



ArmorBlock-LP 8 Output Module

Cat. No. 1792-OB8PLP

This 1792 ArmorBlock™ I/O block module (Cat. No. 1792-OB8PLP) contains I/O circuits, a built-in power supply, and a built-in DeviceNet I/O adapter. Because of its sealed housing, this 1792 I/O block requires no enclosure. It is compatible with PLC or SLC programmable controllers using DeviceNet scanners. The I/O values are accessible from the PLC or SLC programmable controller data table.

This ArmorBlock-LP module has no switches to set. You set module parameters using the DeviceNet Manager Software (cat. no. 1787-MGR) or similar configuration tool.

Contents

This box contains:

- 1 ArmorBlock-LP module
- Package containing 10 write-on indicator tabs, and 7 micro caps
- 1 DeviceNet right-hand aluminum T-port tap (part number 97042401)
- Installation Instructions

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European Union Directive Compliance

If this product is installed within the European Union or EEA regions and has the CE mark, the following regulations apply.

EMC Directive

This apparatus is tested to meet Council Directive 89/336/EEC Electromagnetic Compatibility (EMC) using a technical construction file and the following standards, in whole or in part:

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

The product described in this manual is intended for use in an industrial environment.

Low Voltage Directive

This apparatus is also designed 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 that the above norm requires, see the appropriate sections in this manual, as well as the following Allen-Bradley publications:

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

Install Your ArmorBlock-LP Module

Installation of the ArmorBlock-LP module consists of:

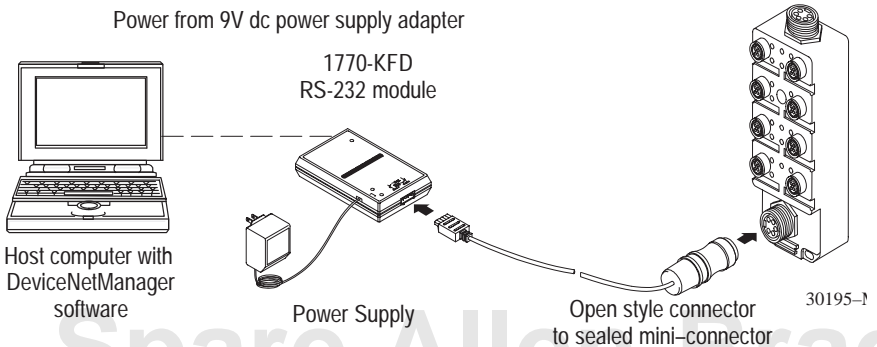
- setting the node address and communication rate in the ArmorBlock module
- mounting the ArmorBlock module
- connecting the wiring
- communicating with your module

Set the Node Address

Each ArmorBlock-LP comes with its internal program set for node address 63 and a communication rate of 125K bps. To set the node address and communication rate, you need the following:

- host computer with DeviceNet Manager Software (or similar configuration software tool)
- 1770-KFD RS-232 module (or similar interface)
- suitable cables to connect the 1770-KFD to your module and to connect the 1770-KFD to your host computer

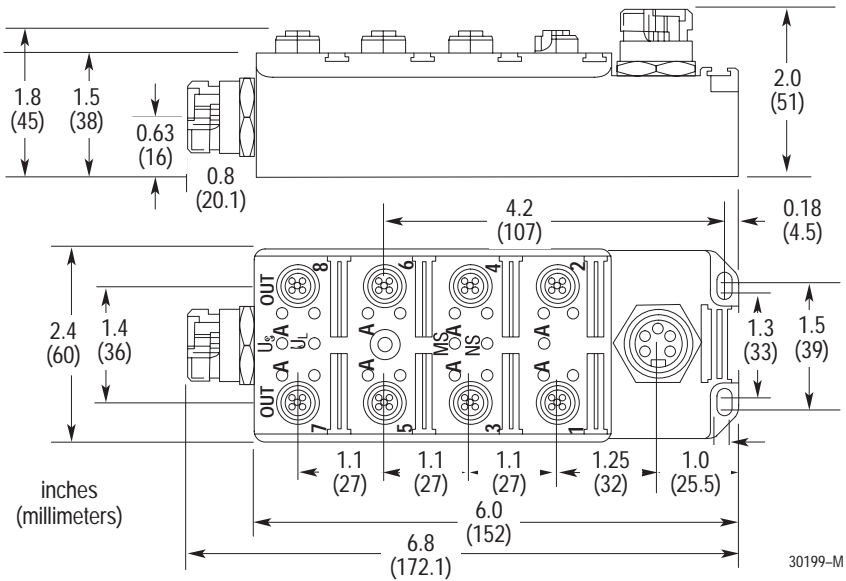
Set up a system (as shown below) to communicate with your ArmorBlock module to set the node address and communication rate to meet your system requirements.



