

SIEMENS

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SIMATIC

ET 200S distributed I/O system
4DO DC24V/2A ST digital electronic module
(6ES7132-4BD32-0AA0)

Manual

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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

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

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, 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 complied with. 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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Preface

1.1 Preface

Purpose of the manual

This manual supplements the *ET 200S Distributed I/O System* Operating Instructions. Functions which apply to the ET 200S in general are described in the ET 200S operating instructions on the Internet (<http://support.automation.siemens.com/WW/view/en/1144348>).

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 validity 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

Due 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 use of the products described in this manual and do not find the answers in this document, please contact your local Siemens representative or office nearest to you on the Internet (<http://www.automation.siemens.com/partner/>).

A guide to the technical documentation for the various SIMATIC products and systems is available on the Internet. (<http://www.siemens.com/simatic-tech-doku-portal>)

The online catalog and ordering system are available on the Internet (<http://www.siemens.com/automation/mall>).

Training center

We offer courses to help you get started with the ET 200S and the SIMATIC S7 automation system. Please contact your regional training center or the central training center in D-90327, Nuremberg, Germany on the Internet (<http://www.siemens.com/sitrain>).

Technical Support

You can reach Technical Support for all industry automation products via the support request Web form on the Internet (<http://www.siemens.com/automation/support-request>).

Additional information about Siemens Technical Support is available on the Internet (<http://www.siemens.com/automation/service>).

Service & Support on the Internet

In addition to our documentation, we offer a comprehensive knowledge base on the Internet (<http://www.siemens.com/automation/service&support>).

There you will find:

- Our Newsletter, which constantly provides you with the latest information about your products.
- The right documentation for you using our Service & Support search engine.
- The bulletin board, a worldwide knowledge exchange for users and experts.
- Your local contact for Automation & Drives in our contact database.
- Information about on-site services, repairs, spare parts, and lots more.

Properties

2.1 4DO DC24V/2A ST digital electronic module (6ES7132-4BD32-0AA0)

Properties

- Digital electronic module with four outputs
- Output current per output 2 A
- Rated load voltage 24 V DC
- Short-circuit protection
- Suitable for solenoid valves, DC contactors, and indicator lights

Special feature

When the rated load voltage 24 V DC is applied to the power module via a mechanical contact, the digital outputs carry a "1" signal for about 25 μ s for switching reasons. You have to take this into consideration if you use this module in connection with high-speed counters.

General terminal assignment

Note

Terminals 4, 8, A4, A8, A3 and A7 are only available at specified terminal modules.

Terminal assignment for 4DO DC24V/2A ST (6ES7132-4BD32-0AA0)				
Terminal	Allocation	Terminal	Allocation	Notes
1	DO ₀	5	DO ₁	<ul style="list-style-type: none"> • DO_n: Output signal, channel n • M: Mass • AUX1: Protective-conductor terminal or potential bus (freely usable up to 230 VAC)
2	DO ₂	6	DO ₃	
3	M	7	M	
4	M	8	M	
A4	AUX1	A8	AUX1	
A3	AUX1	A7	AUX1	

Usable terminal modules

Usable terminal modules for 4DO DC24V/2A ST (6ES7132-4BD32-0AA0)				
TM-E15C26-A1 (6ES7193-4CA50-0AA0)	TM-E15C24-A1 (6ES7193-4CA30-0AA0)	TM-E15C24-01 (6ES7193-4CB30-0AA0)	TM-E15C23-01 (6ES7193-4CB10-0AA0)	← Spring terminal
TM-E15S26-A1 (6ES7193-4CA40-0AA0)	TM-E15S24-A1 (6ES7193-4CA20-0AA0)	TM-E15S24-01 (6ES7193-4CB20-0AA0)	TM-E15S23-01 (6ES7193-4CB00-0AA0)	← Screw-type terminal
TM-E15N26-A1 (6ES7193-4CA80-0AA0)	TM-E15N24-A1 (6ES7193-4CA70-0AA0)	TM-E15N24-01 (6ES7193-4CB70-0AA0)	TM-E15N23-01 (6ES7193-4CB60-0AA0)	← Fast Connect
<p style="text-align: center;">Connection examples</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>2-conductor</p> </div> <div style="text-align: center;"> </div> </div>				

