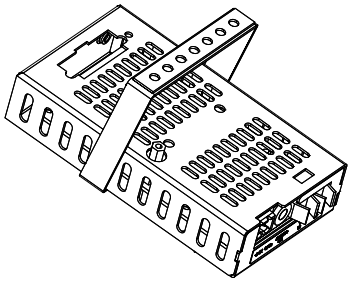
ABB Drives

User's manual
FEA-01 F-series Extension Adapter



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FEA-01 user's manual

Safety instructions

Overview

The chapter contains the safety instructions that you must follow when installing and operating the FEA-01 F-series Extension Adapter. Read the safety instructions before you work on the unit.

In addition to the safety instructions given below, read the complete safety instructions of the specific drive you are working on.

General safety instructions

WARNING! Ignoring the following instructions can cause physical injury or death, or damage to the equipment.

- Only qualified electricians are allowed to install and maintain the drive.
- The drive and adjoining equipment must be properly earthed.
- Do not work on a powered drive. After switching off the input power, always allow the intermediate circuit capacitors 5 minutes to discharge before working on the drive, the motor or the motor cable. Always ensure by measuring with a multimeter (impedance at least 1 Mohm) that the drive is discharged before beginning work.
- The motor cable terminals of the drive are at a dangerously high voltage when input power is applied, regardless of motor operation.
- There can be dangerous voltages inside the drive from external control circuits even when the drive input power is shut off. Exercise appropriate care when working on the unit.

FEA-01 F-series Extension Adapter

Overview

The FEA-01 F-series Extension Adapter is an extension unit for the mounting of FIO I/O extension modules and FEN encoder modules outside the drive unit. The FEA-01 is connected to the drive via a DDCS-protocol fiber-optic link. One I/O extension module can be mounted on one FEA-01 adapter. Several FEA-01 adapters can be connected in a ring topology using fibre optic cable.

Optical component types

The FEA-01 has a 10 MBd fiber-optic link. The drive must also have a 10 MBd DDCS fiber-optic connection. The following optical cable types can be used:

Note: The optical components (transmitter and receiver) on a fibre optic link must be of the same type.

- Plastic optical fibre (POF) cables (max. length 30 m) and
- Hard Clad Silica (HCS®) cables (max. length 200 m).

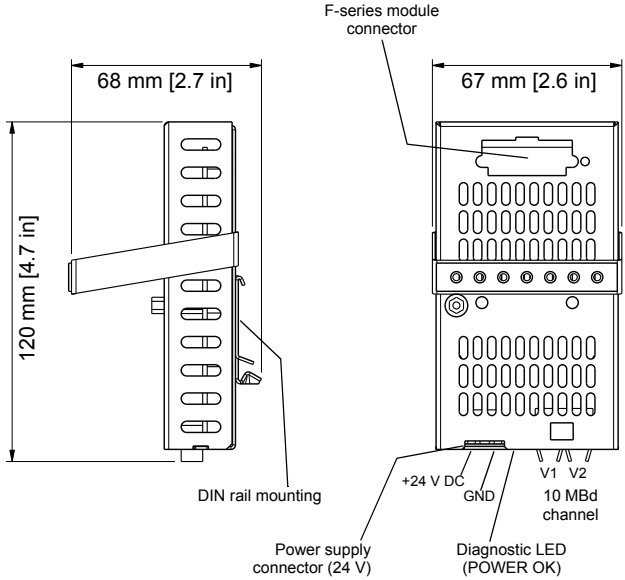
HCS cables allow longer connection distances because of their lower attenuation. HCS® is a registered trademark of SpecTran Corporation.

The optical component types used in ABB drive equipment are presented in *Settings and connections*.

Settings and connections

Layout

The following figure shows the layout and dimensions of the FEA-01, indicating the F-series module connector and front components such as the diagnostic LED, fiber-optic transmitter (V1), receiver (V2) and power supply connector.



Power supply

The FEA-01 requires a supply voltage of 24 V DC ±10%.

Diagnostic LED

The green diagnostic LED on the circuit board of the FEA-01 unit can be viewed on the front of the metal housing.

