

Data sheet

# MCX08M2

## Programmable controller



MCX08M2 is an electronic controller that holds all the typical functionalities of MCX controllers in the compact size of 8 DIN modules:

- programmability
- connection to the CANbus local network
- Modbus RS485 opto-insulated serial interface

It is available in the version with or without graphic LCD display, and 110 / 230 V AC or 24 V AC power supply

### Features MCX08M2

- 8 analog and 8 digital inputs
- 4 analog and 8 digital outputs
- Power supply 24 V AC / 20 / 60 V DC and 110 V / 230 V AC
- Remote access to data through CANbus connection for additional display (LCD available) and keyboard
- RTC clock for managing weekly time programs and data logging information
- Modbus RS485 opto-insulated serial interface
- Dimensions 8 DIN modules
- Available with graphic LCD display and without display for showing the desired information

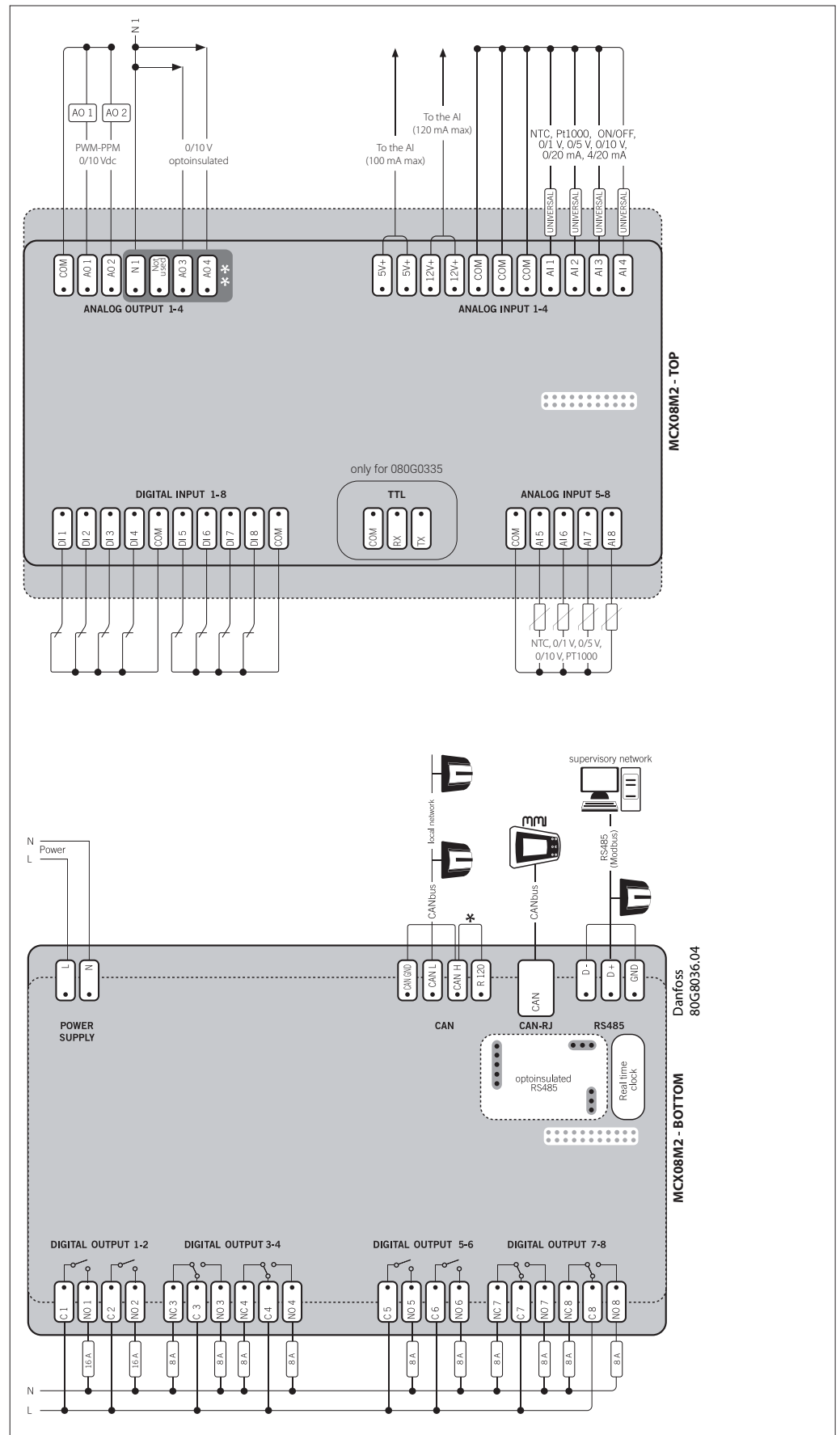
**General features**

FEATURES	DESCRIPTION
Power supply	85 – 265 V AC, 50/60 Hz. Maximum power consumption: 20 V A Insulation between power supply and the extra-low voltage: reinforced
	20 – 60 V DC and 24 V AC ± 15% 50/60 Hz SELV Maximum power consumption: 10 W, 17 V A Insulation between power supply and the extra-low voltage: functional
Plastic housing	DIN rail mounting complying with EN 60715
	Self extinguishing V0 according to IEC 60695-11-10 and glowing / hot wire test at 960 °C according to IEC 60695-2-12
Ball test	125 °C according to IEC 60730-1 Leakage current: ≥ 250 V according to IEC 60112
Operating conditions	CE: -20T60 / UL: 0T55, 90% RH non-condensing
Storage conditions	-30T80, 90% RH non-condensing
Integration	In Class I and/or II appliances
Index of protection	IP40 only on the front cover
Period of electric stress across insulating parts	Long
Resistance to heat and fire	Category D
Immunity against voltage surges	Category II
Software class and structure	Class A
Approvals	CE mark This product is designed to comply with the following EU standards: <ul style="list-style-type: none"> <li>• Low voltage directive LVD 2014/35/EU: <ul style="list-style-type: none"> <li>– EN60730-1: 2011 (Automatic electrical control for household and similar use. General requirements)</li> <li>– EN60730-2-9: 2010 (Particular requirements for temperature sensing controls)</li> </ul> </li> <li>• Electromagnetic compatibility EMC directive 2014/30/EU: <ul style="list-style-type: none"> <li>– EN 61000-6-3: 2007 +A1: 2011 (Emission standard for residential, commercial and light-industrial environments)</li> <li>– EN 61000-6-2: 2005 (Immunity for industrial environments)</li> </ul> </li> <li>• RoHS directive 2011/65/EU and 2015/863/EU: <ul style="list-style-type: none"> <li>– EN50581: 2012</li> </ul> </li> </ul>
	UL approval: <ul style="list-style-type: none"> <li>• UL file E31024</li> </ul>

Input/output

I/O	TYPE	NUM	SPECIFICATIONS