Mount the ArmorBlock Module

Mount the block module directly to the machine or device. Complete mounting dimensions are shown below.

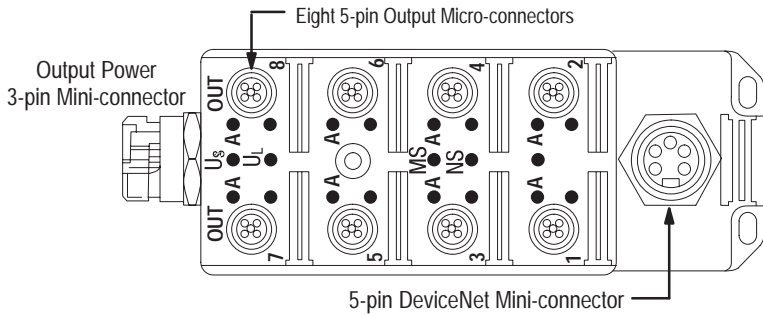
Mounting Dimensions



Connect the Wiring to the ArmorBlock Module

This module uses quick disconnect, screw-on style connectors for:

- I/O output wiring
- the DeviceNet connector
- the output power connector



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Seven micro caps are included with your module. Use these caps to cover and seal unused ports. Pinout diagrams for the connectors are shown below.

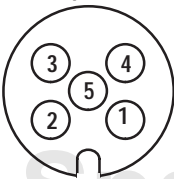


ATTENTION: Make sure all connectors are securely tightened to properly seal the connections against leaks and maintain IP67 requirements.

Connecting the Output Wiring

Connect output wiring to the micro-connectors which screw into mating connectors on the front of the block.

I/O Output Micro-Connector



(View into socket)

Pin 1 = No connection

Pin 2 = Not used

Pin 3 = Negative/Return

Pin 4 = Signal A

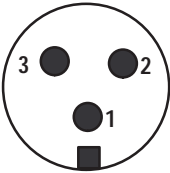
Pin 5 = Ground

Connecting the Output Power Wiring

Connect output power wiring to the 3-pin mini-connector on the end of the block.

Important: The outputs use electronic overcurrent fault protection. Make certain your output power supply can handle overcurrent events.

Output Power Mini-Connector



(View into pins)

Pin 1 = Chassis ground

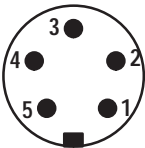
Pin 2 = +24V dc

Pin 3 = Negative/Return

Connecting the DeviceNet Wiring

Connect DeviceNet wiring to the 5-pin mini-connector on the end of the block. Connections are shown below.

DeviceNet Mini-Connector



(View into pins)

Pin 1 = Drain (Bare)

Pin 2 = V+ (Red)

Pin 3 = V- (Black)

Pin 4 = CAN-HI (White)

Pin 5 = CAN-LO (Blue)

Note: Colors are
DeviceNet standard

Communicate with Your ArmorBlock Module

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

When set for Polled, Bit Strobe, or change of state, the module consumes and produces as follows:

Type of I/O Connections	Consumes	Produces
Polled	1 Bytes	1 Byte
Bit Strobe	0 Bytes	1 Byte
Change of State	0 Bytes	1 Byte

Polled device – a master initiates communication by sending its polled I/O message to the ArmorBlock module. The 8 output module consumes the message, updates outputs, and produces a response that reflects the status of its output faults.

Change of state device – productions occur when a fault condition changes. If no fault condition occurs within the “expected packet rate,” a heartbeat production occurs. This heartbeat production tells the scanner module that the ArmorBlock module is alive and ready to communicate.

Bit Strobe device – a master initiates communication by sending its bit strobe I/O message. All bit strobed devices then respond. The 8 output module consumes the message, and produces a response that reflects the status of output faults.