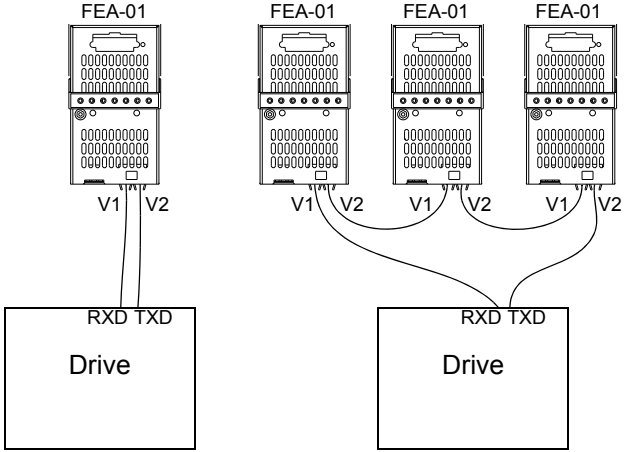
The LED is lit when the FEA-01 is powered. If the LED is off when power is applied, there is a fault.

Fiber-optic link connection

Connect the FEA-01 V1 (TXD) connector to the drive RXD connector. Connect the FEA-01 V2 (RXD) connector to the drive TXD connector as shown below.

Multiple FEA-01 F-series Extension Adapters are connected together in a ring topology as shown below.

For more information on the fiber-optic link connection, see the relevant firmware manual.



Mechanical installation

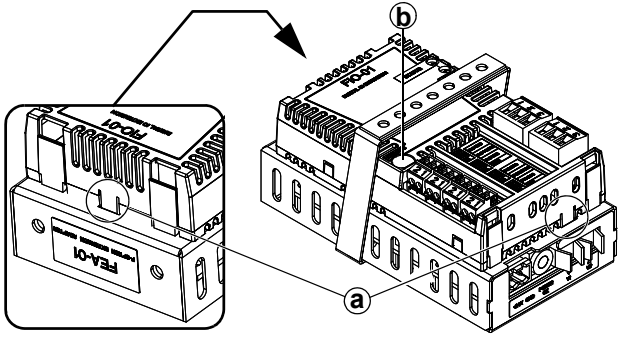
The housing of the FEA-01 unit has two spring-loaded fasteners for vertical or horizontal 35 × 7.5 mm DIN rail mounting. The mounting rail must be earthed to a noiseless earth. If the rail is not mounted on a properly earthed base, a separate earthing conductor must be used. The conductor must be as short as possible and its cross-sectional area must be 6 mm^2 at least.

Note: No solid copper conductor may be used (stranded wire allowed only).

The unit should be mounted so that air can freely pass through the ventilation holes in the housing. Mounting directly above heat-generating equipment should be avoided.

Mounting an I/O extension module

To mount an I/O extension module, insert the plastic retaining clips of the module (a) into the slots in the FEA-01 and fasten the screw (b). Correct installation of the screw is essential for fulfilling the EMC requirements and for proper operation of the module. For more information, see the relevant user's manual.



Technical data

Housing: Painted and zinc-plated sheet steel

Dimensions: 67 × 120 × 68 mm

Mounting: Onto 35 × 7.5 mm DIN rail

Power supply connection

- **Voltage:** 24 V DC ±10%
- **Current consumption:** Refer to I/O extension module's User's Manual.

Connectors

- Fiber-optic link connection: Avago Versatile Link (10 MBd)
- Power supply connection: Detachable screw terminal block (Phoenix Contact MSTBA 2.5/2-G-5.08)

LED: Diagnostic LED labeled 'POWER OK'.

Ambient conditions: The applicable ambient conditions specified for the drive in its hardware manual are in effect.

Degree of protection: IP20

Standards: Complies with the safety standard IEC 61800-5-1 and EMC standard IEC 61800-3.

Further information

Product and service inquiries

Address any inquiries about the product to your local ABB representative, quoting the type designation and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found by navigating to www.abb.com/drives and selecting *Sales, Support and Service network*.

Product training

For information on ABB product training, navigate to www.abb.com/drives and select *Training courses*.

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