



## DATA SHEET

# CP 111

## Differential pressure transmitter

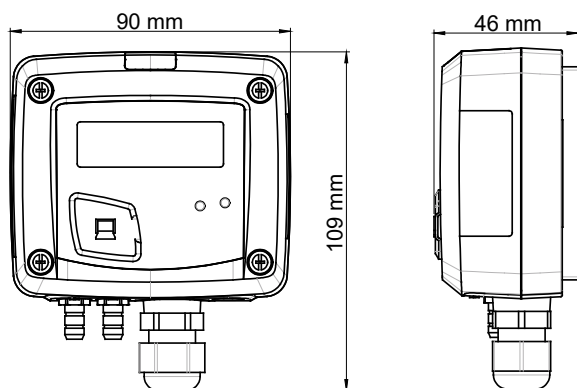


Ranges from 0~20 Pa, 0~30 Pa, 0~40 Pa, 0~50 Pa, 0~100 Pa (can specify other range, min.0~20 Pa, max.0~100 Pa)



Online auto-calibration via solenoid valve

- Output 0~10 V or 4~20 mA, power supply 24 Vac/Vdc (3-4 wires)
- ABS V0 housing, IP65, with or without display
- "1/4 turn" system mounting with wall-mount plate
- Connect analogue output/ power supply cable through back of transmitter
- Designed to measure differential pressure for pharmaceutical or Clean-room applications



## Part number

**Example: CP 111 – A0**

Pressure transmitter measuring range -100/+100 Pa(confirm when order), 4~20 mA or 0~10 V, 24Vac/Vdc, with display

|                             |   |                                                       |                                       |
|-----------------------------|---|-------------------------------------------------------|---------------------------------------|
| CP 11                       | 1 | A                                                     | 0                                     |
| Measuring range             |   | Power supply / Output                                 | Display                               |
| -100/+10 Pa to -100/+100 Pa |   | A: Active, 24 Vac/Vdc / 4~20 mA or 0~10 V (3-4 wires) | O: With display<br>N: Without display |

## General features

|                              |                                                                                              |
|------------------------------|----------------------------------------------------------------------------------------------|
| Measuring ranges             | -100/+100 Pa                                                                                 |
| Measurement units            | Pa, mmH <sub>2</sub> O, inWG, mmHG, daPa, kPa, hPa, mbar                                     |
| Accuracy *                   | ±1% of reading                                                                               |
| Resolution                   | 1 Pa; 0.1 mmH <sub>2</sub> O; 0.01 mbar; 0.01 inWG; 0.01 mmHG; 0.1 daPa; 0.001 kPa; 0.01 hPa |
| Response time                | 1/e (63%) 0.3 s                                                                              |
| Autozero                     | Automatic calibration by solenoid valve (factory pre-configured 10 minutes interval)         |
| Type of fluid                | Air and neutral gases                                                                        |
| Overpressure tolerated       | 21 000 Pa                                                                                    |
| Conditions of use (°C/%RH/m) | From 0 to +50°C. In non-condensing condition. From 0 to 2000 m                               |
| Storage temperature          | From -10 to +70 °C                                                                           |

## Features of the housing

|             |                                                                                     |
|-------------|-------------------------------------------------------------------------------------|
| Material    | ABS V0 as per UL94                                                                  |
| Protection  | IP65                                                                                |
| Display     | LCD 10 digits. Dimensions: 50 x 17 mm. Height of digits: Values: 10 mm; Units: 5 mm |
| Connections | Ribbed, Ø 6.2 mm                                                                    |
| Cable gland | For cables Ø 8 mm maximum                                                           |
| Weight      | 143 g                                                                               |

\*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 specifications

|                       |                                                                                                                                                                                           |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output / Supply       | Active sensor 0-10 V or 4-20 mA<br>(power supply 24 Vac/Vdc $\pm 10\%$ ), 3-4 wires<br>Common mode voltage <30 VAC<br>Maximum load: 500 Ohms (4-20 mA)<br>Minimum load: 1 K Ohms (0-10 V) |
| Consumption           | 3 VA (0~10 V) or 3 VA (4~20 mA)                                                                                                                                                           |
| European directives   | 2014/30/EU EMC; 2014/35/EU Low Voltage;<br>2011/65/EU RoHS II; 2012/19/EU WEEE                                                                                                            |
| Electrical connection | Screw terminal block for cables from 0.05 to 2.5 mm <sup>2</sup> or from 30 to 14 AWG.<br>Carried out according to the code of good practice                                              |
| Communication PC      | USB-mini DIN cable                                                                                                                                                                        |
| Environment           | Air and neutral gases                                                                                                                                                                     |

## Autozero

- To perform an autozero, unplug the 2 pressure connections tubes and press the «Autozero» key. (for other CP110 range models)
- On the CP111 transmitter, 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, «autoZ» is displayed.

