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1075 Saint John Street · Easton, PA 18042-6661
Phone 610.330.9000 · Fax 610.330.9000
www.hindlepowerinc.com

AT Series Communications Module Frequently Asked Questions

What is the AT Communications Module?

The AT Communications Module allows the AT Series Charger to interact with a computer system. A remote operator can read and change the parameters of the battery charger. Everything that the user can do at the charger's front panel display is accessible remotely.

Why would I want to use the remote communications?

The AT Series charger is equipped with a common alarm relay that is activated with any other alarm. However, the common alarm does not indicate which alarm was activated. The communications option allows a computer system to remotely monitor all alarm conditions and monitor all parameters of the charger including the output voltage and current. It also allows the user to change set points and charger modes remotely.

What features are available to me from a remote location?

Meters

- Voltage
- Current
- Equalize Time Remaining
- Battery Temperature

Setpoints

- Float Voltage
- Equalize Voltage
- Equalize Time
- Current Limit
- High DC Voltage Alarm
- Low DC Voltage Alarm
- High DC Shutdown Enable

Status

- Temperature Probe Installed
- Forced Load Share Enabled

Charger Mode

- Float
- Equalize

Equalize Method

- Manual
- Timer
- Auto

Alarms

- High DC Voltage
- Low DC Voltage
- DC Output Failure
- AC Input Failure
- Positive Ground Fault
- Negative Ground Fault
- High DC Voltage Shutdown
- Common Alarm Relay
- Error Number Code

How do you connect to the AT Communications Module?

The AT Communication Module supports a serial connection using either RS-232 or RS-485. RS-232 is a standard serial connection used on computer systems and is limited to a maximum cable length of 50 feet. For industrial applications RS-485 is recommended. RS-485 is designed to be immune to electrically noisy environments and can have up to a maximum cable length of 4,000 feet.

What wiring variation of RS-485 is supported?

Two wire, half-duplex

Can I communicate to more than one AT Series charger?

Yes. RS-485 communications allows multiple AT Series chargers to be connected to the same serial network. Up to 32 AT Series chargers can be connected together. Each charger will be assigned an address so that the computer system knows which charger it is communicating with. RS-232 does not support multiple chargers on a serial network.

What speed does the AT Communications Module support?

The AT Communications Module can be configured for either 9,600 or 19,200 bits per second (baud rate).

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What language (protocol) does the AT Communications Module use?

The AT Communications Module utilizes two protocols (languages): Modbus and DNP3.

What is the difference between Modbus and DNP3?

Modbus is an industrial protocol that has been used for many years. There are two variations of the Modbus protocol: ASCII and RTU.

DNP3 is a newer protocol developed specifically for the utility industry. DNP3 can be configured so that if an event occurs, the charger will send a message to the computer system of any changes. This is called unsolicited messaging. DNP3 with unsolicited messaging enabled detects the alarm and notifies the computer system immediately instead of waiting for the computer system to poll for the status of the alarm.

Both protocols allow the computer system to query the charger for the current status.

What level of DNP3 does the AT Communications Module support?

The AT Communications Module supports DNP3 Level 2 with some advanced features. Refer to the operation manual for the implementation of DNP3.

Can I communicate over the telephone?

Yes. A modem can be used to connect the AT Communications Module to an analog phone line. The modem is should be set to auto-answer. The computer system will also need a modem. The computer system will dial out to the AT Series charger. The modem connected at the charger will answer the call and start communicating. Refer to the operation manual for connection details.

Will this work with my existing SCADA system?

The computer system can be a SCADA (supervisory control and data acquisition) system. SCADA will monitor or log the parameters of the charger and other devices in the facility. There are many different versions of SCADA software available for different types of industries and features. They communicate using industrial communication protocols such as Modbus and DNP3. The SCADA software is configured for the charger's data and a display screen is designed to display the information for the operator. The screen can be setup to display and allow control over the operation of the charger. HindlePower does not sell or maintain SCADA systems.

Can I connect the AT Series charger to Ethernet network?

The AT Communications Module does not support Ethernet, however there is a device that can connect the serial network to an Ethernet network. This device is called an Ethernet bridge. The Ethernet bridge is protocol specific either Modbus or DNP3.

How do I configure the AT Communications Module control board?

For simple applications the board can be configured using DIP switches. The DIP switches set the Protocol, serial type (RS-232 or RS-485), serial speed (baud rate), Modbus protocol, and the Modbus slave address. For the more advanced configuration parameters used for the DNP3 protocol, a computer is required to configure the parameters.

Can the AT Communications Module be added to an old charger in the field?

Yes. The communications option can be added to a charger in the field.

How do I know if the AT Communications Module will fit into my charger?

AT Series chargers manufactured before January 1, 2003 will require the main control board to be replaced or reprogrammed to add the update software to support the communications option. Chargers that have an EN0024-00 main control card will need replacement. Chargers that have an EN5002-00 Rev. 0, 1, or 2 main control card will need replacement. Chargers that have an EN5002-00 Rev. 3 or higher but do not have software Rev. 3.00 or higher need to be reprogrammed. Chargers that have an EN5002-00 Rev. 3A or higher and have software Rev. 3.00 or higher already support the communications option.