

Features

- Manual button Zero calibration and full scale adjustment
- RS-485 serial communication, support standard ModBus RTU protocol
- Built-in buzzer with sound-light alarm,field programmable alarm pressure value.
- Housing made of FR-ABS,satisfactory impact resistance and heat resistance etc.



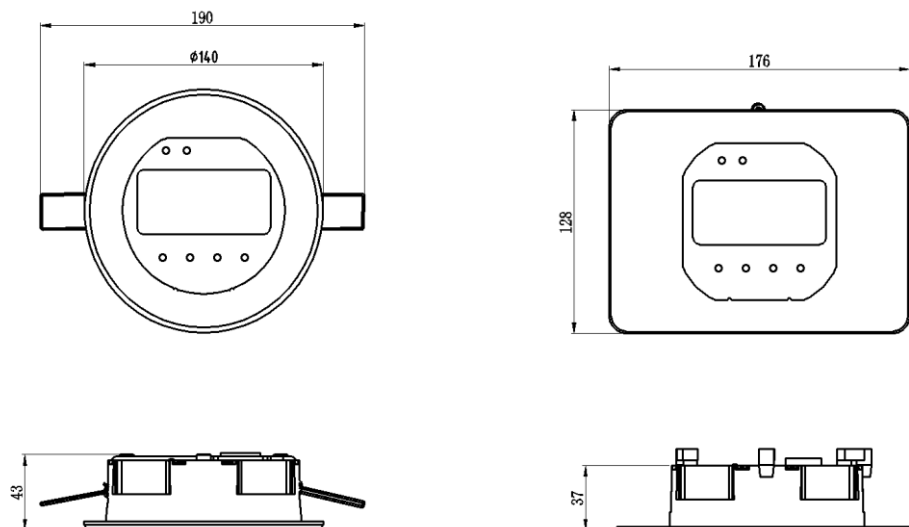
Description

The LFM31 series is a highly integrated, multi-functional digital, smart transmitter. Adopt mature and reliable sensor technology. Combined with advanced micro-controller technology and sensor digital conversion technology designed. LCD display, clear and accurate readings. The core controller adopts imported single-chip microcomputer, its powerful function and high-speed computing ability ensure the excellent quality of the transmitter. It can be equipped with on-site segment LCD display. RS-485 network communication can read the current pressure value of the target device in real time. Meanwhile the LFM31 series has 0~5VDC, 0~10VDC or 4~20mA output modes (individual voltage or current three-wire output, voltage and current Three-wire output at the same time), Mainly used in the intelligent building energy management system, to measure the precise pressure and flow required for building pressurization and air flow control.

Specification

Measurement range	0~±100Pa, 0~±1,000Pa, 0~±10,000Pa			
Unit	Pa、KPa、mBar、mmHG、inWC、mmWC,			
Accuracy	±1%F.S			
Working Temperature	-20°C~70°C			
Compensated Temperature	-10°C~60°C			
Protection Grade	IP54			
Output Signal	0~5V	0~10V	4~20mA	RS485
Power supply	12~30VDC			
Consumption	≤0.75W			
Pressure connection	Plastic concave interface			
Housing material	UL94-V0/ABS Industrial plastics			
Certification	ROHS,CE			
Electromagnetic compatibility	Electromagnetic radiation: EN50081-1/-2; electromagnetic sensitivity: EN50082-2			
Lightning protection	Air conduction withstand voltage 8000V, shell and cable conduction withstand voltage 4000V (customized)			
Display	80*40mm LCD display			
Weight	315g			

