

Multifunction instrument  
**AMI 310**



KEY POINTS

- Measurement of hygrometry, temperature, CO<sub>2</sub>, CO, air velocity, airflow, pressure, tachometry (depending on model and probe)
- Interchangeable modules
- Expandable memory with micro-SD card
- 2 inputs for Pt100 temperature
- Up to 6 measurements simultaneously
- Large colour display

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

**AMI 310** : Only portable instrument

**AMI 310 CLA** : portable instrument supplied with an ABS hygrometry probe, an hotwire probe and a Ø70 mm vane probe

**AMI 310 STD** : portable instrument supplied with ±10000 Pa pressure module, a Ø6 mm Pitot tube, 2 x 1 m of silicone tube, a stainless steel tip, an ABS hygrometry probe, an hotwire probe and a Ø100 mm vane probe

**AMI 310 PRO** : portable instrument supplied with a ±500 Pa pressure module, a Ø6 mm Pitot tube, 2 x 1 m of silicone tube, a stainless steel tip, a stainless steel hygrometry probe, a telescopic hotwire probe, a Ø14 mm vane probe and a Ø100 mm vane probe

**AMI 310 CRF** : portable instrument supplied with a wireless ABS hygrometry probe, an hotwire probe and a wireless Ø70 mm vane probe

**AMI 310 SRF** : portable instrument supplied with ±10000 Pa pressure module, a Ø6 mm Pitot tube, 2 x 1 m of silicone tube, a stainless steel tip, a wireless ABS hygrometry probe, an hotwire probe and a wireless Ø100 mm vane probe

**AMI 310 PRF** : portable instrument supplied with a ±500 Pa pressure module, a Ø6 mm T Pitot tube, 2 x 1 m of silicone tube, a stainless steel tip, a wireless stainless steel hygrometry probe, a telescopic hotwire probe and a Ø100 mm vane probe



Climatic conditions measurement



Hygrometry and air velocity measurement



Pressure measurement

The new probes use a mini-DIN cable unique and pluggable that fits on every probes. This cable is supplied with each instrument. The instruments are supplied in a transport case with a calibration certificate, a charger and a USB cable.



## SPECIFICATIONS DES SONDES EN VITESSE ET DEBIT

### AIR VELICOTY AND AIRFLOW

Features in air velocity and airflow depend on the type of probe connected to the instrument.

	Units	Measuring ranges	Accuracies*	Resolutions
Ø14 mm vane probe	Air velocity : m/s, fpm, km/h	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 : m³/h, cfm, l/s, m³/s	From 0 to 99999 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
Ø70 mm vane probe	Air velocity : m/s, fpm, km/h	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 : m³/h, cfm, l/s, m³/s	From 0 to 99999 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
Ø100 mm vane probe	Air velocity : m/s, fpm, km/h	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 : m³/h, cfm, l/s, m³/s	From 0 to 99999 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
Hotwire probe	Air velocity : m/s, fpm, km/h	From 0.15 to 1 m/s From 0.15 to 3 m/s From 3.1 to 30 m/s	± 2% of reading ± 0.03 m/s*** ± 3% of reading ± 0.03 m/s ± 3% of reading ± 0.1 m/s	0.01 m/s 0.01 m/s 0.1 m/s
	Airflow : m³/h, cfm, l/s, m³/s	From 0 to 99999 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

AMI 310 instruments have the following functions for the measurement of air velocity and air flow :

Selection of the Pitot tube or Debimo blade or coefficient / Selection of the section / Selection of the unit / Automatic or manual temperature compensation / Manual atmospheric pressure compensation / K factor, K2 factor

