KIMO INSTRUMENTS

DATA SHEET



CTV110

Temperature and air velocity transmitter

Configurable outputs

ABS V0 housing, IP65, with or without display

- Measuring range from 0 to 30 m/s and from 0 to 50 °C
- 0-10 V or 4-20 mA output, active, power supply 24 Vac/Vdc (3-4 wires)
- Alternating display of air velocity and temperature
- "¼ turn" system mounting with wall-mount plate
- Housing with simplified mounting system

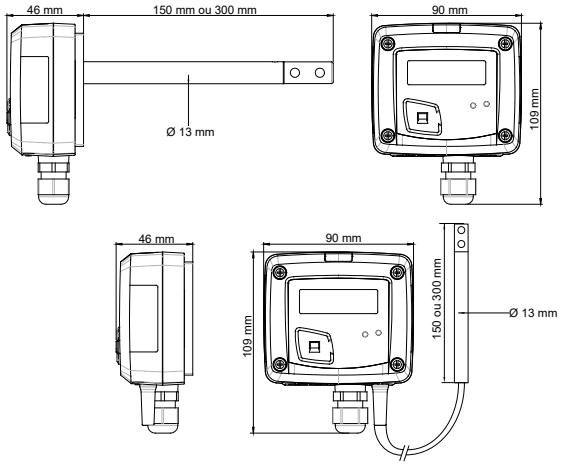
General features

	Temperature	Air velocity
Measuring ranges	From 0 to 50 °C	From 0 to 30 m/s
Accuracy*	±0.3% of reading ±0.25 °C	From 0 to 3 m/s: ±3% of reading ±0.05 m/s From 3 to 30 m/s: ±3% of reading ±0.2 m/s
Unit of measurement	°C, °F	m/s and fpm
Response time	1/e (63%) 5 s	1/e (63%) 2 s
Type of sensor	CTV110-Axx : Pt100 1/3 DIN CTV110-Vxx : CTN	Hotwire
Resolution	0.1 °C	From 0 to 3 m/s: 0.01 m/s From 3 to 30 m/s: 0.1 m/s
Type of fluid	Air and neutral gases	Filtered air
Outputs settings	From -20 to +80 °C, from -50 to +50 °C, from 0 to +100 °C and from 0 to +200 °C	From 0 to 5m/s, from 0 to 10 m/s, from 0 to 15 m/s and from 0 to 20 m/s

*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.

Features of the housing

Material	ABS V0 as per UL94
Protection	IP65
Display	LCD 10 digits. Size: 50 x 17 mm
Height of digits	Values: 10 mm. Units: 5 mm
Cable of remote probe	Length 2 m and Ø 4.8 mm in PVC
Cable gland	For cable Ø 8 mm maximum
Weight	164 g



Part number

CTV 110 — A — O — D — 150 — ●

Power supply / Output
A: Active – 24 Vac/Vdc – 4-20 mA
V: Active – 24 Vac/Vdc – 0-10 V

Display
O: With display
N: Wthout display

Probe
A: Duct
D: Remote

Probe length
150: 150 mm
300: 300 mm

Probe cable length (remote models only)
( ): cable lentgh 2 m
05M: cable length 5 m
10M: cable length 10 m

Example: CTV 110 - AOD150
CTV 110 temperature and air velocity transmitter, active 4-20 mA, with display and remote probe of 150 mm length, cable of 2 m length.

Technical specifications

Output / Power supply	Active sensor 0-10 V or 4-20 mA (power supply 24 Vac/Vdc ±10%), 3-4 wires Common mode voltage < 30 VAC Maximum load: 500 Ω (4-20 mA) / minimum load: 1 kΩ (0-10 V)
Consumption	3 VA
European directives	2014/30/EU EMC; 2014/35/EU Low Voltage; 2011/65/EU RoHS II; 2012/19/EU WEEE
Electrical connection	Screw terminal block for cables from 0.05 to 2.5 mm² or from 30 to 14 AWG 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 0 to +50 °C. In non-condensing condition. From 0 to 2000 m.
Storage temperature	From -10 to 70 °C



Simplified calibration

Electronic board and measuring element fixed to the front panel of the sensor, allowing you to leave your installation intact to configure or calibrate your instruments.

Connections

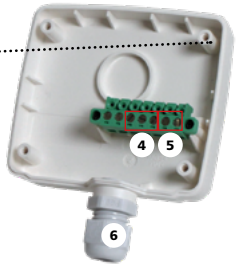
1. Switch 1 (S1)
2. Switch 2 (S2)
3. LCC-S software connection
4. Output terminal block
5. Power supply terminal block
6. Cable gland