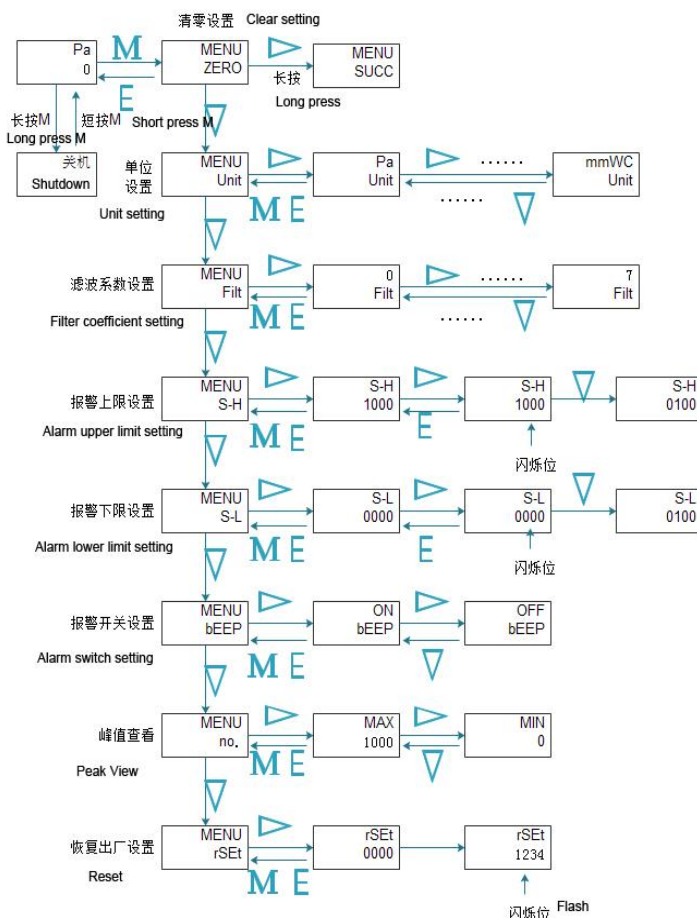
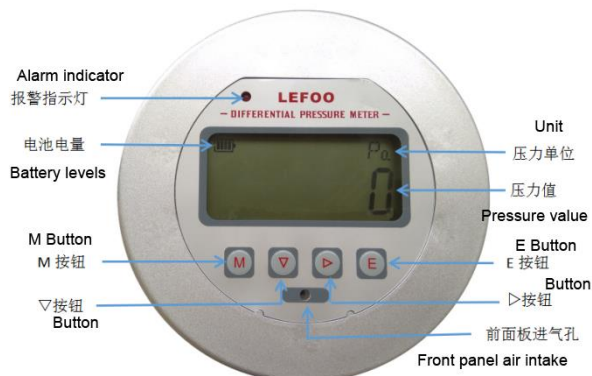
Dimension



Order Ref. NO

Code and description		Notes			
LFM31		Mode			
6	-100~100pa	Measurement range			
0	-1000~1000Pa				
2	-10000~10000Pa				
A	4~20mA and 0~5V/0~10V (Simultaneous output)	E RS—485	Output mode		
B	4~20mA (Three-wire)	F 0~10V and RS—485			
C	0~10V (Three-wire)	G 0~5V and RS—485			
D	0~5V (Three-wire)	H 4~20mA and RS—485			
P	Plastic panel (round)		Installation panel		
S	Stainless steel panel (square)				
F	Front panel air intake		Air intake method		
B	Rear panel air intake				
LFM31	0	B	P	B	Model selection example

Detailed interface



1. Display Function

The pressure value is displayed in the main interface mode, and the display unit can be switched to Pa, KPa, mBar, mmHG, inWC, mmWC. (The ±100Pa range model only has three units of Pa, mmWC and mBar to choose from)

2. Button operation instructions

3. Menu introduction

	Main interface function	Main menu function	Sub-menu function
M	1. Short press to enter the main menu 2. Long press to enter shutdown 3. Short press to turn on when it is off	NO	"OK"button
▽	NO	Down button, main menu function selection	Increase in value
▷	NO	1. Short press to enter the corresponding sub-menu setting 2. Long press the reset setting in the ZERO	1. Decrease the value 2. Move the setting button
E	NO	Back to main interface	Return to the previous main menu

(1) Main menu ZERO: (zero function)

When the pressure value is displayed on the main interface, press the M key to enter the main menu. Press the ▽ key to select ZERO-MENU. Press and hold the key for 2 seconds to enter the manual zero pressure value. Keep the +/- pressure interface disconnected in a stable and static environment before performing zero reset operating. The pressure value should be cleared within the range of -50~50Pa, otherwise it will fail.

(2) Main menu Unit: (Unit setting)

When the pressure value is displayed on the main interface, press the M key to enter the main menu. Press the ▽ key to select Unit-MENU. Short press the ▷ key to enter the pressure unit setting. Press the ▷ key or ▽ key to switch the unit. Press the M key to save the current unit setting. Press the E key to return to the previous level menu.