## SPECIFICATIONS OF PRESSURE MODULE, PITOT TUBE AND DEBIMO BLADE

### PRESSURE AND TEMPERATURE

Pressure module	Units	Measuring ranges	Accuracies*	Resolutions	Overpressure allowed
MPR 500	Pa, mmH <sub>2</sub> O, In WG, mbar, hPa, mmHg, daPa, kPa	From 0 to ±500 Pa From 2 to 28 m/s***	From -100 to +100 Pa : ±0.2% of reading ±0.8 Pa Beyond : ±0.2% of reading ±1.5 Pa	From -100 to +100 Pa : 0.1 Pa Beyond : 1 Pa	250 mbar
MPR 2500		From 0 to ±2500 Pa From 2 to 60 m/s***	±0.2% of reading ±2 Pa	1 Pa	500 mbar
MPR 10000		From 0 to ±10000 Pa From 4 to 100 m/s***	±0.2% of reading ±10 Pa	1 Pa	1200 mbar
MPR 500 M	mmH <sub>2</sub> O, In WG, mbar, hPa, mmHg, daPa, kPa, PSI	From 0 to ±500 mbar From 9 to 100 m/s***	±0.2% of reading ±0.5 mbar	0.1 mbar	2 bar
MPR 2000 M	bar, In WG, mbar, hPa, mmHg, kPa, PSI	From 0 to ±2000 mbar From 18 to 100 m/s***	±0.2% of reading ±2 mbar	1 mbar	6 bar
Pitot tube	Air velocity: m/s, fpm, km/h, mph	From 2 to 5 m/s From 5.1 to 100 m/s	±0.3 m/s ±0.5% of reading ±0.2 m/s	0.1 m/s	-
	Airflow : m³/h, cfm, l/s, m³/s	From 0 to 99999m³/h	±0.2% of reading ±1% FS	1 m³/h	
Debimo blade	Air velocity : m/s, fpm, km/h, mph	From 3 to 20 m/s From 21 to 100 m/s	±0.3 m/s ±1% of reading ±0.1 m/s	0.1 m/s	-
	Airflow : m³/h, cfm, l/s, m³/s	From 0 to 99999m³/h	±0.2% of reading ±1% FS	1 m³/h	

Pressure modules also have a thermocouple connection allowing to connect a K, J, T or S thermocouple probe.

Thermocouple	°C, °F	K : From -200 to +1300°C J : From -100 to +750°C T : From -200 to +400°C	K, J, T : From -200 to 0 °C : ±0.4°C ±0.3 % of reading From 0 to 1300 °C : ±0.4°C  S : ±0.6 °C	0.1 °C
		S : From 0 to 1760°C		0.1 °C 0.1 °C 0.1 °C  0.1 °C

AMI 310 instruments have the following functions for the measurements of pressure :

Automatic autozero by solenoid valve (AMI310 PRO, PRF) / Manual autozero (AMI310 CLA, STD, CRF and SRF) / Pressure integration (0 to 9) / Point/point average / Automatic point/point average / Automatic average

\*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. / \*\*Optional specific adjustment and calibration  
\*\*\*Depending on the differential pressure element connected to the instrument

## PROBES SPECIFICATIONS IN HUMIDITY

	Units	Measuring ranges	Accuracies*	Resolutions
<b>SHR 110 and SHR 300 hygrometry probes</b>	Relative humidity : %RH	From 3 to 98%RH	<b>Accuracy** (Repeatability, linearity, Hysteresis) : ±1.5%RH (from 15°C to 25°C)</b> <b>Factory calibration uncertainty: ±0.88 %RH</b> <b>Temperature dependence : ±0.04 x (T-20) %RH (if T&lt;15°C or T&gt;25°C)</b>	0.1%RH
	Absolute humidity <sup>1</sup> : g/Kg, Kj/Kg	From 0 to 600 g/m <sup>3</sup>	-	0.1 g/m <sup>3</sup>
	Dewpoint <sup>1</sup> : °C <sub>td</sub> , °F <sub>td</sub>	From -50 to +100°C <sub>td</sub>	±0.6% of reading ±0.5°C <sub>td</sub>	0.1 °C <sub>td</sub>
	Wet temperature <sup>1</sup> : °C <sub>tw</sub> , °F <sub>tw</sub>	From -50 to +100°C <sub>tw</sub>	±0.6% of reading ±0.5°C <sub>tw</sub>	0.1 °C <sub>tw</sub>
	Enthalpy <sup>1</sup>	From 0 to 15 000 kj/kg	-	0.1 kj/kg
	Temperature : °C, °F	From -20 to +80 °C (SHR110) From -40 to +180 °C (SHR 300)	±0.3% of reading ±0.25 °C	0.1 °C
<b>SOM 900 omnidirectional probe of draught</b>	Air velocity : m/s, fpm, km/h	From 0.00 to 5.00 m/s	± 3% of reading ± 0.05 m/s	0.01 m/s
	Relative humidity : %RH	From 5 to 95%RH	<b>Accuracy** (Repeatability, linearity, Hysteresis) : ±1.8%RH (from 15°C to 25°C)</b> <b>Factory calibration uncertainty: ±0.88 %RH</b> <b>Temperature dependence : ±0.04 x (T-20) %RH (if T&lt;15°C or T&gt;25°C)</b>	0.1%RH
	Temperature : °C, °F	From -20 to +80 °C	±0.3% of reading ±0.25 °C	0.1 °C
<b>SCOH 112 CO2/hygrometry/temperature probe</b>	Temp.: °C, °F CO <sub>2</sub> : ppm Hygro : %RH	From -20 to +80 °C From 0 to 5000 ppm From 5 to 95%RH	±0.3% of reading ±0.25 °C ±3% of reading ±50 ppm <b>Accuracy** (Repeatability, linearity, Hysteresis) : ±1.8%RH (from 15°C to 25°C)</b> <b>Factory calibration uncertainty: ±0.88 %RH</b> <b>Temperature dependence : ±0.04 x (T-20) %RH (if T&lt;15°C or T&gt;25°C)</b>	0.1 °C 1 ppm 0.1%RH

AMI 310 instruments can also calculate and display the **WBGT index** that corresponds to a index of composite temperature used to estimate the effect of temperature, humidity and solar radiation on humans.

