



Main

Range of product	Modicon M238 logic controller
Product or component type	Counter module
Electrical connection	2 spring terminal blocks

Complementary

Number of modules	3 counter modules per TM238 base
Discrete input number	12 conforming to EN/IEC 61131-2 type 1
Discrete output number	4
Application specific I/O	Axis following Downcounting Frequency generator Frequency meter Period measurement Upcounting
Counting mode	8 mode configurable
Counter inputs resolution	31 bits + sign
Counting frequency	60 kHz
Cycle time	1 ms
Input compatibility	2 and 3-wire sensors (24 V) Incremental signal encoder with 15...30 V source outputs
Type of cable	Shielded cable
Isolation between channels and internal logic	1500 V for 1 minute
Discrete input type	Auxiliary input (IN_CAP) Auxiliary input (IN_EN) Auxiliary input (IN_REF) High-speed (IN_A) High-speed (IN_B) High-speed (IN_SYNC)
Discrete input logic	Positive logic (sink)
Discrete input voltage	24 V DC
Voltage state 1 guaranteed	15...30 V
Current state 1 guaranteed	5 mA
Voltage state 0 guaranteed	<= 5 V
Current state 0 guaranteed	<= 0.5 mA
Discrete input current	>= 2 mA 11 V
Discrete output logic	Positive logic (source)
Discrete output voltage	24 V DC 19.2...30 V
Discrete output current	0.5 A
Load current	2 A per module 0.5 A per output
Response time on output	<= 200 µs energisation/de-energisation
Leakage current	<= 0.1 mA at state 0
Voltage drop	<= 3 V at state 1
Short-circuit protection	Automatic reset after disappearance of fault
Output overload protection	0.5...1.5 A trip current with automatic reset after fault disappearance, per o/p

Fallback status	Each channel held at its last value or set to the predefined value (0 or 1) Faulty channel set to 0
Load inductance	$L = 0.5/I^2F$
Load capacitance	50 μ F
Local signalling	1 display block
Current consumption	≤ 100 mA 24 V DC internal supply ≤ 100 mA 5 V DC internal supply ≤ 2 A 24 V DC external power supply
Mounting support	35 mm symmetrical DIN rail

Environment

Offer Sustainability

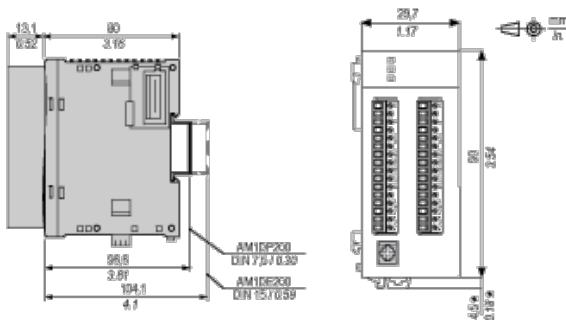
Green Premium product	Green Premium product
Compliant - since 0925 - Schneider Electric declaration of conformity	Compliant - since 0925 - Schneider Electric declaration of conformity
Reference not containing SVHC above the threshold	Reference not containing SVHC above the threshold
Available	Available
Available	Available
WARNING: This product can expose you to chemicals including:	WARNING: This product can expose you to chemicals including:
Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm.	Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm.
For more information go to www.p65warnings.ca.gov	For more information go to www.p65warnings.ca.gov

Contractual warranty

Warranty period	18 months
-----------------	-----------

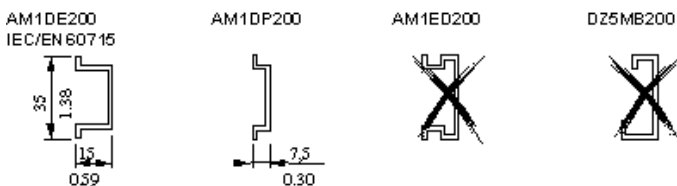
High Speed Counter (HSC) Module

Dimensions



NOTE: * 8.5 mm (0.33 in) when the clip-on lock is pulled out.

