

CARATTERISTICHE GENERALI

MCX06D è disponibile nelle versioni con display LCD grafico o senza display. È un controllo elettronico programmabile sviluppato nelle dimensioni compatte di 4 moduli DIN che racchiude al suo interno tutte le funzionalità tipiche dei controlli MCX: programmabilità, possibilità di collegamento in rete locale CANbus e seriale di comunicazione Modbus RS485.

		MCX06D
INGRESSI ANALOGICI		
NTC, 0/1 V, 0/5 V, configurabili da software		2
Universali NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, configurabili da software		2
Numero totale		4
INGRESSI DIGITALI		
Contatto pulito		8
Numero totale		8
USCITE ANALOGICHE		
0/10 V DC, PWM, PPM configurabili da software		2
PWM, PPM configurabili da software		1
Numero totale		3
USCITE DIGITALI		
5/5/1 relè 5 A (contatti normalmente aperti)		5
SPDT relè 8 A (contatti in scambio)		1
Numero totale		6
VARIE		
Alimentazione isolata 20/60 V DC / 24 V AC		-
Connessione per chiave di programmazione		-
Connessione per terminale tastiera remoto		-
Buzzer		-
CANbus		-
Orologio RTC		-
Seriale Modbus RS485		-
Dimensioni (moduli DIN)		4
Montaggio		Barra DIN



DATI TECNICI

ALIMENTAZIONE

- 20/60 V DC e 24 V AC \pm 15% 50/60 Hz. Massima potenza assorbita: 6 W, 9 VA

- Isolamento garantito dall'alimentazione rispetto alla bassissima tensione: funzionale

I/O	TIPO	NUMERO	CARATTERISTICHE
Uscite digitali	Relè	6	Isolamento tra i relè da 1 a 5: funzionale
			Isolamento tra i relè 6 e gli altri relè: rinforzato
			Isolamento tra i relè e la bassissima tensione: rinforzato
			Carico massimo totale contemporaneo: 33 A
			C1-N01, C2-N02, C3-N03, C4-N04, C5-N05
			Relè da 5 A con contatto normalmente aperto:
			- caratteristiche di carico di ogni relè:
			5 A 30 V DC / 250 V AC per carichi resistivi - 100.000 cicli
			0,7 A 250 V AC per carichi induttivi - 100.000 cicli con $\cos(\phi) = 0,5$
			UL: 250 V AC - 3 A resistivo - 1,5 FLA - 90 LRA - 144 VA pilot duty 30.000 cicli
			NC6-C6-N06
			Relè da 8 A con contatto in scambio:
			- caratteristiche di carico di ogni relè:
			8 A 250 V AC per carichi resistivi - 100.000 cicli
			4 A 250 V AC per carichi induttivi - 100.000 cicli con $\cos(\phi) = 0,6$
			UL: 240 V AC - 6 A resistivo - 4,9 FLA - 29,4 LRA - 470 VA pilot duty 30.000 cicli
Ingressi digitali	Contatto pulito	8	D11, D12, D13, D14, D15, D16, D17, D18
			Corrente di chiusura riferita a massa: 5 mA

I/O	TIPO	NUMERO	CARATTERISTICHE
Uscite analogiche	0/10 V, PWM, PPM	2	AO1, AO2
			Uscita configurabile da software tra:
			- impulsiva, sincrona con la rete, a modulazione di posizione di impulso (PPM) o di larghezza di impulso (PWM):
			tensione a vuoto: 6,8 V
			carico minimo: 1 k Ω
			- impulsiva, a modulazione di larghezza di impulso (PWM) nel range da 100 Hz a 500 Hz:
			tensione a vuoto: 6,8 V
			carico minimo: 1 k Ω
			- 0/10 V DC non optoisolata riferita a massa:
			carico massimo 10 mA
	PWM, PPM	1	AO3
			Uscita configurabile da software tra:
			- impulsiva, sincrona con la rete, a modulazione di posizione di impulso (PPM) o di larghezza di impulso (PWM):
			tensione a vuoto: 6,8 V
			carico minimo: 1 k Ω
			- impulsiva, a modulazione di larghezza di impulso (PWM) nel range da 100 Hz a 500 Hz:
			tensione a vuoto: 6,8 V
			carico minimo: 1 k Ω
Ingressi analogici	NTC, 0/1 V, 0/5 V	2	A11, A12
			Ingressi analogici configurabili da software per:
			- sonde di temperatura NTC, default: 10 k Ω a 25 °C
			- trasduttori di pressione con uscita in tensione 0/5 V
	Universali	2	A13, A14
			Ingressi analogici universali configurabili da software tra:
			- ON/OFF (corrente: 20 mA)
			- 0/1 V, 0/5 V, 0/10 V
			- 0/20 mA, 4/20 mA
			- NTC (10 k Ω a 25 °C)
			- Pt1000
			12 V+ uscita alimentazione 12 V DC, 50 mA max per trasmettitore 4/20 mA (tot. uscite)
			5 V+ uscita alimentazione 5 V DC, 80 mA max per trasmettitore 0/5 V (tot. uscite)

SMALTIMENTO DEL PRODOTTO

- L'apparecchiatura (o il prodotto) deve essere oggetto di raccolta separata in conformità alle vigenti normative locali in materia di smaltimento.