Inside the front housing



Removable front face



Fixed back housing

Symbols

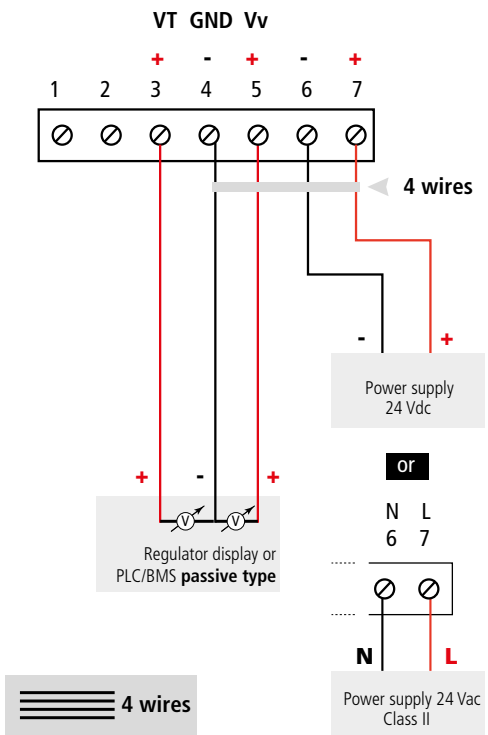
For your safety and in order to avoid any damage of the device, please follow the procedure described in this document and read carefully the notes preceded by the following symbol:

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

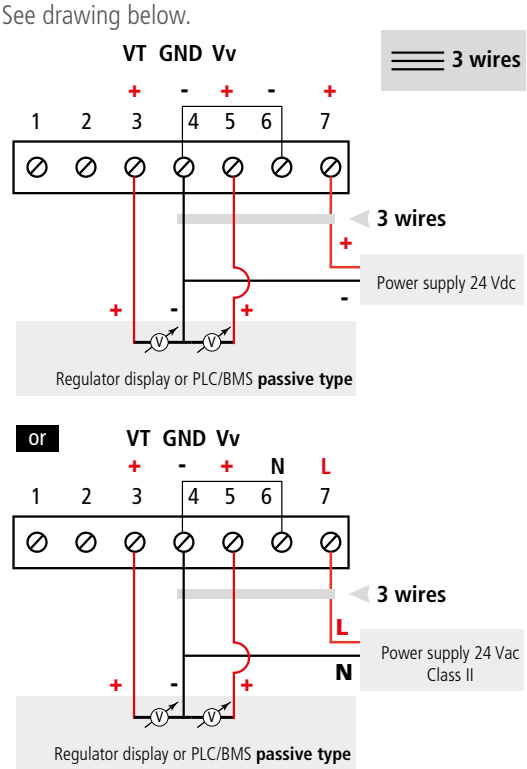
Electrical connections – as per NFC15-100 standard

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

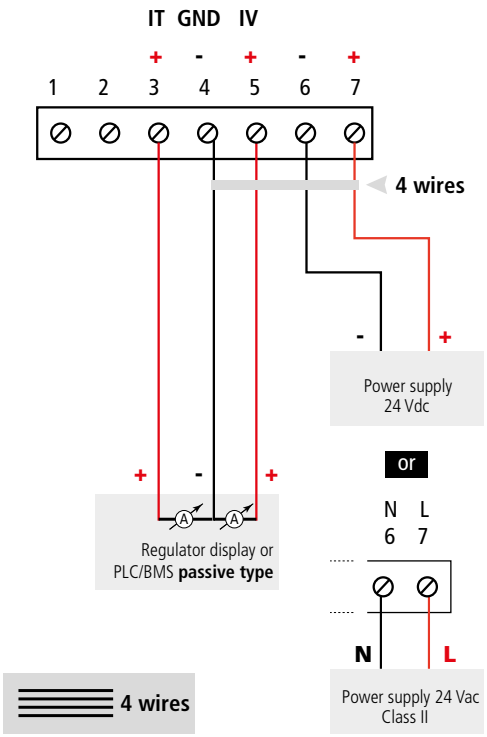
For CTV 110-VNA, CTV 110-VND, CTV 110-VOA, CTV 110-VOD models with 0-10 V output – active:



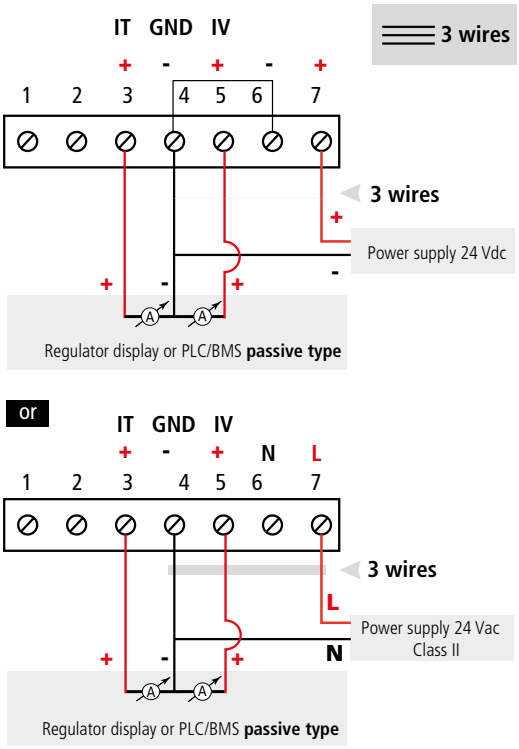
To make a 3-wire connection, before powering up the transmitter, please connect the output ground to the input ground. See drawing below.



