

PS-FBPA

FieldBus Plug Accessory for PSR and PSE Softstarters

1. Overview

PS-FBPA is used for connecting PSR and PSE softstarters with an ABB FieldBus plug. It is possible to control and achieve status information from the softstarter. This device is replacing the 1SFA896312R1001 which only fits the PSR softstarters. The device works together with the complete range of PSR and PSE softstarters.

1.1 PSR

The accessory is primarily intended for use with starter combinations e.g. Manual Motor Starter + Softstarter or Contactor + Thermal overload + Softstarter. The accessory has one digital output for start command and two digital inputs for Run and Trip indications from the starter combination.

1.2 PSE

The accessory is using a serial interface when connected to the PSE. This allows for extensive control and monitoring capabilities. Please see the PSE-specific address maps for the different protocols in separate documents.

2. Following fieldbus protocols are available

- AS-I (Discontinued)
- DeviceNet
- Modbus
- Profibus DP
- CanOpen

3. Required parts

To connect a PSR or PSE softstarter to a fieldbus system the following parts are required.

- FieldBus Plug Accessory (PS-FBPA)
- FieldBus Plug for presenting fieldbus protocol (check that the cable length is sufficient).
- Connectors for bus connection.
- End plug (only required for some protocols).
- Configuration file (gsd, eds, etc.) and software for PLC set-up.
- Device for setting of FieldBus Plug address (CAS21)(PSR only)



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Revision B



4. Device description

Terminals

- X1 Connection with PSR or PSE softstarter via connection cable described below.
- X2 Connection with ABB FieldBus Plug.
- X3 Wiring connectors for the following signals

4.1 PSR

Trip, terminals 1 and 2, used for picking up a trip signal from an external device e.g. Manual Motor Starter or Thermal Overload. The signal is forwarded to the fieldbus as a digital input, bit 0, and do not automatically stop the PSR.

Local/ Rem_N, terminals 3 and 4, used for selecting local or remote control by an external switch. When the switch is closed the softstarter ignores the fieldbus signals and uses the terminals on the softstarter for control (local control). When the switch is open the fieldbus controls the softstarter. If the connection to X2 is missing or if the PLC is turned off the PSR will always be in local control.

4.2 PSE

Trip, terminals 1 and 2, used for picking up a trip signal from an external device. The signal is forwarded to the fieldbus as part of the binary input telegram (see address map for the used protocol). Note that the PSE softstarter has several built-in protections.

Local/ Rem_N, terminals 3 and 4, used for selecting local or remote control by an external switch. When the switch is closed the softstarter ignores the fieldbus signals and uses the terminals on the softstarter for control (local control). When the switch is open the fieldbus can control the softstarter if fieldbus communication is enabled (see PSE commissioning manual for details).

Connection cable (300 mm)

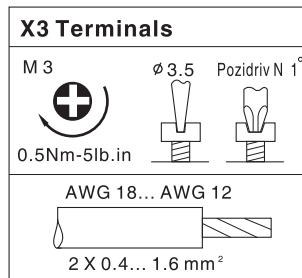
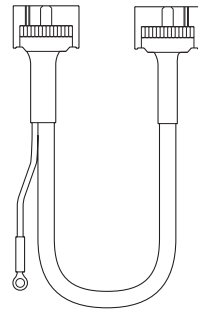
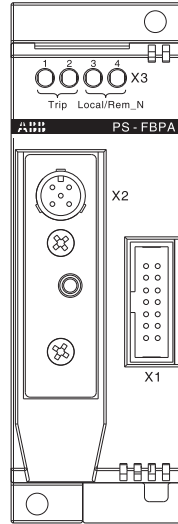
Left side

Contact for connection to FieldBus Plug Accessory terminal X1.
Contact for connection of cable shield with function ground.

Note: this is not a protective ground and it shall be connected to the mounting plate.

Right side

Contact for connection to PSR or PSE Softstarter.



7. Set-up

7.1 PSR

7.1.1 Setting of fieldbus address

The FieldBus Plug accessory does not include any means for setting of the fieldbus address. A separate device (CAS21) shall be used for setting the correct address of the FieldBus Plug. The address is permanently stored in the FieldBus Plug and remains when it's connected to the FieldBus Plug Accessory.

