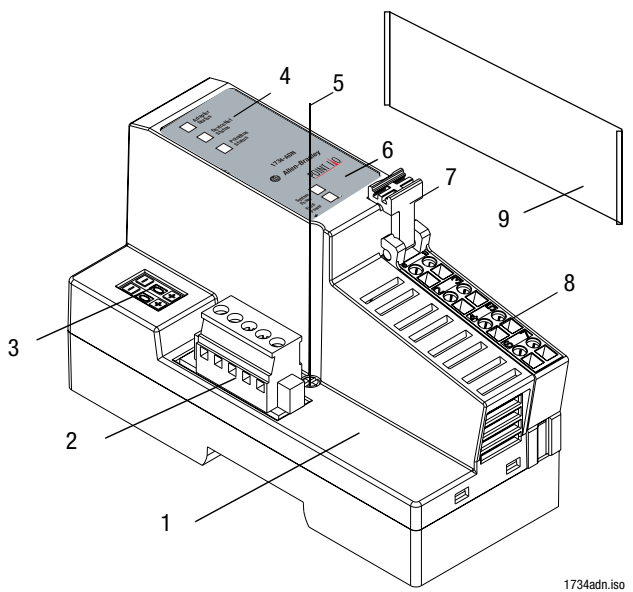
Installation Instructions

POINT I/O DeviceNet Adapter

(Cat. No. 1734-ADN)



	Description		Description
1	1734-ADN DeviceNet Adapter Module	6	System Power and Field Power Indicators
2	DeviceNet Connector	7	RTB Removal Handle
3	Node Address Thumbwheel	8	Removable Terminal Block (RTB)
4	Status Indicators - Adapter, DeviceNet and PointBus	9	Safety End Cap
5	DIN Rail Locking Screw (orange)		

Publication 1734-IN007B-EN-P - June 2001

European Communities (EC) Directive Compliance

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC — Generic Emission Standard, Part 2 — Industrial Environment
- EN 50082-2 EMC — Generic Immunity Standard, Part 2 — Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests. For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

Open style devices must be provided with environmental and safety protection by proper mounting in enclosures designed for specific application conditions. See NEMA Standards publication 250 and IEC publication 529, as applicable, for explanations of the degrees of protection provided by different types of enclosures.

Installing the DeviceNet Adapter

To install the adapter on the DIN rail prior to installing other base units, proceed as follows.

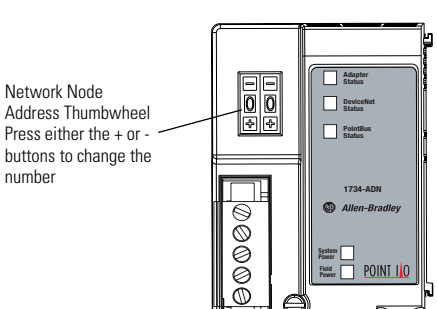
1. Position the adapter vertically above the DIN rail.
2. Press down firmly to install the adapter on the DIN rail.
3. The locking mechanism will lock the adapter to the DIN rail.
4. Insert the DeviceNet network plug and tighten the holding screws.
5. Set the node address on the node address thumbwheel.
6. Slide the safety end cap (9) up to remove. This exposes the backplane and power interconnections.

ATTENTION

Do not discard the end cap. Use this end cap to cover the exposed interconnections on the last mounting base on the DIN rail. Failure to do so could result in equipment damage or injury from electric shock.

Setting the Node Address

Set the node address using the 2-position thumbwheel switch. Valid settings range from 00 to 63. Press either the + or - buttons to change the number.



