Danfoss

Danfoss   Electronics...
MCX makes the difference

![Danfoss logo]

|ITALY|

|DENMARK|

General **index**

General index

|MCX FAMILY| - Programmable control

Programmability for all

Programmability for all

With its range of products, Danfoss Electronics aims at extending and widening the concept of programmability by leaving behind the current limits of just high-level applications and expanding it to all possible environments.

Programmability therefore becomes the instrument that enables you to adjust the control to the user and not the other way round.

Through the development of its application software, Danfoss Electronics makes possible to work on several levels:

- a first level for setting and customising Danfoss Electronics' standard applications. That is an already developed application software that can be 'trimmed' to provide a completely new personalised programme;

- a higher structured language level (from standard C++) for those who are expert enough and prefer to exploit the highest possible detail and potential that a standard programming language can offer.

THE DANFOSS ELECTRONICS DEVELOPMENT SYSTEM

The application software is written in a programming language drawn from C++. We have hidden some of its unsafe functions for the programming of our instruments and at the same time we have made the language simpler and less likely to allow errors.

Any text editor can be used to write the programme, however Danfoss Electronics recommends the use of specific editors for software development, enabling the highlighting of the syntax, the help online as well as the integration with the compiler and MCX uploader.

The elements of the development system are contained in a software package provided by Danfoss Electronics and are as follows:

- **A basic function library**
  (MCXLib.lib and DisplayLib.lib)
  These functions, accessed by the developer from inside its software, allow quick and easy use of Danfoss Electronics device hardware resources, such as digital and analogue inputs and outputs, serial communication port, CANbus network communication port, LED, buzzer, display, keyboard, etc...

- **A command line compiler** (nvmcc.exe)
  Developed and optimised for Danfoss Electronics controls, it represents the heart of the system, as it allows the "translation" of the software from text format to machine format,(object code), ready to be uploaded into the instrument.

- **A programme for uploading the application into the device** (nupload.exe)
  A serial converter makes it possible to interface any PC with Danfoss Electronics controls to perform rapid and safe uploading of the application and for BIOS updating.

- **A software simulator**
  To simulate the application without hardware, it performs a rapid debug, integrating external debug instruments for more accurate simulation, tracing all the amendments to the inputs and outputs to allow automatic test repeatability. The simulator may be run with a simple command from the PC without requiring the connection and powering of any device.

- **A debugger**
  An essential instrument for software development that enables to analyse, identify and eliminate any 'bugs' present in the application by running the programme in small steps, to identify the fragment of the code that generates the problem.
  The typical characteristics present in the Danfoss Electronics debugger include programme running up to the current line, step by step execution, entry of a break point at a preset row, displaying of the value of variables selected during execution, back tracing of the function calls and more.

With the development environment, Danfoss Electronics also provides:

- a demo to use as a basis for creating your own application;

- some literature relating to the development system and the software writing editor installation and integration.

MCX **network**

MCX network

Danfoss Electronics presents its instrumentation series through new MCX programmable controls, which are able to meet the management and requirements of all HVAC/R and industrial automation applications.

MCX system has been formulated along the following concepts:

PROGRAMMABILITY:
to offer to our customers the opportunity to search for the most suitable customized solution through the MCX programmable controls.

MODULAR DESIGN:
to optimize ongoing performance of the system through the MCX and EXC expansion controls.

CONNECTIVITY:
to make our products compatible with the most common communication protocols in the market, through the ACC accessory controls.

USER INTERFACE:
to make our products "user friendly" in order to facilitate the end user's programming of the entire system's function through the MMI controls.

MCX system is a global, open and flexible system. The modular architecture of the system has been built using EXC expansion controls, ACC accessory controls and a standard communication protocol (CANbus for local network, Modbus for supervisor network). The open structure allows connectivity with other standard protocols utilized for the HVAC/R and industrial automation markets.

The expansion of the network is possible through a "plug & play" system, which provides extremely easy access to shared resources.

Through the innovative software programme, the customer has a complete and immediate entry to all the system's elements. The integrated management of the components and the realization of a system with distributed control has never been so easy…

RS485

BMS (Modbus Master)

MYK

CANbus

USB

Computer

MYK

MCX

mmi

ACC

EXC

CANbus

RS485

CANbus

ETHERNET

Firewall

Internet

Web browser Remote SV
(Modbus TCP Master)

ETHERNET

Web browser Local SV
(Modbus TCP Master)

GPRS - ADSL - GSM

RS232

RS485

PSTN

Modem

Modem

ACC
GTW

Web server
Datalogger
Supervisor

GSM

RS485 Modbus /
BACnet 485

RS485

LonWorks FTT 10

BMS Local SV

SMS

ACC
GTW
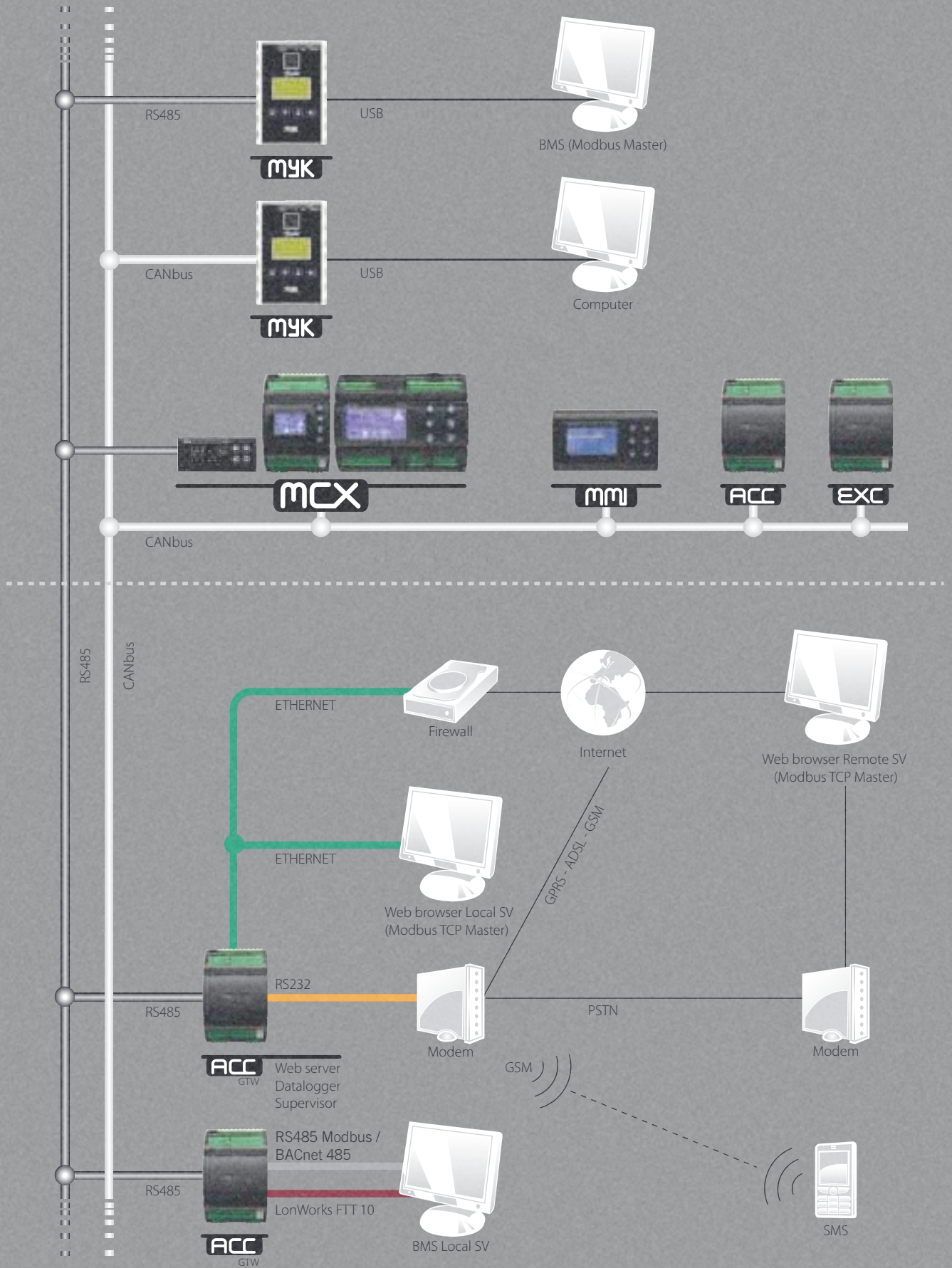
- LonWorks is a registered trademark of Echelon Corporation
- Ethernet is a registered trademark of Xerox Corporation
- BACnet is a registered trademark of American Society
  of Heating, Refrigerating and Air Conditioning Engineers
- Modbus is a registered trademark of Schneider Automation