7.1.2 PLC Software

Set-up files for PLC to different fieldbuses is provided at www.abb.com/lowvoltage

Protocol	Engineering Package	File Name
DeviceNet	1SAJ923091R0103c	ABB_General.eds
PROFIBUS DP	1SAJ924091R0104m	ABB0A09.GSD (PDQ22) / ABB_082D.GSD (PDP22)
CANopen	1SAJ923092R0101b	FBP_CO_General.eds

7.2 PSE

7.2.1 Setting of fieldbus address

When the Fieldbus plug accessory is connected to the PSE, the fieldbus address is set from the PSE by setting the Fieldbus Address parameter.

7.2.2 PLC Software

PLC set-up files for different fieldbuses is provided at www.abb.com/lowvoltage

Protocol	Engineering Package	File Name
DeviceNet		*
PROFIBUS DPV1	1SAJ924091R0104m	ABB0A09.GSD (PDQ22) / ABB_082D.GSD (PDP22)
CANopen		*

* See www.abb.com/lowvoltage for latest file

8. Digital inputs and outputs

8.1 PSR

The FieldBus Plug Accessory has 2 inputs and 1 output (from PLC view)

8.1.1 Digital inputs

Bit 0 Trip, Show status of external overload or short circuit release, Input is asserted when a switch is closed between terminals X3.1 and X3.2.

Bit 1 Run, Shows status of Run signal in PSR Softstarter, the signal follows the Run relay, for exact function please see softstarter instruction.

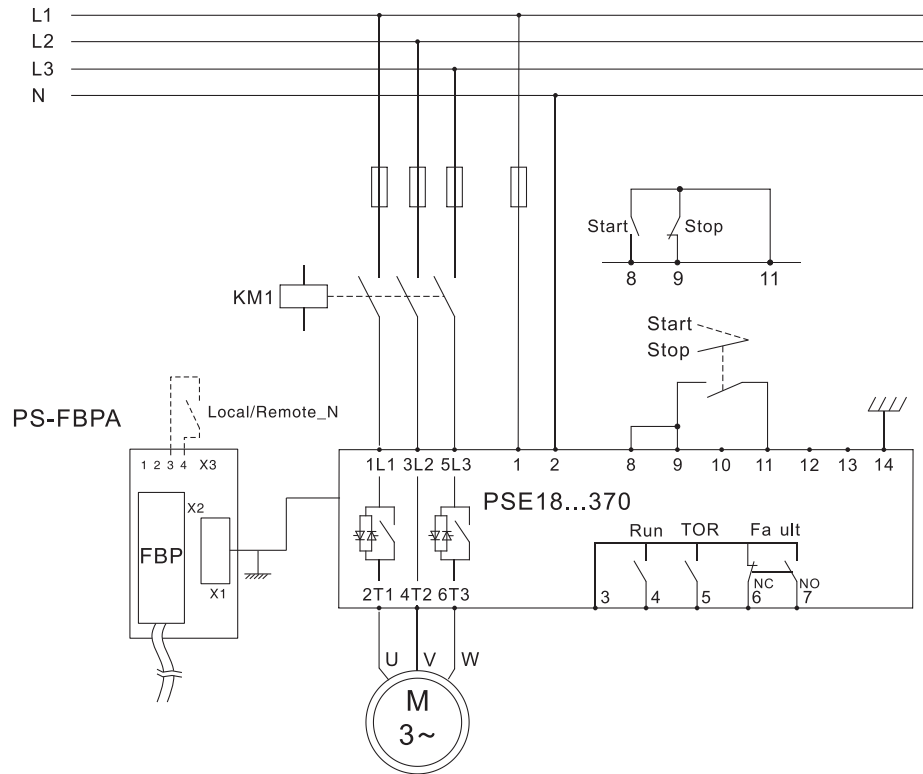
8.1.2 Digital Outputs

Bit 0 Start/Stop_N, Start signal to Softstarter, when the signal is asserted the softstarter gets a start command. When the signal is reset the softstarter will perform a stop.

