KIMO INSTRUMENTS

Technical Data Sheet

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

New

CE

Thermo-anemo-manometer

MP 210

Calibration CERTIFICATE

KEY POINTS

- Mesure de la pression, de la vitesse et du débit
- Modules interchangeables
- 2 entrées pour température Pt100
- Jusqu'à 6 mesures en simultané
- Grand écran graphique

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

MP 210 : Only portable instrument

MP 210 P : MP 210 + MPR 500 pressure module (±500 Pa pressure module)

MP 210 M : MP 210 + MPR 2500 pressure module (±2500 Pa pressure module)

MP 210 G : MP 210 + MPR 10 000 pressure module (±10000 Pa pressure module)

Modules with 2 pressure connectors Ø 6.2 mm made of nickelled brass and 1 thermocouple input.

MP 210 H : MP 210 + MPR 500 M pressure module (±500 mbar pressure module)

MP 210 HP : MP 210 + MPR 2000 M pressure module (±2000 mbar pressure module)

Modules with 2 pressure threaded connectors Ø 4.6 mm made of nickelled brass and 1 thermocouple input.

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 OF PRESSURE MODULES AND PROBES

PRESSURE

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 -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	±0.2% of reading ±2 Pa	1 Pa	500 mbar
MPR 10000		From 0 to ±10000 Pa	±0.2% of reading ±10 Pa	1 Pa	1200 mbar
MPR 500 M	mmH_2O, In WG, mbar, hPa, mmHg, daPa, kPa, PSI	From 0to ±500 mbar	±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	±0.2% of reading ±2 mbar	1 mbar	6 bar

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

AIR VELOCITY AND AIRFLOW

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

	Units	Measuring ranges	Accuracies*	Resolutions
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 blades	Air velocity : m/s, fpm, km/h, mph	From 4 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% PE	1 m^3/h
Vane probe Ø14 mm	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 ou ±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
Vane probe Ø70 mm	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 ou ±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
Vane probe Ø100 mm	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/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% de la lecture ±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 ou ±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

*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

MPR 500, **MPR 2500** and **MPR 10000** pressure modules have 2 pressure connectors Ø 6.2 mm made of nickelled brass and 1 thermocouple input.
MPR 500 M and **MPR 2000 M** have 2 pressure threaded connectors Ø 4.6 mm made of nickelled brass and 1 thermocouple input.

MP 210 instruments have the following functions for the measurements of pressure, air velocity and airflow :

PRESSURE
- Automatic autozero with solenoid valve (depending on model)
- Manual autozero (depending on model)
- Pressure integration (0 to 9)
- Point/point average
- Automatic point/point average
- Automatic average

AIR VELOCITY AND AIRFLOW
- Large choice of Pitot tube or Debimo blades or factor for other sensing element
- Selection of section
- Selection of units
- Manual or automatic temperature balancing
- Manual atmospheric pressure balancing
- K factor, K2 factor

TECHNICAL SPECIFICATIONS OF THE MP 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	59 h with pressure module
Memory capacity	Up to 1000 dataset of 20 000 points
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

AVAILABLE PROBES AND MODULES (OPTIONAL)

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

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

Hotwire probe*
Measuring ranges from 0.15 to 30 m/s, from 0 to 99999 m3/h and from -20 to +80 °C

Vane probe Ø14 mm*
Measuring ranges from 0 to 25 m/s, from 0 to 99999 m3/h and from -20 to +80 °C

Vane probe Ø70 mm**
Measuring ranges from -5 to 35 m/s, from 0 to 99999 m3/h and from -20 to +80 °C

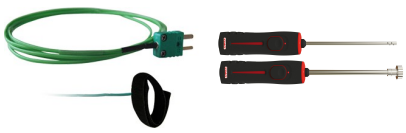
Ø100 mm vane probe**
Measuring ranges from -5 to 35 m/s, from 0 to 99999 m3/h and from -20 to +80 °C

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

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



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

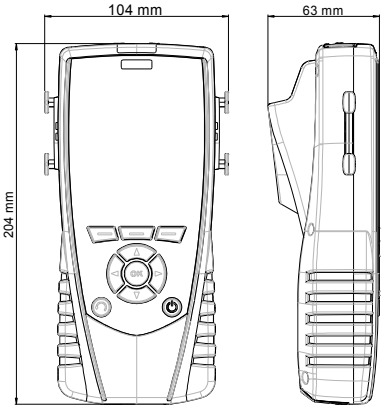
*Also available in telescopic model / **Also available in telescopic model and in wireless model

DELIVERY KITS AND OPTIONS

Description	MP 210	MP 210 P	MP 210 M	MP 210 G	MP 210 H	MP 210 HP
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)	○	○	○	○	○	○
Hot wire probe (SFC 300)	○	○	○	○	○	○
Telescopic hot wire probe (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)	○	○	○	○	○	○
CO / temperature probe (SCO 110)	○	○	○	○	○	○
Gas leak probe (SFG 300)	○	○	○	○	○	○
Tachometry probe (STA)	○	○	○	○	○	○
Thermocouple K, J , T and S probe	○	○	○	○	○	○
Pt100 SMART-2014 probe	○	○	○	○	○	○
Wireless Pt100 probe	○	○	○	○	○	○
2x1 m of silicone tube Ø 4x7 mm	○	√	√	√	○	○
2x1 m of crystal tube Ø 4x6 mm	○	○	○	○	√	√
Stainless steel tip Ø 6x100 mm	○	√	√	√	○	○
Calibration certificate	○	√	√	√	√	√
Transport case	√	√	√	√	√	√
Additional battery	○	○	○	○	○	○

√ : supplied with ○ : optional

FEATURES OF THE HOUSING



Material : ABS/PC and elastomer

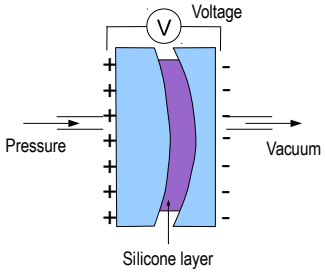
Protection : IP54

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

Piezoresistif sensor
Piezoresistif sensor is a diaphragm formed on a silicone substrate, which bends with applied pressure and generates millivoltage or millicurrent proportional to the pressure applied.

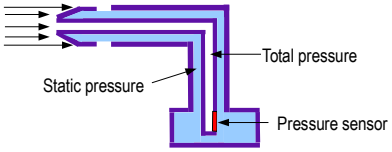


Pitot tube
Dynamic pressure is measured by Pitot tube :
Pd = Total pressure (**Pt**) – static pressure (**Ps**)
Velocity is calculated according to Bernoulli simplified formula.

Formula with temperature correction :

$$V_{m/s} = K \times \sqrt{\frac{574{,}2\ \theta + 156842{,}77}{P_0}} \times \sqrt{\Delta P_{en\ Pa}}$$

Po = Barometric pressure in Pa
θ = Temperature in °C
K = Pitot tube coefficient



ACCESSORIES

Datalogger : PC software for data recording and processing.

RTE : Telescopic extension lenght 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

Distributed by :

EXPORT DEPARTMENT
Tel : + 33. 1. 60. 06. 69. 25 - Fax : + 33. 1. 60. 06. 69. 29
e-mail : export@kimo.fr