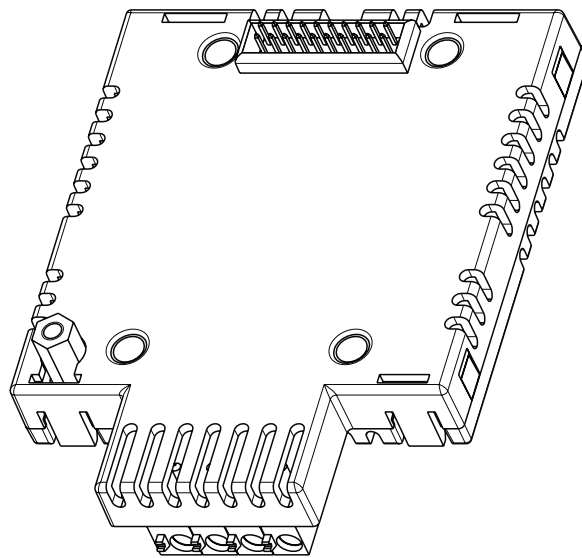


# ABB Drives

## User's Manual External Power Adapter Module FEPA-01





External Power Adapter Module  
FEPA-01

**User's Manual**

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# Safety instructions

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## Overview

This chapter states the general safety instructions that must be followed when installing and operating the FEPA-01 External Power Adapter module.

The material in this chapter must be studied before attempting any work on, or with, 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!** All electrical installation and maintenance work on the drive should be carried out by qualified electricians.

The drive and adjoining equipment must be properly earthed.

Do not attempt any work on a powered drive. After switching off the mains, always allow the intermediate circuit capacitors 5 minutes to discharge before working on the frequency converter, the motor or the motor cable. It is good practice to check (with a voltage indicating instrument) that the drive is in fact discharged before beginning work.

The motor cable terminals of the drive are at a dangerously high voltage when mains power is applied, regardless of motor operation.

There can be dangerous voltages inside the drive from external control circuits even when the drive mains power is shut off.

Exercise appropriate care when working on the unit. Neglecting these instructions can cause physical injury or death.



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# Introduction

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## Intended audience

The manual is intended for the people who are responsible for commissioning and using an FEPA-01 External Power Adapter module. The reader is expected to have a basic knowledge of electrical fundamentals, electrical wiring practices and how to operate the drive.

## Before you start

It is assumed that the drive is installed and ready to operate before starting the installation of the extension module.

In addition to conventional installation tools, have the drive manuals available during the installation as they contain important information not included in this manual. The drive manuals are referred to at various points of this document.

## What this manual contains

This manual contains information on the wiring, installation and use of the FEPA-01 External Power Adapter module.

**Safety instructions** are featured in the first few pages of this manual.

**Overview** contains a short description of the FEPA-01 External Power Adapter, and a delivery checklist.

**Mechanical installation** contains placing and mounting instructions for the module.

**Electrical installation** contains wiring and earthing instructions.

**Diagnostics** explains how to trace faults with the status LEDs on the FEPA-01 module.

**Technical data** contains information on physical dimensions and connectors of the module.



# Overview

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## Overview

This chapter contains a short description of the FEPA-01 External Power Adapter module, and a delivery checklist.

