



## sauermann CP 210-R Differential Pressure and Temperature Sensor User Guide

[Home](#) » [sauermann](#) » sauermann CP 210-R Differential Pressure and Temperature Sensor User Guide 



### CTV 210-R Air Velocity and Temperature Sensor User Guide


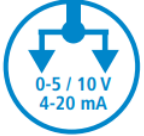




[www.sauermanngroup.com](http://www.sauermanngroup.com)

CTV 210-R

**Air velocity and temperature transmitter**





	Range from $\pm 100$ to $\pm 10\,000$ Pa (according to model)
	Two 4-wire analog outputs 0-5/10 V or 0/4-20 mA
	2 relay outputs
	Air velocity and air flow calculation (optional) with or without display

## Contents

- [1 General features](#)
- [2 Features of the housing](#)
- [3 Used symbols](#)
- [4 Connections](#)
- [5 Autozero](#)
- [6 Configuration of transmitters](#)
- [7 Mounting](#)
- [8 Accessories](#)
- [9 Documents / Resources](#)
  - [9.1 References](#)
- [10 Related Posts](#)

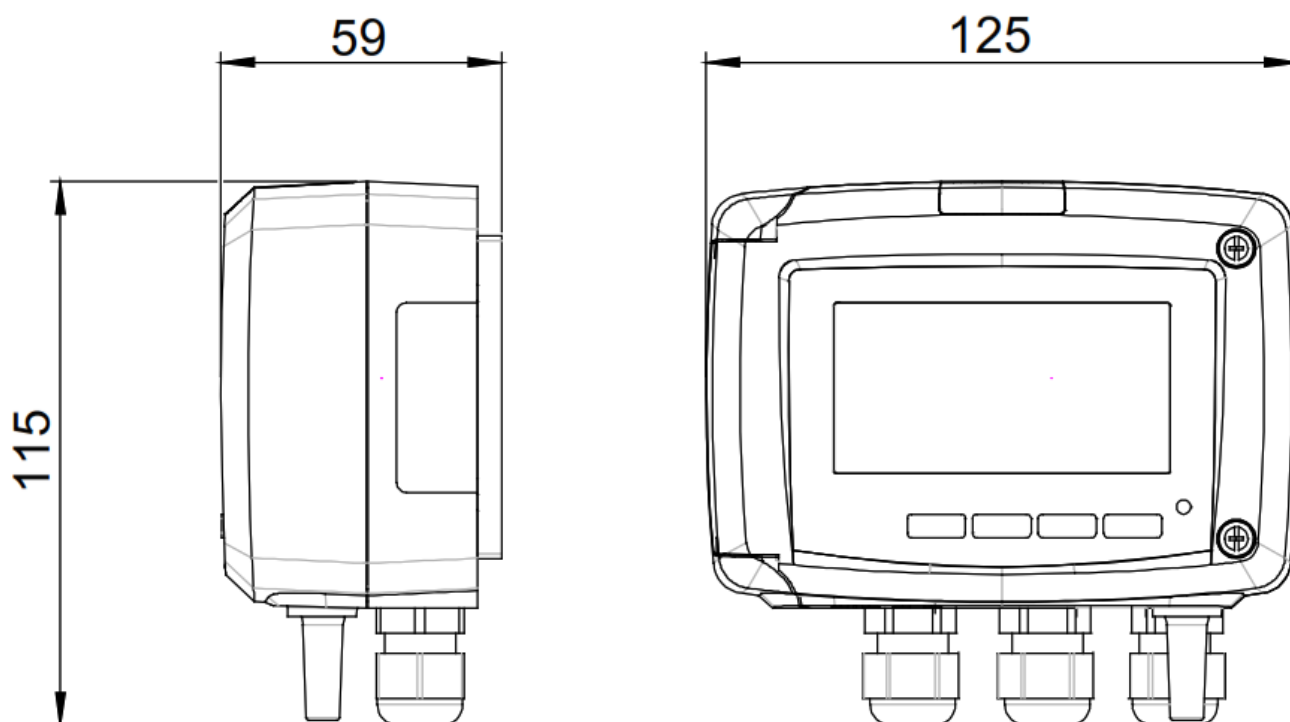
## General features

Power supply	24 Vac / Vdc $\pm 10\%$ . 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 <30 Vac. Maximum load: 500 Ohms (0-4-20 mA). Minimum load: 1 K Ohms (0-5/10 V)
