

Mercury **SENTINEL**

Automatic weather
station for monitoring
sensitive site



Description

With a wide range of over 50 sensors, Mercury SENTINEL station can monitor all types of environmental parameters and transmit the data to your SCADA system.

Main weather measurements

- Air temperature and humidity
- Precipitation: intensity, type and quantity
- Wind speed and direction
- Atmospheric pressure
- Global & diffus radiation
- Gamma radiation
- UV radiation
- Cloud height
- Water height
- Present weather
- Horizontal visibility

Advantages

- Real time monitoring
- Data transmission on several channels simultaneously
- Wide range of sensors
- Visualization of weather data on web platform WebMet
- Météo France partner link (data shared)

Reliable and modular automatic weather station, easy integration into supervisory control and data acquisition systems (SCADA)



Mercury SENTINEL

AIR TEMPERATURE AND HUMIDITY SENSOR

Air temperature measurement

- Range: -40 to + 60°C
- Accuracy: $\pm 0,2^{\circ}\text{C}$
- Resolution: $0,1^{\circ}\text{C}$
- PT100 4 Wires

Air humidity measurement

- Range: 0 to 100%
- Accuracy: 2% from 0 to 90% and 3% from 90 to 100%
- Resolution: 1%

Dew Point

PRECIPITATION SENSOR

Double tipping bucket rain gauge

- Range: 0 to 700mm/h
- Accuracy: 3%
- Catch area: 400 cm²
- Resolution: 0,2mm (or 0,5mm)
- Bucket 8g , material black ABS
- Integrated bubble level
- ILS contact output passive Y / N and no rebound
- Breaking capacity: 0,5A, 200Vcc, 10W
- Stainless steel cone Painted in RAL 9010 glossy white

Option: Heater

GLOBAL RADIATION SENSOR

Pyranometer Class C (ISO 9060:2018)

- Measure range: 0 to 2000W/m²
- Sensibility: 0,2mV/W/m²
- Spectral range: 360 to 1120nm
- No stability / year: < 2%
- No linearity: < 1%
- Temperature dependence: $\pm 0,04\%/^{\circ}\text{C}$
- Calibration uncertainty: 5%

PRESENT WEATHER SENSOR

Visibility measure

- Up to 20km
- Resolution 10m

Precipitation type

- Rain / Hail / Snow / Frog / Haze
- Intensity

Accuracy

- Measurement accuracy error: < 10%
- Detection threshold: 0,015 mm/h

Options

- Heater
- Calibration kit

VISIBILITY SENSOR

Horizontal visibility

- Measure range: 10 to 7500m
- Resolution : 10m
- Contamination Auto test

ULTRASONIC WIND SENSOR

Wind speed measurement

- Range: 0 to + 75 m/s
- Accuracy: $\pm 0,3\text{m/s}$ to $\pm 3\%$ (0...35m/s) $\pm 5\%$ (>35m/s)
- Resolution: 0,1 m/s

Wind direction measurement

- Range: 0 to 359 °
- Accuracy: < 3°
- Resolution: 1°

Option: Heater

PRESSURE SENSOR

Barometer

- Range: 500 to 1100hPa
- Resolution: 0,1hPa
- Accuracy: $\pm 0,04\%$ Full Scale (FS)

Sea level pressure calculation

GAMMA DOSE RATE PROBE

Measures

- Energy range: 45 keV à 2MeV
- Measurement range: 10 nSv/h to 10 Sv/h
- Measurement cycle: 1min to 2 heures

ML500 DATALOGGER

Power supply

- Power input: 24 Vdc
- Solar panel input and integred solar controller
- Battery protection against deep discharges
- Protection against reverse polarity

Communication

- GPRS / 3G / 4G / Ethernet / Modbus Modem
- Frequency of data transmission: 1min, 6min, 1h, 3h, 6h, or without
- Remote software upgrade / Remote maintenance

Sensors inputs

- Inputs protection against overvoltage and electromagnetic interference by plug-in fuses
- From 8 to 32 analogue or digital inputs
- Analogue input: PT100 /Pulse Counters /0_5Vdc /-30_+40mVdc /4_20mA
- Digital input: RS232/RS485/RS422 /SDI12 / FSK
- 24Bits AC/DC Converter – high accuracy

Paramétrage et maintenance

- Logiciel Mercury Maintainer (sans licence)

PROTECTION ENCLOSURE

Protection box

- Dim : W400xH500xD210mm
- Material : Polypropylene
- IP66 / IK10
- Closure : 2 key points
- Earth connexion
- Watertight cable routing and glands
- Gel lead battery : 12Vdc 18Ah or 28Ah

Options

- Protective cap against direct radiation
- Tamper-proof solar panel attachment

WIND MAST

Tilting wind mast

- Height: 10m
- Double guying

Options

- Lightning rod kit
- Frangibility
- Color : Red and White
- Solar panel attachment at 8m

GENERAL FEATURES

Mechanical structure

- Material : Galvanized steel and/or ALU
- Painted White
- Corrosion resistant
- UV resistant shielded cables

Environnemental features

- Operating temperature: -40 to +65°C
- Storage temperature: -40 to +70°C
- Humidity: 0 to 100%

Conformity

- Standard EN 15518- 1-2-3
- Standard IEC 61000-4-2/4-3/4-4/4-5/4-6



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