Introduction

MCX technical specifications

ANALOG INPUTS
NTC, 0/1V, 0/5V
NTC, Pt1000, 0/1V, 0/5V, 0/10V, ON/OFF, 0/20mA, 4/20mA selectable via software
Max number

DIGITAL INPUTS
24V optoisolated
230Vac optoisolated
Voltage free contact
Max number

ANALOG OUTPUTS
0/10Vdc optoisolated
0/10Vdc, PWM, PPM selectable via software
PWM, PPM cutting phase
Max number

DIGITAL OUTPUTS
SPST relay 8A
SPDT relay 8A
SPST relay 16A
SPDT relay 16A
SSR 24Vac/230Vac (optional)
Max number

POWER SUPPLY
20/60Vdc - 24Vac
110-230Vac – 50/60Hz
Isolated power supply

OTHERS
Connection for programming key
Connection for remote display and keyboard
Buzzer
CANbus
RTC clock
Modbus RS485 serial interface
TTL serial interface
Dimensions
Mounting

• Available for all models º Available for some models

	MCX06C	MCX06D	MCX08M	MCX15B	MCX20B
	2	2	4	4	6
	2	2	4	6	10
	4	4	8	10	16
			4	18	22
				4	4
	6	8	8	14	18
	6	8	8	18	22
			2	4	6
	1	2			
	1	1	2	2	
	2	3	4	6	6
	6 (5A)	5 (5A)	2	9	13
		1	4	4	4
			2		2
				2	1
		1	6	13	17
	6	6	8	15	20
	·	·	○	○	○
			○	○	○
	·	·	·	·	·
	·	·	·	·	·
	·	·	·	·	·
		·	·	·	·
	·	·	·	·	·
	○	○	○	○	○
	1 not isolated	1	1	2	2
	○		·		
	33x75mm	4DIN	8DIN	16DIN	16DIN
	Panel	DIN bar	DIN bar	DIN bar	DIN bar

MCX06C

MCX06C is an electronic controller that holds all the typical functionalities of MCX controllers in the 32x74mm standard size: programmability, connection to the CANbus local network, Modbus RS485 serial communication interface

| |Programmable| | |IP 64| | |CAN network| | |Graphic display| | |Multilanguage| | |MYK connection| | |Serial board| | |Real Time Clock| |

MCX06C

Family:|MCX| Type:|06Compact| Display:|LED| Dimensions:|33x75mm|

Product part numbers

code	description
080G0065	MCX06C, 24V, LED, S
080G0066	MCX06C, 24V, LED, RS485, RTC, S

Note: the single pack codes (S) don't include standard kit connectors. On request are available also the industrial pack codes (I) that don't include standard kit connectors

General features

	MCX06C
ANALOG INPUTS	
NTC, 0/1V, 0/5V	2
Universal (NTC, Pt1000, 0/1V, 0/5V, 0/10V, ON/OFF, 0/20mA, 4/20mA) selectable via software	2
Total number	4
DIGITAL INPUTS	
Voltage-free contact	6
Total number	6
ANALOG OUTPUTS	
0/10Vdc, PWM, PPM selectable via software	1
PWM, PPM selectable via software	1
Total number	2
DIGITAL OUTPUTS	
SPST relay 5A (normally open contacts)	6
Total number	6
OTHERS	
Insulated power supply 20/60Vdc - 24Vac	•
Connection for programming key	•
Connection for remote display and keyboard	•
Buzzer	
CANbus	•
RTC clock	•
Modbus RS485 serial interface	•
Dimensions (mm)	33x75
Mounting	Panel

Dimensions

LED DISPLAY

MCX06D

MCX06D is fitted with LED display, 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

PRG		CAN				RS485 Modbus	12.00
|Programmable|	|IP 40|	|CAN network|	|Graphic display|	|Multilanguage|	|MYK connection|	|Serial board|	|Real Time Clock|
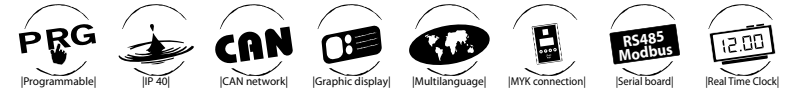
Family:|MCX| Type:|06DIN| Display:|LED-LCD| Dimensions:|04DIN|

Product part numbers

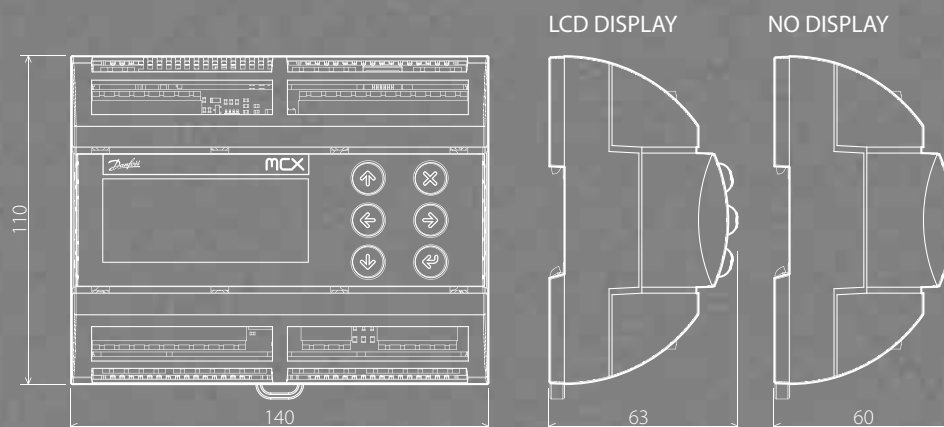| code	description
080G0108	MCX06D, 24V, LED, S
080G0109	MCX06D, 24V, LED, RS485, RTC, S
080G0111	MCX06D, 24V, LCD, S
080G0112	MCX06D, 24V, LCD, RS485, RTC, S
080G0114	MCX06D, 24V, S
080G0115	MCX06D, 24V, RS485, RTC, S

Note: the single pack codes (S) include standard kit connectors. On request are available also the industrial pack codes (I) that don't include standard kit connectors
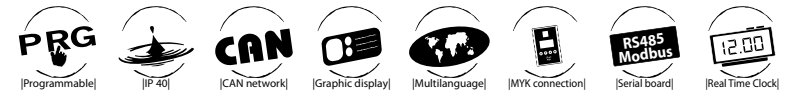
General features

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

Dimensions

LED DISPLAY   LCD DISPLAY   NO DISPLAY

110

70   63   63   60

MCX08M

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 serial communication interface.

