



Installation Instructions

POINT I/O Field Potential Distributor Module

Catalog Number 1734-FPD, Series B

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Important User Information





Solid state equipment has operational characteristics differing from those of electromechanical equipment. *Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls* (Publication SGI-1.1 available from your local Rockwell Automation sales office or online at <http://www.literature.rockwellautomation.com>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable. In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

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.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.
ATTENTION 	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard and recognize the consequences.
SHOCK HAZARD 	Labels may be located on or inside the equipment (e.g., drive or motor) to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be located on or inside the equipment (e.g., drive or motor) to alert people that surfaces may be dangerous temperatures.

Environment and Enclosure

ATTENTION

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 considered Group 1, Class A industrial equipment according to IEC/CISPR Publication 11.

Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

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.

Preventing Electrostatic Discharge

ATTENTION

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 Hazardous Location Approval

European Zone 2 Certification (The following applies when the product bears the EEx marking.)

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

DEMKO 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 03NK30347.



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

IMPORTANT

Observe the following additional Zone 2 certification requirements.

- 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.
-

North American Hazardous Location Approval

<p>The following information applies when operating this equipment in hazardous locations:</p>	<p>Informations sur l'utilisation de cet équipement en environnements dangereux:</p>
<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>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>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 inadapte à une utilisation en environnement de Classe I, Division 2. • S'assurer que l'environnement est classé non dangereux avant de changer les piles.

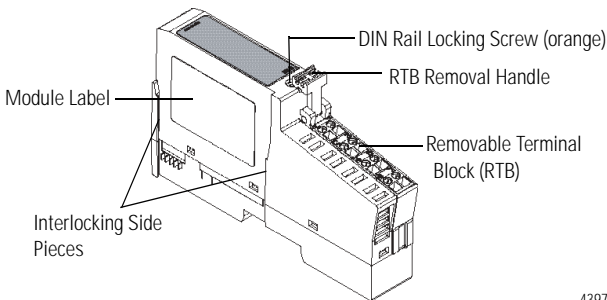
About the Module

The purpose of the module is to break the field power distribution.

Use the module to change the field power distribution source for I/O modules to the right of the module. This facilitates logical or functional partitioning of low-channel count, high I/O-mix applications using the 1734-adapters, 1734-PDN, and 1734D Series communication interfaces. This module passes through all POINT I/O backplane signals except the internal field power bus for field devices.

You can use the module with a range of voltage inputs to include the following.

- 5 to 250V dc applications
- 24 to 240V ac applications
- I/O modules



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Install the Module

ATTENTION



POINT I/O is grounded through the DIN rail to chassis ground. Use zinc plated yellow-chromate steel DIN rail to assure proper grounding. The use of other DIN rail material (e.g., aluminum, plastic, etc.) that can corrode, oxidize, or are poor conductors, can result in improper or intermittent grounding.

Secure DIN rail to mounting surface approximately every 200 mm.

ATTENTION



When you insert or remove the module while backplane power is on, 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.

To install the module on the DIN rail, proceed as follows.

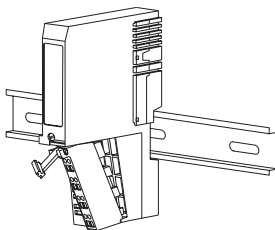
1. Position the module vertically above the DIN rail.
2. Engage the interlocking pieces with the unit on the left.
3. Press down firmly to install the module on the DIN rail.

The locking mechanism locks the module to the DIN rail.

Remove the Module

To remove a 1734-FPD module, you must first remove any I/O module installed in the base to the right. To remove the 1734-FPD module from the DIN rail, proceed as follows.

1. Pull up on the RTB removal handle to remove the terminal block.



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2. Use a small-bladed screwdriver to rotate the DIN rail locking screw to a vertical position.

This releases the locking mechanism.

3. Lift straight up to remove.

Replace the Module

To install a replacement module in an existing system, proceed as follows.

WARNING

When you connect or disconnect the removable terminal block (RTB) with field-side power applied, an electrical arc can occur. This could cause an explosion in hazardous location installations.

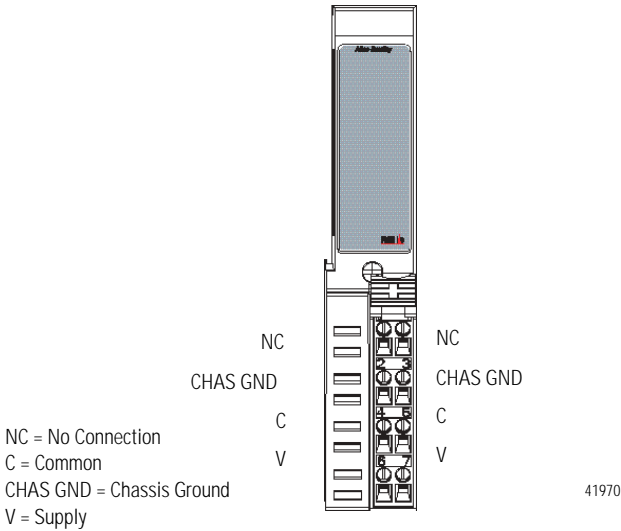
Be sure that power is removed or the area is nonhazardous before proceeding.

1. Position the module vertically above the DIN rail.
2. Slide the module down to engage the interlocking sides pieces to the adjacent modules on both left and right sides.

3. Press down firmly to install the module on the DIN rail.

The module locking mechanism snaps into place.

