Features

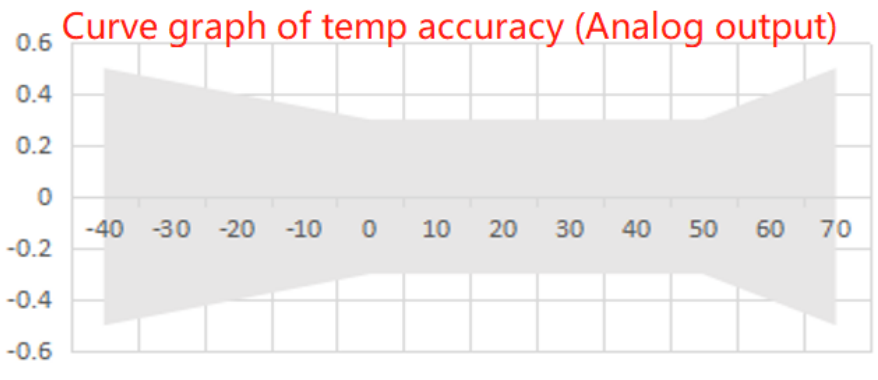
- The shell design is light and beautiful
- A variety of installation methods and output methods are optional
- Using high-precision sensors, with good long-term stability and anti-interference ability
- The power supply and output have over-voltage and reverse connection protection functions, with a high degree of protection up to IP65

Description

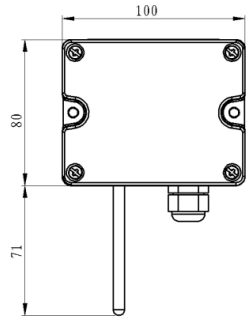
The LFW series temperature transmitter adopts a high-precision sensor, which has good long-term stability and anti-interference ability. The measured temperature value can be converted into a proportional electrical signal output. A variety of installation methods and output methods are optional. The PC shell is light and beautiful, with higher strength and temperature resistance. The power supply and output have overvoltage and reverse connection protection functions. The higher protection level can reach IP65.

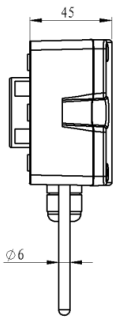
Specification

Transducer	High-precision thermal resistance, see selection table (resistance output type) / PT1000, Class A (analog output type)	
Output	Resistance, see selection table and thermal resistance indexing table / 4~20mA or 0~10VDC,0~5VDC	
Thermal resistance	See selection table and thermal resistance indexing table	
Accuracy	Typical 0.2~0.5℃@25℃, see selection table / ≤±0.3℃@0~50℃, see accuracy curve for details	
Power supply	Voltage type 15~35VDC/24VAC±20%	Current type 18.5~35VDC (RL=500Ω) 8.5~35VDC (RL=0Ω)
Output load	（Analog output type）≤500Ω(Current type)，≥2KΩ(0~5V), ≥3KΩ(0~10V)	
Housing material	PC housing, stainless steel probe (φ6mm) and casing	
Working temperature	-40~70℃，0~95%RH(Non-condensing)	
Protection Grade	IP65	

