KIMO INSTRUMENTS

DATA SHEET

AMI 310

Multifunction instrument

Interchangeable modules
1 device = several possible ranges & parameters

SMART-2014 system
Wireless & wired probes automatically recognized

Wireless connection
Device/probe wireless connection

Supplied with calibration certificate

Features

- Hygrometry, temperature, CO_2, CO, air velocity, airflow, pressure, tachometry measurement (depending on model & probe)
- Expandable memory with micro-SD card
- 2 inputs for Pt100 temperature (from -200 to +600°C)
- Up to 6 measurements simultaneously
- Large color display

References

Reference	Description		
AMI 310	Portable instrument only		
AMI 310 CLA	- Portable instrument - Ø70 mm vane probe	- ABS hygrometry probe - Hotwire probe	
AMI 310 STD	- Portable instrument - ±10000 Pa pressure module	- Ø6 mm Pitot tube - 2 x 1 m of silicone tube - 1 stainsless steel tip	- ABS hygrometry probe - Hotwire probe - Ø100 mm vane probe
AMI 310 PRO	- Portable instrument - ±500 Pa pressure module - Ø6 mm T Pitot tube	- 2 x 1 m of silicone tube - 1 stainless steel tip - Stainless steel hygrometry probe	- Telescopic hotwire probe - Ø100 mm telescopic vane probe
AMI 310 CRF	- Portable instrument - Wireless ABS hygrometry probe	- Hotwire probe - Wireless Ø70 mm vane probe	
AMI 310 SRF	- Portable instrument - ±10000 Pa pressure module	- Ø6 mm Pitot tube - 2 x 1 m of silicone tube - 1 stainsless steel tip	- Wireless ABS hygrometry probe - Hotwire probe - Wireless Ø100 mm vane probe
AMI 310 PRF	- Portable instrument - ±500 Pa pressure module - Ø6 mm T Pitot tube	- 2 x 1 m of silicone tube - 1 stainless steel tip - Telescopic hotwire probe	- Wireless stainless steel hygrometry probe - Wireless Ø100 mm vane probe
AMI 310 SK	- Portable instrument - ±500 Pa pressure module	- Telescopic hotwire probe with gooseneck - Ø6 mm Pitot tube	- 2 x 1 m of silicone tube (black & white) - 1 stainless steel tip

Climatic conditions measurement

Hygrometry and air velocity measurement

Pressure measurement

The 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.

AMI 310 General features

Connections	2 mini-DIN connections SMART-2014 probes and 1 micro-USB port for charging and PC connection
Power supply	Lithium-Ion battery
Autonomy	32 h with hygrometry probe
Memory capacity	Up to 1000 dataset of 20 000 points in the internal memory + 4 GB micro-SD card
Conditions of use (°C/%RH/m)	From 0 to +50 °C. In non-condensation condition. From 0 to 2000m.
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 ECM; 2014/35/EU Low tension; 2011/65/UE RoHS II; 2012/19/UE DEEE
Languages	French, English, Dutch, German, Italian, Portuguese, Swedish, Norwegian, Finn, Danish, Chinese, Japanese

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.

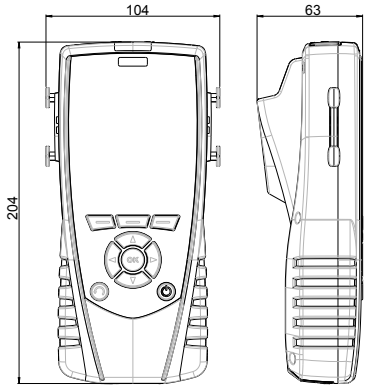
Maintenance

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.

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.

Dimensions (in mm)



Housing features

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
Keypad	Elastomer 10 keys

Accessories

Name	Reference
PC software for data recording and processing	Datalogger
Mini-DIN / mini-DIN cable for probe	CSM
Backpack	SAD
Infrared printer	KIMP23
Telescopic extension of 1m lenght bent at 90° for measuring probe	RTE
Wheeled telescopic tripod for radiofrequency probes, 1.20 to 3.50 m length, ajustable at 90°	RTR-3500

Only the accessories supplied with the device must be used.

