

# SIEMENS

## SIMATIC

ET 200S Distributed I/O System  
Digital Electronic Module  
8DO DC24V/0,5A SINK OUTPUT  
(6ES7132-4BF50-0AA0)

Manual

Preface

---

Properties

---

1

Diagnostics

---

2

## 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.

<b>⚠ DANGER</b>
indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken.
<b>⚠ WARNING</b>
indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken.
<b>⚠ CAUTION</b>
with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.
<b>CAUTION</b>
without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.
<b>NOTICE</b>
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:

<b>⚠ WARNING</b>
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

All names identified by ® are registered trademarks of the Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

## 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.

# 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>

## 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.

Phone: +49 (911) 895-3200.

<http://www.siemens.com/sitrain>

## Technical Support

You can reach technical support for all A&D projects

- using the support request web form:  
<http://www.siemens.com/automation/support-request>
- Phone: + 49 180 5050 222
- Fax: + 49 180 5050 223

For more information about our technical support, refer to our Web site at

<http://www.siemens.de/automation/service>

## Service & Support on the Internet

In addition to our documentation services, you can also make use of our comprehensive online 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. Lots more can be found on our "Services" pages.

# Table of contents

	<b>Preface</b> .....	<b>3</b>
<b>1</b>	<b>Properties</b> .....	<b>7</b>
1.1	Digital Electronic Module 8DO DC24V/0,5A SINK OUTPUT (6ES7132-4BF50-0AA0) .....	7
<b>2</b>	<b>Diagnostics</b> .....	<b>13</b>
2.1	Diagnostics using LED display.....	13
	<b>Index</b> .....	<b>15</b>



## Properties

### 1.1 Digital Electronic Module 8DO DC24V/0,5A SINK OUTPUT (6ES7132-4BF50-0AA0)

#### Properties

- Digital electronic module with eight outputs
- Sink output
- 0.5 A output current per output, 4 A aggregate current
- 24 VDC rated load voltage
- Short-circuit protection
- Suitable for solenoid valves, DC contactors, and indicator lights
- Supports isochronous mode

#### Distinctive feature

When you connect-in the 24 VDC rated load voltage on the power module by means of a mechanical contact, the digital outputs feed the "1" signal for approximately 50  $\mu$ s, depending on the circuit. You need to take this into account if you use the module in combination with fast counters.

#### Requirements for operation

It is possible to operate the Digital Electronic Module 8DO DC24V/0,5A SINK OUTPUT with the following interface module versions (specified order numbers or higher). Interface modules not listed in the table are not subject to any constraints.

Interface module	Order number (or higher)	Firmware version (or higher)
IM 151-1 STANDARD	6ES7151-1AA03-0AB0	---
IM 151-1 FO STANDARD	6ES7151-1AB02-0AB0	---
IM 151-1 HIGH FEATURE	6ES7151-1BA02-0AB0	---
IM 151-3 PN	6ES7151-3AA20-0AB0	V4.0.1
IM 151-3 PN HIGH FEATURE	6ES7151-3BA20-0AB0	
IM 151-3 PN FO	6ES7151-3BB21-0AB0	

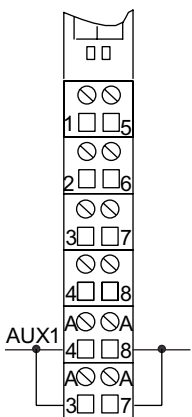
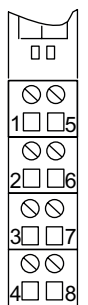
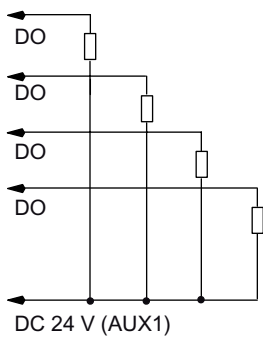
**General terminal assignment**

**Note**

The A4, A8, A3, and A7 terminals are only available at specified terminal modules.

Terminal assignment for 8DO DC24V/0,5A SINK OUTPUT (6ES7132-4BF50-0AA0)				
Terminal	Assignment	Terminal	Assignment	Notes
1	DO <sub>0</sub>	5	DO <sub>1</sub>	<ul style="list-style-type: none"> <li>DO<sub>n</sub>: Output signal, Channel n</li> <li>AUX1: 24 VDC encoder supply (from the power module, for example) or potential bus (available for use up to 230 VAC).</li> </ul>
2	DO <sub>2</sub>	6	DO <sub>3</sub>	
3	DO <sub>4</sub>	7	DO <sub>5</sub>	
4	DO <sub>6</sub>	8	DO <sub>7</sub>	
A4	AUX1	A8	AUX1	
A3	AUX1	A7	AUX1	

