Features

- RTK or near-online operation
- Streaming or file transfer
- Remote configuration with timer functionality
- Easy commissioning
- Automated operation
- Acquisition and storage of external sensor data
- Precise position determination (cm - dm)
- GNSS and GSM antenna connection

Integrated sensor hardware

- Precise GNSS module (L1 or L1/L2)
- Cellular modem (4G, 2G fallback)
- Accelerometer, temperature sensor
- Processor for data management
- Data storage (32 GB)
- ePaper display for displaying system information
- BT/WLAN module (optional)

Application fields

- Continuous settlement measurements
- Monitoring of slopes
- Bridge monitoring
- Monitoring of dams
- Monitoring of buildings
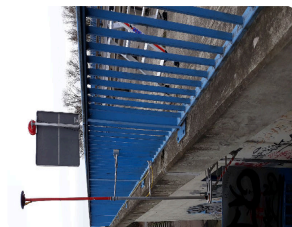
System description

The Alberding A08-MON sensor combines a precise GNSS module, a 4G LTE modem, a processor and other components in one housing. Automation of data acquisition and data flow is realized by the integrated Alberding data management software. Data transfer to the server is either file-based or streaming.

The A08-MON sensor supports low-cost GNSS L1 modules as well as high-end L1/L2 receivers from different manufacturers. For the detection of fast and high frequency movements L1/L2 receivers and the RTK method are used.

Low-cost GNSS receivers are used for monitoring slow movements. Complete solutions with solar power supply are offered for long-term measurements. The measurement time of the sensors can be preconfigured via timer functionality and adjusted to the situation during operation.

The A08-MON sensor can also serve as a data logger for recording external sensors. The sensor measurement data is recorded via the serial RS232 interface, stored internally and transmitted to the server with the GNSS measurements. Upon customer request, we have integrated geotechnical and weather sensors, among others.

The server-based data processing is automated with the Alberding Monitoring Software AMoS. The web-based software handles the collection, presentation, analysis and archiving of the information. When definable threshold values are exceeded, a configurable user group is notified via SMS and/or e-mail.

Technical specifications

Physical

Dimensions (LxWxH):	16.7 cm x 8.2 cm x 4.1 cm
	(6.57" x 3.23" x 1.61")
Weight:	200 g (0.44 lb)
Display:	1.54" e-Paper
GNSS antenna connector:	SMA female

Communications

Cellular:	LTE Cat M1/NB2, GSM/GPRS fallback
Data/Power:	HR30
GSM antenna connector:	SMA female

Electrical

External power input:	5 V max. 2 A
Power consumption:	Typ. 1,8 W
Protections:	Short circuit
	Overvoltage charge (overcharge)
	Temperature

Data and memory

Data storage:	Integrated memory card
Wired data output:	HR30 (serial USB), IPX7, IPX8
Wired data input:	HR30 (serial USB), IPX7, IPX8

Environmental

Operating temperature:	-20 °C to +55 °C (-4 °F to +131 °F)
Humidity:	up to 80 %
Ingress protection:	IP65
Enclosure material:	ABS, TPE seal
Compliance:	CE, RoHS

[1]Depends on baseline length, number of satellites in view, satellite geometry, GNSS antenna, multipath environment and atmospheric conditions
[2]ppm limited to baseline up to 20 km

Subject to technical changes. © August 2023, Alberding GmbH
P/N: Alberding A08-MON
Made in Germany

GNSS manufacturer specifications (example - L1/L2)

Scalable tracking

GNSS signals:	
GPS	L1C/A & L2C code and carrier phase
GLONASS	L1OF & L2OF code and carrier phase
BeiDou	B1I & B2I code and carrier phase
Galileo	E1-B/C & E5b
QZSS	L1C/A & L2C
SBAS	L1C/A
Number of channels:	184
Max. update rates:	RTK: 10 Hz
	RAW: up to 20 Hz

Accuracy (RMS)[1]

Autonomous L1:	1.5 m
RTK[2]:	0.01 m + 1 ppm
RTK convergence time:	< 10 sec

Time to First Fix

Cold start:	24 s
Warm start:	2 s
Signal re-aquisition:	2 s

GNSS manufacturer specifications (example - L1)

Scalable tracking

GNSS signals:	
GPS	L1 code and carrier phase
GLONASS	L1OF code and carrier phase
BeiDou	B1I code and carrier phase
Galileo	E1
QZSS	L1
Number of channels:	230
Max. update rates:	RTK: 10 Hz
	RAW: up to 20 Hz

Accuracy (RMS)[1]

Autonomous L1:	2.5 m
RTK[2]:	0.01 m + 1 ppm
RTK convergence time:	< 10 sec

Time to First Fix

Cold start:	29 s
Warm start:	28 s
Signal re-aquisition:	1 s

Interfaces

GNSS antenna   GSM antenna

ePaper display

A08-MON
V1.5
S/N: 2242A70262
IMEI: 352247639702191

Power/Data
(HR30 connector)