Specifications probes & modules

- Air velocity & airflow probes

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

Probe	Units	Measuring range	Accuracy*	Resolution
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 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
Ø70 mm vane probe	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**: 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, 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/s
	Airflow**: m³/h, cfm, 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
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 (Specific adjustment and calibration in option) ±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 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

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

*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.
**Calculated parameters. / ***Depending on the differential pressure element connected to the instrument.

- Pressure modules, Pitot tubes and Debimo blades

Pressure module	Units	Measuring range	Accuracy*	Resolution	Tolerated over-pressure
MPR 500	Pa, mmH_2O, 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	From -100 to +100 Pa: 0.1 Pa Beyond: 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_2O, 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 tubes	Air velocity: m/s, fpm, km/h, mph	From 3 to 5 m/s From 5.1 to 85 m/s	±0.3 m/s ±0.5% of reading ±0.2 m/s	0.1 m/s	-
	Airflow**: m^3/h, cfm, l/s, m^3/s	From 0 to 99 999 m^3/h	±0.2% of reading ±1% FS	1 m^3/h	-
Debimo blades	Air velocity: m/s, fpm, km/h, mph	From 3 to 20 m/s From 21 to 40 m/s	±0.3 m/s ±1% of reading ±0.1 m/s	0.1 m/s	-
	Air flow**: m^3/h, cfm, l/s, m^3/s	From 0 to 99 999 m^3/h	±0.2% of reading ±1% FS	1 m^3/h	-

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

Thermocouple	Units	Measuring range	Accuracy*	Resolution
Thermocouple	°C, °F	K: From -200 to +1300 °C J: From -100 to +750 °C N: From -200 to 1300 °C T: From -200 to +400 °C S: From 0 to 1760 °C	K, J, N, 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 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

- Hygrometry probes

Probe	Units	Measuring range	Accuracy*	Resolution
Hygrometry probes SHR 110 and SHR 300	Relative humidity: %RH	From 3 to 98% RH	Accuracy (Repeatability, linearity, Hysteresis): ±1.5%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
	Absolute humidity**: g/m^3	From 0 to 600 g/m^3	-	0.1 g/m^3
	Dew-point**: $°C_{td}$, $°F_{td}$	From -50 to +100 $°C_{td}$	±0.6% of reading ±0.5 $°C_{td}$	0.1 $°C_{td}$
	Wet temperature**: $°C_{tw}$, $°F_{tw}$	From -50 to +100 $°C_{tw}$	±0.6% of reading ±0.5 $°C_{td}$	0.1 $°C_{tw}$
	Enthalpy**: kj/kg	From 0 to 10 000 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
	Combination ratio** : g/kg	From 0 to 10 000 g/kg	-	0.1 g/kg
Omnidirectional probe of airstream SOM 900	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	Accuracy (Repeatability, linearity, Hysteresis): ±1.5%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 0 to +50 °C	±0.3% of reading ±0.25 °C	0.1 °C
CO_2/hygrometry/ temperature probe SCOH 112	Temperature: °C, °F CO_2: ppm Hygrometry: %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 Accuracy (Repeatability, linearity, Hysteresis): ±1.5%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 °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_w= Wet-bulb temperature or natural wet temperature, measurement calculated from the relative humidity of a thermo-hygro probe ;
- T_g= 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_d= 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_2 / temperature, CO_2 / 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.
**Calculated parameters. / ***Depending on the differential pressure element connected to the instrument.

