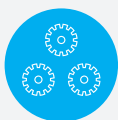


Automatic Hydrological Station

Hydrological Monitoring



Modular and scalable platform



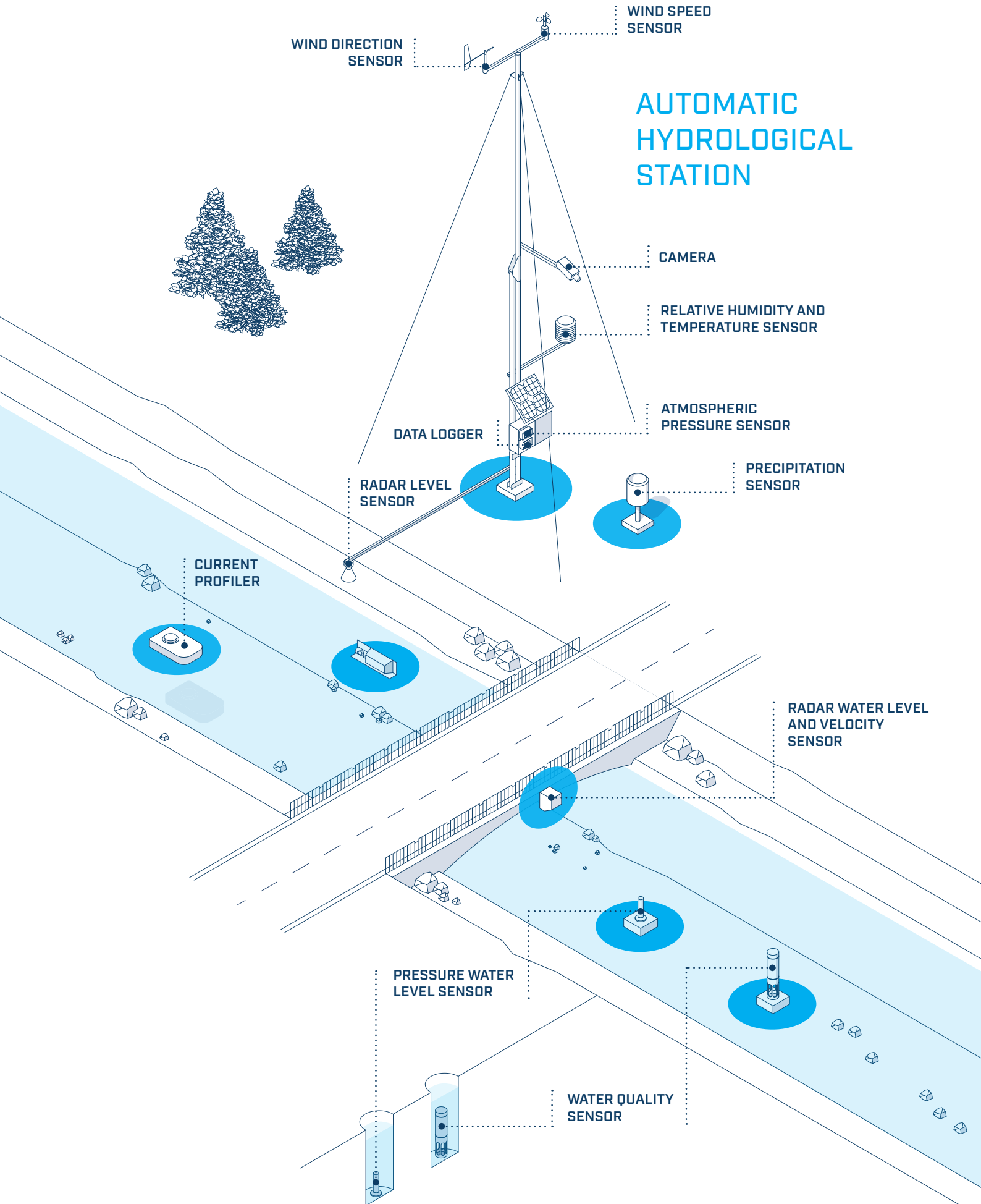
Multimode data communication



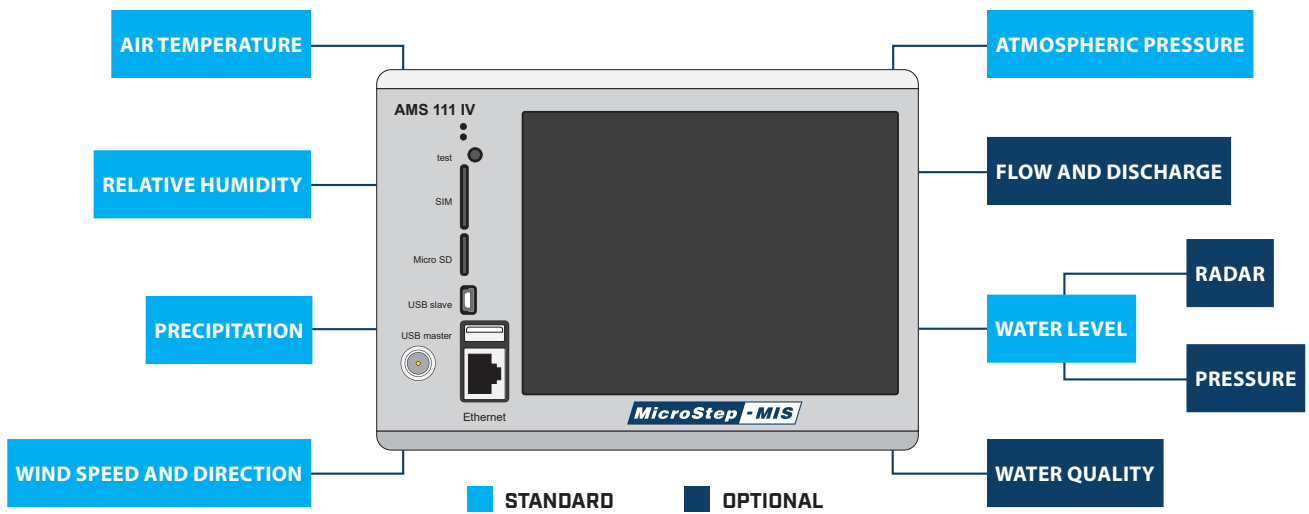
Statistics, alerts and notifications



Customizable web interface



Sensor configuration modules



Technical specifications

Data Logger AMS 111 IV

Memory and RTC

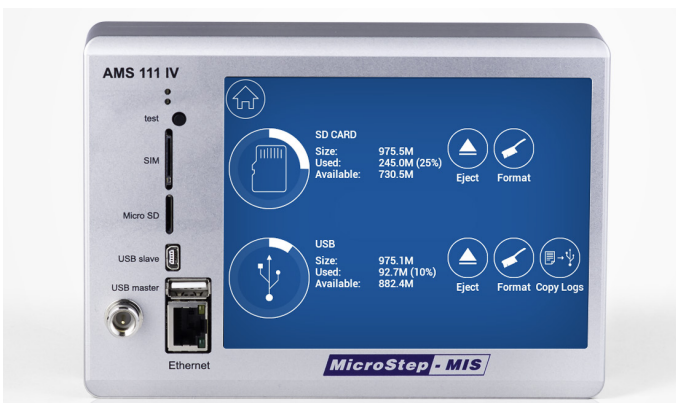
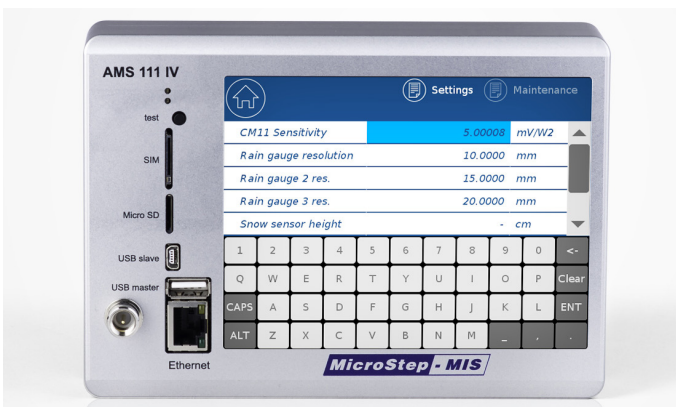
Internal 128 MB Flash memory

Internal 128 MB DRAM memory

Secure digital card up to 64 GB

External USB mass storage up to 256 GB

Real time clock (backup with Lithium battery)



Communication I/O ports

3x RS-232 port (baud rate: 300 to 115200), 1x UART

2x RS-485 port

Interface for GSM / Wifi / Radio module

Ethernet 10/100 Mbit

USB master, USB slave

2x SDI-12

Supported Protocols

FTP server, FTP client, HTTP server, telnet, SMTP, SMTPS, MODBUS RS-485, MODBUS, NTP Ethernet

