MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected official pages for procurement and maintenance review

PRODUCT BRAND

Siemens

PRODUCT MODEL

6ES7422-1BH10-0AA0

SM 422 Digital Output Module. Source PDF pages: M03 pp. 2,181-184. Adjacent model text on shared pages is outside this product reference.

OFFICIAL SOURCE

S7-400, M7-400 Programmable Controllers Module Specifications; 09/2003

Siemens original documentation and product reference

Original 09/2003 BH10 reference. Page 184 is retained only for the BH10/BH11 commissioning and supply-loss comparison; BH11 parameters are not assigned to BH10.

AMIKON PRODUCT SUPPORT

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Amikon Limited prepared this independent reference package. Selected manufacturer pages follow with their original content and pagination visible.

Safety Guidelines

This manual contains notices intended to ensure personal safety, as well as to protect the products and connected equipment against damage. These notices are highlighted by the symbols shown below and graded according to severity by the following texts:



Danger

indicates that death, severe personal injury or substantial property damage will result if proper precautions are not taken.



Warning

indicates that death, severe personal injury or substantial property damage can result if proper precautions are not taken.



Caution

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

Caution

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

Notice

draws your attention to particularly important information on the product, handling the product, or to a particular part of the documentation.

Qualified Personnel

Only **qualified personnel** should be allowed to install and work on this equipment. Qualified persons are defined as persons who are authorized to commission, to ground and to tag circuits, equipment, and systems in accordance with established safety practices and standards.

Correct Usage

Note the following:



Warning

This device and its components 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.

This product can only function correctly and safely if it is transported, stored, set up, and installed correctly, and operated and maintained as recommended.

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Disclaim of Liability

We have checked the contents of this manual for agreement with the hardware and software described. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the data in this manual are reviewed regularly and any necessary corrections included in subsequent editions. Suggestions for improvement are welcomed.

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Technical data subject to change.

4.16 Digital Output Module SM 422; DO 16 × 24 VDC/2 A; (6ES7422-1BH10-0AA0)

Characteristics

The digital output module SM 422; DO 16 × 24 VDC/2 A has the following features.

- 16 outputs, isolated in two groups of 8
- 2 A output current
- 24 VDC rated load voltage

The status LEDs also indicate the system status even when the front connector is not inserted.



Caution

To commission the module, the rated load voltage must be applied at least once to each group of 8 outputs (e.g. connection of 1L **and** 3L). If voltage is not applied to a group due, for example, to 1L and 2L failing, **all** the outputs switch off, even those in the second group. The status LED continues to function in the same way.

