

Modicon TM3 I/O expansion modules for Modicon controllers Expert counter modules

Applications		- High-speed counter with reflex output management: no event management - Single or dual counter with additional period meter and frequency meter functions. These functions manage reflex outputs.
Compatibility	Local and remote I/O Distributed I/O	Modicon M262 logic/motion controller
		
Inputs	Number of counter channels Conforming to IEC/EN 61131-2 Type of signal (1) Frequency per channel Type of input Nominal input voltage Voltage limit values Resolution Acquisition time on capture Event generation time to the PLC	10 fast inputs Yes Source or sink 200 kHz Type 1 24 V $\pm$ I/O, type 1 0...28.8 V $\pm$ 32 signed bits $\leq 3 \mu\text{s}$ —
Outputs	Number Type Response on threshold	8 fast outputs Source $\leq 10 \mu\text{s}$
Supply voltage		Via 24 V $\pm$ external power supply
Format (W x H x D) mm (in.)		30.2 x 90 x 70 (1.19 x 3.54 x 2.76)
Mounting		Mounting on symmetrical DIN rail L ₁ or panel using special mounting kit TMAM2
Module	Channels connected: via removable screw terminal blocks at intervals of 3.81 mm (0.15 in.) via removable spring terminal blocks at intervals of 3.81 mm (0.15 in.)	TM3XFHSC202 TM3XFHSC202G
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(1) Source output: PNP output. Sink output: NPN output.



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- 1 Modicon M262 logic/motion controller
- 2 TM3XFHSC expert counter module (event management available on first two slots only)
- 3 TM3XHSC expert counter module
- 4 TM3 I/O module

Presentation

Expert counter modules are used to count the pulses generated by a sensor or to process signals from an incremental encoder. The counter functions allow reflex outputs to be managed on all modules. TM3XFHSC202/G modules offer an additional event management function on the M262 logic/motion controller when installed in the first two local slots. The function parameters are set by configuration using EcoStruxure Machine Expert software.

Integrated I/O functions

Simple inputs:

- Standard digital inputs
- Inputs with latching option (latching is used to capture pulses)
- Inputs with event generation in the M262 controller (valid for TM3XFHSC202 and TM3XFHSC202G modules only)

Single counter function: 10 x 32-bit channels

- Pulse up/down counter

Expert counter functions: 10x 32-bit channels

- Expert counter: Up/down counting on preset or modulo with option to manage reflex outputs, captures, and events depending on model
- Period meter: Measures the time between two edges; used to manage reflex outputs or event-triggered actions
- Frequency meter: Gives the frequency in hertz

Supply voltage: external 24 V $\overline{\text{DC}}$ power supply

Connections

Screw or spring-type connectors at intervals of 3,81 mm (0.15 in.) for compact dimensions.

Configuration

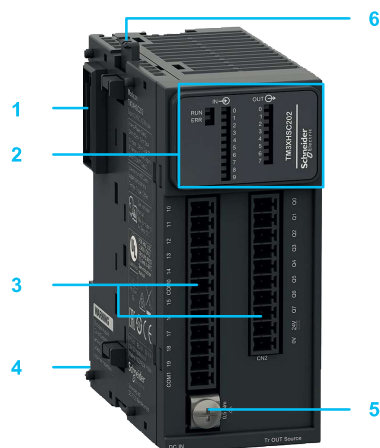
Counter modules connect to M262 logic/motion controller according to the general rules for the Modicon TM3 system: 7 local modules max. plus 7 remote modules.

Mounting

- Counter modules are mounted on a symmetrical DIN rail $\perp$.
- For plate or panel mounting, use the **TMAM2** kit.
- The **TM2XMTGB** grounding plate simplifies connection of the cable shielding (shielding must be connected to the device's functional ground).

Description

Modicon TM3 counter modules



TM3XHSC202

- 1 TM3 bus connectors
- 2 Display block with module channel status and diagnostics LEDs
- 3 Slot for removable screw or spring-type terminal blocks (depending on the model) for connecting counter channels (1)
- 4 Clip for locking on symmetrical DIN rail $\perp$
- 5 Screw terminal for the functional ground (FG) connection
- 6 Locking catch for the adjacent module

(1) Removable terminal blocks supplied with each module.

