

ME812u Controller

Technical Instructions

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What is the ME812u?

The ME812u is a general-purpose controller that you can use to control multiple pieces of equipment simultaneously. The ME812u can communicate BACnet/ARCNET at 156 kbps or BACnet MS/TP at 9600 bps, 19.2 kbps, 38.4 kbps, or 76.8 kbps.

SOFTWARE REQUIREMENT WebCTRL® v6.0 or later

Using expanders

To add inputs or outputs to the ME812u, you can attach up to 5 MEx, MX, or X expanders to the ME812u. Do not attach MEx expanders to a controller with MX/X expanders. See an expander's *Technical Instructions* for more information.

Driver and control program

Driver	drv_melgr_vanilla
	 WARNING You must use v2-04-139 or later driver.
Maximum number of control programs*	999
Maximum number of BACnet objects*	12000

* Depends on available memory.

Specifications

Power	24 Vac $\pm 10\%$, 50–60 Hz, 50 VA 26 Vdc $\pm 10\%$, 23 W
BACnet port	For communication with the controller network using ARC156 or MS/TP (9600 bps–76.8 kbps)
Rnet port	Supports: • Up to 15 ZS sensors • One Wireless Adapter that communicates with up to 15 wireless sensors • One Equipment Touch • Up to 4 RS Standard sensors and one RS Plus, RS Pro, or RS Pro-F sensor NOTE ZS sensors, a Wireless Adapter, and an Equipment Touch can share the Rnet, but not RS sensors.
Rnet Local Access port	For system start-up and troubleshooting

Expansion	Up to 5 expanders with a maximum of 192 points
Inputs	12 inputs, configurable for 0–5 Vdc, 0–10 Vdc, 0–20 mA, RTD, thermistor, or dry contact
Input resolution	14 bit A/D
Input pulse frequency	40 pulses per second. Minimum pulse width (on or off time) required for each pulse is 25 msec.
Outputs	8 outputs for 24 Vdc relay driver, 0–10 Vdc, or 0-20 mA
Output resolution	12 bit D/A
Microprocessor	32-bit Motorola Power PC microprocessor with cache memory, Fast Ethernet controller, high performance 32-bit communication co-processor, ARCNET communication co-processor, and I/O expansion CAN co-processor
Memory	16 MB non-volatile battery-backed RAM (with 12 MB available for use), 8 MB Flash memory, 32-bit memory bus
Real-time clock	Battery-backed real-time clock keeps track of time in event of power failure
Battery	10-year Lithium CR123A battery retains the following data for a maximum of 720 hours during power outages: time, control programs, editable properties, schedules, and trends. To conserve battery life, you can set the driver to turn off battery backup after a specified number of days and depend on the archive function to restore data when the power returns. A low battery is indicated by the Battery low LED or a low battery alarm in the WebCTRL® application.
Data archive	Control programs, editable properties, and schedules are archived to non-volatile Flash memory daily and after every power up or download. If a power outage occurs and the battery backup fails or is turned off, the data is automatically restored from this archive.
Protection	Incoming power is protected by a replaceable 3 Amp Pico® fuse. Network connections are protected by non-replaceable internal solid-state polyswitches that reset themselves when the condition that causes a fault returns to normal. The power, network, input, and output connections are also protected against transient excess voltage/surge events lasting no more than 10 msec.
BT485 connector	You attach a BT485 (not included) to a controller at the beginning and end of a network segment to add bias and to terminate a network segment.
Status indicators	LED's indicate status of communications and low battery status. Seven segment display indicates running, error, and power status.
Environmental operating range	-20 to 140°F (-29 to 60°C), 10–90% relative humidity, non-condensing NOTE Install in a UL Listed enclosure only.
Physical	Rugged aluminum cover, removable screw-type terminal blocks
Overall dimensions	Height: 11 5/16 in. (28.7 cm) Width: 7 1/2 in. (19 cm)
Mounting dimensions	Height: 10 13/16 in. (27.5 cm) Width: 5 in. (12.7 cm)

Recommended panel depth	2 3/4 in. (7cm)
Weight	1.4 lbs (0.64 kg)
BACnet support	Conforms to the BACnet Advanced Application Controller (B-AAC) Standard Device Profile as defined in ANSI/ASHRAE Standard 135-2012 (BACnet) Annex L, Protocol Revision 9
Listed by	UL-916 (PAZX), cUL-916 (PAZX7), FCC Part 15-Subpart B-Class A, CE

Inputs

The ME812u has 12 inputs that accept the following signal types.

Signal Type	Description
Thermistor ¹	Precon type 2 (10 kOhm at 77 °F). Input voltages should be from 0.489 Vdc to 3.825 Vdc for thermistors.
Dry contact	A 5 Vdc wetting voltage detects contact position, resulting in a 1 mA maximum sense current when the contacts are closed.
0–5 Vdc 0–10 Vdc	The output impedance of a 0–5 Vdc or a 0–10 Vdc source must not exceed 200 Ohms. The input impedance of the ME812u is approximately 20 kOhm.
0–20 mA	The input resistance on the positive (+) terminal is 250 Ohms. The Aux Power Out connector is capable of supplying 24 Vdc to multiple 4–20 mA transducers, but the total current demanded must not exceed 200 mA. If the voltage measured from the Aux Power Out connector to Gnd is less than 18 Vdc, you need to use an external power supply.
RTD ¹	Platinum - 1 kOhm at 32 °F (0 °C) Nickel/Iron - 1 kOhm at 70 °F (21 °C) Balco TS8000 - 1 kOhm at 70 °F (21 °C) Input voltages should be from 0.6–1.2 V NOTE Automated Logic® recommends use of an external current transducer between an RTD and the ME812u.
Pulse counter ²	Pulse counting up to 40 pulses per second. Minimum pulse width (on or off time) required for each pulse is 25 msec.

¹ To use a thermistor or RTD not listed above, you can set up a *custom translation table* (page 25) for your sensor.

² The ME812u can perform pulse counting for dry contact or voltage inputs if you assign the input to a Pulse to Analog Input microblock. See *To assign inputs or outputs to points* (page 18).

NOTE If you have one or more RTD's connected to the inputs, the total current draw of all Thermistor, RTD, and Dry contact devices wired to the inputs should not exceed 10 mA. Exceeding this limit will affect the accuracy of the RTD's. Use the following approximations as a reference:

- 10 kOhm Thermistor draws approximately 0.334 mA
- 1 kOhm RTD draws approximately 0.834 mA
- Dry contact draws approximately 1 mA

For example, if you connect 12 RTD's to the inputs, you cannot use the remaining 4 inputs for Thermistor, RTD, or Dry contact devices. This assumes negligible wiring impedance (<10 Ohms) for each RTD input with up to 100 feet of 22 AWG cable.

Outputs

The ME812u has 8 universal outputs that you can use as digital outputs or analog outputs. The outputs support:

- driving external 24 Vdc relays
- 0-10 Vdc devices
- 0-20 mA devices



WARNING Do not apply 24 Vac to these universal outputs.

If output controls a...	Resistance to ground must be...
0–10 Vdc device	500 Ohms minimum
0–20 mA device	800 Ohms maximum

NOTES

- The device must share the same ground as the controller.
- The total output current from all outputs and the **Aux Power Out** connector must not exceed:
500 mA at 115 °F
300 mA at 140 °F
For temperatures above 115 °F, use the following equation to calculate the total current at 8 mA per degree:
$$500\text{mA} - ((\text{max. expected temp.} - 115^{\circ}\text{F}) * 8\text{mA})$$

Zone sensors

Automated Logic® wireless sensors

You can connect a Wireless Adapter to ME812u's **Rnet** port. The Wireless Adapter communicates with up to 15 wireless sensors. When using wireless sensors, the Rnet can have:

- Up to 15 wireless and ZS sensors (any combination)
- One Wireless Adapter
- One Equipment Touch

ZS sensors

You can wire up to 15 ZS sensors to the ME812u's **Rnet** port. ZS sensors can share the Rnet with the devices listed above.

NOTE A control program can use no more than 5 ZS Sensors, so you must use multiple control programs if your Rnet network has more than 5 sensors.

