temperature And Humidity Transmitter



Product Information

The LFH10R is a temperature and humidity transmitter that features high-precision sensors and main control for long-term stability and anti-interference ability. It has an outstanding design with an LCD backlight dual display for temperature and humidity, making it easy to operate. The transmitter also has overvoltage and reverse connection protection functions, ensuring durability and reliability. With an IP65 protection level, it is suitable for various environments. The LFH10R offers multiple output options including RS485/Modbus, 0~10VDC, and 4~20mA. It has a wide range of temperature measurement from -20°C to 60°C and a relative humidity range of 0%~100%. The temperature range can be easily changed by dialing code, and the 485 output allows for changing the machine number and baud rate by dialing code as well.

The LFH10R comes in three models: LFH10R1, LFH10R2, and LFH10R3. These models are wall-mounted, duct-mounted, and split temperature and humidity transmitters respectively. They support different types of outputs such as 0~10VDC (3 wire), 4~20mA (2 wire), and RS485/Modbus. The LCD display is available for temperature output options V10 or A4.

The LFH10R has a compact design with dimensions of 82mm x 200mm x 38mm (LFH10R1), 62mm x 250mm x 38mm (LFH10R2), and 72mm x 250mm x 38mm (LFH10R3). It is made of ABS housing with a PC probe and polymer filter. Optional stainless steel probe rod and sintered/stainless steel wire mesh filter are also available. The working environment ranges from -20°C to 60°C with a humidity range of 5% to 95% RH (non-condensing). The transmitter has an IP65 protection class.

Product Usage Instructions

LFH10R1 Instructions:

1. For wall mounting, use the provided LFH10R1 wall mounting hole.
2. Installation depth should be between 2-5mm.

LFH10R2 Instructions:

1. It is recommended to install LFH10R2 with flange accessories.
2. Adjust the insertion depth as needed.
3. Fix the mounting flange on the air duct using two screws, ensuring the inserted probe is locked by the screws on the flange.
4. The opening of the air duct should be 15.1mm.
5. After installation, seal the air duct to prevent air leakage.

LFH10R3 Instructions:

1. Use the LFH10R1/10R3 wall mounting hole or LFH10R2/10R3 flange mounting holes for installation.

Product Installation:

1. Prolonged exposure of the sensor probe to high concentrations of chemical gases may cause reading shifts.
2. If choosing a metal rod temperature and humidity transmitter, specify the metal rod and front cover specifications in the remarks.
3. To install, open the top cover and connect the power cord and signal line to the bottom box through the waterproof connector.
4. Complete the wiring according to the provided wiring diagram.
5. Ensure proper sealing between the waterproof connector and the bottom box (using a sealing ring), as well as between the upper cover and the bottom box (using a sealing ring), to achieve an IP65 protection level.
6. Reinstall the top cover to its original state.

OVERVIEW AND PARAMETERS

- Adopt high-precision sensor and main control, long-term stability and anti-interference ability
- Outstanding design, LCD backlight dual display of temperature and humidity, easy operation
- Overvoltage and reverse connection protection function, IP65 protection level
- Temperature range can be changed by dialing code, 485 output can change the machine number and baud rate by dialing code

OVERVIEW

LFH10R series temperature and humidity transmitter is a transmitter specially designed for industrial applications. It has three installation methods: wall-mounted, pipeline, and split. The three output modes of current, voltage, and RS485 are optional. The on-site adaptability is strong, and the terminal design is suitable for rapid installation.

It can be widely used in computer rooms, HVAC, buildings, storage vegetable greenhouses, farms and other places where temperature and humidity measurement is required.

