

## Features

- Operating pressure value can be set on site through the built-in DIP switch of the LFM11 series products.
- The response time can be adjustable on-site through the built-in DIP switch of the product (0.5S ~ 4S).
- Rotation method is fixed to the installation back plate (It can be installed step by step).
- Adopt flame-retardant ABS injection molding shell, with good impact resistance, heat resistance properties.



## Overview

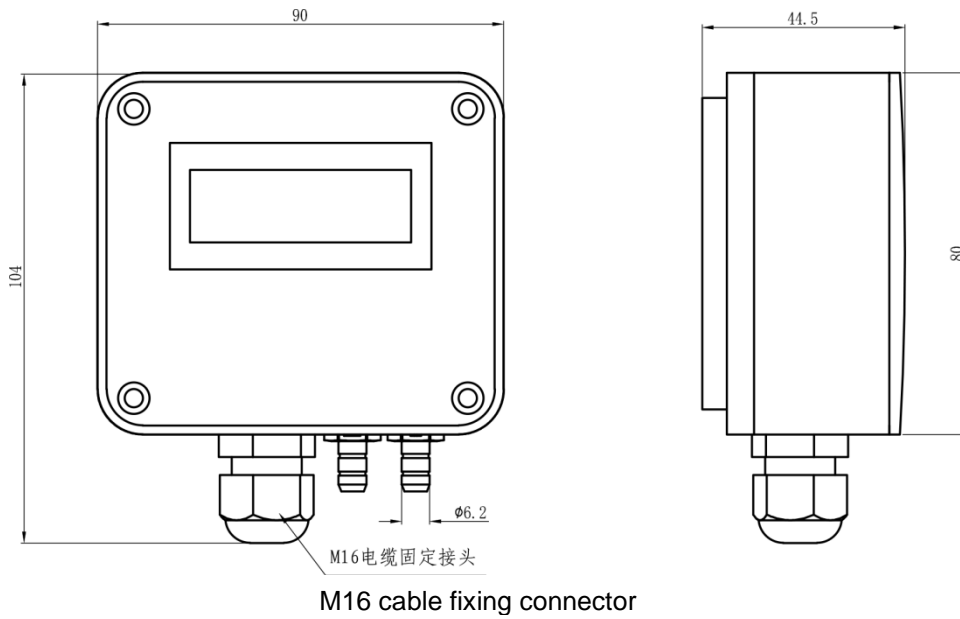
The LFM11 series differential pressure transducer / transmitter detects differential pressure or gauge pressure and converts this pressure value into a proportional electrical signal output for use in intelligent building energy management systems. It measures the precise and required pressure and flow for building pressurization and air flow control.

It is widely using for the monitoring of air or neutral gas, and a variety of pressure units and ranges can be switched. It adopts imported micro pressure core, digital pressure acquisition and temperature compensation, this differential pressure transmitter has the characteristics of sensitive pressure response, long-term stable output, and superior temperature performance.

## Technical Parameters

Pressure Range	0~±100Pa, 0~±1,000Pa, 0~±10,000Pa				
Overload pressure	Maximum 15 times of the rated pressure				
Accuracy	±1%F.S				
Storage temperature	-20°C~70°C				
Compensation temperature	-10°C~60°C				
Response time	0.5s/1s/2s/4s				
Protection grade	IP54				
Pressure connection	Metal barbed connection, Ø 6.2 mm				
Electrical connection	Two-wired	Three-wired	Four-wired	Five-wired	Six-wired
	4~20mA	0~5V 0~10V	RS485	0~10VDC RS485	4~20mA 0~5/10VDC
Power supply	12~30VDC	16~30VDC	12~30VDC	16~30VDC	16~30VDC
Power consumption	≤1.5W				
Communication	RS-485 standard interface, Modbus RTU protocol				
Certification	ROHS certification,CE certification				
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 (can be customized according to requirements)				
Display mode	LCD Backlight digital display				
Weight	166g				

## Dimensions



Order Ref. No.

