KIMO INSTRUMENTS

Technical Data Sheet

Pressure / Temperature / Humidity / Air Velocity / Airflow / Sound level

CE

Thermo-hygrometer-anemometer

VT 210

KEY POINTS

- Measurement of temperature, hygrometry and air velocity (depending on models)
- Interchangeable modules
- 2 inputs fot Pt100 temperature (from -200 to +600°C)
- Up to 6 measurements simultaneously
- Device/probe wireless communication

CONNECTIONS

Interchangeable measurement modules

1 device = several possible ranges and parameters

Wireless connection

Device/probe wireless connection

SMART-2014 system

Wireless and wired probes automatically recognized

REFERENCES

VT 210

Only portable instrument

VT 210 L / VT 210 TL

VT210 + SH100 probe (Ø100 mm vane probe of air velocity, airflow and temperature)
VT210 + SHT100 probe (Ø100 mm telescopic vane probe of air velocity, airflow and temperature)

VT 210 M

VT210 + SMT 900 probe (telescopic multifunction probe of air velocity, airflow, relative humidity and temperature)

VT 210 P / VT 210 TP

VT210 + SH14 probe (Ø14 mm vane probe of air velocity, airflow and temperature)
VT210 + SHT14 probe (Ø14 mm telescopic vane probe of air velocity, airflow and temperature)

VT 210 H / VT 210 TH

VT210 + SH70 probe (Ø70 mm vane probe of air velocity, airflow and temperature)
VT210 + SHT70 probe (Ø70 mm telescopic vane probe of air velocity, airflow and temperature)

VT 210 F / VT 210 TF

VT210 + SFC300 probe (hotwire probe)
VT210 + SFC900 probe (hotwire telescopic probe)

The new probes use a mini-DIN cable unique and pluggable that fits on every probes. Each device is supplied with 2 cables of this type*.
The instruments are supplied in a transport case with a calibration certificate, a charger and a USB cable.

** Except VT210F and VT210P supplied with 1 cable.*

SPECIFICATIONS OF THE PROBES

Probes	Units	Measuring ranges	Accuracies*	Resolutions
Hotwire probe SFC 300 / SFC 900	Air velocity: m/s, fpm, km/h, mph	From 0.15 to 1 m/s	±2%of reading ±0.03 m/s (Specific adjustment and calibration in option)	0.01 m/s
		From 0.15 to 3 m/s From 3.1 to 30 m/s	±3% of reading ±0.03 m/s ±3% of reading ±0.1 m/s	0.01 m/s 0.1 m/s
	Airflow: m^3/h, cfm, l/s, m^3/s	From 0 to 99 999 m^3/h	±3% of reading or ±0.03 *area surface (cm^2)	1 m^3/h
	Temperature: °C, °F	From -20 to +80°C	±0.3% of reading ±0.25°C	0.1 °C
Ø14 mm vane probe SH 14 / SHT 14	Air velocity: m/s, fpm, km/h, mph	From 0 to 3 m/s From 3.1 to 25 m/s	From 0.8 to 3 m/s : ±3% of reading ±0.1m/s From 3.1 to 25 m/s : ±1% of reading ±0.3 m/s	0.1 m/s
	Airflow: m^3/h, cfm, l/s, m^3/s	From 0 to 99 999 m^3/h	±3% of reading or ±0.03 *area surface (cm^2)	1 m^3/h
	Temperature: °C, °F	From -20 to +80°C	±0.4% of reading ±0.3°C	0.1°C
Ø70 vane probe SH 70 / SHT 70	Air velocity: m/s, fpm, km/h, mph	From -5 to 3 m/s From 3.1 to 35 m/s	From 0.4 to 3 m/s : ±3% of reading ±0.1m/s From 3.1 to 35 m/s : ±1% of reading ±0.3 m/s	0.1 m/s
	Airflow: m^3/h, cfm, l/s, m^3/s	From 0 to 99 999 m^3/h	±3% of reading or ±0.03*area surface (cm^2)	1 m^3/h
	Temperature: °C, °F	From -20 to +80°C	±0.4% of reading ±0.3°C	0.1°C
Ø100 vane probe SH 100 / SHT 100	Air velocity: m/s, fpm, km/h, mph	From -5 to 3 m/s From 3.1 to 35 m/s	From 0.3 to 3 m/s : ±3% of reading ±0.1m/s From 3.1 to 35 m/s : ±1% of reading ±0.3 m/s	0.01 m/s 0.1 m/d
	Airflow: m^3/h, cfm, l/s, m^3/s	From 0 to 99 999 m^3/h	±3% of reading or ±0.03*area surface (cm^2)	1 m^3/h
	Temperature: °C, °F	From -20 to +80°C	±0.4% of reading ±0.3°C	0.1°C
Multifonction probe SMT 900	Air velocity: m/s, fpm, km/h, mph	From 0.15 to 3 m/s From 3.1 to 30 m/s	± 3% of reading ± 0.03 m/s ± 3% of reading ± 0.1 m/s	0.01 m/s 0.1 m/s
	Air flow: m^3/h, cfm, l/s, m^3/s	From 0 to 99999 m^3/h	±3%of reading or ±0.03*sheath surface (cm^2)	1 m^3/h
	Relative humidity:%RH	From 0 to 100%HR	**Accuracy (Repeatability, linearity, Hysteresis) :** ±1.8%RH (from 15°C to 25°C) **Factory calibration uncertainty:** ±0.88%RH **Temperature dependence :** ±0.04 x (T-20) %RH (if T<15°C or T>25°C)	0.1%RH
	Temperature: °C, °F	From -20 to +80°C	±0.3% de la lecture ±0.25°C	0.1°C