For CTV 110-ANA, CTV 110-AND, CTV 110-AOA, CTV 110-AOD models with 4-20 mA output – active:



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



Settings and use of the transmitter

Configuration

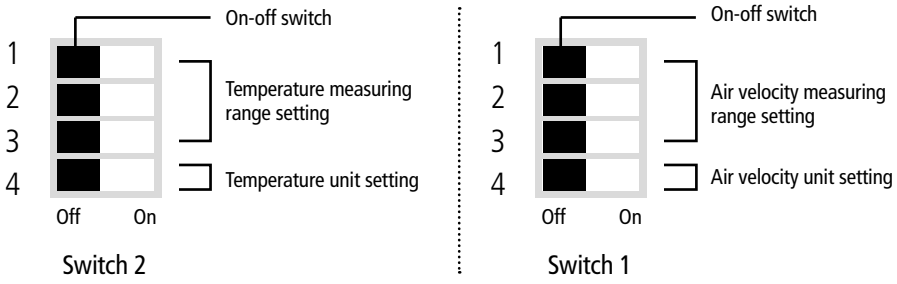
It is possible to configure the measuring ranges and the units of the transmitter via switch and/or software.

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.

Configuration by switch

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

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.



Unit settings

To set a measurement unit in air velocity and temperature, put the on-off switch 4 of the units as shown in the table beside.

Air velocity (Switch 1)	**m/s**	**fpm**
Temperature (Switch 2)	**°C**	**°F**
Combinations	1 2 3 4	1 2 3 4

Outputs setting To set a measuring range, put the on-off switches 1, 2 and 3 as shown beside.

Air velocity configuration (Switch 1)	**From 0 to 5 m/s**	**From 0 to 10 m/s**	**From 0 to 15 m/s**	**From 0 to 20 m/s**	**From 0 to 30 m/s**
Temperature configuration (Switch 2)	**From 0 to 50 °C**	**From -20 to 80 °C**	**From -50 to 50 °C**	**From 0 to 100 °C**	**From 0 to 200 °C**
Combinations					

Configuration via LCC-S software (option)

An easy and friendly configuration with the software!
You can configure your own intermediary ranges.

Example: for a 0-30 m/s transmitter, the minimum delta of the range is 5 m/s. The instrument could be then configured from 5 to 10 m/s.

To access the configuration via software:
- Set the DIP switches as shown beside
- Connect the cable of the LCC-S to the connection of the transmitter.

Configuration via PC



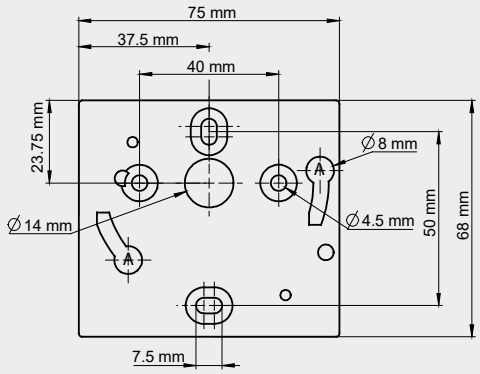
Switch 1

Please refer to the user manual of the LCC-S 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).**

Mounting

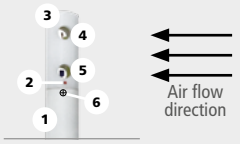
To mount the transmitter, mount the ABS plate on the wall (drilling: Ø 6 mm, screws and pins are supplied).
Insert the transmitter on the fixing plate (see A on the drawing beside).
Rotate the housing in clockwise direction until you hear a "click" which confirms that the transmitter is correctly installed.



Positioning of the measuring element in the air flow

The probe must be placed perpendicular to the air flow, as shown beside.
For the duct mount probes, it is possible to place the probe's head front of the air flow, and keep the housing straight:

- Locate the red point marked on the probe's head.
- Remove the screw located on the tip of the probe's body.
- Rotate the probe's head by ¼ turn, ½ turn or ¾ turn, in order to place the red spot front to the air flow.
- Replace the screw on the probe's body.



1. Body of the probe
2. Red spot (mark)
3. Head of the probe
4. Sensitive element (air velocity)
5. Sensitive element (temperature)
6. Screw

The red point on the probe's head is a mark that must be placed face to the airflow. Then, the probe is perpendicular to the airflow.

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.

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.

Options and accessories

Ref.	Description
KIAL-100A	Power supply class 2, 230 Vac input, 24 Vac output
KIAL-100C	Power supply class2, 230 Vac input, 24 Vdc output
LCC-S	Configuration sofwtare with USB cable

Sliding fittings, mounting flanges, mounting bracket for hot-wire probe

ⓘ Only the accessories supplied with the device must be used.

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