Modicon TM3
I/O expansion modules for Modicon controllers

Catalog
June 2019
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I/O expansion modules for Modicon controllers

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To be competitive in today’s digital era, machine builders must be innovative. Smart machines, those that are better connected, more flexible, more efficient, and safe, are enabling machine builders to innovate in ways never before possible.

EcoStruxure, Schneider Electric’s open, IoT-enabled architecture and platform, offers powerful solutions for the digital era. As part of this, EcoStruxure Machine brings powerful opportunities for machine builders and OEMs, empowering them to offer smart machines and compete in the new, digital era.

EcoStruxure Machine brings together key technologies for product connectivity and edge control on premises, and cloud technologies to provide analytics and digital services. EcoStruxure Machine helps you bring more innovation and added value to your customers throughout the entire machine life cycle.

Innovation at Every Level for Machines is full systems across three layers:

- **Connected products**
  - Our connected products for measuring, actuating, device level monitoring, and control adhere to open standards to provide unmatched integration opportunities and flexibility
  - Edge Control

We are IIoT-ready with a proven set of tested and validated reference architectures that enable the design of end-to-end open, connected, and interoperable systems based on industry standards. Ethernet and OPC UA facilitates IT/OT convergence meaning machine builders reap benefits from web interfaces and cloud.

Apps, Analytics & Services

Seamless integration of machines to the IT layer allows the collection and aggregation of data ready for analysis — for machine builders and end users alike. This means increased uptime and the ability to find information faster for more efficient operations and maintenance.

These levels are completely integrated from shop floor to top floor. And we have cloud offers and end-to-end cybersecurity wrapped around.

EcoStruxure Machine makes it easier for OEMs/machine builders to offer their customers smarter machines. The advent of smart machines is driven by the changing needs of end users:

- Evolving workforce
- Reducing costs
- Dynamic markets
- Shorter life cycles
- Prioritizing safety and cybersecurity

EcoStruxure Machine provides one solution for the whole machine life cycle:

- With Smart Design & Engineering the time to market is reduced by up to 30% using our automated engineering and the simulation capabilities
- During Commissioning & Operation of the machine, resources such as energy, material and loss can be improved, and with seamless integration to the IT world efficiency can be improved by up to 40%
- Smart Maintenance & Services reduces the time for corrective actions up to 50%
# Selection guide

## Modicon TM3

**I/O expansion modules for Modicon controllers**  
**Controllers for industrial machines**

<table>
<thead>
<tr>
<th>Applications</th>
<th>Type</th>
<th>Logic controller</th>
<th>Logic/Motion controller</th>
<th>Motion controller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>For hardwired architectures</td>
<td>For performance-demanding applications</td>
<td>For modular and distributed architectures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For performance machines</td>
<td>IIoT ready for performance machines</td>
<td>For automating machines/lines with 0 - 130 servo or robot axes</td>
</tr>
</tbody>
</table>

### Logic controller

<table>
<thead>
<tr>
<th>Specification</th>
<th>Performance</th>
<th>Memory</th>
<th>Supply voltage</th>
<th>Communication fieldbus and networks</th>
<th>Embedded I/O</th>
<th>Output types</th>
<th>Synchronized axes</th>
<th>Configuration software</th>
<th>Controller range</th>
<th>Released as of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22 µs/inst</td>
<td>640 KB RAM, 2 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCat</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert-Basic (1)</td>
<td><strong>Modicon M221/M221 Book</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22 µs/inst</td>
<td>64 MB RAM, 128 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>Modicon M241</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22 µs/inst</td>
<td>64 MB RAM, 128 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>Modicon M251</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3...5 µs/inst</td>
<td>256 MB RAM, 256 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>Modicon M262</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.5...2 µs/inst</td>
<td>128 KB to 256 KB NV RAM</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>LMC Eco, LMC Pro2</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Logic/Motion controller

<table>
<thead>
<tr>
<th>Specification</th>
<th>Performance</th>
<th>Memory</th>
<th>Supply voltage</th>
<th>Communication fieldbus and networks</th>
<th>Embedded I/O</th>
<th>Output types</th>
<th>Synchronized axes</th>
<th>Configuration software</th>
<th>Controller range</th>
<th>Released as of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.2 µs/inst</td>
<td>640 KB RAM, 2 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCat</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert-Basic (1)</td>
<td><strong>Modicon M221/M221 Book</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22 µs/inst</td>
<td>64 MB RAM, 128 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>Modicon M241</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22 µs/inst</td>
<td>64 MB RAM, 128 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>Modicon M251</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22 µs/inst</td>
<td>64 MB RAM, 128 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>Modicon M262</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.5...2 µs/inst</td>
<td>256 MB RAM, 256 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>LMC Eco, LMC Pro2</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Motion controller

<table>
<thead>
<tr>
<th>Specification</th>
<th>Performance</th>
<th>Memory</th>
<th>Supply voltage</th>
<th>Communication fieldbus and networks</th>
<th>Embedded I/O</th>
<th>Output types</th>
<th>Synchronized axes</th>
<th>Configuration software</th>
<th>Controller range</th>
<th>Released as of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.2 µs/inst</td>
<td>640 KB RAM, 2 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCat</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert-Basic (1)</td>
<td><strong>Modicon M221/M221 Book</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22 µs/inst</td>
<td>64 MB RAM, 128 MB Flash</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
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<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>Modicon M241</strong></td>
<td></td>
</tr>
<tr>
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<td>22 µs/inst</td>
<td>64 MB RAM, 128 MB Flash</td>
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<td><strong>Modicon M262</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.5...2 µs/inst</td>
<td>128 KB to 256 KB NV RAM</td>
<td>24 V ac</td>
<td><strong>EtherCAT</strong></td>
<td><strong>1 Serial Line</strong></td>
<td>Up to 16 relay outputs</td>
<td>–</td>
<td>EcoStruxure Machine Expert V1.1 (2)</td>
<td><strong>LMC Eco, LMC Pro2</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Optional

- **1 Serial Line**
- **Profibus DP**
- **4 fast digital inputs**

### More details in catalog

- **Modicon TM3 (DIA3ED2140109EN)**
- **Modicon TM3 (DIA3ED2140107EN)**
- **Modicon TM3 (DIA3ED2140108EN)**
- **Modicon TM3 (DIA3ED2180503EN)**
- **Modicon TM7 (DIA3ED2140405EN)**

### Safety I/O

- **Modicon TM5 (DIA3ED2131204EN)**
- **Modicon TM7 (DIA3ED2140405EN)**

### Controller range

- **Modicon M221/M221 Book**
- **Modicon M241**
- **Modicon M251**
- **Modicon M262**
- **Modicon M262**
- **Modicon M262**
- **Modicon TM5**

---

(1) Formerly named SoMachine Basic.  
(2) Formerly named SoMachine. EcoStruxure Machine Expert merges both former software ranges, SoMachine and SoMachine Motion.
## Machine Automation

<table>
<thead>
<tr>
<th>Software</th>
<th>Controllers</th>
<th>I/O</th>
<th>Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoStruxure Machine Advisor</td>
<td>Modicon M221</td>
<td>Modicon TM3 Optimized I/O system</td>
<td>Preventa XPS Universal safety module</td>
</tr>
<tr>
<td>EcoStruxure Machine Expert – Basic</td>
<td>Modicon M241</td>
<td>Modicon TM5 and TM7 Performance I/O system</td>
<td>Modicon TM3 functional safety module</td>
</tr>
<tr>
<td>EcoStruxure Machine Expert – Safety</td>
<td>Modicon M251</td>
<td>Safety SLC</td>
<td>Preventa XPSMCM modular safety controller</td>
</tr>
</tbody>
</table>

### Machine control
- From basic to motion- and robot-centric machines with the PacDrive 3 offer, Modicon controllers and solutions bring a consistent and scalable response to achieving flexibility, performance, productivity, and digitization.

