Data Loggers Series 32

The data logger series 32 ensures the most accurate and highly precise standards of measurement required by professional wind consultants, wind farm operators and research engineers. A wide range of accessories is available to customise each measurement system to meet its specific conditions, even for extreme climates and remote areas.

The low power consumption of the data loggers and sensors allow for self-contained measurement systems in remote, undeveloped areas. A solar module (10W/20W or 50W) or batteries will reliably run the entire measurement system.

3 Types of Loggers:

The number of input channels is the only difference between the 3 data logger types: WICOM-32, METEO-32 and METEO-32X.

All 3 types of data loggers store measurement data and statistics and provide for a Slow Motion Recorder (SMR). Data is collected at selected intervals and a variety of evaluation functions are available. The memory capacity allows for unsupervised automatic operation over a period of months or even years. Measurement data sets are available in the form of text files so that standard programs, such as Excel, can be used for evaluation.

Data Interface:

AMMONIT data loggers have a serial RS-232 & RS-485 interface. Logger software (CALLaLOG and/or AmmonitCONNECT) is supplied with each new data logger and can be downloaded from our website. Data can be transferred automatically, simplifying logger programming. All of our data loggers are designed to provide reliable meteorological data both for wind site assessment and for monitoring of operational wind farms (SCADA-system).

All data loggers are supplied with appropriate functions. A RS-485 / 2 wire interface is provided with each logger. We can also supply a standard or a GSM/GPRS modem when no telephone line is accessible. With the use of a modem many instructions can be transmitted to the logger via SMS.

Second interface:

Data loggers are linked to a PC/laptop via a RS-232 serial interface. This allows communication with the software for system configuration and data access. All loggers provide a data connection, a serial RS-485-2 wire line, the type used in many sensors, measurement modules and SCADA systems. Simple converters can be applied to adapt loggers to other standards (USB, RS-232, Ethernet). The interface makes it possible to extend the system by up to 8 sensors with digital-serial outputs. The user can cascade the measurement system with further Ammonit data loggers, control special output modules or transfer measurement data to other storage systems.

WICOM-32:

The wind computer WICOM-32 was expecially developed for wind energy applications. It registers the wind speeds (at 3 heights) and the wind direction (at 2 heights) essential measurements for the precise investigation of a potential sites & energy gen. predictions.

METEO-32:

The METEO-32 data logger is a further development of the WICOM-32. It registers all data relevant for detailed weather observations: wind speed (at 3 heights), wind direction (at 2 heights), temperature, relative humidity, atmospheric pressure, solar radiation and precipitation.

METEO-32X:

The METEO-32 data logger was developed for meteorological measurements. It registers all the data needed for the detailed weather observations: wind speeds (at 3 heights), wind direction (at 2 heights), temperature, relative humidity, atmospheric pressure, solar radiation and precipitation. In addition the METEO-32X offers 8 free channels for other applications.

Software CALLaLOG or AmmonitConnect:

This software can be used to configure, monitor and control the data transfer of any number of measuring stations, via modem or cable. A number of loggers can be grouped in individual projects, each with their own interface and a separate access time. All projects, with any number of measuring systems, can be monitored quickly using this software.

Data Logger Series 32:

P2500 - WICOM-32

P2510 - METEO-32

P2520 - METEO-32X

		P2500 - WICOM-32	P2510 - METEO-32	P2520 - METEO-32X
Input Channels:		3 x wind speed, 2 x wind direction	3 x wind speed, 2 x wind direction, 1 x rel. air humidity, 1 x air temperature, 1 x air pressure, 1 x global radiation, 1 x rain	3 x wind speed, 2 x wind direction, 1 x rel. air humidity, 1 x air temperature, 1 x air pressure, 1 x global radiation, 1 x rain, 4 x 12-bit-ADC, 2 x 16-bit counter, 2 x status
Recommended Sensors:	wind speed wind direction temperature temperature/humidity air pressure precipitation	P6100H, P6181, P6160 (adapter requ.) P6200H, P6210H, P6245 (H)	P6100H, P6181, P6160 (adapter requ.) P6200H, P6210H, P6245 (H) P6311 P6312 P6330, P6331, P6335 P6360(H)	P6100H, P6181, P6160 (adapter requ.) P6200H, P6210H, P6245 (H) P6311 P6312 P6330, P6331, P6335 P6360(H)
Housing:	protection dimensions/weight connectors	IP65, connectors IP67 (closed) 120 mm x 200 mm x 75 mm / approx. 1.2kg (incl. batteries) screwed miniature round-socket, binder series 723		
Power Supply:	external current emergency power supply	input 12 VDC 10...24 Volt (connector supplied) approx. 0.5mA (between measurements), 45 mA (measuring) 2 Alkaline batteries (9 V E-block - 6LR61-PP3), optional lithium batteries		
Temperature:	operational range display readable	-40 degrees celsius.....+85 degrees celsius -10 degrees celsius.....+50 degrees celsius	All data data loggers are carefully checked prior to each delivery to the customer. They pass a 24 hour test at temperatures from -30 to +60 degrees celsius	
Memory: **Clock / Backup battery**		4000 KByte non-volatile-memory (EEPROM) recorded 2 000 000 values. Buffered real time clock, error at -30.....+60 degrees celsius: < 5 ppm / 3 V lithium button cells CR2032, approx. 180...230mAh		
Digital Output:		open-drain, 12...24 VDC, approx. 20mA, e.g. can switch sensor heating on or off via relay (also via SMS)		
Data Output:		display: 2 x 16 character double spaced, RS232 & RS485 serial: 38 400 baud, E71 ASC II		
Series Measurements:	scan interval log interval configuration functions	1.....60 seconds 1.....9999 scan intervals ring memory, subdivided in daily data blocks average, maximum, minimum, standard deviation		
Statistics:	scan interval log interval configuration functions	1 minutes monthly according to real time calendar shift register, subdivided in 4 statistics blocks 29 classes +/- 1 m/s wind speed distribution (in 2 heights) 36 sector rose with unique distributions (anemometer 1)		
SMR:	scan interval memory capacity configuration	1.....60 seconds 180 measurement lines separate non-volatile memory		
Included with each delivery:		user manual, batteries, drying agent, PC-cable, 5 pin plug (ext. supply), software (CALLaLOG and / or AmmonitConnect)		

