sauermann®

DATA SHEET

VT 110 - VT 115

Hotwire thermo-anemometer

- **Easy to use**
- **Selection of units**
- **Hold-min-max functions**
- **Adjustable blacklight**

Features

- Airflow calculation
- Airflow calculation with cone
- Selection of units (air velocity, airflow and temperature)
- Display of minimum and maximum values
- Adjustable auto shut-off
- Selection of cone
- Dimensions of rectangular and circular duct
- Automatic average
- Air velocity compensation in atmospheric pressure

Technical specifications

Parameters	Accuracy**	Measuring range	Resolution
Velocity (hotwire)	From 0.15 to 3 m/s: ±3% of reading ±0.05 m/s From 3.1 to 30 m/s: ±3% of reading ± 0.2 m/s	From 0.15 to 30 m/s	0.01 m/s 0.1 m/s
Airflow	±3% of reading ±0.03 x surface (cm²)	From 0 to 99 999 m³/h	1 m³/h
Temperature	±0.3% of reading ± 0.25 °C	From -20 to +80 °C	0.1 °C

*Except class 110 S which is supplied with adjustment certificate.

**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.

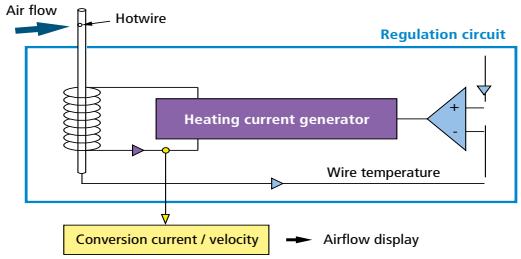
General features

Measuring units	**Velocity (hotwire):** m/s, fpm, km/h **Airflow:** m³/h, cfm, l/s, m³/s **Temperature:** °C, °F
Measuring elements	Hotwire air velocity: thermistance with a negative temperature coefficient. 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 de 5 digits with 16 segments (unit)
Type of probe	VT 110: Stainless hotwire probe VT 115: Telescopic hotwire probe bent at 90°
Cable	Straight, 2 m length
Housing	ABS, protection IP54
Keypad	5 keys
European directives	Directives EMC 2014/30/EU and EN 61010-1
Power supply	4 batteries AAA LR03 1.5 V
Battery life	180 hours
Ambience	Neutral gas
Conditions of use (°C,% RH, m)	From 0 to +50 °C. In non-condensing conditions. From 0 to 2000 m.
Oprating temperature (probe)	From 0 to +50 °C
Storage temperature	From -20 to +80 °C
Auto shut-off	Adjustable from 0 to 120 min
Weight	250 g

Operating principle

Hotwire anemometer

A wire is continuously heated at a superior temperature than ambient and continuously cooled by airflow. Constant temperature is maintained by a regulation circuit. The heating current is proportional to the airflow velocity.



Thermometer: NTC probe

Probes with a negative temperature coefficient are thermistors with a resistance that decreases with the temperature, according to the equation below:

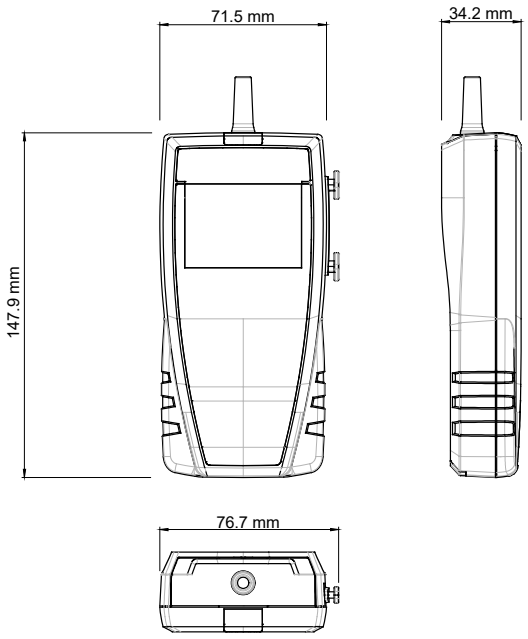
$$R_{(T)}=R_{(T0)}e^{(\frac{\alpha}{100} \times (T_0 + 273.15)^2 \times (\frac{1}{T + 273.5} - \frac{1}{T_0 + 273.5}))}$$

RT= resistance sensor value at temperature T
$R(T_0)$ = resistance value of the temperature sensor at reference 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.

Dimensions (in mm)



Kit content

Designation	Sales reference	Description
VT 110	24621	Thermo-anemometer with straight hotwire probe, calibration certificate and soft transport case
VT 110 S	24714	Thermo-anemometer with straight hotwire probe, adjustment certificate and soft transport case
VT 115	24622	Thermo-anemometer with telescopic hotwire probe bent at 90°, calibration certificate and soft transport case
VT 115 S	24723	Thermo-anemometer with telescopic hotwire probe bent at 90°, adjustment certificate and soft transport case

Certificates

Calibration certificate: A calibration is a comparison of the values of the instrument with those of a standard to determine a measurement error with an associated calibration uncertainty. A calibration certificate guarantees the traceability of measurements to national standards.

Adjustment certificate: An adjustment certificate is a document that ensures the conformity of the device with the tolerances of the data sheet. It ensures that the device has followed the manufacturing process.

Accessories

Designation	Sales reference	Description
CQ 15	24633	Magnetic protective housing
K 35	10374	Airflow cone (200 x 200 mm, airflow: 10 to 400 m³/h).
K 75	10637	Airflow cone (300 x 300 mm, airflow: 30 to 750 m³/h).
K120	11595	Airflow cone (450 x 450 mm, airflow: 50 to 1200 m³/h).
K150	11926	Airflow cone (550 x 100 mm, airflow: 10 to 400 m³/h).
MT 51	24636	ABS transport case
ST 110	24635	Soft transport case