# Wilmers Data Loggers

Data loggers from **Wilmers Messtechnik** are rugged data acquisition systems for conducting long-term measurements under difficult conditions. Thanks to their universal measurement inputs and simple formula language, sensors for practically any desired measurement variable can be flexibly integrated. Our data loggers are distinguished by their ease of use and high reliability.

The **wilog306** is our standard system for wind site assessment and small weather stations. In combination with a GSM modem and a solar energy supply, it ensures maintenance-free operation even at remote measurement locations.

The **blueberry COMPACT** is an attractively priced data logger for wind site assessment, environmental monitoring and meteorological research. It allows for the attachment of all standard sensors without the use of an expensive measurement converter. Each sensor has a separate fuse and surge protection. The device can be connected to the Internet using GSM / GPRS. The integrated web interface provides local access via an Internet browser and global access via the Internet.
The **blueberry COMPACT** automatically sends measurement data by e-mail.

The **blueberry NDL 485** is a modular data logger system for complex wind site assessments, wind turbine power curve measurements, environmental monitoring and meteorological research. As a result of its high sampling rate and large data storage capacity, it is well suited for recording high resolution measurement data, e.g. turbulence measurements with ultrasonic anemometers. The RS485 bus interface allows for the connection of 'intelligent' sensors (ultrasonic anemometers, present weather sensors, cloud ceilometers) and sensor extension modules. The Ethernet port enables the integration into a computer network (LAN). The integrated web interface provides local access via an Internet browser and global access via the Internet. The **NDL 485** automatically sends measurement data by e-mail or FTP. It serves as the basis for online weather stations with graphic presentation of the measurement data on the Internet. Thanks to the integrated switching outputs, the **NDL 485** can also be used for simple control tasks. Data transmission via GSM / GPRS allows for continuous control of measurements at remote locations.
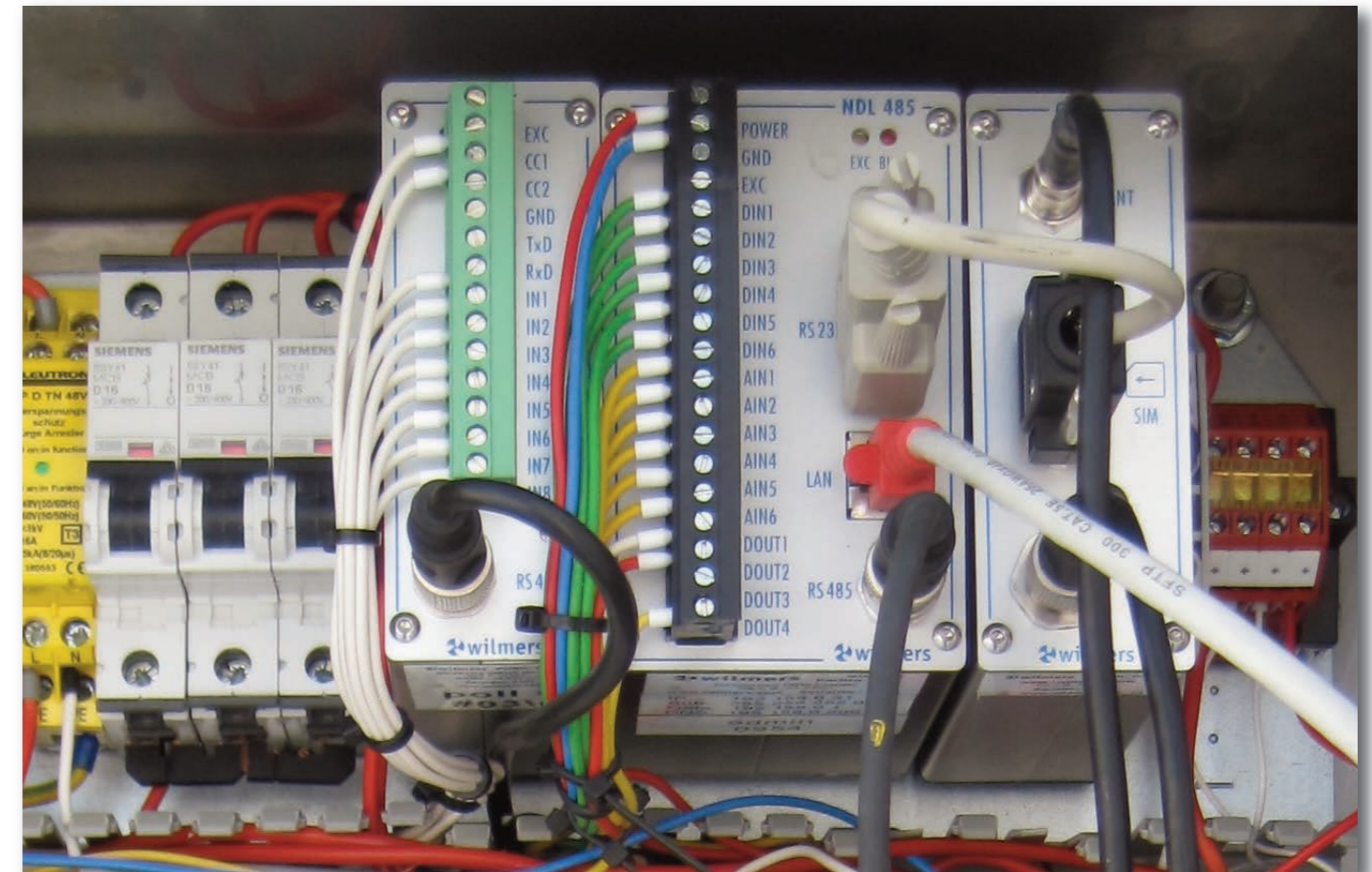
Intelligent data acquisition for wind energy, meteorology and industry

