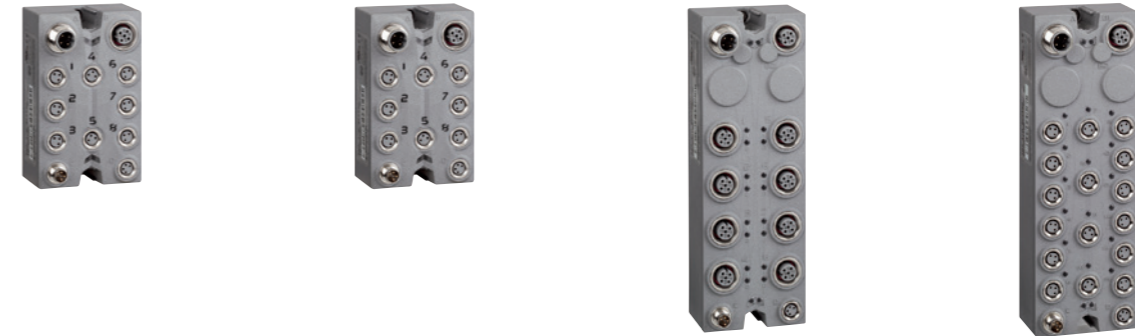


Modicon TM7

High-Performance and Safe IP67 Distributed I/O System
Digital I/O blocks

Applications	
Compatibility	Remote I/O
	Distributed I/O

Digital I/O expansion blocks	
With TM5SBET7 bus expansion module (transmitter module):	
- Modicon M258 logic controller	
- Modicon LMC058 motion controller	
■ With TM7NCOM... CANopen interface block:	
- Modicon M258 logic controller	
- Modicon LMC058 motion controller	
- Modicon LMC078 motion controller	
- Modicon M262 logic/motion controller	
■ With Modicon TM5 network interface modules over Ethernet, Sercos and CANopen	



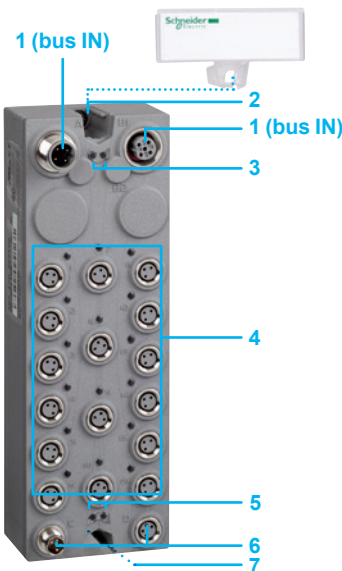
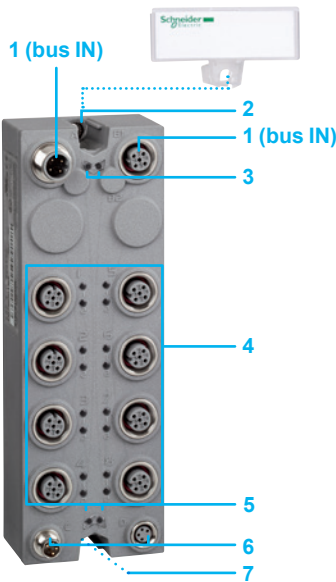
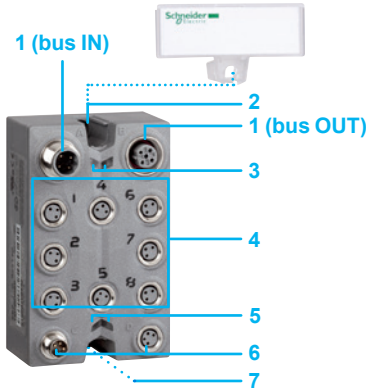
Degree of protection		IP67	IP67	IP67	
Housing type		Plastic	Plastic	Plastic	
Modularity (number of channels)	Max. number of digital channels	8	16	16	
	Digital inputs	8	16	16	
	Digital outputs	-	-	-	
Digital inputs	Voltage/Current	24 V ---/7 mA	24 V ---/7 mA	24 V ---/7 mA	
	Type	Sink (1)	Sink (1)	Sink (1)	
	IEC 61131-2 conformity	Type 1	Type 1	Type 1	
Digital outputs	Voltage	-	-	-	
	Type	-	-	-	
	Current per output	-	-	-	
	Current per expansion block	-	-	-	
Sensor/actuator power supply	Voltage	24 V ---	24 V ---	24 V ---	
	Max. current	500 mA for all channels	500 mA for all channels	500 mA for all channels	
	Protection against	Overloads, short-circuits, and reverse polarity	Overloads, short-circuits, and reverse polarity	Overloads, short-circuits, and reverse polarity	
Connection	TM7 expansion bus	Bus input connector	B-coded 4-way male M12	B-coded 4-way male M12	B-coded 4-way male M12
		Bus output connector	B-coded 4-way female M12	B-coded 4-way female M12	B-coded 4-way female M12
	Digital I/O channels	Sensor connector	3-way female M8, 1 channel per connector	3-way female M8, 1 channel per connector	A-coded 5-way female M12, 2 channels per connector
		Actuator connector	-	-	-
	Expansion block power supply	Input connector	4-way male M8	4-way male M8	4-way male M8
		Output connector	4-way female M8	4-way female M8	4-way female M8
Diagnostics	By expansion block	Yes	Yes	Yes	
	By channel	Yes	Yes	Yes	
	By communication on TM7 bus	Yes	Yes	Yes	
Expansion block		TM7BDI8B	TM7BDI16B	TM7BDI16A	