Foglio istruzioni

Controllo elettronico MCX06D



DKRCC.P1.R10.B4.1U



3106000400

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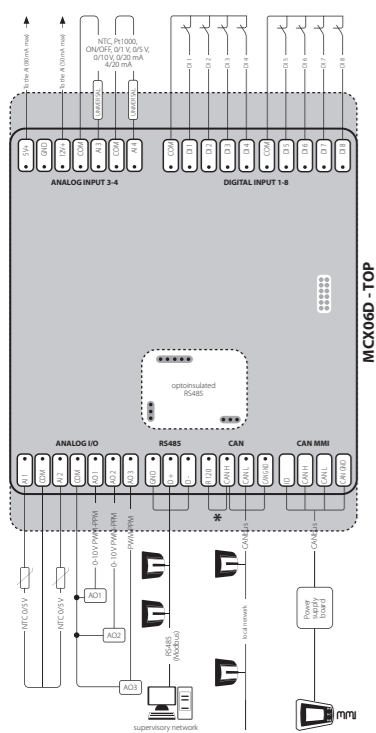
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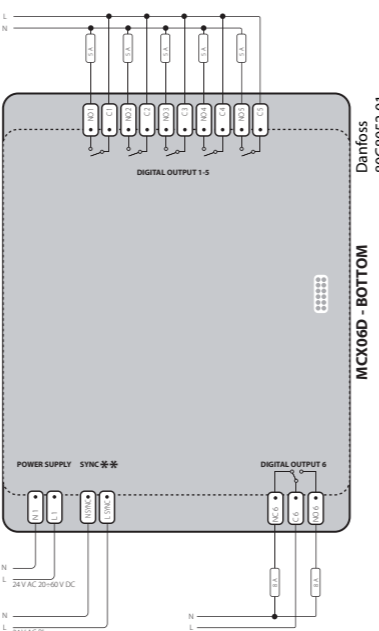
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SCHEMA DI COLLEGAMENTO

SCHEMA SUPERIORE



SCHEMA INFERIORE



*NOTA: collegamento da effettuare sui due strumenti posti all'estremità della rete locale, la connessione deve essere realizzata il più vicino possibile al connettore

**NOTA: quando AO viene usato come uscita sincronizzata, l'ingresso di sincronismo deve essere in fase con il carico su AO

Foglio istruzioni

Controllo elettronico MCX06D



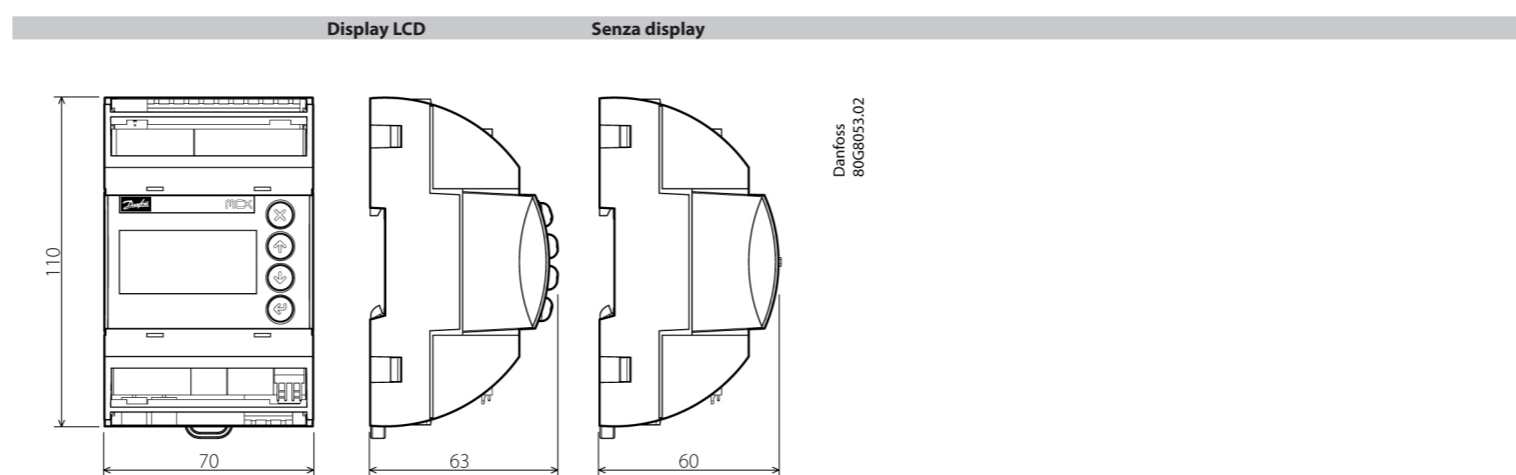
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DIMENSIONI