### Controllers
- Modicon TM3 Optimized I/O system for more compact and modular machines
- Modicon TM5 for more performance-demanding machines, with Modicon TM7 for harsh environments; Both Performance I/O ranges (Modicon TM5 and TM7) allow safety functions to be implemented using the Modicon TM5CSLC safety logic controller
- Preventa XPS Universal safety modules cover a wide range of safety functions, suitable for small applications with 4-5 safety functions, with diagnostic information provided to controllers via a single wire connection
- Preventa TM3 functional safety modules are suitable for small applications covering E-Stop functions and diagnostics via TM3 bus
- Preventa XPSMCM modular safety controllers are suitable for medium size applications with up to 20 safety functions and diagnostics via Modbus TCP, EtherNet/IP, EtherCAT, or Profinet

### Safety
- Preventa XPS Universal safety modules offer holistic solutions to Modicon M282 and PacDrive LMC controllers, increasing overall safety demand in Machine Automation

### Embedded Safety
- All these devices are managed within a single software, EcoStruxure Machine Expert, a powerful and collaborative engineering environment

### Software
- EcoStruxure Machine Expert – Safety optional add-on for programming safety logic controllers
- EcoStruxure Machine Expert – Basic software for programming Modicon M221 logic controllers: an intuitive standalone environment accessible to basic skilled technicians
- EcoStruxure Machine Advisor is a cloud-based services platform designed for machine builders to track machines in operation worldwide, monitor performance data, and resolve exceptional events, while reducing support costs by up to 50%
Machine Automation

Comprehensive Schneider offers for machine builders

- Lexium servo drives, motors, and robotics are designed to control applications ranging from a single independent axis up to high-performance synchronized multi-axis machines requiring high-speed and precise positioning and movements.

- The Lexium offer is designed for a broad range of motion-centric machines in applications such as Packaging, Material Handling, Material Working, Food and Beverage, and Electronics.

- Schneider Electric has developed Tested Validated & Documented Architectures (TVDA) applicable for generic machine control applications as well as for dedicated segment applications such as Packaging, Material Working, Material Handling, Hoisting, Pumping, or generic Machine Control applications.

Choose Schneider Electric to help secure your investment and benefit from worldwide services at every step of your project

- From planning and inception to modernization, we help ensure optimal technical and business performance. Our field service engineers combine 30+ years of manufacturer-level experience with the latest technology to bring innovation to every level of our offer, and every step of your project.

- Our machine control dedicated services empower you to maximize your business infrastructure and face increasingly stringent demands on productivity, safety, equipment availability, and performance optimization.
Presentation

Modicon TM3
I/O expansion modules for Modicon controllers
Presentation of the range

Modicon TM3 range
The Modicon TM3 offer enhances the capabilities of Modicon M221, M221 Book, M241, and M251 logic controllers, Modicon M262 logic/motion controller, and the TM3BC bus coupler module.
The flexibility offered by the TM3 expansion modules systems allows:
- I/O to be remotely located in the enclosure or in another cabinet, up to 5 m (16.40 ft) away, using the bus expansion system
- I/O to be distributed via islands over the Ethernet network using the bus coupler module

Local or remote I/O expansion modules
<table>
<thead>
<tr>
<th>Module Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digital I/O modules</strong></td>
<td>For creating configurations with up to 488 digital I/O (depending on the controller). These modules are available with the same connections as the controllers. Modules with 8 to 32 inputs/outputs: 24 V or 120 V 50/60 Hz inputs, relay or transistor outputs.</td>
</tr>
<tr>
<td><strong>Analog I/O modules</strong></td>
<td>For creating configurations with up to 114 analog I/O (depending on the controller), designed to receive, amongst other things, position, temperature, and speed sensor signals. They are also capable of controlling variable speed drives or any other device equipped with a current or voltage input. Modules with 2 to 8 inputs/outputs: voltage/current or temperature inputs, voltage/current or temperature outputs, voltage/current inputs/outputs.</td>
</tr>
<tr>
<td><strong>Expert modules</strong></td>
<td>For high-speed counting (24 V inputs), and event counting with or without event management on fast inputs/thresholds/stop. For controlling TeSys U motor starters: simplified wiring for the control part connected via RJ45 cables.</td>
</tr>
<tr>
<td><strong>TM3 bus expansion modules</strong></td>
<td>Transmitter and receiver modules and bus expansion cable for locating I/O remotely.</td>
</tr>
<tr>
<td><strong>Safety I/O modules</strong></td>
<td>For integrated machine safety: control of Emergency stops, control of switches, control of light curtains, control of pressure-sensitive mats or edges.</td>
</tr>
<tr>
<td><strong>Bus coupler module for distributed I/O</strong></td>
<td>For creating distributed I/O islands over Ethernet with: support for EtherNet/IP and Modbus/TCP communication protocols, integration of Web services and cybersecurity (Achilles L1), integration of the device identification service from the M262 controller.</td>
</tr>
</tbody>
</table>

Specific features
Modicon TM3 expansion modules have been designed with a simple interlocking assembly mechanism. A bus expansion connector is used to distribute data (data synchronization) and provide power during assembly on the bus coupler module, and on the Modicon M221, M221 Book, M241, and M251 logic controllers, Modicon M262 logic/motion controller, and the TM3BC bus coupler module.

Connections
The following connections are available on the front face of the expansion modules (depending on the model):
- removable screw terminal blocks for the I/O and the power supply (1)
- HE 10 connectors, for use with HE 10/ flying leads or HE 10/HE 10 cordsets and Telefast sub-bases (2)

The connectors on the bus expansion modules and Ethernet bus coupler module are RJ45 connectors.

Mounting
Modicon TM3 modules are mounted on a symmetrical DIN rail. They have a locking clip on the top of their casing.
For plate or panel mounting, use the TMAM2 kit.

Notes:
1 Removable terminal blocks are supplied with Modicon TM3 expansion modules.
2 Modicon ABE7 Telefast pre-wired system to be ordered separately (please refer to catalog ref DIA3ED2160602EN).
Modicon TM3 expansion system

EcoStruxure Machine Expert software is used to configure the local and remote I/O and distributed I/O islands.

**Local and remote I/O configuration**

**Local I/O**
- Maximum configuration: 7 Modicon TM3 expansion modules associated with a Modicon M221, M221 Book, M241, or M251 logic controller, or Modicon M262 logic/motion controller. Depending on the expansion module references, there may be fewer than 7 (see page 12).

**Remote I/O**
- Maximum configuration: 14 Modicon TM3 expansion modules (7 local modules + 7 remote modules) with Modicon TM3 bus expansion modules (transmitter module and receiver module).
  - The transmitter and receiver bus expansion modules can be used to:
    - increase the number of expansion modules that can be connected to a Modicon M221, M221 Book, M241, or M251 logic controller, or a Modicon M262 logic/motion controller from 7 to 14
    - locate Modicon TM3 expansion modules remotely, up to 5 m (16.40 ft) away
  - The transmitter module and receiver module are physically connected by a bus expansion cable, reference VDIP184546, or any other Cat 5E, F/UT cable.

