

Wind Masts from 30 m to 60 m Wind Data Logger





Features of Data Loggers W323 und W528

- Ø 4 Anemometers
- Ø 2 Wind Vanes
- Ø 2 PT100 Temperature Probes
- Ø Air Pressure Sensor
- Ø Humidity and Temperature Sensor
- Ø Pyranometer
- Ø Rain Gauge
- Ø Internal and External Power Supply
- Ø Serial Port RS232
- Ø GSM Modem



WIND COMPUTER SYSTEM



- Ø Measurement of Time Series
- Ø Determination of Turbulence Intensity
- Ø Vertical Wind Profile
- Ø Measuring Power Curves
- Ø Measurements in Complex Terrain
- Ø Wind Farm Development



Wind and Weather Station W323 W528

Long-term Data Retrieval in all Climates



WIND COMPUTER

It is our philosophy to build data loggers that operate continuously under outdoor conditions in all climates and all year long. However, extreme weather conditions may have influence on the accuracy of all technical systems. Regular checks and maintenance of sensors and measurement systems will help to minimize the risk of system failures, e.g. of power supply.

The data logger works automatically. All parameters including battery voltage can be checked on LCD display. The regular maintenance normally will be nothing more than checking all sensor and cable connections. Data loggers *W323* and *W528* record the signals of various sensors, convert them to units and store the data in an internal data storage system. The regular power supply is by alkaline batteries 1,5 V size D (Mono) which will normally be sufficient for a 5 months period. Furthermore, the special "sleep mode" of the data loggers will extend the battery life time up to one year – even with data storage in one minute intervals.



Sensors

All sensors may be connected by waterproof plugs to the wind computer. A huge variety of different sensor types may be used, e.g.

- Ø 3 Anemometers
- Ø 2 Wind Vanes
- Ø 2 PT 100 Temperature Probes
- Ø Air Pressure Sensor
- Ø Relative Humidity Sensor
- Ø Net Radiation Sensor
- Ø Pyranometer
- Ø Rain Gauge

Maintenance of Sensors

The correct connection of the sensors and of the respective cables should be checked regularly. Although the internal power supply is documented within the data logger files, battery voltage has to be controlled and batteries should be replaced if necessary. Furthermore, it is important to check on the external power supply in case a solar panel is connected to the system. Also the time settings of the logger should be compared to the actual local time in regular intervals.

It is required by international measurement standards that all maintenance works and changes in logger settings are well documented (maintenance protocol etc.). Calibration of sensors, especially of anemometers should be done by the manufacturer or an approved institution.

Data Storage

All measurement data may be recorded at time intervals which may be chosen freely. Normally, recording intervals are within 1 second and 24 hours.

Data Retrieval

Recorded data can be transferred by the serial port to the PC or notebook or may be transmitted by remote data transmission (modem, GSM or other mobile system). Data are converted into common formats and may be processed directly thereafter.



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The **WINDCOM** software leads you to remote data retrieval by means of analog modem, GSM modem, fixed phone connection or to simple manual data download. The time of data downloads may be chosen as automatic, semiautomatic or manual. When retrieving data by modem, the data are transferred to the computer in intervals to be freely chosen and are stored into data archives.

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Station Rufnummer Passwort	Daten lesen	
	<u>}</u>	
Kein Modem gefunden		

With each remote data download only new data stored following the last data download are transmitted. When choosing the online connection to the data logger, real-time data may be seen and controlled. The remote control also includes online changes in settings or measurement parameters.

The most striking features of **WINDCOM**

- Control and download of stored data, automatically, semi automatically or manually
- Organization of data archives
- Free parameterization of download intervals
- Input of intervals, repeat intervals und stand by times
- Time and interval control of external programs
- Automatic sending of fax documents
- Menu-lead and user friendly program routines



WINDCOM - Direct Communication to measurement Systems

WINDCOM is a software program designed for direct communication to connected data logger systems. **WINDCOM** enables direct parameterization of the data logger from the PC. Data retrieved from the data logger are stored as data files and may be archived in archive files (monthly data, annual data etc.). Each data download is confined to data stored following the last successful data download. Downloads are made directly from the data logger's storage.

The software displays the real-time data, the system time as well as channel settings and correlated units. All data may be transformed into MS Excel sheets.

A full-scale station archive may hold data from all data logger stations which are identified by their station number. Each measurement station may be assigned a file path, a file extension and a period of archiving.



Technical Data			
General:		Data logger W 323 and W528	
	 Input channels 	3 x wind speed, 2 x wind direction, 8 x analog inputs,	
		1 x rain gauge 2 x Pt100	
Housing:	 protection 	plastic ABS, waterproof IP65, connectors IP 67	
-	dimension	200 x 120 x 75 mm	
	• weight	Approx. 440 g	
	connectors	Binder series 680/723	
Power supply:	 internal 	3 Alkaline batteries 1,5 V size D (Mono)	
	 external 	5V to 20 V battery charger or solar panel	
	 Standby 	Approx. 8 µA	
	Measurement	8 - 10 mA, max. 28 mA	
Battery life		approx. 5 months	
Memory		Ring memory, EEPROM memory (data storage without buffer	
-		battery)	
Memory capacity	,	2 Mbyte	
Operating range:			
	Operating temperature	-30° C +60° C	
	 Storage temperature 	-40° C +80° C	
Clock		Real-time clock, buffered	
	 Accuracy 	-10°C +50°C < 1 minute/month	
Data output:		2 x 16 LCD real time data on display, extended temperature	
		range	
Connection to PC		Serial R-S 232, 9.600 to 115.000 kBaud, 8 bits, No parity, 1	
		stop bit	
Impulse inputs:	• TTL	2 1700 Hz Resolution 0.1 Hz.	
	 Measuring range 	0.275 m/s Resolution 0. 1 m/s	
Analog inputs:		02.5 V voltage output (temperature, humidity etc.)	
	 Resolution 	162 Bit <µ50 V	
	 Input impedance 	> 1 M Ohm	
		Free choice of scaling parameter	
Wind Direction:	 Analog Inputs 	02.5 V for wind vanes with potentiometer output	
	 Reference-voltage 	2, 5 V < 15 ppm.	
	 Measuring range 	0360 degrees	
	Resolution	12 Bit < 0.1 mV	
Open-Drain:		Open collector output 12 V 0.1 A (open-drain for the control of	
		GSM modem)	
Measuring interval:		1s 24h	
Storage interval:		1s 24h	
Communication Software:		WindCom for the download of stored data and for	
		configuration of the data logger settings	