RS sensors

You can wire RS sensors to the ME812u's **Rnet** port. An Rnet can consist of any of the following combinations of devices wired in a daisy-chain or star configuration:

- 1 RS Plus, RS Pro, or RS Pro-F
- 1–4 RS Standards
- 1–4 RS Standards, and 1 RS Plus, RS Pro, or RS Pro-F

NOTE RS sensors cannot share the Rnet with other devices.

Equipment Touch devices

You can wire an Equipment Touch to the ME812u's Rnet port to view or change the controller's property values, schedule equipment, view trends and alarms, and more, without having to access the system's server. The Rnet can have one Equipment Touch, one Wireless Adapter, and up to 15 ZS sensors. RS sensors cannot share the Rnet with an Equipment Touch.

To mount the ME812u

Screw the ME812u into an enclosed panel using the mounting holes provided on the cover plate. Leave about 2 in. (5 cm) on each side of the controller for wiring.

If using expanders, see the following section(s) before mounting the controller.

To attach MEx expanders

See the MEx expander's *Technical Instructions* for mounting options.

Use ARC156 wiring to wire the MEx expander to the controller. Do not exceed 100 feet total wire length. See *Wiring for Communications* in the expander's *Technical Instructions* for complete wiring specifications.

- 1 Wire the ME812u's **Xnet Remote Expansion** port to the same port on the MEx expander.

NOTE To use more than one expander, wire their **Xnet Remote Expansion** ports together in a daisy-chain configuration. The ME812u must be the first device on the expander network.

- 2 Set the ME812u's **Xnet/Mx** DIP switch to **Xnet**.

NOTE You must set the Xnet baud rate to 500 kbps in the WebCTRL® interface on the driver's **Xnet** page. See *To set up the driver* (page 21).

To attach MX or X expanders

Arrange the ME812u and expanders in one or two columns, placing the ME812u at the top of a column.

- 1 Connect the devices' **Expansion** connectors.

NOTES

- To mount the expander, place spacers behind its mounting holes so that its **Expansion** connector will align with the connector on the ME812u. See table below to purchase the appropriate spacers.
- If you use 2 columns, use an MX expander cable to connect an **Expansion** connector in the first column to an **Expansion** connector in the second column. See the expander's *Technical Instructions* for more information.

- 2 Set the ME812u's **Xnet/Mx** DIP switch to **Mx**.

Expander...	Requires 2 spacers...	ALC part number
MX040, MX400, MX440	Small	254901
MX080, MX4106, MX4106p, MX800, MX8102, MX880	Medium	254900
MX0160, MX0320, MX1600, MX16160	Large	254902

Wiring for power



WARNING Do not apply line voltage (mains voltage) to the controller's ports and terminals.



CAUTIONS

- The ME812u is powered by a Class 2 power source. Take appropriate isolation measures when mounting it in a control panel where non-Class 2 circuits are present.
- Automated Logic® controllers can share a power supply as long as you:
 - Maintain the same polarity.
 - Use the power supply only for Automated Logic® controllers.

NOTE For the controller to recognize an attached expander, you must turn on the expander before you turn on the controller.

To wire for power

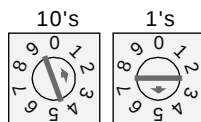
- 1 Make sure the ME812u's power switch is in the **OFF** position to prevent it from powering up before you can verify the correct voltage.
- 2 Remove power from the power supply.
- 3 Pull the screw terminal connector from the controller's power terminals labeled **24ac/26dc** and **Return** (Ground).
- 4 Connect the transformer wires to the screw terminal connector.
- 5 Apply power to the power supply.
- 6 Measure the voltage at the ME812u's power input terminals to verify that the voltage is within the operating range of 21.6–26.4 Vac.
- 7 Insert the screw terminal connector into the ME812u's power terminals.
- 8 Turn **on** the ME812u's power.
- 9 Verify that the Run LED (a dot in the lower right corner of the **Module Status** LED) begins blinking. The **Module Status** LED will show a chase pattern when the controller is running with no errors.

To address the ME812u

You must give the ME812u an address that is unique on the network. You can address the ME812u before or after you wire it for power.

- 1 If wired for power, turn off the controller's power.
- 2  The controller only reads the rotary switch positions during power up or upon reset.
- 3 Using the rotary switches, set the controller's address to match the **Address** in the controller's properties dialog box in SiteBuilder. Set the **Tens (10's)** switch to the tens digit of the address, and set the **Ones (1's)** switch to the ones digit.

EXAMPLE If the controller's address is 25, point the arrow on the **Tens (10's)** switch to 2 and the arrow on the **Ones (1's)** switch to 5.



Wiring for communications

The ME812u communicates on the following ports.

Port	Protocol	Port type(s)	Baud rate(s)
BACnet	BACnet/ARC156 ¹	EIA-485 (2-wire)	156 kbps
	BACnet MS/TP	EIA-485 (2-wire)	9600 bps 19.2 kbps 38.4 kbps 76.8 kbps (default)
Local Access	Enhanced Access	Rnet ²	115.2 kbps

¹ ARC156 is a unique implementation of the industry standard ARCNET. For a summary of differences between ARCNET and ARC156, see the *ARC156 Wiring Technical Instructions*.

² See *To communicate through the local access port* (page 27).

Wiring specifications

For...	Use...	Maximum Length
ARC156 ¹ and MS/TP ²	22 AWG, low-capacitance, twisted, stranded, shielded copper wire	2000 feet (610 meters)

¹ See the *ARC156 Wiring Technical Instructions*.

² See the *MS/TP Networking and Wiring Technical Instructions*.



WARNING Do not apply line voltage (mains voltage) to the controller's ports and terminals.

To wire to a BACnet/ARC156 network

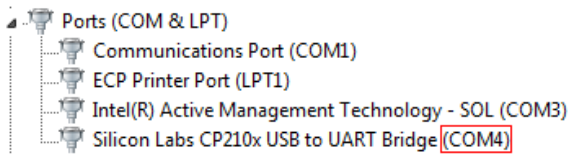
- 1 Turn **off** the ME812u's power.
- 2 Check the communications wiring for shorts and grounds.
- 3 Connect the communications wiring to the BACnet port's screw terminals labeled **Net +**, **Net -**, and **Shield**.
NOTE Use the same polarity throughout the network segment.
- 4 Set the **BACnet Mode** jumper to ARC156.
- 5 If the ME812u is at either end of a network segment, connect a BT485 to the ME812u.
- 6 Turn **on** the ME812u's power.
- 7 Verify communication with the network by viewing a Module Status report in the WebCTRL® interface.

To wire to a BACnet MS/TP network

- 1 Turn **off** the ME812u's power.
- 2 Check the communications wiring for shorts and grounds.
- 3 Connect the communications wiring to the BACnet port's screw terminals labeled **Net +**, **Net -**, and **Shield**.
NOTE Use the same polarity throughout the network segment.
- 4 Set the **BACnet Mode** jumper to MSTP.
- 5 If the ME812u is at either end of a network segment, connect a BT485 to the ME812u.
- 6 Turn **on** the ME812u's power.
- 7 To change the port's baud rate, see *To set a port's baud rate using PuTTY* (page 9).
NOTE Use the same baud rate for all controllers on the network segment.

To set a port's baud rate using PuTTY

- 1 Download and install PuTTY from the *PuTTY website* (<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>).
- 2 Connect a computer to the ME812u's **Local Access** port. See *To communicate through the local access port* (page 27).
- 3 Set the ME812u's **Enhanced Access** DIP switch to **ON**.
- 4 Turn the ME812u's power **Off**, then **On**.
- 5 Start PuTTY.
- 6 Under **Category > Connection**, select **Serial**.
- 7 Under **Options controlling local serial lines**, enter the following settings:

Field	Value
Serial line to connect to	Replace X with the computer's port number that the USB Link Kit cable is connected to. NOTE To find the port number, select Start > Control Panel > System > Device Manager > Ports (Com & LPT) . The COM port number is beside Silicon Labs CP210x USB to UART Bridge . 
Speed (baud)	115200
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None

- 8 Click **Open**. A window similar to the one below appears.

```
BACnet Router, Ethernet MAC address = 00-E0-C9-00-4E-B8
1) Restart
2) Display Modstat
3) IP Address [192.168.168.1]
4) Subnet Mask [255.255.255.0]
5) Default Gateway [0.0.0.0]
6) BACnet/IP UDP Port [0xBAC0]
7) BACnet/IP Network [4824]
8) BACnet/Ethernet Network [4829]
9) BACnet/ARCNET Network [4825]
10) BACnet/MSTP Network [4834]
11) Display B/IP PAD Table
12) Add B/IP PAD Table Entry
13) Delete B/IP PAD Table Entry
14) Clear B/IP PAD Table
15) Set baud rate for MSTP [76800]
16) Set baud rate for PTP [38400]

• The HOME network is updated each time a network number
  is changed (#7-10).

Enter selection: _
```

- 9 Type the number of the baud rate field, then press **Enter**.
- 10 Type the new baud rate, then press **Enter**.
- 11 Type **1**, then press **Enter** to restart the controller.
- 12 When finished, set the ME812u's **Enhanced Access** DIP switch to **OFF** to restore normal functionality to the **Local Access** port.
- 13 Turn the ME812u's power **Off**, then **On**.