PARAMETERS

Relative humidity

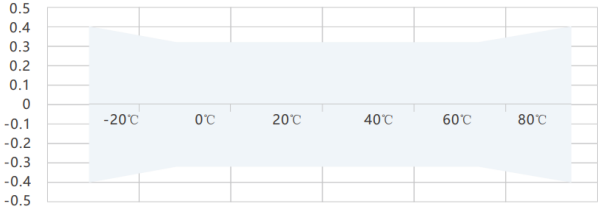
Sensor	Digital
Range	0%~100%
Output	RS485/Modbus,0~10VDC,4~20mA optional
Accuracy	±3%@ 20°C & 20~80%RH
Response time	≤10s(20°C,slow flow air)

Temperature

Sensor	Digital or thermal resistance, see model selection table
Range	0~50°C -20~60°C etc.
Output	4~20mA,0~10VDC, RS485/Modbus Optional
Thermal resistance	See selection table and thermal resistance indexing table
Accuracy	Digital sensor:±0.3°C@(0~60°C) see table below.Thermal resistance: typical ±0.2~0.4°C@25°C, see selection table
Power supply	Voltage type/RS-485: 15~35VDC/24VAC±20% (AC power supply requires isolated power supply) Current type: 19.5~35VDC (RL=500Ω)/9.5~35VDC(RL=0Ω)
Output load	≤250Ω (Current type), ≥2KΩ(Voltage type)
Display	Optional LCD display with unit display and backlight (4~20mA without backlight)
Shell material	ABS housing, PC probe, and polymer filter(Optional stainless steel probe rod, sintered/stainless steel wire mesh filter)
Working environment	-20~60°C,5%-95%RH(non-condensing)
Protection class	IP65

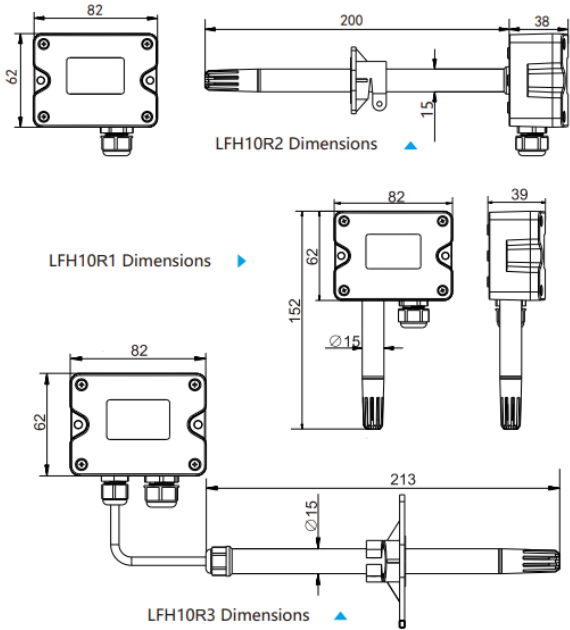
Temperature accuracy curve

3/Temperature
accuracy curve



DIMENSION

SIZE mm



PRODUCT SELECTION

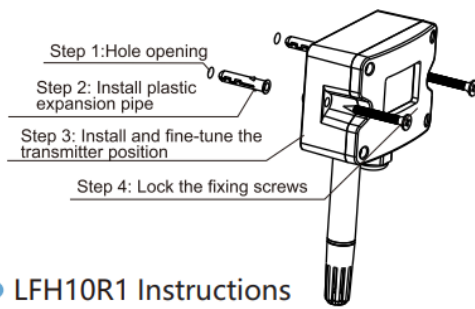
SELECTION

Model	LFH10R 1- LFH1 0R2- LF H10R3-						Wall-mounted temperature & humidity transmitter Duct temperature& humidity transmitter Split temperature& humidity transmitter
Temperature and humidity accuracy		3					±3%RH 0.3℃
Humidity output			V10 A4 RS				0~10VDC(3 wire) 4~20mA(2 wire) RS485/Modbus
Temperature output			V10 A4 RS 0 1 2 6				0~10VDC(3 wire)
							4~20mA(2 wire)
							RS485/Modbus PT1000 ±0.2℃@0℃
							PT100 ±0.2℃@0℃
							NTC20K ±0.4℃@25℃
							NTC10K ±0.4℃@25℃
Temperature range					0 1 2 8		None 0~50℃ -20~60℃ Other(customized)
Display						0 1	None LCD display