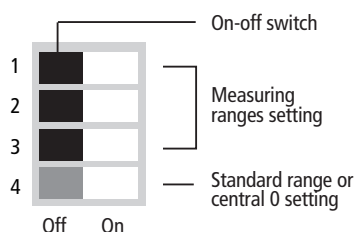
## Configuration

To configure the transmitter, unscrew the 4 screws from the housing then open it. DIP switches allowing the different settings are then accessible.

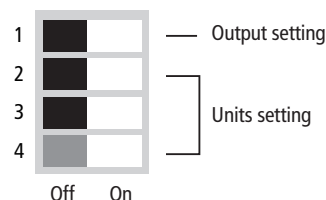


**To configure the transmitter, it must not be energized. Then, you can make the settings required, with the DIP switches (as shown on the drawing below). When the transmitter is configured, you can power it up.**

Left DIP switch



Right DIP switch



## Measuring range settings - Left DIP switch

To set a measuring range, put the 1, 2 and 3 on-off switches as indicated in the table below.

| Pa                 | 20    | 30    | 40    | 50    | 100   |
|--------------------|-------|-------|-------|-------|-------|
| mmH <sub>2</sub> O | 2.0   | 3.0   | 4.0   | 5.0   | 10.0  |
| mbar               | 0.20  | 0.30  | 0.40  | 0.50  | 1.00  |
| inWG               | 0.08  | 0.12  | 0.16  | 0.20  | 0.40  |
| mmHg               | 0.20  | 0.22  | 0.30  | 0.40  | 0.80  |
| daPa               | 2.0   | 3.0   | 4.0   | 5.0   | 10.0  |
| kPa                | 0.020 | 0.030 | 0.040 | 0.050 | 0.100 |
| hPa                | 0.20  | 0.30  | 0.40  | 0.50  | 1.00  |

## Settings and use of the transmitter

### Auto-calibration

CP 111 pressure transmitter has a temperature compensation of the gain from 0 to 50 °C and an auto-calibration process that guarantees over the time an excellent stability and a perfect reliability of the measurement on low and high ranges.

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

**Advantage:** no drift

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



Please follow carefully the combinations beside with the DIP switch. If the combination is wrongly done, the following message will appear on the display of the transmitter «CONF ERROR». In that case, you will have to unplug the transmitter, place the DIP switches correctly, and then power the transmitter up.

### Standard range / central zero setting - Left DIP switch

To set the type of measuring range, put the on-off switch 4 as indicated below:

**Example:** 0 ~ 20 Pa, Full scale / 0  
Central zero



( 0 / 20 Pa )

( -10 Pa / 0 / +10 Pa )

| Configurations | Full Scale | Central zero |
|----------------|------------|--------------|
| Combinations   |            |              |

### Output setting - Right DIP switch

To set the type of analogue output, please put the on-off switch of the output as shown below :

| Configurations | 4~20 mA | 0~10 V |
|----------------|---------|--------|
| Combinations   |         |        |

### Units setting - Right DIP switch

To set a measurement unit, put the on-off switches 2, 3 and 4 of the units as shown below :

| Pa | mmH2O | mbar | InWG | mmHG | daPa | kPa | hPa |
|----|-------|------|------|------|------|-----|-----|
|    |       |      |      |      |      |     |     |

### Configuration via LCC-S Software (option)

An easy and friendly configuration with the software !

You can configure your own intermediary ranges.



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

For example, it is possible to set the instrument from -20 to 0 Pa, from 0 to +20 Pa, or from -10 to +10 Pa ...

- To access the configuration via software :**

- Set the DIP switches as shown below. pls note: thhe on-off switch 1 of the DIP switch can be in any position (selection of the analogue output 0~10 V or 4~20 mA)
- Connect the cable of the LCC-S to the connection of the transmitter.

- Please refer to thhe user manual of the LCC100 to make the configuration.**



the configuration of the parameters can be done either with the DIP switch or via software (you can not combine both solutions).

