Installation Instructions

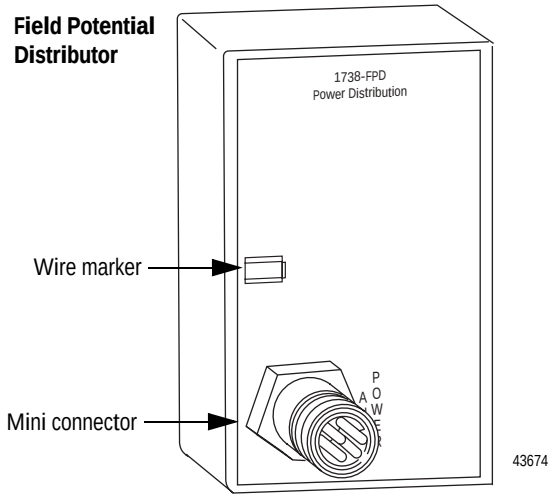
ArmorPoint I/O Field Potential Distributor, Series A

(Cat. No. 1738-FPD)

The field potential distributor (Cat. no. 1738-FPD) lets you change the field power distribution source for I/O modules to the right of the 1738-FPD. This facilitates logical or functional partitioning of high I/O-mix applications.

The 1738-FPD field potential distributor passes through all ArmorPoint™ I/O backplane signals except the internal power bus.

You can use the 1738-FPD with a range of voltage inputs, including 5V dc to 250V dc and/or 24V ac to 240V ac applications and I/O modules. The mounting base ships with the module.



Publication 1738-IN019A-EN-E - June 2004

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.ab.com/manuals/gi) 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.

Reproduction of the contents of this manual, in whole or in part, without written permission of Rockwell Automation, Inc. is prohibited.

Throughout this manual 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 • recognize the consequence
SHOCK HAZARD 	Labels may be located on or inside the equipment to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be located on or inside the equipment to alert people that surfaces may be dangerous temperatures.

ATTENTION

Environment and Enclosure

This equipment is intended for use 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 "enclosed" equipment. It should not require additional system enclosure when used in locations consistent with the enclosure type ratings stated in the Specifications section of this publication. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings, beyond what this product provides, that are required to comply with certain product safety certifications.

NOTE: 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:

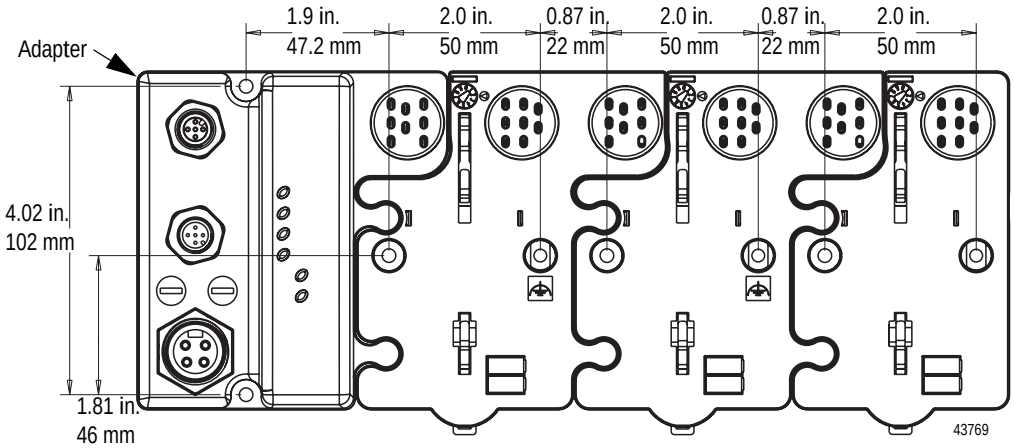
- Touch a grounded object to discharge potential static.
- Wear an approved grounding wriststrap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- If available, use a static-safe workstation.
- When not in use, store the equipment in appropriate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

Mount the I/O Base

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

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

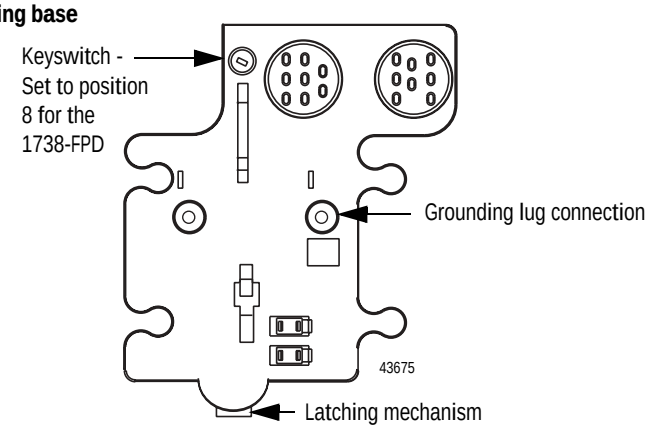
A mounting illustration for the ArmorPoint base with an adapter is shown below.



Install the mounting base as follows:

1. Lay out the required points as shown above in the drilling dimension drawing.
2. Drill the necessary holes for #8 (M4) machine or self-tapping screws.
3. Mount the base using #8 (M4) screws.
4. Ground the system using the ground lug connection. (The ground lug connection is also a mounting hole.)