DIN Rail Mounting

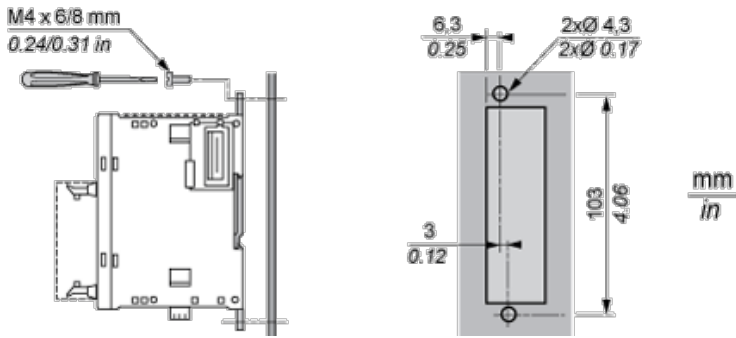


Rail depth	Catalogue part number
15 mm (0.59 in.)	AM1DE200
7,5 mm (0.30 in.)	AM1DP200

NOTE: Do not use AM1ED200 and DZ5MB200

Module Mounting on a Panel Surface

Mounting Hole Layout



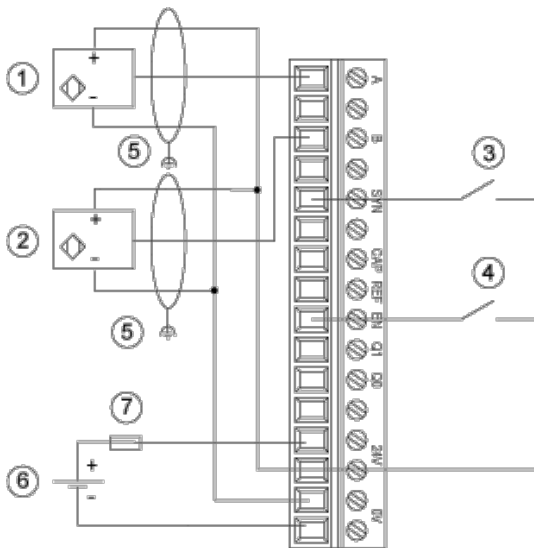
Wiring Requirements

Cable Types and Wire Sizes for Removable Screw Terminal Block

9 0.35 mm in.							
mm ²	0,14...1,5	0,25...0,5	0,25...1,5	0,14...0,5	0,14...0,75	0,25...0,34	0,5
AWG	26...16	24...20	24...16	26...20	26...18	24...22	20

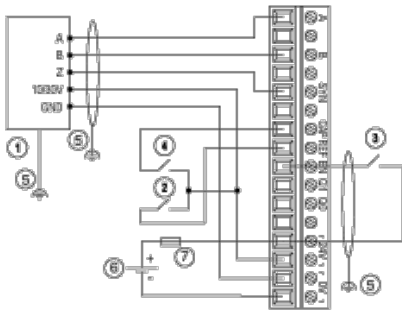
Wiring Diagrams Examples

Sensors Connections



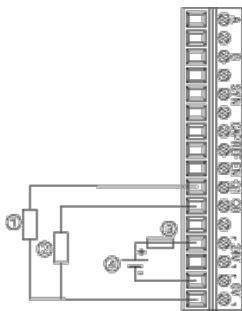
- 1 IN_A input
- 2 IN_B input
- 3 IN_SYNC input (synchronization input)
- 4 IN_EN input (enable input)
- 5 Functional ground
- 6 24 Vdc Power Supply
- 7 External fuse

Incremental Encoder Connection



- 1 Encoder (inputs A, B and Z)
- 2 IN_REF input (reference input)
- 3 IN_EN input (enable input)
- 4 IN_CAP input (capture input)
- 5 Functional ground
- 6 24 Vdc Power supply
- 7 External fuse

Actuators and Power Supply Connections



- 1 Actuator for the Q1 output
- 2 Actuator for the Q0 output
- 3 External fuse
- 4 24 Vdc Power Supply for sensors and actuators