Wire the Module

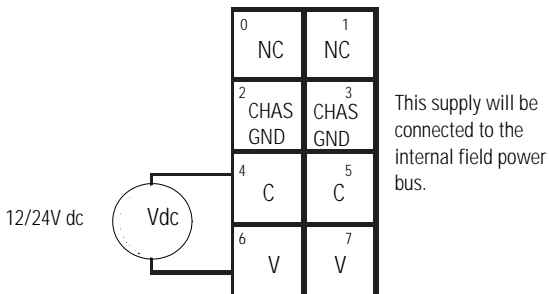


ATTENTION



If you connect or disconnect wiring while the field-side power is on, 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.

12/24V dc Wiring



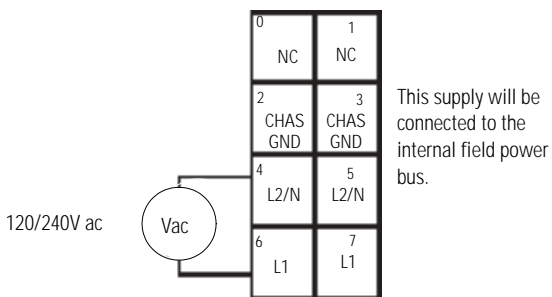
V = 12/24V dc, C = Common
CHAS GND = Chassis Ground

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Connect	Terminal
+V dc	6
-V dc	4
Chas Gnd	2

12/24V dc becomes the internal field power bus for modules to the right.

120/240V ac Wiring



L2/N = Neutral, L1 = 120/240V ac
 CHAS GND = Chassis ground

43995

Connect	Terminal
L1	6
L2/N	4
Chas Gnd	2

120/240V ac becomes the internal power bus for modules to the right.

Specifications

1734-FPD Field Potential Distributor Module

Specification	Value
Input Voltage Rating	12V dc, 24V dc nominal 10...28.8V dc range 120V ac, 240V ac nominal
Input Current	10 A maximum
Indicators	None
Module Location	Between I/O modules in 1734 system Breaks power bus
POINTBus Current	Pass through
Field Power Bus Supply Voltage	264V ac maximum, 12V dc, 24V dc, 10...28.8V dc range 120V ac, 240V ac, 50/60 Hz
Supply Current	10 A maximum
Terminal Base Screw Torque	0.6 N-m (7 lb-in)
Weight	0.12 kg (0.26 lb)
Dimensions	HxWxL
Metric	76.2 x 25.4 x 133.4 mm
Imperial	3.00 x 1.00 x 5.25 in
Weight	0.12 kg (0.27 lb)

Environmental Specifications

Specification	Value
Operational 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) -20...55 °C (-4...131 °F)
Storage Temperature	IEC60068-2-1 (Test Ab, Unpackaged Non-operating Cold) IEC60068-2-2 (Test Bb, Unpackaged Non-operating Dry Heat) IEC60068-2-14 (Test Na, Unpackaged Non-operating Thermal Shock) -40...85 °C (-40...185 °F)
Relative Humidity	IEC60068-2-30 (Test Db, Unpackaged Non-operating Damp Heat) 5...95% non-condensing
Vibration	IEC 60068-2-6 (Test Fc, Operating) 5 g @ 10...500 Hz
Shock Operating	IEC60068-2-27 (Test Ea, Unpackaged Shock) 30 g
Shock Non-operating	IEC60068-2-27 (Test Ea, Unpackaged Shock) 50 g
Emissions	CISPR 11: Group 1, Class A
ESD Immunity	IEC6100-4-2 6 kV contact discharges 8 kV air discharges
Radiated RF Immunity	IEC 61000-4-3 10 V/m with 1 kHz sine-wave 80%AM at 30...2000 MHz 10 V/m with 200Hz 50% Pulse 100%AM at 900 MHz 10 V/m with 200 Hz 50% Pulse 100%AM at 1890 MHz
EFT/B Immunity	IEC 61000-4-4 +4 kV at 2.5 kHz on power ports
Surge Transient Immunity	IEC 61000-4-5 ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports

Environmental Specifications

Conducted RF Immunity	IEC61000-4-6 10V rms with 1 kHz sine-wave 80%AM 150 kHz...80 MHz
Enclosure Type Rating	None (open-style)
Power Consumption	None
Power Dissipation	None
Thermal Dissipation	None
Isolation Voltage (continuous-voltage withstand rating)	50 V continuous Tested to withstand 2600V dc for 60 s
Wire Size	#22...#14 AWG (0.324...2.08 sq. mm) solid or stranded copper wire rated @ 75 °C or greater 3/64 in (1.2 mm) insulation maximum
Wire Category ¹	1 - on power ports

¹Use this Conductor Category information for planning conductor routing. Refer to publication 1770-4.1, Industrial Automation Wiring and Grounding Guidelines.

Certifications

Certification	Value
Certification ¹ (when product is marked)	c-UL-us UL Listed Industrial Control Equipment, certified for U.S. and Canada c-UL-us UL Listed for Class 1, Division 2, Group A,B,C,D Hazardous Locations, certified for U.S. and Canada CE 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 European Union 72/23/EEC LVD Directive, compliant with: EN 61131-2; Programmable Controllers C-Tick Australian Radiocommunications Act, compliant with: AS/NZS CISPR11; Industrial Emissions EEx European Union 94/9/EC ATEX Directive, compliant with: EN 50021; Potentially Explosive Atmospheres, Protection "n" (Zone 2) when used at or below 60V ac or 75V dc

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

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Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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