It is moreover available in the version with power supply 110-230Vac or 24Vac

PRG		CAN					RS485 Modbus	12.00
|Programmable|	|IP 40|	|CAN network|	|Graphic display|	|Multilanguage|	|MYK connection|	|Serial board|	|Real Time Clock|
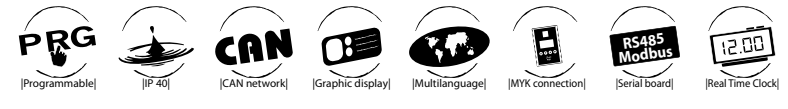
Family:|MCX| Type:|08Medium| Display:|LCD| Dimensions:|08DIN|

Product part numbers

code	description
080G0084	MCX08M, 24V, LCD, RTC, S
080G0085	MCX08M, 230V, LCD, RTC, S
080G0028	MCX08M, 24V, LCD, RS485, RTC, S
080G0029	MCX08M, 230V, LCD, RS485, RTC, S
080G0086	MCX08M, 24V, RTC, S
080G0087	MCX08M, 230V, RTC, S
080G0034	MCX08M, 24V, RS485, RTC, S
080G0035	MCX08M, 230V, RS485, RTC, S

Note: the single pack codes (S) include standard kit connectors. On request are available also the industrial pack codes (I) that don't include standard kit connectors
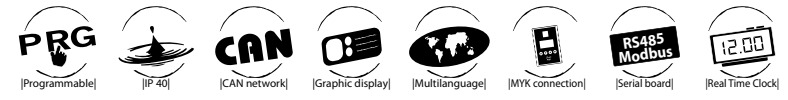
MCX**08M**

General features

	MCX08M
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	4
Total number	8
DIGITAL INPUTS	
Voltage free contact	8
Total number	8
ANALOG OUTPUTS	
0/10Vdc optoinsulated	2
PWM, PPM selectable via software	2
Total number	4
DIGITAL OUTPUTS	
SPST relay 16A (normally open contacts)	2
SPST relay 8A (normally open contacts)	2
SPDT relay 8A (changeover contacts)	4
Total number	8
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)	8
Mounting	DIN bar

Dimensions

LCD DISPLAY   NO DISPLAY

110

140   63   60

Programmable control

MCX15B

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

| |Programmable| | |IP 40| | |CAN network| | |Graphic display| | |Multilanguage| | |MYK connection| | |Serial board| | |Real Time Clock| |

Family:|MCX| Type:|15Big| Display:|LCD| Dimensions:|16DIN|

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

Note: the single pack codes (S) include standard kit connectors. On request are available also the industrial pack codes (I) that don't include standard kit connectors

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	6
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)	14
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

Dimensions

Programmable control

MCX20B

MCX20B 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

PRG		CAN				RS485 Modbus	12.00
|Programmable|	|IP 40|	|CAN network|	|Graphic display|	|Multilanguage|	|MYK connection|	|Serial board|	|Real Time Clock|

Family:|MCX| Type:|20Big| Display:|LCD| Dimensions:|16DIN|

Product part numbers

| code	description
080G0092	MCX20B, 24V, LCD, RTC, S
080G0093	MCX20B, 230V, LCD, RTC, S
080G0044	MCX20B, 24V, LCD, RS485, RTC, S
080G0045	MCX20B, 230V, LCD, RS485, RTC, S
080G0057	MCX20B, 24V, LCD, 2XRS485, RTC, S
080G0058	MCX20B, 230V, LCD, 2XRS485, RTC, S
080G0094	MCX20B, 24V, RTC, S
080G0095	MCX20B, 230V, RTC, S
080G0050	MCX20B, 24V, RS485, RTC, S
080G0051	MCX20B, 230V, RS485, RTC, S
080G0059	MCX20B, 24V, 2XRS485, RTC, S
080G0060	MCX20B, 230V, 2XRS485, RTC, S

Note: the single pack codes (S) include standard kit connectors. On request are available also the industrial pack codes (I) that don't include standard kit connectors

General features

	MCX20B
ANALOG INPUTS	
NTC, 0/1V, 0/5V	6
Universal (NTC, Pt1000, 0/1V, 0/5V, 0/10V, ON/OFF, 0/20mA, 4/20mA) selectable via software	10
Total number	16
DIGITAL INPUTS	
24V optoinsulated	22
230Vac optoinsulated	4
Total number	22
ANALOG OUTPUTS	
0/10Vdc optoinsulated	6
Total number	6
DIGITAL OUTPUTS	
SPST relay 16A (normally open contacts)	2
SPDT relay 16A (changeover contacts)	1
SPST relay 8A (normally open contacts)	13
SPDT relay 8A (changeover contacts)	4
Total number	20
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

Dimensions

LCD DISPLAY   NO DISPLAY

110

280   63   60

LCX06C

LCX06C is the new low-end programmable controller in the 32x74mm standard size. It also provides options for Modbus RS485 serial communication interface and Real Time Clock

PRG		CAN				**RS485 Modbus**	**12.00**
|Programmable|	|IP 64|	|CAN network|	|Graphic display|	|Multilanguage|	|MYK connection|	|Serial board|	|Real Time Clock|

LCX**06C**

Family:|LCX| Type:|06Compact| Display:|LED| Dimensions:|33x75mm|

Product part numbers

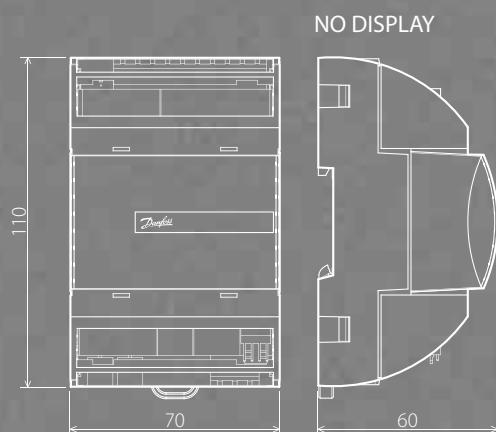| code	description
080G0234	LCX06C, 24V, LED, S
080G0236	LCX06C, 24V, LED, RS485, RTC, S

Note: the single pack codes (S) don't include standard kit connectors. On request are available also the industrial pack codes (I) that don't include standard kit connectors

General features

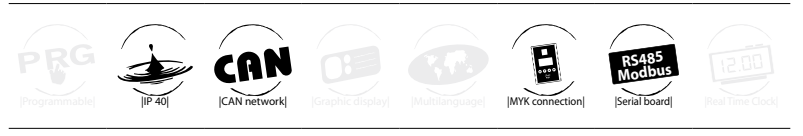|	LCX06C
ANALOG INPUTS	
Universal (NTC ,PT1000, ON/OFF, 0/1V, 0/5V, 0/10V selectable via software)	2
Universal (NTC ,PT1000, ON/OFF, 0/1V, 0/5V, 0/10V, 0/20mA, 4/20mA selectable via software)	2
Total number	4
DIGITAL INPUTS	
Voltage-free contact	6
Total number	6
ANALOG OUTPUTS	
0/10Vdc, PWM-PPM cutting phase selectable via software	2
Total number	2
DIGITAL OUTPUTS	
SPST Relay 5A (normally open contacts)	6
Total number	6
OTHERS	
Power supply 20/30Vdc - 24Vac	•
Connection for programming key	•
Connection for remote display and keyboard	•
Buzzer	
CANbus	
RTC clock	•
Modbus RS485 serial interface	•
TTL serial interface	•
Display	LED 3½
Dimensions (mm)	33x75
Mounting	Panel

