

# CA 310

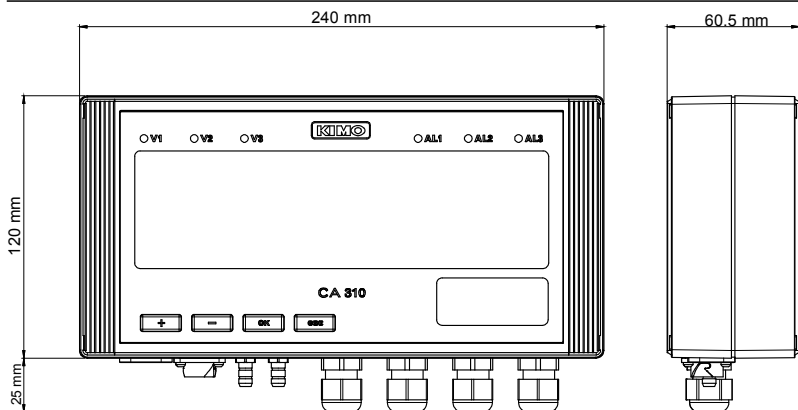
## Large display multifunction transmitter



### KEY POINTS

- 1 input for interchangeable probe
- 1 location for SPI-2 or MVA interchangeable board
  - Alternating display of 1 to 3 parameters
- 3 audible and visual (dual-color LEDs) alarms
- 3 analogue outputs (4 wires) 0/5-10 V or 0/4-20 mA
  - 3 reverse relays 3 A/230 Vac
- 24 Vdc/Vac or 115/230 Vac power supply
  - Outputs diagnostic
- Ethernet communication (optional)
- MODBUS network RS485 system (optional)
  - ABS V0 swivelling housing
  - Large display: 50 x 190 mm

### FEATURES OF THE HOUSING



**Housing:** swivelling (30°)

**Material:** ABS V0 as per UL94

**Protection:** IP63

**Cable gland:** in polyamide for cables Ø8 mm maximum

**Fitting:** barbed fittings Ø6.2 mm

**Weight:** 1150 g

### PART NUMBERS

**CA310-B** : multifunction transmitter, 24 Vac power supply

**CA310-H** : multifunction transmitter, 115-230 Vac power supply

### TECHNICAL SPECIFICATIONS

<b>Power supply</b>	24 Vac / Vdc ±10% 100-240 Vac, 50-60 Hz <b>Warning: risk of electric shock</b>
<b>Output</b>	3 x 0/4-20 mA or 3 x 0-5/10 V (4 wires) Common mode voltage <30 VAC Maximum load: 500 Ohms (0/4-20 mA) / Minimum load: 1 K Ohms (0-5/10 V)
<b>Galvanic isolation</b>	On the outputs Device fully protected by DOUBLE ISOLATION or REINFORCED ISOLATION <input type="checkbox"/>
<b>Consumption with probe and without option</b>	CA310-B: 11 VA CA310-H: 16 VA (CO <sub>2</sub> probe additional consumption for 24 V and 115-230 V models: 2 VA)
<b>Relays</b>	3 reverse relays 5 A / 230 Vac
<b>Audible alarm</b>	Buzzer (70 dB at 10 cm)
<b>European directives</b>	2014/30/EU EMC; 2014/35/EU Low Voltage; 2011/65/EU RoHS II; 2012/19/EU WEEE
<b>Electrical connection</b>	Screw terminal block for cables from 0.05 to 2.5 mm <sup>2</sup> or de 30 à 14 AWG Carried out according to the code of good practice
<b>RS485 communication (optional)</b>	Digital: Modbus RTU protocol, configurable communication speed from 2400 to 115200 Bauds
<b>Ethernet communication (optional)</b>	Ethernet communication module allowing transmission, monitoring and maintenance of transmitters via an Ethernet network in 10 BASE-T and 100 BASE-TX LAN/WAN supporting TCP/IP protocol (additional consumption for 24 V and 115-230 V models: 1 VA)

# TECHNICAL SPECIFICATIONS

<b>Environment and type of fluid</b>	Air and neutral gases
<b>Conditions of use (°C/%RH/m)</b>	From -10 to +50°C. In non-condensing condition. From 0 to 2000 m
<b>Storage temperature</b>	From -10 to +70°C
<b>Security</b>	Protection class 2; Pollution degree 2; Overvoltage category 2

