MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected official pages for procurement and maintenance review

PRODUCT BRAND

Siemens

PRODUCT MODEL

6ES7421-1BL00-0AA0

SM 421 Digital Input Module. Source PDF pages: M03 pp. 2,139-142. 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 1BL00 reference. Page 142 is retained only for the 1BL00/1BL01 exchange notice; its 1BL01 technical characteristics do not apply to 1BL00.

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.

4.7 Digital Input Module SM 421; DI 32 × 24 VDC (6ES7421-1BL00-0AA0)

Characteristics

The SM 421;DI 32 x 24 VDC is a digital input module with the following features:

- 32 inputs, isolated in a group of 32. In other words, all inputs share the same chassis ground.
- Rated load voltage: 24 VDC
- Suitable for switches and 2-wire proximity switches (BEROs, IEC 61131; type 2).

The status LEDs indicate the process status.

Functional Expansion as of Version 03

The lower limit of the rated input range is increased at signal “0” from –3 to –30 V.

The rated input voltage for signal “0” is thus: –30 V to 5 V

Terminal Assignment and Block Diagram of the Digital Input Module SM 421; DI 32 x 24 VDC

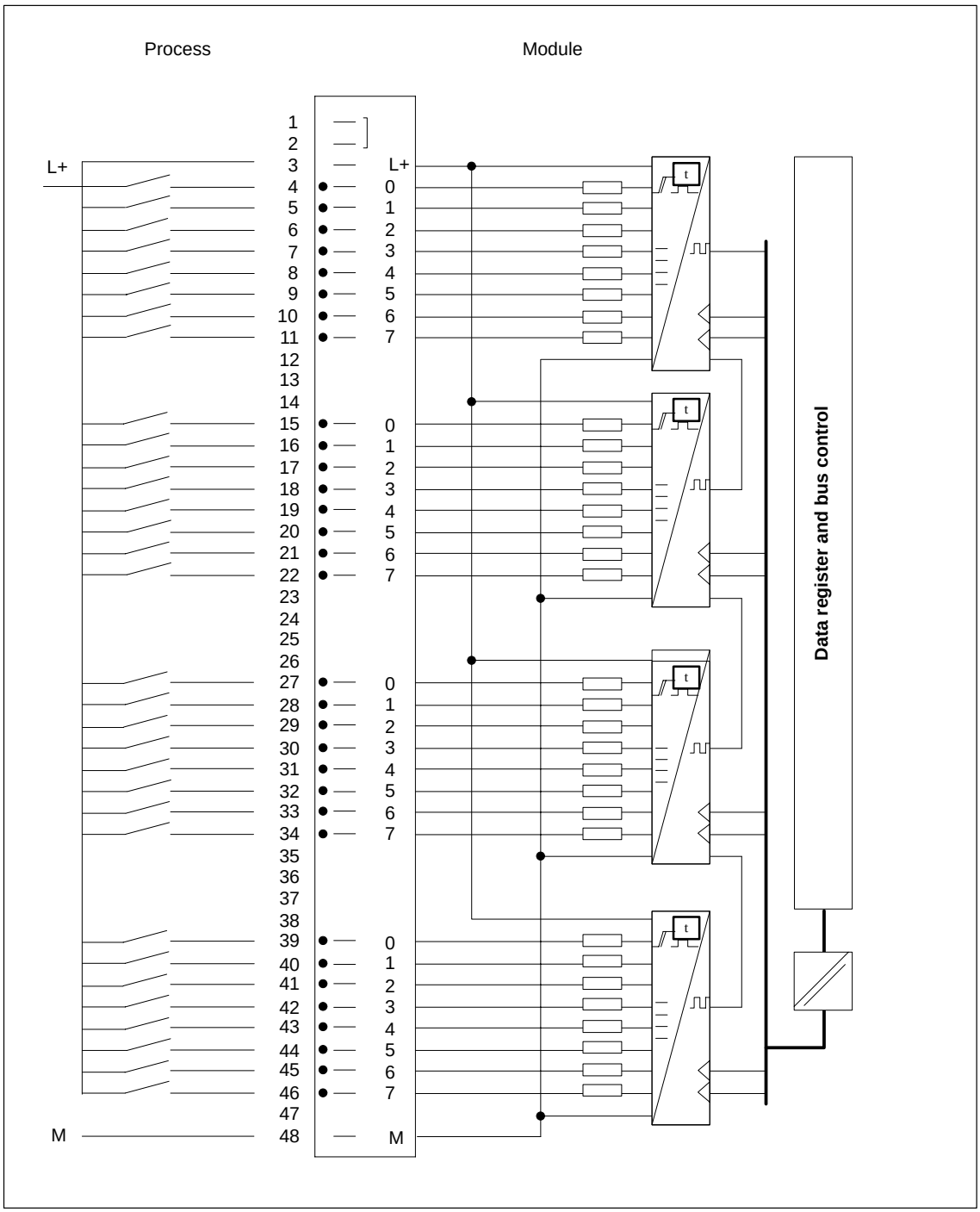


Figure 4-2 Terminal Assignment and Block Diagram of the SM 421; DI 32 × 24 VDC

Technical Specifications of the SM 421; DI 32 x 24 VDC

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 inputs	32
Length of cable	
• Unshielded	Max. 600 m
• Shielded	Max. 1000 m
Voltages, Currents, Potentials	
Power rated voltage of the electronics L+	24 VDC
• Reverse polarity protection	Yes
• Power failure buffering	None
Number of inputs that can be triggered simultaneously	32
Isolation	
• Between channels and backplane bus	Yes
• Between channels and power supply of the electronics	No
• Between the channels	No
Permitted potential difference	
• Between the different circuits	75 VDC / 60 VAC
Insulation tested with	
• Channels against backplane bus and load voltage L+	500 VDC
Current consumption	
• From the backplane bus	Max. 30 mA
• From supply voltage L+	Max. 30 mA
Power dissipation of the module	Typ. 6 W

Status, Interrupts, Diagnostics	
Status display	Green LED per channel
Interrupts	None
Diagnostic functions	None
Substitute value can be applied	No
Sensor Selection Data	
Input voltage	
• Rated value	24 VDC
• For signal “1”	11 V to 30 V
• For signal “0”	–3 V to 5 V –30 V to 5 V as of version 03
Input current	
• At signal “1”	6 mA to 8 mA
Input delay	
• At “0” to “1”	1.2 ms to 4.8 ms
• At “1” to “0”	1.2 ms to 4.8 ms
Input characteristic curve	To IEC 61131; type 2
Connection of two-wire BEROs	Possible
• Permitted bias current	Max. 2.5 mA

4.8 Digital Input Module SM 421; DI 32 × 24 VDC; (6ES7421-1BL01-0AA0)

Characteristics

The digital input module SM 421; DI 32 × 24 VDC has the following features:

- 32 inputs, isolated in a group of 32
- 24 VDC rated input voltage
- Suitable for switches and two/three/four-wire proximity switches (BEROs, IEC 61131; type 1)

The status LEDs indicate the process status.

Notice

If you use the module with the order number 6ES7421-1BL01-0AA0 as a replacement for the module with the order number 6ES7421-1BL00-0AA0, you can leave PIN 3 wired. If you run modules 6ES7421-1BL00-0AA0 and 6ES7421-1BL01-0AA0 involved in mutual exchange, you have to wire and supply PIN 3 as described in Section 4.7.