Improve your machine performance

Modicon M258
Performance Logic Controller
Are you looking for performance control solutions for machines requiring flexible and scalable I/O
Improve your machine performance with the Modicon M258 logic controller
Improve your machine performance while reducing your wiring & assembly costs

- The Modicon™ M258 Logic Controller is a compact, high-performance, and fully expandable PLC.

- With features such as speed control, counting, axis control, and communication functions, the Modicon M258 Logic Controller is developed specifically for machine builders (OEMs) in the packaging, conveying/storage, textile, and woodworking machine industries.
Imagine what total flexibility can do for your business…

- With the Modicon M258 logic controller:
  - Integrated machine flexibility
  - Local I/Os flexibility up to 250 I/Os modules
  - Remote / Distributed I/Os flexibility
  - SoMachine software
  - L programming language (IEC)
  - Tested, Validated, Documented Architectures (TVDA)
  - Wiring
  - Assembly
  - Commissioning

- Improve machine performance
- Enhance machine flexibility
- Speed up machine design
- Achieve 30% savings
Why select the Modicon M258 logic controller
Improve your machine performance with a high-performance PLC

- Improve your machine performance…
  - Basic processing time: 22 ns/Inst
  - Programme memory: 128 K instructions
  - RAM: 64 Mb
  - Flash memory: 128 Mb
  - 8 embedded high-speed counters (200 kHz each)
  - Capacity to manage up to 2400 I/Os
  - More than 45,000 Boolean instructions per ms

- … & openness
  - Embedded serial link and Ethernet port on all references
  - Embedded CANopen master depending on the reference
Improve your machine performance with embedded communication…

1. **Embedded Ethernet: Performance and openness**
   > 10/100 Mb
   > Available protocols:
   > • Ethernet IP device
   > • Ethernet TCP Modbus
   > • SoMachine protocol
   > +
   > • FTP server embedded
   > • Web server embedded

2. **Embedded CANopen Master**
   > Flexibility for your distributed architectures:
   > • Up to 63 slaves
   > • Up to 1 Mb
   > > Speed up machine design:
   > • CANopen configurator in SoMachine software
   > • PLCopen motion libraries

3. **Embedded serial line**
   > Openness thanks to two standard protocols:
   > • Modbus Master/slave
   > • Character RS232 or RS485
   > > Data Terminal Equipment (DTE: printer, bar code scanner…)
   > > Cordset for Data Communication Equipment (DCE: modem, converter…)

…whilst reducing size & costs
Enhance your machine flexibility

● In association with our Modicon™ TM5 and TM7 modular I/O systems, the Modicon M258 offers a maximum flexibility and provides total design freedom by allowing:
  ● local,
  ● remote or
  ● distributed automation architectures…

… with the same I/O modules & a total transparency with SoMachine software
Local flexibility
The cost of a compact controller / the flexibility of a modular controller

I/O expansions

> Compact I/O modules:
  - Low cost
  - High density

> Slice I/O modules:
  - Modularity from 2 to 12 channels

> Removable terminal blocks
> Spring terminals
> Hot swap

> Compact I/O modules
  - From 20 to 42 I/Os digital and / or analog

> Saving space
  - 62.5 mm long

> Slice I/O modules
  - From 2 to 12 I/Os digital, analog, expert

> Saving space
  - 12.5 mm long
Remote flexibility
Remote I/O synchronized with local I/O

- Due to its backplane bus management, the Modicon TM5/TM7 system can be used to control I/O remotely.

- The maximum distance between two remote islands is 100 m and the maximum number of islands is 25, i.e. a total distance of up to 2500 m.

