

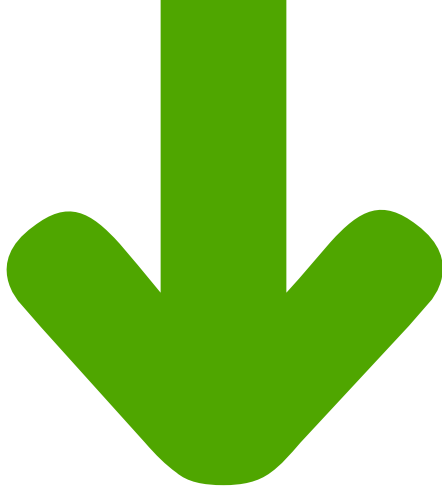
An optimized solution for your small automation systems

Modicon M238

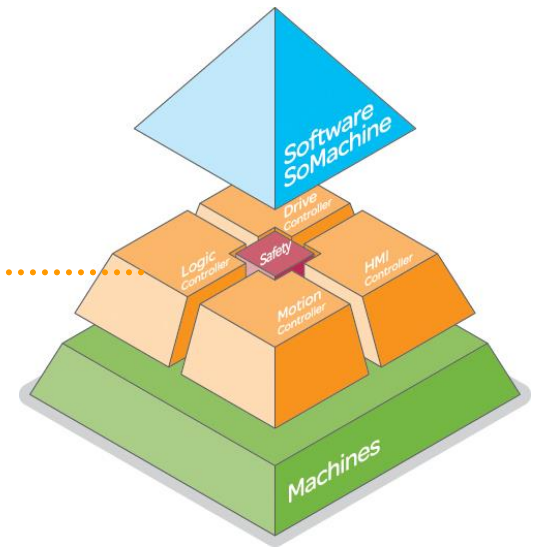
Optimized Logic Controller

Are you looking
for optimized
control solutions
for your small
automation systems
requiring 20 to 80 I/O





Optimized cost/
performance
solution
with the Modicon
M238 logic
controller



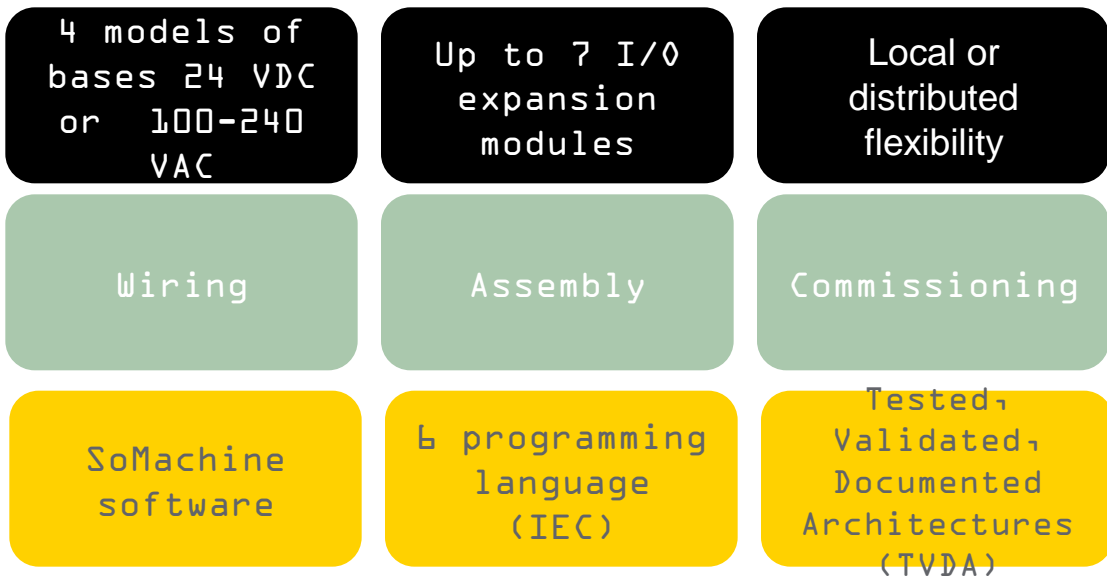
SoMachine

A power centre at the service of your machines

- The Modicon™ M238 Logic Controller is a **compact** and **optimized** PLC that provide **power and flexibility** in your **small automation systems**.
- Based on **high speed counting** and **simple positioning features**, the Modicon M238 offer an “all-in-one” solution in a compact unit. **Fully expandable**, the Modicon M238 Logic Controller is developed specifically for machine builders (OEMs) for small and repetitive machines indifferent field as the packaging and conveying/storage industries.