Dimensions

LED DISPLAY
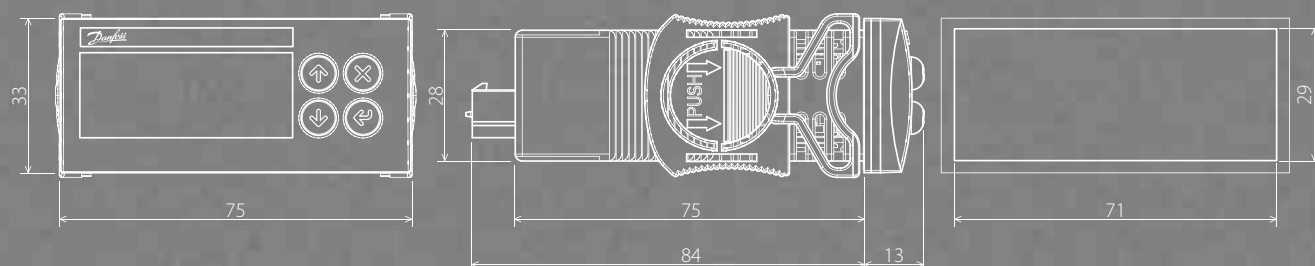
EXC06D

The EXC06D expansion control presents a configuration of 12 inputs and 9 outputs to offer the maximum flexibility to expand the MCX system. Further features are the possibility to connect it to the local CANbus and Modbus RS485 serial communication interface

PRG		CAN				RS485 Modbus	RS485 Modbus
|Programmable|	|IP 40|	|CAN network|	|Graphic display|	|Multilanguage|	|MYK connection|	|Serial board|	|Seriale board|
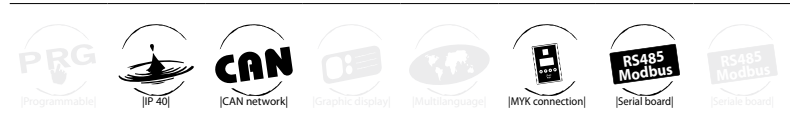
EXC06D

Family:|EXC| Type:|06DIN| Display:|no| Dimensions:|04DIN|

Product part number

code	description
080G0069	EXC06D, 24V, S

General features

	EXC06D
ANALOG INPUTS	
NTC, 0/1V, 0/5V	2
Universal (NTC, Pt1000, 0/1V, 0/5V, 0/10V, ON/OFF, 0/20mA, 4/20mA) selectable via software	2
Total number	4
DIGITAL INPUTS	
Voltage-free contact	8
Total number	8
ANALOG OUTPUTS	
0/10Vdc, PWM, PPM selectable via software	2
PWM, PPM selectable via software	1
Total number	3
DIGITAL OUTPUTS	
SPST relè 5A (normally open contacts)	5
SPST relè 8A (changeover contacts)	1
Total number	6
OTHERS	
Insulated power supply 20/60Vdc - 24Vac	•
Connection for programming key	•
Connection for remote display and keyboard	
Buzzer	
CANbus	•
RTC clock	
Modbus RS485 serial interface	•
Dimensions (DIN modules)	4
Mounting	DIN bar

Dimensions

NO DISPLAY

EXC12M

The EXC12M expansion control presents a configuration of 21 inputs and 20 outputs to offer the maximum flexibility to expand the MCX system.

Further features are the possibility to connect it to the local CANbus and Modbus RS485 serial communication interface.

It is moreover available in the version with power supply 24Vac or 230Vac

PRG		CAN				RS485 Modbus	
|Programmable|	|IP 40|	|CAN network|	|Graphic display|	|Multilanguage|	|MYK connection|	|Serial board|	|Real Time Clock|

EXC12M

Family:|EXC| Type:|12Medium| Display:|no| Dimensions:|08DIN|

Product part number

| code	description
080G0070	EXC12M, 24V, S
080G0071	EXC12M, 230V, S

Note: the single pack codes (S) include standard kit connectors. On request are available also the industrial pack codes (I) that don't include standard kit connectors

General features

	EXC12M
ANALOG INPUTS	
NTC, 0/1V, 0/5V	3
NTC, 0/1V, 0/5V, 0/10V	4
0/1V, 0/5V, 0/10V, 4/20mA	5
Total number	12
DIGITAL INPUTS	
Voltage free contact	9
Total number	9
ANALOG OUTPUTS	
0/10Vdc	6
0/10Vdc, PWM, PPM selectable via software	2
Total number	8
DIGITAL OUTPUTS	
SPST relè 16A (normally open contacts)	2
SPST relè 5A (normally open contacts)	10
Total number	12
OTHERS	
Insulated power supply 24V AC/20-60V DC	·
Insulated 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)	8
Mounting	DIN bar

Dimensions

NO DISPLAY

110

140

60

User interface module
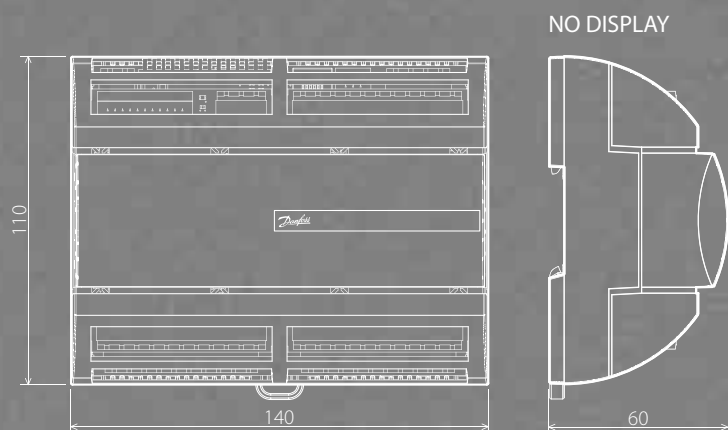
MMIGRS

MMIGRS is MCX's family remote interface. It's fitted with a graphic display that allows a complete customization of the user interface

PRG		CAN					
|Programmable|	|IP 64|	|CAN network|	|Graphic display|	|Multilanguage|	|MYK connection|	|Serial Sound|	|Real Time Clock|
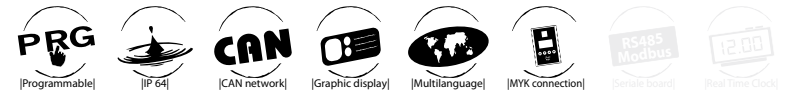
Family:|MMI| Type:|Graphic| Display:|LCD| Dimensions:|150x88mm|

Product part numbers

code	description
080G0010	MMIGRS, REMOTE DISPLAY, PANEL, S
080G0020	MMIGRS, REMOTE DYSPLAY, WALL, S

Note: the single pack codes (S) don't include standard kit connectors. On request are available also the industrial pack codes (I) that don't include standard kit connectors

General features

	MMIGRS
TECHNICAL DATA	
Power supply	from the MCX through the RJ11 telephone connector 12Vdc ± 20% external power supply 12Vac ± 15% external transformers maximum power consumption: 1.5W
USER INTERFACE	
Display	graphical LCD blue transmissive white LED backlight with adjustable brightness via software display format 128x64dots active visible area 66.5x33.2mm contrast adjustable via software
Keyboard	6 white LED backlight keys individually managed via software function key configurable by means the application software
Mounting	based on the version: - panel mounting - wall mounting
OTHERS	
CANbus	.
Modbus RS485 serial interface	
Buzzer	.
RTC clock	
Protection degree	IP64 ~ NEMA3R (panel version) IP40 (wall version)