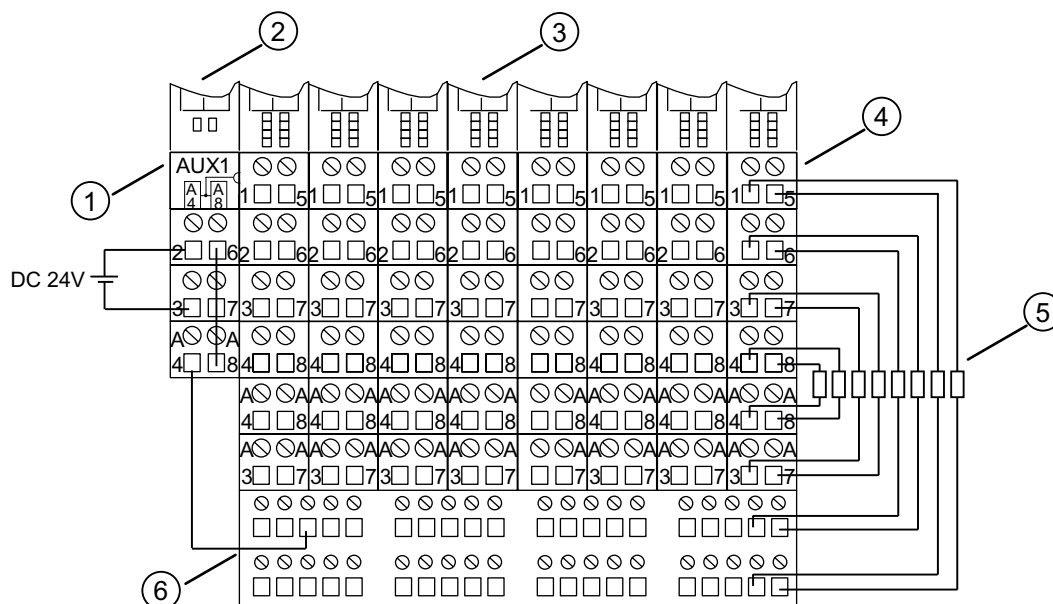
**Available terminal modules**

Available terminal modules for 8DO DC24V/0,5A SINK OUTPUT (6ES7132-4BF50-0AA0)		
TM-E15C26-A1 (6ES7193-4CA50-0AA0)	TM-E15C24-01 (6ES7193-4CB30-0AA0)	← Spring terminal
TM-E15S26-A1 (6ES7193-4CA40-0AA0)	TM-E15S24-01 (6ES7193-4CB20-0AA0)	← Screw-type terminal
TM-E15N26-A1 (6ES7193-4CA80-0AA0)	TM-E15N24-01 (6ES7193-4CB70-0AA0)	← Fast Connect
		<p>Sample connections 1-wire</p> 



## 2-wire connection

The following configuration example shows a 2-wire connection with the 8DO DC24V/0,5A SINK OUTPUT electronic modules. You require further terminals so that sufficient terminals are available for the 24 VDC sensor power supply when the TM-E15S26-A1 terminal modules are used. In the example, this is achieved through the Add-On Terminal TE-U120S4x10. Terminal modules of the same height over a minimum width of 120 mm must be present for each add-on terminal. You can naturally also use other terminals for this configuration (for example, ET 200S potential distribution module 4POTDIS).



- ① Terminal Module TM-P15S23-A0
- ② Power Module PM-E DC24V
- ③ Electronic Module 8DO DC24V/0,5A SINK OUTPUT
- ④ Terminal Module TM-E15S26-A1
- ⑤ Actuators in 2-wire connection
- ⑥ Add-On Terminal TE-U120S4x10

