KIMO INSTRUMENTS

Pressure / Temperature / Humidity / Air Velocity / Airflow / Sound level

CE

CO_2 and temperature transmitter
COT 212

KEY POINTS

- Configurable ranges from 0 to 20000 ppm and from 0 to 50 °
- 4 wires analogue output 0-5/10 V or 0/4-20 mA
- Power supply 24 Vdc/Vac or 115/230 Vac
- Trend indicator
- ABS V0 IP65 housing, with or without display
- "¼ turn" system mounting with wall-mount plate

FEATURES OF THE HOUSING

Remote model

Ambient model
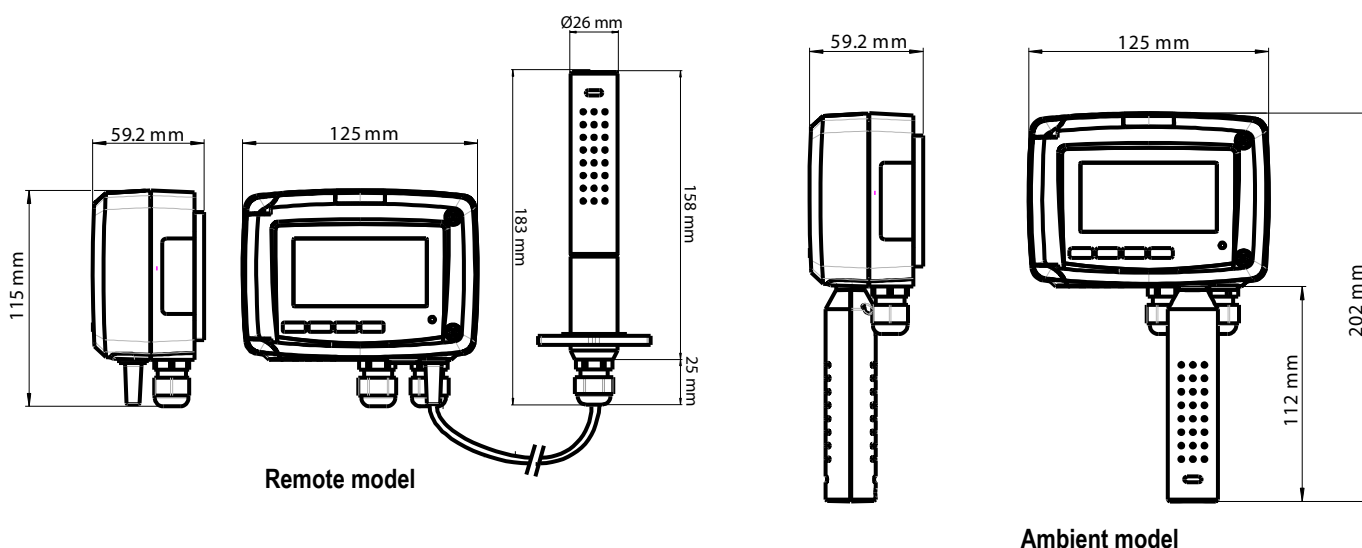
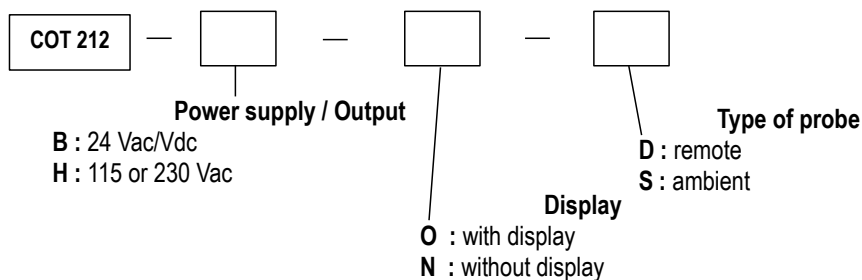|	
Material : ABS V0 as per UL94	**Height of digits :** Values : 10 mm ; Units : 5 mm
Protection : IP65	**Cable gland :** For cables Ø 8 mm maximum
Display : 75 x 40 mm, LCD 19 digits 2 lines.	**Weight :** 320 g

PART NUMBER

To order, just add the codes to complete the part number :