Danfoss B068053.02

INTERFACCIA UTENTE

DISPLAY LCD

- tipo: grafico STN blu trasmissivo
- retroilluminazione: a LED bianchi con intensità regolabile da software
- risoluzione: 96x64 punti
- area visibile attiva: 29,4x19,2 mm
- contrasto: regolabile da software

TASTIERA

- numero di tasti: 4
- la funzione dei tasti è impostabile da software

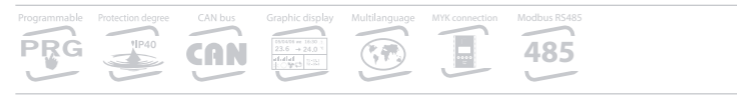
CODICI IDENTIFICATIVI PRODOTTO

CODICE	DESCRIZIONE
080G0111	MCX06D, 24V, LCD, Single Pack
080G0112	MCX06D, 24V, LCD, RS485, RTC, Single Pack
080G0115	MCX06D, 24V, RS485, RTC, Single Pack
080G0166	MCX06D, 24V, LCD, Industrial Pack (32 pieces)
080G0167	MCX06D, 24V, LCD, RS485, RTC, Industrial Pack (32 pieces)
080G0169	MCX06D, 24V, RS485, RTC, Industrial Pack (32 pieces)

GENERAL FEATURES

MCX06D is fitted with graphic LCD display, or without display. It is an electronic controller that holds all the typical functionalities of MCX controllers in the compact size of 4 DIN modules: programmability, connection to the CANbus local network, Modbus RS485 serial communication interface.

		MCX06D
ANALOG INPUTS		
NTC, 0/1 V, 0/5 V, selectable via software		2
Universal NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software		2
Total number		4
DIGITAL INPUTS		
Voltage free contact		8
Total number		8
ANALOG OUTPUTS		
0/10 V DC, PWM, PPM selectable via software		2
PWM, PPM selectable via software		1
Total number		3
DIGITAL OUTPUTS		
SST relay 5 A (normally open contacts)		5
SPDT relay 8 A (changeover contacts)		1
Total number		6
OTHERS		
Insulated power supply 20/60 V DC - 24 V AC		-
Connection for programming key		-
Connection for remote display and keyboard		-
Buzzer		-
CANbus		-
RTC clock		-
Modbus RS485 serial interface		-
Dimensions (DIN modules)		4
Mounting		DIN rail



GENERAL FEATURES AND WARNINGS

- PLASTIC HOUSING FEATURES**
- DIN rail mounting complying with EN 60715
 - Self-extinguishing I0 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: a: 250 V according to IEC 60112

- OTHER FEATURES**
- Operating conditions CE -20T60 / UL: 0T55, 90% RH non-condensing
 - Storage conditions: -30T80, 90% RH non-condensing
 - To be integrated in Class I and/or II appliances
 - Index of protection: IP40 only on the front cover
 - Period of electric stress across insulating parts: long
 - Suitable for using in a normal pollution environment
 - Category of resistance to heat and fire: D
 - Immunity against voltage surges: category I
 - Software class and structure: class A

- 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
- GENERAL WARNINGS**
- Every use that is not described in this manual is considered incorrect and is not authorised by the manufacturer
 - Verify that the installation and operating conditions of the device respect the ones specified in the manual, specially concerning the supply voltage and environmental conditions
 - This device contains live electrical components therefore all the service and maintenance operations must be performed by qualified personnel
 - The device can't be used as a safety device
 - Liability for injury or damage caused by the incorrect use of the device lies solely with the user

