

## Thermo-hygrometer-anemometer VT 210

### KEY POINTS

- Measurement of temperature, hygrometry and air velocity (depending on models)
- 2 inputs for Pt100 temperature (from -200 to +600°C)
- Up to 6 measurements simultaneously
- Interchangeable modules
- 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         |
|-------------------------------------------------|--------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Hotwire probe<br/>SFC 300 / SFC 900</b>      | Air velocity: m/s, fpm,<br>km/h, mph | From 0.15 to 1 m/s                       | ±2% of reading ±0.03 m/s<br>(Specific adjustment and calibration in option)                                                                                                                                          | 0.01 m/s            |
|                                                 |                                      | From 0.15 to 3 m/s<br>From 3.1 to 30 m/s | ±3% of reading ±0.03 m/s<br>±3% of reading ±0.1 m/s                                                                                                                                                                  | 0.01 m/s<br>0.1 m/s |
|                                                 | Airflow: m³/h, cfm,<br>l/s, m³/s     | From 0 to 99 999 m³/h                    | ±3% of reading or ±0.03 *area surface (cm²)                                                                                                                                                                          | 1 m³/h              |
|                                                 | Temperature: °C, °F                  | From -20 to +80 °C                       | ±0.3% of reading ±0.25 °C                                                                                                                                                                                            | 0.1 °C              |
| <b>Ø14 mm vane<br/>probe<br/>SH 14 / SHT 14</b> | Air velocity: m/s, fpm,<br>km/h, mph | From 0 to 3 m/s<br>From 3.1 to 25 m/s    | From 0.8 to 3 m/s : ±3% of reading ±0.1m/s<br>From 3.1 to 25 m/s : ±1% of reading ±0.3 m/s                                                                                                                           | 0.1 m/s             |
|                                                 | Airflow: m³/h, cfm,<br>l/s, m³/s     | From 0 to 99 999 m³/h                    | ±3% of reading or ±0.03 *area surface (cm²)                                                                                                                                                                          | 1 m³/h              |
|                                                 | Temperature: °C, °F                  | From -20 to +80 °C                       | ±0.4% of reading ±0.3 °C                                                                                                                                                                                             | 0.1 °C              |
| <b>Ø70 vane probe<br/>SH 70 / SHT 70</b>        | Air velocity: m/s, fpm,<br>km/h, mph | From -5 to 3 m/s<br>From 3.1 to 35 m/s   | From 0.4 to 3 m/s : ±3% of reading ±0.1m/s<br>From 3.1 to 35 m/s : ±1% of reading ±0.3 m/s                                                                                                                           | 0.1 m/s             |
|                                                 | Airflow: m³/h, cfm,<br>l/s, m³/s     | From 0 to 99 999 m³/h                    | ±3% of reading or ±0.03*area surface (cm²)                                                                                                                                                                           | 1 m³/h              |
|                                                 | Temperature: °C, °F                  | From -20 to +80 °C                       | ±0.4% of reading ±0.3 °C                                                                                                                                                                                             | 0.1 °C              |
| <b>Ø100 vane probe<br/>SH 100 / SHT 100</b>     | Air velocity: m/s, fpm,<br>km/h, mph | From -5 to 3 m/s<br>From 3.1 to 35 m/s   | From 0.3 to 3 m/s : ±3% of reading ±0.1m/s<br>From 3.1 to 35 m/s : ±1% of reading ±0.3 m/s                                                                                                                           | 0.01 m/s<br>0.1 m/d |
|                                                 | Airflow: m³/h, cfm,<br>l/s, m³/s     | From 0 to 99 999 m³/h                    | ±3% of reading or ±0.03*area surface (cm²)                                                                                                                                                                           | 1 m³/h              |
|                                                 | Temperature: °C, °F                  | From -20 to +80 °C                       | ±0.4% of reading ±0.3 °C                                                                                                                                                                                             | 0.1 °C              |
| <b>Multifonction<br/>probe<br/>SMT 900</b>      | Air velocity: m/s, fpm,<br>km/h, mph | From 0.15 to 3 m/s<br>From 3.1 to 30 m/s | ± 3% of reading ± 0.03 m/s<br>± 3% of reading ± 0.1 m/s                                                                                                                                                              | 0.01 m/s<br>0.1 m/s |
|                                                 | Air flow: m³/h, cfm,<br>l/s, m³/s    | From 0 to 99999 m³/h                     | ±3% of reading or ±0.03*sheath surface (cm²)                                                                                                                                                                         | 1 m³/h              |
|                                                 | Relative humidity: %RH               | From 5 to 95 %RH                         | <b>Accuracy (Repeatability, linearity, Hysteresis) :</b> ±1.8%RH (from 15°C to 25°C)<br><b>Factory calibration uncertainty:</b> ±0.88%RH<br><b>Temperature dependence :</b> ±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

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

## AVAILABLE PROBES AND MODULES (OPTIONAL)



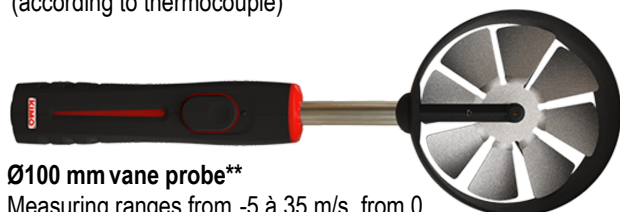
### 4 thermocouple channels module (M4TC)

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 5 to 95%RH



### Ø100 mm vane probe\*\*

Measuring ranges from -5 to 35 m/s, from 0 to 99 999 m<sup>3</sup>/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 m<sup>3</sup>/h and from -20 to +80°C



### Hygrometry probe\*

Measuring ranges from 3 to 98%RH, from -50 to +100°Ctd and -20 to +80°C



### Hygrometry probe\*

Measuring ranges from 3 to 98%RH, 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<sup>3</sup>/h depending on model



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

\*Also available in wireless model

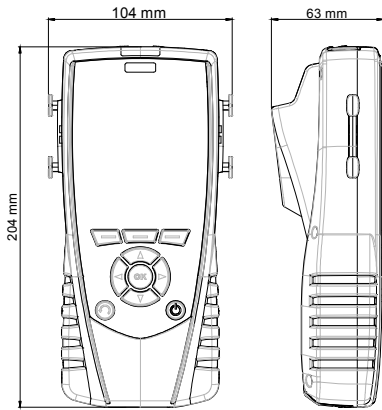
\*\*Also available in telescopic model and in wireless model

## 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)                          | ○      | ○        | ○         | ○        | ○         | ○        | ○         | ○        | ○         | ○        |
| Multifunction 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

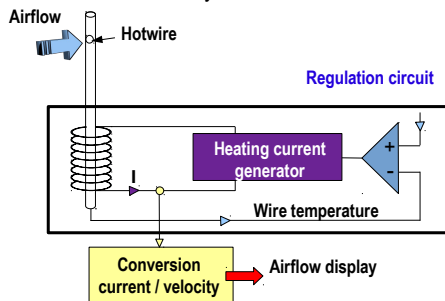
**Display:** LCD 120 x 160 px  
Dimensions: 58 x 76 mm  
Backlight  
Display of 6 measurements including 3 simultaneously

**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  $\approx 100 \Omega$   
for 100°C  $\approx 138.5 \Omega$ .

## 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 length 1m bent at 90° for measuring probe

**RTR-3500:** wheeled telescopic tripod for radiofrequency probes. 1.20 to 3.50 m length, adjustable 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.



Once returned to KIMO, required waste collection will be assured in the respect of the environment in accordance with European guidelines relating to WEEE.

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