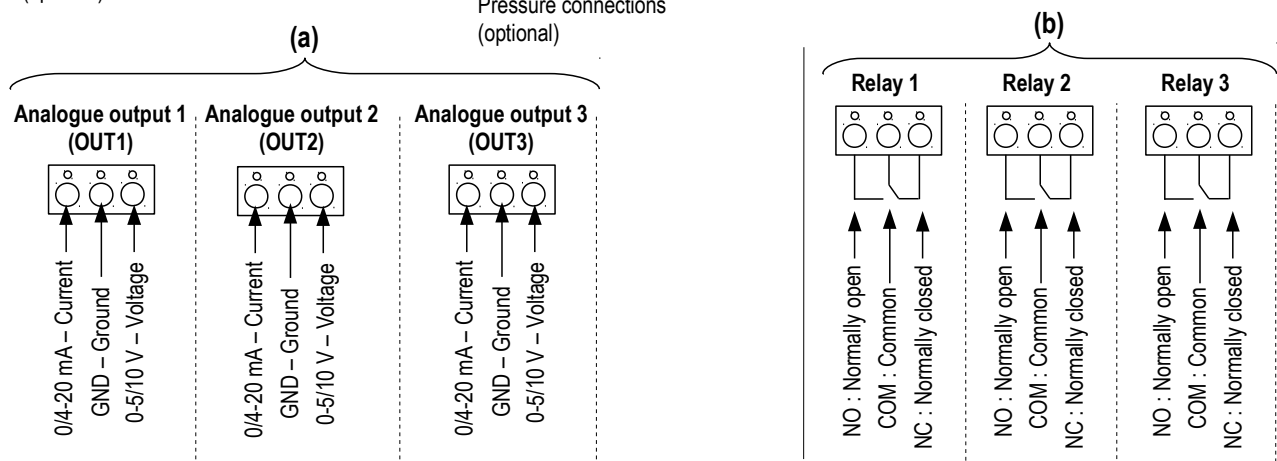
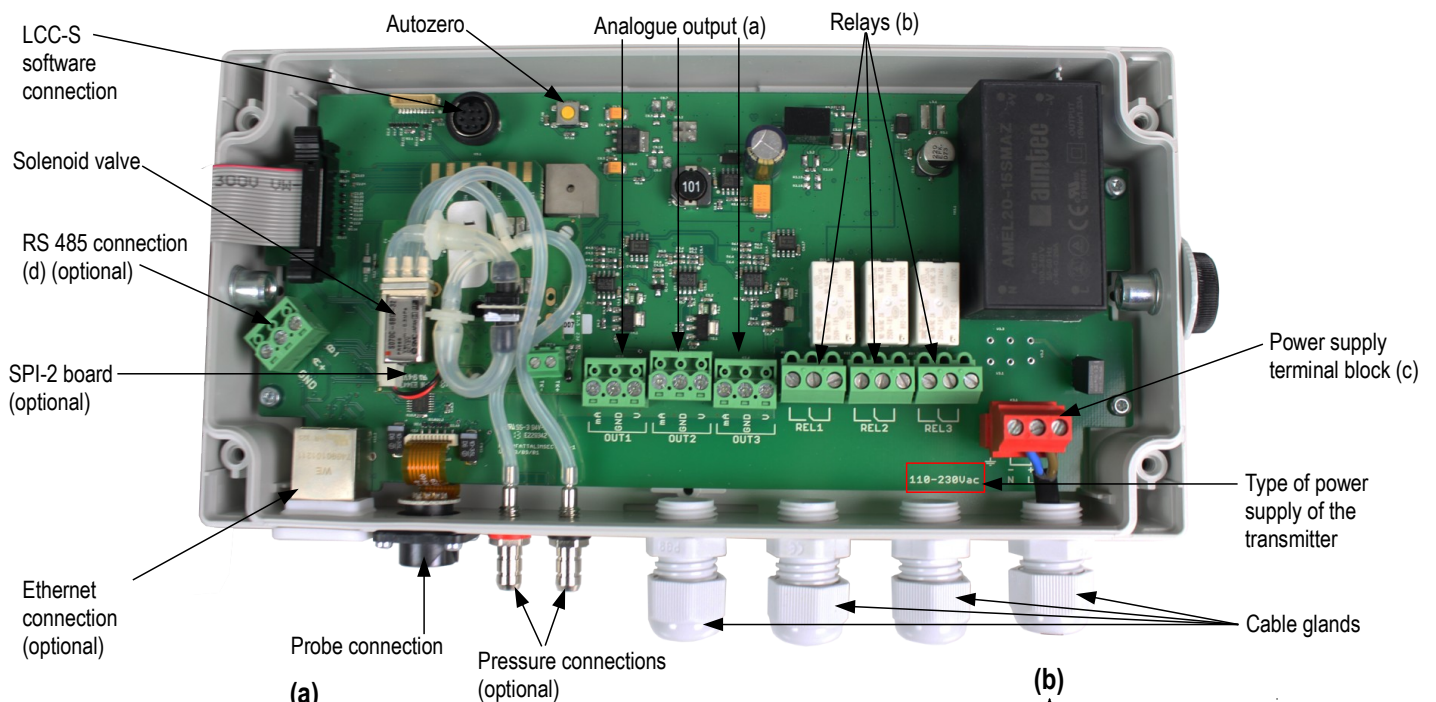
## RELAYS AND ALARMS

CA310 transmitter has 3 independent and configurable alarms : these are visual and audible alarms and it is possible to couple them with 3 relays.