The best optimized cost/performance control solution for your simple machines

- With the Modicon M238 logic controller:



Optimize your machine performance

Reach optimum flexibility & configuration

Achieve 30% savings

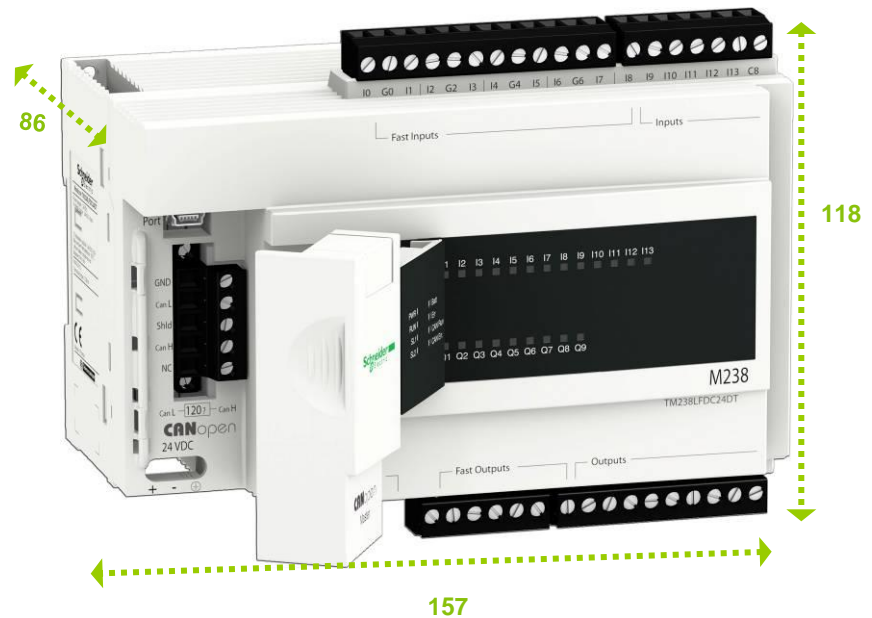
Speed up machine design

**Why select
the Modicon
M238 logic
controller**



Compact and economical

- Optimized performance in a minimum volume
 - Compact bases with 24 digital IO embedded
 - Removable connection
 - Ready to use feature embedded (Counting and regulation, communication, memory...)
 - Library of ready-to-use functions blocs (move velocity, stop, move relative, homing...)
- Expandable up to 7 expansion modules (up to 248 I/O) to choice among a wide range



Optimize your machine performance with high level embedded functions

● Powerful features

- Out-standing time cycles
- 4 embedded PWM outputs to control static's relays (heating regulation...)
- 8 configurable fast inputs: counting up/down, frequency meter, event task, reflex outputs
- 2 embedded serial lines
- Motion functions blocks
- Up to 800 Kbytes user memory
- Extended memory
- Capacity to manage up to 248 I/Os

● Features for simple axis motion control

- 4 PTO outputs and 8 channels HSC up to 100kHz with reflex outputs
- CAN Bus capability for multi-independent motion axes

+ integration



> Closer to your core business...

- Pilot your servo motor or synchronous motors efficiently using integrated business functions (application function blocks, motion function blocks) and dedicated function blocks (fast counting HSC, PTO* Pulse Train Output, PWM* Pulse Width Modulation)
- Guaranty the accuracy of your machines thanks to the monitoring of the reflex actions

** only for 24 VDC models*

Optimize your machine performance with embedded communications

- 1 USB port
- 2 serial links RS232/RS485
- A CANopen bus master link (depending on model)
- Link to the upper level via Ethernet gateway or XBTGT/GK capability

+ communication



> Pilot control equipment...

- Opt for fast exchanges with **CANopen**
Its openness also provides access to efficient and fast communication with numerous products

> Exchange data easily...

- Communicate with your automation equipment such as XBT graphic terminals, ATV variable speed controllers or monitor your equipment remotely via integrated communication ports

Reach optimum flexibility & configuration

- Adapt your configuration to perfectly suit your needs with powerful, efficient and economical expansion modules



- **4 types of controller base configuration**
24 VDC or 100-240 VAC offer



- **Digital** expansion module
- **Analogue** expansion module for measurement values (PT 100/PT 1000 temperature Current Voltage)
- **AS-Interface** expansion module (up to 2 modules)
- **Fast counting** expansion module (up to 3 modules) for measurement values (frequency speed....)

Extensive cabling flexibility through a large offer of expansion modules

- In association with our **Modicon™ TM2 I/O expansion modules**, the Modicon M238 offers a **maximum flexibility** and provides **total design freedom** by allowing:

- **Local** or
- **distributed** automation architectures...

... with the same I/O modules & a total transparency with SoMachine software



A wide I/O expansion modules offer...

