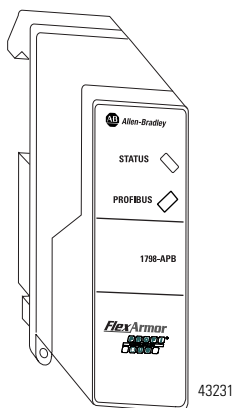




Installation Instructions

FlexArmor PROFIBUS Adapter Module

Catalog Number 1798-APB



The FlexArmor PROFIBUS communication adapter (Cat. No. 1798-APB) provides the electrical interface between the network and the FlexArmor Baseplate. You must have a Field Termination Plug (1798-PFTP1) installed to provide the cabling interface to your network. The Field Termination Plug also provides converter functionality to power all of the system side electronics for the adapter itself and the I/O modules.

Package Contents

Your package contains:

- 1 FlexArmor PROFIBUS adapter module (1798-APB)
- installation instructions

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

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of these products must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards. In no event will Allen-Bradley be responsible or liable for indirect or consequential damage resulting from the use or application of these products.

Any illustrations, charts, sample programs, and layout examples shown in this publication are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this publication, notes may be used to make you aware of safety considerations. The following annotations and their accompanying statements help you to identify a potential hazard, avoid a potential hazard, and recognize the consequences of a potential hazard:

ATTENTION



Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

Environment and Enclosure

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC publication 60664-1), at altitudes up to 2000 meters without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR Publication 11. Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

ATTENTION

This equipment is supplied as "enclosed" equipment. It should not require additional system enclosure when used in locations consistent with the enclosure type ratings stated in the Specifications section of this publication. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings, beyond what this product provides, that are required to comply with certain product safety certifications.

See NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure. Also, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1 ("Industrial Automation Wiring and Grounding Guidelines"), for additional installation requirements pertaining to this equipment.

Related Publications

- For software configuration information, refer to the FlexArmor User Manual, publication no. 1798-UM002.
- For installation instructions for the 1798-PFTP1, see publication no. 1798-IN005.

Preventing Electrostatic Discharge

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

ATTENTION



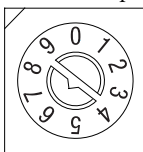
- Touch a grounded object to discharge potential static.
- Wear an approved grounding wriststrap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- If available, use a static-safe workstation.
- When not in use, store the equipment in appropriate static-safe packaging.

Set the Node Address on the PROFIBUS Adapter

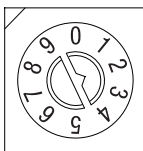
To set the station address, adjust the switches on the back of the adapter. The two switches are most significant digit (MSD) and least significant digit (LSD). The switches can be set between 00 and 99.

The rotary switches are read at adapter power-up only.

Example: Node
Address is set at 26



LSD



MSD

43230

Install Your FlexArmor PROFIBUS Adapter Module

To install the PROFIBUS Adapter Module:

1. Hold the adapter at an angle and engage the top of the adapter in the indentation on the rear of the Baseplate.

IMPORTANT

The adapter module must be installed only in the adapter slot, the second position from the left.

2. Press the module down flush with the panel until the locking lever locks.
3. 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).

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.

Communicate with Your FlexArmor System

Use PROFIBUS software to configure your FlexArmor system. Download the GSD file for this adapter from the following website: www.ab.com/io/networks/gsd.

Troubleshooting with the Indicators

Diagnostic indicators are located on the front of the adapter module. They show both normal operation and error conditions in your PROFIBUS I/O system. The indicators are:

- STATUS
- PROFIBUS

The following table describes status indicators.

STATUS Indicator	
Indicator	Status
OFF	No power
Solid Green	Normal operation
Flashing Red/OFF	Recoverable fault - FlexArmor I/O module bad - Incorrect FlexArmor I/O module installed - Node address changed since power up
Solid Red	Unrecoverable fault

The following table describes PROFIBUS status indicators.

