

CLS-DCO2 Duct Carbon Dioxide (CO2) Transmitter

Applications & Features

- This series transmitters/controllers are designed for monitoring & controlling indoor air quality(CO₂ concentration)
- Suitable for duct mount. Use a patented probe structure for excellent sampling performance
- High performance NDIR digital sensor and circuit, ensure precise measurement and temperature compensation
- Stable, reliable and fast response
- 15 years sensor life without maintenance
- Digital technology applied, over voltage and reverse polarity protection, high reliability and anti-interference capability
- Multiple outputs selection

Specifications

Sensor: NDIR sensor, with ABC algorithm*

Sampling Method: diffusion

Accuracy: see models

Response time(T90): <120s (30cc/min, low airflow)

Drift: <±10ppm/year

Range: 0~2000ppm (measurement range 400~2000 ppm)

Output: 4~20mA, 0~10V, RS485/Modbus

Load resistance:≤500Ω(Current output),≥2kΩ(Voltage output)

Power supply: 16~28VAC/18~35VDC

Working environment: 0~50°C, 0~85%RH (Non-cond.)

Temp. Compensation: 10~40°C

Storage temperature: -20~60°C

Housing: fire retardant ABS+PC(UL94V-0)

Protection: housing IP65/probe IP30

Weight: 240g

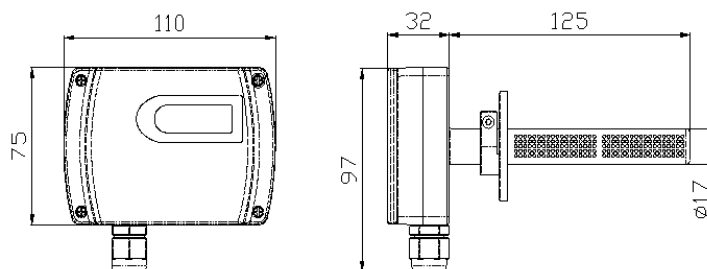
Approval: CE

*ABC algorithm: Automatic Baseline Correction, it constantly keeps track of the sensor's lowest reading over a few days interval and slowly corrects for any long term drift detected as compared to the expected fresh air value of 400 ppm CO₂.

Selection table

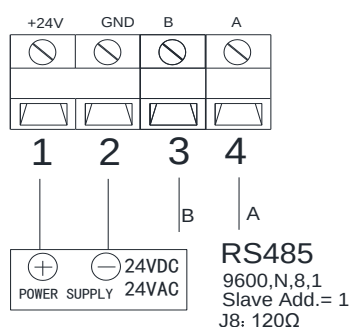
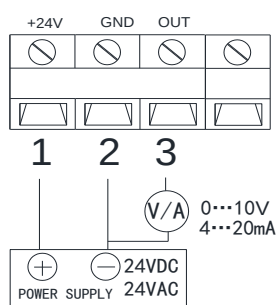
ABB series	Description
CLS-DCO2-0VA0	Duct Carbon Dioxide (CO2) Transmitter,4~20mA/0~10V,400~2000ppm,±50ppm,5%,IP65
CLS-DCO2-0M0	Duct Carbon Dioxide (CO2) Transmitter,RS485,400~2000ppm,±50ppm,5%,IP65

Appearance & size



Connection

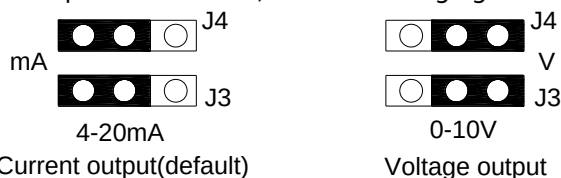
Different models have different electrical terminals. Please wire specific model according to the wiring diagram inside the front cover.



Current and voltage output jumpers J3 & J4:

Current output(4-20mA): left short pin1 and pin2 from J3 & J4 (default).

Voltage output(0-10V): right short pin2 and pin3 from J3 & J4, as the following figure:



Current output(default)

Voltage output

RS485/Modbus communication refers to "CLS-DCO2 carbon monoxide transmitter Modbus communication instruction".

RS485 terminal resistance jumper J8 description:

Terminal resistance 120Ω: left short pin2 and pin3 from J8.