Delivery kits and options

✓ supplied with

Description	AMI 310	AMI 310 CLA	AMI 310 STD	AMI 310 PRO	AMI 310 CRF	AMI 310 SRF	AMI 310 PRF	AMI 310 SK
Pressure module from 0 to ±500 Pa (MPR 500)	Optional	Optional	Optional	✓	Optional	Optional	✓	✓
Pressure module from 0 to ±2500 Pa (MPR 2500)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Pressure module from 0 to ±10000 Pa (MPR 10000)	Optional	Optional	✓	Optional	Optional	✓	Optional	Optional
Pressure module from 0 to ±500 mbar (MPR 500 M)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Pressure module from 0 to ±2000 mbar (MPR 2000 M)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
4 thermocouple channels module (M4TC)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Climatic conditions module (MCC)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
U coefficient module (MCU)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
2 x 1 m of Ø 4 x 7 mm silicone tube	Optional	Optional	✓	✓	Optional	✓	✓	✓
Ø 6 x 100 mm silicone tip	Optional	Optional	✓	✓	Optional	✓	✓	✓
Ø 6 mm, 300 mm length Pitot tube	Optional	Optional	✓	Optional	Optional	✓	Optional	✓
Ø 6 mm, 300 mm length T Pitot tube	Optional	Optional	Option	✓	Optional	Optional	✓	Optional
Ø 6 mm, 300 mm length S Pitot tube	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Telescopic omnidirectional probe (SOM 900)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Multifunction probe (SMT 900)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
ABS hygrometry probe (SHR 110)	Optional	✓	✓	Optional	Optional	Optional	Optional	Optional
Wireless ABS hygrometry probe (SHRF 110)	Optional	Optional	Optional	Optional	✓	✓	Optional	Optional
Stainless steel hygrometry probe (SHR 300)	Optional	Optional	Optional	✓	Optional	Optional	Optional	Optional
Wireless stainless steel hygrometry probe (SHRF 300)	Optional	Optional	Optional	Optional	Optional	Optional	✓	Optional
CO / temperature probe (SCO 110)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
CO_2 / temperature probe (SCO 112)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
CO_2 / temperature / hygrometry probe (SCOH 112)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Hotwire probe (SFC 300)	Optional	✓	✓	Optional	✓	✓	Optional	Optional
Telescopic hotwire probe (SFC 900)	Optional	Optional	Optional	✓	Optional	Optional	✓	Optional
Telescopic hotwire gooseneck probe (SFC900GN)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	✓
Air velocity measurement probe for laboratory hood (SFC 300 S)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Vane probe 14 mm (SH 14)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Telescopic vane probe 14 mm (SHT 14)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Vane probe 70 mm (SH 70)	Optional	✓	Optional	Optional	Optional	Optional	Optional	Optional
Telescopic vane probe 70 mm (SHT 70)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Wireless vane probe 70 mm (SHF 70)	Optional	Optional	Optional	Optional	✓	Optional	Optional	Optional
Vane probe 100 mm (SH 100)	Optional	Optional	✓	Optional	Optional	Optional	Optional	Optional
Telescopic vane probe 100 mm (SHT 100)	Optional	Optional	Optional	✓	Optional	Optional	Optional	Optional
Wireless vane probe 100 mm (SHF 100)	Optional	Optional	Optional	Optional	Optional	✓	✓	Optional
Light probe (SLU)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Tachometry probe (STA)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Gas leak probe (SFG 300)	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Pt100 SMART-2014 probe	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Wireless Pt100 probe	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
K, J, N, T and S thermocouple probe	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Calibration certificate	Optional	✓	✓	✓	✓	✓	✓	✓
Transport case (MTP-310)	✓	✓	✓	✓	✓	✓	✓	✓
Additional battery	✓	✓	✓	✓	✓	✓	✓	✓

Available probes and modules (optional)

Light probe (SLU)
Measuring ranges from 0 to 150 000 lux and from 0 to 13 935 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, 800 to 1100 hPa and 5 to 95%RH

Wireless hygrometry probe (SHRF 110)
Measuring ranges from 3 to 98%RH, -50 to +100°C_{td} and -20 to +80°C

High temperature wireless hygrometry probe (SHRF 300)
Measuring ranges from 3 to 98%RH, -50 to +100°C_{td} and -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, 0 to 99 999 m³/h and -20 to +80°C

Vane probe Ø14 mm*
Measuring ranges from 0 to 25 m/s, 0 to 99 999 m³/h and -20 to +80°C

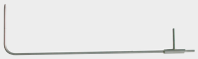
Wireless Ø70 mm vane probe**
Measuring ranges from -5 to 35 m/s, 0 to 99 999 m³/h and -20 to +80°C

Ø100 mm vane probe**
Measuring ranges from -5 to 35 m/s, 0 to 99 999 m³/h and -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 m³/h depending on model



L and S Pitot tubes
Measuring ranges from 3 to 100 m/s and from 0 to 99 999 m³/h

Debimo blades
Measuring ranges from 3 to 100 m/s and from 0 to 99 999 m³/h

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

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