15 digital I/O modules

12 analogue I/O modules (U, I, T°)

2 expert I/O modules (HSC)

...with several connection options



HE10 connector



Removable screw terminal block



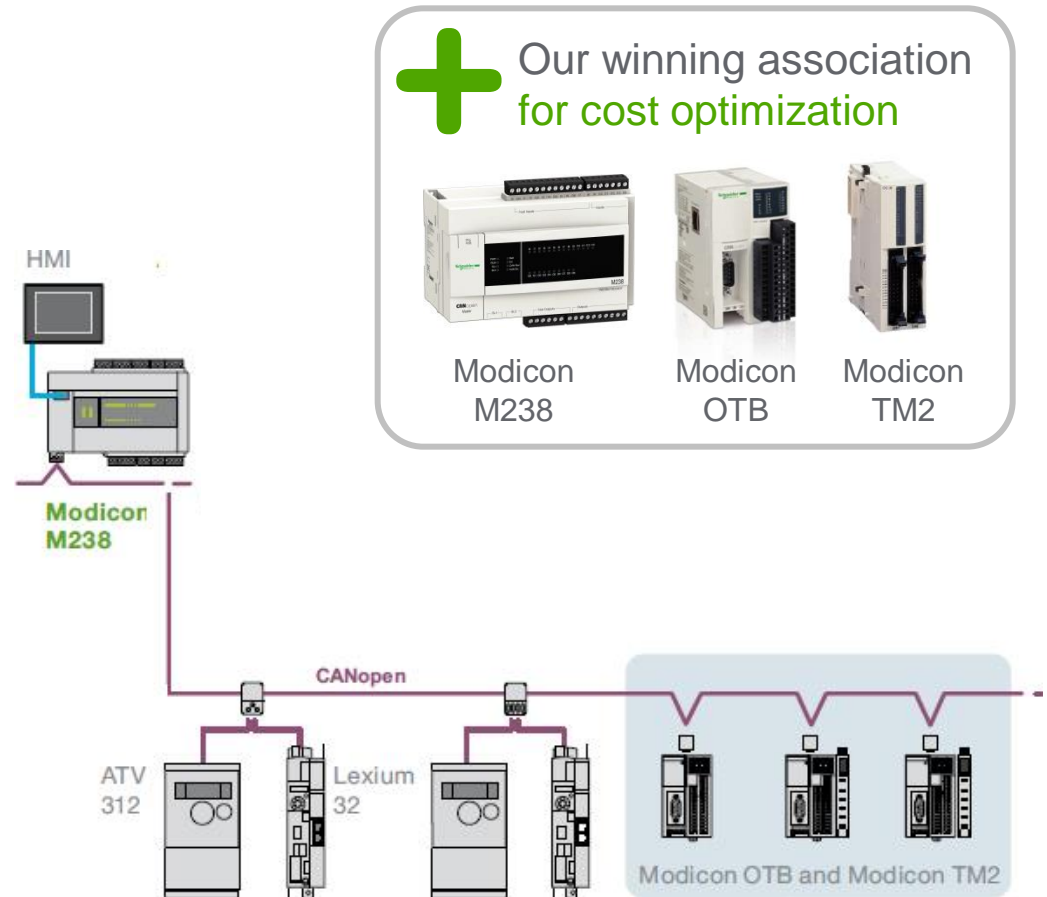
Non-removable spring terminal block

Distributed flexibility

To match accurately the topology of the machine & reduce wiring costs

- Associated with the **Modicon OTB** distributed I/O offer and **Modicon TM2** I/O expansion modules, the Modicon M238 enables the connection of distributed I/O islands (sensors & actuators) that are distributed over machines via the CANopen fieldbus

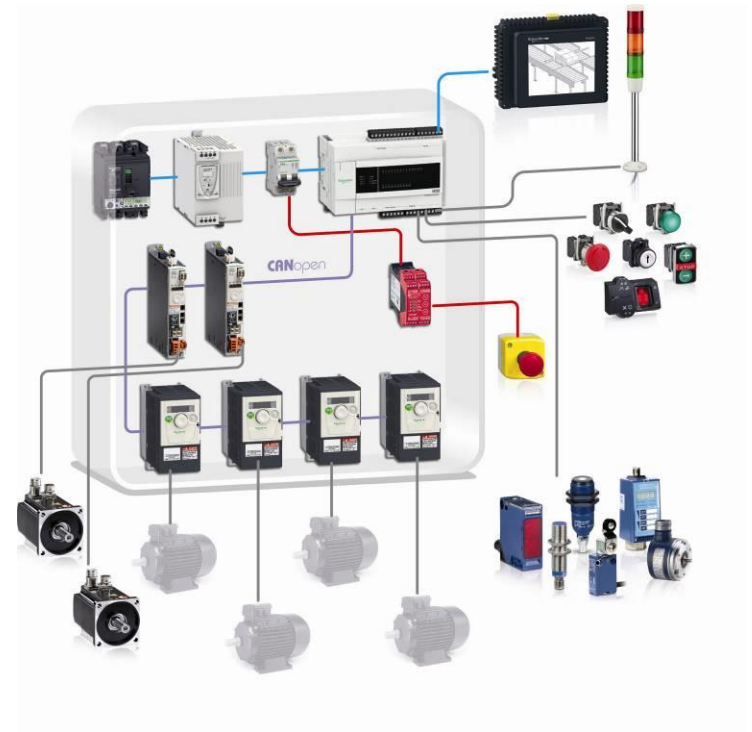
- Flexible and scalable I/O configuration