**Distributed I/O configuration**
- The Modicon TM3BC bus coupler module is used to create distributed I/O islands on the Ethernet network.
  - The bus coupler module is connected via an isolated RJ45/RJ45 cable.
  - Maximum configuration: 14 Modicon TM3 expansion modules (7 modules + 7 modules) with the Modicon TM3 bus expansion system (transmitter module and receiver module) (see pages 30).
**Modicon TM3**

I/O expansion modules for Modicon controllers

**Digital I/O modules**

**Applications**

<table>
<thead>
<tr>
<th>Compatibility</th>
<th>Local and remote I/O</th>
<th>Distributed I/O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modicon M221/M221</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modicon M241/M241/M251</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modicon M262 logic/motion controller</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inputs**

<table>
<thead>
<tr>
<th>Number and type of inputs</th>
<th>8 logic inputs</th>
<th>8 logic inputs</th>
<th>16 logic inputs</th>
<th>32 logic inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>24 V</td>
<td>120 V</td>
<td>24 V</td>
<td>24 V</td>
</tr>
</tbody>
</table>

**Outputs**

<table>
<thead>
<tr>
<th>Number and type of outputs</th>
<th>8 relay outputs</th>
<th>8 transistor outputs</th>
<th>16 relay outputs</th>
<th>16 transistor outputs</th>
<th>32 relay outputs</th>
<th>32 transistor outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>24 V</td>
<td>24 V</td>
<td>24 V</td>
<td>24 V</td>
<td>24 V</td>
<td>24 V</td>
</tr>
</tbody>
</table>

**Power supplied by the controller via the bus expansion connector**

- **TM3DQ16**
  - Power supplied by the controller via the bus expansion connector
  - 2 A for TM3DQ16T and TM3DQ16TG
  - 0.5 A for TM3DQ16U
  - 0.1 A for TM3DI16T and TM3DI16UG

- **TM3DQ16K**
  - Power supplied by the controller via the bus expansion connector
  - 2 A for TM3DQ16T and TM3DQ16TG
  - 0.5 A for TM3DI16T and TM3DI16UG

**Mounting**

- Channels connected
  - via removable screw terminal blocks at intervals of 0.85 mm (0.03 in.)
  - via removable screw terminal blocks at intervals of 5.08 mm (0.20 in.)
  - via removable spring terminal blocks at intervals of 3.81 mm (0.15 in.)
  - via removable spring terminal blocks at intervals of 2.54 mm (0.10 in.)
  - via HE 10 connections (1)

**Page**

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(1) Compatible with the Modicon ABE7 Telefast pre-wired system (please refer to catalog ref. DIA202318050279 (click link to open))
Modicon TM3
I/O expansion modules for Modicon controllers
Digital I/O modules

Breakdown of the offer

Digital I/O modules:
- Input modules: 24 V or 120 V~
- Relay output modules: 24 V source transistor or 24 V sink transistor
- I/O modules: 24 V inputs/relay outputs, or 24 V transistor inputs/relay outputs

Configurable input options

TM3DI and TM3DM modules (except for TM3DIA8 modules) have two optional functions that can be configured using EcoStruxure™ Machine Expert software:
- An input filtering option: Integrating the filter value helps to improve input acquisition speed or reduce the effect of noise on the controller input (1).
- An input latching option: Latching is used to capture incoming pulses with shorter amplitude widths than the controller scan time (1).

Specific features

- If a hardware failure is detected, outputs TM3DO and TM3DM switch to fallback mode previously configured to 0, 1, or hold (1).
- Firmware updates are supported via the TM3 expansion bus, with any type of controller or the bus coupler (1).

Connections

- Screw-type connectors at intervals of 5.08 mm (0.2 in.) for ease of wiring: identical to the connectors on M221/M241 logic controllers
- Screw-type or spring-type connectors at intervals of 3.81 mm (0.15 in.) for compact dimensions: identical to the connectors on TM221ME16 and TM221ME32TK controllers
- HE10 connectors for lower wiring costs using the Telefast pre-wired system: identical to the connectors on TM221M32TK and TM221ME32TK controllers

I/O configuration

- Local I/O: A maximum of 7 I/O modules can be attached to the controller in accordance with the restrictions indicated in the table below.
- Distributed I/O with TM3 bus expansion system: 7 additional I/O modules can be used without restriction. These modules are attached to a TM3XREC1 receiver module.

<table>
<thead>
<tr>
<th>Logic controllers</th>
<th>Number of TM3 expansion modules attached to the controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic controller</td>
<td>1</td>
</tr>
<tr>
<td>TM221C(E)16R</td>
<td></td>
</tr>
<tr>
<td>TM221C(E)16T, TM221C(E)16U</td>
<td></td>
</tr>
<tr>
<td>TM221C(E)24R</td>
<td></td>
</tr>
<tr>
<td>TM221C(E)24T, TM221C(E)24U</td>
<td></td>
</tr>
<tr>
<td>TM221C(E)40R</td>
<td></td>
</tr>
<tr>
<td>TM221C(E)40T, TM221C(E)40U</td>
<td></td>
</tr>
<tr>
<td>TM221M(E)16R(G)</td>
<td></td>
</tr>
<tr>
<td>TM221M(E)16T(G), TM221M(E)32TK</td>
<td></td>
</tr>
<tr>
<td>TM221M(E)32R(G)</td>
<td></td>
</tr>
<tr>
<td>TM221M(E)32T(G), TM221M(E)32TK</td>
<td></td>
</tr>
<tr>
<td>TM2241, TM2251</td>
<td></td>
</tr>
<tr>
<td>Logic/motion controller</td>
<td>TM262</td>
</tr>
<tr>
<td>Bus coupler</td>
<td>TM3BCEIP</td>
</tr>
</tbody>
</table>

Possible regardless of the TM3 module references
Possible regardless of the TM3 module references but without a TM3DQ16R module in the configuration
Possible for some configurations, to be checked in EcoStruxure Machine Expert or by calculating the total consumption
Not possible; use a TM3XTRA1 module + a TM3REC1 module

TM3 expansion modules are powered by the logic controllers via the bus connector on the side of the products. This connector delivers two voltages, 5 V and 24 V. You should therefore calculate the total TM3 expansion module consumption and check that it is definitely compatible with the maximum current delivered by the controller. This information is available on each product data sheet or in the hardware reference guide. This can be checked in the Configuration page in the EcoStruxure Machine Expert programming software.

Mounting

- Digital I/O modules are mounted on a symmetrical DIN rail \( \frac{\pi}{2} \).
- For plate or panel mounting, use the TMAM2 kit.