COT 212 — ▢ — ▢ — ▢

Power supply / Output
B : 24 Vac/Vdc
H : 115 or 230 Vac

Display
O : with display
N : without display

Type of probe
D : remote
S : ambient

Example : COT212 - BOS
Temperature and CO_2 transmitter, power supply 24 Vac/Vdc, with display and ambient probe

TECHNICAL FEATURES IN TEMPERATURE

Measuring range	From 0 to +50 °C
Unit of measurement	°C / °F
Accuracy*	±0.3°C
Response time	T_{90} = 0.9 second for V_{air} = 1 m/s
Resolution	0.1 °C
Type of sensor	NTC
Type of fluid	Air and neutral gases

TECHNICAL FEAUTRES IN CO_2

Measuring range	From 0 to +20000 ppm
Unit of measurement	ppm
Accuracy*	±50 ppm or 3% of the measured value
Response time	T63 = 35 s
Resolution	1 ppm
Type of sensor	Infrared sensor
Type of fluid	Air and neutral gases

*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.
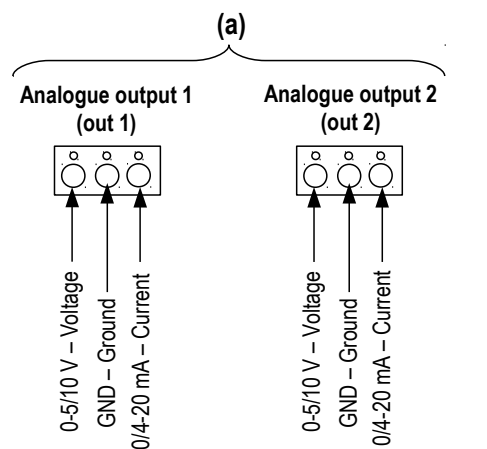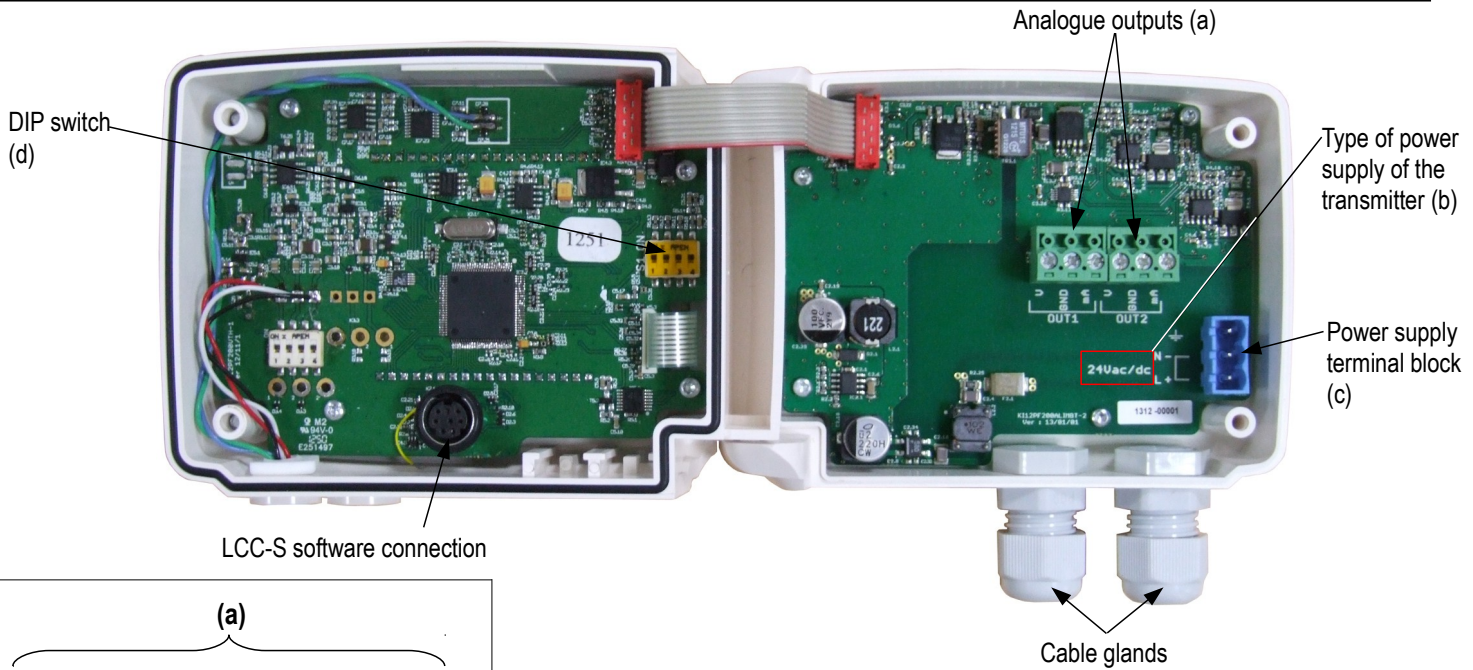
TECHNICAL FEATURES OF THE PROBES