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

Bit	07	06	05	04	03	02	01	00
Consumes	O8A	O7A	O6A	O5A	O4A	O3A	O2A	O1A
Produces	Reserved	OF	Reserved					

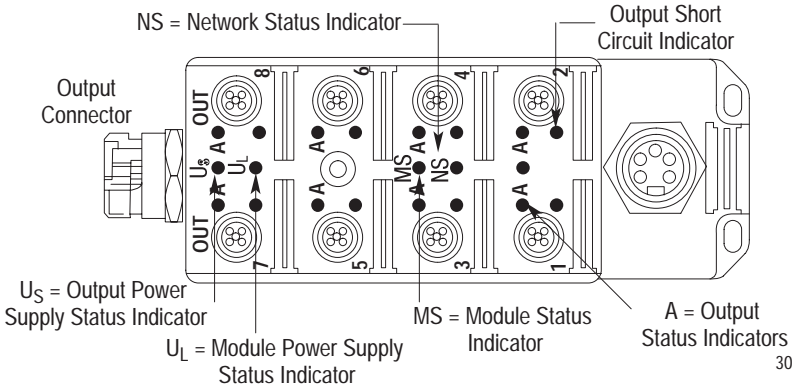
Where: O = Output
OF = Output fault status

Word	Bit	Description
Consumes	00–07	Output bits – when the bit is set (1), the output is on. Bit 00 corresponds to output 1A, bit 01 corresponds to output 2A, bit 02 to output 3A, bit 03 output 4A, bit 04 corresponds to output 5A, bit 05 to output 6A, bit 06 to output 7A, and bit 07 to output 8A.
Produces	00–05	Reserved
	06	OF = output fault status bit – indicates presence of field power and overload condition.
	07	Reserved

Troubleshoot with the Indicators

The ArmorBlock I/O module has the following indicators:

- Network status indicators (NS)
- Module status indicator (MS)
- Individual Output status indicators A1 through A8
- Power Status indicators
 - module power
 - output voltage
 - output status



Network Status Indicator (NS)	
Indication	Status
Flashing Green	On-line, not connected
Solid Green	Link OK, on-line connected
Flashing Red	At least 1 I/O connection is in the timed-out state
Solid Red	Incorrect baud rate, or a duplicate Mac ID exists
Module Status Indicator (MS)	
Indication	Status
OFF	No power, or no network access
Flashing Green/OFF	On-line but not connected
Solid Green	On-line, link okay, connected
Flashing Red	Recoverable fault
Solid Red	Critical failure
Output Short Circuit Indicator	
Indication	Status
OFF	No shorted outputs
Solid Red	Shorted output
Output I/O Status Indicator (1A thru 8A)	
Indication	Status
OFF	Output is off
Yellow	Output is on
Module and Output Power Supply Status Indicators U _S and U _L	
Indication	Status
OFF	Power supply is not functioning correctly
Green	Power Supply is operating

Specifications

8 Output Module – Cat. No. 1792-OB8PLP

Output Power Supply	Note: In order to comply with CE Low Voltage Directives, you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power the outputs of this module.
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Output Specifications

Outputs per Block	8 Sourcing Outputs – labeled 1A through 8A
Output Voltage Range	19–30V dc
On-state Current Maximum	2.0A per output at 60°C
On-state Voltage Maximum	3.0V dc at rated current
Module Current (all outputs on)	12.0A per module
Off-state Leakage Current	1.5mA maximum per output
Surge Current Maximum	4.0A for 10ms, repeatable every 2s
Indicators	Network Status – red/green Module Status – red/green Output Status – Yellow Output Fault – Red Module Power Supply Status – green
Communication Rate in Baud	125k, 250k, 500k software selectable

Specifications continued on next page.

General Specifications	
DeviceNet Power Voltage Current	11.0 – 25.0V dc 100mA
Dimensions Inches Millimeters	6.8H X 2.4W X 2.0D 172.1H X 60W X 51D
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	0 to 60°C (32 to 140°F) –20 to 80°C (–4 to 176°F) up to 100% 30 g peak acceleration, 11(±1)ms pulse width 50 g peak acceleration, 11(±1)ms pulse width Tested 10 g @ 10–500Hz per IEC 68-2-6
Conductors	Refer to publication 1485-6.7.1 for information on cabling for your DeviceNet module.
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 Software Version FT 1.3/1.1.

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