ENGINEERING
TOMORROW

Data sheet

MCX08M
Programmable controller

MCX08M is fitted with or without graphic LCD display. It 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 moreover available in the version with power supply 110 / 230 V AC or 24 V AC.

Features MCX08M

- 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
- Available with graphic LCD display and without display for showing the desired information
- Dimensions 8 DIN modules

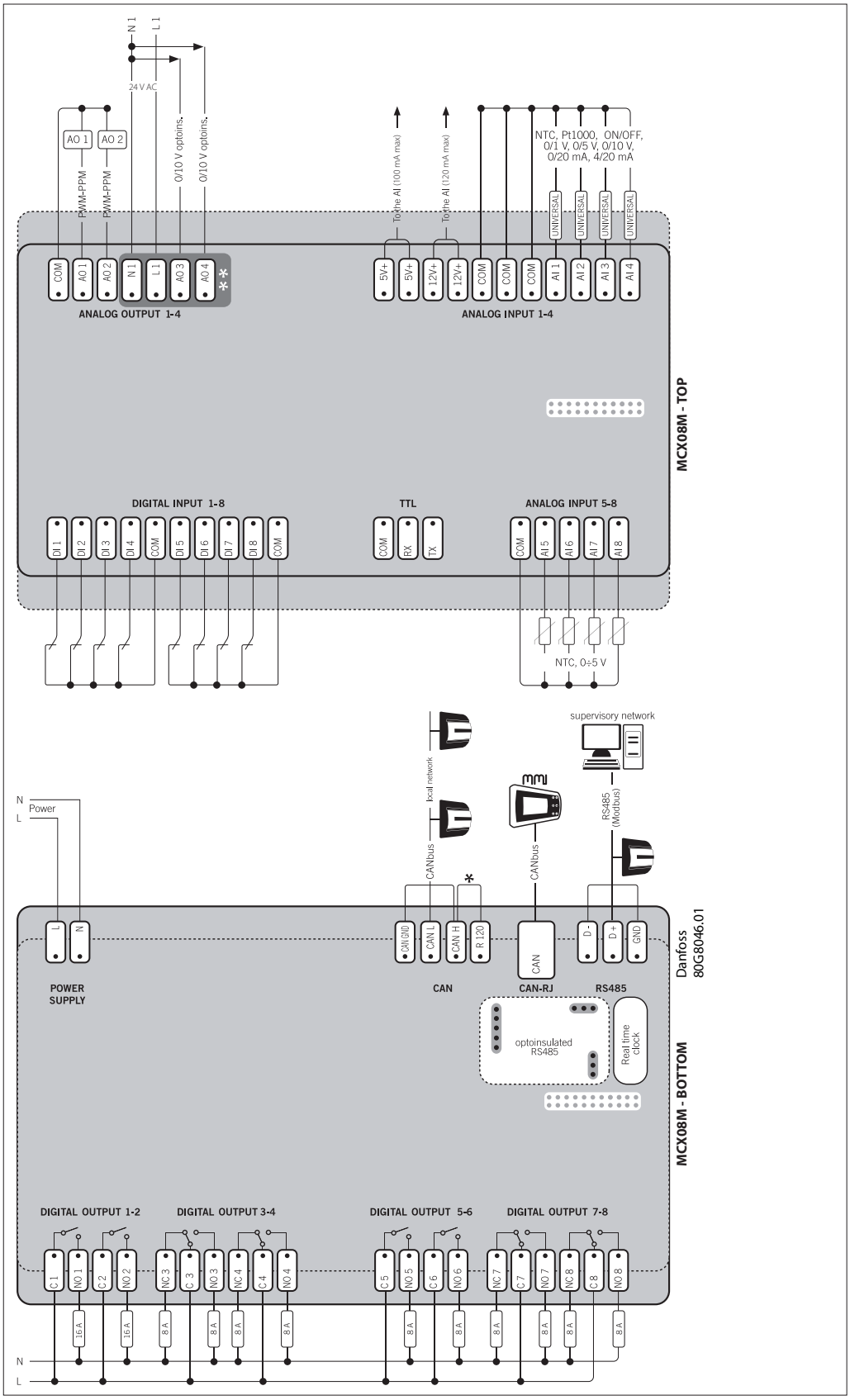
General features

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 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 compliance: This product is designed to comply with the following EU standards: • Low voltage guideline: 73/23/EEC • Electromagnetic compatibility EMC: 89/336/EEC and with the following norms: – EN61000-6-1, EN61000-6-3 – (immunity for residential, commercial and light-industrial environments) – EN61000-6-2, EN61000-6-4 – (immunity and emission standard for industrial environments) – EN60730 (Automatic electrical controls for household and similar use)
	UL approval: • UL file E31024