- INSTALLATION WARNINGS**
- Mounting position recommended: vertical
 - The installation must be executed according to the local standards and legislation of the country
 - Always operate on the electrical connections with the device disconnected from the main power supply
 - Before carrying out any maintenance operations on the device, disconnect all the electrical connections
 - For safety reasons the appliance must be fitted inside an electrical panel with no live parts accessible
 - Don't expose the device to continuous water sprays or to relative humidity greater than 90%
 - Avoid exposure to corrosive or pollutant gases, natural elements, environments where explosives or mixes of flammable gases are present, dust, strong vibrations or shock, large and rapid fluctuations in ambient temperature that in combination with high humidity can condense, strong magnetic and/or radio interference (e.g. transmitting antennae)
 - When connecting loads beware of the maximum current for each relay and connector
 - Use cable ends suitable for the corresponding connectors. After tightening the screws of connectors, slightly tug the cables to check their tightness
 - Use appropriate data communication cables. Refer to the Installation Guide "MCX hardware network specification" for the kind of cable to be used and setup recommendations
 - Reduce the path of the probe and digital inputs cables as much as possible, and avoid spiral paths enclosing power devices. Separate from inductive loads and power cables to avoid possible electromagnetic noises
 - Avoid touching or nearby touching the electronic components fitted on the board to avoid electrostatic discharges

- DISPOSAL INSTRUCTION**
- Equipment containing electrical components may not be disposed together with domestic waste. It must be separately collected with electrical and electronic waste according to local and valid legislation.

Instruction sheet

Electronic controller
MCX06D



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TECHNICAL SPECIFICATIONS

POWER SUPPLY

- 20/60 V DC and 24 V AC ± 15% 50/60 Hz. Maximum power consumption 6 W, 9 VA
- Insulation between power supply and the extra-low voltage: functional

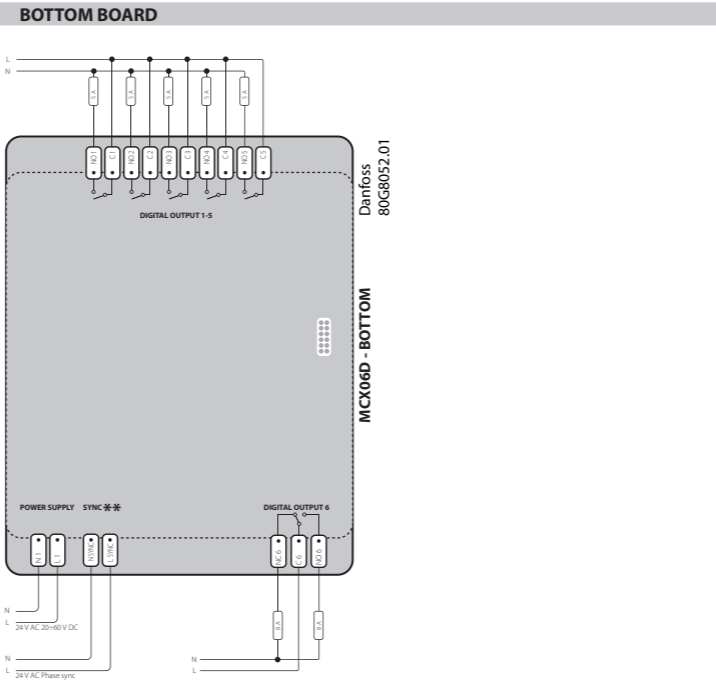
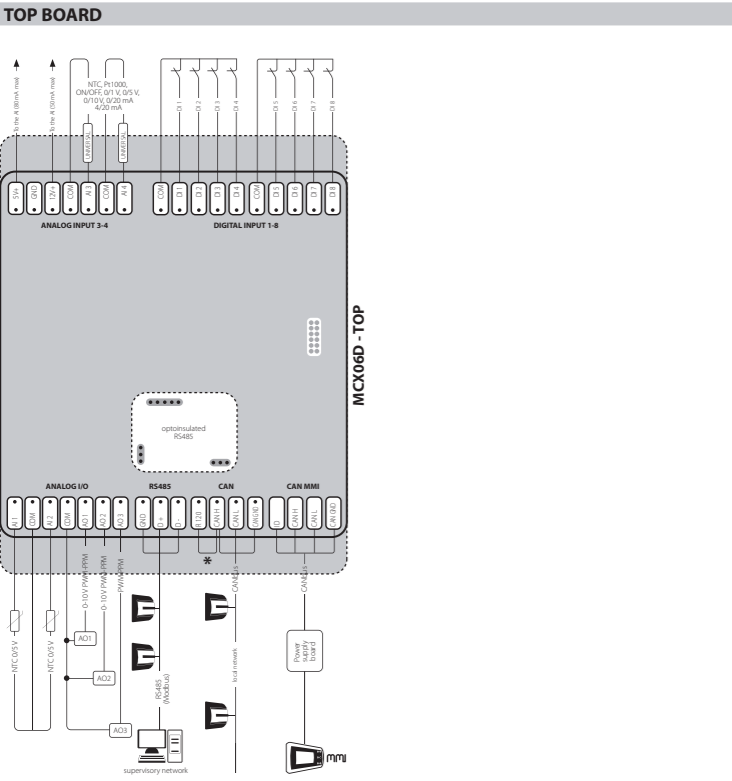
I/O	TYPE	NUMBER	SPECIFICATIONS
Digital outputs	Relay	6	Insulation between relays 1 to 5: functional Insulation between relay 6 and the other relays: reinforced Insulation between relays and the extra-low voltage parts: reinforced C1-NO1, C2-NO2, C3-NO3, C4-NO4, C5-NO5 Normally open contact relays 5 A: - characteristics of each relay: 5 A 30 V DC / 250 V AC for resistive loads - 100,000 cycles 0.7 A 250 V AC for inductive loads - 100,000 cycles with cos(phi) = 0.5 UL: 250 V AC - 3 A resistive - 1.5 FLA - 9.0 LRA - 144 VA pilot duty 30,000 cycles NC6-C6-NO6 Changeover contacts relay 8 A: - characteristics of each relay: 8 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 VA pilot duty 30,000 cycles
Digital inputs	Voltage free contact	8	D11, D12, D13, D14, D15, D16, D17, D18 Current consumption: 5 mA