Terminal resistance None: right short pin1 and pin2 from J8, as the following figure:



Terminal resistance : None

Terminal resistance : 120 Ω

Duct mount installation

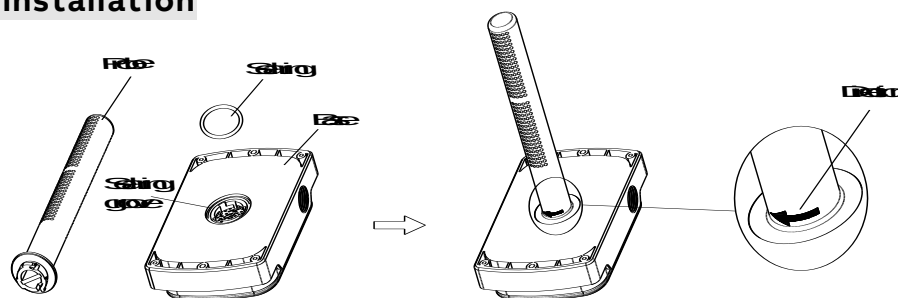


Fig.1

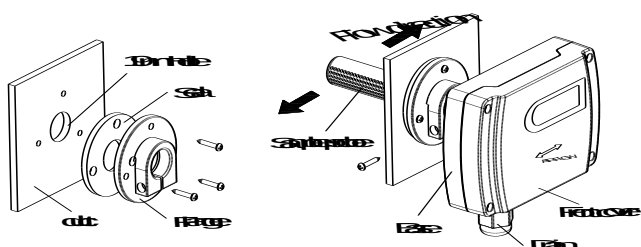


Fig.2

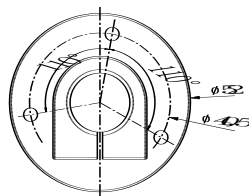


Fig.3

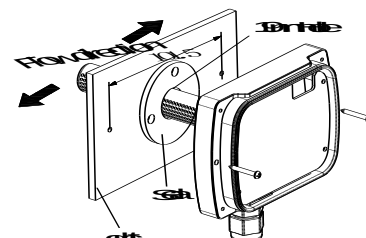


Fig.4

- First, assemble the separated probe on the bottom of enclosure as Fig.1. Insert the seal ring properly and then insert the probe, screw according to the direction indication to the end.
- Duct mount via one of the following ways. Make sure all sampling holes on the probe should be inserted into the duct, and the direction shows on the front cover should be the same as air flow in the duct.
 1. Install via the flange as Fig.2. Drill a $\phi 19\text{mm}$ hole on the duct, install the seal ring and the flange on, then insert the probe into, screw to lock the whole enclosure on the flange.
 2. Install the enclosure directly on the duct as Fig.4. Drill a $\phi 19\text{mm}$ hole on the duct, insert the probe into with the seal ring, and screw the enclosure on the duct directly.
- Electrical wiring. Open the front cover. Finish wiring according to the diagram.
- During all above procedures of assembling, installing and wiring, all seal rings should be applied properly to ensure the whole enclosure structures and the assemble part of the probe with the duct can be air tightened. Only in this way, the measured air can go into the enclosure from the sample holes on the probe, other than from the other parts. Meanwhile, keep the whole protection rate up to IP65.

Attention

- The product is not suitable for high SO_2 concentration environment.
- The product needs to warm up for 180 seconds. In normal application environment, the transmitter could reach to the accuracy stated in the specifications after 3 ABC cycles of continuing work. Especially within 3 days after the initial power on, the measured value may not be accurate. But after 3 cycles of the internal ABC operation, the function can correct the output to the real value and meet the accuracy.
- It should be power OFF during installing and wiring. When using 24VAC, it is strongly recommended to power the unit with independent transformer. If sharing a 24VAC transformer with other equipment such as controllers, transmitters or actuators, please make sure the terminals 24V and GND are connected correctly. Otherwise, it will perhaps reduce serious damages.

Maintenance

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Scan the QR code to go ABB official web page and get more product info



Warning! Installation by person with electrotechnical expertise only.

Warnung! Installation nur durch elektrotechnische Fachkraft.

Avvertenza! Fare installare solo da un elettricista qualificato.

Avertissement! Installation uniquement par des personnes qualifiées en électrotechnique.

¡Advertencia! La instalación deberá ser realizada únicamente por electricistas especializados.