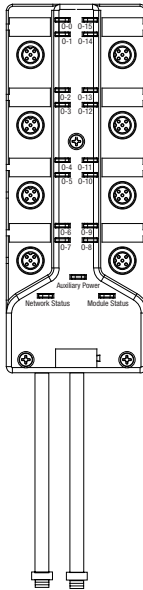




Installation Instructions

ArmorBlock LP2 16 Sourcing Output Module

(Cat. No. 1792D-OBT16LP)



This ArmorBlock LP2™ I/O module (Cat. No. 1792D-OBT16LP) 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 sourcing outputs accessed through Y splitter cables. Outputs are self protected 24V dc and provide up to 0.3A each.

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1792D-5.49 - August 1999

Package Contents

Your package contains:

- 1 ArmorBlock LP2 Module
- Installation Instructions

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/EC 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 publication Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, publication 1770-4.1.

Install Your ArmorBlock LP2 I/O Module

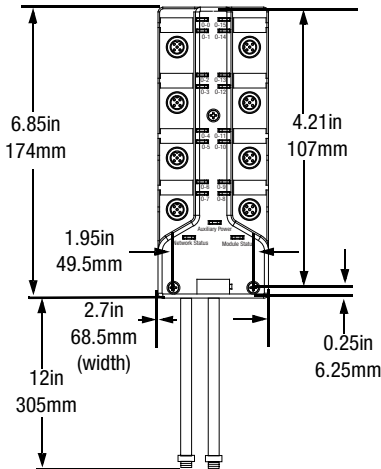
To install the module:

- Mount the module and attach the unit to the DeviceNet trunk.
- Set the node address and baud rate.
- Connect the output cord sets to the LP2 module.
- Communicate with your ArmorBlock LP2 module.

More detailed information about each of these steps is in the following procedures.

Mount the Module and Attach the Unit to the Devicenet Trunk

1. Mount the module using the dimensions shown below.



42049

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.
3. Connect the black auxiliary power cable to your 24V dc power source.

Set the Node Address and Baud Rate

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.

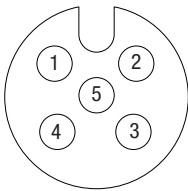
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Connect the Output Cord Sets to the LP2 Module

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 outputs per connector. Use a “Y” splitter cable for access to all output 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 below.



Output Micro-Connector

(View into Sockets)

Pin 1 Not Used
Pin 2 Output B
Pin 3 Auxiliary Power Return
Pin 4 Output A
Pin 5 Not Used

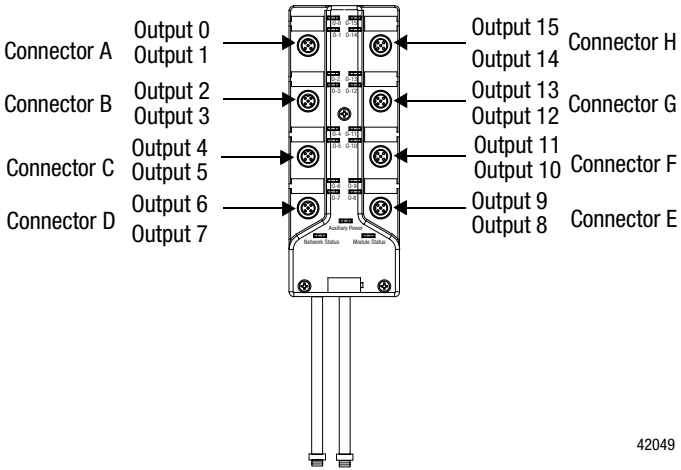
41452



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, output cable return wires must be properly terminated. When outputs are connected in loopback, return wires should be connected together.
 - I/O cable length should be less than 30 meters.
-

Output connectors for this module are shown below.



42049

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 output data as follows:

Type of I/O Connections	Consumes	Produces
Cyclic	2 Bytes	1 Byte
Polled	2 Bytes	1 Byte
Change of State	2 Bytes	1 Byte

Cyclic - allows configuration of the block as an I/O client. The block will consume and 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 output module consumes the message, updates outputs, and producing a response. The response has output faults and the status of the Auxiliary power.

Change of state -productions occur when an output changes or a fault condition occurs. If no output or fault condition change occurs within the expected packet rate, a heartbeat production occurs. This heartbeat production tells the scanner module that the I/O module is alive and ready to communicate. Consumption occurs when data changes and the master produces new output data to the I/O block.