Wiring inputs and outputs

Wiring specifications

Input wiring

Input	Maximum length	Minimum gauge	Shielding
Thermistor Dry contact	1000 feet (305 meters)	22 AWG	Shielded
0–5 Vdc 0–10 Vdc	1000 feet (305 meters)	26 AWG	Shielded
0–20 mA	3000 feet (914 meters)	26 AWG	Shielded or unshielded
RTD	100 feet (30 meters)	22 AWG	Shielded
ZS sensor RS sensor Wireless Adapter for wireless sensors Equipment Touch	See <i>Wiring devices to the ME812u's Rnet port</i> (page 13).		

NOTE Automated Logic® recommends use of an external current transducer between an RTD and the ME812u.

Output wiring

To size output wiring, consider the following:

- Total loop distance from the power supply to the controller, and then to the controlled device
NOTE Include the total distance of actual wire. For 2-conductor wires, this is twice the cable length.
- Acceptable voltage drop in the wire from the controller to the controlled device
- Resistance (Ohms) of the chosen wire gauge
- Maximum current (Amps) the controlled device requires to operate

To wire inputs and outputs



WARNING Do not apply line voltage (mains voltage) to the controller's ports and terminals.

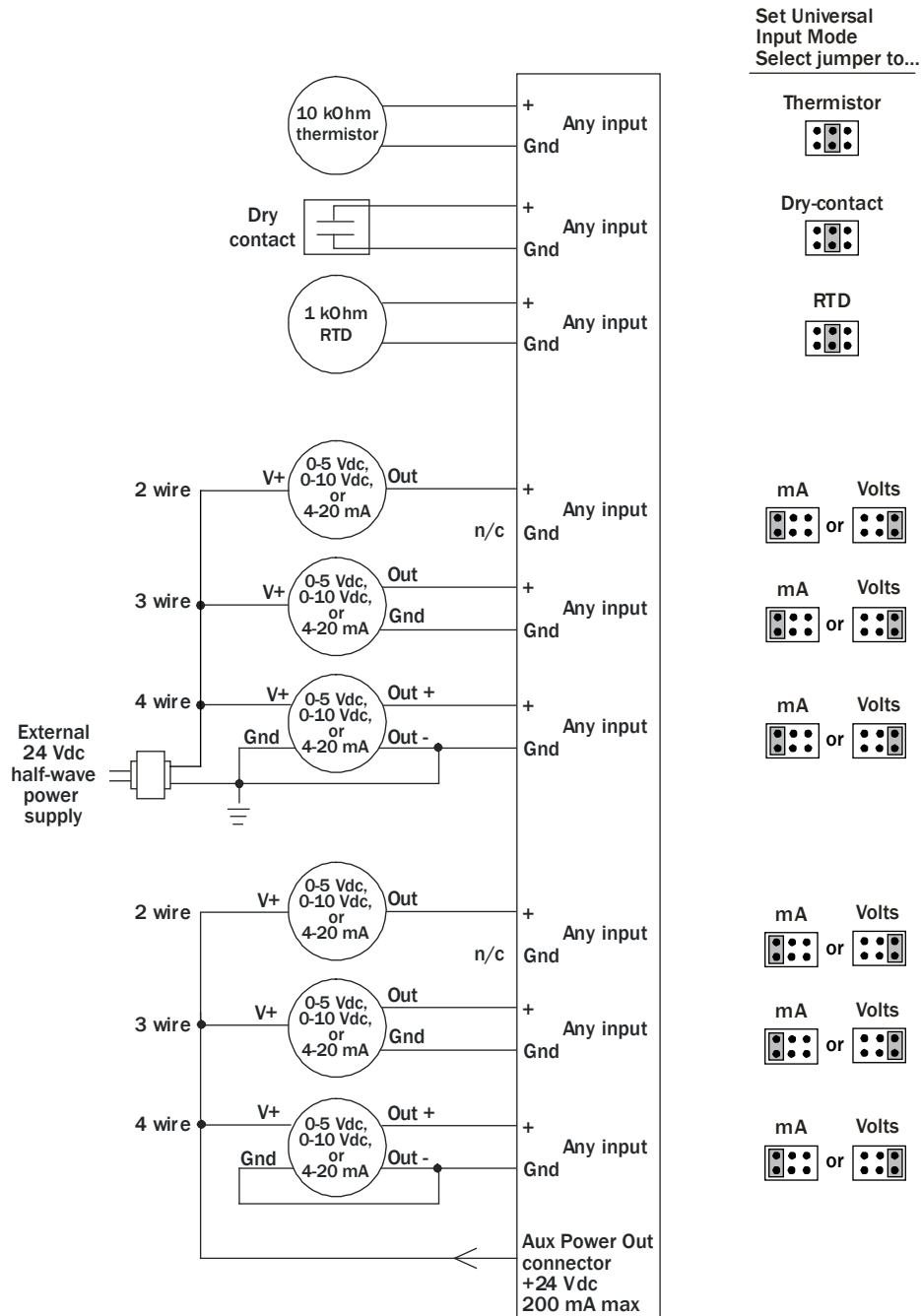
NOTE If the ME812u has an expander mounted to its coverplate, see *ME812u coverplate* (page 34) for the location of connectors, switches, and jumpers.

- 1 Verify that the ME812u's power and communications connections work properly.
- 2 Turn **off** the ME812u's power.

3 Connect the input wiring to the screw terminals on the ME812u. See figure below.

NOTES

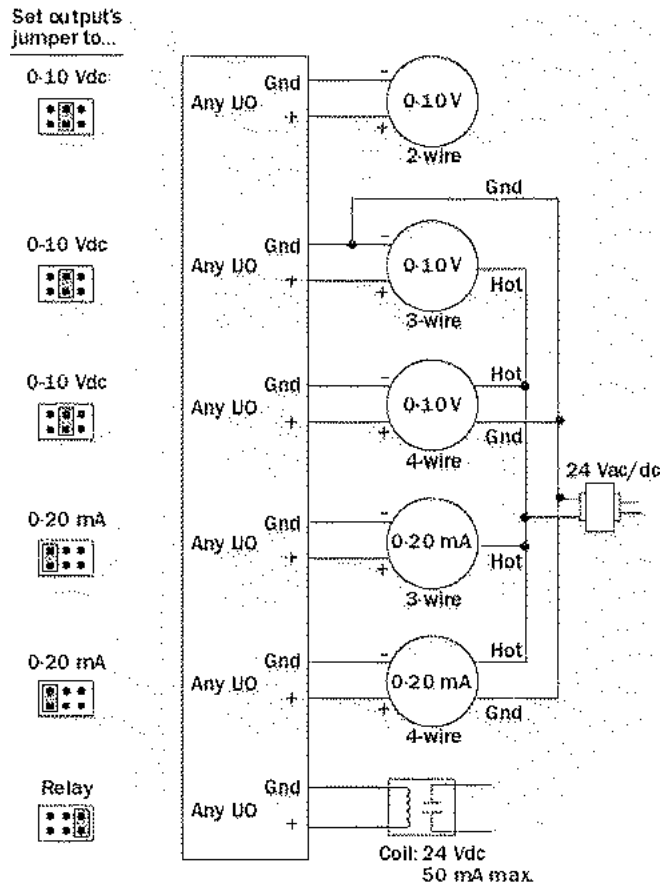
- Connect the shield wire to the **GND** terminal with the ground wire.
- For a loop-powered 4-20 mA sensor, wire the sensor's positive terminal to the **+** terminal on the ME812u's **Aux Power Out** connector. Wire the sensor's negative terminal to an input's **+** terminal.