## Functional description

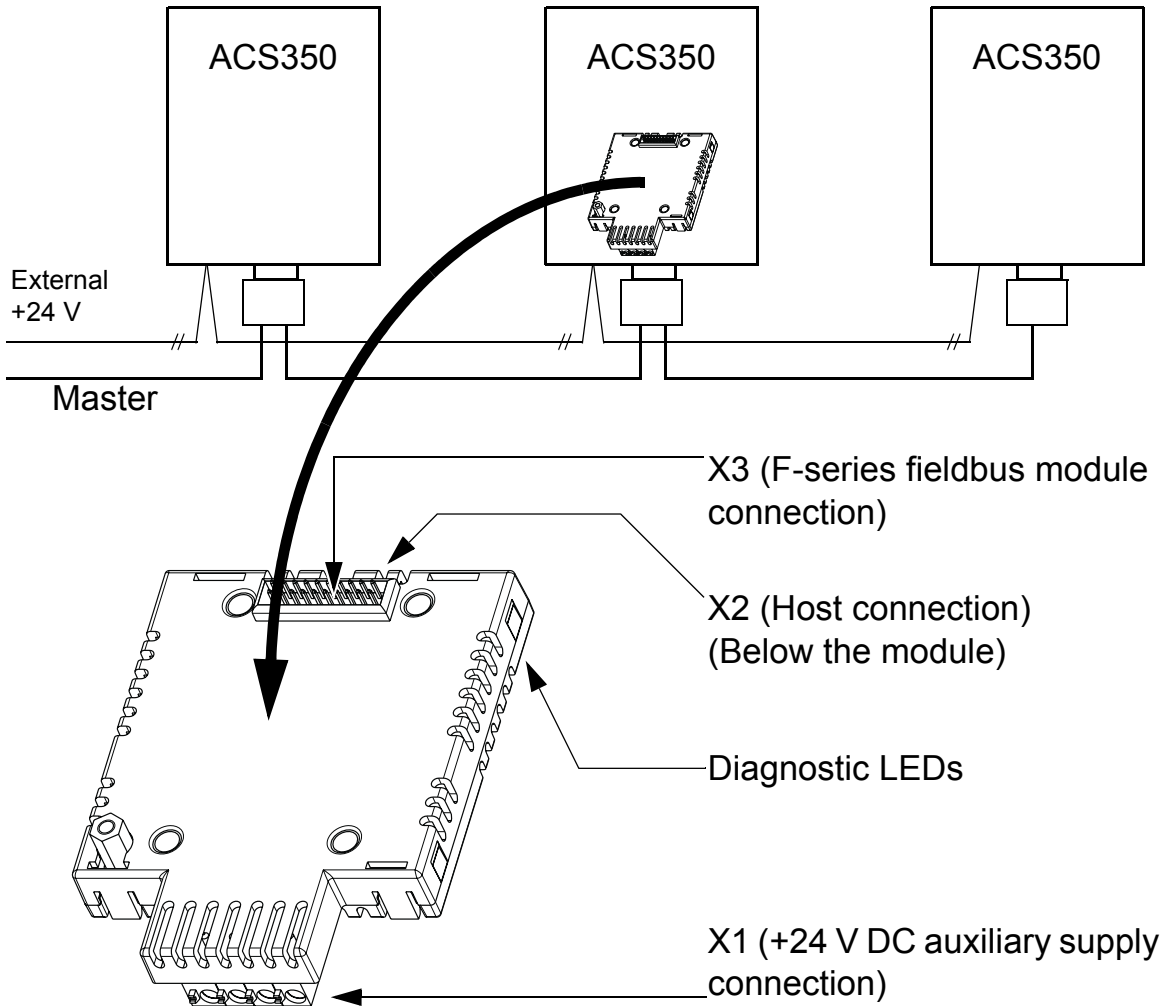
The FEPA-01 External Power Adapter module is an optional device that enables connecting a 24 V DC external power source to a F-series fieldbus module (such as FPBA-01) connected to an ACS350 drive. It supplies a 3.3 V DC auxiliary voltage to the F-series module even when the drive is faulty or disconnected from the supply, for example, during maintenance. The external power source can be, for example, a battery.

If the drive is faulty or disconnected from the supply, FEPA-01 detects that the drive is not functional and sends this information to the F-series module. The fault information can be relayed to the fieldbus master.

Fieldbus interface signals are transmitted to the drive through the FEPA-01 module.

All auxiliary voltages of the system (fieldbus, ACS350 and the external power source) are galvanically isolated from each other.

## The FEPA-01 External Power Adapter module



## Compatibility

The FEPA-01 is compatible with F-series fieldbus adapters used together with ACS drives manufactured by ABB. F-series adapters include:

- FPBA-01
- FCAN-01

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**Note:** Check the compatibility of the F-series fieldbus adapters with FEPA-01 External Power Adapter from an ABB representative.

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## Delivery check

The option package for the FEPA-01 External Power Adapter module contains:

- External Power Adapter module, type FEPA-01
- this manual.



# Mechanical installation

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**WARNING!** Follow the safety instructions given in this manual and the drive documentation.

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## Mounting

The FEPA-01 module is mounted in the option slot of the drive, and the F-series module is mounted on top of it.

Before you mount the FEPA-01, ensure that the clamping and I/O clamping plates are fastened and control cables are connected.

