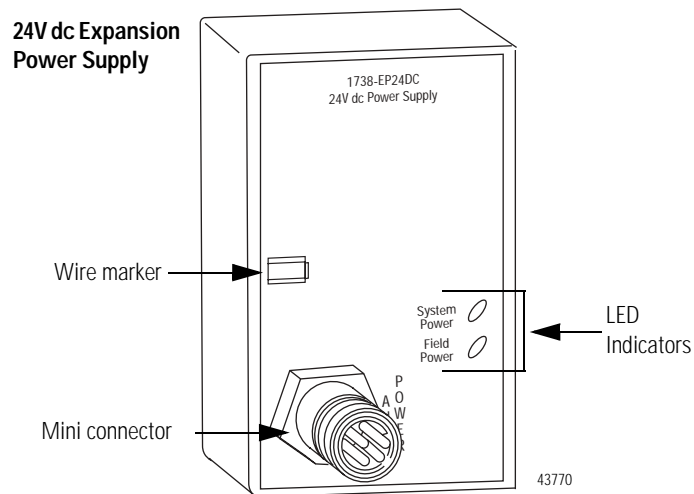




ArmorPoint I/O 24V dc Expansion Power Supply, Series A

(Cat. No. 1738-EP24DC)





The 24V dc expansion power supply unit (Cat. no. 1738-EP24DC) passes 24V dc field power to the I/O modules to the right of the power supply. This unit extends the backplane bus power for up to 17 I/O modules to the right of the supply and creates a new field voltage partition.

The expansion power supply also separates field power from I/O modules to the left of the unit, effectively providing functional and logical partitioning for:

- separating field power between input and output modules
- separating field power to the analog and digital modules
- grouping modules to perform a specific task or function

You can use multiple expansion power units with the ArmorPoint I/O adapters to assemble a full system. For instance, if you are using the 1738-ADN adapter, you may use a 1738-EP24DC expansion power unit to add additional modules in 5 to 17 module increments. For example, if you had a 36 module system with a 1738 ArmorPoint I/O adapter, you would have two 1738-EP24DC expansion power units to provide more PointBus current for modules to the right of the supply.

ATTENTION	Do not connect 120/240V ac to the 1738-EP24DC terminals. Damage to the supply will result.
	
ATTENTION	You can only use the 1738-EP24DC expansion power unit with the 1738 ArmorPoint I/O adapters.
	

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.

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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: <ul style="list-style-type: none"> • identify a hazard • avoid a hazard • recognize the consequence

Important User Information**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.

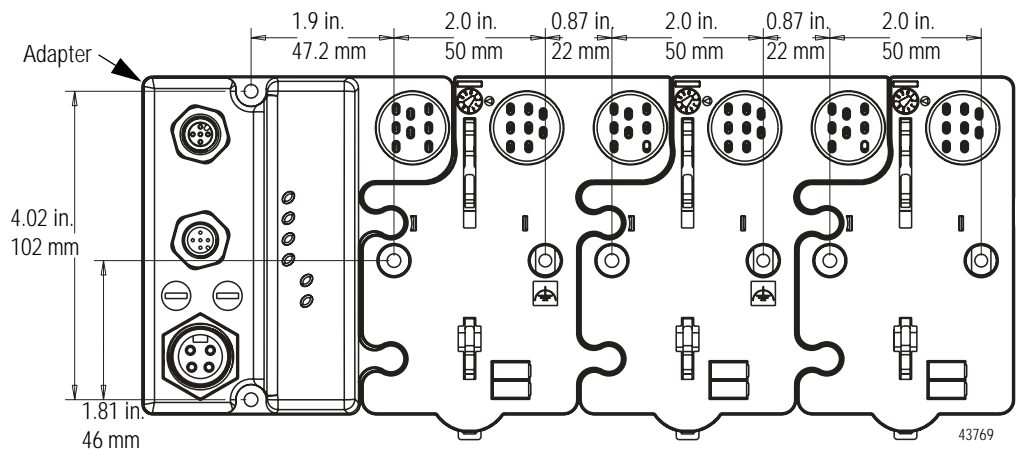
Mount the I/O Base

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:

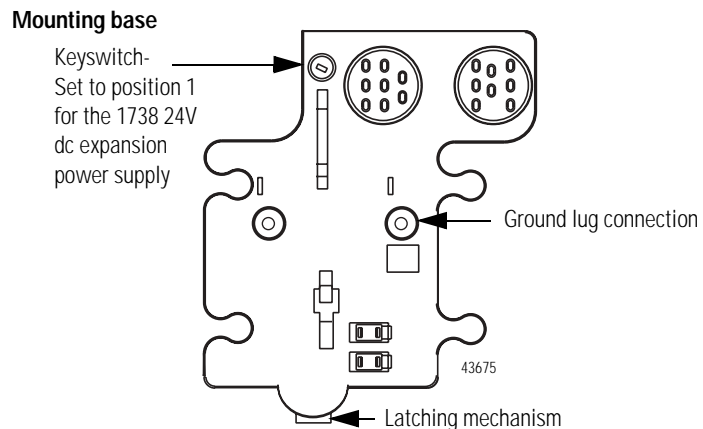
1. Lay out the required points as shown above in the drilling dimension drawing.
2. Drill the necessary holes for #8 (M4) machine or self-tapping screws.
3. Mount the base using #8 (M4) screws.
4. Ground the system using the ground lug connection. (The ground lug connection is also a mounting hole.)

Install the 24V dc Expansion Power Supply

To install the power supply, proceed as follows.

1. Using a bladed screwdriver, rotate the keyswitch on the mounting base clockwise until the number 1 aligns with the notch in the base.
2. Position the power supply vertically above the mounting base.
3. Push the power supply down until it engages the orange latching mechanism. You will hear a clicking sound when the power supply is properly engaged.

The locking mechanism will lock the power supply to the base.



To remove the power supply 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.

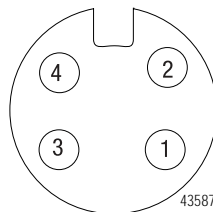
The module will lift up off the base.

3. Pull the module off of the base.

Install a Replacement 1738-EP24DC To an Existing System

1. Remove the module to the right of the power supply from the mounting base.
2. If you have not done so already, remove the existing power supply from the mounting base.
3. Position the replacement power supply vertically above the mounting base.
4. Push the power supply down until it engages the orange latching mechanism. You will hear a clicking sound when the power supply is properly engaged and locked to the base.
5. Place the module to the right of the power supply back onto the mounting base.

Wire the 24V dc Expansion Power Supply



Male In Connector

(view into connector)

Pin 1 - User Power +

Pin 2 - Adapter +

Pin 3 - Adapter -

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-EP24DC power supply.

1738-EP24DC Power Supply	
I/O Module Capacity	5 to 17 I/O modules depending on each module's current rating.
Power Supply	In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power the adapter.
Inputs Voltage Rating	12V dc, 24V dc nominal 10-28.8V dc range
Operating Voltage	10-28.8V dc
Input Current, Maximum	6A for 10ms
Backplane Output Current	5V dc, 1.3A
Field Side Power Requirements, Maximum	24V dc (+20% = 28.8V dc) @ 400mA
Indicators	1 Green Field Power Status Indicator 1 Green 5V System Power Indicator
Module Location	Between I/O modules in 1738 system Breaks field power bus
PointBus Output Current	1 A at 10-19.2V input; 1.3 A at 19.2-28.8V input
Input Overvoltage Protection	Reverse polarity protected
Interruption	Output voltage will stay within specifications when input drops out for 10ms at 10V with maximum load
General Specifications	
Power Consumption, Maximum	9.8W @ 28.8V dc
Power Dissipation, Maximum	3.0W @ 28.8V dc
Thermal Dissipation, Maximum	10.0 BTU/hr @ 28.8V dc
Isolation Voltage (continuous-voltage withstand rating)	50V rms Tested at 1250V ac rms for 60s
Field Power Bus Supply Voltage Voltage Range Supply Current	12V dc, 24V dc nominal 10-28.8V dc range 10 A maximum
Dimensions Inches (Millimeters)	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

General Specifications (continued)	
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
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
Weight	0.637 lb. (0.289 kg)
Wiring Category ¹	1 - on power ports
Keyswitch Position	8
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 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.

Notes:

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.

ArmorPoint is a trademark of Rockwell Automation.

www.rockwellautomation.com

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