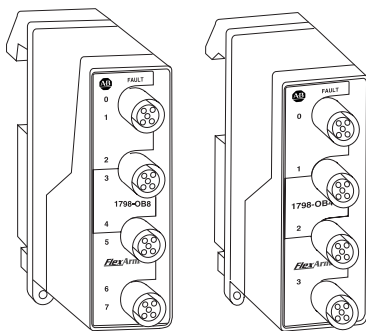




## Installation Instructions

# FlexArmor 24V dc Sourcing Output Modules

Catalog Number 1798-OB4E & 1798-OB8E



42639

The FlexArmor I/O modules (Cat. No. 1798-OB4E & 1798-OB8E) mount in a FlexArmor Baseplate. Use compatible sealed cordsets to connect all field side wiring.

The 1798-OB4E module provides connections for up to 4 outputs. The 1798-OB8E module provides connections for up to 8 outputs. Both of these modules have four 12 mm connectors. Outputs are 24V dc configured for sinking devices. A diagnostic feature for both modules includes output short-circuit detection.

## Package Contents

Your package contains:

- 1 FlexArmor -OB4E or -OB8E 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.

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## 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.

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**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.

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Screw down the module retaining screws to ensure IP67 compliance.

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**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.
-

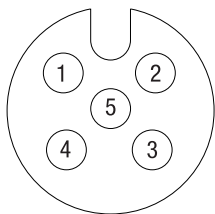
## Connect the Cordset to the FlexArmor Module

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

Four micro caps cover the I/O connectors on both your 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.



### Output Micro-Connector (View into Socket)

- Pin 1 Not Used
- Pin 2 Output B (OB8E modules only)
- Pin 3 Output Common
- Pin 4 Output A
- Pin 5 Not Used

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#### 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.
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## 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 adapter 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

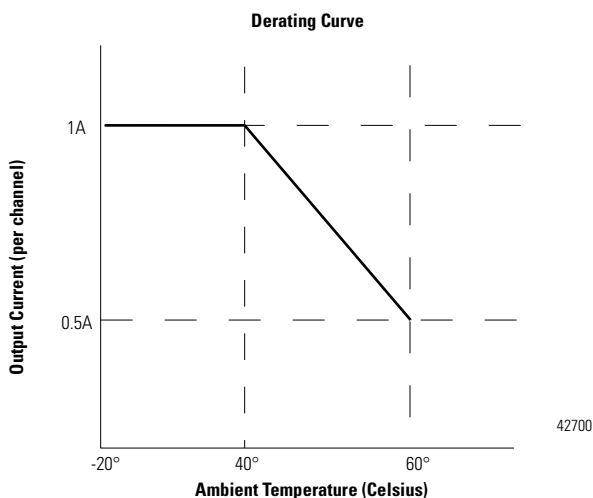
The following table describes status indicators on digital output modules.

I/O Status Indicators		
Function	Indicator	Status
<b>Outputs</b>		
Outputs	Yellow Off	Output ON Output OFF
Fault LED	Red Off	One or more outputs shorted Normal

# Specifications

## Output Module Specifications

Specifications	1798-0B4E	1798-0B8E
Module Type	Digital Output, Sourcing	Digital Output, Sourcing
Number of Channels	1 group of 4	1 group of 8
On-state Voltage	10-28.8V dc; 24V dc nominal	10-28.8V dc; 24V dc nominal
On-state Current (per channel)	1.0A per channel	1.0A per channel
On-state Current (per module)	4.0A per module	5.0A per module
Off-state Voltage	28.8V dc maximum	28.8V dc maximum
Off-State Current	0.5 mA maximum leakage	0.5 mA maximum leakage
On-State Voltage Drop	0.5V dc maximum drop	0.5V dc maximum drop
Surge Current	2.0A for 50 ms (Repeatable every 2 seconds)	2.0A for 50 ms (Repeatable every 2 seconds)
Isolation Voltage	850V dc for 1 second	850V dc for 1 second
Delay Times: Off to On On to Off	0.5 ms maximum 1.0 ms maximum	0.5 ms maximum 1.0 ms maximum
FlexBus Current	60 mA maximum	60 mA maximum
Power Dissipation	2.4 W @ 28.8 V dc	2.9 W @ 28.8 V dc
Thermal Dissipation	8.2 BTU/hr. @ 28.8V dc	9.9 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 4.0A maximum	10-28.8V dc; 5% AC ripple 5.0A 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±1ms pulse width 50G peak, 11±1ms pulse width 5G @ 10-500Hz per IEC 68-2-6 (see graph on next page)	-20 to 60°C (-4 to 140°F) -40 to 85°C (-40 to 185°F) 30G peak, 11±1ms pulse width 50G peak, 11±1ms pulse width 5G @ 10-500Hz per IEC 68-2-6 (see graph on next page)
Conductors	See publication DN-6.7.2	
Cordsets	5 pin micro (12mm) style connectors	
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.
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**WARNING**



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

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**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.

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**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.

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**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.

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**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.

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## **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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