Code and description		Remark
<b>LFM11</b>		Model
<b>6</b>	-100~100pa	Pressure range
<b>4</b>	-1000~1000Pa	
<b>0</b>	-10000~10000Pa	
<b>O</b>	With display	Display mode
<b>N</b>	without display	
<b>A</b>	4~20mA & 0~10VDC (Simultaneous output)	Output type
<b>B</b>	4~20mA (Two-wired)	
<b>C</b>	0~10VDC (Three-wired)	
<b>D</b>	0~5VDC (Three-wired)	
<b>E</b>	RS-485 communication	
<b>C</b>	±1.0% F.S	Accuracy

LFM11	4	O	B	C	Selection example
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## Detailed function

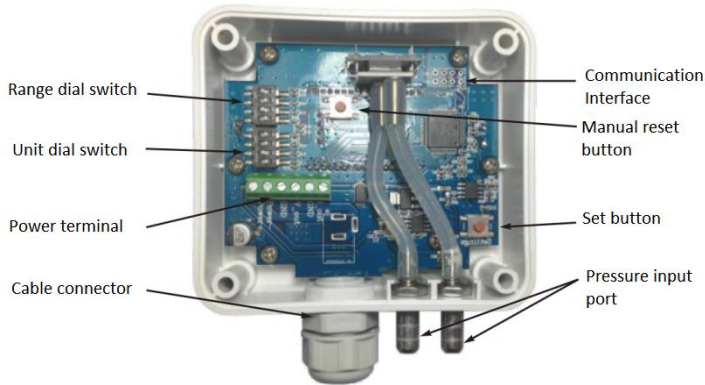


Image 1 LFM11X-XAX internal circuit

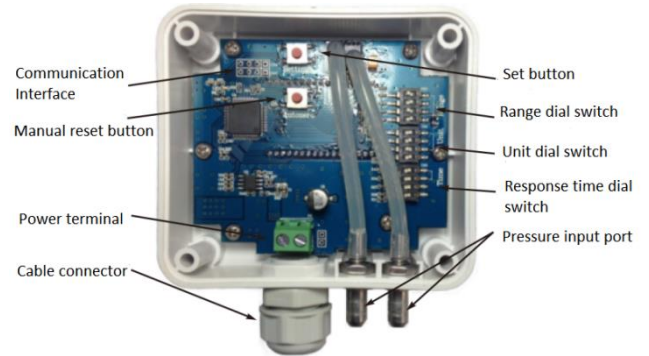


Image 2 LFM11X-XBX internal circuit

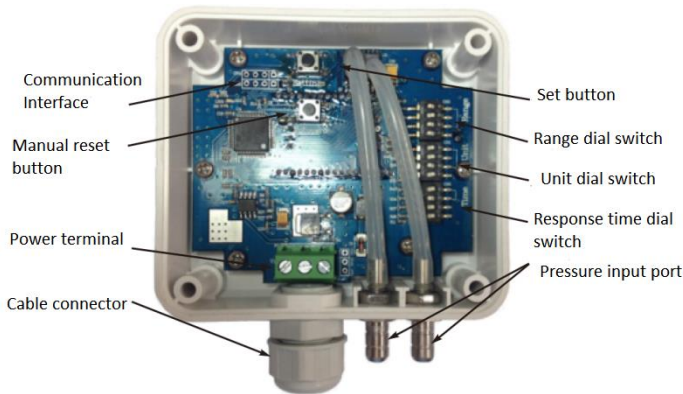


Image 3 LFM11X-X(C/D)X internal circuit

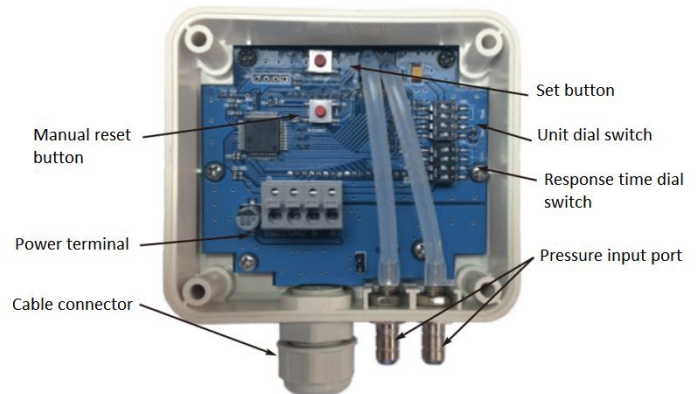


Image 4 LFM11X-XEX internal circuit

**Note:** Image 4 is the RS-485 A-B line matching resistance jumper. When the communication distance exceeds 300 meters, you can choose to connect the end instrument jumper to reduce the signal reflection interference of the communication circuit.

### 1. Display function

Show the pressure value, meanwhile can switch display unit such as Pa, mmH<sub>2</sub>O, inWG, mmHG, daPa, KPa, hPa, mbar.

### 2. Setting function

Accuracy calibration is performed through the setting button on the back of the panel (the display side is the front). Take the range -1,000~1,000Pa as an example, press the button to enter the calibration interface, adjust the pressure source to -1,000Pa, Continue to press to save the current value of -1,000Pa, After each increase of 500Pa for a calibration. If the previous value is bigger than or equal to the next value during calibration, "Err" will be displayed when the calibration fails, and the calibration value is not saved. (It needs to be calibrated under high-precision pressure source, users should not use it lightly).