It is calculated from the following temperatures :

- T<sub>w</sub> = Wet-bulb temperature or natural wet temperature, measurement calculated from the relative humidity of a thermo-hygro probe ;
- T<sub>g</sub> = Globe temperature, measured with a globe thermometer, or black globe thermometer, whose sensitive element is in black glass or black-smoke coated in order to run approximatively as a black body to measure the solar radiation. The measurement is realised with a temperature probe placed in a black ball ;
- T<sub>a</sub> = Air temperature (measured by a thermometer whose bulb is protected from the solar radiation by a screen). The temperature measurement is realised with a thermo-hygro probe ;

AMI 310 instruments have the following functions for the measurement of temperature, hygrometry and air quality :

- **AIR QUALITY PROBES (CO / temperature, CO<sub>2</sub> / temperature, CO<sub>2</sub> / temperature / hygrometry)** : Audible alarm (2 setpoints), Selection of units, Hold function, minimum and maximum values
- **THERMOCOUPLE MODULE** : Delta T, Alarm (lower and upper setpoints), Selection of units, Hold function, minimum and maximum values

\*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.

<sup>1</sup>Calculated value

\*\*As per NF X 15-113 standard and the charter 2000/2001 Hygrometers, GAL (Guaranteed Accuracy Limit) which has been calculated with a coverage factor value of 2 is ±2.88%RH between 18 and 28°C on the measuring range from 5 to 95%RH. Sensor drift is less than 1%RH/year.

## TECHNICAL SPECIFICATIONS OF THE AMI 310

<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>	57 h with hygrometry probe
<b>Storage</b>	Up to 1000 dataset of 20 000 points in the internal memory + 4 GB micro-SD card
<b>Operating temperature</b>	From 0 to +50 °C
<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>Conformity</b>	EMC 2004/108/CE and EN 61010-1 directives
<b>Languages</b>	French, English, Dutch, German, Italian, Portuguese, Swedish, Norwegian, Finn, Danish, Chinese, Japanese

## DELIVERY KITS AND OPTIONS

Description	AMI 310	AMI 310 CLA	AMI 310 STD	AMI 310 PRO	AMI 310 CRF	AMI 310 SRF	AMI 310 PRF
Pressure module from 0 to $\pm 500$ Pa (MPR 500)	○	○	○	√	○	○	√
Pressure module from 0 to 0 to $\pm 2500$ Pa (MPR 2500)	○	○	○	○	○	○	○
Pressure module from 0 to $\pm 10000$ Pa (MPR 1000)	○	○	√	○	○	√	○
Pressure module from 0 to $\pm 500$ mbar (MPR 500 M)	○	○	○	○	○	○	○
Pressure module from 0 to $\pm 2000$ mbar (MPR 2000 M)	○	○	○	○	○	○	○
4 thermocouple channels module (M4TC)	○	○	○	○	○	○	○
Climatic conditions module (MCC)	○	○	○	○	○	○	○
U coefficient module (MCU)	○	○	○	○	○	○	○
2 x 1 m of silicone tube $\varnothing 4$ x 7 mm	○	○	√	√	○	√	√
Stainless steel tip $\varnothing 6$ x 100 mm	○	○	√	√	○	√	√
Pitot tube $\varnothing 6$ mm, lg. 300 mm	○	○	√	○	○	√	○
Pitot tube $\varnothing 6$ mm, lg. 300 mm T	○	○	○	√	○	○	√
Pitot tube $\varnothing 6$ mm, lg. 300 mm S	○	○	○	○	○	○	○
Telescopic omnidirectional probe (SOM 900)	○	○	○	○	○	○	○
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)	○	○	○	○	○	○	√
CO / temperature probe (SCO 110)	○	○	○	○	○	○	○
CO <sub>2</sub> / temperature probe (SCO 112)	○	○	○	○	○	○	○
CO <sub>2</sub> / temperature / hygrometry probe (SCOH 112)	○	○	○	○	○	○	○
Hot wire probe (SFC 300)	○	√	√	○	√	√	○
Telescopic hot wire probe (SFC 300) (SFC 900)	○	○	○	√	○	○	√
Vane probe 14 mm (SH 14)	○	○	○	√	○	○	○
Telescopic vane probe 14 mm (SHT 14)	○	○	○	○	○	○	○
Vane probe 70 mm (SH 70)	○	√	○	○	○	○	○
Telescopic vane probe 70 mm (SHT 70)	○	○	○	○	○	○	○
Wireless vane probe 70 mm (SHF 70)	○	○	○	○	√	○	○
Vane probe 100 mm (SH 100)	○	○	√	√	○	○	○
Telescopic vane probe 100 mm (SHT 100)	○	○	○	○	○	○	○
Wireless vane probe 100 mm (SHF 100)	○	○	○	○	○	√	√
Light probe (SLU)	○	○	○	○	○	○	○
Tachometry probe (STA)	○	○	○	○	○	○	○
Gas leak probe (SFG 300)	○	○	○	○	○	○	○
Pt100 SMART-2014 probe	○	○	○	○	○	○	○
Wireless Pt100 probe	○	○	○	○	○	○	○
K, J, T and S thermocouple probe	○	○	○	○	○	○	○
Calibration certificate	○	√	√	√	√	√	√
Transport case	√	√	√	√	√	√	√
Additional battery	○	○	○	○	○	○	○

