



Installation Instructions

ControlLogix Ethernet Communication Interface Module

Catalog Number 1756-ENET/B

Use this manual as a guide to install the ControlLogix™ Ethernet™ Communication Interface Module. This table identifies what this manual contains and where to find specific information.

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Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of these products must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards. In no event will Rockwell Automation be responsible or liable for indirect or consequential damage resulting from the use or application of these products.

Any illustrations, charts, sample programs, and layout examples shown in this publication are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Rockwell Automation does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Rockwell Automation office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this publication, notes may be used to make you aware of safety considerations. The following annotations and their accompanying statements help you to identify a potential hazard,

avoid a potential hazard, and recognize the consequences of a potential hazard:

WARNING

Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

ATTENTION

Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

ATTENTION



Environment and Enclosure

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC publication 60664-1), at altitudes up to 2000 meters without derating.

This equipment is supplied as "open type" equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

See NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure. Also, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1 ("Industrial Automation Wiring and Grounding Guidelines"), for additional installation requirements pertaining to this equipment.

ATTENTION**Preventing Electrostatic Discharge**

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
 - Wear an approved grounding wriststrap.
 - Do not touch connectors or pins on component boards.
 - Do not touch circuit components inside the equipment.
 - If available, use a static-safe workstation.
 - When not in use, store the equipment in appropriate static-safe packaging.
-

European Zone 2 Certification

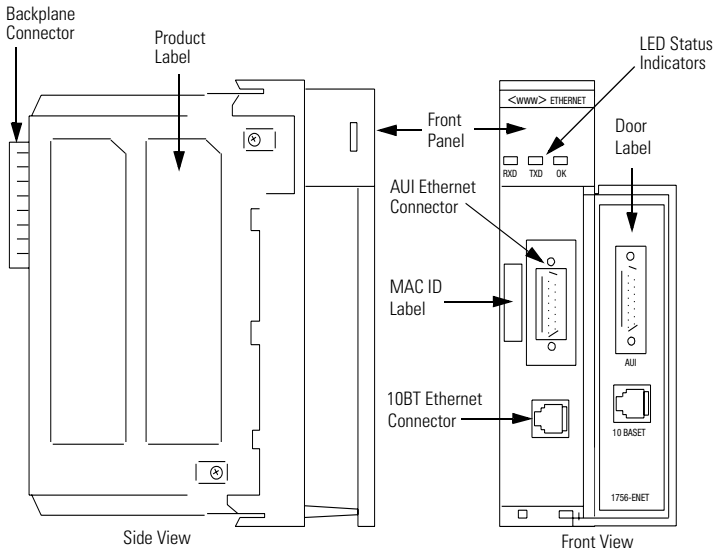
This equipment is intended for use in potentially explosive atmospheres as defined by European Union Directive 94/9/EC.

The LCIE (Laboratoire Central des Industries Electriques) certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of Category 3 equipment intended for use in potentially explosive atmospheres, given in Annex II to this Directive. The examination and test results are recorded in confidential report No. 28 682 010.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 50021 (1999).

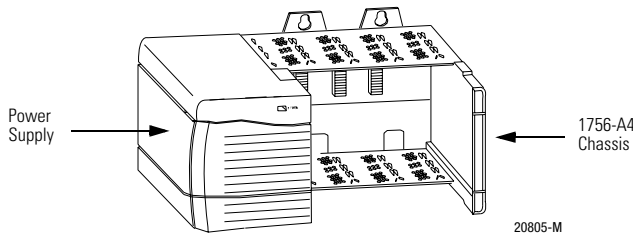
Identifying Module Components

Use this illustration to identify the external features of the Ethernet module.



Preparing the Chassis for Module Installation

Before you install the Ethernet module, you must install and connect a ControlLogix chassis and power supply.

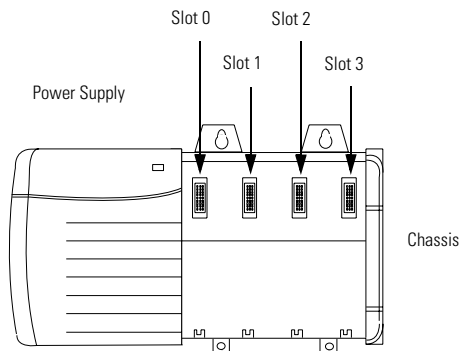


For information about installing these products, refer to the publications listed in this table.