Dimensions

WALL MOUNTING
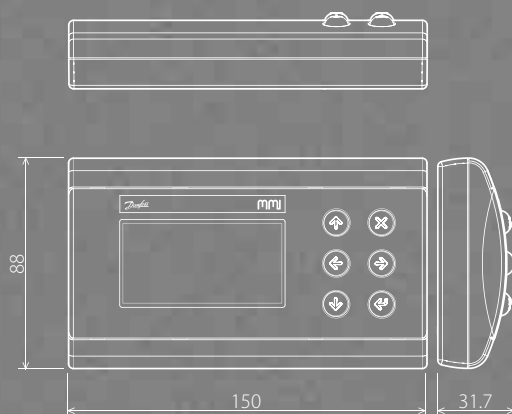
PANEL MOUNTING
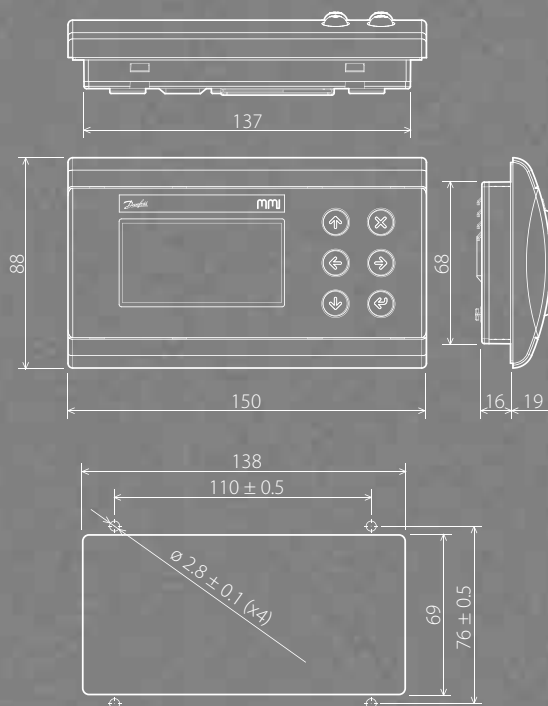
MMILDS

MMILDS

MMILDS is MCX's family remote interface. It's fitted with a LED display for displaying data from a MCX or from 2 probes that can be locally connected. The connection with any MCX controller is through the CAN bus network. The power supply can come from controller which it is connected

PRG
[Programmable]

|IP 65|

CAN
|CAN network|

[Graphic display]

[Multilanguage]

|MYK connection|

RS485 Modbus
[Seriale Board]

12:00
[Real Time Clock]

Family:|MMI| Type:|LED SMALL| Display:|LED| Dimensions:|36x84mm|

Product part number

code	description
080G0233	MMILDS, 12V, LED, CAN, REMOTE DISPLAY, PANEL, I

Note: the industrial pack code (I) don't include standard kit connectors

General features

	MMILDS
ANALOG INPUT	
NTC	1
0/20mA, 4/20mA, 0/5V, 0/1V	1
Total number	2
TECHNICAL DATA	
Power supply	12VDC-12VAC
USER INTERFACE	
Display	LED
Keyboard	3 keys
Mounting	Panel
OTHERS	
CANbus	•
Seriale Modbus RS485	
Buzzer	
RTC clock	
Protection degree	IP65

Dimensions

LED DISPLAY
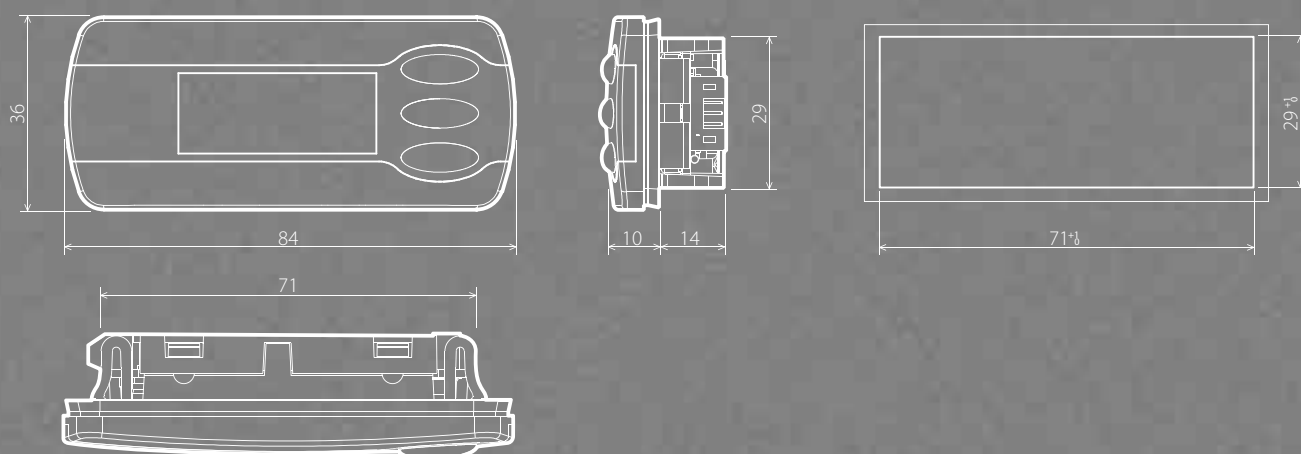
MMIMYK

MMIMYK is the advanced "all in one" device that performs up to three different functions:
- Programming module - Gateway - Data logger.

It has a bright graphic display and a keyboard that enable to configure the module to run several functions. It has also a slot for MMC card (Multi Media Card) to extend the memory capacity
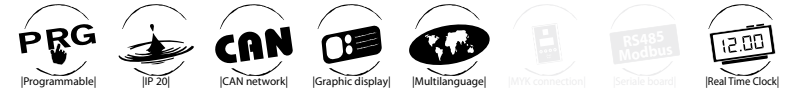
| |Programmable| | |IP 20| | |CAN network| | |Graphic display| | |Multilanguage| | |MYK connection| | |Seriale Scort| | |Real Time Clock| |

Family:|MMI| Type:|Prg| Display:|OLED| Dimensions:|71,5x105mm|

Product part numbers

code	description
080G0072	MMIMYK, PC/MCX INTERFACE AND MCX PROGRAMMING, S
080G0073	MMIMYK, PC/MCX INTERFACE AND MCX PROGRAMMING, DATA LOGGING, S

MMI**MYK**

Note: the single pack codes (S) include standard kit connectors

General features

	MMIMYK
TECHNICAL DATA	
Power supply	from the MCX through the RJ11 telephone connector
	12Vdc (from DC connector)
	24Vac (from screw plug-in connector type pitch 3.5mm): on this supply it is advisable to use a dedicated transformer 24Vac-10VA
	from USB 2.0 (maximum 500mA)
Memory	internal 2MB
	MMC expansion slot (Multi Media Card) up to 2GB
USER INTERFACE	
Display	graphic OLED
	display format 128x64dots
	active visible area 35x17.5mm
Keyboard	4 keys
Mounting	DIN guide or portable
OTHERS	
CANbus	isolated with respect to USB
Modbus RS485 serial interface	isolated with respect to USB
Buzzer	•
RTC clock	•
Protection degree	IP20

Dimensions

OLED DISPLAY

CSTFR1 (vertical side text)
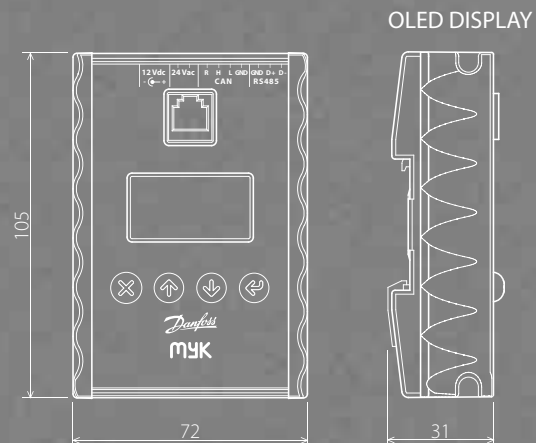
CSTFR1

CSTFR1 is an electronic programmable controller especially dedicated to refrigeration market and that allows full multiplexed cabinet management. Thanks to the software customisation possibility, it can be used in several types of application.