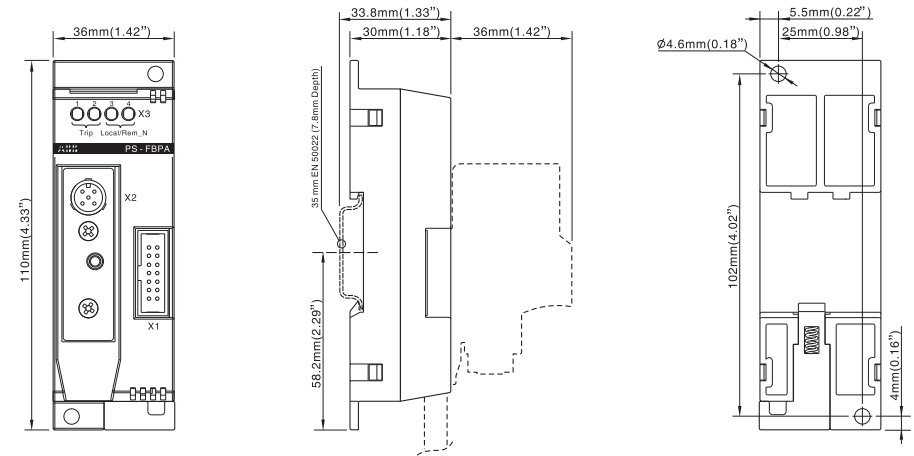
8.2 PSE

The PSE supports full fieldbus communication through the Fieldbus plug. For details about the signals available, please see the PSE-specific fieldbus documentation for the protocol used.

Connection diagram with main contactor + Fuses



5. Dimensions



6. Connections

1. Remove the small cover on the softstarter front.
2. Connect the by packed cable to the connector that is hidden by the cover on the softstarter and to the FieldBus plug Accessory at X1.
3. Connect the cable shield to the mounting plate. This is a function ground and it shall be kept as short as possible.

Note: This is not a protective ground and it shall be connected to the mounting plate.

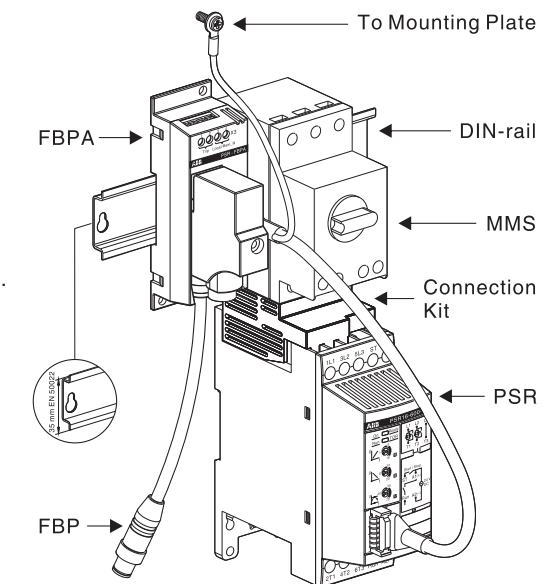
6.1 PSR

The FieldBus plug Accessory is designed for PLC control of a complete starter combination. There are lots of possible combinations, the following assembly show when it is connected to a Manual Motor Starter and softstarter.

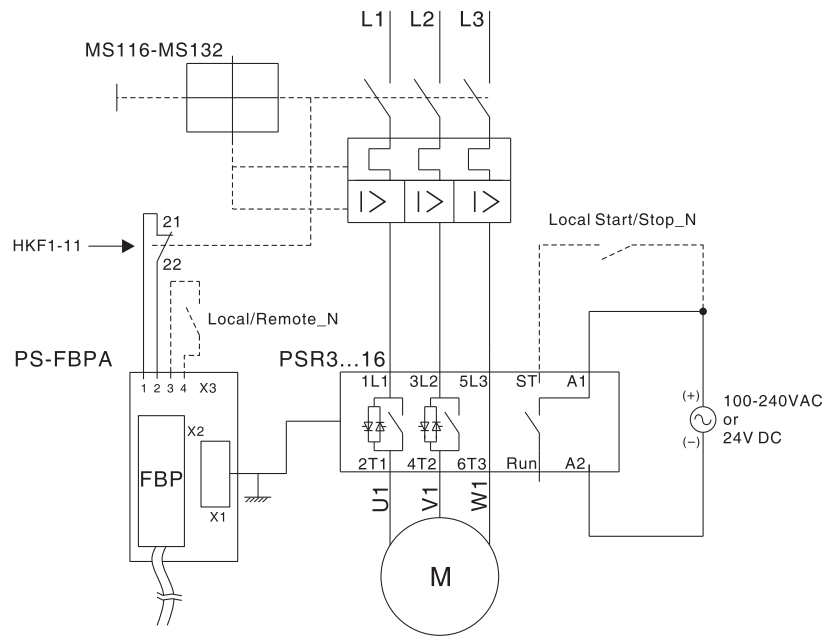
The diagrams show two combinations for Manual Motor Starter + Softstarter and Contactor + Thermal overload + Softstarter.