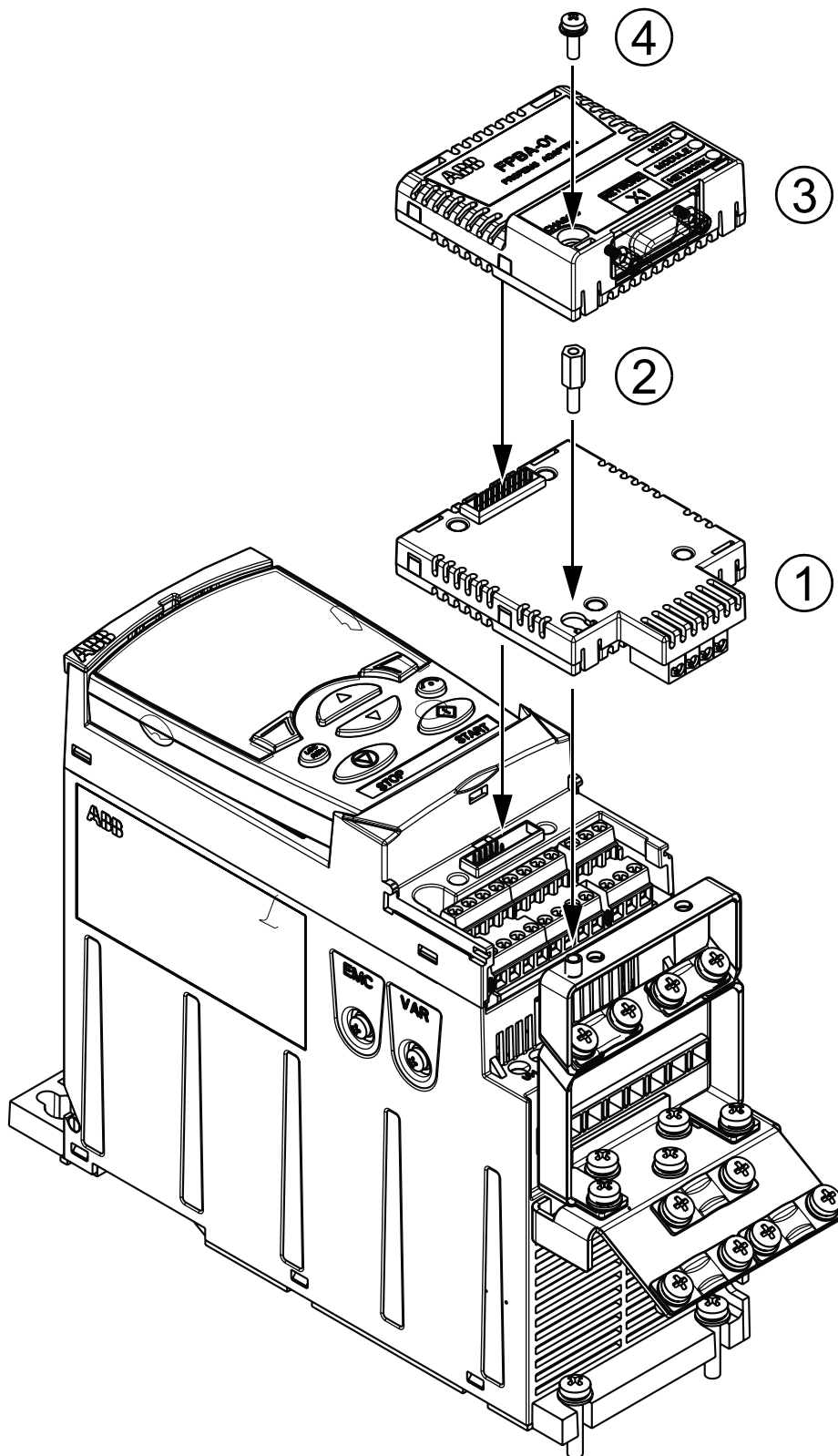
1. Attach the FEPA-01 module to the drive so that the X2 connector is connected to the drive.
2. Insert the spacer.
3. Attach the F-series module (Fieldbus adapter) to the FEPA-01 module so that the X3 connector is connected to the F-series module.
4. Fasten the mounting screw.

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**Note:** Correct installation of the screw is essential for fulfilling the EMC requirements and for proper operation of the module.

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## Mounting the FEPA-01 module





# Electrical installation

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## Overview

This chapter contains the general cabling and grounding instructions.



**WARNING!** Before installation, switch off the drive power supply. Wait five minutes to ensure that the capacitor bank of the drive is discharged. Switch off all dangerous voltages connected from external control circuits to the inputs and outputs of the drive.

