LEFOO

LFG103

CARBON MONOXIDE TRANSMITTER (INDOOR)

[Operation Manual]

OVERVIEW AND PARAMETERS

Overview

The LFG103 indoor carbon monoxide transmitter uses a high-performance electrochemical sensor to measure the concentration of carbon monoxide in the environment, with rapid response, stable performance and high accuracy wide power supply range, perfect overvoltage and reverse connection protection It has current & voltage or RS485 output signal, configurable relay action point and has independent control/alarm function. This product can be widely used in HVAC systems, kitchen restaurants, workshops, underground parking lots, etc.

Parameters

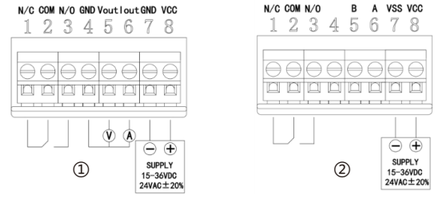
Output	See indication(4～20mA&0～10V / RS485 optional)		
Range	See indication (0～100ppm/0～250ppm/0～400ppm optional)		
Accuracy	±5%FS		
Sensor	Electrochemical sensor with a typical lifetime of 5 years		
Response Time(T_{90})	≤60S	Preheat Time	2min
Power Supply	15～36VDC / 24VAC±20%		
Relay	1xSPDT 3A/30VDC 3A/250VDC		
Relay Set Point	Dip switch selectable 25ppm，60ppm，150ppm，300ppm		
Working Environment	0~50℃&15～90%RH(non-condensing)(continued) -10~60℃&0～95%RH(non-condensing)(Intermittent)		
Storage Temperature	-10~60℃(long term storage:5～30℃(Within 6 month))		
Protection Degree	IP30		

● **Note: When AC power is used for RS485 output products, isolated 24VAC power should be used!**

DESCRIPTION AND DIMENSIONS

Wiring instructions

Depending on the selection, the following diagrams show the current and voltage output (Figure ①) and RS485 output (Figure ②) respectively Wiring method (all can be adapted to relay output).



Output description

■ Analog output

Example 1: If the range is 400ppm, the output type is 0~10V, and the output is 5V, then the output concentration=5V/10V*400ppm=200ppm

Example 2: If the range is 400ppm, the output type is 4~20mA, and the output is 12mA, then the output concentration=((12mA-4mA)/16mA)*400ppm=200ppm

■ Communication protocol (at RS485 output)

Communication default baud rate: 9600, data bits: 8, stop bits: 1, parity: None, flow control: None

①0×03 read data example: the following are read address 01 data and return data respectively

Address	Function code	Register start address		Register length		CRC16	
01	03	00	02	00	01	25	CA

Address	Function code	Number of bytes	Data High 8	Data low 8	CRC16	
01	03	02	0F	A0	BD	CC

♦**Explanation:** Then the output concentration value=0x0F*256+0xA0=3840+160=4000=400.0ppm

②0x06 Example of writing data: changing address 01 to 02 data and returning data are as follows

Address	Function code	Register start address	Register Data		CRC16	
01	06	00 05	00	02	18	0A

Address	Function code	Register start address	Register Data		CRC16	
01	06	00 05	00	02	18	0A

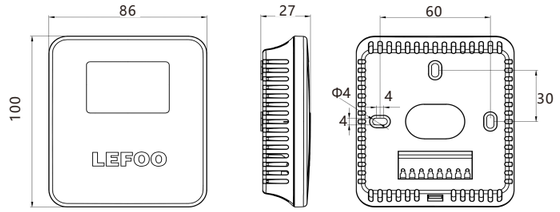
♦Explanation: The above is to modify the sensor address ID of address 01 to 02.