Analog inputs	NTC 0 / 1V 0 / 10V PT1000	4	<b>AI5, AI6, AI7, AI8</b> Analog inputs selectable via software between: <ul style="list-style-type: none"> <li>• 0 / 1 V, 0 / 5 V, 0 / 10 V : impedance is greater than 1M <math>\Omega</math></li> <li>• NTC (10 k<math>\Omega</math> at 25 <math>^{\circ}</math>C)</li> <li>• Pt1000</li> </ul>
	Universal	4	<b>AI1, AI2, AI3, AI4</b> Universal analog inputs selectable via software between: <ul style="list-style-type: none"> <li>• ON/OFF (current: 20 mA)</li> <li>• 0 / 1 V, 0 / 5 V, 0 / 10 V : impedance is greater than 1M <math>\Omega</math></li> <li>• 0 / 20 mA, 4 / 20 mA</li> <li>• NTC (10 k<math>\Omega</math> at 25 <math>^{\circ}</math>C)</li> <li>• Pt1000</li> </ul> 12 V+ power supply 12 V DC, 50 mA max for 4 / 20 mA transmitter (total on all outputs) 5 V+ power supply 5 V DC, 80 mA max for 0 / 5 V transmitter (total on all outputs)
Digital input	Voltage free contact	8	<b>DI1, DI2, DI3, DI4, DI5, DI6, DI7, DI8</b> Current consumption: 5 mA
Analog outputs	0 / 10VDC optoins	2	<b>AO3, AO4</b> <ul style="list-style-type: none"> <li>• Analog outputs optoinsulated 0 / 10 V DC minimum load 1K <math>\Omega</math> (10 mA) for each output</li> </ul>
	PWM PPM 0/10VDC	2	<b>AO1, AO2</b> Analog outputs selectable via software between: <ul style="list-style-type: none"> <li>- 0 / 10 V DC minimum load 1K <math>\Omega</math> (10 mA) for each output</li> <li>- pulsing output, synchronous with the line, at modulation of impulse position (PPM) or modulation of impulse width (PWM)</li> <li>- pulsing output, at modulation of impulse position (PPM) with range 20 Hz to 1 KHz: open circuit voltage: 6.8 V</li> </ul>
Digital output	Relay	8	Insulation between relay: functional Insulation between relays and the extra-low voltage parts: reinforced Total current load limit: 32 A <b>C1-NO1, C2-NO2</b> High inrush current (80 A - 20 ms) normally open contact relays 16 A <ul style="list-style-type: none"> <li>• characteristics of each relay: <ul style="list-style-type: none"> <li>- 10 A 250 V AC for resistive loads - 100.000 cycles</li> <li>- 3.5 A 230 V AC for inductive loads - 230.000 cycles with cos(phi) = 0.5</li> </ul> </li> </ul> <b>C5-NO5, C6-NO6</b> Normally open contact relays 8 A <ul style="list-style-type: none"> <li>• characteristics of each relay: <ul style="list-style-type: none"> <li>- 6 A 250 V AC for resistive loads - 100.000 cycles</li> <li>- 4 A 250 V AC for inductive loads - 100.000 cycles with cos(phi) = 0.6</li> </ul> </li> </ul> Option for code 080G0314: <ul style="list-style-type: none"> <li>- SPST SSR type</li> <li>- 0.5 A 250 V AC resistive load (115 W)</li> </ul> <b>C3-NO3-NC3, C4-NO4-NC4, C7-NO7-NC7, C8-NO8-NC8</b> Changeover contacts relay 8 A <ul style="list-style-type: none"> <li>• characteristics of each relay: <ul style="list-style-type: none"> <li>- 6 A 250 V AC for resistive loads - 100.000 cycles</li> <li>- 4 A 250 V AC for inductive loads - 100.000 cycles with cos(phi) = 0.6</li> </ul> </li> </ul>