Installing a Replacement DeviceNet Adapter to an Existing System

1. Remove the existing adapter from the DIN rail as follows:

   A. Pull up on the RTB removal handle (7) to remove the terminal block.

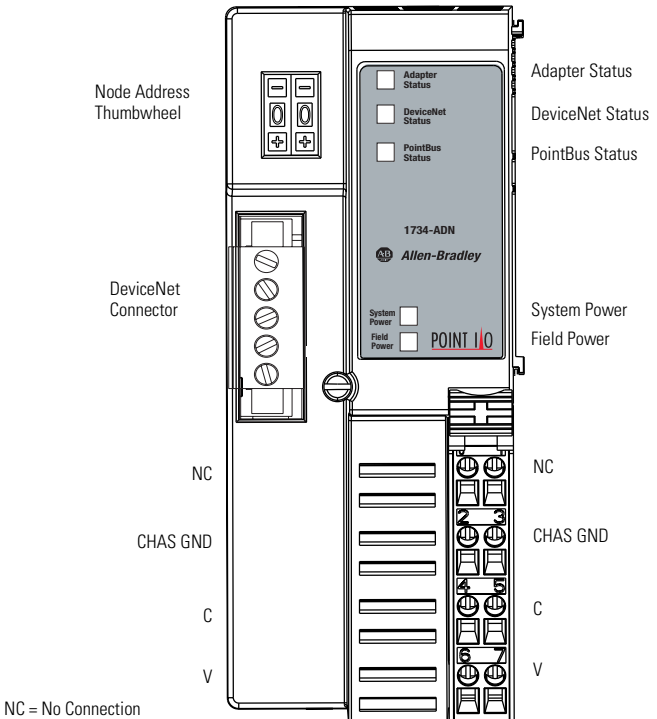
   B. Loosen the screws holding the DeviceNet Network plug and pull up to remove.

   C. Remove the adjacent module from its base.

   D. Use a small bladed screwdriver to rotate the DIN rail locking screw (5) to a vertical position. This releases the locking mechanism.

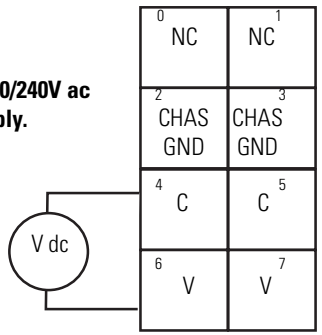
   E. Lift straight up to remove.
2. Slide the safety end cap up to remove. This exposes the backplane and power connections.
3. Position the replacement adapter (1) vertically above the DIN rail. (Make certain the DIN rail lock is in the horizontal position.) Slide the adapter down, allowing the interlocking side pieces to engage the adjacent module.
4. Press firmly to seat the adapter (1) on the DIN rail. The adapter locking mechanism will snap into place.
5. Set the node address on the node address thumbwheel.
6. Insert the DeviceNet network plug and tighten the holding screws.
7. Insert the end opposite the handle into the base unit. This end has a curved section that engages with the wiring base.
8. Rotate the terminal block into the wiring base until it locks itself in place.
9. Replace the adjacent module in its base.

Wiring the DeviceNet Adapter



12/24V dc

Do not connect 120/240V ac power to this supply.



This dc supply will be connected to the internal power bus.

NC = No Connection
C = Common

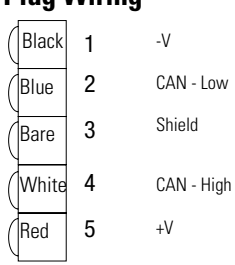
CHAS GND = Chassis Ground
V = Supply

EP24

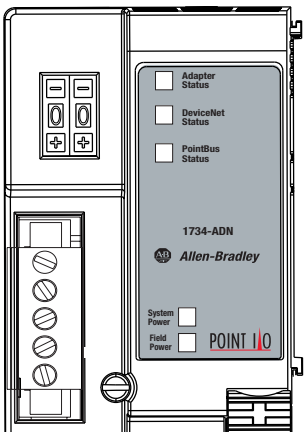
Terminal		Notes
0	No connection	Reserved
1	No connection	
2	Chassis Ground	
3	Chassis Ground	
4	Common	
5	Common	
6	Voltage Input	Apply 12/24V dc. Connects to the internal power bus.
7	Voltage Input	

DeviceNet Connection Plug Wiring

DeviceNet connection



Troubleshooting with the Indicators



Indicator	Indication	Probable Cause
System Power	Off	Not active. field power is off, or dc-dc converter problem.
	Green	System power on. dc-dc converter active (5V)
Field Power	Off	Not active. Field power is off.
	Green	Power on, 24V present

Indication	Probable Cause
Adapter Status	
Off	No power applied to device
Green	Device operating normally
Flashing Green	Device needs commissioning due to configuration missing, incomplete or incorrect.
Flashing Red	Recoverable fault.
Red	Unrecoverable fault may require device replacement
Flashing Red/Green	Device is in self-test
DeviceNet Status	
Off	Device is not on-line - Device has not completed dup_MAC_id test. - Device not powered - check module status indicator
Flashing Green	Device is on-line but has no connections in the established state.
Green	Device on-line and has connections in the established state.
Flashing Red	One or more I/O connections in timed-out state
Red	Critical link failure - failed communication device. Device detected error that prevents it communicating on the network.
Flashing Red/Green	Communication faulted device - the device has detected a network access error and is in communication faulted state. Device has received and accepted an Identify Communication Faulted Request - long protocol message.