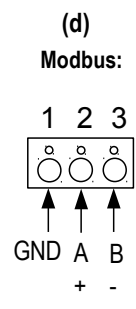
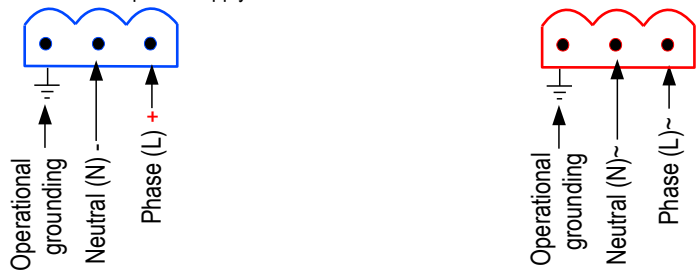
**Available settings:**

- Selection of the parameter (pressure, air velocity, temperature,...)
- Time-delays durations from 0 to 600 s
- Alarm action: rising edge, falling edge, monitoring or state of the transmitter
- Operating mode of the relays: negative or positive safety
- Activation of the audible alarm (buzzer), that can be acknowledge by the front keypad

## CONNECTIONS



**(c)** For 24 Vdc/Vac power supply models: **or** For 115 Vac to 230 Vac power supply models:

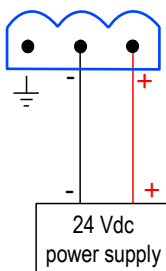


## ELECTRICAL CONNECTIONS – as per *NFC15-100 Norm*

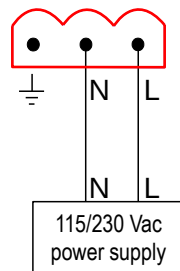


This connection must be made by a formed and qualified technician. Whilst making the connection, the transmitter must not be energized. The presence of a switch or a circuit breaker upstream the device is compulsory.

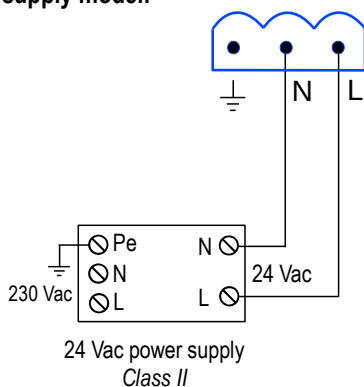
> For 24 Vdc power supply model:



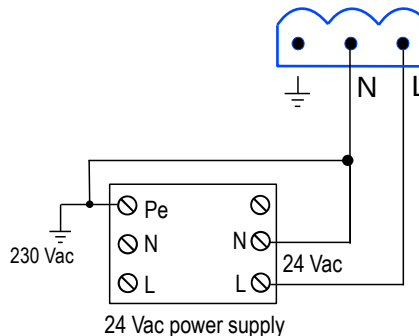
> For 115 Vac to 230 Vac power supply models:



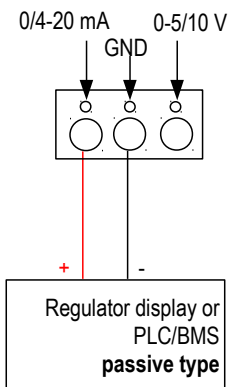
> For 24 Vac power supply model:



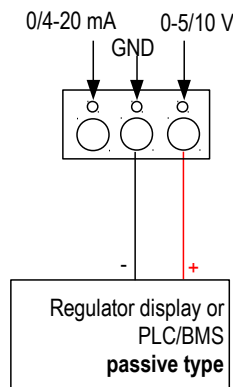
or



> 0/4-20 mA current output connection:



> 0-5/10 V voltage output connection:



## POSSIBLE OPTIONAL MEASUREMENTS

The following probes and boards are available as option for C310 transmitters. For further details please see the technical datasheet of probes for class 310 transmitters.