### 3. Manually clear

Press the button on the back of the panel (the display side is the front) to manually clear, and the zero point will be saved. (If the customer finds that the pressure value displayed on the liquid crystal display or the output signal is biased after the power is turned on during the on-site installation, please keep it parallel to the installation method and reset it manually)

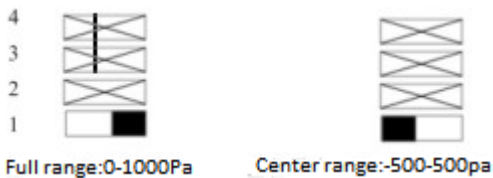
### 4. DIP switch settings

#### ① Range setting

The upper three bits of the range dial switch are used to set the range (range is only related to the output, for example: when the range is set to 100Pa, which means 0~100Pa, the corresponding analog output is 4~20mA and 0~5VDC / 0~10VDC).

Range DIP switch combination	Unit		Pa	mmH <sub>2</sub> O	mbar	inWG	mmHG	daPa	KPa	hPa
	Model									
4 3 2 1	LFM116		10.0	1.00	0.100	/	/	1.00	/	0.100
	LFM110		100	10.0	1.00	0.40	0.75	10.0	0.100	1.00
	LFM112		1,000	100.0	10.00	4.00	7.50	100	1.000	10.00
4 3 2 1	LFM116		25.0	2.50	0.250	/	/	2.50	/	0.250
	LFM110		250	25.0	2.50	1.00	1.87	25.0	0.250	2.50
	LFM112		2,500	250.0	25.00	10.00	18.75	250.0	2.500	25.00
4 3 2 1	LFM116		50.0	5.00	0.500	/	/	5.00	/	0.500
	LFM110		500	50.0	5.00	2.00	3.750	50.0	0.500	5.00
	LFM112		5,000	500.0	50.00	20.00	37.50	500.0	5.000	50.00
4 3 2 1	LFM116		75.0	7.50	0.750	/	/	7.50	/	0.750
	LFM110		750	75.0	7.50	3.00	5.62	75.0	0.750	7.50
	LFM112		7,500	750.0	75.00	30.00	56.20	750.0	7.500	75.00
4 3 2 1	LFM116		100.0	10.00	1.000	/	/	10.00	/	1.000
	LFM110		1,000	100.0	10.0	4.00	7.50	100.0	1.000	10.00
	LFM112		10,000	1,000.0	100.00	40.00	75.00	1,000.0	10.000	100.00

Full range/range center setting (0~1,000Pa as an example)  
 If you need to set the range type, set the last bit of the range dial switch to the corresponding position according to the prompts in the figure below.



**⚠** Please carefully set the transmitter according to the combination of DIP switches. After the transmitter is powered on, if "Err" appears on the display, it means that the DIP switch is set incorrectly. If the above situation occurs, turn off the transmitter power first, reset the correct code switch combination, and then restart the power supply.

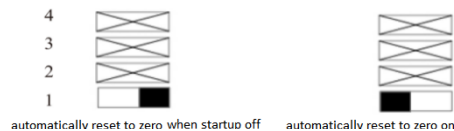
### ② Unit settings

The three-digit measurement unit setting on the unit DIP switch: Please turn the DIP switch to the corresponding position according to the below image:

Setting type	Pa	mmH <sub>2</sub> O	mbar	inWG
Dip switch position				
Setting type	mmHG	daPa	KPa	hPa
Dip switch position				

### ③ Auto reset setting

The bottom digit of the unit dial switch is automatically reset to zero (The automatic zero-setting data is not saved when the power is turned on, that is, when the automatic zero-setting is turned off, the zero position is restored to the last calibration value).



### ④ Response time setting

Set the response time through the response time dial switch: please dial the dial switch to the corresponding position according to the below image:

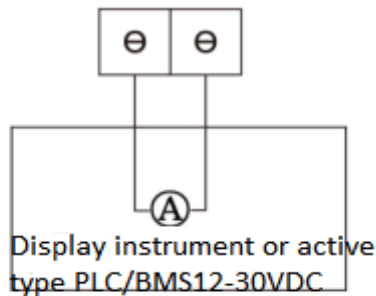
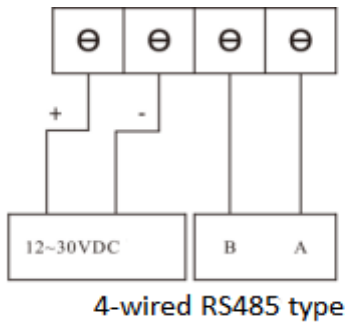
Setting type	0.5s	1s	2s	4s
Dip switch position				

