

Chapter 5 Digital input/output modules

Overview This chapter contains a description of the construction and the operation of the VIPA digital input/output modules.

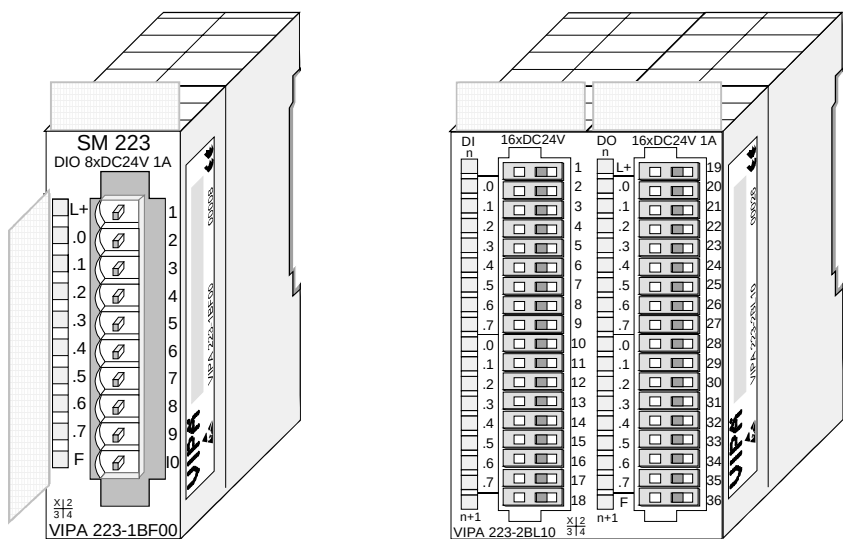
- Below follows a description of:
- A system overview of the digital input/output modules
 - Properties
 - Construction
 - Interfacing and schematic diagram
 - Technical data

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System overview

Input/output modules SM 223

Here follows a summary of the digital input/output modules that are currently available from VIPA:



Order data
input/output
modules

Type	Order number	Page
DIO 8xDC 24V 1A	VIPA 223-1BF00	5-3
DI 16xDC 24V, DO 16xDC 24V 1A	VIPA 223-2BL10	5-5

Security hints for DIO modules



Attention!

Please regard that the voltage applied to an output channel must be $\leq$ the voltage supply applied to L+.

Due to the parallel connection of in- and output channel per group, a set output channel may be supplied via an applied input signal.

Thus, a set output remains active even at power-off of the voltage supply with the applied input signal.

Non-observance may cause module demolition.

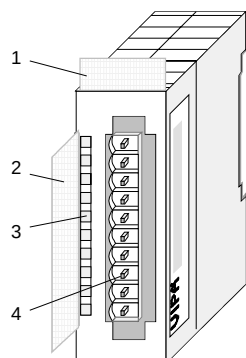
223-1BF00 - DIO 8xDC 24V 1A

Order data DIO 8xDC 24V 1A VIPA 223-1BF00

Description This module is a combination module. It has 8 channels that may be used as input or as output channel. The status of the channels is displayed by means of LEDs. Every channel is provided with a diagnostic function, i.e. when an output is active the respective input is set to "1". When a short circuit occurs at the load, the input is held at "0" and the error is detectable by analyzing the input.

- Properties**
- 8 channels, isolated from the backplane bus (as input or output)
 - Diagnostic function
 - Nominal input voltage DC 24V / supply voltage DC 24V
 - Output current 1A
 - LED error display for overload, overheat or short circuit
 - Active channels displayed by means of LED