Relay outputs	2 changeover relays 3 A / 230 V. NO : 5A / NC: 3A / 240 Vac
Galvanic isolation	Inputs and outputs (models 100-240 Vac). The device fully protected by DOUBLE ISOLATION or REINFORCED ISOLATION Outputs (models 24 Vac/Vdc) 
ExtinctionConsum	CTV210-B: 6 VA. CTV210-H: 8 VA
Electrical conn	Screw terminal block for cable 2.5 mm <sup>2</sup> Carried out according to the code of good practice
PC communication	USB-Mini Din cable
Environment	Air and neutral gases
Conditions of use (°C/%RH/m)	From -10 to +50 °C. In non-condensing conditions. 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

## Features of the housing

Material	ABS V0 as per UL94
Protection	IP65
Display	75 x 40 mm, LCD 20 digits 2 lines. Height of digits: Values: 10 mm; Units: 5 mm
Connection	Ribbed Ø6.2 mm (CP211/212/213)
Pass-through	For cables Ø6 mm maximum
Cable gland	For cables Ø 8 mm maximum
Weight	340 g

All dimensions are in millimeters.



### Used symbols

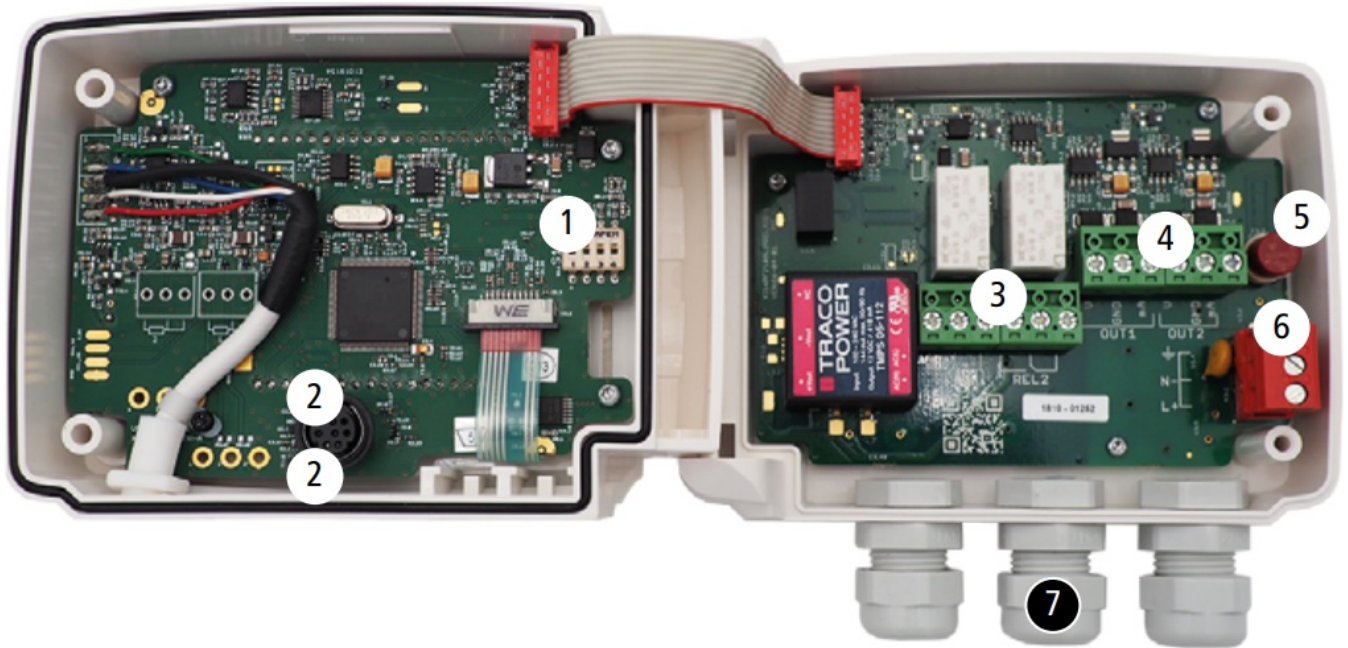


For your safety and in order to avoid any damage of the device, please follow the procedure described in this document and read carefully the notes preceded by the following symbol:





The following symbol will also be used in this document, please read carefully the information notes indicated after this symbol:

## Connections



1. DIP switch (d)
2. Pt100 terminal block
3. Solenoid valve (only on CP211/212)
4. LCC-S software connection
5. Autozero
6. Pressure connections
7. Relays
8. Analog outputs (a)
9. F3.20\* fuse
10. Power supply terminal block (c)
11. Cable glands

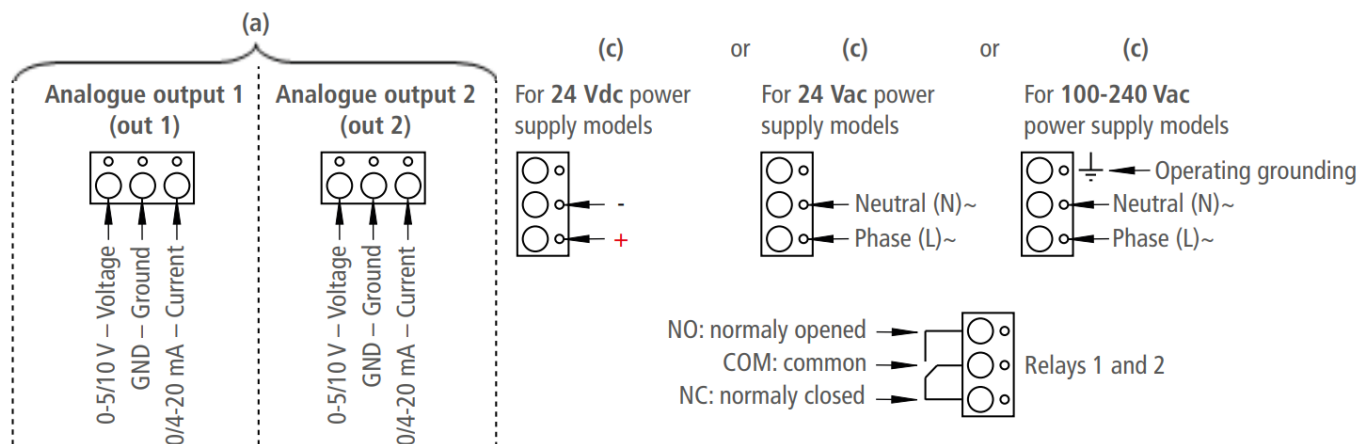
Power supply type (b) specified on the label on the side of the transmitter

**CTV210-XXX-S-R**  
**Power supply:** 100-240 Vac  
 50-60 Hz 8 VA   
**Output:** 0/4...20 mA / 0...5/10 V 

100-240 Vac

**CTV210-XXX-S-R**  
**Power supply:** 24 Vac/Vdc  $\pm 10\%$   
 50-60 Hz 6 VA  
**Output:** 0/4...20 mA / 0...5/10 V

24 Vac/Vdc



\*Fuse present only for 100-240 Vac models.

