

AVVERTENZE

ALTRE CARATTERISTICHE

- ## CONFORMITÀ

- ## AVVERTENZE

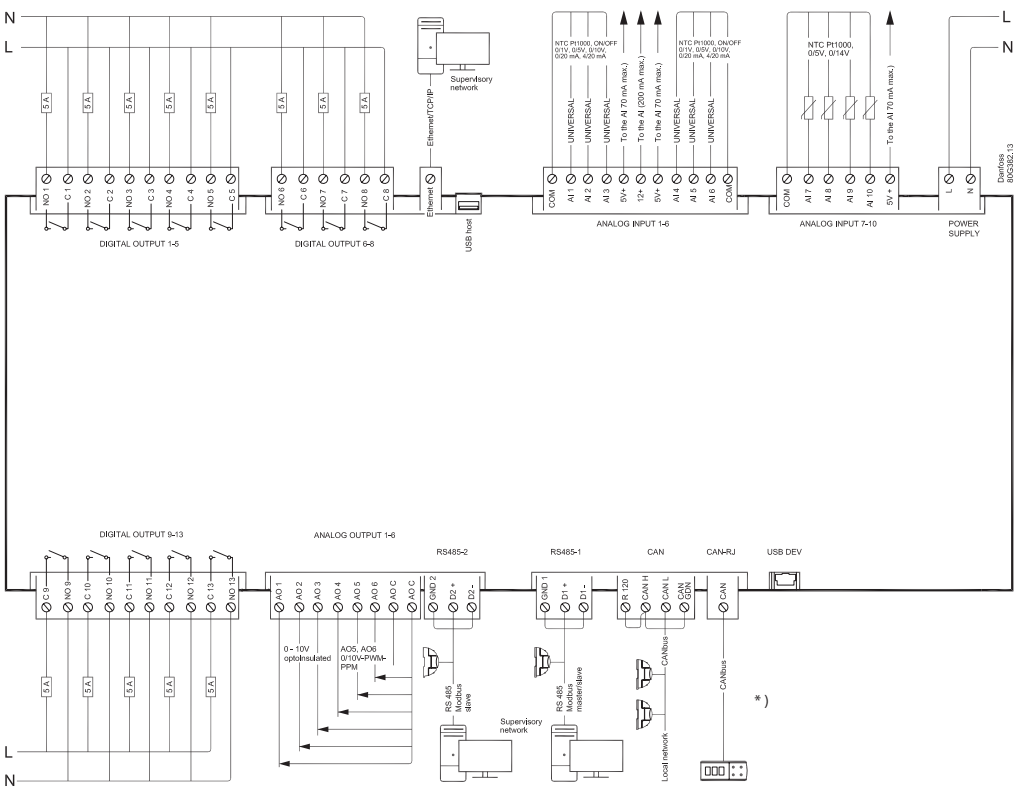
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IO	TIPO	NUMERO	CARATTERISTICHE
Ingressi analogici	NTC 0 / 1 V 0 / 5 V 0 / 10 V PT1000 ON/OFF	16 (MCX20B2) 10 (MCX15B2)	da A11 a A16 su MCX20B2 da A11 a A10 su MCX15B2 NTC, di default del tipo 10 k Ω a 25°C, beta 3435 Tipo 0/XX: l'impedenza è maggiore di 1 M Ω
	0 / 20 mA 4 / 20 mA	10 (MCX20B2) 6 (MCX15B2)	da A11 a A16, da A11 a A14 su MCX20B2 da A11 a A16 su MCX15B2 100 Ω di resistenza di misura per ingressi in corrente Gli ingressi possono essere usati per ingressi digitali puliti, corrente di pulizia contatto: 10mA
Ingressi digitali	Alimentazioni Ausiliarie:		15V+ e 5V+ 5V+ max 200 mA (totale su tutte le uscite) 15V+ max 200 mA (totale su tutte le uscite) Tutte le uscite di alimentazione: sono protette contro i corti circuiti e sono a ripristino automatico dopo una condizione di sovraccarico
	Contatti puliti o 24 V AC (SELV)	18	da DI5 a DI22 Dato che gli ingressi non sono isolati, va usata cautela quando si applicano 24 V AC. La stessa polarità dell'alimentazione deve sempre essere usata nel collegare COM/END. Funzione conto impulsi con frequenza massima di 16,6 Hz (impulso minimo di 30 ms)
	24 V optoisolati	1	DI1, DI2, DI3, DI4 Ingressi optoisolati a 24 V AC 50/60 Hz o 24 V DC Corrente nominale: 5 mA@24V AC
	230 V AC optoisolati	1	DIH1, DIH2, DIH3, DIH4 Ingressi optoisolati, 86-265V AC / 50/60 Hz Isolamento rinforzato Corrente nominale: 2,5 mA @ 265V AC - NOTA: se si utilizza l'ingresso DIH1 a 230 V AC, il corrispondente ingresso DI1 a 230 V non è più disponibile; analogo discorso per le coppie di ingressi DIH2 e DI2, DIH3 e DI3, DIH4 e DI4
Uscite analogiche	0/10V	6	da AO1 a AO6 Uscite analogiche 0/10V, isolate galvanicamente. carico minimo 1K Ω (10 mA) per ogni uscita
	PWM/PPM	2	AO5, AO6 PWM asincrono Tensione di uscita: max V_{out} = 0,6V, min V_{in} = 6,5V Gamma di frequenza: 15Hz - 1kHz PWM e PPM sincrono Tensione di uscita: max V_{out} = 0,6V, min V_{in} = 6,5V Frequenza: 2 volte la frequenza di rete