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Model	wilog306	blueberry COMPACT	blueberry NDL 485 BASIC	blueberry NDL 485 RESEARCH
		NEW		
Measurement inputs				
Digital measurement inputs	3	10	6	6
Analogue measurement inputs	6	6 x differential or 12 x single-ended	6	6
Additional inputs	-	-	via **INPUT modules** (8 x AIN/DIN per module)	
Serial inputs	-	RS485, half-duplex 1,200 .. 115,200 baud	RS485 half-duplex, optional RS232	
Digital measurement inputs				
Measurement range	2..1,500 Hz frequency or 0..1 Hz counter	0 .. 2,000 Hz frequency or counter	0 .. 2,000 Hz frequency or counter Status HI / LO	
Resolution	0.01 Hz	0.01 Hz	0.01 Hz	
Accuracy	frequency ± 0.1% counter ± 1 pulse	frequency ± 0.1% counter ± 1 pulse	frequency ± 0.1% counter ± 1 pulse	
Signal level	HI = >3.0 V, LO = <0.7 V or potential free switch	TTL / AC / potential free switch	HI = >2.5 V · LO = <0.7 V or potential free switch	
Input impedance	>10 kΩ	300 kΩ	>20 kΩ	
Analogue measurement inputs				
Measurement range	0 .. 6 V	±15 V differential, 0 .. 15V single-ended	0 .. 10 V	
Resolution	12 Bit (1.5 mV)	16 Bit autoranging, max. resolution 10 µV	16 Bit (0.3 mV)	
Accuracy	±0.1% of reading ± 1.5 mV	±0.1% of reading ± 100 µV	±0.1% of reading ± 1 mV	
Input impedance	300 kΩ	1 MΩ	1 MΩ	
Measurement functions				
Measurement interval	1 s .. 24 h	1 s .. 24 h	0.1 s .. 24 h	
Statistic interval	1 s .. 24 h	1 s .. 24 h	0.1 s .. 24 h	
Statistic functions	average (arithmetic + vectorial), standard deviation (arithmetic + vectorial), minimum, maximum	average (arithmetic + vectorial), standard deviation (arithmetic + vectorial), minimum, maximum, sum	average (arithm. + vectorial), standard deviation (arithm. + vectorial)	
			minimum, maximum, sum	minimum, maximum, sum, median
Data memory for statistic time series	510 kB (up to 240,000 values) non-volatile ring buffer	32 MB non-volatile ring buffer	32 MB, expandable to up to 512 MB, non-volatile ring buffer	128 MB, expandable to up to 512 MB, non-volatile ring buffer
Data memory for samples	-	32 MB non-volatile ring buffer	32 MB non-volatile ring buffer	
Communication				
Data interfaces	RS232 serial interface	Ethernet interface (LAN), 10 MBit/s	RS232 serial interface, 1,200 .. 115,200 baud, Ethernet interface (LAN), 10 MBit/s, optional **MODBUS TCP** protocol	
Remote data transmission	GSM Modem	integrated GSM / GPRS Modem (quadband)	satellite router GSM, GPRS, DSL, ISDN-Router	
Automatical data transmission	-	via eMail	via eMail	via eMail and FTP
Internet integration	-	via GPRS / CDMA / DSL / Satellite	via GPRS / CDMA / DSL / satellite	
User interface	PC software witerm	Web interface, Internet browser	Web interface, Internet browser	
Graphical data display	-	-	-	realtime diagrams of measured values, optional custom specific graphical display
Display	LCD displays measured values, measurement parameters and power supply voltage	-	-	
Power supply				
External power supply	9 .. 24 VAC/DC	solar module, integrated charge controller	5 .. 24 VDC	
Internal power supply	3 alkaline batteries 1.5 V	2 sealed lead batteries 12 V	-	
Current consumption	intern 1 .. 5 mA, extern 5 mA	typ. 600 mW (50 mA @ 12 V)	typ. 600 mW (50 mA @ 12 V)	
Sensor excitation	5 VDC switched, max. 20 mA	12 VDC switched, constant current supply	5 .. 24 VDC switched, max. 500 mA	
Switching outputs	1 x output for time-scheduled operation of a GSM modem (**TC53i**)	4 switching outputs, HI = supply voltage, LO = 0 V, time or event triggered	4 switching outputs, max. 300 mA, HI = supply voltage, LO = 0 V, time or event triggered	
Surge protection	fine protection via varistors	multistage protection for all sensors	fine protection via varistors / supressor diodes	
Mechanics + operating conditions				
Casing	200 x 120 x 90 mm, IP65 polycarbonate	350 x 390 x 200 mm, IP54 polycarbonate	65 x 105 x 127 mm, IP20 top-hat rail housing, anodized aluminium	
Connections	circular connectors IP67	plugged screw terminals, RJ45	terminal strips, connectors	
Temperature range	-40 .. +70 °C	-40 .. +70 °C	-40 .. +70 °C	