AMIKON TECHNICAL DOCUMENTATION

Installation Instructions

Siemens 6ES7131-6BH00-0BA0

ET 200SP 16-Channel Digital Input

INPUTS	VOLTAGE	BASEUNIT	CODING
16 DI	24 V DC	A0	CC00

For qualified personnel only. Isolate the equipment and follow the complete manufacturer and site safety procedures. This reference does not replace the approved project design or the full installation manual.

01 PREPARATION AND WIRING CHECKS

- Use BaseUnit A0 and CC00 identification for this exact module.
- Start the potential group with the required light-colored BaseUnit.
- Fit 25–45 kohm parallel contact resistors when wire-break diagnostics are enabled.
- Provide sensor power separately; the sixteen input terminals are not sensor-supply outputs.
- Check input-delay settings and optional QI addressing before operation.

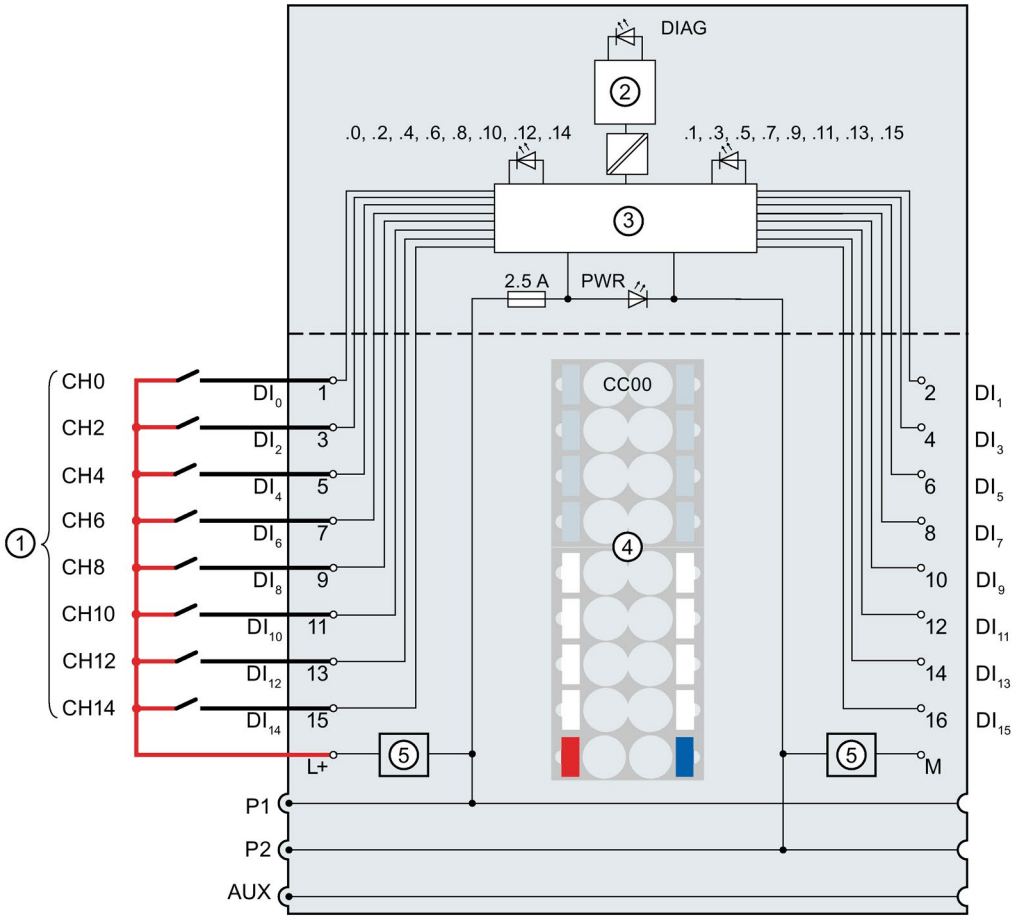
02 ORIGINAL WIRING REFERENCE

Original source PDF pages 12, 11, 14, 20. The following pages retain the original Siemens drawings and printed page numbers.