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AN32081941308501-000201 - MCX15B2/MCX20B2 foglio istruzioni - P.N. 080R9340
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CONNESSIONI

SCHEDA INFERIORE**SCHEDA SUPERIORE**

- 3 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²
- Connettore digital output 1
- 6 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²
- Connettore digital output 16-20 (MCX028)
- 10 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²
- Connettore analogi input 15-16 (MCX028)
- 4 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²
- Connettore digital input
- 3 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²
- Connettore digital input 3
- 3 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²
- Connettore digital input 5-8
- 3 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²
- Connettore digital input 1-3
- 6 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²
- Connettore digital input 14-17
- 3 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²
- Connettore digital input 18-22
- 6 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,25-2,5 mm²

SCHEDA INFERIORE

- Connettore digital output 1-5
- 10 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore digital output 6-8
- 6 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore Ethernet
- 8/8 vie RJ45
- Connettore analog input 1-6
- 6 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore analog input 7-10
- 6 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore power supply
- 2 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore digital output 9-13
- 10 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore analog output 1-6
- 8 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore RS485-2
- 3 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore RS485-1
- 3 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore CAN
- 4 vie tipo morsetto a vite estraibile passo 5 mm: sezione cavo 0,2-2,5 mm²
- Connettore CAN RJ
- 6/6 vie tipo telefonico RJ12
- Connettore-USB
- USB mini B

Lunghezza dei cavi			
Interfaccia	Max. lunghezza dei cavi (m)	Max. baudrate (bps)	Min. spessore dei cavi
Ethernet	100	10/100 M	
CANbus	1000	50 K	AWG18
	500	125 K	AWG22
	250	250 K	AWG24
	80	500 K	AWG26
	30	1 M	AWG26
RS485	1000	125 K	AWG22
Cablaggio di segnale	30		

INTERFACCIA UTENTE

DISPLAY LCD

- tipo: grafico STN blu trasmissivo
- retroilluminazione: a LED bianchi con intensità regolabile da software
- risoluzione: 128x64 punti
- area visibile attiva: 58x29 mm
- contrasto: regolabile da software

TASTIERA

- numero di tasti: 6
- la funzione dei tasti è impostabile da software

Interfaccia di Comunicazione			
Interfaccia	Uso	Etichetta del connettore	Caratteristiche tecniche
CANBUS	Fieldbus per la connessione a interfaccia utente, controllori MC, dispositivi di servizio etc.	CAN CAN RJ	Layer fisico in accordo con ISO 11898-2 High Speed CAN BUS Formato del frame in accordo con le specifiche CAN 2.0B Trasceiver non isolato (l'alimentazione ha un isolamento informativo)
USB device	Previsto per uso futuro	USB-DEV	Tipi Mini B
USB host	Per connessione a Flash drive per aggiornamento software, datalogging e servizio	USB-H	Tipi A
RS485-1, RS485-2	Bus di comunicazione verso BMS (ex Modbus slave), strumenti di servizio, dispositivi intelligenti (ex Modbus master) RS485-1 può essere polarizzato come master dalla applicazione	RS485-1 RS485-2	RS485 Red Fornisce 500V di isolamento galvanico di piccolo transitorio
Ethernet	Per la funzionalità di web server e per l'integrazione (ex Modbus TCP) ATTENZIONE Non far lavorare i cavi al di fuori dell'edificio. Collegare i dispositivi in ET in accordo con EN 60950 e EN 62368 (Information technology equipment. Safety. General requirements)	ETHERNET	100, 10 BASE-T e 100 BASE-TX, IEEE 802.3 MDIX-Automatic medium-dependent interface crossover)

