

## Vane probe thermo-anemometer LV 110 – LV 111 – LV 117

### KEY POINTS

- Airflow calculation
- Automatic average
- Hold-min-max function
- Selection of units

### TECHNICAL FEATURES

|                                                        |                                                                                                                                         |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Measuring elements</b>                              | <b>Air velocity</b> : Hall effect sensor<br><b>Ambient temperature</b> : NTC sensor                                                     |
| <b>Display</b>                                         | 4 lines, LCD technology. Sizes 50 x 36 mm<br>2 lines of 5 digits with 7 segments (value)<br>2 lines de 5 digits with 16 segments (unit) |
| <b>Vane probe diameter</b>                             | <b>LV111</b> : Ø 14 mm / <b>LV117</b> : Ø 70 mm<br><b>LV110</b> : Ø 100 mm                                                              |
| <b>Cable</b>                                           | Coiled, lg. 0.45 m, extension : 2.4 m                                                                                                   |
| <b>Housing</b>                                         | ABS, protection IP54                                                                                                                    |
| <b>Keypad</b>                                          | 5 keys                                                                                                                                  |
| <b>European directives</b>                             | 2004/108/EC EMC ; 2006/95/EC Low Voltage ; 2011/65/EU RoHS II ;<br>2012/19/EU WEEE                                                      |
| <b>Power supply</b>                                    | 4 batteries AAA LR03 1.5 V                                                                                                              |
| <b>Battery life</b>                                    | 120 hours                                                                                                                               |
| <b>Ambience</b>                                        | Neutral gas                                                                                                                             |
| <b>Conditions of use (instrument)<br/>(°C, %RH, m)</b> | From 0 to +50 °C. In non condensing conditions. From 0 to 2000 m.                                                                       |
| <b>Operating temperature (probe)</b>                   | From 0 to +50 °C                                                                                                                        |
| <b>Storage temperature</b>                             | From -20 to +80 °C                                                                                                                      |
| <b>Auto shut-off</b>                                   | Adjustable from 0 to 120 min                                                                                                            |
| <b>Weight</b>                                          | 390 g                                                                                                                                   |



### SPECIFICATIONS

| Models              | Measuring units | Measuring range      | Accuracy <sup>1</sup>                                                                       | Resolution          |
|---------------------|-----------------|----------------------|---------------------------------------------------------------------------------------------|---------------------|
| <b>Air velocity</b> |                 |                      |                                                                                             |                     |
| LV111 : Ø 14 mm     | m/s, fpm, km/h  | From 0.8 to 25 m/s   | From 0.8 to 3 m/s : ±3% of reading ±0.1 m/s<br>From 3.1 to 25 m/s : ±1% of reading ±0.3 m/s | 0.1 m/s             |
| LV110 : Ø 100 mm    | m/s, fpm, km/h  | From 0.3 to 35 m/s   | From 0.3 to 3 m/s : ±3% of reading ±0.1 m/s<br>From 3.1 to 35 m/s : ±1% of reading ±0.3 m/s | 0.01 m/s<br>0.1 m/s |
| LV117 : Ø 70 mm     | m/s, fpm, km/h  | From 0.4 0 to 35 m/s | From 0.4 to 3 m/s : ±3% of reading ±0.1 m/s<br>From 3.1 to 35 m/s : ±1% of reading ±0.3 m/s | 0.1 m/s             |

### Airflow

|            |                                                |                                    |                                                |                     |
|------------|------------------------------------------------|------------------------------------|------------------------------------------------|---------------------|
| All models | m <sup>3</sup> /h, cfm, l/s, m <sup>3</sup> /s | From 0 to 99 999 m <sup>3</sup> /h | ±3% of reading ±0.03 * area (cm <sup>2</sup> ) | 1 m <sup>3</sup> /h |
|------------|------------------------------------------------|------------------------------------|------------------------------------------------|---------------------|