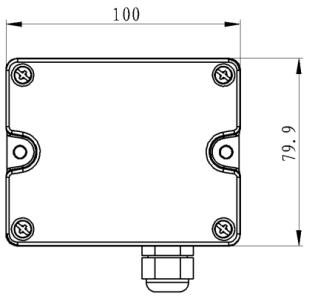


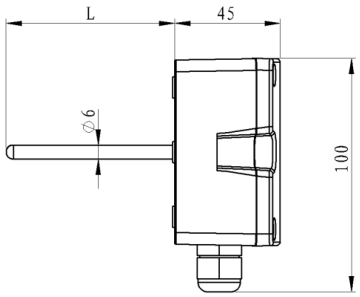
Dimensions



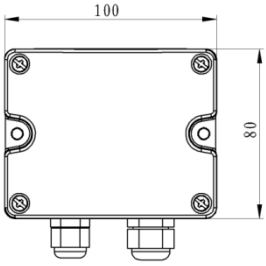


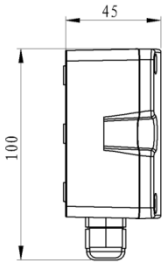
LFW101



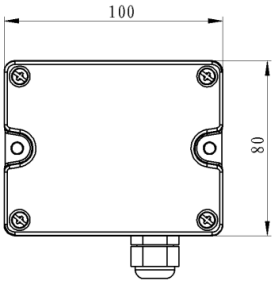


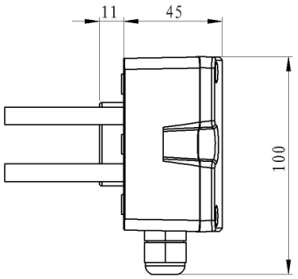
LFW102/LFW103





LFW104





LFW105

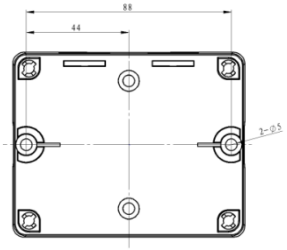
Order Ref NO

Code and description					Notes
LFW101-	Wall-mounted temperature & humidity transmitter		LFH104-	Remote temperature transmitter	Model
LFW102-	Duct type temperature & humidity transmitter		LFH105-	Clamp type temperature transmitter	
LFW103-	Split type temperature and humidity transmitter				
	V10	0~10VDC(Three-wired)	2	NTC20K，±0.2℃@25℃	Temperature output
	A4 RS	4~20mA(Two-wired)	3	Ni 1000，±0.5℃@25℃	
	V5	0~5VDC(Three-wired)	4	NTC10K-II,±0.2℃@25℃	
	0	PT1000，±0.2℃@25℃	5	NTC10K-III,±0.3℃@25℃	
	1	PT100，±0.2℃@25℃	6	NTC10K-A,±0.3℃@25℃	
		0	NO		Temperature range
		1	0~50℃		
		2	-20~60℃		
		8	Others (customer specified)		
			0	75MM	Probe length LFW102/103
			1	125MM	
			2	200MM	
			8	Others (customer specified)	
LFW102-	2	1	2		Model selection example

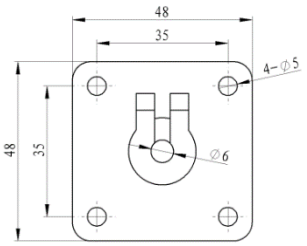
Notes:

1. Only when the temperature output options are V10, A4, V5, the corresponding temperature range 1-8 needs to be selected. Otherwise, only 0 can be selected.
2. The cable length standard of LFW104 is 1m. If lengthening is needed, it should be increased by the whole meter, and a length mark should be added at the end. Example: LFW104-A41-2, which means the cable length is 2m.
3. The accuracy of the LFW105 clamp type is related to the pipe wall material, installation, ambient temperature, wind speed, etc. It is difficult to achieve the above accuracy.
4. Example LFW101-V101 represents wall-mounted temperature output 0~10VDC temperature range 0~50℃

