



M10 GPSonde

M10 GPSonde is the latest generation of Modem's radiosondes

Among new features, development of enhanced performances of humidity measurement and protection for evaporation cooling effect represent the most significant improvements of the Modem's M10 radiosonde.

New features

Original technical innovation of humidity sensor providing enhanced performances of humidity measurement.

Protection for evaporative cooling effect on a radiosonde emerging from cloud layer.

12 channels GPS Board offering almost immediate initialization time

Automatic frequency setting through infrared communication link

Authorization of launch directly indicated on the radiosonde

Single Electronic board design with low energy consumption allowing longer in-flight battery life

Design:

Reduced dim. : 95x95x88.5 mm

Light Weight : 150g (incl. batteries)

Flexible radio antenna

Full compatibility with our *Robotsonde* system.

Other characteristics

Special metallization process of the sensor boom against night time infrared radiation

External on/off power switch

Code correlated differential GPS

Pressure calculated from GPS altitude, this method pioneered by MODEM, is now considered as the most accurate and reliable solution

Sensors calibration stored on Flash memory

Ground Check system with built-in GPS repeater for indoor initialization

Low energy consumption:

In flight batteries life > 4 hours

Storage batteries life more than 3-year

200 KHz step frequency setting

Digital transmission

Three spare (analog) channels for additional sensors such as Ozonesonde

A model with digital channel is also available

Environmental protection program

TECHNICAL SPECIFICATIONS

GPSonde M10

GENERAL

Dimensions : 95 x 95 x 88.5 mm
Weight : 150 g (including batteries)

TEMPERATURE

Sensor type : Thermistor
Measurement range : +60° to -100°
Resolution : 0.01°C
Absolute accuracy : 0.3°C
Repeatability : 0.1°C
Reproducibility : 0.2°C
Response time : <1s (1000hPa, 20°C)
Measurement rate : 1 Hz

HUMIDITY

Sensor type : Capacitor
Measurement range : 0% to 100%
Resolution : 0.1%
Absolute accuracy : 3%
Repeatability : 2%
Reproducibility : 2%
Response time : <2s (1000hPa, 20°C)
Measurement rate : 1 Hz

PRESSURE

Calculated from GPS altitude
Range : 1100 to 3 hPa
Accuracy : 1 hPa at Surface
: 0.1 hPa at 60 hPa
Reproducibility : 0.2hPa at 100hPa
: 0.05hPa at 10hPa
Resolution : 0.1 hPa

BATTERIES

Technology : 1.5V alkaline
Autonomy : >4 h
Package : 4-battery pack

WIND MEASUREMENT

General : Differential corrections
Altitude Range : Unlimited
Position accuracy : 10 m
Horizontal Wind accuracy : 0.15 m/s
Wind direction accuracy : 1 °
Position resolution : 0.01 m
Horizontal wind resolution : 0.01 m/s
Wind direction resolution : 0.1°
Measurement rate : 1 Hz

TRANSMITTER

Compliant with European standard ETSI EN 302054
Frequency range : 400 to 406 MHz
Frequency step : 200 KHz
Frequency setting : By infrared link
Maximum drift : 1 KHz
Output Power : 200 mW
Modulation type : PSK 4800 bauds

CALIBRATION

Factory calibration : Stored on Flash memory
Ground Check : Adjustment Prior launch

SR10 GROUND STATION

GENERAL

Dimensions : Width: 150 mm – Depth: 185 mm – Height: 65mm
Weight : 1.3 kg
Consumption : 10 W max
Links : USB to PC
Programming interface : Cable with connector
GPS : 12-channel receiver
Workstation : Desktop or Laptop PC

TELEMETRY

Receiver : 400 – 406 MHz digital synthesizer
Tracking range : >350 Km
Modulation : PSK

