

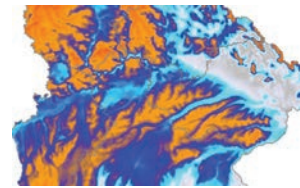
Wind and Solar Energy Assessment. SCADA. Power Curve Measurement.

# Ammonit Meteo-40 Data Logger

Accurate. Reliable. Efficient. Compliant with IEC61400-12-1.



Wind and Solar Maps



Wind Resource Assessment



Solar Resource Assessment



Solar Power Plant Monitoring



Wind Farm Monitoring (SCADA)



Climate Research



Site Assessment in Cold Climate



Power Curve Measurement



## Benefit from latest technology

### Various inputs and outputs for different measurement purposes

#### USB | Ethernet connection

USB-A ports for modem, wireless adapter or memory device;  
USB-B port for PC; Ethernet port for LAN or SCADA

#### Display & Keys

User-friendly menu to configure and check certain data logger settings

#### Analog Current

for sensors with output current

#### RS485 master / RS485 slave

for ultrasonic anemometers and smart sensors; SCADA applications

#### Analog Voltage

for barometric pressure sensors, temperature humidity sensors, pyranometers, etc.

#### 5V | Switches

for modem and sensor heating, etc.



#### Pulse Counter

for anemometers, precipitation sensors, etc.

#### Digital / Serial / Status

for serial wind vanes (e.g., Thies TMR), precipitation monitor, ext. activation, etc.

### User-friendly configuration via protected web interface

You can easily configure measurement devices and communication methods using wizards in the Meteo-40 web interface. Conveniently access the web interface in your browser via **encrypted HTTPS connection**.

#### System configuration

- System administration, e.g., time
- Heating manager

#### Sensor library and channel overview

- Sensor configuration via wizards
- Real-time electric values

#### Statistics and source data

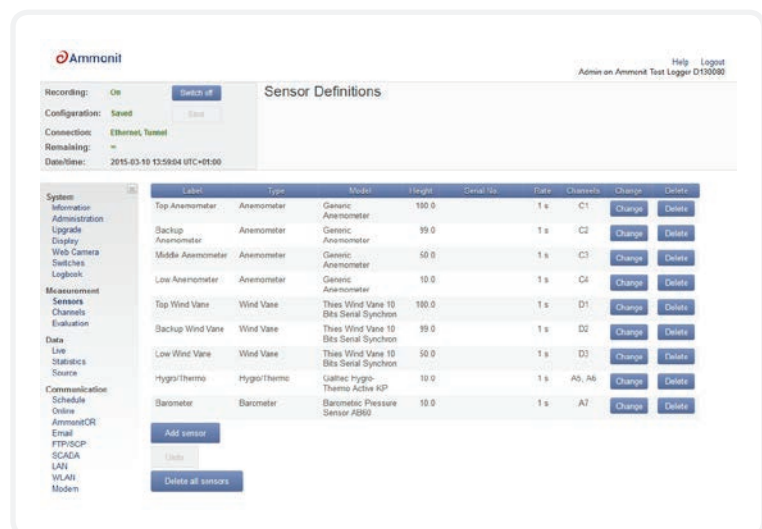
- Configuration of statistics interval
- 1-sec data list

#### Data transfer and online availability

- Scheduler for data transmission
- Modem configuration via wizard

#### SCADA integration

- Configurable Modbus register map
- Selectable statistics interval



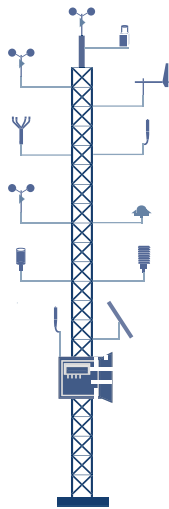
Label	Type	Model	Height	Serial No	Date	Channels	Change	Delete
Top Anemometer	Anemometer	Generic Anemometer	100.0	1 s	C1	[Change] [Delete]		
Backup Anemometer	Anemometer	Generic Anemometer	99.0	1 s	C2	[Change] [Delete]		
Middle Anemometer	Anemometer	Generic Anemometer	50.0	1 s	C3	[Change] [Delete]		
Low Anemometer	Anemometer	Generic Anemometer	10.0	1 s	C4	[Change] [Delete]		
Top Wind Vane	Wind Vane	Thies Wind Vane 10 Bits Serial Synchron	100.0	1 s	D1	[Change] [Delete]		
Backup Wind Vane	Wind Vane	Thies Wind Vane 10 Bits Serial Synchron	99.0	1 s	D2	[Change] [Delete]		
Low Wind Vane	Wind Vane	Thies Wind Vane 10 Bits Serial Synchron	50.0	1 s	D3	[Change] [Delete]		
Hygro/Thermo	Hygro/Thermo	Gaithic Hygro-Thermo Active KP	10.0	1 s	A5, A6	[Change] [Delete]		
Barometer	Barometer	Barometric Pressure Sensor #260	10.0	1 s	A7	[Change] [Delete]		