P4-4G modem**Data rates**

- LTE-FDD Max 100 Mbps (DL) Max 50 Mbps (UL)
- LTE-TDD Max 61 Mbps (DL) Max 18 Mbps (UL)
- DC-HSPA+ Max 42 Mbps (DL) Max 5.76 Mbps (UL)
- UMTS Max 384 Kbps (DL) Max 384 Kbps (UL)
- TD-SCDMA Max 4.2 Mbps (DL) Max 2.2 Mbps (UL)
- CDMA Max 5.4 Mbps (DL) Max 14.7 Mbps (UL)
- EDGE Max 236.8 Kbps (DL) Max 236.8 Kbps (UL)
- GPRS Max 85.6 Kbps (DL) Max 85.6 Kbps (UL)

Operating temperature range

-40 °C to +85 °C

Environmental conditionsOperating temperature range: -40 °C to +70 °C
Operating humidity range: 0 to 100 %**P4-GSM modem****Specification**

- Quad Band GSM/GPRS/3G modem E-GSM 850/900/1800/1900
- Class 4 (2 W at 900 MHz)
- Class 1 (1W at 1800 MHz)
- Data, SMS
- Fax and data transmission without extra hardware

Operating temperature range

-40 °C to +85 °C

Environmental conditionsOperating temperature range: -40 °C to +70 °C
Operating humidity range: 0 to 100 %**Air temperature sensor****Measuring range**

-65 °C to +75 °C

Accuracy

±0.2 (-40 to +60) °C

Atmospheric pressure sensor**Pressure range**

500 to 1100 hPa (or custom)

Measurement principle

piezoresistive transducer

Accuracy

±0.3* hPa (-40 °C to +60°C)

Long-term stability

±0.2 hPa / year

custom range or accuracy available upon request*Current profiler****Water velocity profiling****Profiling range**

0.4 m to 40

Velocity range	± 5 m/s default, ± 20 m/s max.
Number of cells	automatic, 25 typical, 200 max.
Cell size	10 cm min. (automatic selection)

Bottom tracking

Velocity range	± 9.5 m/s
Maximum depth	70 m (@15°C, fresh water)

Precipitation sensor

Catch area	200 cm ²
Output	pulses - switching contact
Resolution	0.1 mm 0.2 mm 0.5 mm
Measuring range	0 to 600 mm/h 0 to 900 mm/h 0 to 2500 mm/h
Measurement error for different rainfall	intensity < 20 mm/h → measurement error < 1 % intensity 20 to 600 mm/h → measurement error < 2 %

Radar water level and velocity sensor**Level measurement**

Level range	<ul style="list-style-type: none"> • 0 to 15 m - standard version • 0 to 35 m - extended measuring range (optional)
Accuracy	+/- 2 mm

Velocity measurement

Detectable measuring range	0.10 to 15 m/s (depending on flow conditions)
Accuracy	+/- 0.01 m/s; +/- 1 % FS
Distance to water surface	0.50 to 35 m

Relative humidity sensor

Measurement range	0 to 100 %RH
Accuracy (@ 25 °C)	±1 %RH
Short term hysteresis	< 0.6 %RH
Accuracy over temperature range	$1 + t - 25 * (0.008 + 0.00052 * RH)$
Typical long-term stability	±1.0* % per year
Sensor type	thin film capacitive

* dependent on operating environment

Water level sensor**Pressure water level sensor**

Measuring range	0 to 0.25 m up to 600 m for density of liquid 1 kg/dm ³
Accuracy	0.1 % for ranges ≥ 1 m 0.25 % for ranges ≥ 0.6 m 0.4 % of range

Radar level sensor

Measuring range	up to 35 m (114.8 ft)
Accuracy	±2 mm

Water quality sensor

	Measuring range	Accuracy
Temperature	0 to +50 °C	±0.1°C
pH	0 to 14 pH	±0.1
ORP	-1000 to +1000 mV	±2 mV
Dissolved Oxygen/T°C	0 to 20 mg/L 0 to 200 % SAT	± 0.1 mg/L ± 1 %
Conductivity	0 to 200; 0 to 2000 µS/cm 0 to 20; 0 to 200 mS/cm	±1 % of the full range
Salinity	5 to 60 ppt	±0.5 % of the full range
Turbidity	0 to 50; 0 to 200 NTU 0 to 1000 NTU; 0 to 4000 NTU AUTOMATIC RANGE Range 0 - 4500 mg/L	±1 % of the full range

Wind sensor**Wind speed**

Range	0 to 60 m/s (116 knots)
Accuracy	±2 % @ 12 m/s
Resolution	0.01 m/s (0.02 knots)
Response time	0.25 seconds
Threshold	0.01 m/s

Wind direction

Range	0 to 359° (no dead band)
Accuracy	±2° @ 12 m/s
Resolution	1°
Response time	0.25 seconds

Tiltable meteorological mast

Length	10 m
Material	aluminium alloy
Color	white, red / white red RAL3000 / white RAL9016
Load	200 km/h, 250 km/h optional