I/O	TYPE	NUMBER	SPECIFICATIONS
Analog outputs	0/10 V, 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): open circuit voltage: 6.8 V minimum load: 1 kΩ - pulsing output, at modulation of impulse width (PWM) with range 100 Hz to 500 Hz: open circuit voltage: 6.8 V minimum load: 1 kΩ - 0/10 V DC non optoisolated output, referred to the ground: 10 mA maximum loads
	PWM, PPM	1	AO3 Analog outputs selectable via software between: - pulsing output, synchronous with the line, at modulation of impulse position (PPM) or modulation of impulse width (PWM): open circuit voltage: 6.8 V minimum load: 1 kΩ - pulsing output, at modulation of impulse width (PWM) with range 100 Hz to 500 Hz: open circuit voltage: 6.8 V minimum load: 1 kΩ
Analog inputs	NTC, 0/1 V, 0/5 V	2	A11, A12 Analog inputs selectable via software between: - NTC temperature probes, default: 10 kΩ at 25 °C - pressure transducers with 0/5 V output
	Universal	2	A13, A14 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)

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CONNECTION DIAGRAM



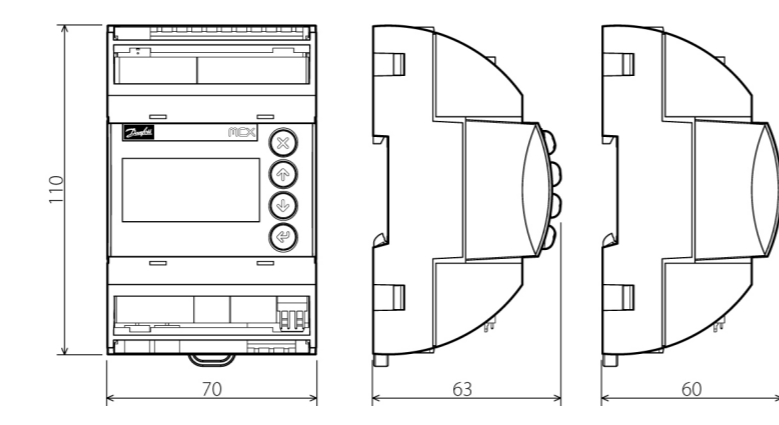
*NOTE: connection has to be made on the first and last local network units, make the connection as close as possible to the connector
**NOTE: when AO is used as synchronised output, the sync input must be in phase with the load on AO

Instruction sheet

Electronic controller
MCX06D



DIMENSIONS



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USER INTERFACE

- LCD DISPLAY**
- display mode: STN blue transmissive
 - backlight: white LED backlight adjustable via software
 - display format: 96x64 dots
 - active visible area: 29.8x19.2 mm
 - contrast: adjustable via software
- KEYBOARD**
- number of keys: 4
 - keys function is settled by the application software

PRODUCT PART NUMBERS

CODE	DESCRIPTION
080G0111	MCX06D, 24V, LCD, Single Pack
080G0112	MCX06D, 24V, LCD, RS485, RTC, Single Pack
080G0115	MCX06D, 24V, RS485, RTC, Single Pack
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