Description

Modicon TM3 digital I/O modules
1. Display block with module channel status and diagnostics LEDs
2. TM3 bus connectors (one on each side). These are designed to provide continuity of the link between connected modules.
3. Input or output channel terminal blocks (depending on model: screw terminals, spring terminals, or HE 10 connector)
4. Clip for locking on symmetrical DIN rail \( \frac{\pi}{2} \)
5. Locking catch for the adjacent module

(1) Except on Modicon M221 and Modicon M221 Book logic controllers
## References

### Modicon TM3 digital input modules

<table>
<thead>
<tr>
<th>Number of logic inputs</th>
<th>Input type</th>
<th>Input terminal block (1)</th>
<th>References</th>
<th>Weight (kg/lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inputs</td>
<td>24 V ≥ sink/source</td>
<td>Screw 5.08/0.2</td>
<td>TM3DI8</td>
<td>0.110/0.243</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 5.08/0.2</td>
<td>TM3DI8G</td>
<td>0.095/0.209</td>
</tr>
<tr>
<td>16 inputs</td>
<td>24 V ≥ sink/source</td>
<td>Screw 3.81/0.15</td>
<td>TM3DI16</td>
<td>0.105/0.231</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3DI16G</td>
<td>0.095/0.209</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HE 10 connector –</td>
<td>(2) TM3DI16K</td>
<td>0.075/0.165</td>
</tr>
<tr>
<td>32 inputs</td>
<td>24 V ≥ sink/source</td>
<td>Screw 5.08/0.2</td>
<td>TM3DI32K</td>
<td>0.110/0.243</td>
</tr>
</tbody>
</table>

### Modicon TM3 digital output modules

<table>
<thead>
<tr>
<th>Number of logic outputs</th>
<th>Output type</th>
<th>Output current</th>
<th>Output terminal block (1)</th>
<th>References</th>
<th>Weight (kg/lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 outputs</td>
<td>Relay 2 A</td>
<td>24 V ≥ sink/source</td>
<td>Screw 5.08/0.2</td>
<td>TM3DQ8R</td>
<td>0.130/0.287</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 5.08/0.2</td>
<td>TM3DQ8RG</td>
<td>0.115/0.254</td>
<td></td>
</tr>
<tr>
<td>16 outputs</td>
<td>2 A</td>
<td>24 V ≥ sink/source</td>
<td>Screw 3.81/0.15</td>
<td>TM3DQ16R</td>
<td>0.140/0.309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3DQ16RG</td>
<td>0.130/0.287</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transistor, source 0.5 A</td>
<td>Screw 5.81/0.15</td>
<td>TM3DQ16T</td>
<td>0.105/0.231</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3DQ16TG</td>
<td>0.095/0.209</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HE 10 connector –</td>
<td>(2) TM3DQ16TK</td>
<td>0.075/0.165</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transistor, sink 0.5 A</td>
<td>Screw 3.81/0.15</td>
<td>TM3DQ16U</td>
<td>0.105/0.231</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3DQ16UG</td>
<td>0.095/0.209</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HE 10 connector –</td>
<td>(2) TM3DQ16UK</td>
<td>0.075/0.165</td>
<td></td>
</tr>
<tr>
<td>32 outputs</td>
<td>Transistor, source 0.1 A</td>
<td>Screw 5.81/0.15</td>
<td>TM3DQ32R</td>
<td>0.115/0.254</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3DQ32RG</td>
<td>0.115/0.254</td>
<td></td>
</tr>
</tbody>
</table>

### Modicon TM3 mixed digital I/O modules

<table>
<thead>
<tr>
<th>Number of logic I/O</th>
<th>Number and type of inputs</th>
<th>Number and type of outputs</th>
<th>I/O terminal block (1)</th>
<th>References</th>
<th>Weight (kg/lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inputs/outputs</td>
<td>4 x 24 V ≥ sink/source inputs</td>
<td>4 relay outputs, 2 A</td>
<td>Screw 5.08/0.2</td>
<td>TM3DM8R</td>
<td>0.120/0.265</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 5.08/0.2</td>
<td>TM3DM8RG</td>
<td>0.100/0.220</td>
<td></td>
</tr>
<tr>
<td>24 inputs/outputs</td>
<td>16 x 24 V ≥ sink/source inputs</td>
<td>8 relay outputs, 2 A</td>
<td>Screw 3.81/0.15</td>
<td>TM3DM24R</td>
<td>0.165/0.364</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3DM24RG</td>
<td>0.155/0.342</td>
<td></td>
</tr>
</tbody>
</table>

### Separate parts

<table>
<thead>
<tr>
<th>Designation</th>
<th>Description</th>
<th>Reference</th>
<th>Weight (kg/lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting kit</td>
<td>For plate or panel mounting of digital I/O modules</td>
<td>TMAM2</td>
<td>0.065/0.143</td>
</tr>
<tr>
<td>Set of I/O terminal blocks</td>
<td>4 x 10-way and 4 x 11-way removable screw terminal blocks for TM3DI16, TM3DQ16R, TM3DQ16T, and TM3DQ16U modules</td>
<td>TMAT2MSET</td>
<td>0.127/0.280</td>
</tr>
<tr>
<td></td>
<td>4 x 10-way and 4 x 11-way removable screw terminal blocks for 3DI16G, TM3DQ16R, TM3DQ16T, and TM3DQ16U modules</td>
<td>TMAT2MSETG</td>
<td>0.127/0.280</td>
</tr>
</tbody>
</table>

1. Removable screw or spring-type terminal blocks, supplied.
2. Modules compatible with the Modicon A/B/E7 Telefast pre-wired system (please refer to catalog ref. DIA3ED2160602EN (click link to open)).
## Selection guide

### Modicon TM3

I/O expansion modules for Modicon controllers

### Analog I/O modules

#### Applications

<table>
<thead>
<tr>
<th>Compatibility</th>
<th>Local and remote I/O</th>
<th>Distributed I/O</th>
</tr>
</thead>
</table>

#### Modicon TM3BC bus coupler module

#### Inputs

<table>
<thead>
<tr>
<th>Number</th>
<th>Type</th>
<th>Range</th>
<th>Resolution</th>
<th>Transfer time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 inputs</td>
<td>Voltage/current</td>
<td>-10…+10 VDC, 0…+10 VDC, 0…+20 mA, 4…20 mA</td>
<td>16 bits or 15 bits + sign</td>
<td>1 or 10 ms (configurable)</td>
</tr>
<tr>
<td>4 inputs</td>
<td>Voltage/current</td>
<td>-10…+10 VDC, 0…+10 VDC, 0…+20 mA, 4…20 mA</td>
<td>12 bits or 11 bits + sign</td>
<td>1 or 10 ms (configurable)</td>
</tr>
<tr>
<td>4 inputs</td>
<td>Voltage/current</td>
<td>-10…+10 VDC, 0…+10 VDC, 0…+20 mA, 4…20 mA</td>
<td>100 ms per channel</td>
<td>1 or 10 ms (configurable)</td>
</tr>
<tr>
<td>4 inputs</td>
<td>Temperature or voltage/current</td>
<td>Thermocouples (J, K, R, S, B, T, N, E, C), Thermocouples (J, K, R, S, B, T, N, E, C), non-isolated</td>
<td>16 bits or 15 bits + sign</td>
<td>1 or 10 ms (configurable)</td>
</tr>
</tbody>
</table>

#### Outputs

<table>
<thead>
<tr>
<th>Number</th>
<th>Type</th>
<th>Range</th>
<th>Resolution</th>
<th>Transfer time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 outputs</td>
<td>Voltage/current</td>
<td>-10…+10 VDC, 0…+10 VDC, 0…+20 mA, 4…20 mA</td>
<td>12 bits or 11 bits + sign</td>
<td>1 or 10 ms (configurable)</td>
</tr>
<tr>
<td>4 outputs</td>
<td>Voltage/current</td>
<td>-10…+10 VDC, 0…+10 VDC, 0…+20 mA, 4…20 mA</td>
<td>12 bits or 11 bits + sign</td>
<td>1 or 10 ms (configurable)</td>
</tr>
<tr>
<td>1 output</td>
<td>Temperature or voltage/current</td>
<td>Thermocouples (J, K, R, S, B, T, N, E, C), Temperature probes (RTD), (N100, N1000, PT100, PT1000), -10…+10 VDC, 0…+10 VDC, 0…+20 mA, 4…20 mA</td>
<td>16 bits or 15 bits + sign</td>
<td>1 or 10 ms (configurable)</td>
</tr>
<tr>
<td>2 outputs</td>
<td>Voltage/current</td>
<td>-10…+10 VDC, 0…+10 VDC, 0…+20 mA, 4…20 mA</td>
<td>12 bits or 11 bits + sign</td>
<td>1 or 10 ms (configurable)</td>
</tr>
</tbody>
</table>