√ : supplied with    ○ : optional

AVAILABLE PROBES AND MODULES (OPTIONAL)



**Light probe (SLU)**

Measuring ranges from 0 to 150 000 lx and from 0 to 13935 fc



**4 thermocouple channels module (M4TC)**

Measuring range from -200 to +1760 °C (according to thermocouple type)



**Climatic conditions module (MCC)**

Measuring ranges from 0 to +50°C, from 800 to 1100 hPa and from 5 to 95%RH



**Wireless hygrometry probe (SHRF 110)**

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



**High temperature wireless hygrometry probe (SHRF 300)**

Measuring ranges from 3 to 98%RH, from -50 to +100 °Ctd and from -40 to +180°C



**U coefficient module (MCU)**

Measuring range from -20 to +80 °C  
Allows to calculate U coefficient



**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



**Hotwire probe\***

Measuring ranges from 0.15 to 30 m/s, from 0 to 99999 m<sup>3</sup>/h and from -20 to +80 °C



**Vane probe Ø14 mm\***

Measuring ranges from 0 to 25 m/s, from 0 to 99999 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 99999 m<sup>3</sup>/h and from -20 to +80 °C



**Ø100 mm vane probe\*\***

Measuring ranges from -5 à 35 m/s, from 0 to 99999 m<sup>3</sup>/h and from -20 to +80 °C



**CO/temperature probe (SCO 110)**

Measuring ranges from 0 to 500 ppm and from -20 to +80 °C



**Gas leak probe (SFG 300)**

Measuring range from 0 to 10 000 ppm



**Airflow cones**

Measuring range from 10 to 1200 m<sup>3</sup>/h depending on modele



**L and S Pitot tubes**

Measuring ranges from 2 to 100 m/s and from 0 to 99999 m<sup>3</sup>/h



**Debimo blades**

Measuring ranges from 4 to 100 m/s and from 0 to 99999 m<sup>3</sup>/h



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

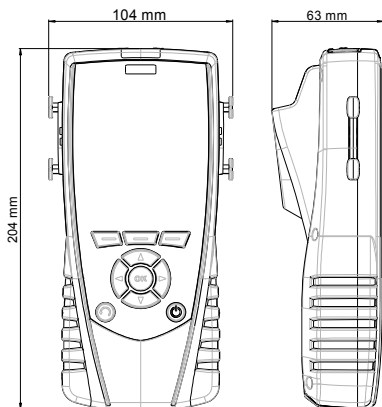


**Black ball (BN)**

Ø70 mm or 150 mm, with cable gland for Ø2 to 7 mm temperature probes

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

## FEATURES OF THE HOUSING



**Material** : ABS/PC and elastomer

**Protection** : IP54

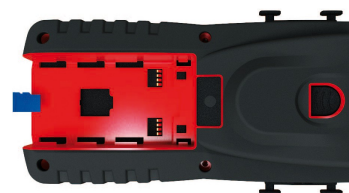
**Display** : Color LCD 120 x 160 px ;  
Dimensions : 58 x 76 mm,  
Backlight  
Display of 6 measurements including 3 simultaneously

**Key pad** : elastomer, 10 keys

## INNOVATIONS

### Expandable memory

These new instruments have an internal memory of 1000 datasets of 20 000 points.  
The AMI 310 also has a slot for a 4 GB micro-SD card (included in the delivery).



### Measure continuously

This new generation of instruments has a Li-ion battery, rechargeable directly on the instrument.

## ACCESSORIES



**Datalogger** : PC software for data recording and processing.



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



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



**KIMP23** : Infrared printer



**SAD** : Backpack

## 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).

[www.kimo.fr](http://www.kimo.fr)

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