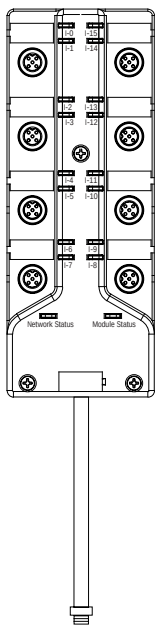
Installation Instructions

ArmorBlock LP2 16 Sourcing Input Module

(Cat. No. 1792D-16VT0LP)



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This ArmorBlock LP2™ I/O module (Cat. No. 1792D-16VT0LP) is a stand-alone 24V dc I/O product which communicates via a DeviceNet network. The sealed housing of this module requires no enclosure.

This model has 16 inputs accessed through Y splitter cables.

Package Contents

Your package contains:

- 1 ArmorBlock LP2 Module
- Installation Instructions

Publication 1792D-5.28 - January 1999

European Union 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 Council Directive 89/336/EEC Electromagnetic Compatibility (EMC) and 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 following Allen-Bradley publications:

- Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, publication 1770-4.1
- Automation Systems Catalog, publication B111

Install Your ArmorBlock LP2 I/O Module

To install the module:

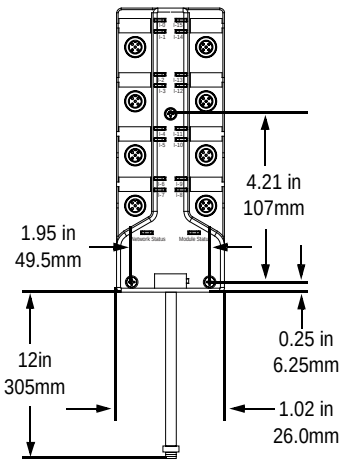
- Set the node address and baud rate.
- Mount the module.
- Attach the unit to the DeviceNet trunk.
- Connect the cord sets.

Set the Node Address

Set the node address using RSNetworx for DeviceNet software, DeviceNetManager™ software, or another software configuration tool. The module is equipped with AutoBaud detect. AutoBaud lets the module read the settings already in use on your DeviceNet network and automatically adjusts to follow those settings.

Install the Module

1. Attach the module using the dimensions shown below.



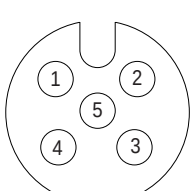
2. Connect the grey DeviceNet cable to the DeviceNet trunk. Use the 1485P-P1R5-MN5R1 T-Part tap to make the connection to round media. Use the 1485P-P1E4-R5 to connect to the Kwik Link flat media system.

Connect the Input Cord Sets to the LP2 Module

This module uses 5 pole micro (12mm) style PCB mounted connectors.

Eight micro caps cover the connectors on your module. Remove the caps and connect your cables to the appropriate ports. This product has two inputs per connector. Use a "Y" splitter cable for access to all input connections. For more information on these cables, see the Product Data guide publication 1792-2.1.

Use the micro caps to cover and seal unused ports. A pinout diagram for the connectors is shown next.



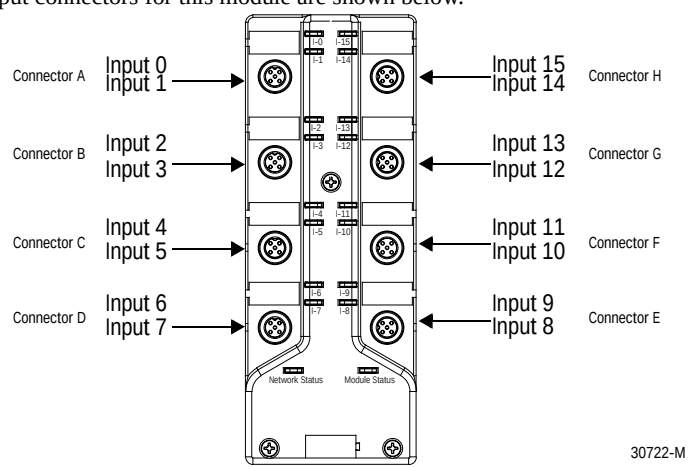
Input Micro-Connector
(View into Sockets)
Pin 1 Sensor Source Voltage
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Not Used

[1] Logic Ground is approximately 0.4V above DeviceNet V-measured at the module.

ATTENTION:

- Make sure all connectors and caps are securely tightened to properly seal the connections against leaks and maintain IP67 requirements
- For maximum noise immunity, input and output cable return wires must be properly terminated. When inputs and outputs are connected in loopback, return wires should be connected together.
- I/O cable length should be less than 30 meters.

Input connectors for this module are shown below.



DeviceNet Cable

Refer to the DeviceNet Cable and Planning Installation manual for more information on DeviceNet cabling for you module.

Communicate With Your ArmorBlock LP2 Module

This ArmorBlock module's I/O is exchanged with the master through a polled, change of state, or cyclic connection.

The module produces input data as follows:

Type of I/O Connections	Consumes	Produces
Cyclic	0 Byte	2 Bytes
Polled	0 Byte	2 Bytes
Change of State	0 Byte	2 Bytes

Cyclic - allows configuration of the block as an I/O client. The block will produce its I/O cyclically at the rate configured.

