sauermann®

DATA SHEET

LV 111-117-110

Vane probe thermo-anemometer

- **Airflow calculation**
- **Selection of units**
- **Hold-min-max functions**
- **Automatic average**

Features

- Airflow calculation
- Airflow calculation with cone (LV 110/117)
- Automatic average
- Selection of units (air velocity, airflow and temperature)
- Affichage du minimum et du maximum
- Configurable auto shut-off
- Detection of flow direction (LV 110/117)
- Selection of the type of cone

Technical specifications

Parameters	Accuracy[1]	Measuring range	Resolution
Air velocity	**LV111 (Ø 14 mm):** from 0.8 to 3 m/s: ±3% of reading ±0.1 m/s From 3.1 to 25 m/s: ±1% of reading ±0.3 m/s	From 0.8 to 25 m/s	0.1 m/s
	LV110 (Ø 100 mm): from 0.3 to 3 m/s: ±3% of reading ±0.1 m/s From 3.1 to 35 m/s: ±1% of reading ±0.3 m/s	From 0.3 to 35 m/s	0.01 m/s, 0.1 m/s
	LV 117 (Ø 70 mm): from 0.4 to 3 m/s: ±3% of reading ±0.1 m/s From 3.1 to 35 m/s: ±1% of reading ±0.3 m/s	From 0.4 to 35 m/s	0.1 m/s
Airflow All models	±3 % of reading ±0.03 x area (cm²)	From 0 to 99 999 m³/h	1 m³/h
Temperature All models	±0.4 % of reading ±0.3 °C	From -20 to +80 °C	0.1 °C

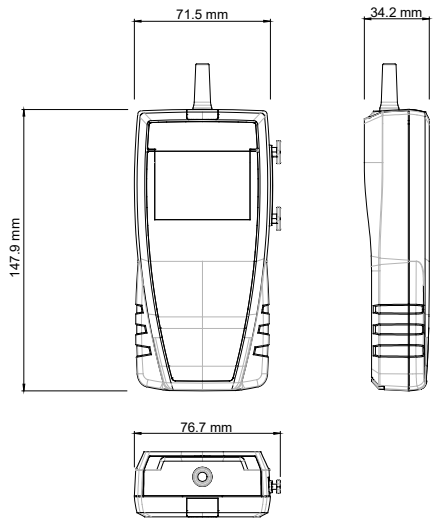
*All the accuracies indicated in this technical datasheet were stated in laboratory conditions, and can be guaranteed for measurements carried out in the same conditions, or carried out with calibration compensation.

General features

Measuring units	LV 111 - LV 117 - LV 110: m/s, fpm, km/h All models (airflow): m³/h, cfm, l/s, m³/s All models (temperature): °C, °F
Measuring elements	Air velocity: Hall effect sensor Ambient temperature: NTC sensor
Display	4 lines, LCD technology. Dimensions 50 x 36 mm. 2 lines of 5 digits with 7 segments (value) 2 lines of 5 digits with 16 segments (unit)
Vane diameter	LV111: Ø 14 mm LV117: Ø 70 mm LV110: Ø 100 mm
Cable	Coiled, 0.45 m length, extension 2.4 m
Housing	ABS, protection IP54
Keypad	5 keys
European directives	2014/30/EU EMC; 2014/35/EU Low Voltage; 2011/65/EU RoHS II; 2012/19/EU WEEE
Power supply	4 batteries AAA LR03 1.5 V
Battery life	58 hours(1)
Ambience	Neutral gas
Conditions of use (°C, %RH, m)	From 0 to +50 °C. In non condensing conditions. From 0 to 2000 m.
Operating temperature (probe)	From 0 to +50 °C
Storage temperature	From -20 to +80 °C
Auto shut-off	Adjustable from 0 to 120 min
Weight	390 g

(1)Battery life given at 20 °C with alkaline batteries.

Dimensions (in mm)



Kit content

- 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)

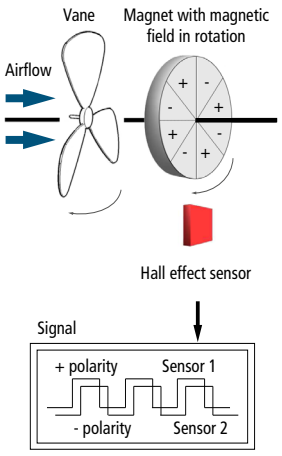
Accessories

Name	Reference
Coque Magnetic protective housing	CQ 15
Telescopic exxtension 1 m length, with index at ±90°	RTE
Airflow cones for LV 110 anemometer	K 25 – 85
ABS transport case	MT 51

Operating principle

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: NTC probe

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

$$R_{(T)} = R_{(T0)} e^{\left(\frac{\alpha}{100} \times (T_0 + 273.15)^2 \times \left(\frac{1}{T + 273.5} - \frac{1}{T_0 + 273.5}\right)\right)}$$

RT = resistance sensor value at temperature T
$R(T_0)$ = resistance sensor value at reference temperature T_0
T and T_0 in °C
α and T_0 sensor specific constants

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.

Warranty

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