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

Bit	07	06	05	04	03	02	01	00
Produces 0	RSVD	OPWR	RSVD	RSVD	RSVD	RSVD	RSVD	RSVD
Consumes 0	07	06	05	04	03	02	01	00
Consumes 1	015	014	013	012	011	010	09	08

Where: 0 = Output RSVD = Reserved OPWR = Output Power (Auxiliary Power)

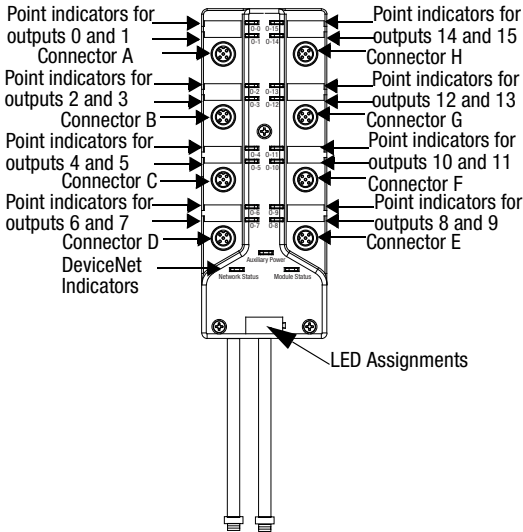
Byte	Bit	Description
Produces 0	00-05 06 07	Reserved OPWR = Output power fault, Auxiliary Power is not present Reserved
Consumes 0	00-07	Output bits - when the bit is set (1), the output will be turned on. Bit 00 corresponds to output 0, bit 01 corresponds to output 1, bit 02 to output 2, bit 03 to output 3, bit 04 to output 4, bit 05 to output 5, bit 06 to output 6, and bit 07 to output 7
Consumes 2	08-07	Output bits - when the bit is set (1), the output will be turned on. Bit 00 corresponds to output 8, bit 01 corresponds to output 9, bit 02 to output 10, bit 03 to output 11, bit 04 to output 12, bit 05 to output 13, bit 06 to output 14, and bit 07 to output 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 outputs 0 through 15



42049-M

The following table describes the module status indicator.

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

The following table describes the network status and Auxiliary power indicators.

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.
Auxiliary Power	
Indication	Status
None	No Auxiliary Power
Green Solid	Auxiliary Power Present

The following table describes I/O status indicators.

I/O Status Indicators			
Function	Module Status Indicator	Point Indicator	Condition
Outputs	Green Green	None Yellow	Output not energized Output energized

For more information on indications, see the Product Data, publication 1792-2.1.

Specifications

16 Output Module - Cat. No. 1792D-OBT16LP			
Sourcing Output Specifications		Max	Min
Outputs per block		16 sinking outputs labeled 00 through 15	
Output Auxiliary Voltage		30V	10V
On-state Voltage Drop		1V	-
On-state Current		0.3A	-
Off-state Leakage		1.5mA	-
Module Current (all outputs)		4.0A	-
Surge Current - for 10 ms, repeatable every 2s		0.6A	-
Indicators		Network Status - red/green Module Status - red/green Auxiliary Power - green Point LED - yellow	
Communication Rate		<ul style="list-style-type: none"> 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 	
DeviceNet Power	Voltage	25V dc	11V dc
	Current	125mA	250mA
Auxiliary Power	Voltage	30V dc	10V dc
	Current	4A	4A
Dimensions (assembled to base) inches - (Millimeters)		1.023H x 2.7W x 6.85D (26)H x (68.5)W x (174)D	
Environmental Conditions			
Operational Temperature		-25 to 60°C (-13 to 140°F)	
Storage Temperature		-25 to 80°C (-13 to 176°F)	
Relative Humidity		Up to 100%	
Shock Operating		30g peak acceleration, 11 (+1) ms pulse width	
Non-operating		50g peak acceleration, 11(+1)ms pulse width	
Vibration		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)		<ul style="list-style-type: none"> 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. Please contact the ODVA website (<http://www.odva.org>) for listing of products tested by ODVA independent test labs for further details.

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RSNetWorx for DeviceNet is a trademark of Rockwell Software, Inc.
DeviceNet is a trademark of Open DeviceNet Vendor Association (ODVA).

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