



MCX15B electronic controller

MCX15B is fitted with or without graphic LCD display. It is an electronic controller that stands on the top of the MCX range, thanks to the large number of its inputs and outputs. It holds all the typical functionalities of MCX controllers: programmability, connection to the CANbus local network and up to two Modbus RS485 serial communication interfaces. Furthermore it is available in two models, powered at 110-230Vac or 24Vac





GENERAL FEATURES

	MCX15B	
ANALOG INPUTS		
NTC. 0/1V. 0/5V	4	
Universal (NTC, Pt1000, 0/1V, 0/5V, 0/10V, ON/OFF, 0/20mA, 4/20mA) selectable via software	б	
Total number	10	
DIGITAL INPUTS		
24V optoinsulated	18	
230Vac optoinsulated	4	
Total number	18	
ANALOG OUTPUTS		
0/10Vdc optoinsulated	4	
PWM, PPM selectable via software	2	
Total number	6	
DIGITAL OUTPUTS		
SPDT relay 16A (changeover contacts)	2	
SPST relay 8A (normally open contacts)	9	
SPDT relay 8A (changeover contacts)		
Total number	15	
OTHERS		
Power supply 24V AC/20-60V DC	•	
Power supply 110V/230V AC	•	
Connection for programming key	•	
Connection for remote display and keyboard	•	
Buzzer	•	
CANbus	•	
RTC clock	•	
Modbus RS485 serial interface	•	
Dimensions (DIN modules)	16	
Mounting	DIN bar	



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TECHNICAL SPECIFICATIONS

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POWER SUPPLY

- 85Vac at 265Vac, 50-60Hz. Maximum power consumption: 26VA. Insulation between power supply and the extra-low voltage: reinforced

- 20Vdc at 60Vdc and 24Vac ± 15% 50/60Hz. Maximum power consumption: 12W, 20VA. Insulation between power supply and the extra-low voltage: functional

I/O	TYPE	NUMBER	SPECIFICATIONS	I/O	TYPE	NUMBER	SPECIFICATION
Digital Relay outputs	Relay	Relay 15 Concerning the insulation distance there are three groups of relays: - group 1: relays 1 to 8 - group 3: relays 9 to 13 - group 3: relays 14 to 15 Insulation between relays of the same group: functional Insulation between relays and the extra-low voltage parts: reinforced Insulation between relays and the extra-low voltage parts: reinforced Total current load limit: 92A C1-NO1 to C9-NO9 Normally open contact relays 8A: - characteristics of each relay:	- group 1: relays 1 to 8 in	Digital inputs	24V optoinsulated	18	DI1 to DI18 Digital Inputs op
				230Vac optoinsulated	4	DIH1 to DIH4 Inputs optoinsul - NOTE: when the couple of inp	
			Analog outputs	0/10V	4	AO1, AO2, AO3, Analog outputs o External power s	
				PWM, PPM	2	AO5, AO6 Analog outputs - pulsing output or modulation - pulsing output	
						open circuit v minimum loo	
			Analog inputs	NTC, 0/1V, 0/5V	4	AI7 to AI10 Analog inputs se - NTC temperato - pressure transo	
			High inrush current (80A - 20ms) changeover contacts relay 16A: - characteristics of each relay: 7A 250 Vac for resistive loads - 100.000 cycles 3.5A 230Vac for inductive loads - 230.000 cycles with cos(phi) = 0.4		Universal	4	Al1 to Al6 Universal analog - ON/OFF (curre - 0/1V, 0/5V, 0/11 - 0/20mA, 4/20r - NTC (10kΩ at 2 - Pt1000
		Using of device in case of Tamb = 70°C has to be according to following requirements: - maximum load admitted for 8A relay: 4A 250Vac - maximum load admitted for 16A relay: 5A 250Vac				12V+ power sup 5V+ power supp	

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GENERAL FEATURES AND WARNINGS

PLASTIC HOUSING FEATURES

- 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: ≥ 250V 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 II

- Software class and structure: class A

CE COMPLIANCE

- Committance
 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 follwing norms:
 EN61000-6-1, EN61000-6-3 (immunity for residential, commercial and ligth-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 - 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 reccomended: vertical
- The installation must be executed according 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
- 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 chock, large and rapid fluctuations in ambient temperature that in combination with high humidity can condensate, 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 Fieldbus Installation Guide 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 nearly touching the electronic components fitted on the board to avoid electrostatic discharges

TIONS

uts optoinsulated 24Vac 50/60Hz o 24Vdc

- oinsulated, 230Vac 50/60Hz. Basic insulation
- when the 230Vac DH1 input is used, the corresponding 24V DI1 input is not available anymore; the same for the of inputs DIH2 and DI2, DIH3 and DI3, DIH4 and DI4

