

SIMATIC

ET 200M

IM 153-4AA01-0AB0/153-4BA00-
0AB0/153-2BAx2-0AB0
interface module

Product Information

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.
⚠ WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.
⚠ CAUTION
with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.
CAUTION
without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.
NOTICE
indicates that an unintended result or situation can occur if the corresponding information is not taken into account.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation for the specific task, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

⚠ WARNING
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be adhered to. The information in the relevant documentation must be observed.

Trademarks

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Introduction

Overview

This product information applies to

- IM 153-4AA01-0XB0, firmware version 3.0
- IM 153-4BA00-0XB0, firmware version 3.0.
- IM 153-2BAx2-0XB0.

Supplement to the ET 200M operating instructions

This product information is a supplement to the operating instructions ET 200M (<http://support.automation.siemens.com/WW/view/en/1142798>).

What's new?

The following new properties are available:

Property	IM 153-4AA01-0XB0	IM 153-4BA00-0XB0
Shared Device	x	x
Media redundancy	x	x
Isochronous real-time communication IRT option "high performance"	x	x
HART modules	—	x
F modules	—	x

The following changes to the technical data of IM 153-2BAx2-0XB0, starting with product version 02:

Voltage, Currents, Potentials	
Current consumption from 24 V	max. 600 mA (for IM 153-2BAx2, product version 01) max. 620 mA (for IM 153-2BAx2, starting with product version 02)

Configuration with STEP 7 or GSD

You can configure the ET 200M using the above-named IM 153-4AA01-0XB0/153-4BA00-0XB0 under STEP 7 V5.5 (with HSP 214 or HSP 213) or a GSD file.

The GSD file is available at Internet

(<http://support.automation.siemens.com/WW/view/en/25057900>).

The F modules of the IM 153-4BA00-0XB0 can only be configured with STEP 7.

Product information

2.1 The new functions for the IM 153-4

Media redundancy

Function for ensuring the network and system availability. Redundant transmission links (ring topology) ensure that an alternative communication path is made available if a transmission link fails.

For additional information, refer to the STEP 7 Online Help and the PROFINET system description (<http://support.automation.siemens.com/WW/view/en/19292127>) Manual.

This function deals with operating on a standard CPU, not on an H system.

Shared Device

The "Shared Device" function allows the submodules of an IO device to be divided up among different IO controllers.

There are some special considerations for an ET200M if it is to be operated as a shared device.

For additional information, refer to the STEP 7 Online Help and the PROFINET system description (<http://support.automation.siemens.com/WW/view/en/19292127>) Manual.

The following applies to the ET 200M:

- If an IO controller fails, the entire IO device outputs substitute values. This means that not only the I/O modules of the failing IO controller output substitute values, but also the I/O modules of the intact IO controller.
- Since the outputs of an IO module cannot separately output substitute values, in the shared device environment the I/O will only output process values if both IO controllers are in RUN.

As soon as an IO controller is in STOP mode, the outputs of that IO module that are subscribed by the other IO controller will therefore output substitute values. This circumstance must be observed, for example, for the S7 function "Activate PA". After "Activate PA", the CPU that is in STOP mode will be reported as being in RUN mode. This releases the modules that are assigned to the other controller that is still in RUN.

Configuration as Shared Device

"IM153-4 PN ST V3.0 Shared-Device" or "IM153-4 PN HF V3.0 Shared-Device" must be used for the configuration of Shared Device. The remaining configuration is done in the usual way.

When configuring as a Shared Device, the OB 83 must be integrated into the block list, because the transition from STOP to RUN will generate so-called "Return of submodule" alarms. The alarms are intercepted by the OB 83, otherwise the CPU would go into STOP.

Both of the IO controllers that share the device must be in "RUN", so that the IM 153-4 PN can send data to the I/O.

Also refer to the *STEP 7 documentation*.

Isochronous real-time communication

Synchronized communication protocol for cyclic exchange of IRT data between PROFINET devices. A reserved bandwidth within the send clock is available for the IRT data. The reserved bandwidth ensures that the IRT data can be transmitted at reserved, synchronized intervals while remaining uninfluenced by another greater network load (for example, TCP/IP communication or additional real time communication).

The IRT option "high flexibility" permits simple planning and expansion of the system. Topological configuration is not required.

The "high performance" IRT option requires a configuration of the topology.

Note

IO controller as a sync master for IRT communication with the option "high performance"

We recommend also operating the IO controller as a Sync-Master if you configure the IRT communication with the option "high performance".

Otherwise, IRT and RT configured IO devices may fail if the sync master fails.

For more information about configuring synchronized PROFINET devices in Sync domains, refer to the STEP 7 online help and the PROFINET system description (<http://support.automation.siemens.com/WW/view/en/19292127>) manual.

HART modules (only IM 153-4BA00-0XB0)

The following HART modules can be used with the IM 153-4BA00-0XB0-0XB0:

- 6ES7 331-7TF01-0AB0
- 6ES7 331-7TB00-0AB0
- 6ES7 332-8TF01-0AB0
- 6ES7 332-5TB00-0AB0

The following applies for the IM 153-4BA00-0XB0-0XB0:
Input/output data: 672 input bytes/192 output bytes

You can only configure the HART modules using STEP 7, not with PDM. PDM does not currently support the parameterization of field devices via PROFINET.

Fail-safe signal modules (only IM 153-4BA00-0XB0)

The following fail-safe signal modules can be used in the IM 153-4BA00-0XB0:

Module	Order No.	Product version
SM 326; DI 24 x DC 24V	6ES7326-1BK02-0AB0	1
SM 336; F-AI 6 x 0/4 ... 20 mA HART	6ES7336-4GE00-0AB0	1
SM 326; F-DO 10 x DC 24V/2A PP	6ES7326-2BF10-0AB0	1
SM 326; DO 8 x DC 24V/2A PM	6ES7326-2BF41-0AB0	1

A safety protector is *no* longer required for these modules.

Module 6ES7322-8BH10-0AA0

You can also use the 6ES7322-8BH10-0AA0 module in the IM 153-4BA00-0XB0.