### ⑤ Communication mode setting

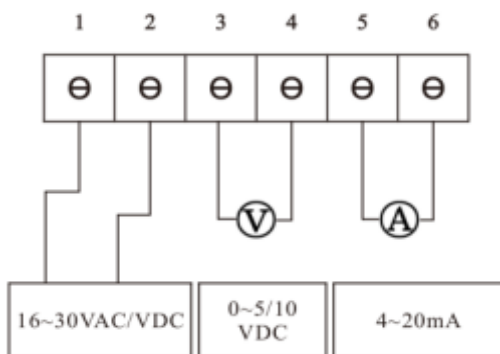
Set the RS-485 communication mode through the response time dial switch: please dial the dial switch to the corresponding position according to the figure below. (Only applicable to RS-485 communication models)



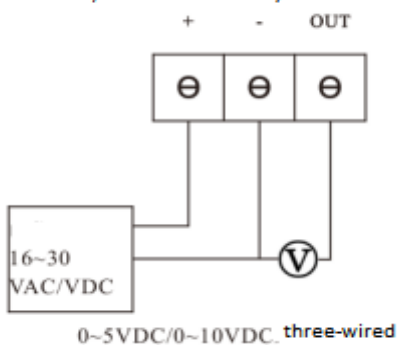
## Electrical connection



### 4-20mA two-wire system without polarity



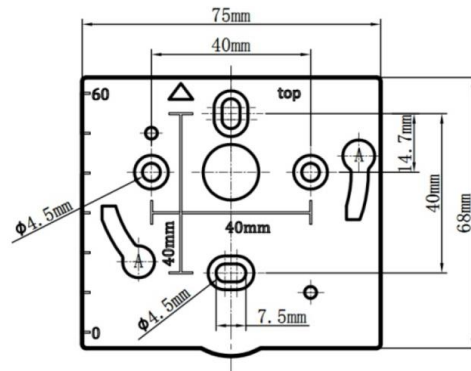
1. Power supply positive VAC/VDC L
  2. Power supply negative VAC/VDC N
  3. Output signal ground GND
  4. Voltage output signal V-out
  5. Output signal ground GND
  6. Current output signal I-out
- 4-20mA & 0-5/0-10VDC six-wire system



**Note:** Remove the plug of the front cover and the rubber plug of the back cover, pass the wire through the waterproof connector, correctly connect to the terminal, tighten the waterproof connector, and cover the rubber plug of the back cover.

## Installation method

Fix the plastic back plate to the wall. (Drilled hole  $\varnothing 6\text{mm}$ , depth 30mm, screws and accessories are provided with the goods) Place the transmitter on the back plate (see part A in the figure on the right) and rotate the transmitter clockwise, when you hear the click sound, the transmitter is installed correctly.



## Maintenance

Please avoid using harsh solvents or cleaning agents containing formaldehyde (formalin) to clean the transmitter and probe.

## Options and accessories

- Power Adapter
- Connection tube

## Common problems and solutions

1. The displayed range or unit does not match the setting.

- ① The DIP switch is not in place, restart after power off and redial.
2. After pressurization, the pressure display or output value does not change (mostly displayed as 0 or FULL) or the change is not accurate.

① Whether the loading pressure exceeds the burst pressure and directly destroys the pressure core;

② Whether the used medium is corrosive or is different from the applicable medium of the purchased product (the existing micro differential pressure transmitters are all non-corrosive gases);

③ Check whether the intake tube is blocked by foreign matter (particulate matter or water column) or leaks;

④ Whether the operating environment temperature exceeds the compensation temperature range (the temperature compensation range of the micro differential pressure transmitter is  $-10\sim 60^{\circ}\text{C}$ );

⑤ Whether there is a misoperation of clearing under pressure, if there is, clearing again after confirming that there is no input pressure;

⑥ Whether the setting button has been mis-operated (the setting button has an anti-misoperation mechanism, that is, the set point pressure value must be increased from small to large to successfully set it finally, it needs to be calibrated under a high-precision pressure source. It is not recommended for customers to calibrate by themselves. If the deviation is caused by the calibration operation, it must be returned to the factory for recalibration).

3. The pressure display value is normal, no analog output or inaccurate analog output.

① Check whether the output line connection is normal;

② For three-wire output, it is necessary to check whether the transmitter and the control instrument have a common ground wire (that is, the ground wire must be connected);

③ Check whether the load resistance is selected properly.

4. The zero pressure value drifts slightly.

① After the drift has stabilized, perform the reset operation.

If the above method cannot eliminate the fault, please contact the manufacturer!