Degree of protection		IP67	IP67	IP67	IP67	
Housing type		Plastic	Plastic	Plastic	Plastic	
Modularity (number of channels)	Max. number of digital channels	8	8	16	16	
	Digital inputs	-	0...8 software-configurable	0...16 software-configurable	0...16 software-configurable	
	Digital outputs	8	0...8 software-configurable	0...16 software-configurable	0...16 software-configurable	
Digital inputs	Voltage/Current	-	24 V ---/4.4 mA	24 V ---/4.4 mA	24 V ---/4.4 A max.	
	Type	-	Sink (1)	Sink (1)	Sink (1)	
	IEC 61131-2 conformity	-	Type 1	Type 1	Type 1	
Digital outputs	Voltage	24 V ---	24 V ---	24 V ---	24 V ---	
	Type	Transistor/Source (2)	Transistor/Source (2)	Transistor/Source (2)	Transistor/Source (2)	
	Current per output	2 A max.	0.5 A max.	0.5 A max.	0.5 A max.	
	Current per expansion block	8 A max.	4 A max.	8 A max.	8 A max.	
Sensor/actuator power supply	Voltage	24 V ---	24 V ---	24 V ---	24 V ---	
	Max. current	500 mA for all channels	500 mA for all channels	500 mA for all channels	500 mA for all channels	
	Protection against	Overloads, short-circuits, and reverse polarity	Overloads, short-circuits, and reverse polarity	Overloads, short-circuits, and reverse polarity	Overloads, short-circuits, and reverse polarity	
Connection	TM7 expansion bus	Bus input connector	B-coded 4-way male M12	B-coded 4-way male M12	B-coded 4-way male M12	
		Bus output connector	B-coded 4-way female M12	B-coded 4-way female M12	B-coded 4-way female M12	
	Digital I/O channels	Sensor connector	-	3-way female M8, 1 channel per connector	A-coded 5-way female M12, 2 channels per connector	3-way female M8, 1 channel per connector
		Actuator connector	3-way female M8, 1 channel per connector	3-way female M8, 1 channel per connector	5-way female M12, 2 channels per connector	3-way female M8, 1 channel per connector
	Expansion block power supply	Input connector	4-way male M8	4-way male M8	4-way male M8	4-way male M8
		Output connector	4-way female M8	4-way female M8	4-way female M8	4-way female M8
Diagnostics	By expansion block	Yes	Yes	Yes	Yes	
	By channel	Yes	Yes	Yes	Yes	
	By communication on TM7 bus	Yes	Yes	Yes	Yes	
Expansion block		TM7BDO8TAB	TM7BDM8B	TM7BDM16A	TM7BDM16B	

