

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected original pages for procurement and maintenance review

PRODUCT BRAND

Siemens

PRODUCT MODEL

6ES7138-4DF00-0AB0

ET 200S Serial Interface

SOURCE EDITIONS AND SCOPE

08/18/2019; last modified 08/15/2019 (PDF 1,2); 04/2007, A5E01062463-01 (PDF 1,2,3,7,8)

Selected Siemens product data and interface-module compatibility pages, not an installation manual. The 2001 manual limits 3964(R) to RS232C/RS422; the grouped RS422/RS485 data-sheet heading does not enable it on RS485. The old manual contains incomplete warning text, so no installation PDF is supplied. IM restrictions apply only to the identified interface and DF00 versions.

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Amikon prepared this independent reference package. Siemens remains the author of the appended original pages; original page numbers and manufacturer notices are retained.

SIMATIC DP, ELECTRONIC MODULE FOR ET 200S, 1 SI SERIAL INTERFACE ONE CHANNEL, 15MM WIDE RS232/422, 485 ASCII, 3964R

Supply voltage	
Rated value (DC)	24 V
Input current	
from backplane bus 3.3 V DC, max.	10 mA
Power loss	
Power loss, typ.	1.2 W
Memory	
Standard blocks	2 700 byte; P_SEND, P_RCV in S7-CPU
Interfaces	
Number of interfaces	1
Interface physics, RS 232C (V.24)	Yes; RS 232C signals: 8 (TxD, RxD, RTS, CTS, DTR, DSR, DCD, PE)
Interface (physical) RS 422/485 (X.27)	Yes; RS-422 signals: 5 (TxD(A), RxD(A), TxD(B), RxD(B), PE); RS-485 signals: 3 (R/T(A), R/T(B), PE)
RS 232, cable length shielded, max.	15 m
RS 422/RS 485, cable length shielded, max.	1 200 m
Point-to-point connection	
Integrated protocol driver	
— 3964 (R)	Yes
— ASCII	Yes
Transmission rate, RS 422/485	
— with 3964 (R) protocol, max.	19.2 kbit/s; half duplex: 110, 300, 600, 1 200, 2 400, 4 800, 9 600, 19 200 bps
— with ASCII protocol, max.	19.2 kbit/s; full duplex: 110, 300, 600, 1 200, 2 400, 4 800, 9 600, 19 200 bps
Transmission speed, RS 232	
— with 3964 (R) protocol, max.	19.2 kbit/s; half duplex: 110, 300, 600, 1 200, 2 400, 4 800, 9 600, 19 200 bps
— with ASCII protocol, max.	19.2 kbit/s; full duplex: 110, 300, 600, 1 200, 2 400, 4 800, 9 600, 19 200 bps
Character frame (adjustable)	
— Bits per character	7 or 8
— Number of start/stop bits	1 or 2
— Bits per character frame	10

— Parity	none, odd, even, any
Data quantity per PLC sampling cycle	
— Send	7 byte
— Receive	7 byte

Interrupts/diagnostics/status information

Diagnostics indication LED

- | | |
|------------------------|-----|
| • Receive RxD (green) | Yes |
| • Transmit TxD (green) | Yes |
| • Group error SF (red) | Yes |

Potential separation

Potential separation interface

- | | |
|--|-----|
| • Between RS 422/485 and internal power supply | Yes |
| • between RS 232 and internal power supply | Yes |

Ambient conditions

Ambient temperature during operation

- | | |
|--------|-------|
| • min. | 0 °C |
| • max. | 60 °C |

Ambient temperature during storage/transportation

- | | |
|--------|--------|
| • min. | -40 °C |
| • max. | 70 °C |

Dimensions

Width	15 mm
Height	81 mm
Depth	52 mm

Weights

Weight, approx.	50 g
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last modified: 08/15/2019 

SIEMENS

SIMATIC

ET 200S distributed I/O
IM151-3 PN HIGH FEATURE
interface module
(6ES7151-3BA22-0AB0)

Manual

Preface

Properties

1

Parameters

2

Functions

3

Interrupt, error, and system
messages

4

Response times

5

04/2007

A5E01062463-01

Safety Guidelines

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 device/system may only be set up and used in conjunction with this documentation. Commissioning and operation of a device/system may only be performed by **qualified personnel**. Within the context of the safety notes in this documentation qualified persons are defined as persons who are authorized to commission, ground and label devices, systems and circuits in accordance with established safety practices and standards.

