

The **M10** radiosonde is a reference in the Upper Air Observation worldwide and insures a guarantee of quality and reliability of PTU and wind data collection.

The **M10** radiosonde has a crossed dipole GNSS antenna and a specific architecture allowing it to continue to operate in a degraded GNSS environment (spoofing, jamming), where standard radiosondes lose their location.

- Resistant to GNSS Spoofing
- Pressure calculated from the GNSS altitude, concept introduced by Meteomodem
- Process facilitated by a fully automatic preparation (frequency change, calibration...) and a simplified balloon train
- External ON/OFF power switch and authorization to release indicated directly on the radiosonde
- GNSS re-transmitter for initialization of the radiosonde inside a room
- Additional analog and digital inputs (XDATA)
- Compatible with the **Robotsonde**, automatic balloon launcher system (up to 24 radiosondes)
- Real-time processing of wet bubble effect
- Certified GRUAN



## Technical specifications

GENERAL		CALIBRATION	
Dimensions	95 x 95 x 88.5 mm	Factory calibration	Stored on flash memory
Weight	150 g (batteries included)	Groundcheck	Prior to launch
TEMPERATURE		PRESSURE : Calculated from GNSS altitude	
Sensor type	Thermistor	Range	1100 hPa to 3 hPa
Measurement range	+60 °C to -100°C	Resolution	0.1 hPa
Resolution	0.01°C	Accuracy	< 1.0 hPa from 1100 hPa to 100 hPa
Absolute accuracy	0.3°C		0.3 hPa from 100 hPa to 10 hPa
Repeatability	0.1°C		0.1 hPa < 10 hPa
Reproducibility	0.2°C	Reproducibility	0.2 hPa at 100 hPa
Response time	< 1 s		0.05 hPa at 10 hPa
Measurement rate	1 Hz		
HUMIDITY		TRANSMITTER :	
Sensor type	Capacitor	Compliant with european standard ETSI EN 302054	
Measurement range	0 % to 100 %	Frequency range	400.15 MHz to 406 MHz
Resolution	0.1 %	Frequency step	200 kHz (option 100 kHz)
Absolute accuracy	3 %	Frequency setting	By infrared
Repeatability	2 %	Maximum drift	1 kHz
Reproducibility	2%	Typical output power	200 mW
Response time	< 2 s (1000 hPa, 20°C)	Modulation	FSK
Measurement rate	1 Hz	Transmission rate	1 Hz
WIND MEASUREMENT		BATTERIES	
Horizontal wind accuracy	0.15 m/s	Technology	1.5 V alkaline
Wind direction accuracy	1 °	Autonomy	> 4 h in flight
Horizontal wind resolution	0.01 m/s	Package	4 battery
Wind direction resolution	0.1 °	Storage	> 3 years
Measurement rate	1 Hz		
GEOPOTENTIAL HEIGHT		GNSS RECEIVER	
Altitude range	> 45 km	Type	GPS
Position accuracy	± 5 m	Frequency	1 575.45 mHz, code L1 C/A
Position resolution	0.01 m		
		OPTION	
		Additional sensors (XDATA, OZONE, LOAC, ...)	

## Messages

- Edition of WMO messages (**TEMP FM35, TEMP SHIP FM36, TEMP MOBIL FM38, TEMP DROP FM37, PILOT FM32, PILOT SHIP FM33, PILOT MOBIL FM34, CLIMAT TEMP FM75, BUFR 309052, BUFR HR 309052, BUFR DROP 309053, BUFR HR DROP 309053, BUFR PILOT PRESSURE 309050, BUFR PILOT ALTITUDE 309051, BUFR HR 309056, BUFR HR 309057**)
- Edition of STANAG messages (**MECTM - 4082, METB2/3 - 4061, METCFL, METTA - 4140, METK3, METFM - 2103, MET11, MET44, METSR, EACMM**)