➢ Ambient probe

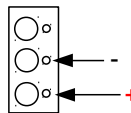|	
Size	Length : 112 mm ; Diameter : 26 mm
Material	polycarbonate

➢ Remote probe

Size	Length : 158 mm (without cable gland), 183 mm (with cable gland) mm ; Diameter : 26 mm
Material	polycarbonate
Cable	Length : 2 m ; diameter : 4.8 mm

TECHNICAL SPECIFICATIONS
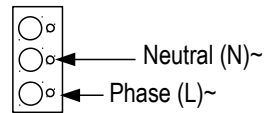
Power supply	24 Vac / Vdc ±10 % 115 Vac or 230 Vac ±10 %, 50-60 Hz
Output	2 x 4-20 mA or 2 x 0-20 mA or 2 x 0-5 V or 2 x 0-10 V (4 wires) Maximum load : 500 Ohms (0/4-20 mA) Minimum load : 1 K Ohms (0-5/10 V)
Galvanic isolation	Inputs and outputs (115 Vac/230 Vac models) Outputs (24 Vac/Vdc model)
Consumption	5 VA
Electromagnetical compatibility	EN61326
Electrical connection	Screw terminal block for cable 2.5 mm²
PC communication	Kimo USB-Mini Din cable
Environment	Air and neutral gases
Type of fluid	Air and neutral gases
Operating temperature	From 0 to +50 °C
Storage temperature	From -10 to +70 °C

CONNECTIONS

Analogue outputs (a)

DIP switch (d)

LCC-S software connection

Type of power supply of the transmitter (b)

Power supply terminal block (c)

Cable glands

(a)

Analogue output 1 (out 1)

- 0-5/10 V – Voltage
- GND – Ground
- 0/4-20 mA – Current

Analogue output 2 (out 2)

- 0-5/10 V – Voltage
- GND – Ground
- 0/4-20 mA – Current

(c) `or` **(c)** `or` **(c)**

For power supply **24 Vdc** models

For power supply **24 Vac** models
- Neutral (N)~
- Phase (L)~

For power supply **230 Vac, 115 Vac** models
- Ground
- Neutral (N)~
- Phase (L)~
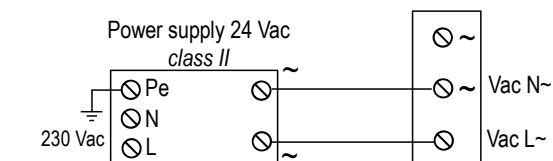
- −
- +
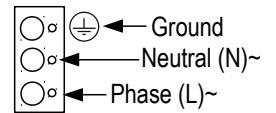
ELECTRICAL CONNECTIONS – as per *NFC15-100 standard*

⚠️ **This connection must be made by a 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).
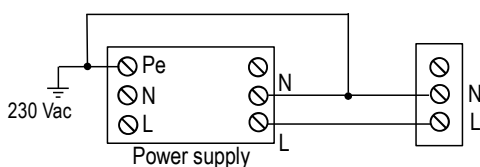
➢ **For transmitters with 24 Vdc power supply :**

Power supply 24 Vdc

- − −
- + +
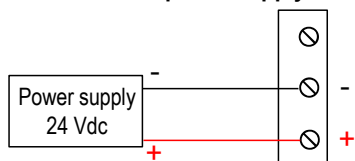
➢ **For transmitters with 24 Vac power supply :**