The selectable units are as follows:

Pa
KPa mBar
mmHG inWC mmWC

(3) Main menu Filt: (Filter coefficient setting)

When the pressure value is displayed on the main interface, press the M key to enter the main menu. Press the ▽ key to select Filt-MENU. Short press the key to enter the damping filter coefficient setting. Press the ▷ key or ▽ key to switch the filter coefficient. Press the M key to save the current filter coefficient setting. Press the E key to return Up the menu.

(4) Main menu **S-H**: (Alarm upper limit setting)

When the pressure value is displayed on the main interface, press the M key to enter the main menu, press the ▽ key to select **SH-MENU**. Short press the ▷ key to enter the pressure upper limit setting, press the ▷ key to select the pressure value. The current digit LCD flashes. Press the current selection digit value to increase. Press M Key to save the current upper limit pressure value. Press E key to return to the previous menu. Note: The upper limit of pressure should be greater than the lower limit, it can be set correctly. Otherwise it will prompt an error and not save.

(5) Main menu **S-L**: (Alarm lower limit setting)

When the pressure value is displayed on the main interface, press the M key to enter the main menu. Press the ▽ key to select **SL-MENU**. Short press the ▷ key to enter the pressure lower limit setting. Press the ▷ key to select the pressure value, the current digit LCD flashes. Press the ▽ key current selection digit value to increase. Press M Key to save the current upper limit pressure value. Press E key to return to the previous menu. Note: The upper limit of pressure should be greater than the lower limit, it can be set correctly. Otherwise it will prompt an error and not save.

(6) Main menu **bEEP**: (Alarm switch setting)

When the pressure value is displayed on the main interface, press the M key to enter the main menu. Press the ▽ key to select **bEEP-MENU**. Short press the ▷ key to enter the alarm switch setting, press the ▷ key to select the alarm switch on or off. Press the M key to save the current alarm Switch status setting. Press E key to return to the previous menu.

(7) Main menu **no.**: (peak viewing mode)

When the pressure value is displayed on the main interface, press the M key to enter the main menu. Press the ▽ key to select **no.-MENU**. Short press the ▷ key to enter the maximum pressure peak view mode. Press the ▷ key or ▽ key to select the Min. pressure value or the Max. pressure value. Press the E key to exit the pressure view Mode, return to the previous menu.

(8) Main menu **rSEt**: (restore factory settings)

When the pressure value is displayed on the main interface, press the M key to enter the main menu. Press the ▷ key to select **rSEt-MENU**. Short press the ▷ key to enter the password input mode. Press the ▷ key password value selection digit, the current digit LCD flashes. Press the ▽ key current selection digit value to increase. Press the M key to save the current Enter the password. The factory setting password is: 1234. If the input is correct, the factory settings will be restored. If the input is incorrect, the error code Err4 will be displayed. Press the E key to return to the previous menu.

4. System error flag:

Err1: Clear zero Failed.

Err2: The upper limit setting failed (the upper limit must be greater than the lower limit)

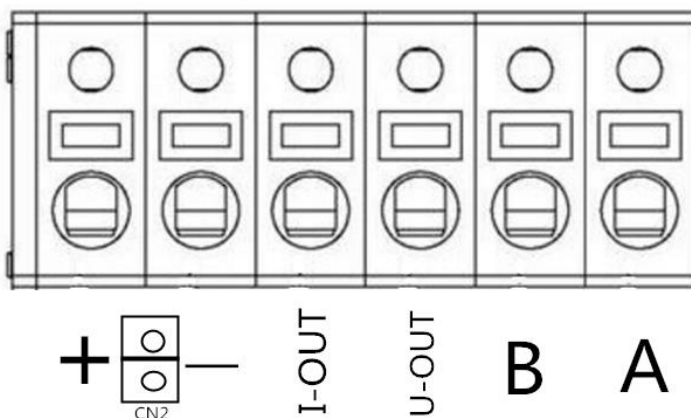
Err3: The lower limit setting failed (the upper limit must be greater than the lower limit)

Err4: The restoring factory settings password is entered incorrectly

Err5: Pressure transmitter error

Wiring definition

The wiring terminal of M31 series pressure transmitter is shown in Figure 1. The terminal definition is shown in Table 1.