#### Supply voltage

Via 24 V DC external power supply

#### Format

(W x H x D) mm (in)

23.6 x 90 x 70 (0.93 x 3.54 x 2.76)

#### Mounting

Mounting on symmetrical DIN rail L-J or panel using special mounting kit TMAM02

### Channels connected:

<table>
<thead>
<tr>
<th>Module</th>
<th>via removable screw terminal blocks at intervals of 5.08 mm (0.2 in.)</th>
<th>via removable screw terminal blocks at intervals of 3.81 mm (0.15 in.)</th>
<th>via removable spring terminal blocks at intervals of 3.81 mm (0.15 in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM3AI2H</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TM3AI4H</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TM3AI4I</td>
<td>TM3AI4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TM3AI4G</td>
<td>TM3AI4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TM3AI8H</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TM3AI8I</td>
<td>TM3AI8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TM3AI8I</td>
<td>TM3AI8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TM3AI8G</td>
<td>TM3AI8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TM3AI8G</td>
<td>TM3AI8</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### More technical information on www.schneider-electric.com
Modicon TM3
I/O expansion modules for Modicon controllers
Analog I/O modules

Presentation
- TM3AI●● and TM3T●● analog input modules are used to acquire various analog values (voltage, current, or temperature) in industrial applications.
- TM3T14D● analog input modules are used to acquire temperature values in industrial applications.
- TM3AQ●● analog output modules are used to control preactuators in physical units, such as variable speed drives or valves, and applications where process control is required.
- TM3TM●● and TM3AM●● mixed analog modules combine voltage/current or temperature inputs with one or two voltage/current outputs in the same unit.

When the controller stops, the outputs on each TM3 analog module can be configured to fall back (hold the last value or a specified value). This function, when set to "hold", is useful when debugging the application or when a fault is detected, in order not to disturb the process being controlled.

Breakdown of the offer
Analog I/O modules
- Modules with 2 to 8 analog inputs/outputs:
  - voltage/current or temperature inputs
  - temperature inputs
  - voltage/current outputs

Connections
- Screw-type or spring-type connectors at intervals of 5.08 mm (0.2 in.) for ease of wiring: identical to the connectors on Modicon M221 (TM221C●●●) and Modicon M241 (TM241C●●●) logic controllers
- Screw-type or spring-type connectors at intervals of 3.81 mm (0.15 in.) for compact dimensions: identical to the connectors on Modicon M221 Book (TM221M16●● and TM221ME16●●) logic controllers

Configuration
- Analog I/O modules connect to Modicon M221, M221 Book, M241, and M251 logic controllers and Modicon M262 logic/motion controller according to the general rules for the Modicon TM3 system: 7 local modules max. plus 7 remote modules.
- An external 24 V power supply is required for each Modicon TM3 analog module.
- The I/O modules are designed with isolation by an optocoupler between the internal electronics and the I/O channels.

Mounting
- Analog modules are mounted on a symmetrical DIN rail.
- 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 analog modules
1. Locking catch for the adjacent module
2. TM3 bus connectors (one on each side). These are designed to provide continuity of the link between connected modules.
3. Clip for locking on symmetrical DIN rail
4. Module power status LED
5. Removable spring or screw terminal blocks (depending on the model) for connecting the analog channels and the 24 V power supply (1)

(1) Removable terminal blocks supplied with each module.
## References

### Modicon TM3 analog input modules

<table>
<thead>
<tr>
<th>Number and type of channels</th>
<th>Input range</th>
<th>Output range</th>
<th>Resolution</th>
<th>Input terminal block/ reference</th>
<th>Reference</th>
<th>Weight kg/ lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 voltage/current inputs</td>
<td>-10...+10 VDC, 0...+10 VDC/0...20 mA, 0...20 mA</td>
<td>–</td>
<td>16 bits or 15 bits + sign</td>
<td>Screw 5.08/0.2</td>
<td>TM3AI2H</td>
<td>0.115/0.254</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 5.08/0.2</td>
<td>TM3AI2HG</td>
<td>0.100/0.220</td>
</tr>
<tr>
<td>4 voltage/current inputs</td>
<td>-10...+10 VDC, 0...+10 VDC/0...20 mA, 0...20 mA</td>
<td>–</td>
<td>12 bits or 11 bits + sign</td>
<td>Screw 3.81/0.15</td>
<td>TM3AI4</td>
<td>0.110/0.243</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3AI4G</td>
<td>0.100/0.220</td>
</tr>
<tr>
<td>4 voltage/current or temperature inputs (2)</td>
<td>Thermocouples (3) (J, K, R, S, B, T, N, E, C) - Temperature probes (RTDs) (N100, Ni1000, Pt100, Pt1000) -0...+10 VDC, 0...+10 VDC/0...20 mA, 0...20 mA</td>
<td>–</td>
<td>16 bits or 15 bits + sign</td>
<td>Screw 3.81/0.15</td>
<td>TM3TI4</td>
<td>0.110/0.243</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3TI4G</td>
<td>0.100/0.220</td>
</tr>
<tr>
<td>4 differential temperature inputs</td>
<td>Thermocouples (J, K, R, S, B, T, N, E, C), non-isolated</td>
<td>–</td>
<td>16 bits or 15 bits + sign</td>
<td>Screw 3.81/0.15</td>
<td>TM3TI4D</td>
<td>0.110/0.243</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3TI4DG</td>
<td>0.100/0.220</td>
</tr>
<tr>
<td>8 voltage/current inputs</td>
<td>-10...+10 VDC, 0...+10 VDC/0...20 mA, 0...20 mA</td>
<td>–</td>
<td>12 bits or 11 bits + sign</td>
<td>Screw 3.81/0.15</td>
<td>TM3AI8</td>
<td>0.110/0.243</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3AI8G</td>
<td>0.100/0.220</td>
</tr>
<tr>
<td>8 temperature inputs</td>
<td>Thermocouples (3) (J, K, R, S, B, T, N, E, C) - NTC and PTC thermistors</td>
<td>–</td>
<td>16 bits or 15 bits + sign</td>
<td>Screw 3.81/0.15</td>
<td>TM3TI8T</td>
<td>0.110/0.243</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3TI8TG</td>
<td>0.100/0.220</td>
</tr>
</tbody>
</table>

### Modicon TM3 analog output modules

<table>
<thead>
<tr>
<th>Number and type of channels</th>
<th>Input range</th>
<th>Output range</th>
<th>Resolution</th>
<th>Input terminal block/ reference</th>
<th>Reference</th>
<th>Weight kg/ lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 voltage/current outputs</td>
<td>–</td>
<td>-10...+10 VDC, 0...+10 VDC/0...20 mA, 0...20 mA</td>
<td>12 bits or 11 bits + sign</td>
<td>Screw 5.08/0.2</td>
<td>TM3AQ2</td>
<td>0.115/0.254</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 5.08/0.2</td>
<td>TM3AQ2G</td>
<td>0.100/0.220</td>
</tr>
<tr>
<td>4 voltage/current outputs</td>
<td>–</td>
<td>-10...+10 VDC, 0...+10 VDC/0...20 mA, 0...20 mA</td>
<td>12 bits or 11 bits + sign</td>
<td>Screw 5.08/0.2</td>
<td>TM3AQ4</td>
<td>0.115/0.254</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 5.08/0.2</td>
<td>TM3AQ4G</td>
<td>0.100/0.220</td>
</tr>
</tbody>
</table>