## All you need for reliable and secure communication and data transfer

### Various communication and data transfer options

Select your preferred communication method with Meteo-40: wired or wireless, via GSM or SAT modem, local or remote. You can choose from a range of different options for data transfer, e.g., statistics file upload to a server of your choice or sending files via e-mail.

Individually decide which communication and data transfer method you prefer.



#### Local communication

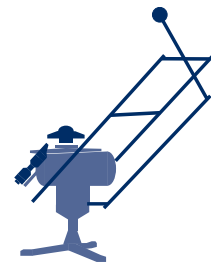
- LAN, link-local or USB
- Wireless access via WiFi USB stick

#### Remote communication

- UMTS, GSM or SAT modem
- SMS
- RS485 or Ethernet e.g. for SCADA applications

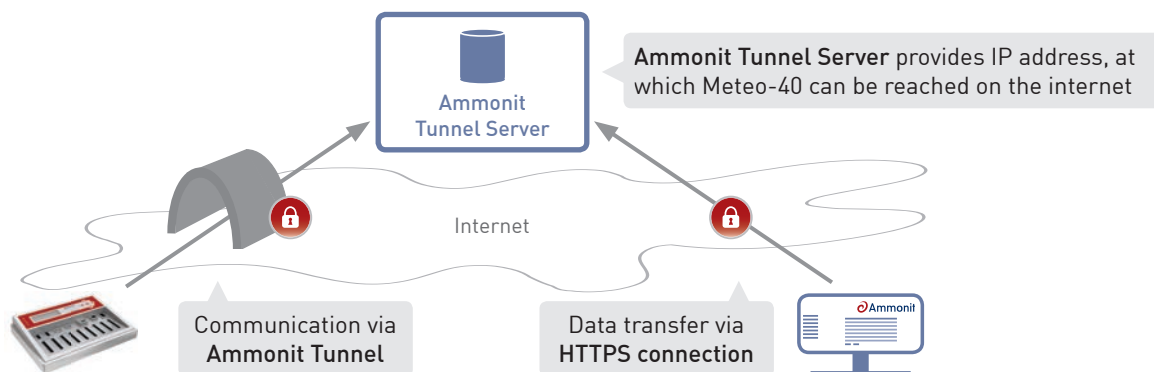
#### Reliable and secure data transfer

- Data upload via FTP / SCP to your server
- Data upload via SCP to AmmonitOR
- E-mail data to your account
- Data retrieval via Modbus TCP/IP or RTU
- Data download on USB memory stick



### Working cost-effective and secure in the field with the Ammonit tunnel server

Securely work on your Meteo-40 in the field via our **Ammonit Tunnel Server** using an **encrypted HTTPS connection**, which cannot be accessed illegally. Thus Meteo-40 automatically obtains a **unique subdomain** from the tunnel server. You can use a standard SIM card with dynamic IP address in your modem. The **tunnel server automatically manages the subdomains**. Just enter the subdomain, e.g., <https://serialnumber.tunnel.ammonit.com>, to access the Meteo-40 web interface. An expensive **SIM card with static IP address is not necessary**.