### Temperature

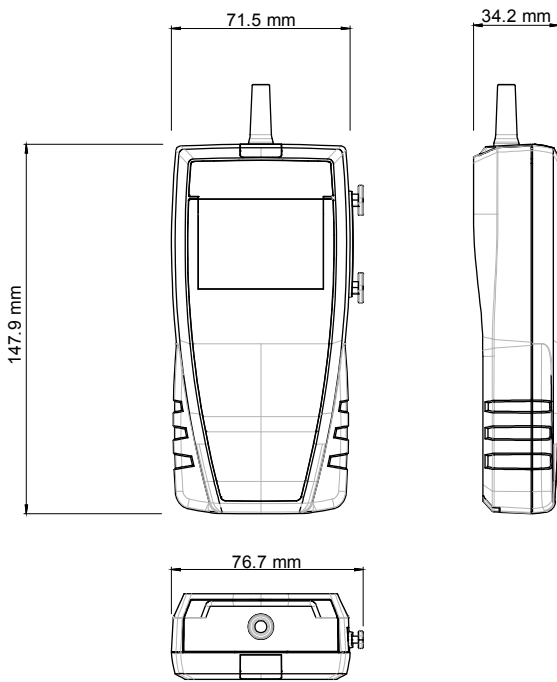
|            |        |                    |                           |        |
|------------|--------|--------------------|---------------------------|--------|
| All models | °C, °F | From -20 to +80 °C | ±0.4 % of reading ±0.3 °C | 0.1 °C |
|------------|--------|--------------------|---------------------------|--------|

### FUNCTIONS

- Airflow calculation
- Airflow calculation with cone (LV 110/117)
- Automatic average
- Selection of units (air velocity, airflow and temperature)
- Hold function
- Display of minimum and maximum values
- Configurable auto shut-off
- Backlight
- Detection of flow direction (LV 110/117)
- Selection of the type of cone
- Dimensions of rectangular and circular duct

\*Except class 110 S

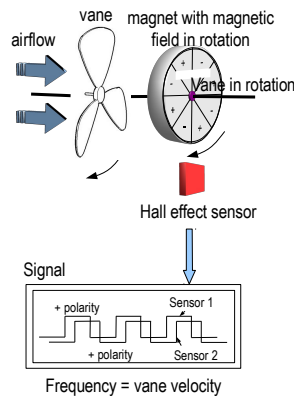
## DIMENSIONS



## OPERATING PRINCIPLES

### Air velocity : Hall effect sensor

Rotation of the vane probe leads to a circular magnet of 8 poles. A dual Hall effect sensor, placed next to the magnet captures the signals of magnetic field polarity transition. The sensor signal is converted to electrical frequency and is proportional to the rotation velocity of the vane probe. Signal chronology allows to determine the rotation direction.



### Thermometer : CTN probe

Negative temperature coefficient probes are thermistors with a resistance that decreases with temperature according to the equation below:

$$R_{(T)} = R_{(T_0)} e^{\left( \frac{\alpha}{100} \times (T_0 + 273.15)^2 \times \left( \frac{1}{T + 273.5} - \frac{1}{T_0 + 273.5} \right) \right)}$$

$R_T$  = resistance sensor value at temperature  $T$

$R(T_0)$  = resistance sensor value at reference temperature  $T_0$

$T$  and  $T_0$  in °C

$\alpha$  and  $T_0$  sensor specific constants

## SUPPLIED WITH

Instruments are supplied with :

- LV 111 : vane probe Ø 14 mm
- LV 117 : vane probe Ø 70 mm
- LV 110 : vane probe Ø 100 mm
- Calibration certificate\*
- Transport case (ref : ST 110)



\*Except class 110 S

## ACCESSORIES

**CQ 15** : Magnetic protective housing



**RTE** : Telescopic extension, length 1m, with index at ±90°

**K 25 - 85** : Airflow cones for anemometer LV 110



**MT 51** : ABS transport case



## MAINTENANCE

We carry out calibration, adjustment and maintenance of your instruments to guarantee a constant level of quality of your measurements. As part of Quality Assurance Standards, we recommend you to carry out a yearly checking.

## GUARANTEE

Instruments have 1-year guarantee for any manufacturing defect (return to our After-Sales Service required for appraisal).

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