- Synchronization of all data acquisition, since all the expansion modules are on the same backplane bus.
Distributed flexibility
To match accurately the topology of the machine & reduce wiring costs

- The Modicon TM5 (IP20) and Modicon TM7 (IP67) modular I/O systems enable the connection of distributed I/O islands (sensors & actuators) that are distributed over machines via the CANopen fieldbus

- Flexible and scalable I/O configuration
Integrated machine flexibility
For evolutive configurations

- **High-speed counting:**
  - 8 integrated high-speed counters at 200 kHz each
  - A complete range of counting expansion modules

- **Inverter control**
  - Through built-in Modbus serial line
  - Through built-in CANopen Master

- **Positioning**
  - Through built-in CANopen Master and PLCopen function blocks

- **Temperature control**
  - Through a wide range of temperature modules and integrated regulation function blocks
Speed up machine design with SoMachine software suite

- **SoMachine™ software:**
  - 6 Programming Languages (IEC 61131-3)
  - Function blocks
  - Tested, Validated, Documented (TVD) architectures included
  - Maximize operation and reduce maintenance
  - Diagnosis through transparency and remote access

- **Two standard USB ports:**
  - Mini-USB B port for SoMachine programming software
  - USB-A port for memory key for programme, firmware, data files transfer speed: 480 Mbits/s
With the Modicon M258

- Improve your machine performance by using an open and high-performance PLC

- Enhance maximum flexibility with local, remote & distributed automation architectures possibilities

- Speed up machine design by using only one software, ready-to-use TVD architectures and ready-to-use Function Blocks

Save 30% in assembly, wiring and commissioning time
## Modicon M258 motion controller compact bases

<table>
<thead>
<tr>
<th>Power supply</th>
<th>24 VDC</th>
<th>24 VDC</th>
<th>24 VDC</th>
<th>24 VDC</th>
<th>24 VDC</th>
<th>24 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet (1)</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
</tr>
<tr>
<td>CANopen Master</td>
<td>-</td>
<td>-</td>
<td>1 (Sub-D9)</td>
<td>1 (Sub-D9)</td>
<td>1 (Sub-D9)</td>
<td>1 (Sub-D9)</td>
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<tr>
<td>Serial link</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
</tr>
<tr>
<td>USB Ports (USB A - USB mini-B)</td>
<td>1-1</td>
<td>1-1</td>
<td>1-1</td>
<td>1-1</td>
<td>1-1</td>
<td>1-1</td>
</tr>
<tr>
<td>PCI slots (2)</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Digital inputs</td>
<td>26/24 VDC - 8/200 kHz</td>
<td>26/24 VDC - 8/200 kHz</td>
<td>26/24 VDC - 8/200 kHz</td>
<td>26/24 VDC - 8/200 kHz</td>
<td>26/24 VDC - 8/200 kHz</td>
<td>38/24 VDC - 8/200 kHz</td>
</tr>
<tr>
<td>Digital outputs</td>
<td>16 Trans 0.5A</td>
<td>16 Trans 0.5A</td>
<td>16 Trans 0.5A</td>
<td>4 trans 0.5A / 12 Relays</td>
<td>16 Trans 0.5A</td>
<td>28 Trans 0.5A</td>
</tr>
<tr>
<td>Analog inputs</td>
<td>-</td>
<td>4 Inputs / 0-20mA / 4-20mA / -10V/+10V</td>
<td>-</td>
<td>-</td>
<td>4 Inputs / 0-20mA / 4-20mA / -10V/+10V</td>
<td>4 Inputs / 0-20mA / 4-20mA / -10V/+10V</td>
</tr>
<tr>
<td>Max. number of expansions</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>References</td>
<td>TM258LD42DT</td>
<td>TM258LD42DT4L</td>
<td>TM258LF42DT</td>
<td>TM258LF42DR</td>
<td>TM258LF42DT4L</td>
<td>TM258LF66DT4L</td>
</tr>
</tbody>
</table>

1. TCP Modbus - Ethernet-IP Device - Server Web/FTP
2. Optional Communication modules:
   1 (RS232): TM5PCRS2 / 1 (RS485): TM5PCRS4
## Expansion modules