### Modicon TM3 mixed analog I/O modules

<table>
<thead>
<tr>
<th>Number and type of channels</th>
<th>Input range</th>
<th>Output range</th>
<th>Resolution</th>
<th>Input terminal block/ reference</th>
<th>Reference</th>
<th>Weight kg/ lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 temperature or voltage/current inputs (2) and 1 voltage/current output</td>
<td>Thermocouples (3) (J, K, R, S, B, T, N, E, C) - Temperature probes (RTDs) (N100, Ni1000, Pt100, Pt1000) -0...+10 VDC, 0...+10 VDC/0...20 mA, 0...20 mA</td>
<td>16 bits or 15 bits + sign</td>
<td>Screw 5.08/0.2</td>
<td>TM3TM3</td>
<td>0.115/0.254</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 5.08/0.2</td>
<td>TM3TM3G</td>
<td>0.100/0.220</td>
</tr>
<tr>
<td>4 voltage/current inputs and 2 voltage/current outputs</td>
<td>-10...+10 VDC, 0...+10 VDC/0...20 mA, 0...20 mA</td>
<td>12 bits or 11 bits + sign</td>
<td>Screw 3.81/0.15</td>
<td>TM3AM6</td>
<td>0.110/0.243</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3AM6G</td>
<td>0.100/0.220</td>
</tr>
</tbody>
</table>

### Separate parts

<table>
<thead>
<tr>
<th>Designation</th>
<th>Description</th>
<th>Unit reference</th>
<th>Weight kg/lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grounding plate</td>
<td>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)</td>
<td>TM2XMTGB</td>
<td>0.045/0.099</td>
</tr>
</tbody>
</table>

| Shielding connection clamps | Assembly and grounding of the cable shielding. Pack of 25 clamps including 20 for Ø 4.8 mm (0.189 in.) cable and 5 for Ø 7.9 mm (0.311 in.) cable | TM200RSRCEMC | – |

| Mounting kit | For mounting analog I/O modules on a plate or panel | TMAM2 | 0.065/0.143 |

| Set of I/O terminal blocks | 4 x 10-way and 4 x 11-way removable screw terminal blocks for TM3AI4, TM3TI4, TM3AI8, TM3TI8, and TM3AM6 modules | TMAT2MSET | 0.127/0.280  |
|                           | 4 x 10-way and 4 x 11-way removable spring terminal blocks for TM3AI4G, TM3TI4G, TM3AI8G, TM3TI8G, and TM3AM6G modules | TMAT2MSETG | 0.127/0.280  |

1. Removable terminal blocks supplied with each module.
2. Each input can be configured independently for temperature or voltage/current.
3. Use isolated thermocouples only.
# Selection guide

## 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

<table>
<thead>
<tr>
<th>Number of counter channels</th>
<th>10 fast inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conforming to IEC/EN 61131-2</td>
<td>Yes</td>
</tr>
<tr>
<td>Type of signal</td>
<td>Source or sink</td>
</tr>
<tr>
<td>Frequency per channel</td>
<td>200 kHz</td>
</tr>
<tr>
<td>Type of input</td>
<td>Type 1</td>
</tr>
<tr>
<td>Nominal input voltage</td>
<td>24 V DC, type 1</td>
</tr>
<tr>
<td>Voltage limit values</td>
<td>0...28.8 V</td>
</tr>
<tr>
<td>Resolution</td>
<td>32 signed bits</td>
</tr>
<tr>
<td>Acquisition time on capture</td>
<td>&lt; 3 µs</td>
</tr>
<tr>
<td>Event generation time to the PLC</td>
<td>–</td>
</tr>
</tbody>
</table>

#### Outputs

<table>
<thead>
<tr>
<th>Number</th>
<th>8 fast outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Source</td>
</tr>
<tr>
<td>Response on threshold</td>
<td>&lt; 10 µs</td>
</tr>
</tbody>
</table>

#### Supply voltage
- Via 24 V DC 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 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.)

### Compliance
- Type 1
- Device class 3
- Conforming to IEC/EN 61131-2

### Wiring

1. Source output: PNP output
2. Sink output: NPN output

---

More technical information on www.schneider-electric.com
**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: 10 x 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 <<< 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
- 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**

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
5. Screw terminal for the functional ground (FG) connection
6. Locking catch for the adjacent module

(1) Removable terminal blocks supplied with each module.
# References

## Modicon TM3 expert counter modules

<table>
<thead>
<tr>
<th>Module type</th>
<th>Inputs</th>
<th>Outputs</th>
<th>Input terminal block (1)</th>
<th>Reference</th>
<th>Weight kg/lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-speed counter</td>
<td>10 fast inputs</td>
<td>8 fast outputs</td>
<td>Screw 3.81/0.15</td>
<td>TM3XHSC202</td>
<td>0.150/0.330</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3XHSC202G</td>
<td>0.150/0.330</td>
</tr>
<tr>
<td>High-speed counter with event management</td>
<td>10 fast inputs</td>
<td>8 fast outputs</td>
<td>Screw 3.81/0.15</td>
<td>TM3XFHSC202</td>
<td>0.150/0.330</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Spring 3.81/0.15</td>
<td>TM3XFHSC202G</td>
<td>0.150/0.330</td>
</tr>
</tbody>
</table>

## Separate parts

<table>
<thead>
<tr>
<th>Designation</th>
<th>Description</th>
<th>Unit reference</th>
<th>Weight kg/lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grounding plate</td>
<td>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)</td>
<td>TM2XMTGB</td>
<td>0.045/0.099</td>
</tr>
<tr>
<td>Mounting kit</td>
<td>For mounting expert modules on a plate or panel</td>
<td>TMAM2</td>
<td>0.065/0.143</td>
</tr>
<tr>
<td>Set of I/O terminal blocks</td>
<td>2 screw terminal blocks</td>
<td>TMA262SET8S</td>
<td>0.127/0.280</td>
</tr>
<tr>
<td></td>
<td>2 spring terminal blocks</td>
<td>TMA262SET8S</td>
<td>0.127/0.280</td>
</tr>
</tbody>
</table>

(1) Removable terminal blocks supplied with each module.

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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 LU9Rxxx 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.
- For plate or panel mounting, use the TMAM2 kit.

Connection cables
1. Length: 0.3 m (0.98 in) LU9R03
2. Length: 1 m (3.28 in) LU9R10
3. Length: 3 m (9.84 in) LU9R30

Modicon TM3 module
1. Modicon TM3 TM3XTYS4

TeSys U
3. Power base LUB120 or LUB320 LU2B12BL or LU2B32BL
4. Control unit 24 V LUCALUCB/LUCC/LUCDBL LUCALUCB/LUCC/LUCDBL
5. Terminal block LU9BN11C LU9MRC
6. Parallel wiring module LUFC00 LUFC00

For more information about TeSys U motor starter applications, visit our website www.schneider-electric.com.
Modicon TM3
I/O expansion modules for Modicon controllers
Expert module for TeSys U motor starter applications

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 supply for the inputs and starter coils (1)
4. Clip for locking on symmetrical DIN rail
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

<table>
<thead>
<tr>
<th>Designation</th>
<th>Description</th>
<th>Reference</th>
<th>Weight kg/lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert module for controlling TeSys U motor starters</td>
<td>4 motor starters</td>
<td>TM3XTYS4</td>
<td>0.115/0.254</td>
</tr>
<tr>
<td>Separate parts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting kit</td>
<td>Sold in lots of 10</td>
<td>For mounting expert modules on a plate or panel</td>
<td>TMAM2</td>
</tr>
</tbody>
</table>

(1) The module is supplied with a removable screw terminal block for connecting the power supply.
Modicon TM3
I/O expansion modules for Modicon controllers
Modicon TM3 bus expansion system: transmitter and receiver modules

Presentation
TM3 transmitter and receiver modules can be used to:
- Increase the number of TM3 I/O expansion modules that can be connected to an M2 logic controller or Modicon M262 logic/motion controller from 7 to 14
- Locate Modicon TM3 expansion modules remotely, up to 5 m (16.404 ft) away

The transmitter module and receiver module are physically connected by a bus expansion cable, reference VDIP184546, or any other Cat 5E, F/UT cable.