Prescribed Usage

Note the following:

WARNING

This device may only be used for the applications described in the catalog or the technical description and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens. Correct, reliable operation of the product requires proper transport, storage, positioning and assembly as well as careful operation and maintenance.

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.

이 기기는 업무용(A급) 전자파 적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며 가정 외의 지역에서 사용하는 것을 목적으로 합니다.

Preface

Preface

Purpose of the manual

This manual supplements the *ET 200S Distributed I/O System* Operating Instructions. General functions for the ET 200S are described in the *ET 200S Distributed I/O System* Operating Instructions.

The information in this document along with the operating instructions enables you to commission the ET 200S.

Basic knowledge requirements

To understand these operating instructions you should have general knowledge of automation engineering.

Scope of the manual

This manual applies to this ET 200S module. It describes the components that are valid at the time of publication.

Recycling and disposal

Thanks to the fact that it is low in contaminants, this ET 200S module is recyclable. For environmentally compliant recycling and disposal of your electronic waste, please contact a company certified for the disposal of electronic waste.

Additional support

If you have any questions relating to the products described in these operating instructions, and do not find the answers in this document, please contact your local Siemens representative.

<http://www.siemens.com/automation/partner>

The portal to our technical documentation for the various SIMATIC products and systems is available at:

<http://www.siemens.com/automation/simatic/portal>

The online catalog and ordering system are available at:

<http://www.siemens.com/automation/mall>

Properties

1.1 IM151-3 PN HIGH FEATURE interface module

Properties

The IM151-3 PN HIGH FEATURE interface module has the following properties:

- It interconnects the ET 200S with PROFINET IO.
- It prepares the data for the assembled electronic modules and motor starters.
- It supplies the backplane bus.
- Integrated switch with 2 ports
- Transfer and backup of the device name on SIMATIC Micro Memory Card
- Firmware update
 - Via SIMATIC Micro Memory Card
 - Via PROFINET IO
- The reference potential M of the rated supply voltage of the IM151-3 PN HIGH FEATURE to the rail (protective conductor) is connected by means of an RC combination, thus permitting an ungrounded configuration.
- Supported Ethernet services: ping, arp, Net diagnostics (SNMP)/MIB-2
- Interrupts
 - Diagnostic interrupts
 - Process interrupts
 - Insert/remove module interrupts
 - Maintenance interrupts
- Port diagnostics
- Port disabling
- Records for IO modules
- The maximum address space is 256 bytes I/O data.
- A maximum of 63 modules can be operated with the IM151-3 PN HIGH FEATURE.
- The maximum bus length at the backplane bus is 2 m.
- Grouping of modules within one byte (packing).
- Use of fail-safe modules
- IRTflex (RT Class 2)

Isochronous Realtime Ethernet IRTflex (RT Class 2)

IRTflex (RT Class 2) denotes a highly stable form of isochronous communication over PROFINET IO.

This procedure is characterized by particularly simple engineering and high flexibility for network expansions.

In the case of PROFINET IO with IRTflex, a sync master generates a signal with which the sync slaves synchronize themselves. The sync master and sync slaves belong to a sync domain that is configured using STEP 7.

For additional information, refer to the STEP 7 Online Help.

Compatibility with the predecessor module

The IM151-3 PN HIGH FEATURE interface module (6ES7151-3BA22-0AB0) is compatible with the IM151-3 PN HIGH FEATURE interface module (6ES7151-3BA20-0AB0).

The new interface module directly replaces the predecessor module in an existing system without the need for reconfiguration.

Firmware updates on the predecessor module are not supported.

Configuring

Configure the IM151-3 PN HIGH FEATURE interface module using *STEP 7* V5.4 SP 2.

Constraints when operating the modules with IM151-3 PN HIGH FEATURE

The following modules cannot be used with the IM151-3 PN HIGH FEATURE:

Module	Up to order number	Up to product version
2AO U; HIGH FEATURE	6ES7135-4LB01-0AB0	3
2AO I; HIGH FEATURE	6ES7135-4MB01-0AB0	3
1SI serial interface module	6ES7138-4DF00-0AB0	4
Modbus/USS serial interface module	6ES7138-4DF01-0AB0	4
2PULSE	6ES7138-4DD00-0AB0	6
1Count 24V/100kHz	6ES7138-4DA03-0AB0	-
Motor starter - Direct starter - Reversing starter		3RK1301-xxxxx-1AA1 3RK1301-xxxxx-1AA1