### Compact I/O expansion modules

<table>
<thead>
<tr>
<th>Power supply</th>
<th>24 VDC</th>
<th>24 VDC</th>
<th>24 VDC</th>
<th>24 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital in</td>
<td>12 Inputs - 24 VDC</td>
<td>24 Inputs - 24 VDC</td>
<td>24 Inputs - 24 VDC</td>
<td>12 Inputs - 24 VDC</td>
</tr>
<tr>
<td>Digital and relays outputs</td>
<td>8 Outputs - Trans 0.5A</td>
<td>12 Relays outputs - 0.5A</td>
<td>18 Outputs - Trans 0.5A</td>
<td>6 Outputs - Trans 0.5A</td>
</tr>
<tr>
<td>Analog inputs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4 Inputs / 0-20mA / 4-20mA / -10V/+10V</td>
</tr>
<tr>
<td>Analog outputs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2 Outputs / 0-20mA / -10V/+10V</td>
</tr>
<tr>
<td>References</td>
<td>TM5C12D8T</td>
<td>TM5C24D12R</td>
<td>TM5C24D18T</td>
<td>TM5C12D6T6L</td>
</tr>
</tbody>
</table>

### Digital I/O expansion modules

<table>
<thead>
<tr>
<th>Number of digital inputs and/or outputs</th>
<th>2 Channels</th>
<th>4 Channels</th>
<th>6 Channels</th>
<th>8 Channels</th>
<th>12 Channels</th>
<th>8 Inputs / 4 Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>Removable spring terminal block</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 VDC sink/source inputs</td>
<td>TM5SDI2D</td>
<td>TM5SDI4D</td>
<td>TM5SDI6D</td>
<td>-</td>
<td>TM5SDI12D</td>
<td>-</td>
</tr>
<tr>
<td>100-240 VAC inputs</td>
<td>TM5SDI2A</td>
<td>TM5SDI4A</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>100-120 VAC inputs</td>
<td>-</td>
<td>-</td>
<td>TM5SDI6U</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>0.5A Source transistor outputs</td>
<td>TM5SDDO2T</td>
<td>TM5SDDO4T</td>
<td>TM5SDDO6T</td>
<td>-</td>
<td>TM5SDDO12T</td>
<td>-</td>
</tr>
<tr>
<td>2A Source transistor outputs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>TM5SDDO8TA</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Relay outputs</td>
<td>TM5SDDO2R</td>
<td>TM5SDDO4R</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>30VDC/230VAC relay outputs + 5A relay</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>24 VDC sink/source inputs + 0.5A relay outputs</td>
<td>TM5SDDO2S</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Analog expansion modules

<table>
<thead>
<tr>
<th>Number of digital inputs and/or outputs</th>
<th>2 Inputs</th>
<th>4 Inputs</th>
<th>6 Inputs</th>
<th>2 Outputs</th>
<th>4 Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>Removable spring terminal block</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>±10V/0-20mA/4-20mA inputs - 12 bits</td>
<td>TM5SAI2L</td>
<td>TM5SAI4L</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>±10V/0-20mA/4-20mA inputs - 16 bits</td>
<td>TM5SAI2H</td>
<td>TM5SAI4H</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>±10V/0-20mA outputs - 12 bits</td>
<td>-</td>
<td>-</td>
<td>TM5SAO2L</td>
<td>TM5SAO4L</td>
<td>-</td>
</tr>
<tr>
<td>±10V/0-20mA outputs - 16 bits</td>
<td>-</td>
<td>-</td>
<td>TM5SAO2H</td>
<td>TM5SAO4H</td>
<td>-</td>
</tr>
<tr>
<td>J/K/S/N thermo-couple inputs – 16 bits</td>
<td>TM5SAI2TH</td>
<td>-</td>
<td>TM5SAI6TH</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PT100/1000 inputs - 16 bits</td>
<td>TM5SAI2PH</td>
<td>TM5SAI4PH</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Expert modules

<table>
<thead>
<tr>
<th>Number of digital inputs and/or outputs</th>
<th>1 Channel / 100 kHz</th>
<th>1 Channel / 250 kHz</th>
<th>1 Channel / SSI 1 Mb</th>
<th>2 Channels / 100 kHz</th>
<th>2 Channels / 50 kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event counting interval measurement</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2 x 24V DC auxiliary inputs 24V DC encoder power supply</td>
<td>TM5SE1IC01024</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2 x 24V DC auxiliary inputs 5V DC encoder power supply</td>
<td>-</td>
<td>TM5SE102505</td>
<td>-</td>
<td>TM5SE1SC10005</td>
<td>-</td>
</tr>
</tbody>
</table>
Make the most of your energy