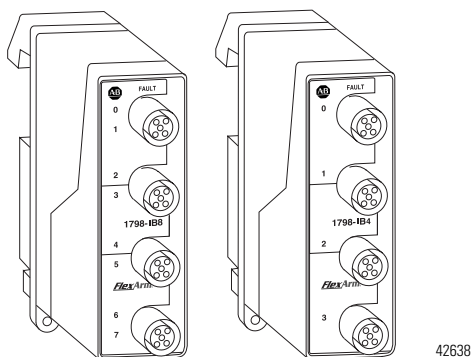




FlexArmor 24V dc Sinking Input Modules

Catalog Number 1798-IB4 & 1798-IB8



The FlexArmor I/O modules (Cat. No. 1798-IB4 & 1798-IB8) mount in a FlexArmor Baseplate. Use compatible sealed cordsets to connect all field side wiring.

The 1798-IB4 module provides connections for up to 4 inputs. The 1798-IB8 module provides connections for up to 8 inputs. Both of these modules have four 12 mm connectors. Inputs are 24V dc configured for sourcing devices. A diagnostic feature for both modules includes sensor power short-circuit detection.

Package Contents

Your package contains:

- 1 FlexArmor -IB4 or -IB8 module
- installation instructions

(Note: Baseplates and other components are ordered and shipped separately.)

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 B113

Related Publications

For software configuration information, refer to the 1798-ADN User Manual, publication 1798-UM001A-US-P and the 1798-APB User Manual, publication 1798-UM002A-EN-P.

Install Your FlexArmor I/O Module

To install the module:

- Install the modules into the Baseplate
- Connect the cordsets
- Communicate with the module

These steps are explained in more detail in the following procedures.

For instructions on how to mount the FlexArmor Baseplate, refer to publication no. 1798-IN003A-EN-P.

Install the Modules into the Baseplate

To install the modules into the Baseplate:

1. Hold the module at an angle and engage the top of the module in the indentation on the rear of the Baseplate.
2. Press the module down flush with the panel until the locking lever locks.
3. Repeat these steps for each I/O module and each remaining Baseplate I/O slot.

IMPORTANT

I/O modules can be installed in any slot location to the right of the adapter module. The adapter is capable of addressing up to eight I/O modules.

Screw down the module retaining screws to ensure IP67 compliance.

IMPORTANT

- Torque the screws to 0.5-0.7 Nm. (4.43 - 6.2 inch pounds).
 - Dust caps must have 4 inch pounds of torque to maintain IP67 compliance.
-

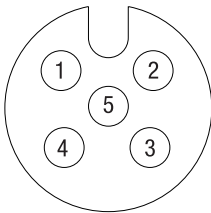
Connect the Cordset to the FlexArmor Module

These modules use 5 pin micro (12mm) style PCB mounted connectors.

Four micro caps cover the I/O connectors on both modules. Remove the caps and connect your cables to the appropriate ports. Keep the caps in place on any unused connector to maintain the IP67 rating.

Refer to publication no. 889-CP0021A-EN-P for compatible Rockwell Automation cables and cordsets.

A pinout diagram for the connectors is shown below.



42652

Input Micro-Connector

(View into Socket)

- Pin 1 Sensor Power
- Pin 2 Input B (IB8 module only)
- Pin 3 Sensor Common
- Pin 4 Input A
- Pin 5 Not Used

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.
-

Communicate with Your FlexArmor System

The FlexArmor DeviceNet adapter module supports multiple communication choices. The network master makes the actual communication choice. The choices are:

Polled - data is sent by the adapter in response to received data.

Strobe - data is sent by the network in response to the strobe command. The single bit allocated to the adapter in the strobe message is not used. If the configured size of the input data (sent from the adapter) is greater than 8 bytes, the strobe connection establishment will fail. In this case, the input size must be re-configured to 8 bytes or less.

Change of State - data is sent by the adapter based on detection of any changed value within the input data. Data is independently received based on change of state from the sender. Data in both directions can be acknowledged or unacknowledged depending on the run time configuration of the system.

Cyclic - data is sent cyclically by the adapter based on a configured time value. Data is independently received cyclically from the sender. Data in both directions can be acknowledged or unacknowledged depending on the run time configuration of the system.


Troubleshooting with the Indicators

The following table describes status indicators on digital input modules.