Input/output

I/O	TYPE	NUM	SPECIFICATIONS
Analog inputs	NTC 0 / 1 V 0 / 5 V	4	**AI5, AI6, AI7, AI8** Analog inputs selectable via software between: • NTC temperature probes, default: 10 kΩ at 25 °C • pressure transducers with 0/5 V output
	Universal	4	**AI1, AI2, AI3, AI4** Universal analog inputs selectable via software between: • ON/OFF (current: 20 mA) • 0 / 1 V, 0 / 5 V, 0 / 10 V • 0 / 20 mA, 4 / 20 mA • NTC (10 kΩ at 25 °C) • Pt1000 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	**DI1, DI2, DI3, DI4, DI5, DI6, DI7, DI8** Current consumption: 5 mA
Analog outputs	0 / 10 V DC optoins	2	**AO3, AO4** • Analog outputs optoinsulated 0 / 10 V DC 10 mA max for each output • External power supply 24 V AC / V DC
	PWM PPM	2	**AO1, AO2** Analog outputs selectable via software between: • pulsing output, synchronous with the line, at modulation of impulse position (PPM) or modulation of impulse width (PWM) • pulsing output, at modulation of impulse width (PWM) with range 20 Hz to 1 KHz: – open circuit voltage: 6.8 V – minimum load: 1 kΩ
Digital output	Relay	8	Insulation between relay: functional Insulation between relays and the extra-low voltage parts: reinforced Total current load limit: 32 A **C1-NO1, C2-NO2** High inrush current (80 A - 20 ms) normally open contact relays 16 A • characteristics of each relay: – 10 A 250 V AC for resistive loads - 100.000 cycles – 3.5 A 230 V AC for inductive loads - 230.000 cycles with cos(phi) = 0.5 – UL: 240 V AC - 10 A resistive - 8 FLA - 40 LRA - 640 V A pilot duty 30.000 cycles **C5-NO5, C6-NO6** Normally open contact relays 8 A • characteristics of each relay: – 6 A 250 V AC for resistive loads - 100.000 cycles – 4 A 250 V AC for inductive loads - 100.000 cycles with cos(phi) = 0.6 – UL: 240 V AC - 6 A resistive - 4.9 FLA - 29.4 LRA - 470 V A pilot duty 30.000 cycles **C3-NO3-NC3, C4-NO4-NC4, C7-NO7-NC7, C8-NO8-NC8** Changeover contacts relay 8 A • characteristics of each relay: – 6 A 250 V AC for resistive loads - 100.000 cycles – 4 A 250 V AC for inductive loads - 100.000 cycles with cos(phi) = 0.6 – UL: 240 V AC - 6 A resistive - 4.9 FLA - 29.4 LRA - 470 V A pilot duty 30.000 cycles

Connection diagram



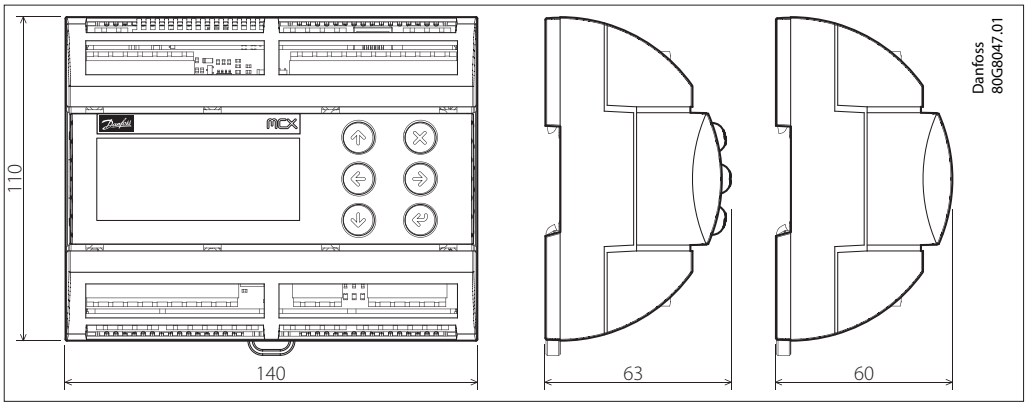
*NOTE: *connection has to be made on the first and last local network units, make the connection as close as possible to the connector*

**NOTE: *optoinsulated analog outputs voltages are referenced to contact N1*

Connection

CONNECTORS	TYPE	DIMENSIONS
TOP BOARD		
Analog output 1-4 connector	7 screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
Analog input 1-4 connector	11 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
Digital input 1-8 connector	10 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
TTL connector	3 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
Analog input 5-8 connector	5 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
BOTTOM BOARD		
Power supply connector	2 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
CAN connector	4 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
CAN-RJ connector	6/6 way telephone RJ11 plug type	
RS485 connector	3 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
Digital output 1-2 connector	4 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
Digital output 3-4 connector	6 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
Digital output 5-6 connector	4 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²
Digital output 7-8 connector	6 way screw plug-in connector type	• pitch 5 mm • section cable 0.2-2.5 mm²

Dimensions



User interface

TYPE	FEATURES	DESCRIPTION
LCD display	Display	STN blue transmissive
	Backlight	White LED backlight adjustable via software
	Contrast	Adjustable via software
	Format	128x64 dots
	Active visible area	58x29 mm
Keyboard	Number of keys	6
	Keys function	Set by the application software

Product part numbers

DESCRIPTION	CODE NO.
MCX08M, 24V, LCD, RS485, RTC, S	**080G0028**
MCX08M, 230V, LCD, RS485, RTC, S	**080G0029**
MCX08M, 24V, RS485, RTC, S	**080G0034**
MCX08M, 24V, LCD, RS485, RTC, I	**080G0118**
MCX08M, 24V, RS485, RTC, I	**080G0122**
MCX08M, 230V, RS485, RTC, I	**080G0123**
MCX08M, 230V, RS485, RTC, 2SSR, I	**080G0292**

Note: single pack codes (S) include standard kit connectors, industrial pack codes (I) don't include standard kit connectors

Accessories part numbers

DESCRIPTION	CODE NO.
MCX08M CONNECTORS KIT	**080G0180**