



DATA SHEET

COT 212-R

CO₂ and temperature transmitter



Configurable ranges from 0 to 5000 ppm⁽¹⁾ and from 0 to 50°C



4-wire analogue output
0-5/10 V or 0/4-20 mA



2 relay outputs



ABS V0 IP65 housing,
with or without display

Features

- Power supply 24 Vdc/Vac or 100-240 Vac
- Trend indicator
- "1/4 turn" system mounting with wall-mount plate

Part number

COT 212	-		-		-		-	R
		Power supply / Output		Type of probe		Relay outputs		
		B: 24 Vac/Vdc		D: remote				
		H: 100-240 Vac		S: ambient				
		Display						
		O: with display (only for models with power supply of 100-240 Vac)						
		N: without display (only for models with power supply of 24 Vac/Vdc)						

Example: COT212 – BNS – R

Temperature and CO₂ transmitter, 24 Vac/Vdc power supply, without display, with ambient probe and relay outputs

Important note:

The model with power supply of 24 Vac/Vdc is available only without display.

The model with power supply of 100-240 Vac is available only with display.

Technical specifications

Parameter	Accuracy ⁽²⁾	Measuring range	Response time	Resolution
NTC Temperature	±0.3°C	From 0 to +50°C	T ₉₀ = 0.9 second for V _{air} = 1 m/s	0.1°C / 0.1°F
CO ₂ (Infrared sensor)	From 0 to 5000 ppm: ±3% of the measured value ±50 ppm From 0 to 20 000 ppm: ±5% of the measured value ±100 ppm	From 0 to 5000 ppm Other available range from 0 to 20 000 ppm	T ₆₃ = 35 s	1 ppm

⁽¹⁾ Other measuring range available on request: 0-20 000 ppm.

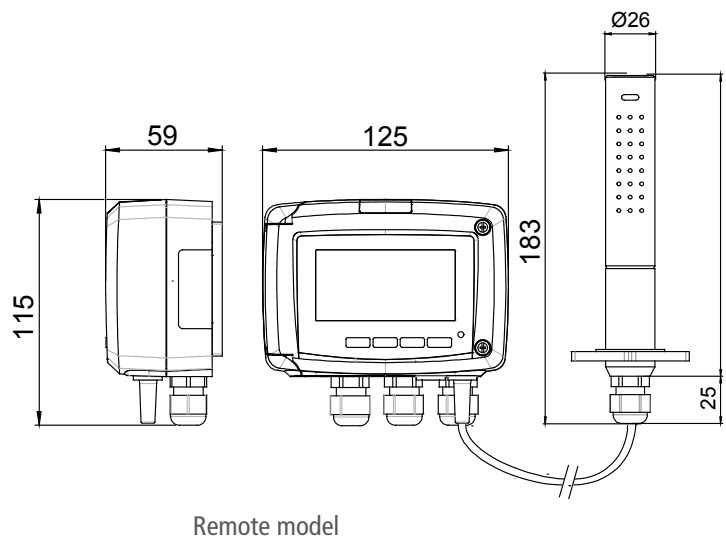
⁽²⁾ All the accuracies indicated in this technical datasheet were stated in laboratory conditions, and can be guaranteed for measurements carried out in the same conditions, or carried out with calibration compensation.

General features

Power supply	24 Vac / Vdc ±10% 100-240 Vac, 50-60 Hz
	Warning: risk of electric shock 
Output	2 x 4-20 mA or 2 x 0-20 mA or 2 x 0-5 V or 2 x 0-10 V (4 wires) Common mode voltage <30Vac Maximum load: 500 Ohms (0/4-20 mA) Minimum load: 1 K Ohms (0-5/10 V)
Relay outputs	2 changeover relays. NO: 5A / NC: 3A / 240 Vac
Galvanic isolation	Inputs and outputs (100-240 Vac models) Device fully protected by DOUBLE ISOLATION or REINFORCED ISOLATION  Outputs (24 Vac/Vdc model)
Consumption	COT212-B: 6 VA / COT212-H: 8 VA
Electrical connection	Screw terminal block for cable 2.5 mm² Carried out according to the code of good practice
PC communication	USB-Mini Din cable
Environment	Air and neutral gases
Type of fluid	Air and neutral gases
Conditions of use (°C/%RH/m)	From -10 to +50°C. In non-condensing condition. From 0 to 2000 m.
Storage temperature	From -10 to +70°C
Security	Protection class II; Pollution degree 2; Overvoltage category 2 (OVCI)
European directives	2014/30/EU EMC; 2014/35/EU Low Voltage; 2011/65/EU RoHS II; 2012/19/EU WEEE

Dimensions

All dimensions are in millimeters.