Indication	Probable Cause
PointBus Status	
Off	Device is not on-line - Device has not completed Dup_MAC_ID test. - Device not powered - check module status indicator
Flashing Green	Device is on-line but has no connections in the established state.
Green	Device on-line and has connections in the established state.
Flashing Red	One or more I/O connections in timed-out state
Red	Critical link failure - failed communication device. Device detected error that prevents it communicating on the network.
Flashing Red/Green	Communication faulted device - the device has detected a network access error and is in communication faulted state. Device has received and accepted an Identify Communication Faulted Request - long protocol message.

Safety Approvals

C-UL and UL Hazardous Location Approval

C-UL and UL certifies products for general use as well as for use in hazardous locations. **Actual C-UL and UL certification is indicated by the product label** as shown below, and not by statements in any user documentation.

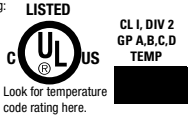
Example of the C-UL and UL certification product label:

To comply with C-UL and UL certification for use in hazardous locations, the following information becomes a part of the product literature for this C-UL and UL-certified industrial control product.

- This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D, or non-hazardous locations only.
- The products having the appropriate C-UL and UL markings (that is, Class I, Division 2, Groups A, B, C, D) are certified for use in other equipment where the suitability of combination (that is, application or use) is determined by the C-UL and UL or the local inspection office having jurisdiction

Important: Due to the modular nature of a programmable control system, the product with the highest temperature rating determines the overall temperature code rating of a programmable control system in a Class I, Division 2, location. The temperature code rating is marked on the product label as shown. Operating temperature range is 0° - 55°C.

: Temperature code rating:



Look for temperature code rating here.

The following warnings apply to products having C-UL and UL certification for use in hazardous locations.

WARNING: Explosion Hazard

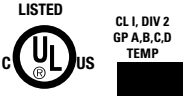
- Substitution of components may impair suitability for Class I, Division 2.
- Do not replace components unless power has been switched off or the area is known to be non-hazardous.
- Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Do not disconnect connectors unless power has been switched off or the area is known to be non-hazardous. Secure any user-supplied connectors that mate to external circuits on this equipment by using screws, sliding latches, threaded connectors, or other means such that any connection can withstand a 15 Newton (3.4 lb.) separating force applied for a minimum of one minute.

C-UL and UL logo is a registered trademark of the Underwriters Laboratories.

Approbation d'utilisation dans des environnements dangereux par la C-UL/UL

La C-UL/UL certifie des produits pour une utilisation générale aussi bien que pour une utilisation en environnements dangereux. **La certification C-UL/UL en vigueur est indiquée par l'étiquette produit** et non par des indications dans la documentation utilisateur.

Exemple d'étiquette de certification d'un produit par la C-UL/UL :

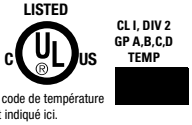


Pour satisfaire à la certification C-UL/UL en environnements dangereux, les informations suivantes font partie intégrante de la documentation des produits de commande industrielle certifiés.

- Cet équipement ne convient qu'à une utilisation en environnements de Classe I, Division 2, Groupes A, B, C, D ou non dangereux.
- Les produits portant le marquage C-UL/UL approprié (c'est-à-dire Classe I, Division 2, Groupes A, B, C, D) sont certifiés pour une utilisation avec d'autres équipements, les combinaisons d'applications et d'utilisations étant déterminées par la C-UL/UL ou le bureau local d'inspection qualifié.

Important: De par la nature modulaire des systèmes de commande programmables, le produit ayant le code de température le plus élevé détermine le code de température global du système dans un environnement de Classe I, Division 2. Le code de température est indiqué sur l'étiquette produit.

Code de température :



Le code de température est indiqué ici.

Les avertissements suivants s'appliquent aux produits ayant la certification C-UL/UL pour une utilisation en environnements dangereux.

AVERTISSEMENT : Risque d'explosion

- La substitution de composants peut rendre ce matériel inadapté à une utilisation en environnements de Classe I, Division 2.
- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de remplacer des composants.
- 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 fournis par l'utilisateur pour se brancher aux circuits externes de cet équipement à l 'aide de vis, loquets coulissants, connecteurs filetés ou autres, de sorte que les connexions résistent à une force de séparation de 15 Newtons (1,5 kg - 3,4 lb.) appliquée pendant au moins une minute.
- S'assurer que l'environnement est classé non dangereux avant de changer les piles.

Les sigles C-UL et UL sont des marques déposées de la Underwriters Laboratories.

