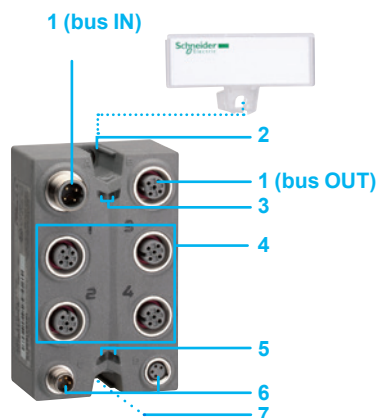


Modicon TM7
High-Performance and Safe IP67 Distributed I/O System
Analog I/O blocks

Applications			Analog I/O expansion blocks																			
Compatibility	Local and remote I/O		With TM5SBET7 bus expansion module (transmitter module): - Modicon M258 logic controller - Modicon LMC058 motion controller																			
	Distributed I/O		■ 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		IP67		IP67		IP67		IP67							
Housing type			Plastic		Plastic		Plastic		Plastic		Plastic		Plastic		Plastic							
Modularity (number of channels)	Max. number of analog channels		4		4		4		4		4		4		4							
	Analog inputs		4		4		—		—		2		—		2							
	Temperature inputs		—		—		4		—		—		—		—							
	Analog outputs		—		—		—		—		2		—		2							
Inputs	Type		Voltage -10...+10 V $\overline{\text{---}}$		Current 0...20 mA		Pt 100 temperature probe, Pt 1000 temperature probe, KTY 10 silicon temperature probe, KTY 84 silicon temperature probe, Resistance 0...3,276 Ohm		J, K, S thermocouple Voltage 0...65,536 μV		—		Voltage -10...+10 V $\overline{\text{---}}$		Current 0...20 mA							
	Resolution		11 bits + sign		12 bits		16 bits		16 bits		—		11 bits + sign		12 bits							
Analog outputs	Type		—		—		—		—		Voltage -10...+10 V $\overline{\text{---}}$		Current 0...20 mA		Current 0...20 mA							
	Resolution		—		—		—		—		11 bits + sign		12 bits		12 bits							
	Current per expansion block		—		—		—		—		—		—		—							
Sensor/actuator power supply	Voltage		24 V $\overline{\text{---}}$		24 V $\overline{\text{---}}$		—		—		24 V $\overline{\text{---}}$		24 V $\overline{\text{---}}$		24 V $\overline{\text{---}}$							
	Max. current		500 mA for all channels		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		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		B-coded 4-way male M12		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		B-coded 4-way female M12		B-coded 4-way female M12		B-coded 4-way female M12		B-coded 4-way female M12							
	Analog I/O channels	Sensor connector	A-coded 5-way female M12		A-coded 5-way female M12		A-coded 5-way female M12		A-coded 5-way female M12		A-coded 5-way female M12		A-coded 5-way female M12		A-coded 5-way female M12							
		Actuator connector	—		—		—		—		—		—		—							
	Expansion block power supply	Input connector	4-way male M8		4-way male M8		4-way male M8		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		4-way female M8		4-way female M8		4-way female M8							
	Diagnostics	By expansion block		Yes		Yes		Yes		Yes		Yes		Yes		Yes						
		By channel		Yes		Yes		Yes		Yes		Yes		Yes		Yes						
By communication on TM7 bus		Yes		Yes		Yes		Yes		Yes		Yes		Yes								
Expansion block			TM7BAI4VLA		TM7BAI4CLA		TM7BAI4TLA		TM7BAI4PLA		TM7BAO4VLA		TM7BAO4CLA		TM7BAM4VLA		TM7BAM4CLA					
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Description

Analog I/O expansion blocks

Analog 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 Four female M12 connectors for connecting sensors and/or actuators with channel status LEDs
- 5 Two LEDs indicating the status of the 24 V $\pm$ sensor and actuator power supplies
- 6 Two M8 connectors for connecting the 24 V $\pm$ 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



TM7BAI4●LA,
TM7BAO4●LA,
TM7BAM4●LA

Analog I/O expansion blocks

Max. no. of channels	Input range	Output range	Resolution	Sensor and actuator connection	Communication bus	Reference	Weight kg/lb
4 input	Voltage -10...+10 V $\pm$	—	11 bits + sign	4 female M12 connectors	TM7 bus	TM7BAI4VLA	0.200/ 0.441
	Current 0...20 mA	—	12 bits	4 female M12 connectors	TM7 bus	TM7BAI4CLA	0.200/ 0.441
	Pt 100, Pt 1000 temperature probe KTY 10, KTY 84 silicon temperature probe Resistance 0...3,276 Ω	—	16 bits	4 female M12 connectors	TM7 bus	TM7BAI4TLA	0.200/ 0.441
	J, K, S thermocouple Voltage 0...65,536 μ V	—	16 bits	4 female M12 connectors	TM7 bus	TM7BAI4PLA	0.200/ 0.441
4 output	—	Voltage -10...+10 V $\pm$	11 bits + sign	4 female M12 connectors	TM7 bus	TM7BAO4VLA	0.200/ 0.441
	—	Current 0...20 mA	12 bits	4 female M12 connectors	TM7 bus	TM7BAO4CLA	0.200/ 0.441
2 input + 2 output	Voltage -10...+10 V $\pm$	Voltage -10...+10 V $\pm$	11 bits + sign	4 female M12 connectors	TM7 bus	TM7BAM4VLA	0.200/ 0.441
	Current 0...20 mA	Current 0...20 mA	12 bits	4 female M12 connectors	TM7 bus	TM7BAM4CLA	0.200/ 0.441

Architecture and connection cables

[See page 26](#)

Separate parts

[See page 29](#)

Configuration software

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