Mounting base

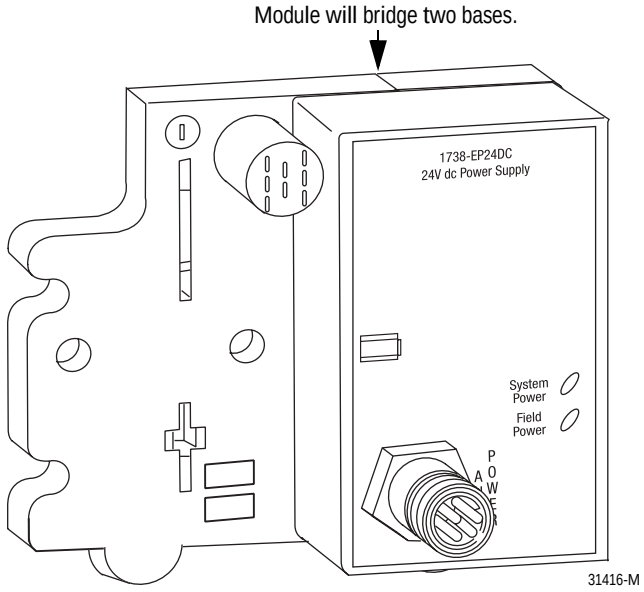


Install the ArmorPoint Field Potential Distributor (FPD)

To install the FPD, proceed as follows.

1. Using a bladed screwdriver, rotate the keyswitch on the mounting base clockwise until the number 8 aligns with the notch in the base.

2. Position the FPD vertically above the mounting base. The FPD will bridge two bases.



3. Push the FPD down until it engages the orange latching mechanism. You will hear a clicking sound when the FPD is properly engaged.

   The locking mechanism will lock the FPD to the base.

Remove the ArmorPoint Field Potential Distributor From the Mounting Base

To remove the FPD from the mounting base:

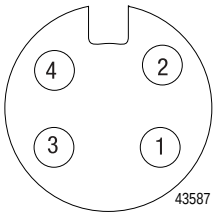
1. Put a flat blade screwdriver into the slot of the orange latching mechanism.

2. Push the screwdriver toward the I/O module to disengage the latch.

   The module will lift up off the base.

3. Pull the module off of the base.

Wire the Field Potential Distributor



Male In Connector
(view into connector)
Pin 1 - User Power +
Pin 2 - No Connect
Pin 3 - No Connect
Pin 4 - User Power -

ATTENTION

Make sure all connectors and caps are securely tightened to properly seal the connections against leaks and maintain IP67 requirements.

Specifications

Following are specifications for the 1738 ArmorPoint FPD.

1738-FPD Field Potential Distributor	
Inputs Voltage Rating	12V dc, 24V dc nominal 10-28.8V dc range 120V ac, 240V ac nominal
Input Current	10A maximum
Operating Voltage	12/24V dc, 120/240V ac
Backplane Output Current	Pass Through
Keyswitch Position	8
General Specifications	
Indicators	None
PointBus Current	Pass Through
Power Consumption	None
Power Dissipation	None
Thermal Dissipation	None
Isolation Voltage (continuous-voltage withstand rating)	50V rms, 120V rms/240V rms Tested at 1528V ac rms for 60s
Field Power Bus Supply Voltage Supply Current	 264V ac maximum, 12V dc, 24V dc, 10-28.8V dc range 120V ac, 240V ac, 50/60 Hz 10A maximum
Dimensions Inches (Metric)	1.25H x 2.63W x 4.25D (31.75H x 66.80W x 107.95D)
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): -20 to 60°C (-4 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), -40 to 85°C (-40 to 185°F)
Relative Humidity	IEC 60068-2-30 (Test Db, Un-packaged Non-operating Damp Heat): 5-95% non-condensing
Shock	IEC60068-2-27 (Test Ea, Unpackaged Shock): Operating 30g Non-operating 50g
Vibration	IEC60068-2-6 (Test Fc, Operating): 5g @ 10-500Hz
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 2000MHz 10V/m with 200Hz 50% Pulse 100%AM at 900Mhz 10V/m with 200Hz 50% Pulse 100%AM at 1890Mhz
EFT/B Immunity	IEC 61000-4-4: ±4kV at 5kHz on power ports
Surge Transient Immunity	IEC 61000-4-5: ±1kV line-line(DM) and ±2kV line-earth(CM) on power ports

General Specifications (continued)		
Conducted RF Immunity	IEC 61000-4-6: 10Vrms with 1kHz sine-wave 80%AM from 150kHz to 80MHz	
Emissions	CSPR 11: Group 1, Class A	
Enclosure Type Rating	Meets IP65/66/67 (when marked)	
Mounting Base Screw Torque	#8 screw, 7.5 in. lbs. in Aluminum, 16 in. lbs. in Steel	
Wiring Category[1]	1 - on signal ports	
Weight Imperial (Metric)	0.637 lb. (0.289 kg)	
Certifications: (when product is marked)	c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada
	CE[2]	European Union 89/336/EEC EMC Directive, compliant with: EN 61000-6-4; Industrial Emissions EN 50082-2; Industrial Immunity EN 61326; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity European Union 73/23/EEC LVD Directive, compliant with: EN 61131-2; Programmable Controllers
	C-Tick[2]	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions

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

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

Rockwell Automation Support

Rockwell Automation provides technical information on the web to assist you in using our products. At http://support.rockwellautomation.com, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnect Support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit http://support.rockwellautomation.com.

Installation Assistance

If you experience a problem with a hardware module within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running:

United States	1.440.646.3223 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell tests all of our products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned:

United States	Contact your distributor. You must provide a Customer Support case number (see phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for return procedure.

www.rockwellautomation.com

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

Publication 1738-IN019A-EN-E - June 2004 PN 957824-52