ATTENTION

Make sure all connectors and caps are securely tightened to properly seal the connections against leaks and maintain IP enclosure type requirements.

ATTENTION

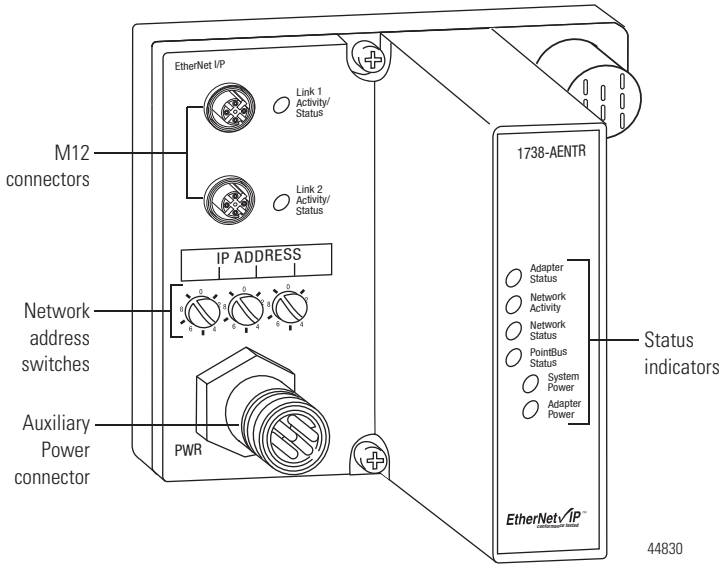
To comply with the CE Low Voltage Directive (LVD), all connected I/O must be powered from a source compliant with the following:
Safety Extra Low Voltage (SELV) or Protected Extra Low Voltage (PELV).

About the Module

The ArmorPoint I/O 2-Port EtherNet/IP adapter provides connectivity to an EtherNet/IP network via two M12 Ethernet-keyed connectors for 2-port pass-through to support daisy chains or rings, and the existing star and tree network topologies.

The adapter ships with a terminating base to be used with the last I/O module on the backplane. The sealed IP67 housing of the adapter requires no enclosure. (Note that environmental requirements other than IP67 may require an additional appropriate housing.) The EtherNet/IP connector is a sealed D-coded M12 (micro) style.

1738-AENTR Adapter, Series A



Before You Begin

To effectively use your adapter, note the following considerations.

Determine Compatibility

RSLogix 5000 version 17 or greater must be used for the 1738-AENTR's Add-on Profile. The 1738-AENTR adapters will accept I/O connections with the electronic keying for the 1738-AENT. This allows the 1738-AENTR adapter to be used in a daisy-chain topology with the 1738-AENT's profile used for the 1738-AENTR.

If using the adapter with a 1756-ENBT module, 1768-ENBT module or an L3xE processor, use the following required firmware versions for these bridge modules:

- 1756-ENBT firmware version 4.5 or greater
- 1768-ENBT firmware version 2.1 or greater
- L3xE processor firmware version 17 or greater

If you use the BootP utility to assign IP addresses to the adapter, use version 2.3.2 or greater.

Understand Messaging

Class 3 (Explicit Message) requests through the adapter to a specific I/O module may not always receive a response from the I/O module. In the case where the I/O module does not reply to the request, the adapter responds with an error code indicating a time-out.

Establish I/O Connections

When you power up an ArmorPoint I/O system and establish I/O connections, the outputs transition to the Idle state, applying Idle state data before going to RUN mode. This occurs even when the controller making the connection is already in RUN mode.

Configure Autobaud

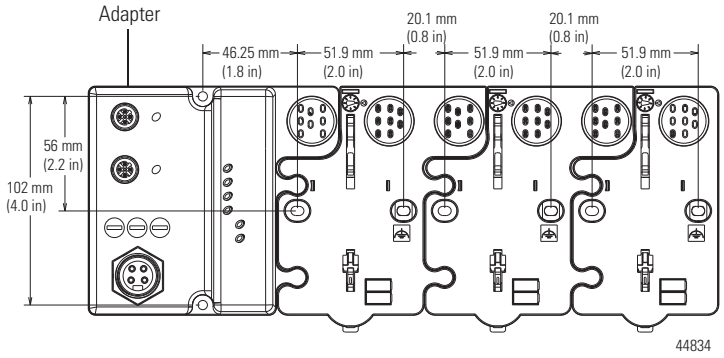
The adapter cannot reconfigure an I/O module that you previously configured to operate at a fixed baud rate. When you reuse an ArmorPoint I/O module from another ArmorPoint I/O system, configure the module to autobaud before using it with the adapter.

Mount the Adapter and I/O Base

To mount the ArmorPoint I/O adapter on a wall or panel, use the screw holes provided with the ArmorPoint I/O adapter.

IMPORTANT The ArmorPoint I/O adapter must be mounted on a grounded metal mounting plate or other conductive surface.

Mounting illustration for the ArmorPoint I/O adapter with I/O bases

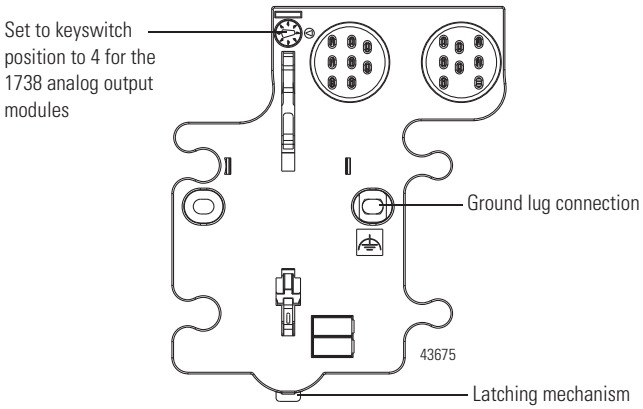


Follow the instructions to install the mounting base.