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Data Logger Series 32

Features of Data Logger - Series 32:

1. Recording measurement series at programmable intervals
2. Producing wind statistics for estimating energy potential
3. Slow-motion recording (SMR) of wind data for special events
4. User-friendly 3 buttons and 2 line display
5. Designed for use in temperatures ranging from -40 to + 85 degree celsius
6. Low-power electronics and stand-by operations
7. Internal clock with a deviation of < 5 ppm over the entire temperature range (approx. 12 seconds / months)
8. Emergency power supply from standard 9 V block battery, lithium type optional
9. Socket for external power supply 10...26 V DC
10. Separate power supply for wind sensors with trip switch
11. GSM/GPRS option for data transfer and email / SMS
12. Remote control and data transmission through world wide web
13. Internal monitor of power source and internal temperature
14. Plausibility checks of measurement values
15. Generation of warnings (GSM option)
16. Non volatile 4000 KB memory (approx. 2 000 000 measurements)
17. Update of user software via serial interface and GSM
18. RS-232 interface for data transfer (38400 baud)
19. Data compression to accelerate data transfer up to 30%
20. RS-485 interface, e.g. for connecting ultrasonic anemometers, SCADA, visibility sensor
21. User-friendly software for multi-logger-management with graphical user interface

Installation and Maintenance:

All Ammonit data loggers are enclosed in IP65 protective housings and bear the CE-mark of the European Commission. The data logger should be installed in a lockable, earthred metal cabinet. This not only provides protection against weather and lightning, but also protects from theft and vandalism. Ammonit has developed solid steel cabinets for its dtaa loggers, which can also accommodate additional components so that installation and maintenance of equipment is comfortable.

All Ammonit measurement systems are designed for permanent automatic operation in exposed positions. If the system is provided with a remote monitoring facility and a small solar system as power supply, the only maintenance required is to occasional check that sensors are working properly.

It is crucial that all sensor cables are safely attached to the mast. Damaged cables could result in moisture entering the cabinet or into the logger itself.

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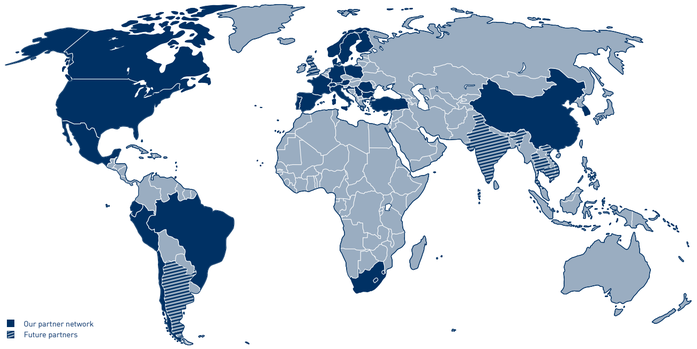
Data Loggers Series 32: WICOM-32 METEO-32 METEO-32X

Overview of Channels		WICOM-32	METEO-32	METEO-32X
Anemometers (*1)	16-bit Counters	3	4 (*1)	6 (*1)
Wind Vanes (*2+*3 +*4)	12-bit ADC	2	2 (*4)	2 (*2 +*3+*4)
Thermometer (*3)	12-bit ADC		1	1 (*3)
Hygrometer (*3)	12-bit ADC		1	1 (*3)
Barometer (*3)	12-bit ADC		1	1 (*3)
Pyranometer (*4)	12-bit ADC		1 (*4)	1 (*3+*4)
Precipitation (*1)	16-bit Counter		(*1)	(*1)
12-bit ADC (*3)	12-bit ADC			4 (*3)
Status (0 or 1)				2
Total number of channels		5 channels	10 channels	18 channels

*1) A precipitation sensor can be connected instead of a 4th anemometer (Meteo-32) and 6th anemometer (Meteo-32X).
*2) Up to 7 wind vanes can be connected, refer to (*3) & (*4)
*3) 4 additional analogue sensors can be connected: wind vanes, thermometer, hygrometer, barometer ultra-sonic, pyranometer, propeller anemometer.
*4) A 3rd wind vane could be connected, instead of a pyranometer

Benefit from our global partner network:

With our partners we provide full service packages for a successful measurement campaign, from offer through to construction of the mast & measuring system and operation and maintenance. To find a partner near you, please refer to the contact section of our website: www.ammonit.com



Measuring Wind Power to the highest Standards

High Quality
Measurement Equipment for
Wind Site Assessments, Wind Farm Monitoring and Climate Research

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