It's also available with optoinsulated Modbus RS485 serial communication interface

PRG		CAN				RS485 Modbus	
|Programmable|	|IP 40|	|CAN network|	|Graphic display|	|Multilanguage|	|MYK connection|	|Serial board|	|Real Time Clock|

Family:|CST| Type:|Custom| Display:|No| Dimensions:|08DIN|

Product part numbers

code	description
080G0155	CSTFR1, 230V, I
080G0156	CSTFR1, 230V, RS485, I

Note: the industrial pack code (I) include standard kit connectors

General features

	CSTFR1
ANALOG INPUTS	
NTC	4
NTC, 0/5V, 4/20mA selectable via software	1
Total number	5
DIGITAL INPUTS	
Voltage free contact	4
Total number	4
ANALOG OUTPUTS	
PWM, PPM selectable via software	1
Total number	1
DIGITAL OUTPUTS	
SPST relay 16A	1
SPDT relay 8A	1
SPST relay 8A	2
SSR 230Vac	1
Total number	5
OTHERS	
Insulated power supply 110-230Vac, 50-60Hz	•
Connection for programming key	•
Connection for remote user interface	•
Buzzer	
CANbus	•
RTC clock	
Modbus RS485 serial interface	•
Dimensions (DIN module)	8
Mounting	DIN bar

Dimensions

NO DISPLAY

110

140

60
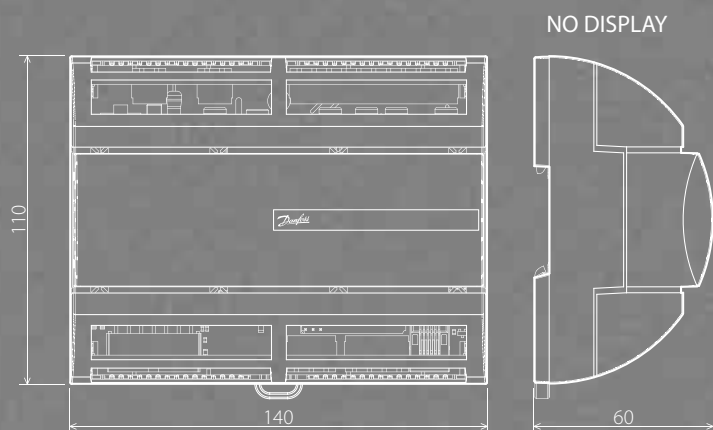
EXD316

EXD316 can be used where there are requirements to accurate control of superheat and temperature in connection with refrigeration. The superheat is controlled by one pressure transmitter and one temperature sensor. The expansion valve has to be a step motor valve type ETS or Saginomiya type UKV, SKV, VKV or PKV. An external battery backup can be mounted for safety cut off the valve when a power failure occurs. EXD316 can be also used as a "valve driver" by receiving a current or voltage signal from an external controller. EXD316 has a CANbus communication interface for the integration in the MCX system

PRG		CAN					
|Programmable|	|IP 20|	|CAN network|	|Graphic display|	|Multilanguage|	|MVK connection|	|Serial bord|	|Real Time Clock|

Family:|EXD| Type:|Driver for valve| Display:|No| Dimensions:|4DIN|

Product part number

code	description
084B8042	EXD316, SUPERHEAT CONTROLLER, S

General features

	EXD316
TECHNICAL DATA	
Power supply	24Vac/dc +/- 15% 50-60Hz, 10VA
Battery backup	18-24Vdc
Input signal	Current signal: 4-20mA or 0-20mA Voltage signal: 0-10V or 1-5V
Digital input	1
Alarm relay	1 (AC-1:4A ohmic , AC-15:3A inductive)
OTHERS	
CANbus	•
Modbus RS485 serial interface	
Buzzer	
RTC clock	
Protection degree	IP20
Mounting	DIN bar

Dimensions
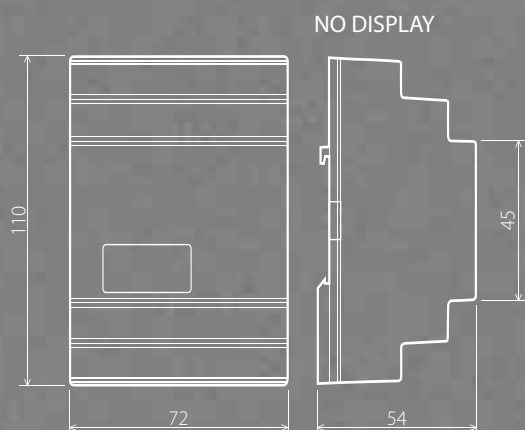
NO DISPLAY

ACCMMR

ACCMMR allows to connect up to two MMI user interface giving them the required power supply.

ACCMMR has 24Vac or 230Vac power supply and DIN rail mounting

PRG	IP 40	CAN	Graphic display	Multilanguage	MYK connection	Serial board	Real Time Clock
[Programmable]	[IP 40]	[CAN network]	[Graphic display]	[Multilanguage]	[MYK connection]	[Serial board]	[Real Time Clock]

Family:|ACC| Type:|Remote module| Display:|No| Dimensions:|04DIN|

Product part number

code	description
080G0011	ACCMMR, 24V, S
080G0052	ACCMMR, 230V, S

Note: the single pack codes (S) include standard kit connectors. On request are available also the industrial pack codes (I) that don't include standard kit connectors

General features

	ACCMMR
OTHERS	
Internal protection device	PTC thermistor
CANbus	•
Dimensions (DIN modules)	4
Mounting	DIN bar