4 Set each input's **Universal Input Mode Select** jumper to indicate the type of input.

- 5 Connect digital and analog output wiring to the **UO** screw terminals on the ME812u and to the controlled device. Connect the ground wire to the UO's **Gnd** terminal.

⚠ WARNING Do not apply 24 Vac to these universal outputs.



- 6 Set each output's jumper to the type of device wired to the output.
- 7 For each digital output, turn the output's potentiometer clockwise until it stops (maximum output).
- 8 Turn **on** the ME812u's power.

Wiring devices to the ME812u's Rnet port

You can wire the following devices to the ME812u's Rnet port in a daisy-chain or star configuration:

- ZS or RS sensors (page 14)
- *Wireless Adapter* (page 15) that communicates with wireless sensors
- *Equipment Touch* (page 16)

NOTE ZS sensors, a Wireless Adapter, and an Equipment Touch can share the same Rnet, but not RS sensors.

The Rnet communicates at a rate of 115 kbps.

Rnet wiring specifications

NOTE Use the specified type of wire and cable for maximum signal integrity.

Description	4 conductor, shielded or unshielded, CMP, plenum rated cable
Conductor	22 AWG (7x0096) bare copper
Maximum length	500 feet (152 meters)
Insulation	Low-smoke PVC (or equivalent)
Color Code	Black, white, green, red
Shielding	If shielded, Aluminum/Mylar shield (100% coverage) with TC drain wire
UL temperature rating	32–167 °F (0–75 °C)
Voltage	300 Vac, power limited
Listing	UL: NEC CL2P, or better

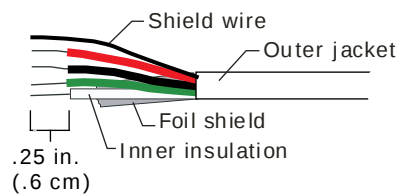
To wire a ZS or an RS sensor to the ME812u

For complete sensor installation instructions, including ZS sensor power requirements, see:

- *ZS Sensors Technical Instructions*
- *RS Sensors Technical Instructions*

- 1 Turn **off** the ME812u's power.

Partially cut, then bend and pull off the outer jacket of the Rnet cable(s). Do not nick the inner insulation.



- 2 Strip about .25 inch (.6 cm) of the inner insulation from each wire.
- 3 Wire each terminal on the ME812u's **Rnet** port to the terminal of the same name on the sensor.

NOTES

- If using shielded wire, connect the shield wire and the ground wire to the **Gnd** terminal.
- Verify that the **Enhanced Access** DIP switch is set to **Off**.

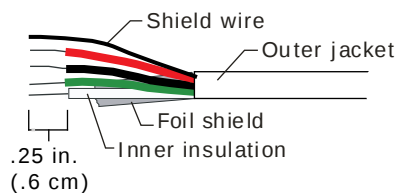
- 4 Turn **on** the ME812u's power.

To wire a Wireless Adapter to the ME812u

NOTES

- The Wireless Adapter requires a 24 Vac power supply. It is not powered by the Rnet.
- If the Wireless Adapter will be:
 - Daisy-chained on the Rnet with ZS sensors or an Equipment Touch, use the standard 4-conductor Rnet cable.
 - The only device on the Rnet, you can use a 3-conductor cable instead of the standard 4-conductor Rnet cable.
- For complete Wireless Adapter installation instructions, see the *Wireless Sensors Technical Instructions*.

- 1 Turn **off** the ME812u's power.
- 2 Partially cut, then bend and pull off the outer jacket of the Rnet cable(s). Do not nick the inner insulation.



- 3 Strip about .25 inch (.6 cm) of the inner insulation from each wire.
- 4 Wire the ME812u's **Rnet+**, **Rnet-**, and **Gnd** terminals to the terminals of the same name on the Wireless Adapter's Rnet connector.



NOTES

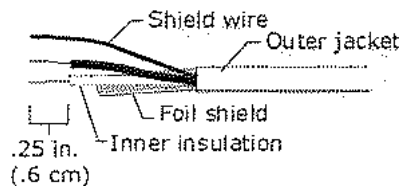
- If using shielded wire, connect the shield wire and the ground wire to the **Gnd** terminal.
 - Verify that the **Enhanced Access** DIP switch is set to **Off**.
- 5 Turn **on** the ME812u's power.

To wire an Equipment Touch to the ME812u

NOTES

- The Equipment Touch requires a 24 Vac power supply. It is not powered by the Rnet.
- If the Equipment Touch will be:
 - Daisy-chained on the Rnet with ZS sensors or a Wireless Adapter, use the standard 4-conductor Rnet wiring and follow the wiring instructions *To wire a ZS or an RS sensor to the ME812u* (page 14).
 - The only device on the Rnet, you can use a 2-conductor cable instead of the standard 4-conductor Rnet cable and follow the instructions below.
- For complete Equipment Touch installation instructions including wiring diagrams, see the *Equipment Touch Installation and Setup Guide*.

- 1 Turn **off** the ME812u's power.
- 2 Partially cut, then bend and pull off the outer jacket of the cable. Do not nick the inner insulation.



- 3 Strip about .25 inch (.6 cm) of the inner insulation from each wire.
- 4 Wire the ME812u's **Rnet+** and **Rnet-** terminals to the terminals of the same name on the Equipment Touch's connector.

NOTES

- If using shielded wire, connect the shield wire and the ground wire to the **Gnd** terminal.
 - Verify that the **Enhanced Access** DIP switch is set to **Off**.
- 5 Turn **on** the ME812u's power.

Downloading the ME812u

Download to send the following items to the ME812u:

Item	Notes
Up to 999 control programs, depending on available memory	Must be in WebCTRLx.x\webroot\<system_name>\programs .
DRV_MELGR_VANILLA driver	Must be in WebCTRLx.x\webroot\<system_name>\drivers . NOTE To verify that you have the driver's latest version, go to http://accounts.automatedlogic.com/download , then select Drivers > ExecB . Compare the latest version to the ME812u's driver in SiteBuilder.
Editable properties	
Schedules	

If you change any of the above items or the ME812u's address after the initial download, you must download again. The first download takes longer than subsequent downloads.



CAUTIONS

- The ME812u will lose stored data when you download.
- Equipment controlled by the ME812u will shut down and restart when you download.
- After you download, the **Archive Valid** LED lights to indicate the downloaded items are stored in the ME812u's flash memory. This type of memory is not dependent on power or battery backup. If you need to remove power from the controller after downloading, make sure this LED is lit.

To download from the WebCTRL® interface

If your network is complete, you can download from any network browser. If not complete, connect a laptop with a local copy of the system database to the ME812u's local access port. See *To communicate through the local access port* (page 27).

- 1 On the WebCTRL® **Network**  tree, select the controller.
- 2 Click **Downloads**.
- 3 Do one of the following:
 - If the controller is in the Downloads list, go to step 4.
 - If the controller is not in the list:
 - a. Click **Add**.
 - b. In the pop-up, select the controller.
 - c. Select **All Content**.
 - d. Click **Add**.
 - e. Click **Close**.
- 4 Select the controller in the Downloads list.
- 5 Click **Start**.

NOTES

- If the download fails, locate and resolve the problem, then retry the download.
- You can also download a controller from the **Devices** page.

To assign inputs or outputs to points

To use an input or output, you must assign it to its corresponding point in the control program.

- 1 In the WebCTRL® **Geographic**  tree, select the equipment controlled by the ME812u.
- 2 On the **Properties** page, select the **I/O Points** tab.
- 3 In each point's **Num** field, type the number of the controller's corresponding input or output. For example, if you use DO1 on the ME812u for the point **Pump S/S**, type 1 in the **Num** field for **Pump S/S**.