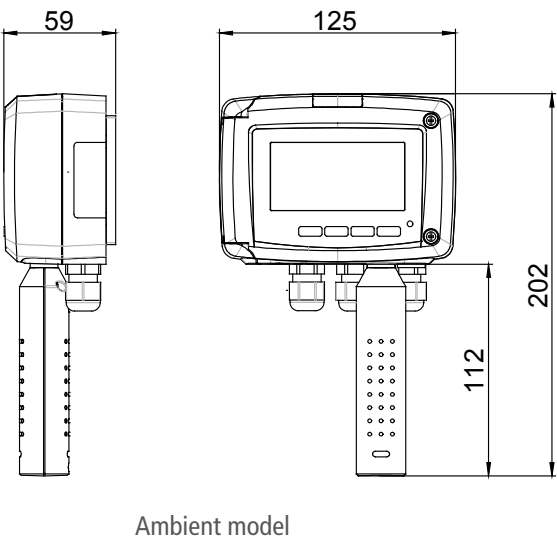
Probes technical specifications

Ambient probe

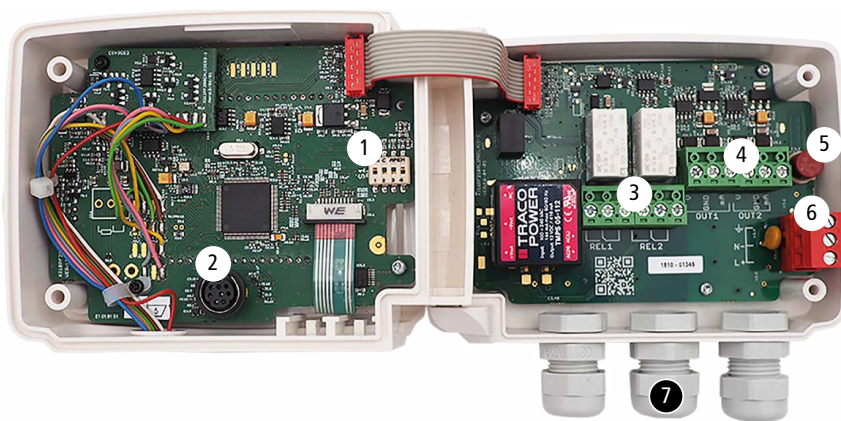
Dimensions	Length: 112 mm Diameter: 26 mm
Material	Polycarbonate
Remote probe	
Dimensions	Length: 158 mm without cable gland, 183 mm with cable gland Diameter: 26 mm
Material	Polycarbonate
Cable	Length: 2 m Diameter: 4.8 mm

Features of housing

Material	ABS V0 as per UL94
Protection	IP65
Display	75 x 40 mm, LCD 19 digits 2 lines Height of digits: Values: 10 mm; Units: 5 mm
Cable gland	For cables Ø8 mm maximum
Weight	340 g



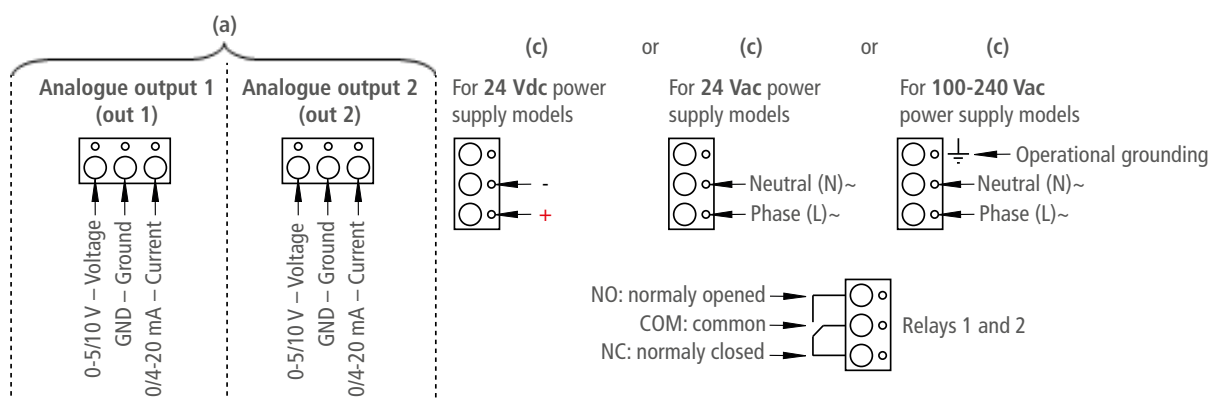
Connections



1. DIP switch (d)
2. LCC-S software connection
3. Relays
4. Analogue outputs (a)
5. F3.20* fuse
6. Power supply terminal block (c)
7. Cable glands

Type of power supply (b) specified on the label on the side of the transmitter

COT212-XXX-R	COT212-XXX-R
Power supply: 100-240 Vac 50-60 Hz 8 VA	Power supply: 24 Vac/Vdc $\pm 10\%$ 50-60 Hz 6 VA
Output: 0/4...20 mA / 0...5/10 V	Output: 0/4...20 mA / 0...5/10 V
100-240 Vac	24 Vac/Vdc



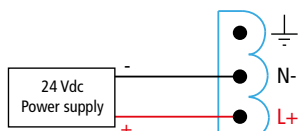
* Fuse present only for 100-240 Vac models.
Every fuse replacement must be performed with a power off device using a TR5 630 mA 250 V fuse.