Probes	Measuring ranges
Stainless steel or polycarbonate hygrometry / temperature probe	From 0 to 100%RH and from -40 to +180°C (according to probe)
Air velocity vane probe: air velocity / temperature / airflow	From -5 to 35 m/s (according to probe) / From -20 to +80°C / From 0 to 99 999 m³/h
Air velocity hotwire probe: air velocity / temperature / airflow	From 0 to 30 m/s / From -20 to +80°C / from 0 to 99 999 m³/h
Omnidirectional probe: air velocity / temperature	From 0 to 5 m/s and from 0 to 50°C
Pt100 1/3 DIN temperature probe	From -50 to +180°C / From -20 to +80°C
CO / temperature probe	From 0 to 500 ppm and from 0 to 50°C
CO <sub>2</sub> / temperature probe	From 0 to 20 000 ppm and from 0 to 50°C
Boards	Measuring ranges
Pressure / atmospheric pressure	From -100 à +10 000 Pa (according to boards) / from 800 to 1100 hPa
Current / voltage	3 current/voltage analogue inputs : 0-20 mA / 4-20 mA and 0-2,5 V / 0-5 V / 0-10 V, with terminal block

## RS 485 MODBUS PROTOCOL (optional)

Class 310 transmitters can be linked in one network operating on a RS485 home bus.

The RS 485 digital communication is a 2-wire network, on which the transmitters are connected in parallel. They are connected to a PLC/BMS via the RTU Modbus communication system. Since the C310 can be configured with the keypad, the MODBUS enables remote configuration, to measure 1 or 2 parameters or to see the status of the alarms...

## ETHERNET BOARD (optional)

An Ethernet board can be put on a CA310 transmitter allowing for each transmitter to have a specific configurable IP address. So the user can remotely interrogate the transmitter, retrieve data, modify the configuration, ...

It is also possible to integrate CA310 transmitters into a computer network via the RJ45 connection located at the bottom of the transmitter.

## CONFIGURATION

Class 310 transmitters allow you to set all the parameters managed by the transmitter: units, measuring ranges, alarms, outputs, channels... via the different methods shown below:

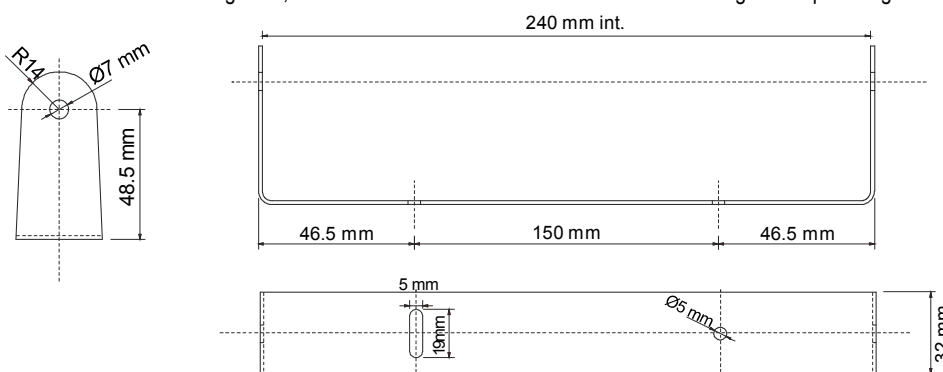
- > **Via keypad**, only on models with display. A code-locking system for keypad guarantees the security of the installation. See configuration manual.
- > **Via software (optional)**: simple and user-friendly. See LCC-S user manual.
- > **Via Modbus (optional)**: configuration of all parameters from your PC, via the supervision or data acquisition software.
- > **Via Ethernet (optional)**: configuration of all parameters from your PC, via the supervision or data acquisition software.

## MOUNTING

Install the mounting bracket in horizontal position along a plane wall (see below dimensions / drilling drawing).

Put the display inside the mounting bracket, with the 2 screws. Remove the screw covers located on the right and left side of housing, in order to have access to the 4 shutting screws.

Make the electrical connection with the connection glands, with soft cable  $\varnothing 7$  mm maximum. Close the housing before powering on.



## CALIBRATION

**Outputs diagnostics:** with this function, you can check with a multimeter (or on a regulator/display, or on 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 0 mA, 4 mA, 12 mA and 20 mA

**Certificate:** transmitters are supplied with an individual adjusting certificate and can be supplied with a calibration certificate as an option.

## MAINTENANCE

Avoid aggressive solvents. When cleaning rooms or ducts with products containing formol, protect the transmitter.

## OPTIONS

- **LCC-S:** configuration software with USB cable
- **SQR/3 function:** square root extraction function for the calculation of air velocity and airflow
- **RS5:** RS 485 Protocol Modbus digital output
- **CETHE:** Ethernet board
- **HRP:** high resolution (example in pressure: 0.1 Pa) with SPI2-100 board
- **Calibration certificate**

 Only the accessories supplied with the device must be used.

## 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.

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