NOTES

- **Exp** (expander number) is 00 for the ME812u.
 - Do not assign the same output number to more than one point.
- 4 Enter the appropriate values for each input and output in the remaining columns. See *Input values*, *Output values*, *Resolution values* and *Offset/Polarity values* below.
NOTE You can also enter these values in the EIKON® LogicBuilder application.
 - 5 If you have not performed the initial download to the ME812u, you must download now so you can verify inputs and outputs.
 - 6 To verify each input's operation, force each sensor to a known value, then compare it to the **Value** shown on the **Properties** page on the **I/O Points** tab.
 - 7 To verify each output's operation, lock each output to a known condition on the **I/O Points** tab, then verify that the equipment operates correctly.

Input values

Input	I/O Type	Sensor/Actuator Type	Min/Max
Analog (BAI)			
0-5 Vdc	0-5 Volt	Linear Full Range	Engineering values associated with 0 Vdc (Min) and 5 Vdc (Max) ¹
0-10 Vdc	0-10 Volt	Linear Full Range	Engineering values associated with 0 Vdc (Min) and 10 Vdc (Max) ¹
2-10 Vdc	0-10 Volt	Linear w/Offset, 2-10 Volts	Engineering values associated with 2 Vdc (Min) and 10 Vdc (Max) ¹
0-20 mA	0-20 mA	Linear Full Range	Engineering values associated with 0 mA (Min) and 20 mA (Max) ¹
4-20 mA	0-20 mA	Linear w/Offset, 4-20 mA	Engineering values associated with 4 mA (Min) and 20 mA (Max) ¹

Input	I/O Type	Sensor/Actuator Type	Min/Max
RTD	RTD Input	Select your RTD type or set up and select a Non-Linear, Custom Table ²	N/A
Thermistor	Thermistor	Select your Thermistor type or set up and select a Non-Linear, Custom Table ²	N/A
Pulse to Analog (BPTA) ³			
Pulse Counter	Counter Input	N/A	N/A
Digital (Binary) (BBI)			
Dry Contact	Dry Contact	N/A	N/A

¹ The sensor reads a value and sends a corresponding signal (Volt, mA, or psi) to the ME812u's physical input. The Analog Input microblock uses the **Min** and **Max** values to linearly translate the signal into the engineering value used in subsequent control logic. For example, set **Min** to 0 and **Max** to 10 for a 4–20 mA sensor that measures velocity from 0.0 to 10.0 inches/second so that when the input reads 4 mA, the microblock outputs a value of 0. Similarly, when the input reads 8 mA, the microblock outputs a value of 2.5.

² You can set up a *custom translation table* (page 25) on the driver's **Custom Translation Tables** pages in the WebCTRL® interface.

³ The control program must have one Pulse to Analog Input microblock for each pulse counting input.

Output values

Output	I/O Type	Sensor/Actuator Type	Min/Max
Analog (BAO)			
0–10 Vdc	Electrical 0–10 Volt	Linear Full Range	Engineering values associated with 0 Vdc (Min) and 10 Vdc (Max) ¹
2–10 Vdc	Electrical 0–10 Volt	Linear w/Offset, 2–10 Volts	Engineering values associated with 2 Vdc (Min) and 10 Vdc (Max) ¹
0–20 mA	Electrical 0–20 mA	Linear Full Range	Engineering values associated with 0 mA (Min) and 20 mA (Max) ¹
4–20 mA	Electrical 0–20 mA	Linear w/Offset, 4–20 mA	Engineering values associated with 4 mA (Min) and 20 mA (Max) ¹
Digital (Binary) (BBO)			
Relay	Relay/Triac Output	N/A	N/A

¹ The Analog Output microblock uses the **Min** and **Max** values to linearly translate its EIKON® LogicBuilder wire value into a physical output signal (Volt, mA, or psi) sent from the ME812u to an actuator. For example, set **Min** to 0 and **Max** to 100 for an Analog Output microblock that receives a 0 to 100% open signal from a PID microblock and that controls a 0–10 Vdc actuator so that when the PID signal is 100%, the ME812u output is 10 Vdc. Similarly, when the PID signal is 50%, the ME812u output is 5 Vdc.

Resolution values

Resolution is not particular to a type of input or output, but the driver handles analog and digital (binary) inputs and outputs differently. To set these values appropriately, you should understand how the driver uses them.

Resolution	Notes
Analog Input (BAI)	The driver truncates the microblock's present value according to the resolution. EXAMPLE If the calculated present value is 13.789 and you set the Resolution to 0.1, the control program uses 13.7 for any calculations downstream from the microblock.
Analog Output (BAO)	The driver truncates the wire input value to the microblock before performing any scaling calculations. EXAMPLE If the wire input value is 13.789 and you set the Resolution to 0.1, the microblock uses 13.7 for any scaling calculations.
Digital Inputs and Outputs	N/A

Offset/Polarity values

Offset/Polarity is not particular to a type of input or output, but the driver handles analog and digital (binary) inputs and outputs differently. To set these values appropriately, you should understand how the driver uses them.

Offset/Polarity	Notes
Analog Input (BAI)	Offset value (positive or negative) adds a fine adjustment to a sensor reading after all scaling for calibration. EXAMPLE If a sensor reads 74.9°F when the actual measured value is 73.6°F, enter an Offset of -1.3 to calibrate the sensor to the measured value.
Analog Output (BAO)	You can use the Offset value (positive or negative) to calibrate an output, but you generally do not need to. If used, the driver adds the offset value to the wire input value before performing any scaling calculations to determine the ME812u's output.
Digital (Binary) Input (BBI)	Polarity determines the microblock's present value when no signal is received from the equipment. When no signal is received from the equipment, if Polarity is set to: normal —present value is off reversed —present value is on
Digital (Binary) Output (BBO)	Polarity determines the ME812u's output based on the control program's signal to the microblock. When the control program's signal to the microblock is on , if Polarity is set to: normal —output is on reversed —output is off NOTE Regardless of Polarity , the output will be off if the ME812u loses power.

To use the Auto-Off-On switches

NOTE If the ME812u has an expander mounted to its coverplate, see *ME812u coverplate* (page 34) for the location of switches.

You can control an output using the **Auto-Off-On** switch.

Set the switch to...	To...
On	Turn on the output.
Off	Turn off the output
Auto	Let the control program control the output

The potentiometer, located between the **Auto-Off-On** switch and the jumper, allows you to manually control the output level of an analog output. Place the **Auto-Off-On** switch in the **On** position, then turn the potentiometer counterclockwise to reduce the output, or clockwise to increase the output.



For a digital output, turn the potentiometer clockwise until it stops (maximum output) and leave it in this position.

The control program can monitor the status of an **Auto-Off-On** switch and display the status on the control program's **Properties** page > **I/O Points** tab in the WebCTRL® interface. The **Value** of the point monitoring the **Auto-Off-On** switch shows **Off** if the switch is set to **Auto**, and **On** if the switch is set to **Off** or **On**.

To monitor an Auto-Off-On switch

- 1 Insert a BACnet Binary Input microblock in the control program.
- 2 On the microblock's **Properties** page in the WebCTRL® interface, set the **I/O Type** field to **H-O-A Status Feedback**.
- 3 In the **Input Number** field, type the number of the output you want to monitor.

To set up the driver

After you download the driver and control program(s) to the ME812u, you may want to change the driver's properties in the WebCTRL® interface to suit your application.

- 1 On the WebCTRL® **Network**  tree, click  to the left of your ME812u.
- 2 Click  to the left of **Driver** to see its children.
- 3 Make changes as needed on the **Properties** page for **Driver** and any of its children.

Driver

On the **Driver** page, you can change the following properties:

- Backup battery conservation settings. See table below.
- Module clock synchronization and failure. See table below.
- Network Input microblock communication properties.