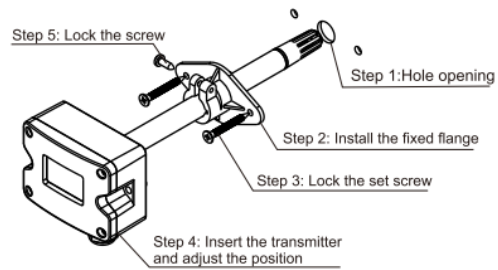
INSTALLATION

1. Only when the temperature output option is V10 or A4, the corresponding temperature range 1-8 needs to be selected; otherwise, only 0 can be selected.
2. Example LFH10R1-3A4A411 represents the wall-mounted type, the temperature and humidity accuracy is ±3%RH (±0.3℃), the humidity output is 4~20mA, and the temperature output is 4~ 20mA, temperature range 0~50℃ with display.
3. Prolonged exposure of this product's sensor probe to high concentrations of chemical gases may cause the sensor's readings to shift.
4. To choose a metal rod temperature and humidity transmitter, you need to clearly write the specifications of the metal rod and the front cover in the remarks.

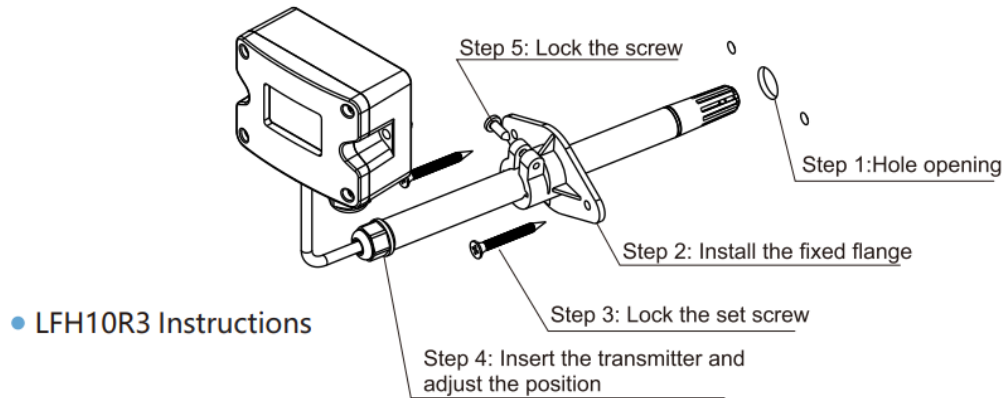
PRODUCT INSTALLATION



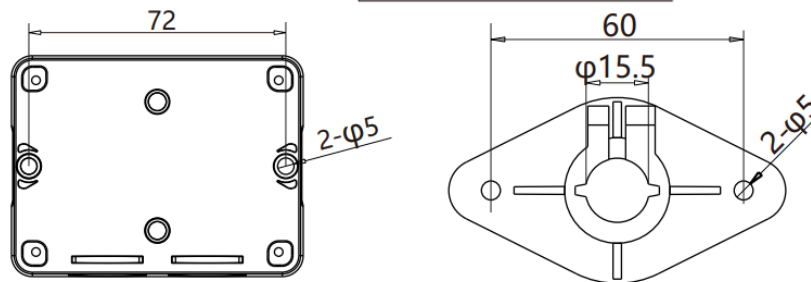
• LFH10R1 Instructions



• LFH10R2 Instructions



• LFH10R3 Instructions

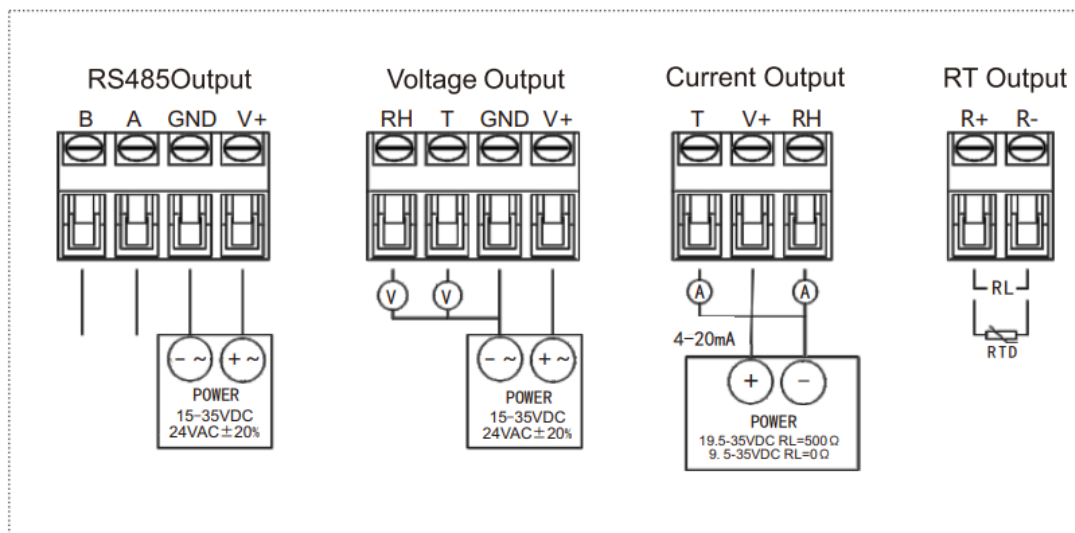


• LFH10R1/10R3 wall mounting hole • LFH10R2/10R3 Flange Mounting Holes

1. LFH10R2 is recommended to be installed with flange accessories, and the insertion depth can be adjusted. Fix the mounting flange on the air duct with two screws, the screws on the flange can lock the inserted probe. The opening of the air duct is $\phi 15.1$ mm. After the probe is installed, the air duct should be sealed to avoid air leakage.
2. LFH10R1/10R3 should be vertical when wall-mounted, and pay attention to the probe facing down. The installation location should be far away from the factors that affect the measurement, such as cold and heat sources, etc., and should avoid direct sunlight or rain, and if necessary, install a sunshade or rain cover. On the installation plane, open 2 fixing holes according to the hole size in the installation drawing (see above), and then use 2 screws to fix the bottom box. The LFH10R3 probe tube installation description is the same as the LFH10R2 using flanged installation.