CODICI PRODOTTO

CODICE	DESCRIZIONE
080G0327	MCX15B2, 1xRS485, S
080G0328	MCX15B2, LCD, 1xRS485, S
080G0329	MCX20B2, 2xRS485, I (12 pieces)
080G0330	MCX20B2, LCD, 2xRS485, I (12 pieces)
080G0331	MCX20B2, LCD, 2xRS485, S
080G0332	MCX20B2, LCD, 4xCSR, 2xRS485, S

Accessories	
080G0404	MCX20B2 CONNECTORS KIT

Nota: i codici in imballo singolo (S) includono il kit connettori standard, i codici in imballo industriale (I) non includono il kit connettori standard

Furthermore, it is fitted with an ultra wide range (24/110/230 V AC) power supply in the same product variant, with USB and Ethernet connection for embedded Web server and IP protocols management. It is available in several models, with or without graphic LCD display and with 15 or 20 digital output.

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Programmable	Protection degree	CAN bus	Graphic display	Multilanguage	MPX connection	Modbus RS485	Ethernet	USB

www.danfoss.com/mcx

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POWER SUPPLY

- 21 – 265 V AC, 50/60 Hz. Maximum power consumption: 15 W. Insulation between power supply and the extra-low voltage: reinforced
- 40 – 230 V DC

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

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OTHER FEATURES

- Operating conditions CE : -20/60, 90% RH non-condensing
- Storage conditions : -30/80, 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 use in environments with degree of pollution 2
- Category of resistance to heat and fire: D
- Immunity against voltage surges: category II, category III for versions without display
- Software class and structure: class A

COMPLIANCE

CE mark

This product is designed to comply with the following EU standards:

- Low voltage directive LVD 2014/35/EU:
 - EN60730-1:2011 (Automatic electrical control for household and similar use. General requirements)
 - EN60730-2:2010 (Particular Requirements for Temperature Sensing Controls)
- Electromagnetic compatibility EMC directive 2014/30/EU:
 - EN 61000-6-3: 2007 +A1: 2011 (Emission standard for residential, commercial and light-industrial environments)
 - EN 61000-6-2: 2005 (Immunity for industrial environments)
- RoHS directive 2011/65/EU and 2015/863/EU:
 - EN50581: 2012

- 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

- Mounting position recommended: vertical
- Always ensure that the device is executed according to the local standards and legislations 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 operate the device in continuous operation
- Avoid exposure to corrosive or pollutant gases, natural elements, environments where explosives or mixtures of flammable gases are present, dust, strong vibrations or shock, large and rapid fluctuations in ambient temperature that in combination with high humidity can condensate, strong magnetic and/or radio interference
- 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 cable (refer to the Installation Guide "MCK hardware network specification" for the kind of cable to be used and setup recommendations)
- Reduce the path of the board and digital inputs cables as much as possible, and avoid spiral paths
- Enclose power devices, Separate from inductive loads and power cables to avoid possible electromagnetic noises
- Enclose power cables, Separate from power cables and power cables to avoid possible electromagnetic noises
- The product is not suitable to be exposed directly to the Internet

 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.

IO	TYPE	NUMBER	SPECIFICATIONS
Analog inputs	NTC 0 / 1 V 0 / 5 V 0 / 10 V PT100	16 (MCX20B2) 10 (MCX15B2)	A11-A16 on MCX20B2 A11 - A10 on MCX15B2 NTC, default 10 kΩ at 25 °C, Beta 3435 0/V type: impedance is greater than 1 MΩ
	ON/OFF 0 / 20 mA 4 / 20 mA	10 (MCX20B2) 6 (MCX15B2)	A11-A16, A11-A14 on MCX20B2 A11-A16 on MCX15B2 100 Ωs as measuring resistance for current measurements The inputs can be used to sense voltage free contacts with contact cleaning current 10 mA
	Auxiliary Supplies		15 V+ and 5 V+ 5 V+ max: 200 mA (total on all outputs) 15 V+ max: 200 mA (total on all outputs) All power outputs are protected against short circuit and have an automatic recovery from overload condition.
Digital inputs	Voltage free contacts or 24 V AC (SELV)	18	D15 to D122 As the inputs are not isolated caution has to be used when applying 24 V AC: the same polarity of the supply MUST always be used on COM/GND connection. Counting function with max frequency of 16.6kHz (30ms minimum pulse time)
	24 V opto-insulated	4	D11, D12, D13, D14 Inputs opto isolated, 24 V AC 50/60 Hz or 24 V DC Rated current: 5 mA @24 V AC
	230 V AC opto-insulated	4	DIH1, DIH2, DIH3, DIH4 Inputs opto isolated, 86-265V AC / 50/60 Hz Reinforced isolation Rated current: 2.5 mA @ 265V AC NOTE: when the 230 V AC DIH1 input is used, the corresponding 24 V D11 input is not available anymore; the same for the couple of inputs DIH2 and DI2, DIH3 and DI3, DIH4 and DI4
Analog outputs	0/10 V	6	A01 to A06 Analog Outputs 0/10V, galvanically isolated, minimum load 1 KΩ (10 mA) for each output
	PWM/PPM	2	A05, A06 Asynchronous PWM Voltage output: max V_{out} = 0.6V, min V_{in} = 6.5V Frequency range: 15Hz...1kHz Synchronous PWM and PPM Voltage output: max V_{out} = 0.6V, min V_{in} = 6.5V Frequency: Mains frequency x2