Siemens original documentation and product reference

Wiring: 1-wire connection

The following figure shows the block diagram and an example of the terminal assignment of the digital input module DI 16x24VDC ST on the BaseUnit BU type A0 without AUX terminals (1-wire connection).



①	1-wire connection	DI_n	Input signal, channel n
②	Backplane bus interface	L+	24 V DC (infeed only with light-colored BaseUnit)
③	Input electronics	M	Ground
④	Color-coded label with color code CC00 (optional)	DIAG	Error or diagnostics LED (green, red)
⑤	Filter connection supply voltage (only when light-colored BaseUnit is present)	.0 to .15	Channel status LED (green)
P1, P2, AUX	Internal self-assembling voltage buses Connection to left (dark-colored BaseUnit) Connection to left interrupted (light-colored BaseUnit)	PWR	Power LED (green)

Image 3-1 Wiring and block diagram for 1-wire connection of encoders

Connecting

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3.1 Wiring and block diagram

This section includes the block diagram of the DI 16x24VDC ST module with the terminal assignments for a 1-wire connection.

Information on wiring the BaseUnit can be found in the system manual ET 200SP distributed I/O system (http://support.automation.siemens.com/WW/view/en/58649293).

Note

The load group of the module must begin with a light-colored BaseUnit. Keep this in mind also during the configuration.

Note

Make sure that you only use digital modules with BaseUnit type A0 during commissioning.

Parameters	Range of values	Default	Parameter reassignment in RUN	Effective range with configuration software, e.g. STEP 7 (TIA Portal)	
				GSD file PROFINET IO	GSD file PROFIBUS DP [2]
Input delay	• None • 0.05 ms • 0.1 ms • 0.4 ms • 0.8 ms • 1.6 ms • 3.2 ms • 12.8 ms • 20 ms	3.2 ms	Yes	Channel	Module
Potential group	• Use potential group of the left module (module plugged into a dark-colored BaseUnit) • Enable new potential group (module plugged into light-colored BaseUnit)	Use potential group of the left module	No	Module	Module

[1] If you use a floating switch, you need to connect a resistor in parallel so that the wire break diagnostics is enabled in the open state (sensor resistance for the wire break diagnostics: 25 kΩ to 45 kΩ).

[2] Due to the limited number of parameters with a maximum of 244 bytes per ET 200SP station for a PROFIBUS GSD configuration, the configuration options are restricted. If required, you can assign these parameters using data record 128 as described in the "GSD file PROFINET IO" column (see table above). The parameter length of the I/O module is 4 bytes.

5.2 Interrupts

The DI 16×24VDC ST digital input module supports diagnostic interrupts.

Diagnostics interrupts

The module generates a diagnostic interrupt at the following events:

- Wire break
- Parameter assignment error
- Supply voltage missing
- Channel temporarily unavailable

5.3 Diagnostic messages

A diagnostics alarm is generated and the DIAG-LED flashes on the module for each diagnostics event. You can read out the diagnostics alarms, for example, in the diagnostics buffer of the CPU. You can evaluate the error codes with the user program.

Table 5- 4 Diagnostics alarms, their meaning and corrective measures

Diagnostics alarm	Error code	Meaning	Solution
Wire break	6_H	Impedance of encoder circuit too high.	Use a different encoder type or modify the wiring, for example, use cables with larger cross-section
		Wire break between the module and sensor	Connect the cable
		Channel not connected (open)	• Disable diagnostics • Connect a resistor of between 25 and 45 kOhms to the encoder contacts
Parameter assignment error	10_H	• The module cannot evaluate parameters for the channel. • Incorrect parameter assignment.	Correct the parameter assignment
Supply voltage missing	11_H	Missing or insufficient supply voltage L+	• Check supply voltage L+ on the BaseUnit • Check BaseUnit type
Channel temporarily unavailable	$1F_H$	Firmware update is currently in progress or has been canceled. The module does not read in process values in this state.	• Wait for firmware update. • Restart the firmware update.