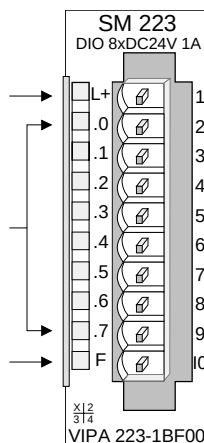
Construction



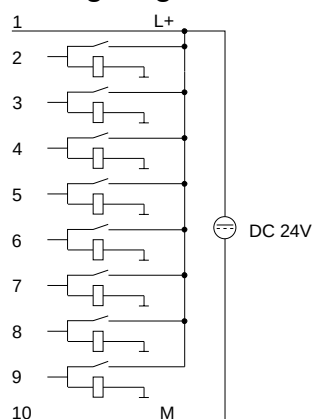
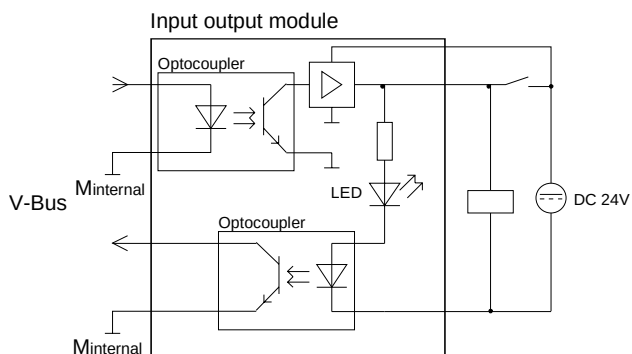
- [1] Label for the module description
 [2] Label for the bit address with description
 [3] LED status indicator
 [4] Edge connector

Status indicator pin assignment

LED	Description
L+	LED (yellow) Supply voltage available
.07	LEDs (green) when the input signal is "1" or the output is active the respective LED is turned on
F	LED (red) Overload, overheat or short circuit error



Pin	Assignment
1	+DC 24V supply voltage
2	I/Q+0.0
3	I/Q+0.1
4	I/Q+0.2
5	I/Q+0.3
6	I/Q+0.4
7	I/Q+0.5
8	I/Q+0.6
9	I/Q+0.7
10	Supply ground

Wiring and schematic diagram**Wiring diagram****Schematic diagram****Technical data**

Electrical data	VIPA 223-1BF00
Number of channels	8
Rated load voltage	DC 24V (20.4 ... 28.8V)
No-load current consumption at L+ (all A.x=off)	50mA
Output current per channel	1A protected against short circuits
Total output current	12A
Nominal input voltage	DC 24V (20.4 ... 28.8V)
Signal voltage "0"	0 ... 5V
Signal voltage "1"	15 ... 28.8V
Input filter time delay	3ms
Input current	typ. 7mA
Voltage supply	DC 5V via backplane bus
Current consumption via backplane bus	65mA
Data width in the process image	1Byte PII, 1Byte PIQ
Status indicator	via LEDs located on the front
Programming specifications	
Input data	1Byte
Output data	1Byte
Parameter data	-
Diagnostic data	-
Dimensions and weight	
Dimensions (WxHxD) in mm	25.4x76x88
Weight	50g

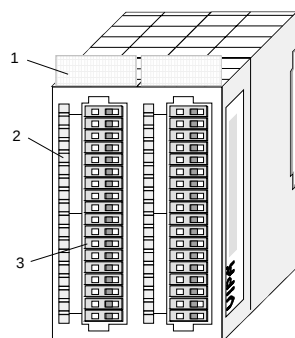
223-2BL10 - DI 16xDC 24V, DO 16xDC 24V 1A

Order data DI 16xDC 24V, DO 16xDC 24V 1A VIPA 223-2BL10

Description The module has 32 channels that are isolated from the backplane bus. 16 channels operate as inputs and 16 as outputs. The status of the channels is displayed by means of LEDs.

