LEFOO

LFG202

CARBON DIOXIDE TRANSMITTER (DUCT TYPE)

PRODUCT OPERATION MANUAL

OVERVIEW AND PARAMETERS

- Good long-term stability and reliability, with ABC self-calibration
- Imported high-performance NDIR sensor
- The sensor is oxygen-free and has a service life of >5 years
- The internal waterproof and breathable membrane design effectively prevents liquid water from entering

PRODUCT DESCRIPTION

The transmitter uses Swedish SenseAir patented high-performance NDIR sensor for CO2 concentrationMeasurement, rapid response, stable performance, to ensure the accuracy of measurement; wide power supply range, positiveThe high protection level of the surface shell can adapt to various harsh conditions on site; the flange position can be selectedFlexible installation.

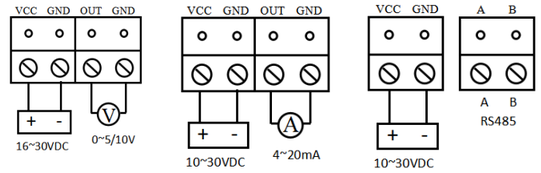
TECHNICAL PARAMETERS

Output Type:	0~5/10V、4~20mA、RS485
Measuring range:	0~2000ppm、0~5000ppm
Product accuracy:	(±40ppm±3%MV)ppm
Sensor:	NDIR sensor with ABC self calibration function
Average current:	< 40mA
Operating temperature:	0~50℃
Working humidity:	0~85% RH(no condensation)
Storage temperature:	-20~60℃
Response time (T90):	2min
Power supply voltage:	10~30V(16~30V for 0~10V output)
Protection grade:	Shell IP65 / Probe rod IP30
Service life:	>5 years

DESCRIPTION AND DIMENSIONS

WIRING INSTRUCTIONS

Depending on the selection, the wiring methods will be different. The following diagrams show the wiring methods of voltage output, current output, and RS485 output:



OUTPUT DESCRIPTION

Analog output

Example 1: if the range is 2000ppm, the output type is 0~10V, and the output is 5V, the output concentration = 5V/10V*2000ppm=1000ppm

Example 2: if the range is 2000ppm,the output is 4~20mA，and the output is 12mA，then the output concentration=((12mA-4mA)/16mA)*2000ppm=1000ppm

Communication protocol（when RS485 is output)

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

①**Example of read data：the following are the read address 01 data and return data**

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

Address	Function code	Byte count	Data high 8	Data low 8	CRC16	
01	03	02	01	90	B9	B8

♦Description: the output concentration value =0x01*256+0x90=256+144=400ppm

②**Example of writing data: write 01 to unknown address and return data as follows**

Address	Function code	Register start address		Register data		CRC16	
00	06	00	05	00	01	59	DA

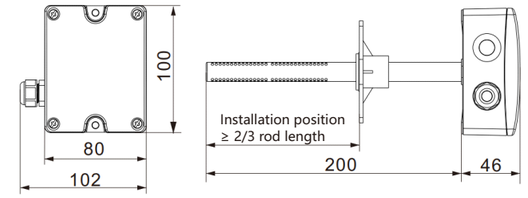
Address	Function code	Register start address		Register data		CRC16	
00	06	00	05	00	01	58	OB

♦Description: 0x00 is the broadcast address;
The above is to modify the unknown address sensor address to 0x01

③**Register introductions**

Register add	Content	Operation	Range	Remark
0002	CO2 Concentration	Read only	0~9999	
0003	Automatic zero calibration	Write only	0~1	0 means close ABC, 1 means openABC (ABC is turned off by defaultat the beginning)
0004	baud rate	read and write	0~4	1 means 2400, 2 means 4800, 0/3 represents 9600 (default 0),4 means 19200
0005	address	read and write	1~255	00 is used when the product address is unknown

DIMENSION IN:(mm)



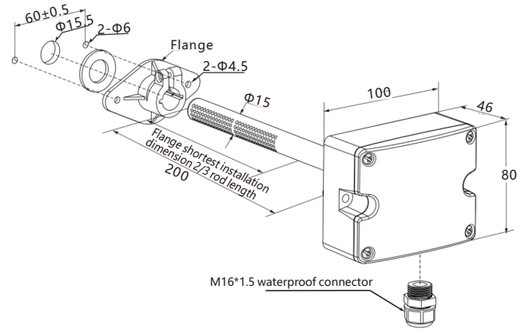
MODEL SELECTION INSTRUCTIONS

Code and description				Remark
LFG202-	Ducted carbon dioxide transmitter			model
	1	2000ppm		range
	2	5000ppm		
		V0	0~5V	output
		V10	0~10V	
		A4	4~20mA	
		RS	RS485/Modbus	
LFG202 –	1 –	V10		Selection example

PRECAUTIONS

- Before use, please confirm: whether the output voltage of the power supply is correct; the positive and negative wiring of the power supply and the positive and negative wiring of the product; the output wiring of the product;
- Keep the transmitter away from heat sources and out of direct sunlight.
- In the normal application environment, the sensor can reach the accuracy in the technical parameters only after the sensor works continuously for at least 3 ABC cycles. Especially within 3 days of initial power-on, the output may be inaccurateBut after 3 ABC cycles (each ABC cycle is 8 days),the ABC self-check function will stabilize the output.
- 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.

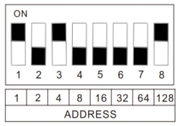
INSTALLATION NOTES



As shown in the figure, use the flange fixed installation method: drill a through hole with a diameter of 15.5mm on the pipe, first fix the gasket and flange on the air duct, and then insert the probe rod into the air duct (the shortest flange installation position should be ≥ 2 /3 rod length), tighten the flange screws to hold the probe rod tightly. The installation dimensions are shown in the figure.

ADDRESS DIAL CODE (ONLY RS485 OUTPUT)

Dial to the ON side, then add the subscript ADDRESS column number correspondingly as shown in the dial code, then the address is 1+4+128=133, corresponding to 0x85(hexadecimal).



Note: Re-power on to update the DIP address; only when the DIP address is 0, the device ID address can be modified through software.

PLUGGABLE TERMINAL

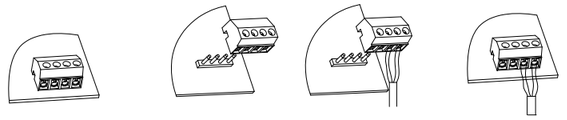


Figure 1 Figure 2 Figure 3 Figure 4

1. Remove the connection terminals from the circuit board (as shown in Figure 1 and Figure 2);
2. According to the wiring instructions, connect the wires to the terminals (as shown in Figure 3);
3. Press the connection terminals back onto the row pins of the circuit board to complete the wiring (as shown in Figure 4).