Power supply 24 Vac *class II*

230 Vac — Pe / N / L — ~ / ~ — Vac N~ / Vac L~

`or`

230 Vac — Pe / N / L — Power supply — N / L

➢ **For transmitters with 115 or 230 Vac power supply :**

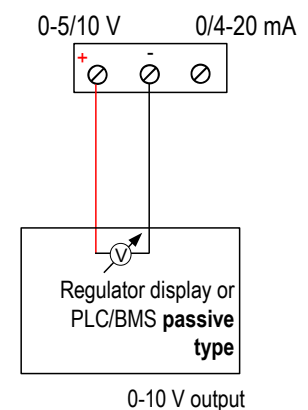Power supply 115 / 230 Vac
- Ground
- Neutral
- Phase

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 :**

0-5/10 V   0/4-20 mA

- −   +

Regulator display or PLC/BMS **passive type**

4-20 mA output
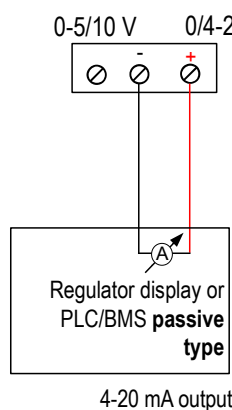
➢ **Connection of output in voltage 0-10 V :**

0-5/10 V   0/4-20 mA

+   −

Regulator display or PLC/BMS **passive type**

0-10 V output

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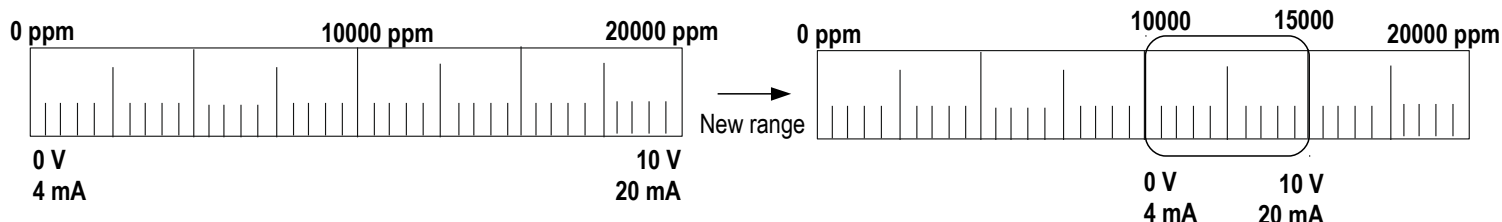- **Keypad** for models with display : a code-locking system allows to secure the installation (See class 210 user manual).
- **Software** (optional) on all models. Simple user-friendly configuration. See LCC-SD user manual.

Configurable analogue output :
It is possible to configure your own intermediary ranges in CO_2 and in temperature.
*Caution : the minimum difference between the high range and the low range is 20.*

Configure the range according to your needs : outputs are automatically adjusted to the new measuring range

0 ppm	10000 ppm	20000 ppm

0 V — 10 V
4 mA — 20 mA

New range →

0 ppm	10000	15000	20000 ppm

0 V — 10 V
4 mA — 20 mA

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.

75 mm
37.5 mm
40 mm
23.75 mm
Ø 8 mm
Ø 14 mm
Ø 4.5 mm
50 mm
68 mm
7.5 mm
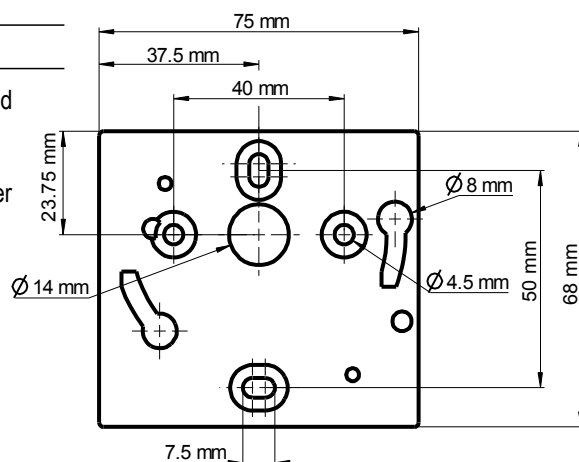
CALIBRATION

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.

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.

OPTIONS AND ACCESSORIES

- **LCC-S :** configuration software with USB cable
- **Calibration certificate**

www.kimo.fr

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