Block diagram

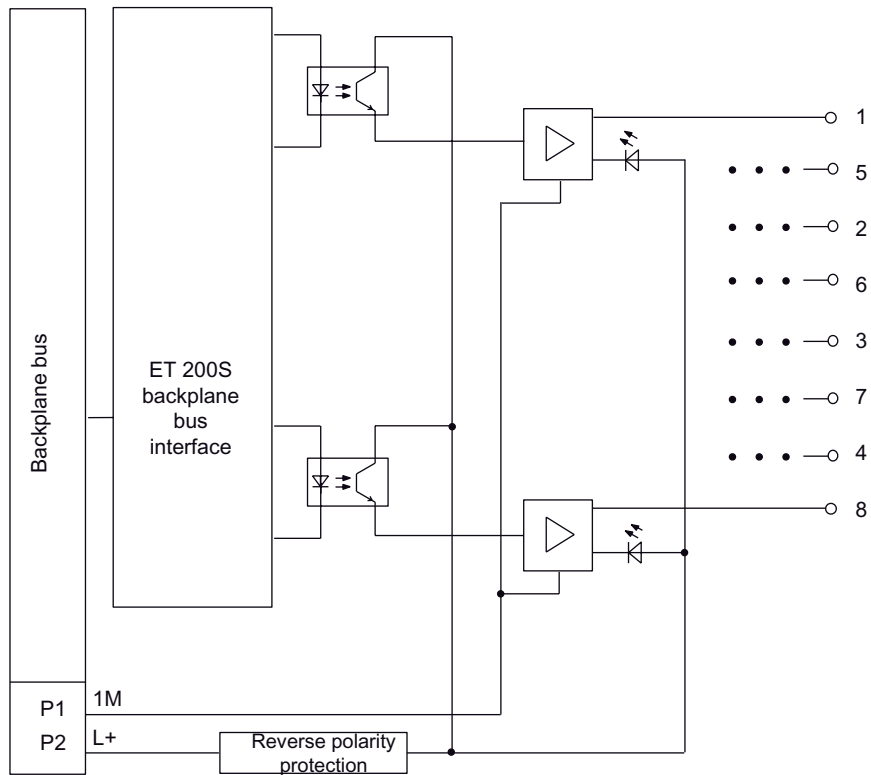


Figure 1-1 Block diagram of the 8DO DC24V/0,5A SINK OUTPUT

Technical specifications of 8DO DC24V/0,5A (6ES7132-4BF50-0AA0)

Dimensions and weight	
Width (mm)	15
Weight	Approx. 40 g
Module-specific data	
Supports isochronous mode	Yes
Number of outputs	8
Output type	SINK
Cable length	
• Unshielded	Max. 600 m
• Shielded	Max. 1000 m
Parameter length	3 bytes
Voltages, currents, potentials	
Rated load voltage L+ (from the power module)	24 VDC
• Reverse polarity protection	Yes
Total current of the outputs (per module)	4 A

## 1.1 Digital Electronic Module 8DO DC24V/0,5A SINK OUTPUT (6ES7132-4BF50-0AA0)

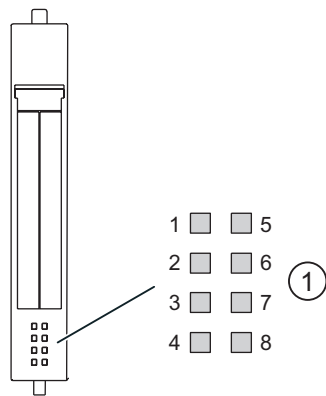
Electrical isolation	
• Between the channels	No
• Between the channels and backplane bus	Yes
Permissible potential difference	
• Between the different circuits	75 VDC / 60 VAC
Insulation tested	500 VDC
Current consumption	
• From backplane bus	Max. 10 mA
• From rated load voltage L+ (no load)	Max. 5 mA per channel
Power dissipation of the module	Typ. 1.5 W
<b>Status, interrupts, diagnostics</b>	
Status display	Green LED per channel
Diagnostics function	No
<b>Data for selecting an actuator</b>	
Output voltage	
• For signal "1"	Typ. 1 V
Output current	
• For signal "1"	
– Rated value	0.5 A
– Permitted range	5 mA to 0.6 A
• For signal "0" (leakage current)	Max. 5 $\mu$ A
Output delay (for resistive load)	
• For "0" to "1"	Max. 300 $\mu$ s
• For "1" to "0"	Max. 600 $\mu$ s
Load resistor range	48 $\Omega$ to 3.4 k $\Omega$
Lamp load	Max. 5 W
Connecting two outputs in parallel	
• For redundant triggering of a load	Yes, per module
• To increase performance	No
Control of a digital input	Yes
Switch rate	
• With resistive load	100 Hz
• With inductive load	0.5 Hz
• With lamp load	10 Hz
Limitation (internal) of the voltage induced on circuit interruption	Typ. 47 V
Reverse-voltage protection	No
Short-circuit protection of the output	Yes, per channel
• Threshold on	Typ. 1.5 A



## Diagnostics

### 2.1 Diagnostics using LED display

#### LED display



① Status display for input/output status (green)

#### Status displays

Event (LEDs)								Cause	Remedy
1	5	2	6	3	7	4	8		
On								Input/output at Channel 0 activated.	—
	On							Input/output at Channel 1 activated.	—
		On						Input/output at Channel 2 activated.	—
			On					Input/output at Channel 3 activated.	—
				On				Input/output at Channel 4 activated.	—
					On			Input/output at Channel 5 activated.	—
						On		Input/output at Channel 6 activated.	—
							On	Input/output at Channel 7 activated.	—



# Index

## B

Basic knowledge requirements, 3  
Block diagram, 10

## C

Configuration example for 2-wire connection, 9  
Counters, 7

## D

Disposal, 3

## I

Internet  
    Service & Support, 4

## L

LED display, 13

## P

Properties, 7

## R

Recycling, 3  
Requirements for operation, 7

## S

Scope  
    Manual, 3  
Service & Support, 4  
Status displays, 13

## T

Technical specifications, 10  
Technical Support, 4  
Terminal assignment, 8  
Terminal modules, 8  
Training center, 4