Specifications - 1734-ADN DeviceNet Adapter Module	
Communication Interface Specifications	
Expansion I/O Capacity	Up to 13 modules, dependent on PointBus current requirements (13 times 75mA = 0.975, just under the limit of 1.0A). The actual number of modules can vary. Add up the current requirements of the modules you want to use to make sure they do not exceed the amperage limit of the 1734-ADN. (Note: Total expansion up to 63 modules - 13 modules maximum with 1734-ADN - add 1734-EP24DC modules for an additional 17 modules (or less based on current requirements), up to 63 module maximum). **Cat. No. PointBus Current Requirements** 1734-IB2 75mA 1734-IB4 75mA 1734-IV2 75mA 1734-IV4 75mA 1734-OB2E 75mA 1734-OB4E 75mA 1734-OW2 80mA 1734-IE2C 75mA 1734-OE2C 75mA 1734-IE2V 75mA 1734-OE2V 75mA 1734-IA2 75mA 1734-IM2 75mA 1734-OA2 75mA 1734-IJ2 160mA 1734-IK2 160mA 1734-IR2 220mA 1734-IT2 175mA 1734-VHSC5 180mA 1734-VHSC24 180mA
DeviceNet Communication Rate	125K bit/s (500m maximum) 250K bit/s (250m maximum) 500K bit/s (100m maximum)
DeviceNet Cable	Allen-Bradley part number 1485C-P1-Cxxx Refer to publication DN-2.5 for more information
Module Location	Starter module - left side of 1734 system

DeviceNet Power Specifications	
Power Supply	**Note:** In order to comply with CE Low Voltage Directives (LVD), you must use either a NEC Class 2, a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter.A SELV supply cannot exceed 30V rms, 42.4V peak or 60V dc under normal conditions and under single fault conditions. A PELV supply has the same rating and is connected to protected earth.
Input Voltage Rating	24V dc nominal
DeviceNet Input Voltage Range	11-25V dc DeviceNet specification
Input Overvoltage Protection	Reverse polarity protected
DeviceNet Power Requirements	24V dc (+4% = 25V dc max) @ 30mA maximum

Power Supply Specifications	
Power Supply	**Note:** In order to comply with CE Low Voltage Directives (LVD), you must use either a NEC Class 2, a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter.A SELV supply cannot exceed 30V rms, 42.4V peak or 60V dc under normal conditions and under single fault conditions. A PELV supply has the same rating and is connected to protected earth.
Input Voltage Rating	24V dc nominal 10-28.8V dc range
Field Side Power Requirements	24V dc (+20% = 28.8V dc maximum) @ 400mA maximum
Inrush Current	6A maximum for 10ms
PointBus Output Current	1A maximum @ 5V dc ±5% (4.75 - 5.25)
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	
Indicators	3 red/green status indicators Adapter status DeviceNet status PointBus status 2 green power supply status indicators: System Power (PointBus 5V power) Field Power (24V from field supply)
Power Consumption	8.1W maximum @ 28.8V dc
Power Dissipation	2.8W maximum @ 28.8V
Thermal Dissipation	9.5 BTU/hr maximum @ 28.8V dc
Isolation Voltage	1250V rms/V ac
Field Power Bus Nominal Voltage Supply Voltage Range Supply Current	 24V dc 10-28.8V dc range, 10A maximum
Dimensions Inches (Millimeters)	3.0H x 2.16W x 5.25L (76.2H x 54.9W x 133.4L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded maximum 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)

Field Wiring Terminations		
DeviceNet	1 - Black Wire 2 - Blue Wire 3 - Bare Wire 4 - White Wire 5 - Red Wire	-V CAN Low Shield CAN High +V
Power Supply	0 - No Connection 2 - Chassis Ground 4 - Common 6 - Supply	1 - No Connection 3 - Chassis Ground 5 - Common 7 - Supply
Mass	9.0 oz/255 grams	
Agency Certification (when product is marked)	C-UL Listed C-UL Class I, Division 2, Groups A, B, C and D certified UL Listed UL Class I, Division 2, Groups A, B, C and D certified CE marked for all applicable directives. C-Tick marked for all applicable acts. DeviceNet compatible as certified by ODVA, Inc.	

1 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

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Americas Headquarters, 1201 South Second Street, Milwaukee, WI 53204, USA, Tel: (1) 414 382-2000, Fax: (1) 414 382-4444
European Headquarters SA/NV, avenue Herrmann Debroux, 46, 1160 Brussels, Belgium, Tel: (32) 2 663 06 00, Fax: (32) 2 663 06 40
Asia Pacific Headquarters, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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