Automatic Weather Station Type AWS

with Meteorological Sensors

Measuring Parameter

- precipitation
- wind direction
- wind velocity
- air temperature
- air humidity
- soil temperature
- evaporation
- atmospheric pressure
- radiation

Wind Combined Sensor

Ultrasonic

Radiation Sensor

Temperature/Humidity Sensor

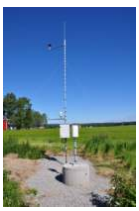
Rain Gauge RG50

Evaporation pan

Weather Station in the Emirates

Weather Station in the desert

Weather Station
in Italy



Weather Station
in Norway

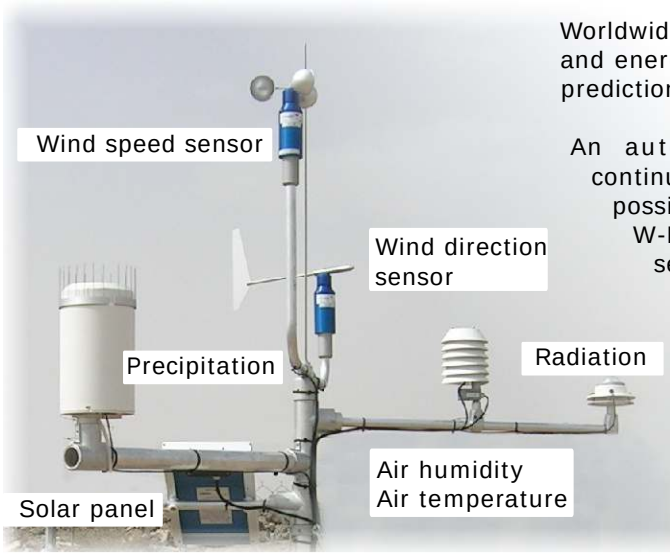
Weather Station
in the Czech Republic

Weather Station
in Italy

AZO

We are certified
ISO 9001:2008
Certificate No. 01150509
Quality is our standard

Meteorological Sensors



Worldwide climatic data are collected for calculating hydrology and energy balance. These data form the basis for hydrological predictions, water balance research and resource management.

An automatic weather station (AWS) stores the data continuously in a data logger (e.g. MDS-5) which offers also the possibility to transmit the data via the GSM-, GPPRS-, Radio-, W-LAN-, or Satellite-network from remote areas. SEBA sensors correspond to the standards of the World Meteorological Organization (WMO) and our concepts are continuously improved.

The configuration of an AWS may vary due to the purpose of the system but typically consists of a weather-proof enclosure containing the data logger (e.g. MDS-5), rechargeable battery and telemetry (optional), meteorological sensors, solar panels and a mast.

Unilog
Data Logger for Registration of Meteoroligical Values

technical data:

Electronics:
- base: Levellog
- power supply external 5.5...20V
- back up-battery internal 3.6V lithium AA/2Ah
- average power consumption: 150µA (75mA with LAN module)
- flash controller M16C 16bit with integrated watch-dog
- clock IC
- serial flash memory with 4MByte (approx. 280.000 measured values)
- logical channels: up to 32 channels
- A/D-converter 16 bit

Handling and display:
- display (3 lines, each 16 characters 3.65mm)
- keyboard with 3 keys

Interfaces:
- RS232, RS485, USB, LAN(optional)

Inputs:
- RS485 sensor interface (SHWP)
- SDI12 sensor interface input (option)
- up/down counter input, phase counter, impulse(rain)
- 2 contact inputs (control, protocol)
- 8 analogue bi-/unipolar for standard signals, potentially isolated extendable up to max. 32 anlogue inputs (optional)

Outputs:
- RS485-sensor-interface (SHWP)
- binary, BCD, Gray (optional)

all connections with push in clamps up to 1.5mm²

Combined Ultrasonic Wind Sensor
Wind Direction Sensor / Wind Speed Sensor

technical data:

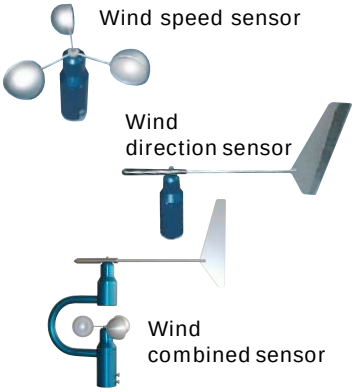
output frequency:	1, 2, 4Hz outputs per second
wind speed measuring range:	0-60 m/s, resolution 0,01 m/s
wind direction measuring range:	0-359° no dead band, resolution 1°
operating temperature:	-35 ºC to +70 ºC
digital interfaces (optional):	RS232 / 422 / 485 / SDI-12
NMEA O/P (Protokoll):	yes
analogue outputs (optional):	2
protection class:	IP65
material:	Luran (plastic)
dimensions / hole for mast fixing:	142 x 160 mm / 44,45 mm

