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SIMATIC ET 200S

6ES7132-4HB01-0AB0

ET 200S TWO CHANNEL RELAY OUTPUT MODULE

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ET 200S distributed I/O Digital electronic module 2RO NO DC24..120V/5A, AC24..230V/5A (6ES7132-4HB01-0AB0)

Manual

04/2007
A5E01077282-01

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.

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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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GERMANY

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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:

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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.
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- Information about on-site services, repairs, spare parts. Lots more can be found on our "Services" pages.

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Properties

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1.1 Digital electronic module 2RO NO DC24..120V/5A, AC24..230V/5A (6ES7132-4HB01-0AB0)

Properties

- Digital electronic module with two relay outputs
- Output current 5 A per output
- Rated load voltage DC up to 120 V / AC to 230 V
- Suitable for solenoid valves, DC contactors, and indicator lights
- Isolated from the supply voltage
- Extended temperature range from 0 to 55 °C with vertical installation

⚠ CAUTION

The rated power supply voltage of the 2RO NO DC24..120V/5A, AC24..230V/5A is 24 VDC. The 2RO NO DC24..120V/5A, AC24..230 V/5A must be in a 24 VDC potential group only (from the power module).

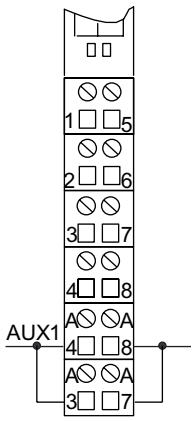
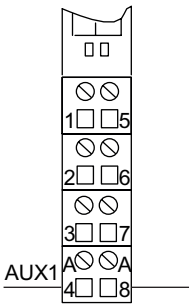
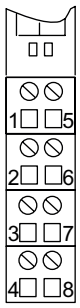
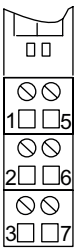
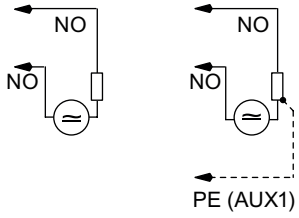
General terminal assignment

Note

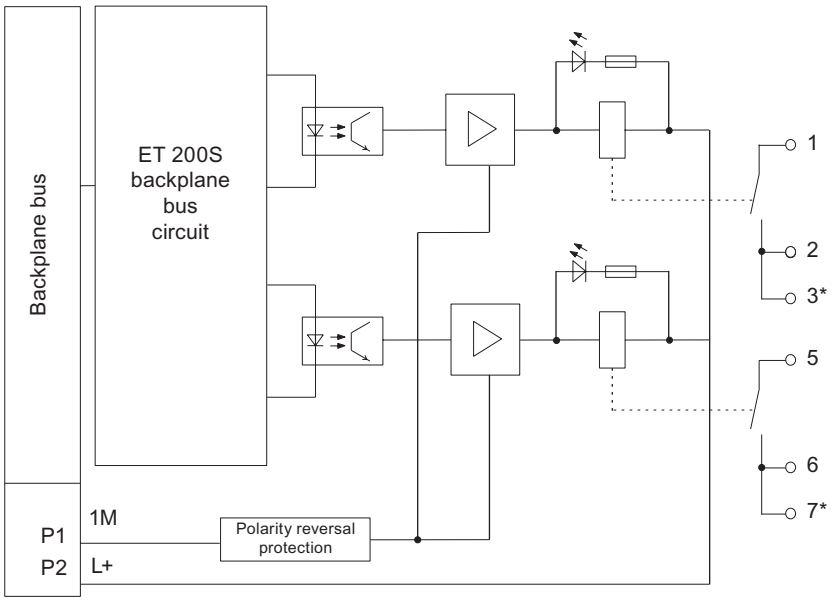
Terminals 4, 8, A4, A8, A3 and A7 are only available at specified terminal modules.

Terminal assignment for 2RO NO DC24..120V/5A, AC24..230V/5A (6ES7132-4HB01-0AB0)				
Terminal	**Assignment**	**Terminal**	**Assignment**	**Notes**
1	13	**5**	23	• 13, 14: Normally open contact, Channel 0 • 23, 24: Normally open contact, Channel 1 • n.c.: Not connected (max. 30 V DC can be connected) • AUX1: Protective-conductor terminal or potential bus (freely usable up to 230 VAC)
2	14	**6**	24	
3	14	**7**	24	
4	n.c.	**8**	n.c.	
A4	AUX1	**A8**	AUX1	
A3	AUX1	**A7**	AUX1	

Usable terminal modules

Usable terminal modules for 2RO NO DC24..120V/5A, AC24..230V/5A (6ES7132-4HB01-0AB0)				
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
				Wiring examples 

Block diagram



* From product level 2 of the 2RO NO 24--120 VDC/5 24--230 VAC/5 A the internal bridge between terminals 2 and 6 is not installed. If you require this bridge, it can be replaced by an external bridge between terminals 3 and 7.