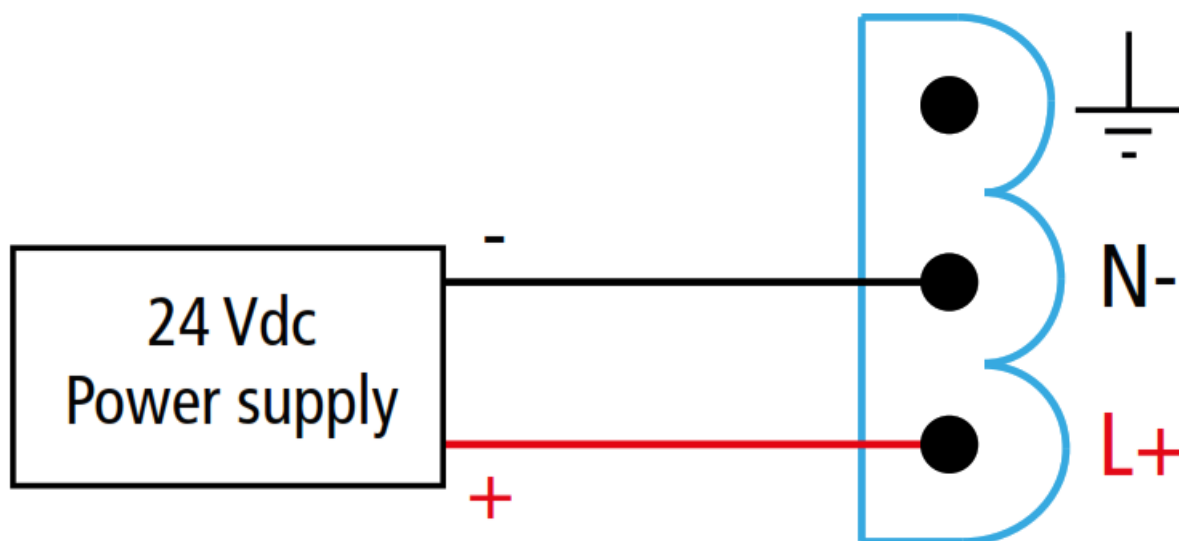
Every fuse replacement must be performed with a power-off device using a TR5 630 mA 250 V fuse.

### Electrical connections as per NFC15-100 standard



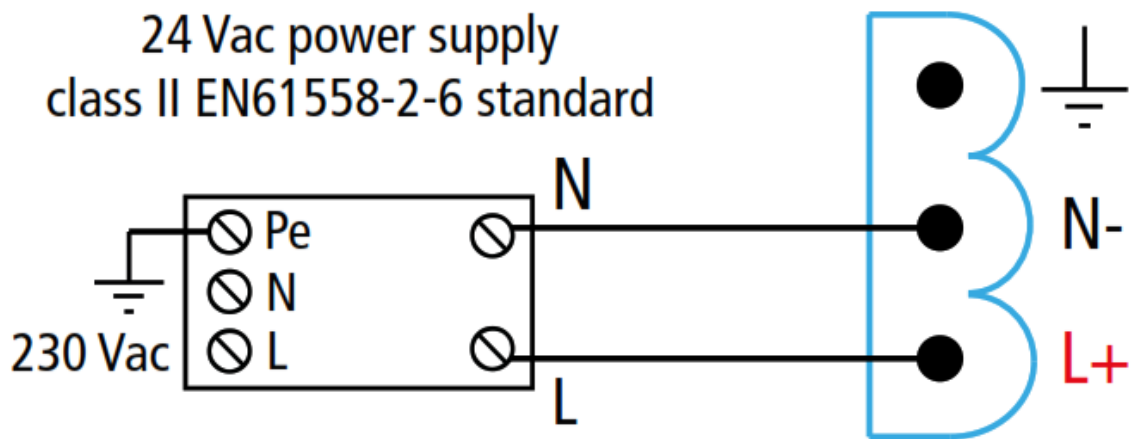
This connection must be made by a formed and qualified technician. To make the connection, the transmitter must not be energized. Before making the connection, you must first check the power supply indicated on the transmitter board (see (b) on the “Connections” part). The presence of a switch and a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

- For transmitters with a 24 Vdc power supply:

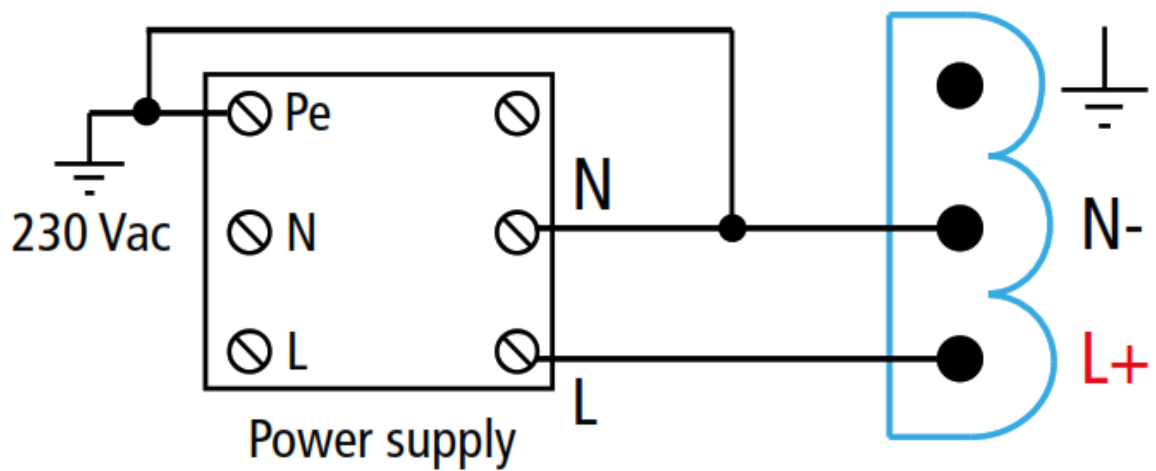


- For transmitters with 24 Vac power supply:

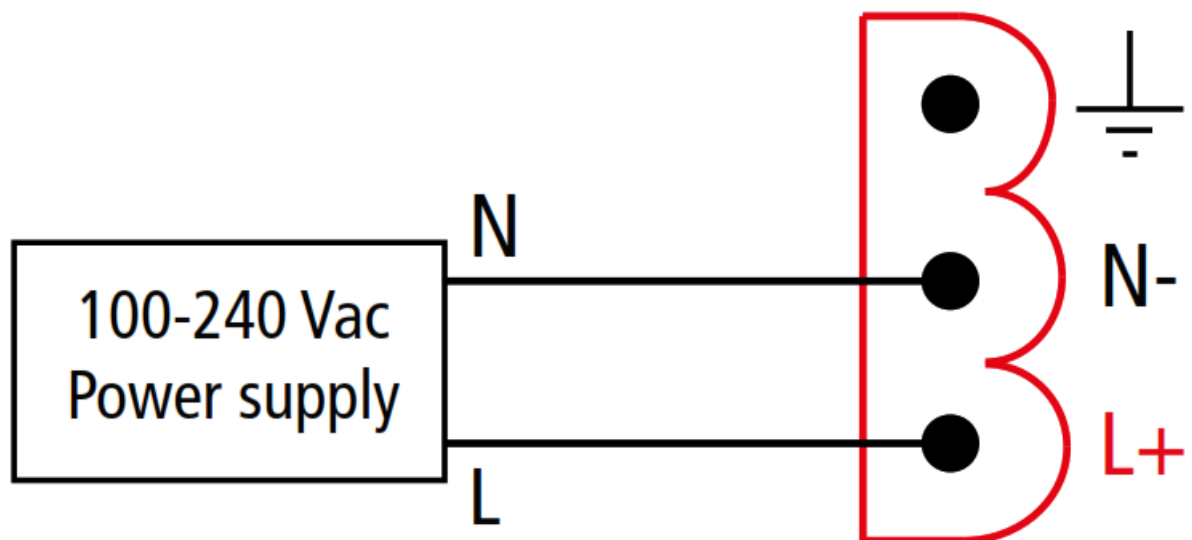
.




