

SIMATIC

DeviceNet ET 200S Distributed I/O System

Manual

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Preface

Purpose of the Manual

The information in this manual is intended to enable you to operate the ET 200S Distributed I/O System on DeviceNet as a slave.

Required level of knowledge

Knowledge of the field of automation engineering is required to understand the manual.

Scope of the manual

This manual is valid for the 5136-DNS-200S DeviceNet Slave Adapter module and the components of the ET 200S distributed I/O system specified in Appendix A.

This manual contains a description of the components that were valid at the time the manual was published. We reserve the right to enclose a Product Information bulletin containing up-to-date information about new components and new versions of components.

I/O Status Byte

Attribute 9 of the Adapter object allows you to enable or disable the generation of an additional I/O Status byte to detect faults in the 5136-DNS-200S Adapter. If the `IoStatusEnable` attribute is `TRUE (1)`, an additional status byte is placed at the beginning of the input data packet, prior to any expansion module data. In the event of a fault, the appropriate bit is set in the status byte, and the I/O data of the related modules may be interrupted depending on the source of the fault. If the fault originates from a power module, then the Master should ignore input data from the modules in that potential group and no output data is transferred to them. If the fault originates from an I/O module, then I/O data transfer is not affected.

If the `IoStatusEnable` attribute is `FALSE (0)`, the input data packet contains only expansion module data as configured. In the event of a fault, the Adapter module transmits zero length I/O messages (no data), and the output data received from the Master for the associated modules is handled as above.

Strobe I/O Operation

The strobe I/O protocol is intended for simple input only devices. The maximum produced size across a strobe I/O connection, as defined by the DeviceNet protocol, is 8 bytes. The strobe I/O protocol has only a single bit of output data per device. The 5136-DNS-200S does not make use of its output bit and can return up to a maximum of 8 bytes of input data depending on the configuration present.

Note

Any configurations in which output data is required or in which the input data size exceeds 8 bytes will result in the disabling of the strobe I/O connection.

Configuration

- User configuration data is only accessible when the `AutoConfig` attribute in the 5136-DNS-200S adapter object is `false (0)`.
- Attempts to modify any parameters of the Slot Objects will result in an object state conflict if the `AutoConfig` attribute is not set to zero (`0 = FALSE`).
- Changes to user configuration data do not take effect until the device is reset (done via reset service with data value of zero (`0`) to the identity object or a power cycle), or an I/O module is hot-swapped.
- Changes to user configuration data are stored in non-volatile memory immediately (before the explicit message response is sent).
 - Changes to configuration data that have not taken effect yet are indicated by the `ConfigChanged` attribute in the 5136-DNS-200S adapter object — the next device reset will apply the changes and clear `ConfigChanged`.

2.8 Technical Specifications

Technical Specifications

Dimensions and Weight			
Dimensions W × H × D (mm)	45 x 119.5 x 75		
Weight	Approximately 153 g		
Data for Specific Modules			
Transmission rate	125; 250; 500 kbaud		
Bus protocol	DeviceNet		
Interface	5-pin DeviceNet		
Voltage, Currents, Potentials			
Rated supply voltage of the electronics (1L+)	24 VDC, Class 2 power supply ^{Note1}		
• Reverse polarity protection	Yes		
Maximum Ambient			
• Mounting rail horizontal	60 °C		
• Mounting rail vertical	40 °C		
Isolation			
• Between the backplane bus and electronic components	No		
• Between DeviceNet and electronic components	Yes		
• Between the supply voltage and electronic components	No		
Insulation tested with	500 VDC		
		Current consumption	
		• From input voltage - total (DN module + 63 bus modules)	250 mA max @ 24 VDC
		• Total from input voltage - (DN module + no bus modules)	125 mA max @ 24 VDC
		DeviceNet Interface	
		• Supply voltage from DeviceNet cable	11 to 25 VDC
		• Current	75 mA max.
		Power dissipation of the interface module	Typically 3.8 W
		Status, Diagnostics	
		Interrupts	None
		Diagnostic function	Yes
		• Module status	Red/Green LED
		• Network status	Red/Green LED
		• I/O status	Red/Green LED

^{Note1} 24 VDC power for module power and network interface power is provided by user-supplied Class 2 power supplies. The 5136-DNS-200S should have separate power supplies for input current and output load power to ensure isolation between the interface module and output circuits.

8.2 DeviceNet Interface Module

Order Number

5136-DNS-200S

Features

The DeviceNet Slave Adapter interface module has the following features:

- It connects the ET 200S with the DeviceNet network.
- It prepares the data for the electronic modules and motor starters that are fitted.
- It supplies the backplane bus.
- The node address of the ET 200S can be set by means of switches.
- If the 24 VDC power supply is disconnected, the interface module is also disconnected.
- The maximum address space is 244 bytes for inputs and 244 bytes for outputs.
- The reference potential M of the rated supply voltage of the interface module to the rail (protective conductor) is connected by means of an RC combination, thus permitting an ungrounded configuration.
- A maximum of 63 modules can be operated with the interface module.
- The maximum width of the station is 1 m.