Speed up machine design with SoMachine software suite

- SoMachine™ software:

- 6 programming languages (IEC 61131-3)
- Ready-to-use automation system function libraries
- Powerful memory management
- Powerful debugging functions and preset debugging screens
- Tested, Validated, Documented (TVD) Architectures included



With the Modicon M238

- > **Optimize your machine performance** by using a compact & powerful PLC
- > **Reach optimum flexibility** by simply adding the requiring I/O expansions and option to your equipment base equipment
- > **Speed up machine design** by using only one software, ready-to-use TVD architectures and ready-to-use Function Blocks



**Optimized
cost/
performance
solution
for your simple
machines**



Modicon

M238

**logic controller
selection guide**

Modicon M238 motion controller compact bases

Max. number of expansions	7	7	7	7
Power supply	24 VDC	24 VDC	100 - 240 VAC	100 - 240 VAC
Serial link	1	2	1	2
CANopen master	-	1	-	1
Inputs	14 / 24 VDC - 8/100 kHz	14 / 24 VDC - 8/100 kHz	14 / 24 VDC - 8/100 kHz	14 / 24 VDC - 8/100 kHz
Outputs	10 trans.0.5 A 4/100 kHz		4 trans. 0,5 A + 5 relays 2 A + 1 relay 5 A	
References	TM238LDD24DT	TM238LFDC24DT	TM238LDA24DR	TM238LFAC24DR

Expansion modules

Digital I/O expansion modules

Number of digital inputs and/or outputs	8		16		32		4 I / 4 O	16 I / 8 O
Connections	Removable screw terminal block	Removable screw terminal block	HE10 connectors	HE10 connectors	Removable screw terminal block	Fixed spring terminal block		
24 VDC sink/source inputs	TM2DDI8DT	TM2DDI16DT	TM2DDI16DK	TM2DDI32DK	-	-		
120 VAC inputs	TM2DAI8DT	-	-	-	-	-		
2 A Source relay outputs	TM2DRA8RT	TM2DRA16RT	-	-	-	-		
Source transistor outputs	TM2DDO8TT (1)	-	TM2DDO16TK (1)	TM2DDO32TK (1)	-	-		
24 VDC sink/source inputs + 2A relay outputs	-	-	-	-	TM2DMM8DRT	TM2DMM24DRF		

(1) Also comes in version: sink transistor outputs (TM2DDO8UT, TM2DDO16UK and TM2DO32UK)

Analog expansion modules

Number of inputs and/or outputs	2 I		8 I		4 I		2 I / 1 O		1 O	2 O
Connections	Removable screw terminal block									
Inputs range	0 ... 10 V 4 ... 20 mA (1)	0 ... 10 V 0 ... 20 mA (1)	0 ... 10 V 0 ... 20 mA (1)	0 ... 10 V 0 ... 20 mA (1)	0 ... 10 V 0 ... 20 mA (1)	Pt100/1000 NI100/1000	0 ... 10 V 4 ... 20 mA (1)	-	-	-
Inputs resolution	12 bits (4096 points)	10 bits (1024 points)	12 bits (4096 points)	12 bits (4096 points)	12 bits (4096 points)		12 ou 11 bits + signe (4096 points)	-	-	-
Outputs range	-	-	-	-	-	-	0 ... 10 V 4 ... 20 mA (1)	0 ... 10 V 4 ... 20 mA (1)	-	+or-10 V
Outputs resolution	-	-	-	-	-	-	12 bits (4096 points)	12 bits (4096 points)	-	11 bits + signe (2048 points)
Measurement precision	0,2 % PE									
Power supply voltage	24 VDC									
References	TM2AMI2HT	TM2AMI8HT	TM2AMI4LT	TM2AMI4LT	TM2AMM3HT	TM2AMM3HT	TM2AMO1HT	TM2AMO1HT	TM2AMO1HT	TM2AVO2HT

(1) Non-differential

Fast counting expansion modules

Number of modules per controller	3 max.	3 max.
Number of channels	2	2
Number of inputs per channel	6 / 60 kHz	12 Relays outputs - 0.5A
Number of outputs per channel	2 (reflex actions)	2 (reflex actions)
Connection	Removable screw terminal block	
References	TM200HSC206DT	TM200HSC206DF

Make the most of your energy