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

VT210 instruments have the following functions for the measurement of temperature, hygrometry and air velocity :

CLIMATIC CONDITIONS MODULE:

- Selection of units
- Hold, min. and max. values

HYGROMETRY/TEMPERATURE PROBE:

- Audible alarm (two higher thresholds)
- Selection of units
- Hold, min. and max. values
- Stockage
- Impression

THERMO-ANEMOMETER:

- Calculation of airflow in ducts and with cones
- Selection of the section of the duct
- Automatic average
- Point/point average
- Automatic point/point average
- Integrated Pt100 temperature
- Hold, min. and max. values, standard deviation
- K2 factor

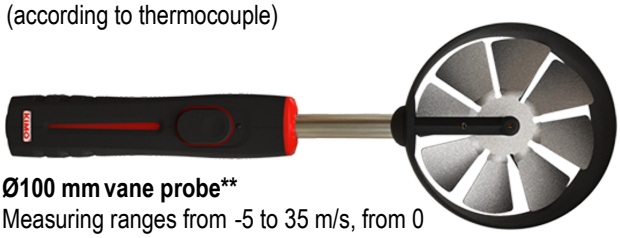
TECHNICAL SPECIFICATIONS OF THE VT 210

Connections	2 mini-DIN connections SMART-2014 probes and 1 micro-USB port for charging and PC connection
Power supply	Lithium-Ion battery
Autonomy	44 hwith hot wire probe / 65 h with thermocouple module
Memory capacity	Up to 1000 dataset of 20 000 points
Conditions of use (°C/%RH/m)	From 0 to +50°C. In non-condensing condition. From 0 to 2000 m.
Storage temperature	From -20 to +80°C
Auto shut-off	Adjustable from 15 to 120 minutes or Off
Weight	485 g
Operating environment	Neutral gas
European directives	2014/30/EU EMC; 2014/35/EU Low Voltage; 2011/65/EU RoHS II; 2012/19/EU WEEE
Languages	French, English, Dutch, German, Italian, Portuguese, Swedish, Norwegian, Finn, Danish, Chinese, Japanese

AVAILABLE PROBES AND MODULES (OPTIONAL)

4 thermocouple channels module (M4TC)
Measuring range from -200 to +1760°C (according to thermocouple)

Climatic conditions module (MCC)
Measuring ranges from 0 to +50°C, from 800 to 1100 hPa and from 0 to 100%RH



Ø100 mm vane probe**
Measuring ranges from -5 to 35 m/s, from 0 to 99 999 m3/h and from -20 to +80°C

Wireless Ø70 mm vane probe**
Measuring ranges from -5 to 35 m/s, from 0 to 99 999 m3/h and from -20 to +80°C

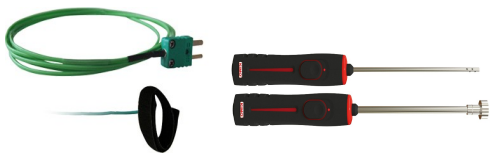
Hygrometry probe*
Measuring ranges from 0 to 100%RH, from -50 to +100°Ctd and -20 to +80°C

Hygrometry probe*
Measuring ranges from 0 to 100%HR, from -50 to +100°Ctd and from -40 to +180°C

Optical tachometry probe (STA)
Measuring range from 0 to 60 000 tr/min

Contact tachometry probe (STA)
Measuring range from 0 to 20 000 tr/min

Airflow cones
Measuring range from 10 to 1200 m^3/h depending on modele



Large choice of temperature probes (see related datasheet) : ambient / contact / penetration / immersion...