Wind

Wind direction sensor / Wind speed sensor

technical data:

Wind speed sensor:	measuring range: 0,5 - 35 m/sec.
output:	0 - 4,67 mA at a burden of 50 Ohm
dimensions:	320 mm diameter, height 250 mm
Wind direction sensor:	angle of rotation 0 - 359°
output:	0 - 1V or 0 - 5kOhm
dimensions:	820 mm diameter, 430 mm total height
Wind combined sensor:	measuring range and output see above
dimensions:	Ø820 mm, 665 mm total height
temperature-operation range:	-35 °C up to +80 °C
material:	aluminium
hole for mast fixing:	50 mm diameter



Air humidity -/ Air temperature sensor

For measuring the relative air humidity and - temperature (also available as separate sensors)

technical data:

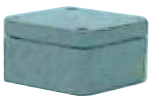
	humidity	temperature	voltage/current-converter
measuring ranges:	0 - 100 % r. h.	-40 °C up to +60 °C	-
principle:	other ranges on request	other ranges on request	other ranges on request
resolution:	capacitive	resistive	voltage/current-converter
accuracy:	0,1 % rel. hum.	0,1 °C	analogue
operation-temperature:	±2 % (10% - 96% r.h.)	±0,3 °C (20 °C)	0,15 %
power supply:	-40 °C up to +60 °C	-40 °C up to +60 °C	-40 °C up to +60 °C
output:	4,6 - 24 V DC	4,6 - 24 V DC	8 - 24 V DC
mounting bracket	0 - 1 V	0 - 1 V	4 - 20 mA
material:	aluminium	aluminium	IP65 in protection housing
dimensions:	Ø 12, length 116 mm	Ø 12, length 116 mm	160 mm x 80 mm x 55 mm

Atmospheric pressure

Pressure sensor, for measuring the atmospheric pressure between 700 - 1200mbar

technical data:

	voltage output
linearity:	0.5%
operating-temperature:	-40°C up to +85°C
power supply:	5 - 24 V DC
sensitivity/output:	87mV/hPas at 12VDC
housing:	aluminium - cast housing
dimensions:	62mm x 56mm x 33mm



Soil temperature

Soil temperature sensor, for measuring the soil temperature in different depths

technical data:

material:	plastic	operation depths:	20 / 30 / 60 / 110 / 160 / 210 / 310 mm
accuracy:	0,3 °C	measuring range:	-30 °C up to +70 °C or other ranges
power supply:	5 - 24 V DC	output:	0 - 100 mV

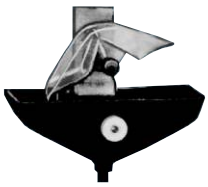
Precipitation

Rain gauge type RG 50

High accurate rain gauge with impulse output, pick-up for datalogger-systems and remote transmission installations, unilateral ball-beared tipping bucket with level and levelling screw. Optionally with heating.

technical data:

collecting area:	200cm^2
resolution:	1 pulse = 0,1mm precipitation
heating:	17W, 24V, forward break-over point +4°C, overlap +3°C
contact burden:	3W
switch direct voltage:	150V
switch direct current:	0,25A
output:	reed-contact impulse (potential free)
tipping bucket:	made of plastic material
dimensions:	height 346mm, diameter 205mm
weight:	3,9kg



For precipitation recording further 8 measuring systems are available. Please ask for separate leaflet.

Radiation

Global radiation sensor for measuring the global radiation in spectral range 0,3 - 3µm

technical data:

spectral range:	305..2800nm
temperature:	-40°..+80°C
measuring range:	0..2000Wm²
temperature dependence:	<0.15%/°C
output:	approx. 15µV W^{-1}m^2

Evaporation

Evaporation pan "Class A"

For measuring evaporation. With lateral float tube. The integrated precision sensor gives an electrical signal, analogically to the water level of the pan.

technical data:

measuring range:	0 - 150mm	output:	0 - 1V optional 0 - 5kOhm
accuracy:	1mm	material:	V2A anticorrosive steel
temperature-operation range:	0 up to 70°C	dimensions:	Ø 1206,5mm, 254mm height
power supply:	5 - 24V	float tube:	Ø 346mm, 1000mm height

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