I/O Status Indicators		
Function	Indicator	Status
Inputs		
Inputs	Yellow Off	Input ON Input OFF
Fault LED	Red Off	Sensor Power Short Normal

Specifications

Input Module Specifications

Specifications	1798-IB4	1798-IB8
Module Type	Digital Input, Sinking	Digital Input, Sinking
Number of Channels	1 group of 4	1 group of 8
Sensor Source Current	400 mA maximum	400 mA maximum
On-state Voltage	10-28.8V dc; 24V dc nominal	10-28.8V dc; 24V dc nominal
On-state Current	2-12 mA; 8 mA @ 24V dc	2-12 mA; 8 mA @ 24V dc
Off-state Voltage	5V dc maximum	5V dc maximum
Off-State Current	1.5 mA minimum	1.5 mA minimum
Channel Impedance	4.6K Ω maximum	4.6K Ω maximum
Isolation Voltage	850V dc channel-to-system for 1s	850V dc channel-to-system for 1s
Delay Times: Off to On On to Off	256 us, 512 us, 1 ms, 2ms 4 ms, 8 ms, 16 ms, 32 ms (Selectable; 256 us default)	256 us, 512 us, 1 ms, 2ms 4 ms, 8 ms, 16 ms, 32 ms (Selectable; 256 us default)
FlexBus Current	20 mA maximum	20 mA maximum
Power Dissipation	2.0W @ 28.8V dc	3.0W @ 28.8V dc
Thermal Dissipation	6.8 BTU/hr. @ 28.8V dc	10.2 BTU/hr. @ 28.8V dc
Indicators	4 channel status - yellow 4 fault LED indicators - red	8 channel status - yellow 8 fault LED indicators - red
External DC Power Voltage (24V dc nom.) Current	10-28.8V dc; 5% AC ripple 450 mA maximum	10-28.8V dc; 5% AC ripple 500 mA maximum
Dimensions (H x D x W)	118 mm X 57 mm X 40 mm 4.63 in. X 2.25 in. x 1.58 in.	118 mm X 57 mm X 40 mm 4.63 in. X 2.25 in. X 1.58 in.
Environmental Conditions: Operating Temperature Storage Temperature Shock: Operating Non-Operating Vibration	-20 to 60°C (-4 to 140°F) -40 to 85°C (-40 to 185°F) 30G peak, 11±1 ms pulse width 50G peak, 11±1 ms pulse width 5G @ 10-500 Hz per IEC 68-2-6	-20 to 60°C (-4 to 140°F) -40 to 85°C (-40 to 185°F) 30G peak, 11±1 ms pulse width 50G peak, 11±1 ms pulse width 5G @ 10-500 Hz per IEC 68-2-6
Conductors	See publication DN-6.7.2	
Enclosure	Meets IP67	
Agency Certification (When product is marked)	CUL listed UL Hazardous Class 1, Division 2, Groups A, B, C, D certified CE marked for all applicable directives  marked for all applicable acts N223	

Hazardous Location Approval

The following information applies only to products marked with Hazardous Location Approval, when operating in hazardous locations:

Products marked “CL I, DIV 2, GP A, B, C, D” are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest “T” number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.

WARNING



EXPLOSION HAZARD -

- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
 - Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
 - Substitution of components may impair suitability for Class I, Division 2.
 - If this product contains batteries, they must only be changed in an area known to be nonhazardous.
-

WARNING



Use supply wires suitable for 30°C above surrounding ambient.

WARNING

When used in a Class I, Division 2, hazardous location, this equipment must be mounted in a suitable enclosure with proper wiring method that complies with the governing electrical codes.

Les informations suivantes ne concernent que les produits marqués pour une utilisation en environnements dangereux :

Les produits marqués « CL I, DIV 2, GP A, B, C, D » ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.

AVERTISSEMENT**RISQUE D'EXPLOSION -**

- 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 externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit.
- La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2.
- S'assurer que l'environnement est classé non dangereux avant de changer les piles.

AVERTISSEMENT



Utiliser des fils d'alimentation qui conviennent à une température de 30°C au-dessus de la température ambiante.

AVERTISSEMENT



Pour une utilisation en environnement de classe i, division 2 dangereux, cet équipement doit être monté dans un boîtier avec un câblage approprié conforme aux normes électriques en vigueur.

Notes:

Allen-Bradley is a registered trademark of Rockwell Automation.
DeviceNet is a trademark of Open DeviceNet Vendor Association (ODVA).
RSNetWorx for DeviceNet is a trademark of Rockwell Software, Inc.

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