SCADA wind farm monitoring with Ammonit Meteo-40 data loggers

Once the wind farm is set up and running, its best performance has to be ensured. To do so, it is essential to monitor and check its operation. Meteo-40 data loggers can easily be integrated in SCADA [Supervisory Control and Data Acquisition] systems to provide reliable comparative meteorological data. Predictions about the annual energy production of a wind farm can be verified by evaluating Meteo-40 measurement data.

With its configurable Modbus Register Map Meteo-40 is designed for operation in most SCADA systems, e.g., Enercon, Gamesa, Alstom. Meteo-40 data loggers are compatible with all commercial SCADA packages on the market, which are based on Modbus protocol. Additionally, Meteo-40 can be integrated in many other systems by using adapting gateways, e.g., CAN-Bus. The necessary parameters are configured via the user-friendly Meteo-40 web interface.

Advanced technology for flexible and convenient operation.

Your advantages of using Ammonit Meteo-40 data loggers for SCADA applications

- Ammonit Meteo-40 data loggers are compatible with most SCADA systems.
- High accuracy according to industry standard IEEE 754 floating-point values.
- Communication via Ethernet (TCP/IP) or RS485.
- Powerful Linux™ computer for data processing.
- Restricted data access for defined IP address by Modbus TCP security.
- Intuitive web interface for configuration.
- Configurable Modbus Register Map for data retrieval.
- Configurable Modbus Endianness for SCADA server.
- Data transmission via standard protocols Modbus TCP/IP and Modbus RTU.
Conveniently integrate Meteo-40 in your SCADA system

To integrate the Ammonit Meteo-40 data logger in your SCADA system, just connect the data logger via RS485 or Ethernet (TCP/IP) to the wind farm network. Meteo-40 uses the standard protocols Modbus TCP/IP and Modbus RTU for data transmission. You can conveniently retrieve data via the Modbus Register Map.

Just by accessing the Meteo-40 web interface, you can easily configure SCADA details. After selecting the SCADA protocol and entering the required parameters, the Modbus Register Map can be edited.

Live data of all active channels and switches as well as statistical data can be accessed. By editing the Modbus register map, you can conveniently assign register numbers to each value. All entries are checked for plausibility.

If required, you can cascade two or more Meteo-40 data loggers. Thus you can multiply the available measurement channels.

Meteo-40 and Modbus

Measurement values can be represented in different formats (16-bit or 32-bit), including single precision IEEE 754 floating-point standard. Date and time values are available as local time as well as Unix time - for both live and statistical data.

The configurable Modbus Register Map includes Input and Holding Registers.

- **Input Registers** include live data of all active channels and switches as well as statistical data. Additionally, certain internal values of the data logger are available in the Input Registers, e.g., internal voltage and current.
- **Holding Registers** can be used to retrieve stored data from the selected interval. It is also possible to synchronize the data logger by writing a time-stamp in the previously configured holding register.

To configure the Meteo-40 register tables, you only have to define unique register addresses to the selected data. By selecting the Modbus Endianness, you can decide about the byte and word sequence of transmitted data.

**User-friendly and to the point for more efficiency.**