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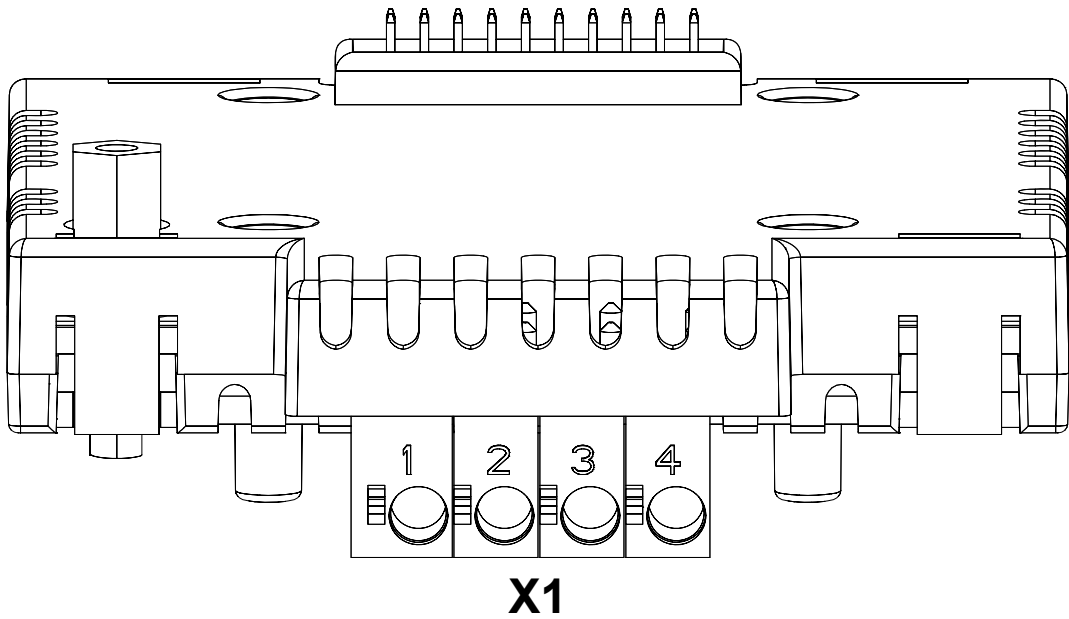
## General cabling instructions

Arrange the adapter cables as far away from the motor cables as possible. Avoid parallel runs. Use bushings at cable entries.

## FEPA-01 connection

The 24 V DC cable is connected to the X1 connector of the FEPA-01.

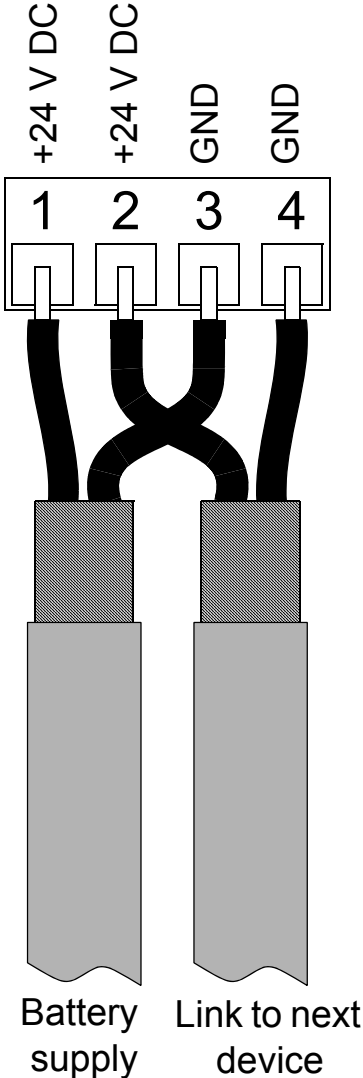
To connect a wire to the screwless terminal block, hold down one of the triggers and insert the stripped wire. Similarly, hold down the trigger when removing a wire.



X1	
1	+24 V
2	+24 V
3	GND
4	GND

### External power connection

Connect the cables to connector X1 on the FEPA-01 as follows:





# Diagnostics

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## LED indications

The FEPA-01 module is equipped with two diagnostic LEDs. The LEDs are described below.