Note: The above is to modify the 01 address sensor address ID to 02; 0x00 is the broadcast address, modify to ensure that only the bus one RS485 product

③Register Description

Register address	Content	Operating	Range	Remarks
0002	CO concentration	R	0~9999	The actual concentration is the reading value/10
0004	baud rate	R&W	0~4	0:9600(Default 0) / 4:19200
0005	address	R&W	0~255	Broadcast address 00 can be used when the product address is unknown

Product Size:(mm)



SELECTION INSTRUCTIONS

Code and Description								Remarks
LFG103-	Indoor carbon monoxide transmitter							Model
	1	100ppm						Measuring range
	2	250ppm						
	3	400ppm						
		IV	4~20mA&0～10V					Output
		RS	RS485/Modbus					
				D	With display			Display
				N	Without display			
					R	1xSPDT		Relay
					N	No relay		
LFG103	–	3	–	IV	–	D	– R	Example of selection

Cautions

1. Before use, please confirm: whether the power output voltage is correct; the positive and negative power supply and the positive and negative wiring of the product; the output wiring of the product.

2. the transmitter should be installed in a position that can effectively respond to the gas concentration of the measured area (installation height: 1.2-1.8m above the ground), and should be far from cold, heat and humidification sources and other locations.

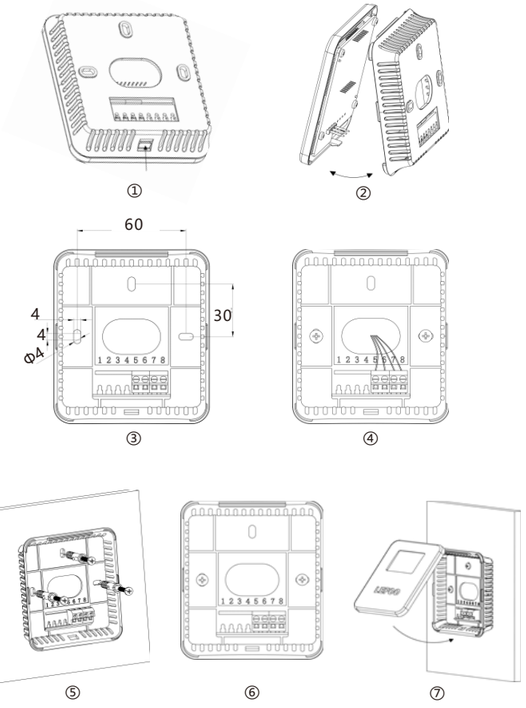
3. not suitable for use in environments containing high concentrations of H2 gas, and H2 gas interference will lead to large errors.

4. High concentration of vehicle exhaust will cause irreparable damage to the sensor, when used for parking lot CO concentration detection, pay attention to the installation in a more open and vacant area.

5. To ensure the performance of the product, it is recommended that regular annual testing and maintenance be performed.

6. The air inlet of the sensor must not be blocked or contaminated. Special attention should be paid to protection in high-pollution environments such as during decoration.

INSTALLATION INSTRUCTIONS



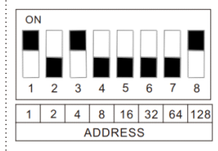
1. Press the cover opening button under the transmitter back cover to open the transmitter (as shown in Figure 1 and 2).

2. Complete the electrical connection according to the wiring diagram, and lead the cable through the wire hole (as shown in Figure 4).

3. There are three installation holes on the back cover of the transmitter, which can be fixed on the wall with expansion screws (as shown in Figure 5). It can also be fixed on the pre-buried 86 boxes on the wall with screws (as shown in Figure 6);

4. Align and fasten the front cover with the bottom case to complete the installation (as shown in Figure 7).

Address dialing code (RS485 output only)

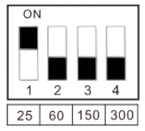


When it is turned to the ON side, the number in the subscript ADDRESS column will be added accordingly. As shown in the figure, the address is:

→1+4+128=133, Corresponds to 0x85 (hexadecimal).

Note: Power up again to update the dialing address; only when the dialing address is 0 can be changed by software Device ID address.

Setpoint dial code (valid with relay output)



When it is turned to the ON side, the corresponding ppm value is set as the action point of relay.

→As shown in the figure of dip switch, the operation point of relay is 25ppm

Note: The set point can be performed when only one dip switch is switched to the ON side. No dip means that the relay does not operate.