Flexibility for your applications...

Modicon M238
Intelligence integrated in the «Logic controller»

> SoMachine

Schneider Electric

> A power center at the service of your machines…

Do you need power and flexibility in your small automation systems?
The 24VDC and 240VAC Modicon M238 programmable controllers and the SoMachine software provides simple and intelligent solutions to meet all your business needs.

The compact logic controller solution can also be used for extensive cabling flexibility with input/output expansion modules. A number of connection possibilities are offered such as removable screw block terminals, spring terminal blocks and HE 10 type connectors for simple, fast and secure cabling.

Discrete
expansion module

Analog
expansion module

AS-Interface
expansion module

Fast counting
expansion module

+ intelligence

> Simplify machine programming…

> SoMachine
Program your M238 Modicon controllers easily with the SoMachine software integrating 6 programming languages, ready-to-use automation system function libraries, powerful memory management, powerful debugging functions and preset debugging screens.

+ upgradeable

> Up to 7 expansion modules…

> Adapt your configuration to perfectly suit your needs with powerful, efficient and economical expansion modules
• Discrete I/O
• Analog I/O for measurement values for:
- PT 100/PT 1000 temperature
- current
- voltage
• Fast I/O counting for measurement values for:
- frequency
- speed….
• Discrete or analog remote i/Os with AS-Interface bus

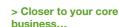## + communication

> 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.

+ 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).
> Guarranty the accuracy of your machines thanks to the monitoring of the reflex actions.

* only for 24 VDC models

> Easy to integrate:
• Intuitive software and offline debugging
• Ready-to-use and customizable business functions

> Powerful:
• Fast counting and integrated PWM/PTO control
• Complex calculations
• Extended memory

> Open and communicative:
• 1 USB port
• 2 serial links
• 1 integrated field bus
• Link to the upper level via gateways

> Compact and economical:
• Minimum volume
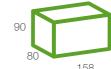• Removable connection
• Adapts perfectly to needs

> Flexible and modular:
• 15 discrete modules and 12 expansion analog modules
• Motion control and remote outputs/inputs by field bus

SoMachine

Packaging

Conveying

90

80

158

Up to 7 expansion modules

> Modicon M238 selection guide

Logic 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	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

Discrete I/O expansion module

Number of discrete inputs/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
Ref: 24 VDC sink/source inputs	TM2DDI8DT	TM2DDI16DT	TM2DDI16DK	TM2DDI32DK	-	-
120 VAC inputs	TM2DAI8DT	-	-	-	-	-
2 A relay outputs	TM2DRA8RT	TM2DRA16RT	-	-	-	-
Source transistor outputs	TM2DDO8TT [1]	-	TM2DDO16TK [1]	TM2DDO32TK [1]	-	-
24 VDC sink/source inputs + 2 A relay outputs	-	-	-	-	TM2DMM8DRT	TM2DMM24DRF

(1) Also comes in version: sink transistor outputs (TM2DDO8**U**T, TM2DDO16**U**K and TM2D032**U**K)

Analog expansion module*

Number of inputs and/or outputs		2 I	8 I	4 I	2 I / 1 0	1 0	2 0
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] Pt100/1000 NI100/1000	0 ... 10 V 4 ... 20 mA [1]	-	-
	resolution	12 bits (4096 points)	10 bits (1024 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	+ou-10 V
	resolution	-			12 bits (4096 points)	12 bits (4096 points)	11 bits + signe (2048 points)
Measurement precision		0,2 % PE					
Power supply voltage		24 VDC					
Dimensions L x D x H		23.5 x 70 x 90 mm					
References		TM2AMI2HT	TM2AMI8HT	TM2AMI4LT	TM2AMM3HT	TM2AMO1HT	TM2AVO2HT

* Other references are available, see the TM2 catalogue...
(1)Non-differential

Fast counting expansion module

Number of modules per controller	3 max.	3 max.
Number of channels	2	2
Number of inputs per channel	6 / 60 kHz	6 / 60 kHz
Number of outputs per channel	2 (reflex actions)	2 (reflex actions)
Connection	Removable screw terminal block	Removable spring terminal block
Reference	TM200HSC206DT	TM200HSC206DF

Network/ bus communication

Ethernet	499TWD01100 [1]
Device Net	LUFP9 [2]
Profilbus DP	LUFP7 [2]

(1) Logic controller Modicon M238 connection by cable XBTZ9980 to order separately.

(2) Logic controller Modicon M238 connection by cable VW3A8306R.. to order separately.

AS-Interface master expansion module

Number of modules per controller	2
Number of equipement	62 including 7 analog
Master profil	M3,V2.11.
Reference	TWDNOI10M3

Due to evolution of standards and equipment, characteristics indicated in the text and images in this document are not binding only after confirmation by our departments.

Design: BlueLoft
Photos: Schneider Electric
Print:

10 / 2010

DIA6ED1081201EN