Connection diagram

MMIGRS REMOTE CONNECTION

ACCCBI080G0075

CAN RJ1 CAN RJ2 CANbus MCX LINK

POWER SUPPLY

POWER SUPPLY

CANbus

CANbus

MCX06D   ACCMMR   MMIGRS
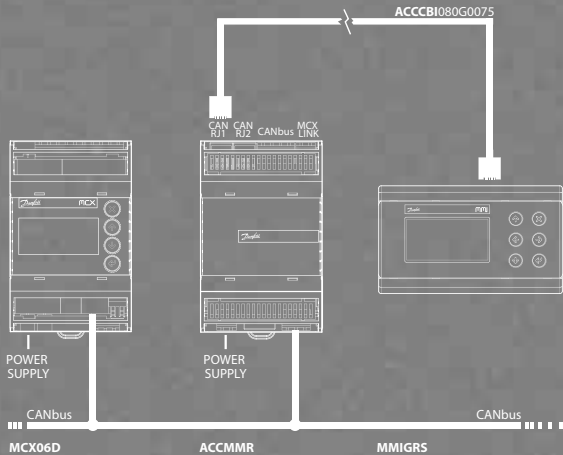
DIRECT CONNECTION BETWEEN MMIGRS AND MCX06

ACCCBI080G0075

YELLOW
GREEN
RED
BLACK

CAN RJ1 CAN RJ2 CANbus MCX LINK

ACCCNX080G0083

POWER SUPPLY

POWER SUPPLY

CANbus

CANbus

MCX06D   ACCMMR   MMIGRS

Dimensions

NO DISPLAY

110

70

60
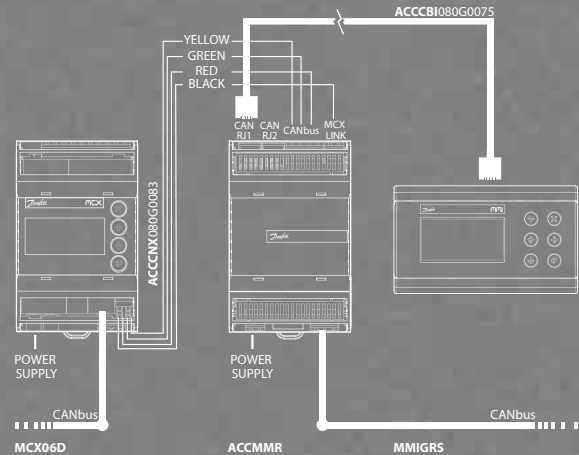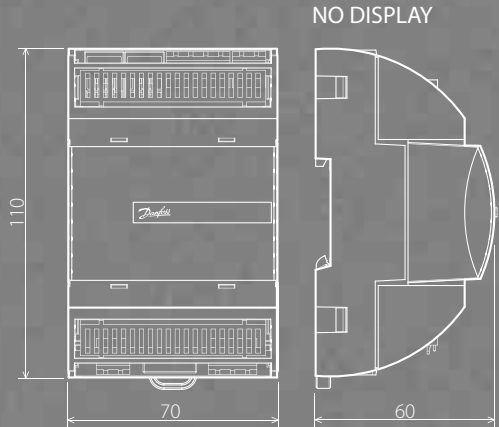
ACCGTW

ACCGTW is a industrial gateway that gives connectivity to Ethernet, Internet, external analogue Modem, GSM or GPRS. The gateway has internal functionality such as alarm management (SMS, e-mail and SNMP), data logger (with graphs processing) and a web server monitoring and control. ACCGTW permits to link any Modbus device connected via serial line. All the configurations take place by means the internal web server making easier devices configuration on every application

PRG		CAN				RS485 Modbus	12.00
[Programmable]	[IP 20]	[CAN network]	[Graphic display]	[Multilanguage]	[MYK connection]	[Serial board]	[Real Time Clock]

ACC**GTW**

Family|ACC| Type:|Gateway| Display:|No| Dimensions:|04DIN|

Product part number

| code	description
080G0068	ACCGTW, USB-RS485 CONVERTER
080G0187	ACCGTW, WEB SERVER GATEWAY
080G0188	ACCGTW, WEB SERVER GATEWAY WITH GSM MODEM

General features

	ACCGTW
DIGITAL INPUTS	
Voltage free contacts	2
POWER SUPPLY	
24Vac	•
CONNECTIONS	
Ethernet	RJ45 (10/100 Mbit/sec)
RS232	Female DB9
RS485	Screw connectors
OTHERS	
Protocols	Modbus RTU, ASCII, TCP/IP
Dimensions (DIN module)	4
Mounting	DIN bar

Connection diagram

Dimensions

NO DISPLAY
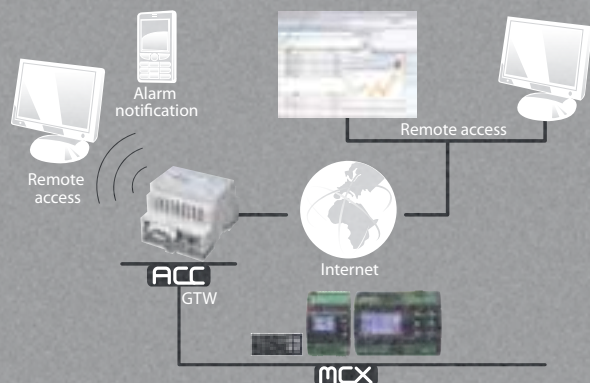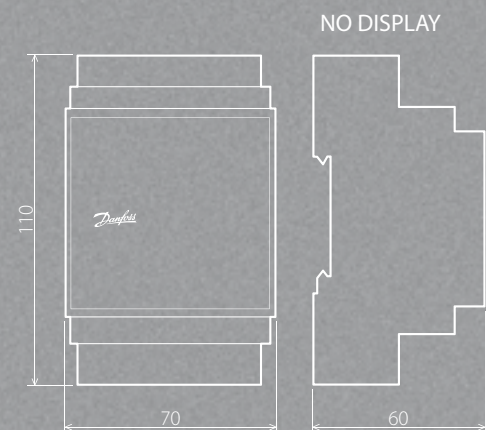
ACCSCS

ACCSCS is a controller for the speed regulation of voltage control fans. The regulating curve depend on the load and on the supply voltage. ACCSCS has 1 command signal input type 0…10V or 4…20mA or PWM, coming from an external regulating device. It's possible to connect more than one motor in parallel way on condition that maximum input regulating current is less than control nominal current

|IP 20| |IP 55| [CAN network] [Graphic display] [Multilanguage] [MYK connection] [Seriale board] [Real Time Clock]
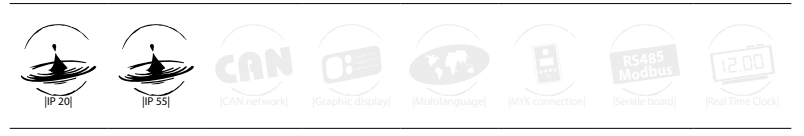
Family:|ACC| Type:|Regulator| Display:|No| Dimensions:|See models|

Product part number

code	description
080G0215	ACCSCS, SINGLE PHASE REG. 230VAC, 8A
080G0216	ACCSCS, SINGLE PHASE REG. 230VAC, 12A
080G0217	ACCSCS, THREE PHASE REG. 400VAC, 8A
080G0218	ACCSCS, THREE PHASE REG. 400VAC, 12A
080G0219	ACCSCS, THREE PHASE REG. 400VAC, 20A
080G0220	ACCSCS, THREE PHASE REG. 400VAC, 28A
080G0221	ACCSCS, THREE PHASE REG. 400VAC, 40A
080G0222	ACCSCS, THREE PHASE REG. 400VAC, 50A

ACC**SCS**

General features

	ACCSCS single-phase
OTHERS	
Input voltage	Single-phase 230V –15+10% 50Hz
Output voltage	0…99% of power supply
Command signal	PWM synchronous with the line
Protection degree	Metallic cover IP20

	ACCSCS three-phase
OTHERS	
Input voltage	Three-phase 400V –15% +10% 50Hz
Output voltage	0…99% of power supply
Command signal	- 0…10V - 4..20mA - PWM 5/10V
Aux output supply	+10V (Imax = 50mA)
Protection degree	Self-extinguishing plastic cover IP55

Dimensions

code	dimensions (mm)					
	A	B	C	D	E	F
080G0215	90	122	81	-	-	-
080G0216	144	122	86	-	-	-
080G0217	230	165	150	220	90	-
080G0218	230	265	165	220	200	-
080G0219	230	265	235	220	200	-
080G0220	340	270	235	322	165	-
080G0221	340	270	235	322	165	-
080G0222	340	440	235	322	340	170

ACCTRS

ACCTRS are safety transformers from 230Vac to 24Vac, 10VA fully packed into epossidic resin for screw mounting

ACCTRS

Family:|ACC| Type:|Transformers| Display:|No| Dimensions:|60x41.5mm|

### Product part number

code	description
080G0224	ACCTRS, EMERGENCY TRANSFORMER, 230VAC/24VAC, 10VA, SCREW MOUNTING

General features

	ACCTRS
TECHNICAL DATA	
Primar voltage	230Vac
Secondar voltage	24Vac
OTHERS	
Nominal power	10VA
Mounting	Screw