⚠ Warning

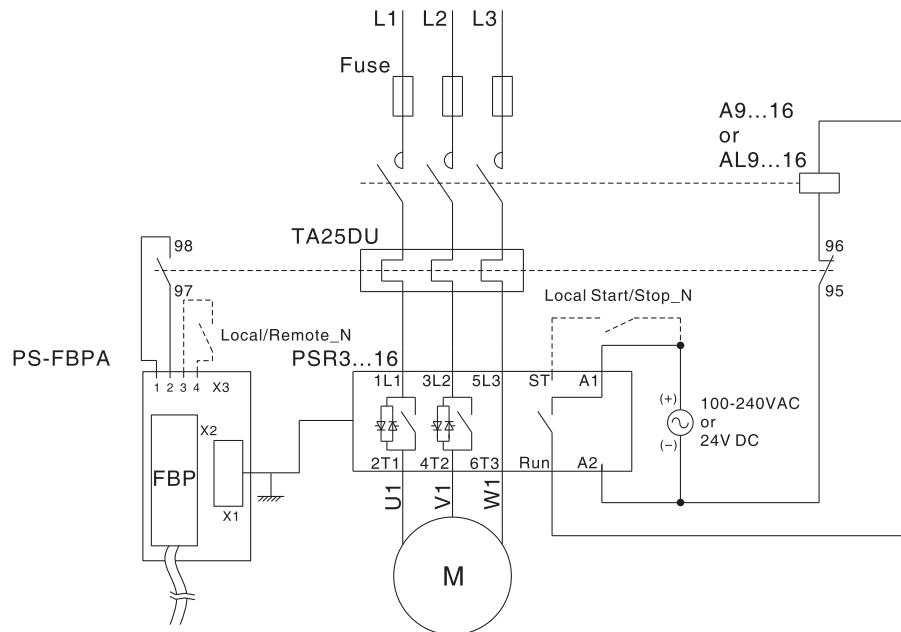
The device function does not include any interlocking means for preventing an automatic restart after reset of overload or short circuit releases. This has to be handled separately by the PLC program i.e. setting the start-signal to "0" after a possible trip.



Connection with Manual Motor Starter



Connection with Contactor + Thermal Overload

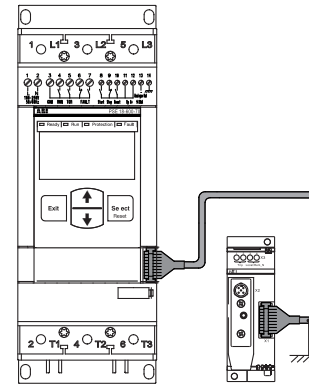


6.2 PSE

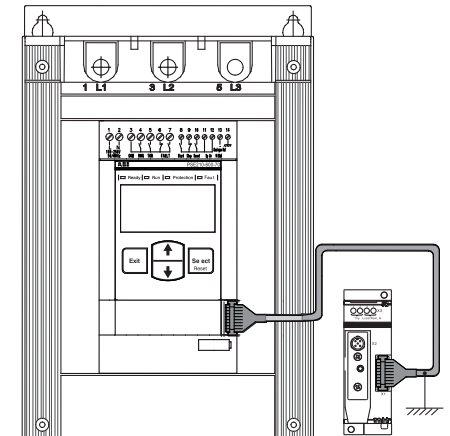
The FieldBus plug Accessory is designed for PLC control of a complete starter combination. There are lots of possible combinations, the following assembly just show the PSE connected to the FBPA.

The connection diagram show when the PSE is connected to the PS-FBPA with fuses and a main contactor.

PSE18...105



PSE210...370



PSE142...170