Mounting
- TM3 bus expansion modules are mounted on a symmetrical DIN rail.
- For plate or panel mounting, use the TMAM2 kit.

Description
TM3XTRA1 transmitter module
1 Block with 2 LEDs displaying communication and power supply status
2 RJ45 connector for the VDIP184546 bus expansion cable, or any other shielded Cat 5E, F/UT cable
3 Screw terminal for the functional ground (FG) connection
4 Clip for locking on symmetrical DIN rail
5 TM3 bus connector providing continuity of the link with the connected module
6 Locking catch for the adjacent module

TM3XREC1 receiver module
1 Block with 2 LEDs displaying communication and power supply status
2 RJ45 connector for the VDIP184546 bus expansion cable, or any other shielded Cat 5E, F/UT cable
3 Slot for screw terminal block for connecting the power supply
4 Clip for locking on symmetrical DIN rail
5 TM3 bus connector providing continuity of the link with the connected module
6 Locking catch for the adjacent module

(1) Removable terminal block supplied with each module.
Modicon TM3
I/O expansion modules for Modicon controllers
Modicon TM3 bus expansion modules: transmitter and receiver modules

References

<table>
<thead>
<tr>
<th>Modicon TM3 bus expansion system</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Designation</strong></td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>Transmitter module</td>
</tr>
<tr>
<td>Receiver module</td>
</tr>
</tbody>
</table>

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

Accessory for transmitter module

<table>
<thead>
<tr>
<th>Designation</th>
<th>Characteristics</th>
<th>Length m (ft)</th>
<th>Reference</th>
<th>Weight kg/ lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional ground cable</td>
<td>Functional ground for the TM3XTRA1 transmitter module</td>
<td>0.12 (0.39)</td>
<td>Cable supplied with the TM3XTRA1 transmitter module</td>
<td></td>
</tr>
</tbody>
</table>

Connection cables for CE market

<table>
<thead>
<tr>
<th>Designation</th>
<th>Used for</th>
<th>Length m (ft)</th>
<th>Reference</th>
<th>Weight kg/ lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shielded category 5E TM3 bus expansion cables</td>
<td>TM3 bus expansion by linking transmitter and receiver modules</td>
<td>0.5 (1.64)</td>
<td>VDIP184546005</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Equipped with an RJ45 connector at each end</td>
<td>1 (3.28)</td>
<td>VDIP184546010</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 (6.56)</td>
<td>VDIP184546020</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 (9.84)</td>
<td>VDIP184546030</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 (16.40)</td>
<td>VDIP184546050</td>
<td>-</td>
</tr>
</tbody>
</table>

Connection cables for UL market

<table>
<thead>
<tr>
<th>Designation</th>
<th>Used for</th>
<th>Length m (ft)</th>
<th>Reference</th>
<th>Weight kg/ lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shielded twisted pair TM3 bus expansion cables, UL compatible</td>
<td>TM3 bus expansion by linking transmitter and receiver modules</td>
<td>2 (6.56)</td>
<td>490NTW00002U</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Equipped with an RJ45 connector at each end</td>
<td>5 (16.40)</td>
<td>490NTW00005U</td>
<td>-</td>
</tr>
</tbody>
</table>

Replacement parts

<table>
<thead>
<tr>
<th>Designation</th>
<th>Description</th>
<th>Unit reference</th>
<th>Weight kg/ lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting kit</td>
<td>For mounting bus expansion modules on a plate or panel</td>
<td>TMAM2</td>
<td>0.065/0.143</td>
</tr>
<tr>
<td>Set of power supply terminal blocks</td>
<td>8 removable screw terminal blocks</td>
<td>TMAT2PSET</td>
<td>0.127/0.280</td>
</tr>
</tbody>
</table>
## Selection guide

**Modicon TM3**

I/O expansion modules for Modicon controllers

Functional safety modules (powered by **Preventa** technology)

<table>
<thead>
<tr>
<th>Safety application</th>
<th>Control of Emergency stop and switches</th>
<th>Control of Emergency stop and switches</th>
<th>Control of Emergency stop, switches, solid-state output safety light curtains, and pressure sensors with PNP+PNP outputs</th>
<th>Control of Emergency stop, switches, pressure-sensitive mats and edges, solid-state output safety light curtains, and pressure sensors with PNP+PNP or PNP+NPN outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatibility</td>
<td>Local and remote I/O</td>
<td>Distributed I/O</td>
<td>Modicon M221/M221 Book/M241/M251 logic controllers</td>
<td>Modicon TM3BC bus coupler module</td>
</tr>
</tbody>
</table>

### Maximum achievable safety level

- PL d/Category 3 conforming to EN ISO 13849-1
- SIL CL2 conforming to EN IEC 62061
- PL e/Category 4 conforming to EN ISO 13849-1
- SIL CL3 conforming to EN IEC 62061

### Standards (product)

- EN/IEC 60947-1
- EN/IEC 60947-5-1
- EN/IEC 60947-1
- EN/IEC 60947-5-1

### Standards (machine assembly)

- EN/IEC 61496-1
- EN/ISO 13850
- EN/IEC 61496-1
- EN/ISO 13850
- EN/IEC 61496-1
- EN/ISO 13850
- EN/IEC 61496-1
- EN/ISO 13850

### Switches in protection devices

- Type 4 light curtains equipped with solid-state safety outputs with test function
- 4-wire pressure-sensitive mats or edges
- Also designed for use with equipment conforming to EN IEC 61496-1 up to type 4
- Also designed for use with equipment conforming to EN 1760-1

### Product certifications

- UL, CSA, TUV, EAC, RCM
- UL, CSA, TUV, EAC, RCM
- UL, CSA, TUV, EAC, RCM

### Safety circuits

- Number: 3 NO
- Type: Instantaneous opening relay
- Module fuse protection: Internal, electronic
- Power supply: 24 V
- Synchronization time between inputs: Unlimited
- Input channel voltage: 24 V
- Safety module: TM3SAC5R, TM3SAF5R, TM3SAF5RG, TM3SAK6R, TM3SAK6RG

More technical information on www.schneider-electric.com

Available Q1 2019
Modicon TM3
I/O expansion modules for Modicon controllers
Functional safety modules *(powered by Preventa technology)*

**Presentation**

Modicon TM3 functional safety modules are designed using Preventa technology. They can be used to incorporate machine safety into the overall machine control.