Terminal Assignment and Block Diagram of the SM 422; DO 16 × 24 VDC/2 A

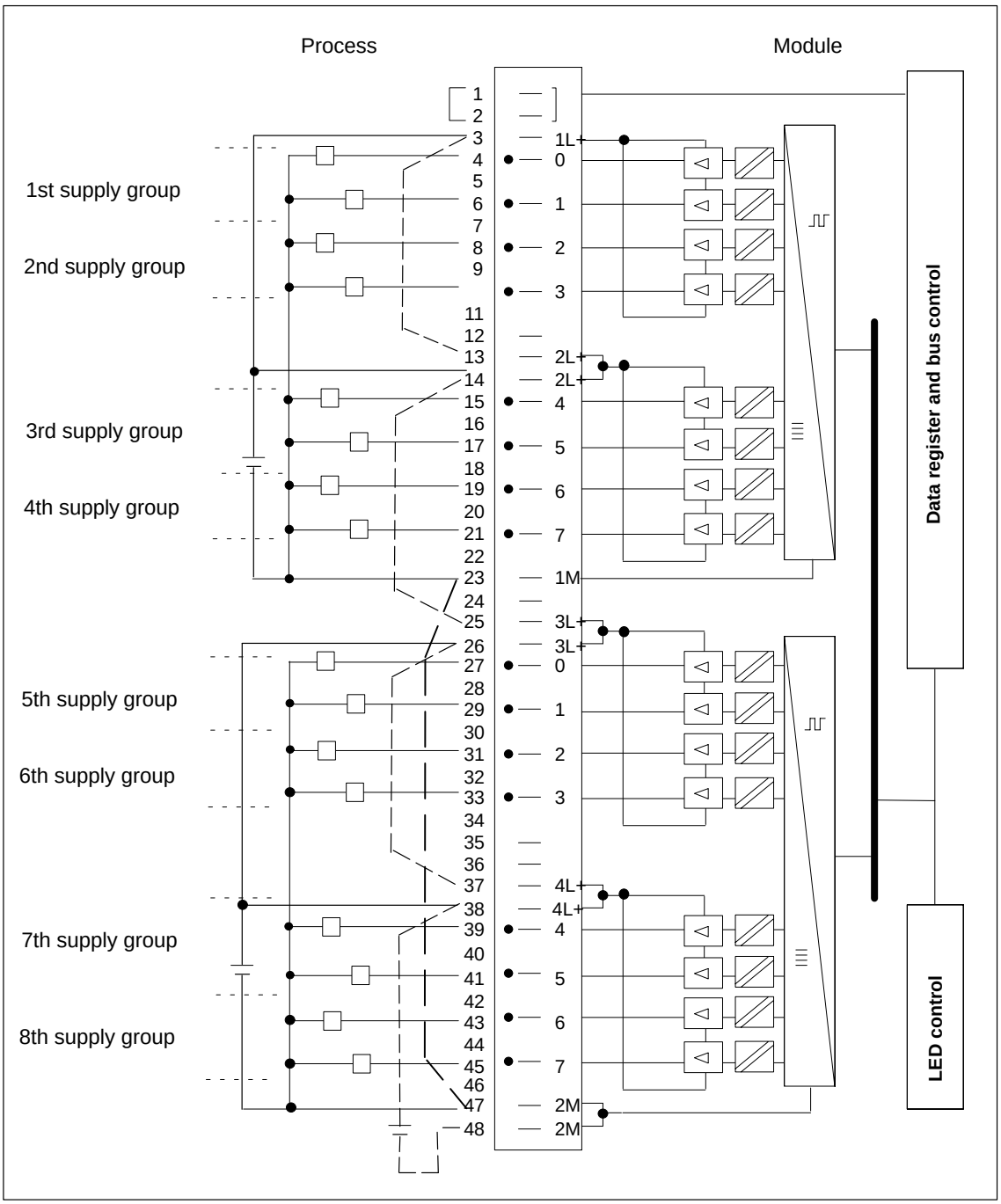


Figure 4-14 Terminal Assignment and Block Diagram of the SM 422; DO 16 × 24 VDC/2 A

Technical Specifications of the SM 422; DO 16 × 24 VDC/2 A

Programming package	
Associated programming package	As of STEP 7 V 2.0
Dimensions and Weight	
Dimensions W × H × D (in millimeters)	25 × 290 × 210
Weight	Approx. 600 g
Data for Specific Module	
Number of outputs	16
Length of cable	
• Unshielded	600 m
• Shielded	1000 m
Voltages, Currents, Potentials	
Power rated voltage of the electronics L+	24 VDC
Rated load voltage L+	24 VDC
Aggregate current of the outputs (two outputs per supply group)	
Up to 40 °C	Max. 3 A
Up to 60 °C	Max. 2 A
Isolation	
• Between channels and backplane bus	Yes
• Between the channels	Yes
In groups of	8
Permitted potential difference	
• Between the different circuits	75 VDC / 60 VAC
Insulation tested with	
• Channels against backplane bus and load voltage L+	500 VDC
• Between the outputs of the different groups	500 VDC
Current consumption	
• From the backplane bus	Max. 160 mA
• Power supply and load voltage L+ (no load)	Max. 30 mA
Power dissipation of the module	Typ. 5 W
Status, Interrupts, Diagnostics	
Status display	Green LED per channel
Interrupts	None
Diagnostic functions	None
Data for Selecting an Actuator	
Output voltage	
• At signal “1”	Min. L+ (-0,5 V)
Output current	
• At signal “1”	
Rated value	2A
Permitted range	5 mA to 2.4 A
• At signal “0” (leakage current)	Max. 0.5 mA
Output delay (for resistive load)	
• From “0” to “1”	Max. 1 ms
• At “1” to “0”	Max. 1 ms
Load resistor range	12 Ω to 4 kΩ
Lamp load	Max. 10 W
Parallel connection of 2 outputs	
• For redundant triggering of a load	Possible (only outputs of the same group)
• To increase performance	Not possible
Triggering a digital input	Possible
Switch rate	
• For resistive load	100 Hz
• For inductive load to IEC 947-51, DC 13	0.2 Hz at 1 A 0.1 Hz at 2A
• For lamp load	Max. 10 Hz
Limit (internal) of the inductive circuit interruption voltage up to	Max. -30 V
Short-circuit protection of output[1]	Electronically cyclic1)
• Threshold on	2.8 to 6A

1) A supply group always consists of two adjacent channels starting with channel 0. Channels 0 and 1, 2 and 3 and so on up to 14 and 15 therefore form one supply group.

2) Following a short circuit, reclosing under a full load is not guaranteed. To prevent this, you can do one of the following things:

- Change the signal at the output
- Interrupt the load voltage of the module, or
- Briefly disconnect the load from the output

4.17 Digital Output Module SM 422; DO 16 × 24 VDC/2 A; (6ES7422-1BH11-0AA0)

Characteristics

The digital output module SM 422; DO 16 × 24 VDC/2 A has the following features.

- 16 outputs, isolated in two groups of 8
- 2 A output current
- 24 VDC rated load voltage

The status LEDs also indicate the system status even when the front connector is not inserted.

A Note about Commissioning

The following technical feature applies to the digital output module SM 422; DO 16 × 24 VDC/2 A with the order number 6ES7 422-1BH**11**-0AA0 but not to the digital output module SM 422; DO 16 × 24 VDC/2 A with the order number 6ES7 422-1BH**10**-0AA0:

To commission the module, it is **no** longer necessary to apply load voltage (1L+ and 3L+, for example,) to each group of 8 outputs. The module is fully operative even if only one group is supplied with L+.

Note

It is no longer possible to switch off all the outputs by disconnecting a single L+ supply as might have been the case with the previous module (6ES7 422-1BH**10**-0AA0)L+.