Figure 1-1 Block diagram of the 2RO NO DC24..120V/5A, AC230V/5A

Technical data 2RO NO DC24..120V/5A, AC230V/5A (6ES7132-4HB01-0AB0)

Dimensions and weight	
Width (mm)	15
Weight	Approx. 50 g
Module-specific data	
Supports isochronous operation	No
Number of outputs	2
Length of cable	
• Unshielded	Max. 600 m
• Shielded	Max. 1,000 m
Parameter length	3 bytes
Address space	1 byte
Address space (packed)	2 bits

Voltages, currents, potentials	
Rated supply voltage L+ (from the power module)	24 VDC
Reverse polarity protection Current per channel	Yes
• Up to 50°C	Max. 5 A
• Up to 60°C	Max. 4 A
Electrical isolation	
• Between the channels	Yes
• Between the channels and backplane bus	Yes
• Between the channels and supply voltage	Yes
• Between the supply voltage and backplane bus	Yes
Permissible potential difference	
• Between the supply voltage and backplane bus	75 VDC / 60 VAC
• Between channels and backplane bus	240 VAC
• Between channels and supply voltage	240 VAC
Insulation tested	Yes
• Between the supply voltage and backplane bus	500 VDC
• Between channels and backplane bus	1500 VAC
• Between channels and supply voltage	1500 VAC
Current consumption	
• From the power supply L+	Max. 30 mA
Power dissipation of the module	Typically 0.6 W
Status, interrupts, diagnostics	
Status display	Green LED per channel
Diagnostics function	No
Data for selecting an actuator	
Output current	
• Continuous thermal current	Max. 5 A
• Minimum load current	8 mA
• Minimum voltage	17 V
Connecting two outputs in parallel	
• For redundant triggering of a load	No
• To increase performance	No
Control of a digital input	Yes
Switch rate	
• For resistive load	2 Hz
• On inductive load	0.5 Hz
• For lamp load	2 Hz
Limitation (internal) of the voltage induced on circuit interruption	No
Short-circuit protection of the output [1]	No
[1] The relay outputs must be fused externally with 6 A.	

Switching capacity and lifetime of the contacts

With an external protective circuit, the contacts will last longer than specified in the table. This table shows the switching capacity and endurance of the relay contacts:

Table 1-1 Switching capacity and lifetime of the relay contacts

Resistive load	Voltage	Current	Operating cycles (typical)
For resistive load	24 VDC	5.0 A	0.1 million
		4.0 A	0.2 million
		2.0 A	0.5 million
		1.0 A	1.6 million
		0.5 A	4 million
		0.1A	7 million
	60 VDC	0.5 A	1.6 million
	120 VDC	0.2 A	1.6 million
	48 VAC	2.0 A	1.6 million
	60 VAC	2.0 A	1.2 million
	120 VAC	5.0 A	0.1 million
		3.0 A	0.2 million
		2.0 A	0.4 million
		1.0 A	0.8 million
		0.5 A	1.5 million
	230 VAC	5.0 A	0.1 million
		3.0 A	0.2 million
		2.0 A	0.4 million
		1.0 A	0.8 million
		0.5 A	1.5 million
For inductive load in accordance with IEC 947-5-1 DC 13/ AC 15	24 VDC	2.0 A	0.1 million
		1.0 A	0.2 million
		0.5 A	0.5 million
	60 VDC	0.5 A	0.2 million
	120 VDC	0.2 A	0.5 million
	48 VAC	1.0 A	0.7 million
	60 VAC	1.0 A	0.5 million
	120 VAC	2.0 A	0.1 million
		1.0 A	0.3 million
		0.5 A	1 million
		0.1A	2 million
For inductive load in accordance with IEC 947-5-1 DC 13/ AC 15	230 VAC	2.0 A	0.1 million
		1.0 A	0.3 million
		0.5 A	1 million

Parameters

2

2.1 Parameters

This table shows the parameters for digital output modules:

Table 2-1 Parameters for digital output modules

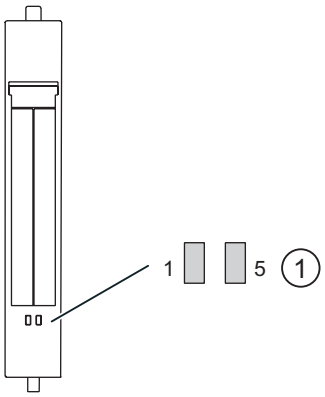
2RO NO NC DC24..48V/5A AC24..230V/5A	Range of values	Default setting	Applicability
Response to CPU/master STOP	• Substitute a value • Keep last value	Substitute a value	Module
Substitute value *	• "0" • "1"	"0"	Channel
* If the interface module or COMPACT module becomes deenergized, the digital output modules will not produce substitute values. Output value = 0.			

Diagnostics

3

3.1 Diagnostics using LED display

LED display



① Status display for output status (green)

Status and error displays

Event (LEDs)		Cause	Remedy
1	5		
On		Output on channel 0 activated.	—
	On	Output on channel 1 activated.	—

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