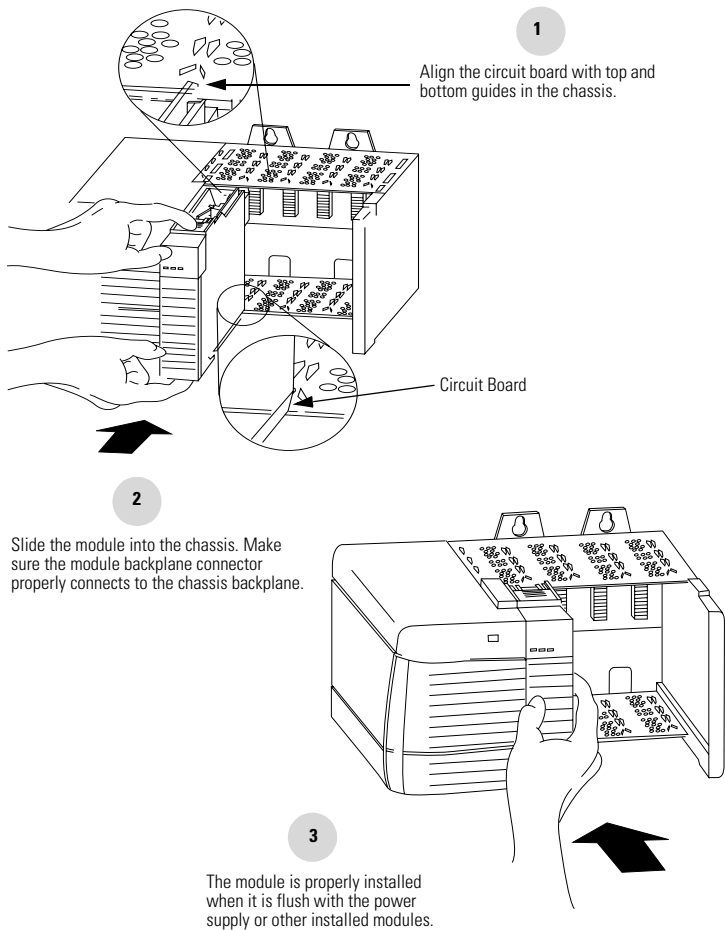
| Chassis Type | Chassis Installation | Power Supply | Power Supply Installation |
|--|----------------------|--------------|---------------------------|
| Series B: 1756-A4, -A7, -A10, -A13, -A17 | Pub. No. 1756-IN080 | 1756-PA72/B | Pub. No. 1756-5.67 |
| | | 1756-PB72/B | |
| | | 1756-PA75/A | Pub. No. 1756-5.78 |
| | | 1756-PB75/A | |

Determining Module Slot Location

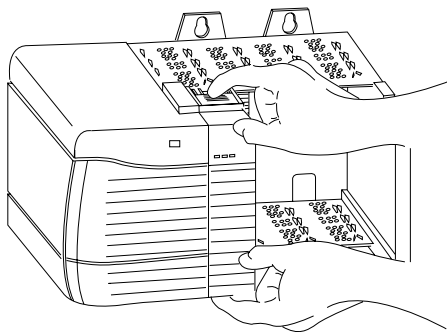
You can install the module in any slot in the ControlLogix chassis. You can also install multiple ENET modules in the same chassis. The figure below shows chassis slot numbering in a 4-slot chassis. Slot 0 is the first slot and is always the leftmost slot in the rack (the first slot to the right of the power supply).



Installing the Module in the Chassis

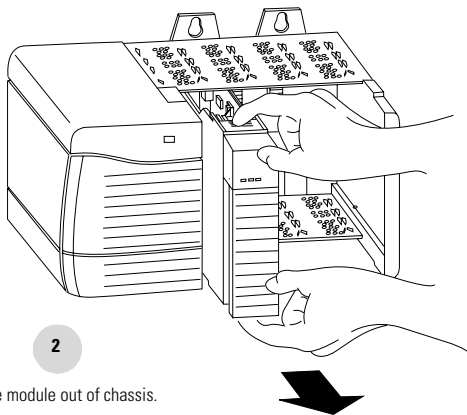


Removing or Replacing the Module (when applicable)



1

Push on upper and lower module tabs to disengage them.



2

Slide module out of chassis.

IMPORTANT

If you are replacing an existing module with an identical one, and you want to resume identical system operation, you must install the new module in the same slot.

Installing or Removing the Module While Power Is Applied

You can install or remove the module while chassis power is applied. Please observe the following precautions.

WARNING



When you insert or remove the module while backplane power is on, or you connect or disconnect the communications connectors, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

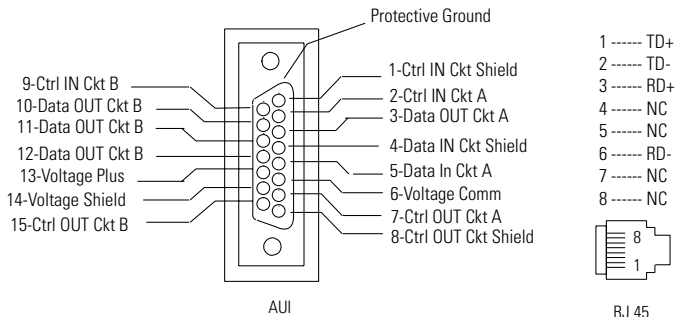
Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.