CONNECTIONS

- Digital input 1 connector
- 3 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Digital output 9-15 connector (MCB208)
- 6 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Digital output 16-20 connector (MCB208)
- 10 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Analog input 11-14 connector (MCB208)
- 7 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Analog Input 15-16 connector
- 4 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Digital input 1-8 connector
- 3 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Digital input 9-13 connector
- 3 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Digital input 14-17 connector
- 6 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Digital input 18-22 connector
- 6 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²

- Digital output 1-5 connector
- 10 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Digital output 6-8 connector
- 6 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Ethernet connector
- 8/8 way RJ45
- Analog input 1-6 connector
- 11 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Analog input 7-10 connector
- 6 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Power supply connector
- 1 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Digital output 9-13 connector
- 10 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- Analog output 1-6 connector
- 11 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- RS485-2 connector
- 3 way screw plug-in connector type pitch 5 mm; section cable 0.2-2.5 mm²
- RS485-1 connector
- 3 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 RJ12
- USB connector
- USB mini B

USER INTERFACE

- display mode: STN blue transmissive
- back-light: white LED back-light adjustable via software
- display format: 128x64 dots
- active visible area : 58x29 mm
- contrast: adjustable via software

- number of keys: 6
- keys function is settled by the application software

Communication Interface			
Interface	Use	Connector Label	Technical data
CANbus	Fieldbus for connection to user interfaces, MCK controllers, service tools etc.	CAN CAN-RJ	Physical layer according to ISO 11898-2 High Speed CAN bus Frame Format according to CAN 2.0B specification Transceiver not included (power supply has reinforced isolation)
USB device	Prepared for future use	USB-DEV	Plug-Type Mini B
USB host	For connection to Flash drive for application software, updating, datalogging and service	USB-H	Plug-Type A
RS485-1, RS485-2	Communication bus to SMART devices (e.g. Modbus slave), service tools, smart devices (e.g. Modbus master) RS485-1 can be polarized as master from the application	RS485-1 RS485-2	Plug-Type A according to IEC 60320-1 Provide 500V peak transient galvanic isolation
Ethernet	For web server functionality, integration (e.g. Modbus TCP) NOTICE Do not route cable outside of buildings. Connect only to IT equipment classed as EN 60950 or EN 62368 (information technology equipment, Safety, General requirements)	ETHERNET	Interface type: 10 BASE-T and 100 BASE-TX, IEEE 802.3 MOD-X (Automatic medium-diameter crossover)

PRODUCT NUMBERS

CODE	DESCRIPTION
080G0327	MCX15B2, 1xRS485, S
080G0328	MCX15B2, LCD, 1xRS485, S
080G0329	MCX20B2, 2xRS485, I (12 pieces)
080G0330	MCX20B2, LCD, 2xRS485, I (12 pieces)
080G0331	MCX20B2, LCD, 2xRS485, S
080G0332	MCX20B2, LCD, 4xSSR, 2xRS485, S
Accessories	
080G0404	MCX20B2 CONNECTORS KIT

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

DIMENSIONS

Wire lengths			
Interface	Max wire length (m)	Max. baudrate (bps)	Min. wire size
Ethernet	100	10/100 M	
CANbus	1000	50 K	AWG18
	500	125 K	AWG22
	250	250 K	AWG24
	80	500 K	AWG26
	30	1 M	AWG28
RS485	1000	125 K	AWG22
Signal wiring	30		