### Configuration via PC

#### Connections

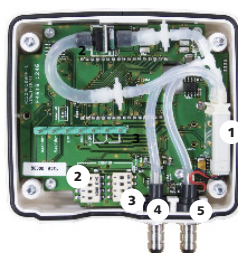
#### CP 111



Left DIP switch



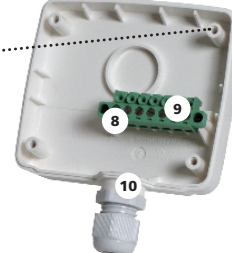
Right DIP switch



Inside the front housing



Removable front face



Fixed back housing

1. Solenoid valve
2. Left DIP switch
3. Right DIP switch
4. Pressure connections

5. Pressure connections
6. Autozero
7. LCC-S software connection
8. Output terminal block

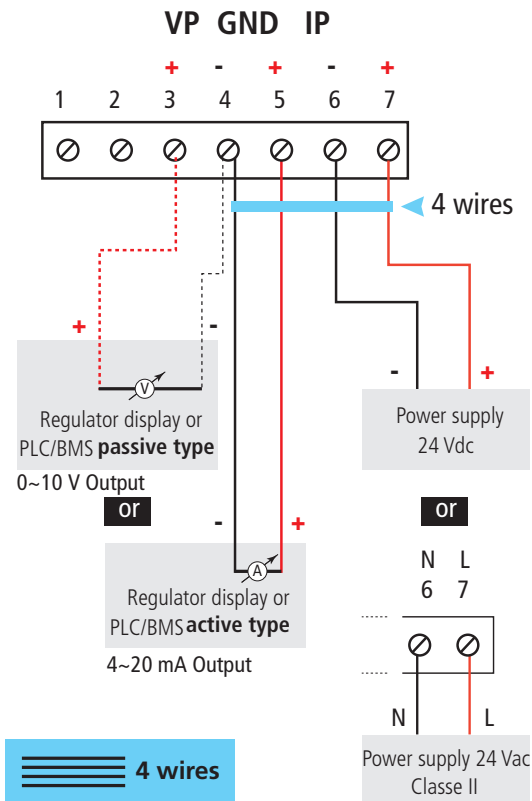
9. Power supply terminal block
10. Cable gland

## Electrical connections - as per NFC15-100 standard

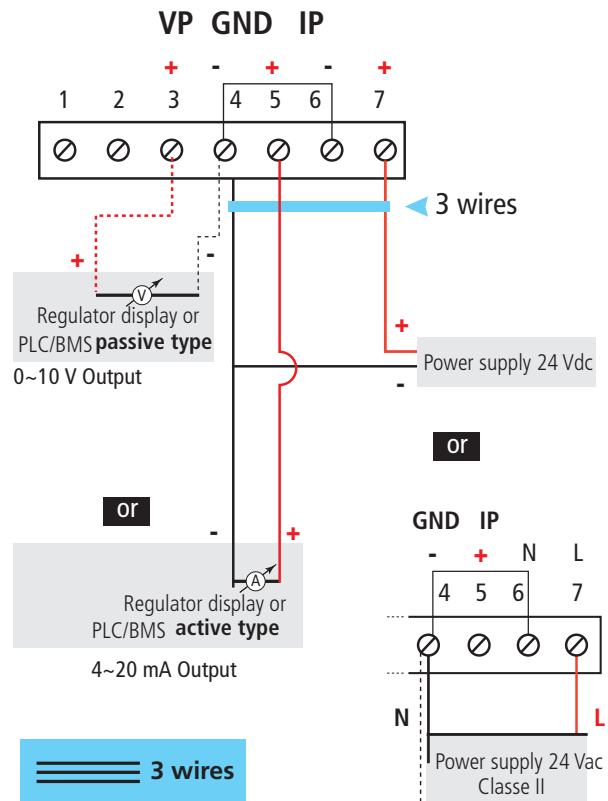


**This connection must be made by a qualified technician.**  
To make the connection, the transmitter must not be energized.

For **CP111-AO / CP111-AN** models,  
with 0~10 V or 4~20 mA output - **active, 4 wires**:



To make a 3-wires connection, before powering up the transmitter, please connect the output ground to the input ground, see below drawing.



## Mounting

To mount the transmitter, mount the ABS plate on the wall (drilling: Ø 6 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.



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

## Maintenance:

- Avoid any aggressive solvent.
- Protect the transmitter and its probes from any cleaning product containing formalin, that may be used for cleaning rooms or ducts.

## Accessories

Ref.

Description

LCC-S

Configuration software with USB cable

Connection tube

Connection fittings

## Precautions for use:

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.

## Warranty

Instruments have 1-year guarantee for any manufacturing defect.



Only the accessories supplied with the device must be used.