**Ammonit Tunnel Server: Advanced technology for higher security and cost effectiveness.**

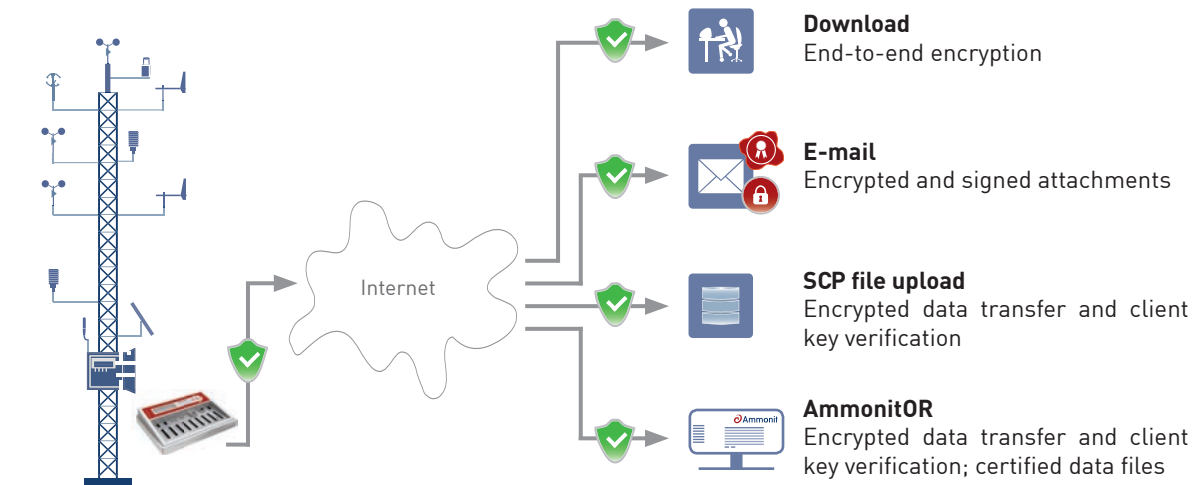
## Ammonit Meteo-40 Data Logger: 100% Traceability. 100% Protection.

### Ensuring data authenticity and integrity by using digital signatures and encryption

Measurement data is valuable and irreplaceable. To protect your data, we use **public key cryptography** acc. to the **OpenPGP standard** on Meteo-40 data loggers. Hence, Meteo-40 can encrypt and digitally sign data.

A valid digital signature indicates that the message was created by a known sender (authentication) and that the message was not manipulated on transit (integrity).

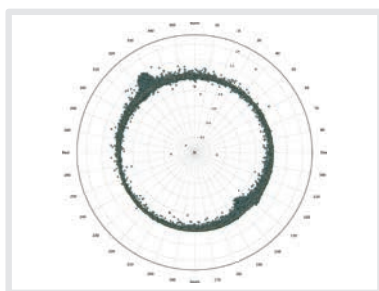
Encryption is a process of encoding information in a way that only authorized parties can read it. Only an authorized recipient can easily decrypt the message with the key provided by the originator.



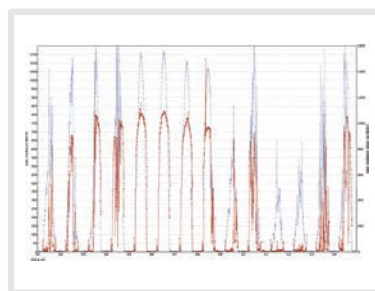
Transparency and traceability to fulfil data quality standards according to IEC, MEASNET and Germany's TR6.

### AmmonitOR: Effective MEASNET-compliant campaign monitoring

**AmmonitOR (Ammonit Online Report)** simplifies managing your measurement campaigns. Connect your Meteo-40 with AmmonitOR to conveniently monitor the quality of your measurement data according to the MEASNET site assessment guideline.



Shadow zone plot



XY plot

Month/Day	1	2	3	4	5	6	7	8	9	10
2014-12	100	100	100	100	100	100	100	100	100	100
2014-11	100	100	100	100	100	100	100	100	100	100
2014-10	100	100	100	100	100	100	100	100	100	100
2014-09	100	100	100	100	100	100	100	100	100	100
2014-08	100	100	100	100	100	100	100	100	100	100
2014-07	100	100	100	100	100	100	100	100	100	100
2014-06	100	100	100	99	100	100	100	100	100	100
2014-05	100	100	100	100	100	100	100	100	100	100
2014-04	100	100	100	100	100	100	100	100	100	100
2014-03	100	100	100	100	100	100	100	100	100	100

Data calendar for completeness check

#### Your advantages

- Data verification using diagrams and curves
- Data plausibility check with customisable filters
- Data completeness check with calendar
- Campaign documentation in PDF reports
- Efficient problem detection
- Configurable alert messages, e.g., low power supply
- Configurable data exports for further data processing
- Certified data files and encrypted data transfer

Effective monitoring of measurement systems - 24/7 wherever you are.