Backup Battery	
Turn off internal backup battery after ____ days to conserve battery life (shutoff date/time)	How long backup battery should run after power loss.  TIP Downloading activates the battery backup. To conserve battery life when you know the ME812u will be without power for an extended period after downloading (for example, during shipment): 1 Verify the Archive Valid LED is lit, then set this field to 0. 2 After you install the ME812u and apply power, enter a number greater than 0.
BACview Control	
Keypad Inactivity timeout (minutes)	Log out the user (if a user-level password is required), turn off the backlight, and display the standby screen after this period of inactivity.
Keypad user-level password	Numeric password user must enter to access system through a BACview® device.
TouchScreen Control	
TouchScreen Schedule Edit Enable	Check this field to allow a user to edit this controller's schedules from an Equipment Touch's Schedules screen.
Module Clock	
Clock Fail Date and Time	Date and time the control program uses when controller's real-time clock is invalid.  TIP Use an occupied date and time (such as a Tuesday at 10 a.m.) so the equipment does not operate in unoccupied mode if the controller loses power during occupancy.
Time Synch Sensitivity (seconds)	When the controller receives a time sync request, if the difference between the controller's time and the time sync's time is greater than this field's value, the controller's time is immediately changed. If the difference is less than this field's value, the controller's time is slowly adjusted until the time is correct.
Network Microblocks	
Number of poll retries before Network Input Microblocks indicate failure	The maximum number of retries after the initial attempt that a Network microblock will attempt to communicate with its target device. If unsuccessful, the point will transition to an idle state for 30 seconds before attempting to communicate again. Change this field only if directed by Technical Support.
Periodic rebinding interval	If a microblock uses a wildcard in its address, this timer determines how often the microblock will attempt to find the nearest instance of its target. For example, if an outside air temperature address uses a wildcard, a VAV application will look for the outside air temperature on the same network segment or on the nearest device containing that object.

BACnet COV Throttling

Enable COV Throttling

Under normal circumstances, COV Throttling should be enabled to prevent excessive network traffic if an object's COV Increment is set too low. See EXCEPTION below.

When enabled, if an object generates excessive COV broadcasts (5 updates in 3 seconds), the driver automatically throttles the broadcasts to 1 per second. Also, if the object's value updates excessively for 30 seconds, an alarm is sent to the WebCTRL® application listing all objects that are updating excessively. A Return-to-normal alarm is sent only after all objects have stopped updating excessively.

EXCEPTION: In rare circumstances, such as process control, a subscribing object may require COV updates more frequently than once per second. For these situations, clear this checkbox, but make sure that your network can support the increased traffic. You will also need to disable the **Excessive COV** alarms under the driver's **Common Alarms**.

Trend Sampling

Collect a daily midnight sample for all points in this controller that are sampling on COV

For values that change infrequently, select to verify at midnight daily that the point is still able to communicate trend values.

Device

On the **Device** page, you can change the following properties:

- BACnet device object properties for the ME812u
- ME812u communication

Configuration

NOTE The three APDU fields refer to all networks over which the ME812u communicates.

Max Masters and Max Info Frames

Apply only if the ME812u's MS/TP network is enabled.

Notification Classes

Alarms in the WebCTRL® application use Notification Class #1. A BACnet alarm's Notification Class defines:

- Alarm priority for Alarm, Fault, and Return to Normal states
- Options for BACnet alarm acknowledgment
- Where alarms should be sent (recipients)

Priorities	NOTE BACnet defines the following Network message priorities for Alarms and Events.										
	<table> <tr> <th>Priority range</th><th>Network message priority</th></tr> <tr> <td>00–63</td><td>Life Safety</td></tr> <tr> <td>64–127</td><td>Critical Equipment</td></tr> <tr> <td>128–191</td><td>Urgent</td></tr> <tr> <td>192–255</td><td>Normal</td></tr> </table>	Priority range	Network message priority	00–63	Life Safety	64–127	Critical Equipment	128–191	Urgent	192–255	Normal
Priority range	Network message priority										
00–63	Life Safety										
64–127	Critical Equipment										
128–191	Urgent										
192–255	Normal										
Priority of Off-Normal	BACnet priority for Alarms.										
Priority of Fault	BACnet priority for Fault messages.										
Priority of Normal	BACnet priority for Return-to-normal messages.										
Ack Required for Off-Normal, Fault, and Normal	Specifies whether alarms associated with this Notification Class require a BACnet Acknowledgment for Off-Normal, Fault, or Normal alarms.  TIP You can require operator acknowledgment for an Alarm or Return-to-normal message (stored in the WebCTRL® database). In the WebCTRL® interface on the Alarm > Enable/Disable tab, change the acknowledgment settings for an alarm source or an alarm category.										
Recipient List											
Recipients	The first row in this list is the WebCTRL® application. Do not delete this row. Click Add if you want other BACnet devices to receive alarms associated with this Notification Class.										
Recipient Description	Name that appears in the Recipients table.										
Recipient Type	Use Address (static binding) for either of the following: - Third-party BACnet device recipients that do not support dynamic binding - When you want alarms to be broadcast (you must uncheck Issue Confirmed Notifications). This use is rare.										
Days and times	The days and times during which the recipient will receive alarms.										
Recipient Device Object Identifier	Type the Device Instance from SiteBuilder (or from the network administrator for third-party devices) in the # field.										
Process Identifier	Change for third-party devices that use a BACnet Process Identifier other than 1. The WebCTRL® application processes alarms for any 32-bit Process Identifier.										
Issue Confirmed Notifications	Select to have a device continue sending an alarm message until it receives delivery confirmation from the recipient.										
Transitions to Send	Uncheck the types of alarms you do not want the recipient to get.										

Calendars

Calendars are provided in the driver for BACnet compatibility only. Instead, use the **Schedules** feature in the WebCTRL® interface.

Common and Specific Alarms

On these pages, you can enable/disable, change BACnet alarm properties, or set delays for the following BACnet alarms:

Common alarms:

- Module Halted
- All Programs Stopped
- Duplicate Address
- Locked I/O
- Control Program
- Program Stopped
- Excessive COV

Specific alarm:

- Dead Module Timeout
- Low Battery Alarm
- Pneumatic Unstable Alarm
- Pneumatic Leak Alarm
- Low Main Air Alarm

NOTE To set up alarm actions for controller generated alarms, see *Setting up alarm actions* in WebCTRL® Help.

Module Generated Alarm	
Description	Short message shown on the Alarms page or in an alarm action when this type of alarm is generated.
Events	
Alarm Category and Alarm Template	See <i>Customizing alarms</i> in WebCTRL® Help.
Enable	Clear these checkboxes to disable Alarm or Return to normal messages of this type from this controller.
Notification Class	Do not change this field.

Custom Translation Tables

You can set up a translation table that an analog input will use to translate the raw data from a non-linear sensor to the engineering units you want it to output on the wire. In the **Network**  tree, select **Custom Translation Table #1, #2, or #3**. The **Properties** page has instructions. For the input to use the translation table, navigate to the input in the **Geographic**  tree, select the **Details** tab, then set **Sensor Type (Scaling Method)** to **Non-Linear, Custom Table #__**.

I/O Tuning

Applies if an expander with pneumatic analog outputs is attached to the ME812u.

On the **I/O Tuning** page, you can change communication and control settings for pneumatic inputs and outputs.

Pneumatic control power up delay (seconds)	Delay after controller is reset before pneumatic control is available.
Refresh all channels every ____ seconds	Each pneumatic output is refreshed at this interval and when its setpoint changes.
Maximum service time per channel (seconds)	Time allowed for each output to reach setpoint.
Use coarse control when more than ____ PSI beyond setpoint	Coarse control allows faster but less accurate pressure changes. Use fine control when pressure is closer than this value to setpoint.
Fine control supply gain	Proportional gain used when setpoint is greater than current pressure. Larger actuators require higher gains.
Fine control bleed gain	Proportional gain used when setpoint is less than current pressure.
Fine control minimum valve pulse length (msec)	The shortest duration that a pneumatic valve is pulsed open when making fine adjustments to the line pressure. NOTE Enter an even multiple of 10msec between 20 and 4000.
"on" pressure for pneumatic digital outputs (psi)	Pressure maintained by digital outputs that are ON.
"off" pressure for pneumatic digital outputs (psi)	Pressure maintained by digital outputs that are OFF.
Main air low pressure limit (psi)	Trigger Low Main Air Alarm when main air pressure drops below this value.

Pneumatic Lines

Applies if an expander with pneumatic analog outputs is attached to the ME812u.
This page shows pneumatic line status information.

BACnet router properties

Select **Disable Color Cache**. The other BACnet router properties do not apply to the ME812u.

BACnet half-router properties

Does not apply to the ME812u.

Alarm Store/Forward

On the **Alarm Store and Forward** page, you can change alarm delivery settings for the ME812u used to store and forward alarms from a remote dial-up site.

BACnet firewall

Does not apply to the ME812u.

Xnet

If the ME812u has MEx expanders attached, you can change the baud rate and communications timeout on the **Xnet** page.