Modicon TM7

High-Performance and Safe IP67 Distributed I/O System

Digital I/O blocks



Description

Digital I/O expansion blocks

8-channel digital I/O expansion blocks have the following on the front panel:

- 1 A male M12 connector (bus IN) and a female M12 connector (bus OUT) for connecting the TM7 expansion bus
- 2 A slot for the expansion block label (1)
- 3 Two bus diagnostic LEDs
- 4 Eight female M8 connectors for connecting sensors and actuators with channel status LEDs
- 5 Two LEDs indicating the status of the 24 V $\bar{\text{---}}$ sensor and actuator power supplies
- 6 Two M8 connectors for connecting the 24 V $\bar{\text{---}}$ sensor and actuator power supplies (male for PWR IN, female for PWR OUT)
- 7 Mounting using two \varnothing 4 screws (not supplied) and connection of the functional ground when block is mounted on a metal support

16-channel digital I/O expansion blocks have the following on the front panel:

- 1 A male M12 connector (bus IN) and a female M12 connector (bus OUT) for connecting the TM7 expansion bus
- 2 A slot for the expansion block label (1)
- 3 Two bus diagnostic LEDs
- 4 Eight M12 connectors (2 channels per connector) or sixteen M8 connectors for connecting sensors and actuators with channel status LEDs
- 5 Two LEDs indicating the status of the 24 V $\bar{\text{---}}$ sensor and actuator power supplies
- 6 Two M8 connectors for connecting the 24 V $\bar{\text{---}}$ sensor and actuator power supplies (male for PWR IN, female for PWR OUT)
- 7 Mounting using two \varnothing 4 screws (not supplied) and connection of the functional ground when block is mounted on a metal support

(1) Label-holder supplied with IP67 block



TM7BDI8B,
TM7BDO8TAB,
TM7BDM8B



TM7BDM16B,
TM7BDI16B



TM7BDI16A,
TM7BDM16A

Digital I/O expansion blocks

Max. no. of channels	Number/type of inputs (1)	Number/type of outputs (2)	Sensor and actuator connection	Communication bus	Reference	Weight kg/lb
8, input	8, sink (3)	–	8 female M8 connectors	TM7 bus	TM7BDI8B	0.180/ 0.397
16, input	16, sink (3)	–	16 female M8 connectors	TM7 bus	TM7BDI16B	0.320/ 0.705
	16, sink (3)	–	8 female M12 connectors	TM7 bus	TM7BDI16A	0.320/ 0.705
8, output	–	8, transistor/source (4), 2 A max.	8 female M8 connectors	TM7 bus	TM7BDO8TAB	0.185/ 0.408
8, I/O, configurable	0...8, sink (3)	0...8, transistor/source (4), 0.5 A max.	8 female M8 connectors	TM7 bus	TM7BDM8B	0.190/ 0.419
16, I/O, configurable	0...16, sink (3)	0...16, transistor/source (4), 0.5 A max.	8 female M12 connectors	TM7 bus	TM7BDM16A	0.320/ 0.705
			16 female M8 connectors	TM7 bus	TM7BDM16B	0.320/ 0.705

(1) 24 V \pm IEC type 1

(2) 24 V \pm

(3) Sink inputs: positive logic

(4) Source outputs: positive logic

Architecture and connection cables

[See page 26](#)

Separate parts

[See page 29](#)

Configuration software

■ EcoStruxure Machine Expert software: please refer to catalog Ref. [DIA3ED2180701EN](#)