**Data acquisition: control of safety products**
- Emergency stop button: complementary protection measures
- Monitoring devices used in protection systems to control access to hazardous areas
- Light curtains and safety mats to detect intrusion into hazardous areas

**Monitoring and processing**
- Modicon TM3 functional safety modules control the input signals from monitoring devices and act as an interface with contactors and variable speed drives, causing the machine to stop.
- Modicon TM3 functional safety modules complement the embedded I/O on Modicon M221, M221 Book, M241, and M251 logic controllers and Modicon M262 logic/motion controller.

<table>
<thead>
<tr>
<th>Functional safety modules</th>
<th>Safety system/Performance level reached</th>
</tr>
</thead>
<tbody>
<tr>
<td>For control of Emergency stops</td>
<td>Category 4/PL e, SIL3 architecture</td>
</tr>
<tr>
<td><img src="#" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td>For control of switches</td>
<td>Category 4/PL e, SIL3 architecture</td>
</tr>
<tr>
<td><img src="#" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td>For control of type 4 light curtains</td>
<td>Category 4/PL e, SIL3 architecture</td>
</tr>
<tr>
<td><img src="#" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td>For control of pressure-sensitive mats or edges</td>
<td>Category 4/PL e, SIL3 architecture</td>
</tr>
<tr>
<td><img src="#" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Diagram" /></td>
<td></td>
</tr>
</tbody>
</table>

- The safety outputs available on all 4 modules are relay type, guided by microprocessor technology.
- Diagnostic utilities use the LEDs on the front of the module, which provide information on the monitoring circuit status.
- The diagnostic information is shared via the TM3 bus.
- The Start button monitoring function is configurable depending on the wiring.

**Connections**

Equipped with removable screw or spring-type terminals (depending on the model) for connecting the safety channels.

**Configuration**

Modicon TM3 functional safety modules connect 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**

- Modicon TM3 functional safety modules are mounted on a symmetrical DIN rail.
- For plate or panel mounting, use the TMAM2 kit.
Presentation, description, references

Modicon TM3
I/O expansion modules for Modicon controllers
Functional safety modules (powered by Preventa technology)

Description
Modicon TM3 functional safety modules
1. Locking catch for the adjacent module
2. TM3 bus connectors (one on each side). These are designed to provide continuity of the link between connected modules.
3. Clip for locking on symmetrical DIN rail
4. Display block (6 or 8 (1) green/red LEDs) for the module channel status and diagnostics
5. Removable spring or screw-type terminal blocks (depending on the model) for connecting the safety channels and the power supply

References

<table>
<thead>
<tr>
<th>Designation</th>
<th>Maximum achievable safety level</th>
<th>Input terminal block (2)</th>
<th>Reference</th>
<th>Weight kg/lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 V power supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional safety modules for control of: - Emergency stop - switches</td>
<td>PL d/Category 3 conforming to EN/ISO 13849-1 SIL CL2 conforming to EN/IEC 62061</td>
<td>Screw TM3SAC5R</td>
<td>0.190/0.420</td>
<td></td>
</tr>
<tr>
<td>Functional safety modules for control of: - Emergency stop - switches</td>
<td>PL e/Category 4 conforming to EN/ISO 13849-1 SIL CL3 conforming to EN/IEC 62061</td>
<td>Screw TM3SAF5R</td>
<td>0.190/0.420</td>
<td></td>
</tr>
<tr>
<td>Functional safety modules for control of: - Emergency stop - switches - safety light curtains with solid-state outputs</td>
<td>PL d/Category 3 conforming to EN/ISO 13849-1 SIL CL2 conforming to EN/IEC 62061</td>
<td>Screw TM3SAF5R</td>
<td>0.190/0.420</td>
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<tr>
<td>Functional safety modules for control of: - Emergency stop - switches - safety light curtains with solid-state outputs - pressure-sensitive mats or edges</td>
<td>PL e/Category 4 conforming to EN/ISO 13849-1 SIL CL3 conforming to EN/IEC 62061</td>
<td>Screw TM3SAF5R</td>
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Separate parts

<table>
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<tr>
<th>Designation</th>
<th>Description</th>
<th>Reference</th>
<th>Weight kg/lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting kit</td>
<td>For mounting functional safety modules on a plate or panel</td>
<td>TMAM2</td>
<td>0.065/0.143</td>
</tr>
</tbody>
</table>

(1) Depending on the model.
(2) Removable screw or spring-type terminal blocks, supplied with the safety module.
The TM3BCEIP bus coupler module is used to create distributed I/O islands, managed by a master controller via the Ethernet communication network, and to exchange data using the EtherNet/IP and Modbus/TCP protocols between the controllers and the distributed I/O on the Ethernet network. It is compatible with Modicon M221 (1), M241, and M251 logic controllers and Modicon M262 logic/motion controller.

**Specific features**
- Embedded Web server
- Embedded cybersecurity (Achilles L1) and user access rights management via a Web server
- Two isolated RJ45 ports on the front of the module for communication over Ethernet (the second port can be connected to other devices in a daisy chain or ring topology)
- Ethernet half duplex/full duplex service, autonegotiation, and auto-MDIX supported
- 10/100 Mbps data transfer rate (physical layer interface in RMII mode, with automatic cable detection supported)

**Ethernet services**
- EtherNet/IP Adapter
- Modbus TCP/IP server
- EtherNet/IP protocol version: IPv4, limited use of IPv6 (only default @)
- RSTP ring topology supported
- Simple Network Management Protocol (SNMP)
- Devices Profile for Web Services (DPWS)
- FDR client
- DHCP client
- BOOTP client
- Address conflict detection

**Configuration**
The TM3BCEIP bus coupler module connects to Modicon M241 and Modicon 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 or distributed modules.

**Format**
W x H x D: 27 x 90 x 70 mm (0.93 x 3.54 x 2.76 in.)

**Mounting**
- The TM3BCEIP bus coupler module is mounted on a symmetrical DIN rail.
- For plate or panel mounting, use the TMAM2 kit.

---

(1) Compatible with Modicon M221 logic controllers in Q1 2020
▲ Availability: Q1 2020
**Description**

1. Device ID QR code, also provides access to technical documentation
2. Block of status LEDs for the power supply, module, network, and I/O
3. Clip for locking on symmetrical DIN rail
4. Removable terminal block for connecting the integrated power supply (24 V) and functional ground (1)
5. TM3 bus connector providing continuity of the link with the connected module
6. Locking catch for the adjacent module
7. Two thumbwheels for I/O island addressing purposes
8. Two Ethernet ports: isolated RJ45 connectors for the Ethernet network connection, for firmware updates and accessing the Web server and configuration parameters
9. USB-B port for firmware updates and accessing the Web server and configuration parameters (2)

**References**

<table>
<thead>
<tr>
<th>Bus coupler module</th>
<th>Characteristics</th>
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<td>for Ethernet network</td>
<td>EtherNet/IP and Modbus TCP protocols</td>
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**Replacement parts**

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<tbody>
<tr>
<td>Mounting kit</td>
<td>For mounting TM3BCEIP modules on a plate or panel</td>
<td>TMAM2</td>
<td>0.065/0.143</td>
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<tr>
<td>Set of power supply terminal blocks</td>
<td>8 removable screw terminal blocks</td>
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**Configuration software**

EcoStruxure Machine Expert software (please refer to catalog ref. DIA3ED2180701EN)

(1) The module is supplied with a removable screw terminal block for connecting the power supply.
(2) TM3BCEIP is configurable only with EcoStruxure Machine Expert software. The Web server I/O configurator function will be available in Q1 2020.
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<thead>
<tr>
<th>Index</th>
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<tbody>
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<td><strong>I/O expansion modules for Modicon controllers</strong></td>
<td><strong>Product reference index</strong></td>
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