Xnet Configuration	
Data Rate	Set at 500 kbps.
Comm. Timeout (seconds)	If the expander does not receive communication from the controller for this amount of time, the expander will reset itself. The range is 15–300 seconds.

Expanders

If the ME812u has expanders attached, the **Expanders** page displays expander status information.

To communicate through the local access port

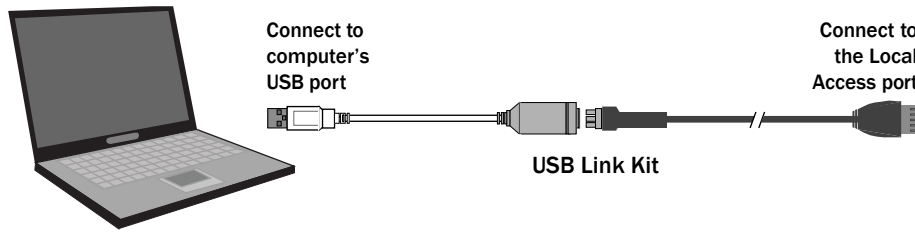
Using a computer and a USB Link Kit, you can communicate locally with the ME812u to download or to troubleshoot.

PREREQUISITES

- A computer with a USB port
- A USB Link Kit. See the *USB Link Kit Technical Instructions*.
NOTE The USB Link Kit driver is installed with a WebCTRL® v5 or later system. But if needed, you can get the latest driver from <http://www.silabs.com/products/mcu/Pages/USBtoUARTBridgeVCPDrivers.aspx>. Install the driver before you connect the USB Link Kit to your computer.
- The controller driver drv_melgr_vanilla v2-04-139 or later

 **CAUTION** If multiple controllers share power but polarity was not maintained when they were wired, the difference between the controller's ground and the computer's AC power ground could damage the USB Link Kit and the controller. If you are not sure of the wiring polarity, use a USB isolator between the computer and the USB Link Kit. Purchase a USB isolator online from a third-party manufacturer.

- 1 Connect the USB Link Kit to the computer and to the controller's Local Access port.



NOTE If using a USB isolator, plug the isolator into your computer's USB port, and then plug the USB Link Kit cable into the isolator.

- 2 Set the controller's **Enhanced Access** DIP switch.

To communicate In...	Set switch to...
The WebCTRL® application	Off
PuTTY or HyperTerminal	On
SiteBuilder to set a custom IP address	On

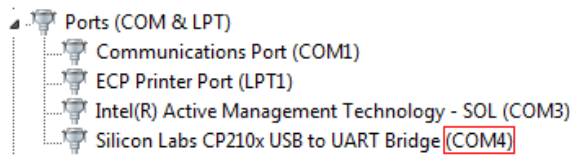
- 3 Turn the controller's power off, then on again.

To set up a Local Access connection in the WebCTRL® interface

For the WebCTRL® application to communicate with the Local Access port, you must do the following:

- 1 On the **System Configuration**  tree, select **Connections**.
- 2 On the **Configure** tab, click **Add**.
- 3 From the **Type** drop-down list, select **BACnet Local Access**.
- 4 Optional: Edit the **Description**.
- 5 Type the computer's **Port** number that the USB cable is connected to.

NOTE To find the port number, plug the USB cable into the computer's USB port, then select **Start > Control Panel > System > Device Manager > Ports (Com & LPT)**. The COM port number is beside **Silicon Labs CP210x USB to UART Bridge**.



- 6 Set the **Baud** rate to 115200.
- 7 Click **Accept**.
- 8 On the **View** tab, click the button next to the BACnet/IP network, then select **BACnet Local Access**.
- 9 Click **Accept**.
- 10 On the **Configure** tab, select **BACnet Local Access**, then click **Start**.

NOTE If an error message appears, make sure the COM port you selected is not in use. For example, PuTTY may be open and is holding the port open.

- 11 On the **Network**  tree, select the controller that you are connected to.
- 12 Click , then select **Manual Command**.
- 13 Type `rnet` here in the dialog box, then click **OK**.
- 14 On the **Properties** page, click **Module Status**. If a Modstat report appears, the WebCTRL® application is communicating with the controller.

Troubleshooting

If you have problems mounting, wiring, or addressing the ME812u, contact ALC Technical Support.

LED's

The **Module Status** LED can display the following error codes.

Error Code...	Indicates...	Possible solutions
0	The control program or driver has not been downloaded.	Download All Content to the ME812u. See <i>Downloading the ME812u</i> (page 17).
1	A control program error	Obtain a Module Status Report (Modstat) and look for error conditions. See <i>To get the controller's serial number</i> (page 31) for instructions on obtaining a Modstat. If you cannot determine the error from the Modstat, send a screenshot of the Modstat to Technical Support.
2	The controller's memory is full	In the WebCTRL® interface, reduce the amount of trend data being stored in the controller. In SiteBuilder, reduce the amount of control programs.
3	A setup error	Verify: • The address has been set on the rotary switches. See <i>Addressing the ME812u</i> (page 7). • The address is unique on the network • DIP switches are set correctly
4	A system error	Obtain a Module Status Report (Modstat) and look for error messages. See <i>To get the controller's serial number</i> (page 31) for instructions on obtaining a Modstat. If you cannot determine the error from the Modstat, send a screenshot of the Modstat to Technical Support.
7	An abnormal restart	See solution above for #4.

Error Code...	Indicates...	Possible solutions
8	The controller is formatting	The number 8 should display only during the short formatting period. If this number displays continuously or flashes intermittently with another number, try each of the following: • Turn the ME812u's power off, then on. • Format the ME812u. See <i>To format the controller</i> (page 30). • Download the controller. See <i>Downloading the ME812u</i> (page 17). • Replace the ME812u.

Other LED's show the status of certain functions.

If this LED is on...	Status is...
Power	The ME812u has power
BACnet TX	The ME812u is transmitting data over the controller network.
BACnet RX	The ME812u is receiving data from the controller network.
Archive Valid	The controller's memory backup is valid
Brownout	Incoming power is low
Battery low	The battery is low

Formatting the controller

If you cannot communicate with a controller after downloading it, as a last resort, you can manually format the controller to erase its memory.

- 1 Turn **off** the ME812u's power.
- 2  Make sure the address switches are not set to 0, 0.
- 3 Hold down the controller's **Format** button while you turn its power on.
- 4 Continue to hold down the **Format** button until the controller displays **8** and then **0**, then release the button.
- 5 Download the ME812u.

To get the ME812u's serial number

If you need the ME812u's serial number when troubleshooting, the number is on:

- a sticker on the back of the main controller board
- a Module Status report (Modstat) under **Core** (or **Main**) **board hardware**



To obtain a modstat in the WebCTRL® interface:

- 1 Select the ME812u in the **Network**  tree.
- 2 On the **Properties** page, click **Module Status**.

Recovering from a power outage

Battery function

The ME812u has a 10-year Lithium CR123A battery that retains the following data for a maximum of 720 hours during power outages.

- Time
- Control programs
- Editable properties
- Schedules
- Trends

To conserve battery life, you can set the driver to turn off battery backup after a specified number of days and depend on the archive function to restore data when the power returns. See *To set up the driver > Driver* (page 22).

Archive function

The following items are archived to non-volatile Flash memory daily and after every power up or download.

- Control programs
- Editable properties
- Schedules

If a power outage occurs and the battery backup fails or is turned off after a specified number of days, the above data is automatically restored from the archive. If changes were made in the WebCTRL® interface since the last archive, you may need to download parameters after power returns to correct any mismatches.

You can see the status of the latest archive in the WebCTRL® interface on the controller's **Driver** page under **Flash Memory Archive**.

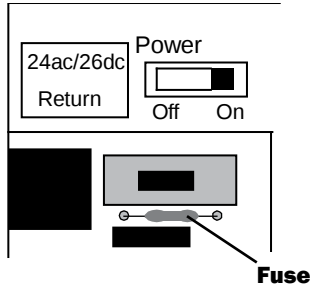
Replacing the ME812u's battery

If the ME812u's **Battery low** LED is lit or if the ME812u sends a **Low Battery** alarm to the WebCTRL® application, replace the battery.