1. Lay out the required points as shown above in the drilling dimension drawing.
2. Drill the necessary holes for M4 (#8) machine or self-tapping screws.
3. Mount the adapter using M4 (#8) screws.

4. Ground the system using the ground lug connection in the I/O base. (The ground lug connection is also a mounting hole.)

Mounting base



5. Mount the terminating base that was shipped with the adapter as the last base in the backplane instead of the base that was shipped with the I/O module.

Specifications

General

Attribute	Value
Number of modules supported, maximum	63
Number of rack optimized connections	5 (for digital modules only)
Number of direct connections, maximum	20
Backplane output current, maximum	0.8 A The actual number of modules can vary. Add up the requirements of the modules you want to use, for current, to make sure they do not exceed the amperage limit of 0.8 A for the 1738-AENTR. Backplane current can be extended beyond 0.8 A by using a 1738-EP24DC Backplane Extension Power Supply. Add multiple 1738-EP24DC modules to achieve the maximum limit of 63 modules.
Input voltage rating	24V DC nominal 10…28.8V DC range
Field side power requirements	24V DC (+20% = 28.8 V DC maximum) @ 400 mA maximum
Inrush current, maximum	6 A for 10 ms
Interruption	Output voltage will stay within specifications when input drops out for 10 ms at 10V with maximum load.
Input overvoltage protection	Reverse polarity protected
PointBus output current, maximum	0.8 A @ 5V DC ± 5% (4.75…5.25V DC)
Auxiliary power cable(1)	Standard cordset (single-ended): Allen-Bradley part number 889N-F4AFC-yF Standard patchcord (double-ended): Allen-Bradley part number 889N-F4AFNM-x

General (Continued)

Attribute	Value
Indicators	3 red/green status indicators on CPU: - Adapter Status - Network Status (Ports 1 and 2 combined) - PointBus Status 1 green/yellow status indicator on CPU: - Network Activity (Ports 1 and 2 combined) 2 green/yellow status indicators on base: - Link 1 Activity/Status - Link 2 Activity/Status 2 green power supply status indicators on DC-DC converter: - System Power (5V DC to PointBus Out) - Adapter Power (24V DC from Field In)
Power consumption, maximum	10.4W @ 28.8V DC
Power dissipation, maximum	6.3W @ 28.8V DC
Thermal dissipation, maximum	21.5 BTU/hr @ 28.8V DC
Isolation voltage	50V (continuous), Basic Insulation Type
Field power bus voltage, nominal	24V DC
Field power bus supply voltage range	10…28.8V DC range
Field power bus supply current, maximum	10 A
Dimensions (H x W x D), approx.	112 x 123 x 67 mm (4.41 x 4.84 x 2.64 in.)
Wiring category[2]	1 - on power ports 1 - on communications ports

General (Continued)

Attribute	Value
Weight, approx.	0.33 kg (0.72 lb)
Mounting type	Metal panel
Enclosure type rating	Meets IP65/66/67/69K (when marked)

(1) Refer to publication M116-CA001A-EN-P for more information.

(2) Use this Conductor Category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Specifications for Ethernet Communication

Attribute	Value
Ethernet communication rate	10/100 Mbps, half or full-duplex
Ethernet ports	2, configured as Embedded Switch
Ethernet network topologies supported	Star, Tree, Daisy chain/Linear, and Ring
Ethernet connector	M12, D code, female, with Ethernet keying
Ethernet cable	Category 5: Shielded or unshielded

Environmental

Attribute	Value
Temperature, operating	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): -20…60 °C (-4…140 °F)
Temperature, nonoperating	IEC 60068-2-1 (Test Ab, Unpackaged Non-operating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Non-operating Dry Heat): -40…85 °C (-40…185 °F)
Relative humidity	IEC 60068-2-30 (Test Db, Unpackaged Damp Heat): 5…95% non-condensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 5 g @ 10…500 Hz
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30 g
Shock, nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 50 g
Emissions	CISPR 11: Group 1, Class A
ESD immunity	IEC 61000-4-2: 6 kV contact discharges 8 kV air discharges
Radiated RF immunity	IEC 61000-4-3: 10V/m with 1 kHz sine-wave 80% AM from 80…2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000…2700 MHz

Environmental (Continued)

Attribute	Value
EFT/B immunity	IEC 61000-4-4: ±4 kV at 5 kHz on power ports ±3 kV at 5 kHz on communications ports
Surge transient immunity	IEC 61000-4-5: ±1 kV @ line-line (DM) and ±2 kV @ line-earth (CM) on power ports ±2 kV @ line-earth (CM) on communications ports
Conducted RF immunity	IEC 61000-4-6: 10V rms with 1 kHz sine-wave 80% AM from 150…80000 kHz

Certifications

Certification (when product is marked)[1]	Value
CE	European Union 2004/108/EC EMC Directive, compliant with: EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) EN 61326-1; Meas./Control/Lab., Industrial Requirements
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications

(1) See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.