Product installation

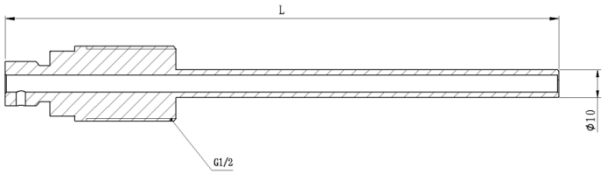


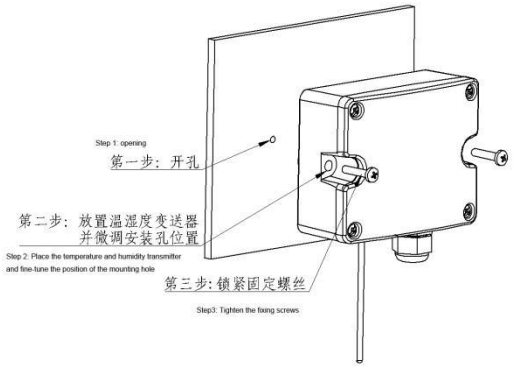
LFW101/104 Wall mounting



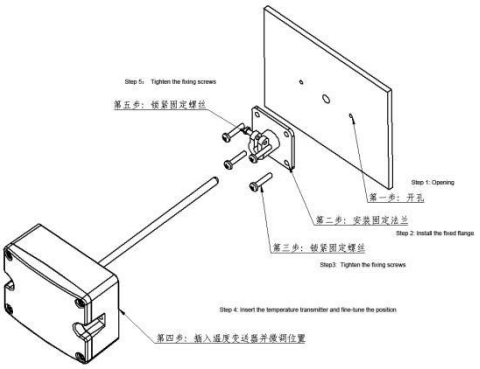
LFW102 Flange mounting

LFW103 Stainless steel casing installation hole

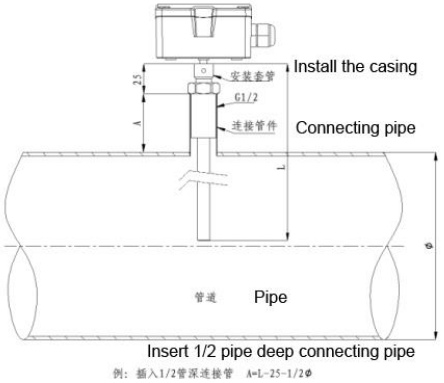




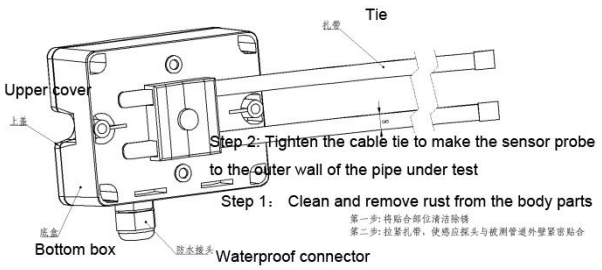
LFH101/104 Installation



LFH102 Installation



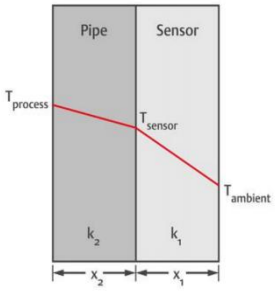
LFH103 Installation



LFH105 Installation

Installation Notes

1. LFW102 is recommended to use flange attachment for installation. The insertion depth is adjustable. Use four screws to fix the mounting flange on the air duct. The screws on the flange can be inserted into the probe and LFW102. The opening of the duct is Φ7mm, and the opening must be sealed at the end.
2. When LFW101/104 is mounted on the wall, the probe should be vertically downward. When installing outdoors, choose a suitable location. Away from factors that affect the measurement, such as cold and heat sources, and avoid direct sunlight or rain. If necessary, install a sun visor or protective cover. Drill 2 fixing holes on the installation plane according to the mounting hole size of the bottom box (see the figure above), and then fix the bottom box with 2 screws.
3. LFW103 should be installed with an installation sleeve. The connecting pipe (pipe clamp) is G1/2 and welded to the pipeline. Tighten the installation sleeve to ensure the pressure seal of the pipeline. Insert the probe into the bottom of the casing and tighten it with a fixing screw.
4. LFW105 is specially designed for circular pipe measurement. It is installed with the pipe under test using cable ties. The cable tie should be tightened to make the sensing probe closely fit the outer wall of the pipeline under test (to ensure the best temperature sensing performance, the bonding part must be clean and free of rust)
5. When wiring, first open the upper cover of the installation box, install the waterproof connector, and connect the power and signal cables to the bottom box through the waterproof connector. Complete the wiring according to the wiring diagram. When assembling the waterproof connector and the bottom box, ensure a good seal (with a sealing ring). The installation of the upper cover and the bottom box must also be sealed (with a sealing ring), so that the overall enclosure protection level can reach IP65.

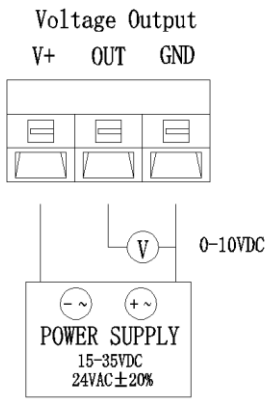


Tambient=Measure the ambient temperature
X1=Sensor component thickness
K1= Thermal conductivity of sensor components
Tsensor= Measuring surface temperature
X2= Wall thickness
K2= Thermal conductivity of tube wall
Tprocess=Fluid temperature in pipe

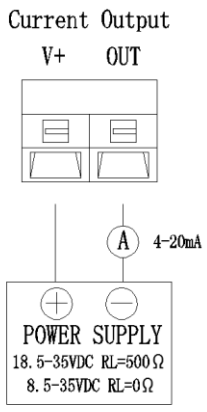
As shown in the figure above, when the clamp pipe installation product LFW105 is used to detect the fluid temperature Tprocess in the pipe, the actual temperature Tsensor detected will be different from the fluid temperature Tprocess in the pipe. The influencing factors leading to the difference are: pipe material thermal conductivity k2/thickness X2, sensor detection thermal conductivity k1/thickness X1, external ambient temperature Tambient, and ambient wind speed, installation adhesion and so on. In order to reduce the difference between Tsensor and Tprocess and improve the detection accuracy, it is necessary to pay attention to the clean, tight, and good heat conduction of the adjacent part during installation. In addition, it is recommended to add insulation materials to the pipeline and the adjacent part. If it is possible to actually measure the temperature Tprocess by other means, and then calculate the deviation from the actual measurement result Tprocess of the LFW105 product, you can calculate and correct the measurement result Tprocess to obtain a more accurate measurement value.

Wiring diagram

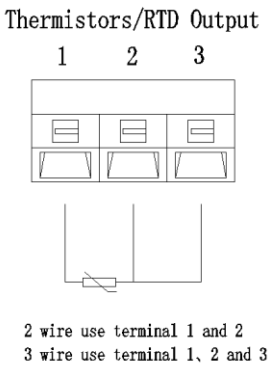
Voltage output



Current output



RT Output



Note: When using 24VAC power supply, it is recommended to use isolated 24VAC power supply. The maximum power of thermal resistance output type is Pmax=100mW@25℃. If it exceeds the rated power, the thermal resistance will burn.