Terminal NO	Terminal definition	
+	+16~30Vdc	Power supply interface
—	GND	
I-OUT	Current Detection	The positive terminal of the ammeter, the other is
U-OUT	Voltage detection	Voltmeter positive, negative connection“-”
B	B-	RS-485 Communication
A	A+	
CN2	Match resistance	Use shorting cap for remote communication

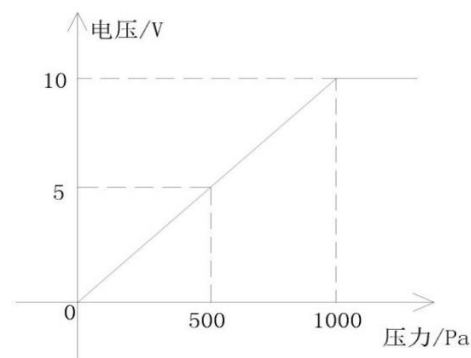
Notes:

1. Make sure that the wiring is correct. If the power cord is connected to the communication terminal by mistake, it will cause irreversible damage to the communication part!
2. Select the output type according to the M31 transmitter and connect the terminals correctly. If the transmitter type is voltage output, connect the DC power supply to the power supply interface. Connect the positive pole of the voltmeter to the "U-OUT" voltage detection terminal and the negative pole to "—" terminal.
3. In order to ensure normal long-distance communication, you can use a shorting cap to insert the "CN2" header, which has a 120 Ω matching resistor in parallel.

Input range setting

1. Set the range from the "S-H" output upper limit and "S-L" output lower limit. Select the "out" output type corresponding to the transmitter model.

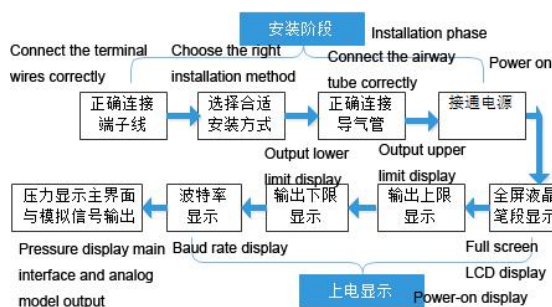
<Example> The output type is set to RS-485 and voltage type 0~10V at the same time; the output upper limit is set to 1000 Pa, and the output lower limit is set to 0 Pa. According to the RS-485 communication protocol, the real-time output changes Pressure value. The voltage detection terminal outputs a linear proportional voltage. If the pressure is 500Pa, the output voltage is 5V. When the pressure is greater than or equal to 1000Pa, the output voltage value is 10V. As shown in the right figure.



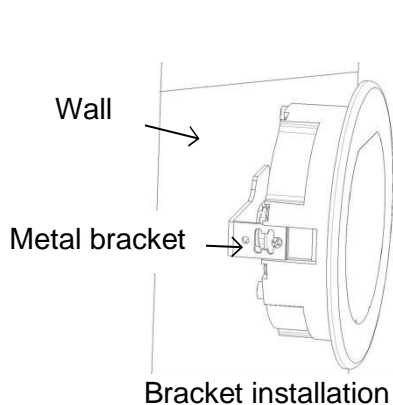
2. Within the range of the transmitter, the upper limit of "S-H" output and the lower limit of "S-L" output can be set arbitrarily. Only the upper limit must be greater than the lower limit, then it can be set correctly.

Product use steps

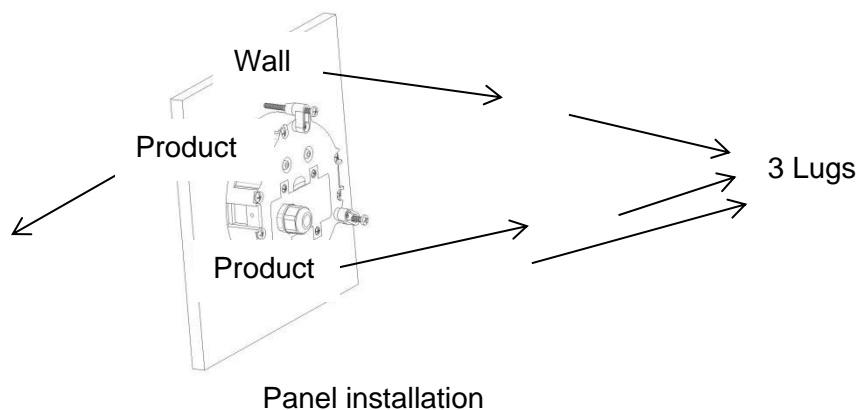
The use of the transmitter product is divided into three stages. Firstly, install and connect correctly; secondly, power on to display the set value of the read parameter; finally enter the main interface to display the pressure change value or output the analog signal or digital signal.