- Properties**
- 32 channels, of these 16 input and 16 output channels
 - Nominal input voltage DC 24V
 - Supply voltage DC 24V(external) for outputs
 - Output current 1A per channel
 - LED error display for overload, overheat or short circuit
 - Active channels displayed by means of an LED

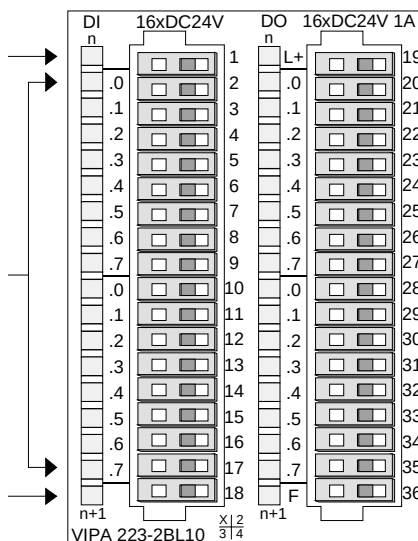
Construction



- [1] Label for the module description
 [2] Label for the bit address with description
 [3] LED status indicator
 [4] Edge connector

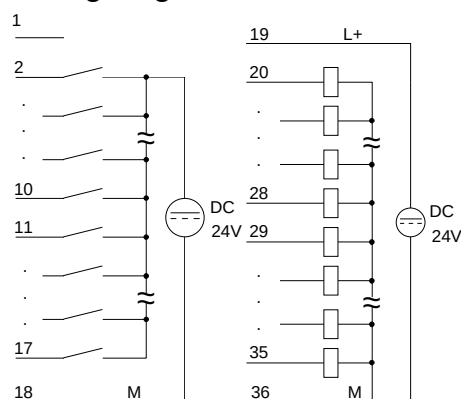
Status indicator pin assignment

LED	Description	Pin	Assignment
L+	LED (yellow) Supply voltage available	1	not connected
.07	LED (green) I+0.0 ... I+1.7 Q+0.0 ... Q+1.7 when the signal (input) is "1" or the output is active, the respective LED is turned on	2	Input I+0.0
F	LED (red) Overload, overheat or short circuit error	17	Input I+1.7
		18	Ground for inputs
		19	Supply voltage +24V
		20	Output Q+0.0
		35	Output Q+1.7
		36	Supply voltage ground outputs

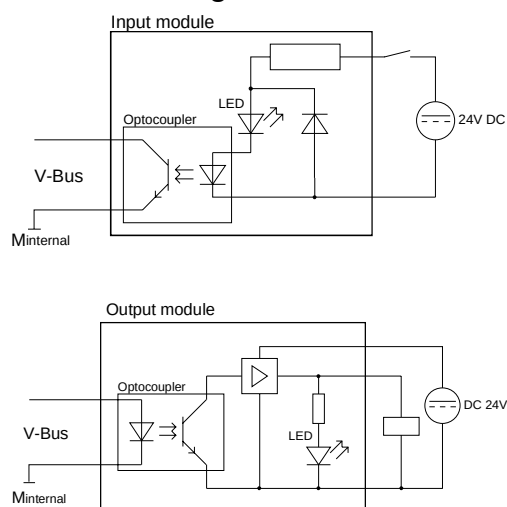


Wiring and schematic diagram

Wiring diagram



Schematic diagram



Technical data

Electrical data	VIPA 223-2BL10
Number of channels	32
Rated load voltage	DC 24V (20.4 ... 28.8V)
No-load current consumption at L+ (all A.x=off)	10mA
Output current per channel	1A protected against short circuits
max. contact load per connector	10A
Nominal input voltage	DC 24V (20.4 ... 28.8V)
Signal voltage "0"	0 ... 5V
Signal voltage "1"	15 ... 28.8V
Input filter time delay	3ms
Input current	typ. 7mA
Voltage supply	DC 5V via backplane bus
Current consumption via backplane bus	120mA
Data width in the process image	2Byte PII, 2Byte PIQ
Status indicator	via LEDs located on the front
Programming specifications	
Input data	2Byte
Output data	2Byte
Parameter data	-
Diagnostic data	-
Dimensions and weight	
Dimensions (WxHxD) in mm	50.8x76x88
Weight	100g