AO3, AO4

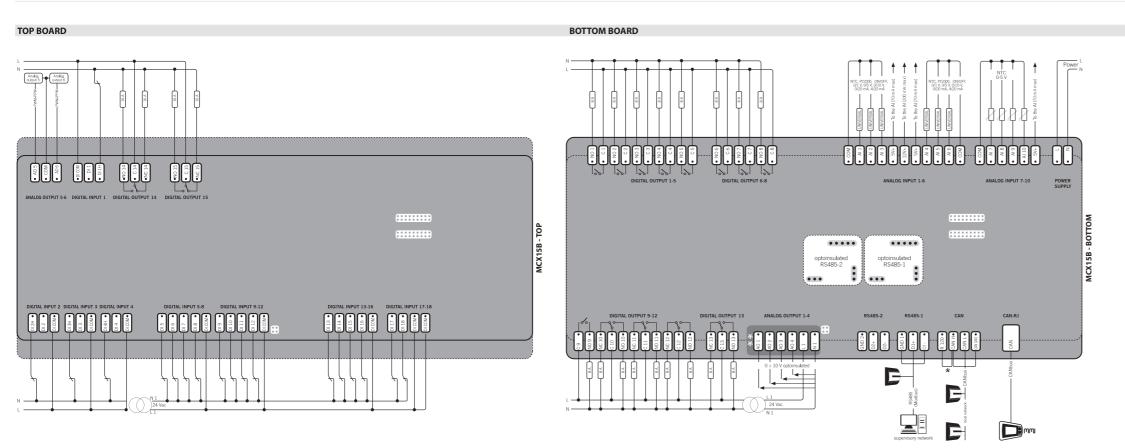
tputs optoinsulated 0/10Vdc 10mA Max for each output wer supply 24Vac/Vdc

- tputs selectable via software between:
- output, synchronous with the line, at modulation of impulse position (PPM)
- lulation of impulse width (PWM)
- output, at modulation of impulse position (PPM) with range 20Hz to 1KHz:
- ircuit voltage: 6.8V
- $um load: 1k\Omega$

- outs selectable via software between:
- perature probes, default: $10k\Omega$ at $25^{\circ}C$ transducers with 0/5V output

- nalog inputs selectable via software between:
- (current: 20mA) 5V, 0/10V
- 4/20mA
- kΩ at 25°C)

er supply 12Vdc, 200mA max for 4/20mA transmitter (total on all outputs) supply 5Vdc, 210mA max for 0/5V transmitter (total on all outputs)



*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

MAKING MODERN LIVING POSSIBLE

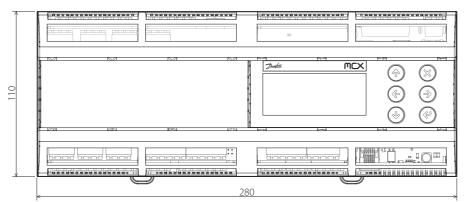




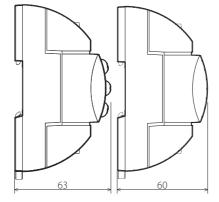
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CONNECTIONS

TOP BOARD

- Analog output 5-6 connector

- Analog output 3-0 connector 3 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm² Digital input 1 connector 3 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm² Digital output 14 connector
- Jay stress plug-in connector type pitch 5mm: section cable 0.2-2.5mm²
 Digital output 15 connector
- 3 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm²
- Digital input 2 connector
 3 way screw plug-in connector type pitch 5mm; section cable 0.2-2.5mm²
 Digital input 3 connector
- Digital input 5 connector type pitch 5mm: section cable 0.2-2.5mm²
 Digital input 4 connector type pitch 5mm: section cable 0.2-2.5mm²
 Digital input 5-8 connector
 Digital input 5-8 connector
- S way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm²
 Digital input 9-12 connector
- Digital III plu 9-12 Connector 5 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm² Digital input 13-16 connector 5 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm² Digital input 17-18 connector 4 way screw plug-in connector 4 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm²

BOTTOM BOARD

- Analog output 5-6 connector

- J way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm²
 Digital output 1-5 connector
 10 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm²
 Divided output 6 0 connector
- Digital output 6-8 connector 6 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm² - Analog input 1-6 connector
- Analog input Domineted 11 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm² Analog input 7-10 connector 6 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm² Development connector
- Power supply connector Digital output 9-12 connector type pitch 5mm: section cable 0.2-2.5mm²
 Digital output 9-12 connector

- Ingitial output 9-12 connector
 11 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm²
 Digital output 13 connector
 3 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm²
 Analog output 14 connector
 May screw plug-in connector
 May screw plug-in connector
 Analog output 14 connector
 6 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm² - RS485-2 connector
- 3 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm²
- RS485 connector
- 3 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm² CAN connector
- 4 way screw plug-in connector type pitch 5mm: section cable 0.2-2.5mm²
- CAN-RJ connector 6/6 way telephone RJ11 plug type

USER INTERFACE

LCD DISPLAY

- display mode: STN blue transmissive
- display from the DE backlight adjustable via software display format: 128x64dots active visible area : 58x29mm
- contrast: adjustable via software

KEYBOARD

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

PRODUCT PART NUMBERS

CODE	DESCRIPTION
080G0088	MCX15B, 24V, LCD, RTC, S
080G0089	MCX15B, 230V, LCD, RTC, S
080G0036	MCX15B, 24V, LCD, RS485, RTC, S
080G0037	MCX15B, 230V, LCD, RS485, RTC, S
080G0053	MCX15B, 24V, LCD, 2XRS485, RTC, S
080G0054	MCX15B, 230V, LCD, 2XRS485, RTC, S
080G0090	MCX15B, 24V, RTC, S
080G0091	MCX15B, 230V, RTC, S
080G0042	MCX15B, 24V, RS485, RTC, S
080G0043	MCX15B, 230V, RS485, RTC, S
080G0055	MCX15B, 24V, 2XRS485, RTC, S
080G0056	MCX15B, 230V, 2XRS485, RTC, S