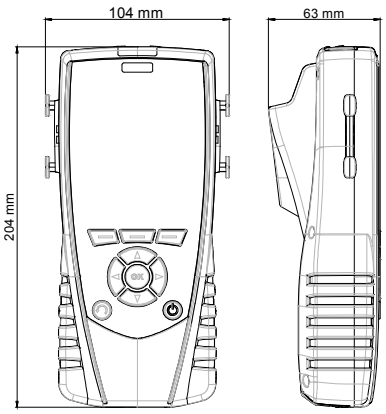
**Also available in wireless model*
***Also available in telescopic model and in wireless model*

DELIVERY KITS AND OPTIONS

Description	VT 210	VT 210 H	VT 210 TH	VT 210 L	VT 210 TL	VT 210 P	VT 210 TP	VT 210 F	VT 210 TF	VT 210 M
Hot wire probe (SFC 300)	○	○	○	○	○	○	○	√	○	○
Telescopic hot wire probe (SFC 900)	○	○	○	○	○	○	○	○	√	○
Air velocity measurement probe for laboratory hood (SFC 300 S)	○	○	○	○	○	○	○	○	○	○
Ø14 mm vane probe (SH 14)	○	○	○	○	○	√	○	○	○	○
Ø14 mm telescopic vane probe (SHT 14)	○	○	○	○	○	○	√	○	○	○
Ø70 mm vane probe (SH 70)	○	√	○	○	○	○	○	○	○	○
Ø70 mm telescopic vane probe (SHT 70)	○	○	√	○	○	○	○	○	○	○
Ø70 mm wireless vane probe (SHF 70)	○	○	○	○	○	○	○	○	○	○
Ø100 mm vane probe (SH 100)	○	○	○	√	○	○	○	○	○	○
Ø100 mm telescopic vane probe (SHT 100)	○	○	○	○	√	○	○	○	○	○
Ø100 mm wireless vane probe (SHF 100)	○	○	○	○	○	○	○	○	○	○
Multifonction probe (SMT 900)	○	○	○	○	○	○	○	○	○	√
ABS hygrometry probe (SHR 110)	○	○	○	○	○	○	○	○	○	○
Wireless ABS hygrometry probe (SHRF 110)	○	○	○	○	○	○	○	○	○	○
Stainless steel hygrometry probe (SHR 300)	○	○	○	○	○	○	○	○	○	○
Wireless stainless steel hygrometry probe (SHRF 300)	○	○	○	○	○	○	○	○	○	○
Tachometry probe (STA)	○	○	○	○	○	○	○	○	○	○
Thermocouple K, J, N, T and S probe	○	○	○	○	○	○	○	○	○	○
Pt100 SMART-2014 probe	○	○	○	○	○	○	○	○	○	○
Wireless Pt100 probe	○	○	○	○	○	○	○	○	○	○
4 thermocouple channels module (M4TC)	○	○	○	○	○	○	○	○	○	○
Climatic conditions module (MCC)	○	○	○	○	○	○	○	○	○	○
Calibration certificate	○	√	√	√	√	√	√	√	√	√
Transport case	√	√	√	√	√	√	√	√	√	√
Additional battery	○	○	○	○	○	○	○	○	○	○

√ : supplied with ○ : optional

FEATURES OF THE HOUSING



Material: ABS/PC and elastomer

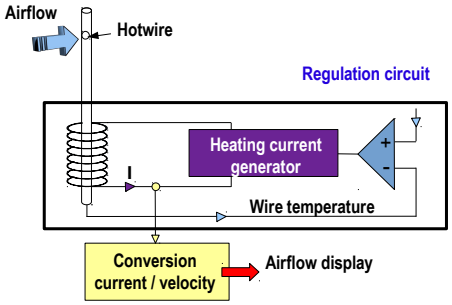
Protection: IP54

Display: LCD 120 x 160 px
Dimensions: 58 x 76 mm
Backlight
Display of 6 measurements including 3 simultaneously

Key pad: Elastomer, 10 keys

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: Pt100 probe
Pt100 is a resistance with a positive temperature coefficient which varies according to the temperature. The higher the temperature is, the more the value of the resistance increases.
ie: for 0°C ≈ 100 Ω
for 100°C ≈ 138.5 Ω.

ACCESSORIES

Datalogger: PC software for data recording and processing.

CSM: Mini-DIN / mini-DIN cable for probe

SAD: Backpack

KIMP23: Infrared printer

RTE: Telescopic extension lenght 1m bent at 90° for measuring probe

RTR-3500: wheeled telescopic tripod for radiofrequency probes. 1.20 to 3.50 m length, ajustable at 90°.

Only the accessories supplied with the device must be used.

MAINTENANCE

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

WARRANTY PERIOD

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

PRECAUTIONS FOR USE

Please 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.

大華高科股份有限公司
www.taiwah.com.tw info@taiwah.com.tw
台北 TEL: (02) 2592 - 5119 Fax: (02) 2592- 3577
台中 TEL: (04) 2707 - 2269 Fax: (04) 2707- 1799
台南 TEL: (06) 243 - 2338 Fax: (06) 243 - 2339

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