## Ammonit measurement systems perform reliably around the world

Benefit from full-service packages provided by our global partner network



Wind energy assessment in Kenya



Solar measurement station in Brazil



Solar energy assessment in Turkey



Wind measurement in Bulgaria



Wind measurement in Austria



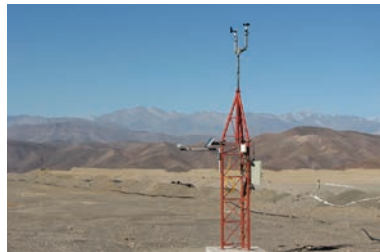
Wind farm monitoring in Spain



Wind farm monitoring in Portugal



Wind measurement in Antarctica



Solar resource assessment in Chile



Wind resource assessment on Aruba



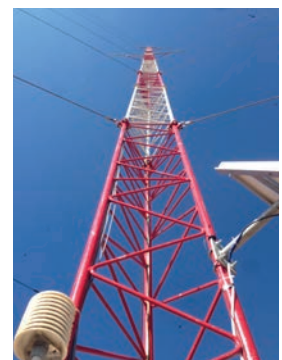
Wind measurement in Australia



Solar measurement in Mexico



Wind resource assessment on Curaçao



Wind energy assessment in Turkey

Thanks to our partners Australian Radio Towers, CLIMATIK, DESAMD, Ecosem, Energiewerkstatt, ENISOLAR, Eunivy Resources, IEM, SME Wind and WindUp for providing the photos for this brochure. For further Ammonit partners refer to [www.ammonit.com](http://www.ammonit.com)

## Ammonit Meteo-40 Data Logger: Specifications

	Meteo-40S	Meteo-40M	Meteo-40L	Description	
<b>Order Number</b>	M11010	M21010	M31010		
<b>Input Channels</b>	<b>Pulse Counters</b>	4	8	12	Anemometers, precipitation sensors
	<b>Digital Serial (Status)</b>	2	4	8	Wind vanes serial, precipitation monitors, ext. activation
	<b>Analog Voltage</b>	4 ± 0.1V, ± 1V, ± 10V 16bit	8 ± 0.1V, ± 1V, ± 10V 16bit	12 ± 0.1V, ± 1V, ± 10V 16bit	Barometric pressure, temperature, humidity sensors, pot. wind vanes, pyranometers, pyr-heliometers
	<b>Analog Current</b>	1 ± 1mA, ± 10mA, ± 100mA 16bit	1 ± 1mA, ± 10mA, ± 100mA 16bit	2 ± 1mA, ± 10mA, ± 100mA 16bit	Sensors with DC output, e.g., temperature humidity sensor (0 ... 20mA)
	<b>RS485 (M)</b>	(1) RS485 Master for up to 8 smart sensors			Ultrasonic anemometers
<b>Output Channels</b>	<b>RS485 (S)</b>	(1) RS485 Slave			SCADA monitoring software
	<b>5V   Switches</b>	2	4	8	Sensor supply, relay for modem, heating supply.
	<b>Current Source</b>	1	1	2	Pt1000, Pt100
<b>Connectivity</b>	<b>USB</b>	(2) USB-A host (1) USB-B device			PC, modem, memory stick, Ethernet, WiFi, GPS, web cam
	<b>Ethernet</b>	(1) Ethernet			LAN, router, media converter, sat.modem, outdoor camera
<b>Storage Size</b>	<b>Source Data (1-sec data)</b>	1 GB	2 GB	2 GB	
	<b>CSV Data (10-min data)</b>	> 50 MB			
<b>Display &amp; Keys</b>	(20x4) LC display with backlight, five keys				
<b>Power Supply</b>	9 ... 36 V DC				
<b>Operat. temperature</b>	-40 ... +65 °C				
<b>Protection (Housing)</b>	IP65				
<b>Housing Dimensions</b>	260x194x50mm				
<b>Weight</b>	950g				
<b>Accessories</b>	External modules, plug connector, mounting kit, steel cabinet				

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