KIMO INSTRUMENTS

Technical Data Sheet

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

New

CE

Multifunction instrument
AMI 310

KEY POINTS

- Measurement of hygrometry, temperature, CO_2, 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 and a telescopic 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 : m^3/h, cfm, l/s, m^3/s	From 0 to 99999 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 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 : m^3/h, cfm, l/s, m^3/s	From 0 to 99999 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 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 : m^3/h, cfm, l/s, m^3/s	From 0 to 99999 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
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 : m^3/h, cfm, l/s, m^3/s	From 0 to 99999 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

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_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	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 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 : m^3/h, cfm, l/s, m^3/s	From 0 to 99999m^3/h	±0.2% of reading ±1% FS	1 m^3/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 : m^3/h, cfm, l/s, m^3/s	From 0 to 99999m^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	°C, °F	K : From -200 to +1300°C J : From -100 to +750°C T : From -200 to +400°C S : From 0 to 1760°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 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 SPECIFIATIONS IN HUMIDITY

	Units	Measuring ranges	Accuracies*	Resolutions
SHR 110 and SHR 300 hygrometry probes	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[1] : g/Kg, Kj/Kg	From 0 to 600 g/m^3	-	0.1 g/m^3
	Dewpoint[1] : °C_{td}, °F_{td}	From -50 to +100°C_{td}	±0.6% of reading ±0.5°C_{td}	0.1 °C_{td}
	Wet temperature[1] : °C_{tw}, °F_{tw}	From -50 to +100°C_{tw}	±0.6% of reading ±0.5°C_{td}	0.1 °C_{tw}
	Enthalpy[1]	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
SOM 900 omnidirectional probe of draught	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) :** ±1.8%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% of reading ±0.25°C	0.1 °C
SCOH 112 CO2/hygrometry/ temperature probe	Temp. : °C, °F CO_2 : ppm Hygro : %HR	From -20 to +80°C From 0 to 5000 ppm From 5 to 95%HR	±0.3% of reading ±0.25°C ±3% of reading ±50 ppm **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 °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.*
[1] Calculated value
***As per NFX 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

Connections	2 mini-DIN connections SMART-2014 probes and 1 micro-USB port for charging and PC connection
Power supply	Lithium-Ion battery
Autonomy	57 h with hygrometry probe
Storage	Up to 1000 dataset of 20 000 points in the internal memory + 4 GB micro-SD card
Operating temperature	From 0 to +50 °C
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
Conformity	EMC 2004/108/CE and EN 61010-1 directives
Languages	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 ±500 Pa (MPR 500)	○	○	○	√	○	○	√
Pressure module from 0 to 0 to ±2500 Pa (MPR 2500)	○	○	○	○	○	○	○
Pressure module from 0 to ±10000 Pa (MPR 1000)	○	○	√	○	○	√	○
Pressure module from 0 to ±500 mbar (MPR 500 M)	○	○	○	○	○	○	○
Pressure module from 0 to ±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 Ø 4 x 7 mm	○	○	√	√	○	√	√
Stainless steel tip Ø 6 x 100 mm	○	○	√	√	○	√	√
Pitot tube Ø 6 mm, lg. 300 mm	○	○	√	○	○	√	○
Pitot tube Ø 6 mm, lg. 300 mm T	○	○	○	√	○	○	√
Pitot tube Ø 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_2 / temperature probe (SCO 112)	○	○	○	○	○	○	○
CO_2 / 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^3/h and from -20 to +80 °C

Vane probe Ø14 mm*
Measuring ranges from 0 to 25 m/s, from 0 to 99999 m^3/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^3/h and from -20 to +80 °C

Ø100 mm vane probe**
Measuring ranges from -5 à 35 m/s, from 0 to 99999 m^3/h and from -20 to +80 °C

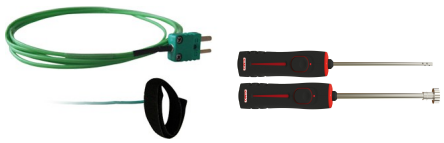
CO/temperature probe (SCO 110)
Measuring ranges from 0 to 500 ppm and from -20 to +80 °C

Gas leak probe (SFG 300)
Measuring range from 0 to 10 000 ppm

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

L and S Pitot tubes
Measuring ranges from 2 to 100 m/s and from 0 to 99999 m^3/h

Debimo blades
Measuring ranges from 4 to 100 m/s and from 0 to 99999 m^3/h

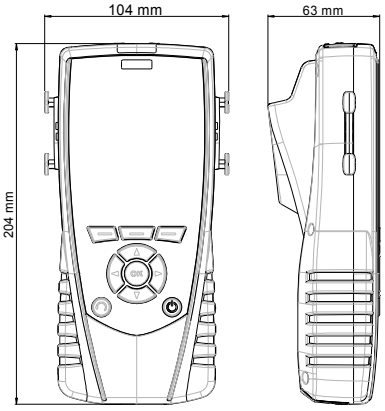


Large choice of temperature probes (see related datasheet) : ambient / contact / penetration / immersion...

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).

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