Connection diagram

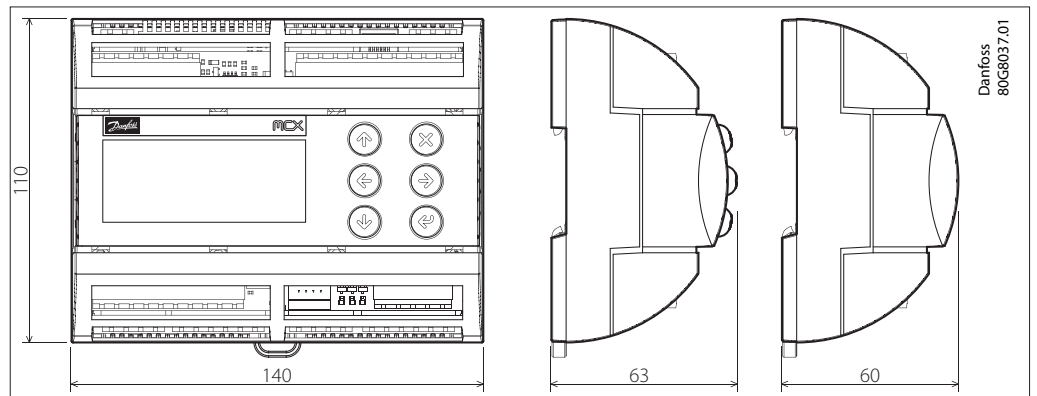


\*NOTE: connection has to be made on the first and last local network units, make the connection as close as possible to the connector  
 \*\*NOTE: optoinsulated analog outputs voltages are referenced to contact N1

**Connection**

CONNECTORS	TYPE	DIMENSIONS
<b>TOP BOARD</b>		
Analog output 1-4 connector	7 screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
Analog input 1-4 connector	11 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
Digital input 1-8 connector	10 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
Analog input 5-8 connector	5 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
TTL connector (only for 080G0335)	3 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 2.5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
<b>BOTTOM BOARD</b>		
Power supply connector	2 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
CAN connector	4 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
CAN-RJ connector	6/6 way telephone RJ12 plug type	
RS485 connector	3 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
Digital output 1-2 connector	4 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
Digital output 3-4 connector	6 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
Digital output 5-6 connector	4 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>
Digital output 7-8 connector	6 way screw plug-in connector type	<ul style="list-style-type: none"> <li>pitch 5 mm</li> <li>section cable 0.2 – 2.5 mm<sup>2</sup></li> </ul>

**Dimensions**



**Product part numbers**

DESCRIPTION	CODE NO.
MCX08M2, 24V, RS485, RTC, Single Pack	080G0293
MCX08M2, 230V, LCD, RS485, RTC, Single Pack	080G0307
MCX08M2, 24V, LCD, RS485, RTC, Single Pack	080G0310
MCX08M2, 24V, RS485, RTC, Industrial Pack (24 pieces)	080G0303
MCX08M2, 230V, RS485, RTC, 2SSR, Industrial Pack (24 pieces)	080G0314
MCX08M2, 24V, LCD, RS485, RTC, Industrial Pack (24 pieces)	080G0315
MCX08M2, 230V, RS485, RTC, Industrial Pack (24 pieces)	080G0316
MCX08M2, 230V, LCD, RS485, 2SSR, TTL, Single Pack	080G0335

**Accessories part numbers**

DESCRIPTION	CODE NO.
MCX08M CONNECTORS KIT	080G0180

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