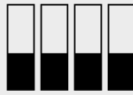

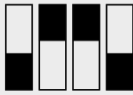
or



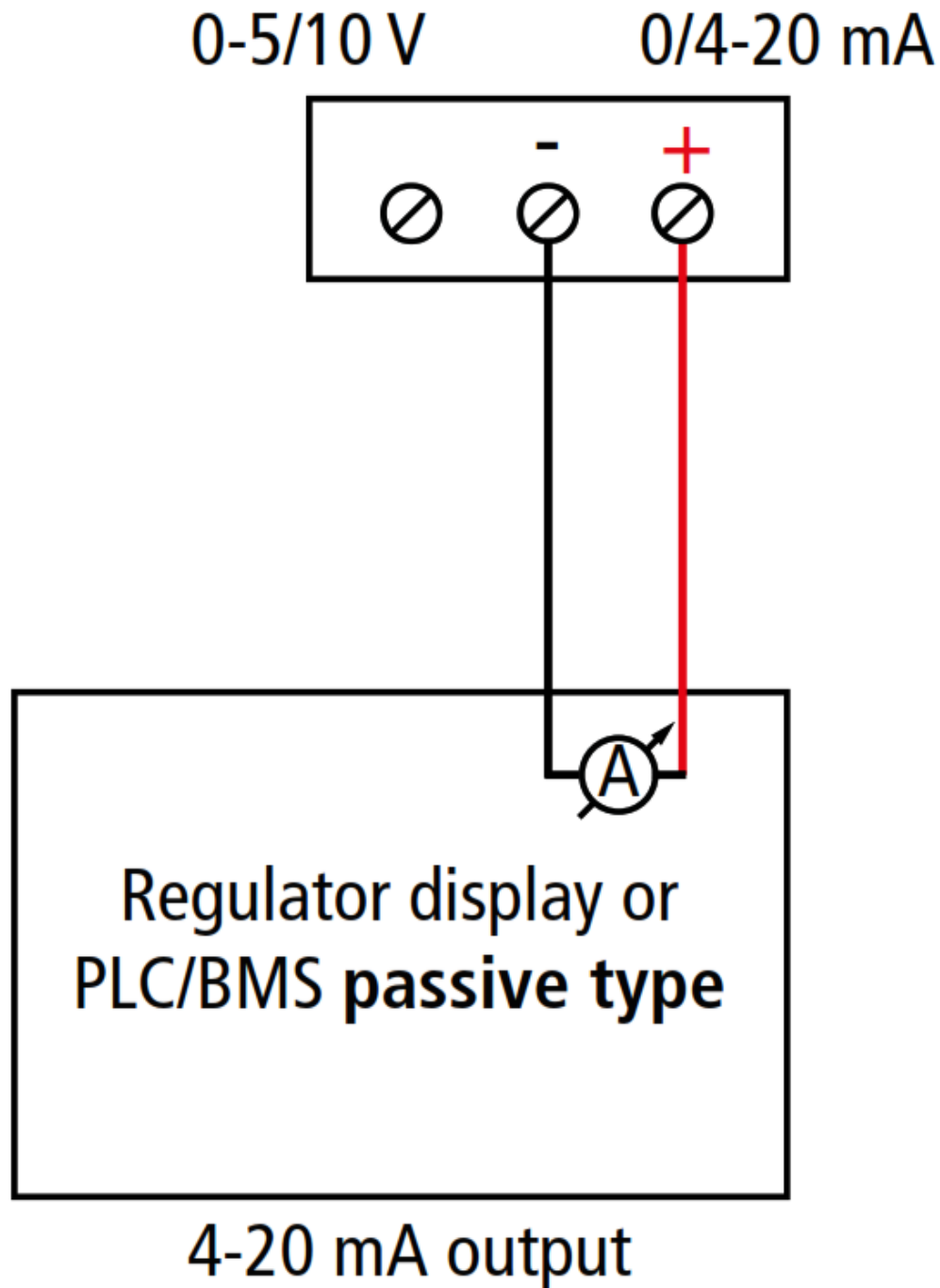
For transmitters with 100-240 Vac power supply:



The selection of the output signal in voltage (0-10 V or 0-5 V) or in the 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-off switches as shown in the table below:

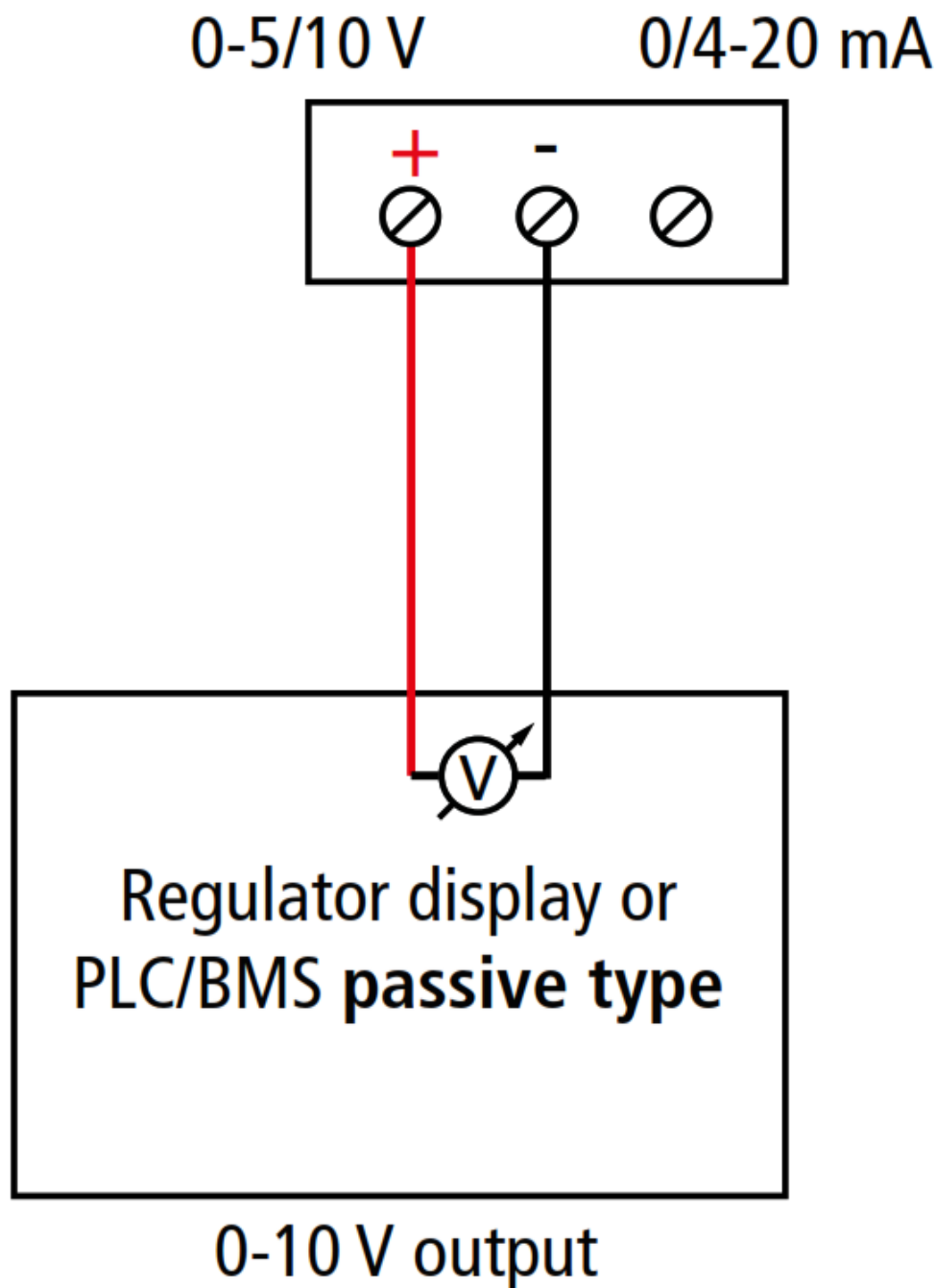
Configurations	4-20 mA	0-10 V	0-5 V	0-20 mA
Combinations	 1 2 3 4	 1 2 3 4	 1 2 3 4	 1 2 3 4

Connection of the output in current 4-20 mA:



Connection of output in voltage 0-10 V:





On 100-240 Vac models, if 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.

## Autozero

### Autocalibration

CP210 transmitters have a temperature compensation from 0 to 50 °C and an auto-calibration process that guarantees overtime excellent stability and perfect reliability of the measurement on low and high ranges.

Auto-calibration principle: the microprocessor of the transmitter drives a solenoid valve that compensates for the possible drifts on the sensitive element over time. The compensation is performed by the permanent adjustment of the zero. So the measurement of the differential pressure is then independent of the environmental conditions of the transmitter.

**Advantage:** no zero-point drift

**Frequency of auto-calibration:** resettable or from 1 to 60 minutes

### Autozero

To perform an autozero, unplug the 2 pressure connection tubes and press the “Autozero” key. On CP211 and CP

212 transmitters, it is not necessary to unplug the 2 pressure connection tubes. When an autozero has been performed, “On” green light turns off then turns on, and on transmitters equipped with a display, “autos” is displayed.