3. Open the top cover, connect the power cord and signal line to the bottom box through the waterproof connector, complete the wiring according to the wiring diagram, and install the top cover back to its original state. Pay attention to the sealing between the waterproof connector and the bottom box (with a sealing ring), and the sealing between the upper cover and the bottom box (with a sealing ring), so that the overall protection level can reach IP65.

WIRING AND DIP SWITCHES

WIRING INSTRUCTION

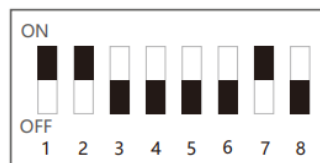


DIP SWITCH DESCRIPTION

485 types: The first 6 digits of the 8-bit dial code are the address, the address can be set to 1-63, the factory default setting is 1, and the 7/8 digits are the baud rate and can be set to 1-3, respectively representing 1: 9600 2: 19200 3: 38400. The setting method is as follows:

(ON stands for 1, OFF stands for 0, numbers 1~8 on the dial panel represent low to high)

- Example:** At this time: the address is: $1 \cdot 2^0 + 1 \cdot 2^1 + 0 \cdot 2^2 + \dots = 3$, the baud rate is 1.



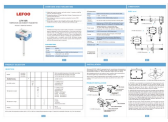
Voltage or current type:

3-bit dial code to select the temperature range, which can be set to 0-7, respectively representing (1 0~50°C 2 0~60°C 3 0~80°C 4 0~100°C 5 -20~60°C 6 -20~80°C 7 -40~60°C 0 Default range(-20°C~60°C)/Customer specified range)

- Example:** The dial value is: $1 \cdot 2^0 + 1 \cdot 2^1 + 0 \cdot 2^2 = 3$ which means the temperature range is 0~80°C



Note: After all the dial codes are changed, the power must be restarted to make the changes take effect. When the address or baud rate dial code is 0, the 485 can be changed by software!



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