Wiring the Ethernet Connector

Use either an AUI or an RJ45 connector to connect to the Ethernet network.

For detailed Ethernet connection information, see the EtherNet/IP Performance and Application Guide, publication ENET-IN001.

Wire the appropriate connector according to this illustration.



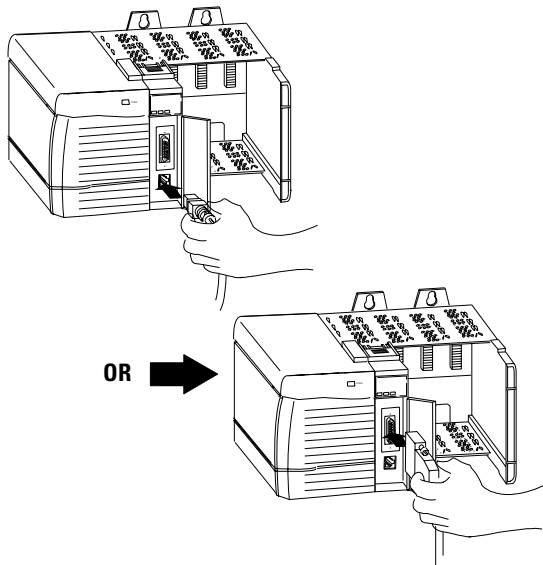
Connecting the Module to the Ethernet Network

WARNING



If you connect or disconnect the Ethernet cable with power applied to this module or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

Attach the AUI or RJ45 connector to the matching Ethernet port:



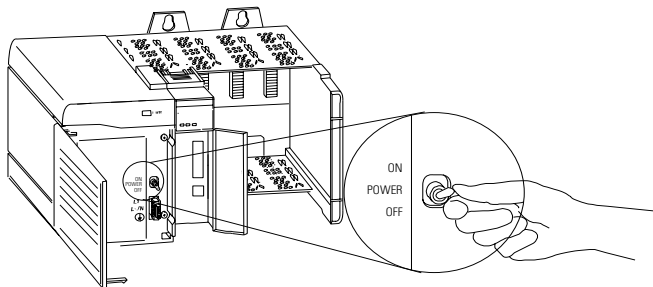
IMPORTANT

Connecting the module to the network via an Ethernet switch will reduce collisions and lost packets and increase network bandwidth. See the EtherNet/IP Performance and Application Guide, publication ENET-AP001, for more information.

If your application requires the module door to be closed, use one of these custom AUI connector cables available in two lengths:

- 2 meters (catalog number 1756-TC02), or
- 15 meters (catalog number 1756-TC15).

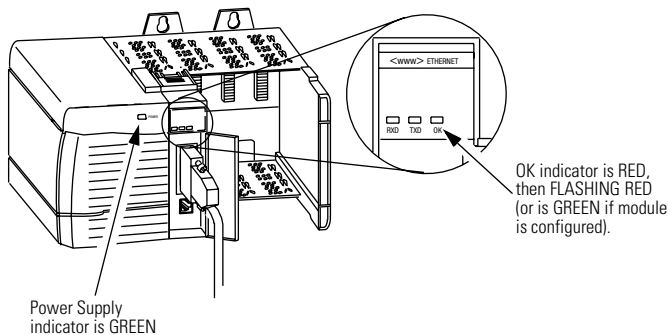
Applying Chassis Power



20921-M

Checking Power Supply and Module Status

Check the LED indicators to determine if the power supply and module are operating properly.



If the Power Supply and OK indicators are not in the states described above refer to the following troubleshooting section.

Troubleshooting the Module

This table describes module health (OK) indicator displays, module status, and recommended action:

| If the OK indicator is | then module status is | take this action |
|--|---------------------------------|--|
| Off | Not operating. | Apply chassis power. Verify module is completely inserted into chassis and backplane. |
| Red, then flashing red or flashing green | Performing powerup diagnostics. | None, normal operation. |
| Green | Operating. | None. |
| Red flashing | Not configured. | Configure module (refer to the configuration chapter of your ControlLogix Ethernet Communication Interface Module User Manual, publication 1756-UM051) |
| Red | Unrecoverable fault. | Repair or replace module. |



This table describes the transmit (TXD) and receive (RXD) indicator display:

| If this indicator | is | the module is |
|--------------------------|-----------|----------------------|
| TXD | Green | Transmitting data |
| | Off | Not active |
| RXD | Green | Receiving data |
| | Off | Not active |

Where to Find Information on Configuring the Ethernet Module

Now that you have installed your Ethernet module, you must configure it with an IP Address, Subnet Mask, and Gateway Address. Refer to the configuration chapter of your ControlLogix Ethernet Communication Interface Module User Manual, publication 1756-UM051.