Modicon TM3

I/O expansion modules for Modicon controllers

Expert counter modules



TM3XHSC202
TM3XHSC202G



TM3XFHSC202
TM3XFHSC202G



TM2XMTGB

References

Modicon TM3 expert counter modules

Module type	Inputs	Outputs	Input terminal block (1) Interval (mm/in.)	Reference	Weight kg/ lb
High-speed counter	10 fast inputs	8 fast outputs	Screw 3.81/0.15	TM3XHSC202	0.150/ 0.330
			Spring 3.81/0.15	TM3XHSC202G	0.150/ 0.330
High-speed counter with event management	10 fast inputs	8 fast outputs	Screw 3.81/0.15	TM3XFHSC202	0.150/ 0.330
			Spring 3.81/0.15	TM3XFHSC202G	0.150/ 0.330

Separate parts

Designation	Description	Unit reference	Weight kg/ lb
Grounding plate	Support equipped with 10 male Faston connectors for connecting the cable shielding (via 6.35 mm/0.25 in. connectors, not supplied) and the functional grounds (FG)	TM2XMTGB	0.045/ 0.099
Mounting kit Sold in lots of 10	For mounting expert modules on a plate or panel	TMAM2	0.065/ 0.143
Set of I/O terminal blocks	2 screw terminal blocks	TMA262SET8S	0.127/ 0.280
	2 spring terminal blocks	TMA262SET8S	0.127/ 0.280

(1) Removable terminal blocks supplied with each module.

Modicon TM3

I/O expansion modules for Modicon controllers

Expert module for TeSys U motor starter applications

Presentation

The **TM3XTYS4** expert module is a pre-wired interface for use with Modicon M221, M221 Book, M241, and M251 logic controllers, and Modicon M262 logic/motion controller, designed to monitor and control up to four TeSys U motor starters.

Controlling motor starters with the TM3XTYS4 expert module

Each of the four channels on the **TM3XTYS4** expert module has:

- Two outputs for controlling the motor starter:
 - Control in one direction
 - Control in two directions, if reversing starter
- Three inputs for the motor starter status:
 - Ready
 - Run
 - Detected fault

The inputs are connected in series with the motor starter auxiliary contacts.

Connections

- The **TM3XTYS4** expert module is equipped with four RJ45 connectors for connecting to the motor starters.
- Dedicated **LU9R●●●** cables equipped with RJ45 connectors at both ends are available for connecting TeSys U motor starters.

Configuration

- The expert module connects directly to the logic controllers on the TM3 bus connector or to the bus expansion system (receiver module).
- One or more expert modules can be connected to Modicon M221, M221 Book, M241, and M251 logic controllers and Modicon M262 logic/motion controller according to the general rules for the TM3 system: 7 local modules max. plus 7 remote modules.

Mounting

- The **TM3XTYS4** expert module is mounted on a symmetrical DIN rail U_r .
- For plate or panel mounting, use the **TMAM2** kit.

Connection cables

1 Length: 0.3 m (0.98 in)

LU9R03

1 Length: 1 m (3.28 in)

LU9R10

1 Length: 3 m (9.84 in)

LU9R30

Modicon TM3 module

2 Modicon TM3

TM3XTYS4

TeSys U

3 Power base

LUB120 or LUB320

LU2B12BL or LU2B32BL

4 Control unit 24 V ---

LUCA/LUCB/LUCC/LUCD●●BL

LUCA/LUCB/LUCC/LUCD●●BL

5 Terminal block

LU9BN11C

LU9MRC

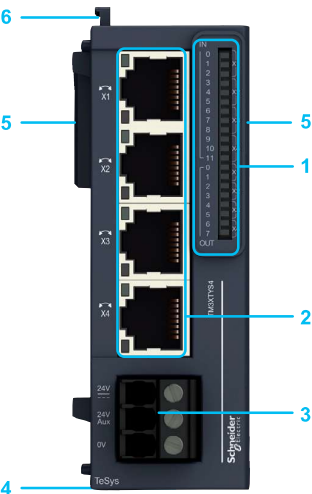
6 Parallel wiring module

LUFC00

LUFC00

For more information about **TeSys U motor starter applications**, please visit our [website](#)





TM3XTYS4

Description

TM3XTYS4 expert module

- 1 Block with 20 LEDs displaying the status of the 12 input channels and 8 output channels
- 2 Four RJ45 connectors for motor starter connection cables
- 3 Screw terminal block for connecting the 24 V $\overline{\text{---}}$ power supply for the inputs and starter coils (1)
- 4 Clip for locking on symmetrical DIN rail $\perp$
- 5 TM3 bus connectors (one on each side). These are designed to provide continuity of the link between connected modules.
- 6 Locking catch for the adjacent module

References

Expert module (1)

Designation	Number and type of channels	Reference	Weight kg/ lb
Expert module for controlling TeSys U motor starters 24 V $\overline{\text{---}}$ power supply (1.2 A)	4 motor starters	TM3XTYS4	0.115/ 0.254

Separate parts

Designation	Description	Reference	Weight kg/ lb
Mounting kit Sold in lots of 10	For mounting expert module on a plate or panel	TMAM2	0.065/ 0.143

(1) The module is supplied with a removable screw terminal block for connecting the power supply.