## Configuration of transmitters

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

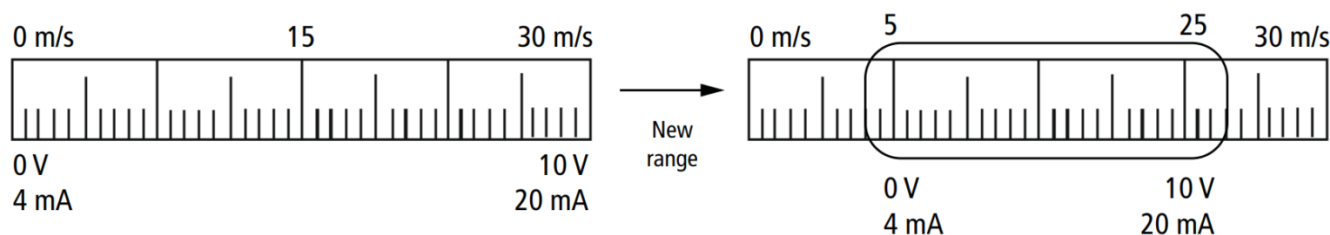
- **Keypad** for models with display: a code-locking system allows to secure the installation (See class 210 user manual).
- **Software** (optional) on all models. Simple user-friendly configuration. See LCC-SD user manual.

### Configurable analog output:

Range with central zero (-50/0/+50 Pa), with offset zero (-300/0/+70 Pa) or standard range (0/+100 Pa), it is possible to configure your own intermediate ranges.

**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**



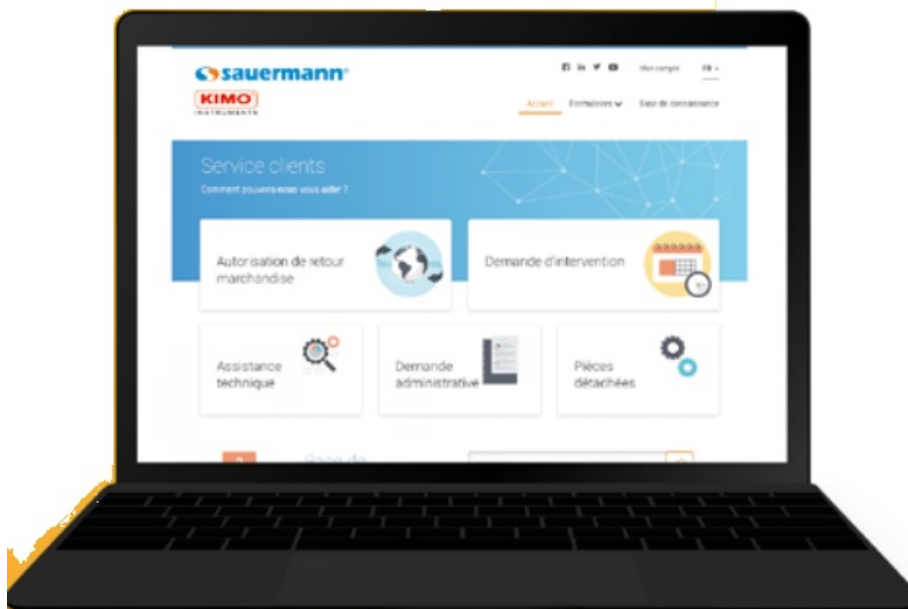
## Mounting

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 a clockwise direction until you hear a “click” which confirms that the transmitter is correctly installed.



Once the transmitter is installed and powered up, please make an autozero to guarantee the correct working of the transmitter in any position.





Use our Customer service portal to contact us Utilisez notre Portail service clients pour nous contacter

QSG CTV 210-R 14/01/2022




**Non-contractual document**

We reserve the right to modify the characteristics of our products without prior notice

<https://sauermann-en.custhelp.com>

[www.sauermanngroup.com](http://www.sauermanngroup.com)

## Documents / Resources

	<p><a href="#"><u>sauermann CP 210-R Differential Pressure and Temperature Sensor</u></a> [pdf] User Guide CP 210-R, Differential Pressure and Temperature Sensor</p>
---	---

## References

- [!\[\]\(0f13e74bece43321be4542883500ac30\_img.jpg\) Manufacturer of Condensate Pumps and Measuring Instruments | Sauermann group](#)
- [!\[\]\(096ca4c8372bb23497150f03b2c177db\_img.jpg\) Services - Homepage](#)