Block diagram

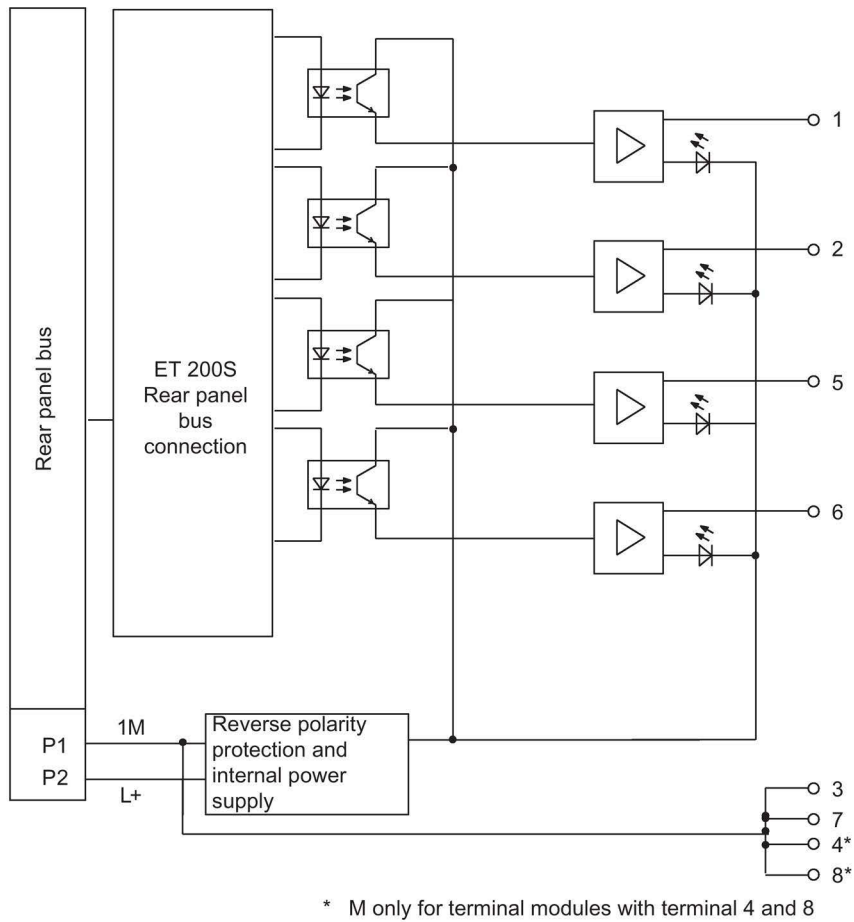


Figure 2-1 Block diagram 4DO DC24V/2A ST

Technical specifications for 4DO DC24V/2A ST (6ES7132-4BD32-0AA0)

Dimensions and weight	
Dimensions W × H × D (mm) (Total dimensions depend on the terminal module selected)	15 × 81 × 52
Weight	Approx. 40 g
Module-specific data	
Supports isochronous operation	Yes
Number of outputs	4
Cable length	
• Unshielded	Max. 600 m
• Shielded	Max. 1000 m
Parameter length	1 byte
Address space	1 byte
Address space (packed)	4 bits
Voltages, currents, potentials	
Rated load voltage L+ (from power module)	24 V DC
• Polarity reversal	Yes ¹
Total current of the outputs (per module)	4 A
Electrical isolation	
• Between the channels	No
• Between the channels and backplane bus	Yes
Permissible potential difference	
• Between different circuits	75 V DC / 60 V AC
Isolation tested	500 V DC
Current consumption	
• From the rated load voltage L+ (no load)	Max. 10 mA per channel
Power loss of the module	Typically 1.6 W
Status, interrupts, diagnostics	
Status display	Green LED per channel
Diagnostics functions	No
Actuator selection data	
Output voltage	
• At signal "1"	Min. L+ (-1 V)
Output current	
• At signal "1"	
– Rated value	2 A
– Permissible range	7 mA to 2.4 A
• At "0" signal (residual current)	Max. 0.1 mA

Properties

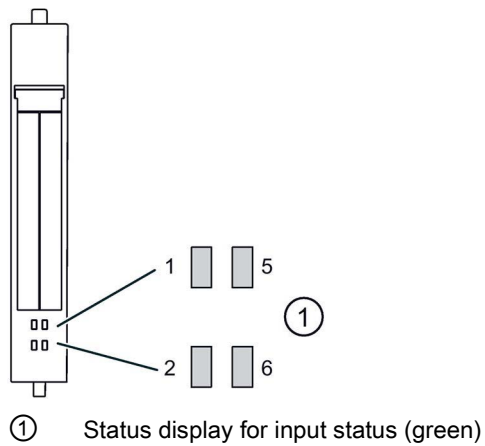
2.1 4DO DC24V/2A ST digital electronic module (6ES7132-4BD32-0AA0)

Output delay (with resistive load)	
<ul style="list-style-type: none"> At "0" to "1" 	Max. 50 μ s typically 45 μ s
<ul style="list-style-type: none"> At "1" to "0" 	Max. 120 μ s typically 90 μ s
Load resistance range	12 Ω to 3.4 k Ω
Lamp load	Max. 10 W
Parallel switching of 2 outputs	
<ul style="list-style-type: none"> For redundant control of a load 	Yes (per module)
<ul style="list-style-type: none"> For increased performance 	No
Control of a digital input	Yes
Switching frequency	
<ul style="list-style-type: none"> With resistive load 	Max. 1 kHz
<ul style="list-style-type: none"> With inductive load 	2 Hz (0.5 H)
<ul style="list-style-type: none"> With lamp load 	10 Hz
Limiting (internal) of inductive shut-down voltage	Typ. L+ (-55 to -60 V)
Reverse-voltage proof	Yes, if using the same load voltage as at the power module
Short-circuit protection of the output	Yes ²
<ul style="list-style-type: none"> Response threshold 	Typically 2.8 to 7.2 A
¹ Polarity reversal can lead to the digital outputs being switched through. ² per channel	

Diagnostics

3.1 Diagnostics using LED display

LED display



Status and error displays

Event (LEDs)				Cause	Solution
1	5	2	6		
On				Input value at channel 0	—
	On			Input activated at channel 1.	—
		On		Input activated at channel 2.	—
			On	Input activated at channel 3.	—

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