Electrical connections as per NFC15-100 standard

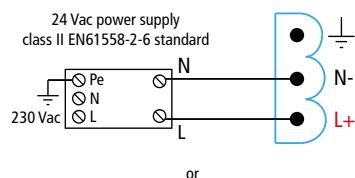


This connection must be made by a formed and qualified technician. To make the connection, the transmitter must not be energized. Before making the connection, you must first check the power supply indicated on the transmitter board (see (b) on "Connections" part). The presence of a switch and a circuit breaker upstream the device is compulsory.

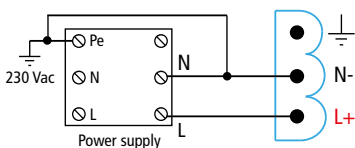
- For transmitters with 24 Vdc power supply:



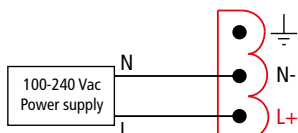
- For transmitters with 24 Vac power supply:



or



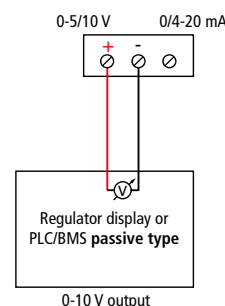
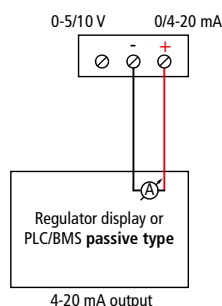
- For transmitters with 100-240 Vac power supply:



The selection of the output signal in voltage (0-10 V or 0-5 V) or in current (4-20 mA or 0-20 mA) is made via the DIP switch (d) of the electronic board of the transmitter: put the on-of switches as shown in the table below:

Configurations	4-20 mA	0-10 V	0-5 V	0-20 mA
Combinations				
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

- Connection of the output in current 4-20 mA:
- Connection of output in voltage 0-10 V:



On 100-240 Vac models, if a fuse protection is used for the power line, it is imperative to use delayed-action fuses in order to absorb the surge of current when first turned on the transmitter.

Configuration of the transmitters

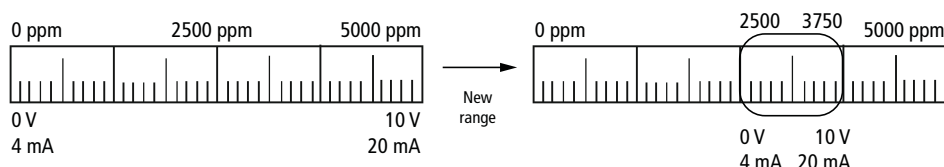
It is possible on the class 210 to configure all the parameters of the transmitter : units, measuring ranges, outputs, channels, calculation functions, etc, via different methods:

- **Keypad for models with display:** a code-locking system allows to secure the installation (See class 210 transmitters user manual).
- **Software (optional) on all models:** Simple user-friendly configuration. See LCC-S user manual.

Configurable analogue output:

It is possible to configure your own intermediary ranges in CO₂ and in temperature.

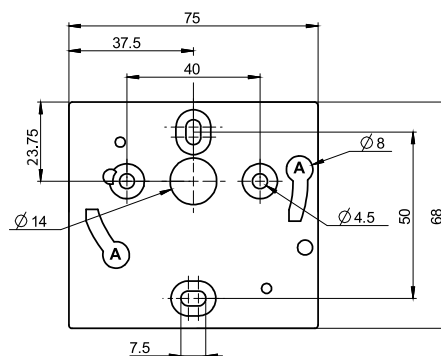
Caution: the minimum difference between the high range and the low range is 20.



Mounting

To mount the transmitter, mount the ABS plate on the wall (drilling: Ø6 mm, screws and pins are supplied).

Insert the transmitter on the fixing plate (see A on the drawing beside). Rotate the housing in clockwise direction until you hear a "click" which confirms that the transmitter is correctly installed.



All dimensions are in millimeters.

Maintenance

Please avoid any aggressive solvent. Please protect the transmitter and its probes from any cleaning product containing formalin, that may be used for cleaning rooms or ducts.

Calibration

Outputs diagnostic: With this function, you can check with a multimeter (or on a regulator / display, or a PLC / BMS) if the transmitter outputs work properly. The transmitter generates a voltage of 0 V, 5 V and 10 V or a current of 4 mA, 12 mA and 20 mA.

Certificate: Class 210 transmitters are supplied with adjusting certificates. Calibration certificates are available as an option.

Precautions for use

Please always use the device in accordance with its intended use and within parameters described in the technical features in order not to compromise the protection ensured by the device.

Options and accessories

Name	Reference
Configuration software with USB cable	LCC-S
Calibration certificate	-



Only the accessories supplied with the device must be used.