

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7650-8PC00-0AA0

TWO-MODULE ACTIVE BUS MODULE

Used with the applicable ET 200PA SMART configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens technical documentation for 6ES7650-8PC00-0AA0

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Preface

Purpose of the operating instructions

The information in these operating instructions enables you to operate the ET 200PA SMART Distributed I/O system with the IM 650 interface module, the ET 200PA SMART I/O modules, and the single-width I/O modules of the S7-300 range released for PCS 7 as a DP slave.

Note

The ET 200PA SMART I/O modules function only in connection with an IM 650 interface module. If the ET 200PA SMART modules are plugged behind an ET 200M interface module (e.g., IM 153-2BA02) or behind an S7-300 CPU, the function of the ET 200PA SMART modules is not available. The ET 200PA SMART modules indicate this with a red SF LED flashing at 2 Hz. An ET 200PA SMART module does not affect the ET 200M / S7-300 bus. This means that other modules of the ET 200M / S7 300 station remain operable without restriction.

Basic knowledge required

To understand the operating instructions you require general experience in the field of automation engineering.

Range of validity of these operating instructions

	Module	Article no.	As of product version
Interface module	Interface module IM 650-8PH	6ES7650-8PH00-xAA0	01
I/O modules	Digital input module DI 16 x 24VDC	6ES7650-8DK70-xAA0	01
	Digital input module DI 32 x 24VDC	6ES7650-8DK80-xAA0	01
	Digital output module DO 16 x 24VDC/0.5A	6ES7650-8EK70-xAA0	01
	Digital output module DO 32 x 24VDC/0.5A	6ES7650-8EK80-xAA0	01
	Analog input module AI 8 x 13-bit	6ES7650-8AE60-xAA0	01
	Analog input module AI 8 x 16-bit	6ES7650-8AK60-xAA0	01
	Analog input module AI 16 x 16-bit	6ES7650-8AK70-xAA0	01
	Analog input module AI 8 x 16-bit HART	6ES7650-8AT60-xAA0	01
	Analog input module AI 8 x TC/4xRTD	6ES7650-8AR60-xAA0	01
	Analog output module AO 8 x 12-bit	6ES7650-8BK60-xAA0	01
	Analog output module AO 8 x 16-bit HART	6ES7650-8BT60-xAA0	01

	Module	Article no.	As of product version
Active bus modules (BM)	Bus module (BM) PS/IM	6ES7650 8PA00-xAA0	01
	Bus module (BM) 2x40	6ES7650 8PC00-xAA0	01
	Bus module (BM) IM/IM	6ES7650 8PB00-xAA0	01

x = 1: Module with conformal coating for use under elevated ambient conditions

x = 0: Standard module

Convention: In the following, the designation IM 650 is used in the operating instructions for the 650-8PH interface module.

For new versions of the ET 200PA SMART components, we reserve the right to enclose product information containing current information about the respective module or the operating instructions.

This product information can also be found on the Internet (<http://support.automation.siemens.com>). Search there for "ET 200PA SMART", for example.

Approvals, standards and certificates

See section "Standards and approvals".

Position in the Information Landscape

This manual contains a complete description of the ET 200PA SMART Distributed I/O system.

If you are using I/O modules from the S7-300 series of modules, you can find information on them in the following manuals:

Manual	Contents
Automation System S7-300, Module Data (http://support.automation.siemens.com/WW/view/en/8859629)	• General technical specifications • Power supply modules • Digital modules • Analog modules • Order numbers for S7-300
ET 200M Signal Modules for Process Automation (http://support.automation.siemens.com/WW/view/en/7215812)	• Overview of the use in process automation • Parameter assignment with <i>SIMATIC PDM</i> • Digital input module • Digital output module
ET 200M Distributed I/O Device HART Analog Modules (http://support.automation.siemens.com/WW/view/en/22063748)	• HART analog modules • Expanded input data (HART auxiliary variables)

If you are replacing the IM 650 in a redundant configuration, the following behavior applies:

"ACT" LED is on:	"ACT" LED is off:
The IM 650 is the active module of the two IM 650 modules.	The IM 650 is the passive module of the two IM 650 modules. You can replace this IM 650 without changeover processes occurring in the ET 200PA SMART.

Removing the IM 650

To remove the IM 650, follow these steps in the order given:

1. **For redundancy:** The IM 650 to be replaced must be de-energized!
Switch off the assigned power supply module or disconnect it from the IM 650.

NOTICE

Short-circuit

If in redundant mode, the two IM 650 modules are connected to one power supply module, then on disconnection of the 24 V supply from one IM 650, a short-circuit of the non-insulated (loose) cable ends may occur.

In the event of this type of short-circuit of the power supply, the second IM 650 and thus your ET 200PA SMART also fail completely.

Therefore, exercise extreme caution when disconnecting the supply voltage and insulate the two cable ends until connecting to the new IM 650.

No redundancy: Set the On/Off switch of the power supply module to position 0 (: output voltages 0 V).

2. Unplug the bus connector.
3. Disconnect the wiring.
4. Loosen the fixing screws of the IM 650.
5. Swing the IM 650 out.

Installing the new IM 650

To install the new IM 650, proceed as follows:

1. On the IM 650, set the same DP address as on the old IM 650.
2. Hook on the new IM 650 and swing it down.
3. Screw the module on securely.
4. Wire the IM 650.
5. Screw the bus connector into place.
6. Set the standby switch of the power supply module to position 1 (output voltages at rated value).

Behavior of the ET 200PA SMART after module replacement

If there is an error after module replacement, you can view the cause of the error in the diagnostic buffer with *HW Config*.

In the case of redundancy

Note

If the active IM 650 ("ACT" LED On) is to be replaced, the I/O will only continue running undisturbed if

- the BF LED is not lit or flashing and the SF LED is not flashing at 0.5 Hz on the passive IM 650
 - in a flying redundancy system, it is evident from the master diagnostics that both IM modules are accessible (in this case, the BF LED can flash).
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Have you replaced an active IM 650 ("ACT" LED on)?	Have you replaced a passive IM 650 ("ACT" LED Off)?
Then, a changeover to the other IM 650 occurred in the ET 200PA SMART and this one also maintains the data communication with its DP master.	No change in the data communication: the active IM 650 has maintained the data communication with its DP master.
Does the new IM 650 have a different product version than the other one that has not been replaced?	
If, after replacement, the newly installed IM 650 goes "into STOP" (all LEDs flashing), then the versions are not compatible. In this case, you must switch off the ET 200PA SMART and upgrade both IM 650 modules or use a compatible version. Please contact your Siemens representative.	

See also

Diagnostics of the IM 650 by LED displays (Page 88)