<b>Color</b>	<b>Function</b>
Green	Connection to the external power supply OK
Red	Communication to host lost (3.3 V not present)



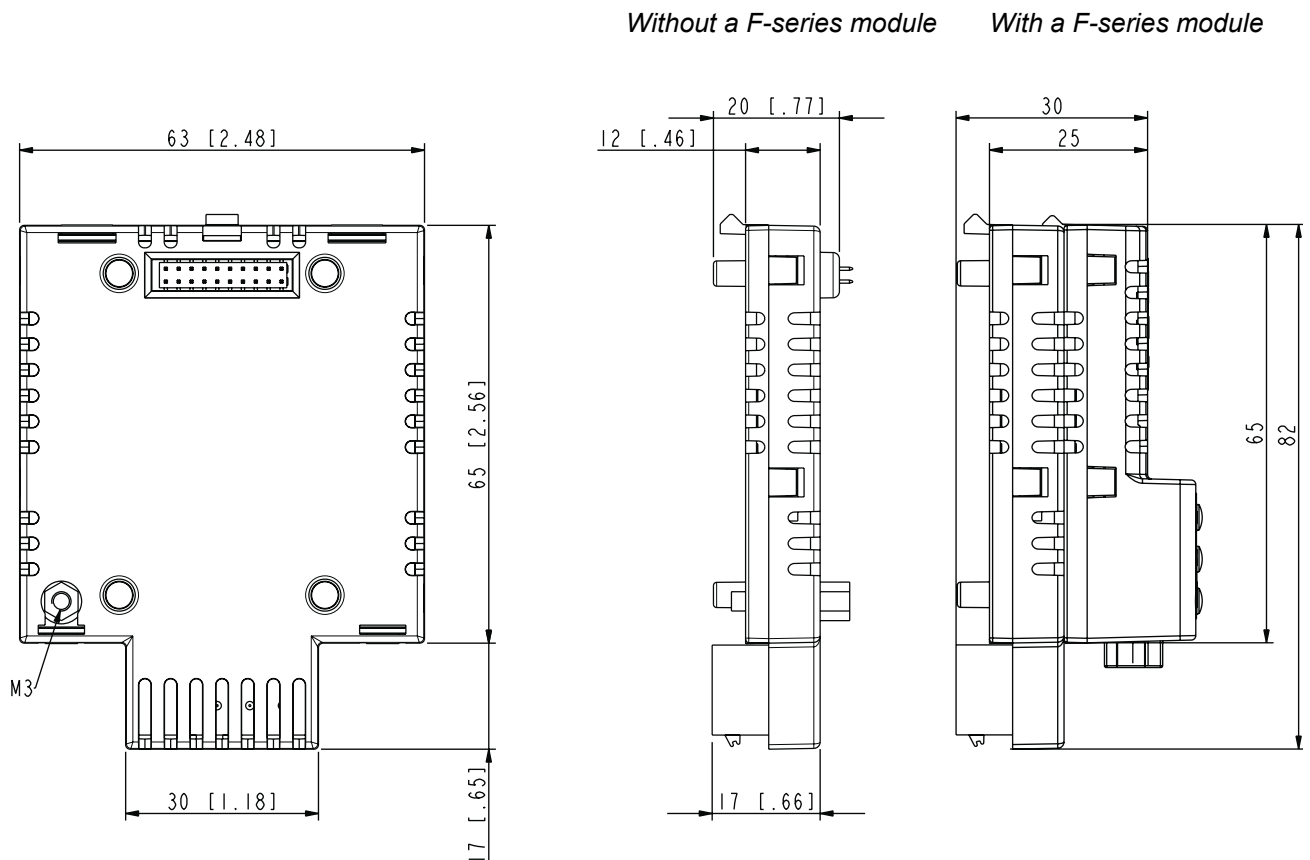
# Technical data

## FEPA-01

### Enclosure and dimensions

**Note:** When the FEPA-01 and a F-series module are mounted, the depth of the drive is 13 mm greater than without them.

ACS350 frame (IP20)	Depth (mm)	
	without FEPA-01	with FEPA-01
R0, R1 and R2	162	175
R3 and R4	169	182



**Mounting:** Into the option slot on the drive.

**Degree of protection:** IP20

**Ambient conditions:** The applicable ambient conditions specified for the drive in its manuals are in effect.

**Connectors:**

- 4-pin connector to external power supply (X1)
- 10-pin connector to host (X2)
- 20-pin connector to F-series module (X3)

**Wire cross-sectional area:**

- max. 1.5 mm<sup>2</sup>

**Power supply:**

- +24 V DC  $\pm$  10%, <200 mA

**General:**

- Estimated minimum lifetime: 100 000 h
- All materials UL/CSA-approved
- Complies with the EMC standard EN/IEC 61800-3.







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