- 1 Verify that the ME812u's power is on.
- 2 Using a small flathead screwdriver, pry up each side of the black battery clip until it is free and you can remove it.
- 3 Remove the battery from the controller, making note of the battery's polarity.
- 4 Insert the new battery into the controller, matching the polarity of the battery you removed.
- 5 Push the black clip back onto the battery until you hear both sides click in place.
- 6 Download the ME812u.

To replace the ME812u's fuse

If you turn on the ME812u's power switch and the Power LED is not lit, use a multimeter to see if the 3 Amp Pico fuse that protects the incoming power is blown.

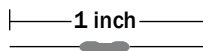


Before replacing the fuse, try to determine why the fuse blew.

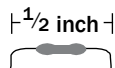
- Check the Power wiring polarity of the ME812u, any attached MEx expanders, and any other controllers that share the power supply. Use the same polarity for all of them.
- Verify that outputs are wired to the appropriate types of devices. See *Outputs* (page 4). For example, you cannot wire a 24 Vac device to an output.
- If the **Aux Power Out** connector is used, verify that it is wired correctly. See *To wire inputs and outputs* (page 11).

To replace the fuse:

- 1 Turn **off** the ME812u's power.
- 2 Using needle-nose pliers, pull the bad fuse from the ME812u.
- 3 Cut the wires on the new fuse so that the total length is approximately 1 inch and the fuse is centered.



- 4 Bend the wire ends so that the length is approximately 1/2 inch.



- 5 Use the pliers to grip one wire end of the fuse and push into a fuse socket on the ME812u.
- 6 Grip the other wire end of the fuse and push into the other fuse socket.
- 7 Turn on the power and verify that the Power LED is lit.

To take the ME812u out of service

If needed for troubleshooting or start-up, you can prevent the WebCTRL® application from communicating with the ME812u.

- 1 On the WebCTRL® **Network**  tree, select the ME812u.
- 2 On the **Properties** page, check **Out of Service**.
- 3 Click **Accept**.

Compliance

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



CAUTION Changes or modifications not expressly approved by the responsible party for compliance could void the user's authority to operate the equipment.

CE Compliance



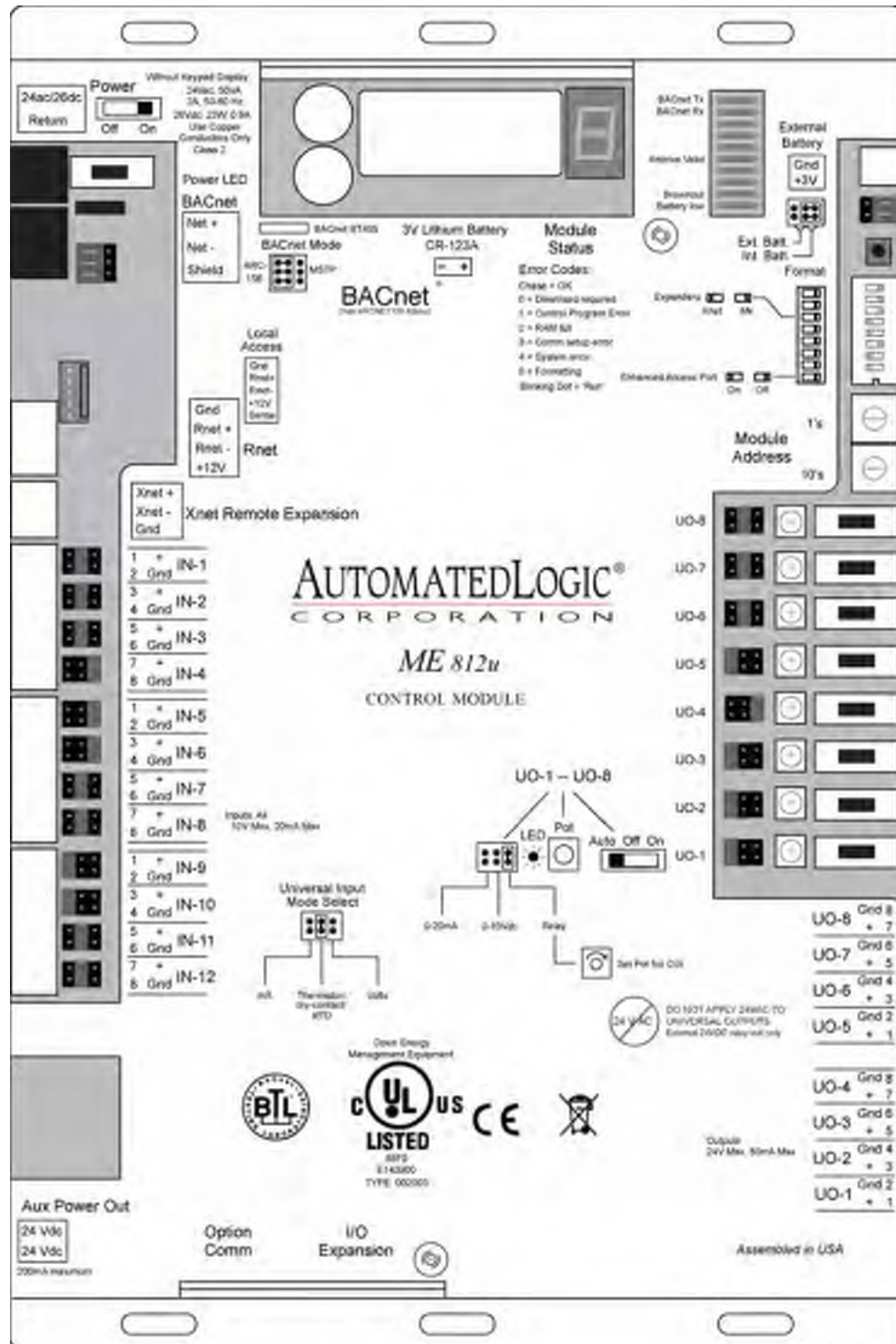
WARNING This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

BACnet Compliance

Compliance of listed products to requirements of ASHRAE Standard 135 is the responsibility of BACnet International. BTL® is a registered trademark of BACnet International.

Appendix - ME812u coverplate

If the ME812u has an expander mounted to its coverplate, see the drawing below for the location of ports, connectors, switches, and jumpers.



Document revision history

Important changes to this document are listed below. Minor changes such as typographical or formatting errors are not listed.

Date	Topic	Change description	Code*
2/6/17	Specifications	Added wireless sensors to the Rnet port specification.	X-D
	Zone sensors	Added wireless sensors to this topic.	
	Equipment Touch	Added Wireless Adapter to this topic.	
	Wiring inputs and outputs > Wiring specifications	Added Wireless Adapter to this topic.	
	Wiring devices to the Rnet port	Added Wireless Adapter to this topic.	
	To wire a Wireless Adapter to the ME812u	New topic.	
9/28/16	To set up a Local Access connection in the WebCTRL interface	Updated WebCTRL menu button in step 12.	A-D
	Appendix - ME812u coverplate	Updated coverplate	A-D
8/12/16	LEDs	Added description of #7 LED to table.	X-TS-RB-F
3/1/16	BACnet firewall	New topic	A-D
9/23/15	Specifications	Removed "(Replacement fuses available from Automated Logic, Part #FUSEPKG.)" from the Protection specification.	X-TS-JM-F
	To replace the ME812u's fuse	Removed sentence, "You can order replacement fuses from Automated Logic, Part #FUSEPKG."	
4/20/15	Entire document	New look, no content changes	A-D
11/14/14	BACnet Compliance	Changed BACnet Manufacturers Association to BACnet International	X-D-CP-MW
10/7/14	Driver	Added the Network Microblock fields	A-TS-RB-F
7/22/14	Equipment Touch	Changed 5 ZS sensors to 15 ZS sensors	X-D
5/13/14	Specifications	Rnet Port: Added Equipment Touch and removed BACview® devices	A-D-CP-O-TC
	Zone sensors	Removed references to BACview	
	Equipment Touch	New topic	
	BACview devices	Removed topic	
	Wiring zone sensors to the ME812u	Changed to "Wiring devices to the ME812u's Rnet port"	
	To wire an Equipment Touch to the ME812u	New topic	
	To set up the driver > Driver	Added new driver property: TouchScreen Schedule Edit Enable	

* For internal use only