Polled - a master initiates communication by sending its polled I/O message to the module. The 16 input module scans the inputs producing a response that reflects their status.

Change of state - productions occur when an input changes. If no input change occurs within the expected packet rate, a heartbeat production occurs. This heartbeat production tells the scanner module that the module is alive and ready to communicate.

Refer to the table below for the word/bit definitions.

Bit	07	06	05	04	03	02	01	00
Produces 0	I7	I6	I5	I4	I3	I2	I1	I0
Produces 1	I15	I14	I13	I12	I11	I10	I9	I8

Where: OW = Off Wire I = Input

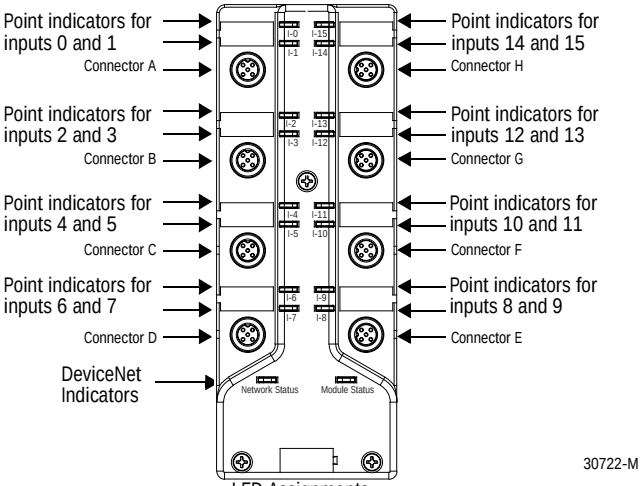
Byte	Bit	Description
Produces 0	00-07	Input status bits: When the bit is set (1), the input is on. Bit 00 = input 0, bit 01= input 1, bit 02 = input 2, bit 03 = input 3, bit 04 = input 4, bit 05 = input 5, bit 06 = input 6, bit 07 = input 7
Produces 1	00-07	Input status bits: Bit 00 = input 8, bit 01= input 9, bit 02 = input 10, bit 03 = input 11, bit 04 = input 12, bit 05 = input 13, bit 06 = input 14, bit 07 = input 15

The DeviceNet Network uses advanced network technology, producer/consumer communication, to increase network functionality and throughput. Visit our website at http://www.ab.com/networks for producer/consumer technology information and updates.

Troubleshoot with the Indicators

This module has the following indicators:

- Network status indicator
- Module status indicator
- Individual point status indicators for inputs 0, through 15



LED Assignments

Module Status Indicator	
Indication	**Status**
None	No Power
Green	
Blinking	Needs Commissioning
Solid	Operating Normal
Red	
Blinking	Recoverable Fault
Solid	Unrecoverable Fault

Network Status Indicator	
Indication	**Status**
None	Not On-line
Green Blinking Solid	 On-line/No Connections On-line/Connected
Red Blink Solid	 Connection Timed Out Failed Communication: A duplicate node address exists or the module is at the wrong baud rate.

I/O Status Indicators			
Function	**Module Status Indicator**	**Point Indicator**	**Condition**
Inputs	Green Green	None Yellow	No valid input Valid input

Specifications

16 Input Module - Cat. No. 1792D-16VT0LP		
Sourcing Input Specifications	**Max**	**Min**
Inputs per block	16 - 3 wire or dry contact NPN devices or 8 - 4 wire NPN devices	
Sensor Source Current (per input)	50mA per point	
Off-Wire Sense Current	0.5mA	-
On-state Voltage	25V dc	10V dc
On-state Current	10mA	2mA
Off-state Voltage	5V dc	
Off-state Current		1.5mA

General Specifications	
Indicators	Network Status - red/green Module Status - red/green Point LED - yellow
Communication Rate	• 125Kbps @ 500 meters(1600 feet) for thick cable, flat media length 375 meters • 250Kbps @ 200 meters(600 feet) for thick cable, flat media length 150 meters • 500Kbps @ 100 meters (330 feet) for thick cable, flat media length 75 meters

16 Input Module - Cat. No. 1792D-16VT0LP

Sourcing Input Specifications	Max	Min
DeviceNet Power Voltage Current	25V dc 150mA max (no sensors) 1.1A (full load)	11V dc
Dimensions (assembled to base) inches - (Millimeters)	1.023H x 2.7w x6.85D (26)H x (68.5)W x (174)D	
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -25 to 60^{0} (-13 to 140^{0}F) -25 to 80^{0}C (-13 to 176^{0}F) Up to 100% 30g peak acceleration, 11 (+1) ms pulse width 50g peak acceleration, 11(+1)ms pulse width Tested 10g @ 10-500Hz per IEC 68-2-6	
Conductors	Publication DN-6.7.2	
Enclosure	Meets or exceeds IP67	
Agency Certification (when product is marked)	• CE marked for all applicable directives	

This product has been tested at an Open DeviceNet Vendor Association, Inc. (ODVA) authorized independent test laboratory and found to comply with ODVA Conformance Test Software Composite Test Version 11.

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