Hazardous Location Information

| The following information applies when operating this equipment in hazardous locations: | Informations sur l'utilisation de cet équipement en environnements dangereux : | | |
|--|---|---|---|
| <p>Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.</p> | <p>Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.</p> | | |
| <p style="text-align: center;">WARNING</p>  | <p>EXPLOSION HAZARD</p> <ul style="list-style-type: none"> • Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous. • Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product. • Substitution of components may impair suitability for Class I, Division 2. • If this product contains batteries, they must only be changed in an area known to be nonhazardous. | <p style="text-align: center;">AVERTISSEMENT</p>  | <p>RISQUE D'EXPLOSION</p> <ul style="list-style-type: none"> • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement. • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit. • La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2. • S'assurer que l'environnement est classé non dangereux avant de changer les piles. |

Specifications

| | |
|--------------------------------|--|
| Module Location | Any slot in the ControlLogix chassis |
| Maximum Backplane Current Load | 900mA @ 5.1V dc 350mA @ 24V dc from I/O chassis backplane |
| Power Dissipation | 13.3W maximum |
| Operating Temperature | 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): 0 to 60°C (32 to 140°F) |
| Storage Temperature | IEC 60068-2-1 (Test Ab, Un-packaged Non-operating Cold), IEC 60068-2-2 (Test Bb, Un-packaged Non-operating Dry Heat), IEC 60068-2-14 (Test Na, Un-packaged Non-operating Thermal Shock): -40 to 85°C (-40 to 185°F) |
| Relative Humidity | IEC 60068-2-30 (Test Db, Un-packaged Non-operating Damp Heat): 5 to 95% non-condensing |
| Shock | IEC 60068-2-27 (Test Ea, Unpackaged Shock): Operating 30g Non-operating 50g |
| Vibration | IEC 60068-2-6 (Test Fc, Operating): 5g @ 10-500Hz |
| Emissions | CISPR 11: Group 1, Class A |
| ESD Immunity | IEC 61000-4-2: 6kV contact discharges 8kV air discharges |
| Radiated RF Immunity | IEC 61000-4-3: 10V/m with 1kHz sine-wave 80%AM from 30MHz to 1000MHz 10V/m with 200Hz 50% Pulse 100%AM at 900Mhz |
| EFT/B Immunity | IEC 61000-4-4: ±2kV at 5kHz on communications ports |
| Surge Transient Immunity | IEC 61000-4-5: ±2kV line-earth (CM) on shielded ports |
| Conducted RF Immunity | IEC 61000-4-6: 10Vrms with 1kHz sine-wave 80%AM from 150kHz to 80MHz |

| | | |
|--|--|---|
| Enclosure Type Rating | None (open-style) | |
| Conductors Wiring Category | 802.3 compliant - twisted pair 2 ⁽¹⁾ | |
| Certifications: (when product is marked) | UL | UL Listed Industrial Control Equipment |
| | CSA | CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations |
| | CSA FM | CSA Certified Process Control Equipment FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations |
| | CE ⁽²⁾ | European Union 89/336/EEC EMC Directive, compliant with: EN 50082-2; Industrial Immunity EN 61326; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions |
| | C-Tick ⁽²⁾ | Australian Radiocommunications Act, compliant with: AS/NZS 2064; Industrial Emissions |
| | EEx ⁽²⁾ | European Union 94/9/EC ATEX Directive, compliant with: EN 50021; Potentially Explosive Atmospheres, Protection "n" |
| | ODVA | ODVA conformance tested to ODVA EtherNet/IP specifications |

⁽¹⁾ For information on conductor routing, refer to publications 1770-4.1, Industrial Automation Wiring and Grounding Guidelines, and ENET-IN001, EtherNet/IP Media Planning and Installation Manual.

⁽²⁾ See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

IMPORTANT

This equipment is not resistant to sunlight or other sources of UV radiation.

The secondary of a current transformer shall not be open-circuited when applied in Class I, Zone 2 environments.

Equipment of lesser Enclosure Type Rating must be installed in an enclosure providing at least IP54 protection when applied in Class I, Zone 2 environments.

This equipment shall be used within its specified ratings defined by Allen-Bradley.

Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 40% when applied in Class I, Zone 2 environments.

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