PROFIBUS Indicator	
Indicator	Status
OFF	No power or no communication
Solid Green	Data is being transmitted and received
Flashing Red/OFF	Recoverable fault - Invalid Send Parameter data - Invalid Check Configuration data
Solid Red	Unrecoverable fault - Unable to communicate

Specifications

FlexArmor PROFIBUS Adapter Specifications	
Network Protocol	PROFIBUS-DP (EN50170) <ul style="list-style-type: none"> • Communication of the slave with a Class 1 master • Communication of the slave with a Class 2 master
Redundancy	Not supported
Repeater Control Signal	RS485 signal
Implementation Type	SPC3

FlexArmor PROFIBUS Adapter Specifications (continued)	
Freeze Mode	Supported
Sync Mode	Supported
Auto Baud Rate	Supported
Fail Safe Mode	Not Supported
Station Type	Slave
FMS Support	Not supported
Number of nodes	100 maximum - rotary switch type node address setting (00-99)
Network Length/ Communication rate	9.6KBPS @ 1000m (3280ft) 19.2KBPS @ 1000m (3280ft) 45.45KBPS @ 1000m (3280ft) 93.75KBPS @ 1000m (3280ft) 187.5KBPS @ 1000m (3280ft) 500KBPS @ 400m (1312ft) 3MBPS @ 100m (328ft) 6MBPS @ 100m (328ft) 12MBPS @ 100m (328ft)
External DC Power (Input Power): Voltage (24V dc nom.) Current	10-28.8V dc; 5% AC ripple 400 mA @ 24V dc
FlexBus (Output Power): Voltage (5V dc nom.) Current	4.75 - 5.2V dc; 5% AC ripple 640 mA @ 5.2V dc
Indicators	1 red/green module status 1 red/green network status
Wiring	Refer to publication 1770-4.1 Programmable Controller Wiring and Grounding Guidelines
Isolation	Type test 1250Vac rms for 60 seconds between field power and PROFIBUS (I/O to logic)
Dimensions (H x D x W)	118 mm X 50 mm X 40 mm 4.63 in. X 1.95 in. X 1.58 in.
Operational Temperature	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): 0 to 55°C (32 to 131°F)
Storage Temperature	IEC 60068-2-1 (Test Ab, Un-packaged Non-operating Cold), IEC 60068-2-2 (Test Bb, Un-packaged Non-operating Dry Heat), IEC 60068-2-14 (Test Na, Un-packaged Non-operating Thermal Shock): -25 to 85°C (-13 to 185°F)
Shock	IEC60068-2-27 (Test Ea, Unpackaged shock): Operating 30g Non-operating 50g
Emissions	CISPR 11: Group 1, Class A

FlexArmor PROFIBUS Adapter Specifications (continued)

ESD Immunity	IEC 61000-4-2: 4kV contact discharges
Radiated RF Immunity	IEC 61000-4-3: 10V/m with 1kHz sine-wave 80%AM from 80MHz to 1000MHz
EFT/B Immunity	IEC 61000-4-4: ±2kV at 5kHz on power ports ±1kV at 5kHz on signal ports
Surge Transient Immunity	IEC 61000-4-5: ±1kV line-line(DM) and ±2kV line-earth(CM) on power ports ±1kV line-earth (CM) on shielded ports
Conducted RF Immunity	IEC 61000-4-6: 10Vrms with 1kHz sine-wave 80%AM from 150kHz to 80MHz
Vibration	IEC60068-2-6 (Test Fc, Operating): 5g @ 10-500Hz
Enclosure	Meets IP67
Agency Certification (When product is marked)	c-UL-us UL Listed Industrial Control Equipment, certified for US and Canada UL UL Listed Industrial Control Equipment CE ¹ European Union 89/336/EEC EMC Directive, compliant with: EN 50081-2; Industrial Emissions EN 50082-2; Industrial Immunity EN 61326; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity C-Tick ¹ Australian Radiocommunications Act, compliant with: AS/NZS 2064; Industrial Emissions

1. See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

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