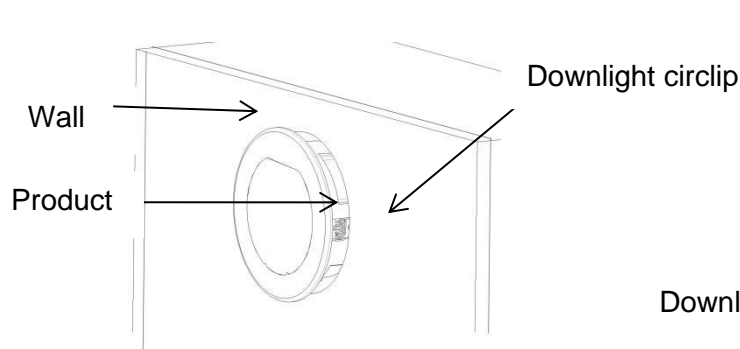
Installation method



1. First, fix the metal bracket to the wall with self-tapping screws ST3.5x30. Finally use the self-tapping screws ST3.5x9 to fix the product to the metal bracket. The pressure port is reliably connected with the air duct, and pay attention to the difference between the high and low pressure ports.

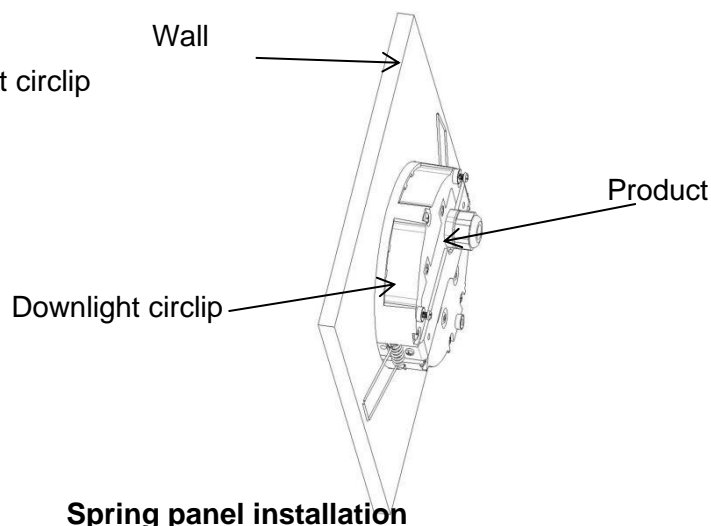


2. Open a hole on the panel that needs to be mounted. The hole diameter is 120mm. Insert the product and install the lug on the back, and then fix it on the panel from the back with ST3.5x30 screws. The pressure port is reliably connected with the air duct, and pay attention to the difference between the high and low pressure ports.



Spring embedded installation

3. Open a hole on the wall. The hole diameter is 120mm. Insert the downlight circlip and this product into the wall at the same time, so that the downlight circlip presses the wall to fix it. The pressure port is reliably connected with the air duct, and pay attention to the difference between the high and low pressure ports.



Spring panel installation

4. Open a hole on the panel, the diameter of the hole is 120mm. Turn the downlight circlip and press it into the panel to fix the product on the panel. The pressure port is reliably connected with the air duct, and pay attention to the difference between the high and low pressure ports.

Accessories

✧ Air duct, metal bracket, plastic lug, self-tapping screw, downlight circlip, expansion tube

Common problems and solutions

If the transmitter fails, please refer to the content listed in the troubleshooting table for troubleshooting, as shown in Table 2

Fault	Cause Analysis	Method of exclusion
The transmitter has no display or cannot communicate	Transmitter is not powered Wiring error	Correctly wire the transmitter according to the wiring diagram
When the pressure is not connected, the display is not 0Pa	Slight deviation due to different environments such as altitude or temperature	Clear through the menu setting when no pressure is connected
Transmitter display or output does not match the measured pressure	Incorrect supply voltage External load is too large	Supply voltage (12V~30V) Adjust external load
No change in pressure display or output value after pressurization	1. The intake pipe is blocked by foreign matter 2. The medium is corrosive or is different from the applicable medium of the purchased product	1. Replace the intake pipe 2. Choose the measuring medium used