Dimensions

Accessory
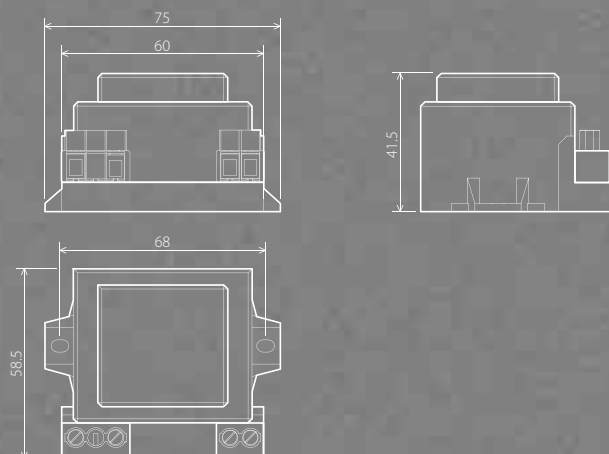
ACCTRD

ACCTRD are safety transformers from 230Vac to 24Vac protected against short circuit and fully packed into epossidic resin for DIN rail mounting

Family:|ACC| Type:|Transformers| Display:|No| Dimensions:|See models|

Product part number

code	description
080G0223	ACCTRD, EMERGENCY TRANSFORMER, 230VAC/24VAC, 12VA, INTERNAL PTC, DIN MOUNTING
080G0225	ACCTRD, EMERGENCY TRANSFORMER, 230VAC/24VAC, 22VA, INTERNAL PTC, DIN MOUNTING
080G0226	ACCTRD, EMERGENCY TRANSFORMER, 230VAC/24VAC, 35VA, INTERNAL PTC, DIN MOUNTING

General features

	ACCTRD
TECHNICAL DATA	
Primar voltage	230Vac
Secondar voltage	24Vac
OTHERS	
Internal protection device	PTC thermistor
Mounting	DIN rail

Dimensions

080G0223	080G0225	080G0226
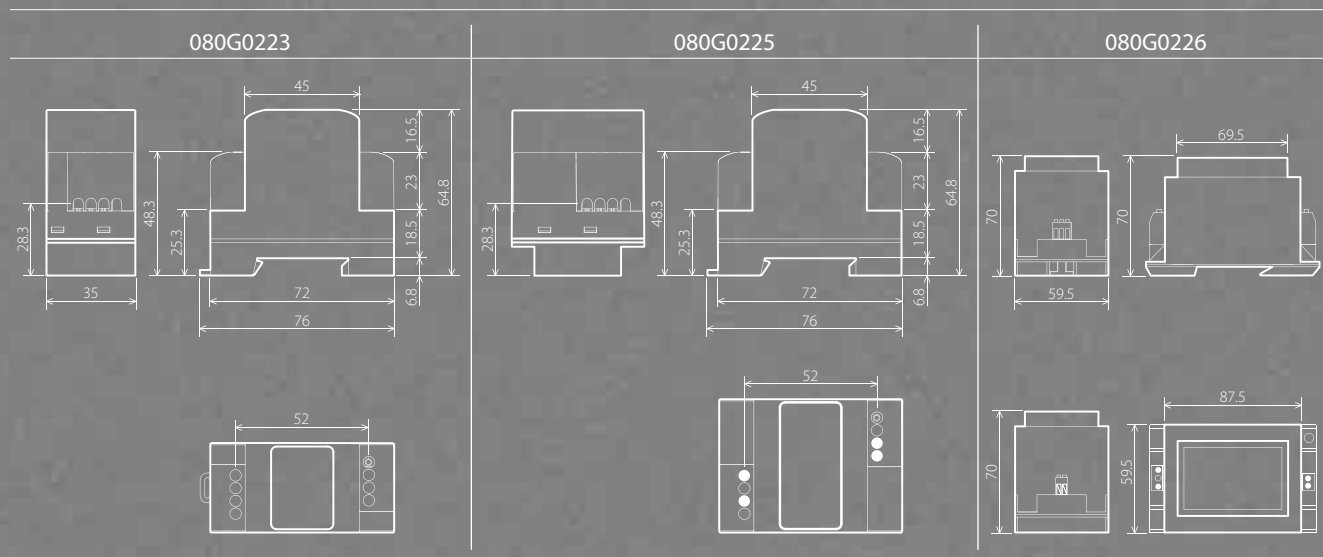
ACCPBT

The ACCPBT temperature probes series supplied by Danfoss Electronics come to cover all needs of temperature monitoring, for low and high temperature applications. It includes NTC probes with IP67 and IP68. When more accuracy is required, then Pt1000 probes IP68 are available

ACCPBT

Family:|ACC| Type:|Temperature probe|

Product part number

code	description
080G0199	ACCPBT, NTC TEMP. PROBE, IP67, 1.5m CABLE
080G0200	ACCPBT, NTC TEMP. PROBE, IP67, 3m CABLE
080G0201	ACCPBT, NTC TEMP. PROBE, IP67, 6m CABLE
080G0203	ACCPBT, NTC TEMP. PROBE, IP68 6X20, 1.5m CABLE
080G0202	ACCPBT, NTC TEMP. PROBE, IP68 6X20, 3m CABLE
080G0204	ACCPBT, NTC TEMP. PROBE, IP68 6X20, 6m CABLE
080G0205	ACCPBT, NTC TEMP. PROBE, IP68 6X40, 1.5m CABLE
080G0206	ACCPBT, NTC TEMP. PROBE, IP68 6X40, 3m CABLE
080G0207	ACCPBT, NTC TEMP. PROBE, IP68 6X40, 6m CABLE
080G0209	ACCPBT, PT1000 TEMP. PROBE, IP68 6X40, 1.5m CABLE
080G0208	ACCPBT, PT1000 TEMP. PROBE, IP68 6X40, 3m CABLE
080G0210	ACCPBT, PT1000 TEMP. PROBE, IP68 6X40, 6m CABLE
080G0211	ACCPBT, PT1000 TEMP. PROBE, IP44 5X40, 1.5m CABLE, 0 +550°C
080G0212	ACCPBT, NTC TEMP. PROBE, IP67 6X40, 1.5m CABLE, -50+200°C, 100kOhm@25°C
080G0213	ACCPBT, REMOVIBLE FITTING, 1/4 GAS FOR TEMP. PROBES, 6X40 BULB

Accessory

ACCPBP

The ACCPBP pressure probes series supplied by Danfoss Electronics come to cover all needs of pressure monitoring, both for refrigeration and air conditioning applications. They include pressure transmitters with 0..5V ratiometric signal output and 4…20mA standard current signal.

They are available with two types of electrical connection: with built-in cable or for DIN 43650 standard connector

Family:|ACC| Type:|FFW probe|

Product part number

code	description
060G0139	ACCPBP, RATIOMETRIC PRESSURE PROBE, 10 – 90 % V, -1…9 BAR, 7/16-20 UNF FLARE FITTING, DIN CONNECTOR 43650 – A PG 9
060G0090	ACCPBP, RATIOMETRIC PRESSURE PROBE, 10 – 90 % V, -1…34 BAR, 7/16-20 UNF FLARE FITTING, DIN CONNECTOR 43650 – A
060G4254	ACCPBP, RATIOMETRIC PRESSURE PROBE, 10 – 90 % V, -1…34 BAR 7/16-20 UNF FLARE FITTING, DIN CONNECTOR 43650 – A PG 9
060G1321	ACCPBP, PRESSURE PROBE, 4 – 20 MA, -1…6 BAR, 7/16-20 UNF FLARE FITTING, DIN CONNECTOR 43650 – A PG 9
060G1327	ACCPBP, PRESSURE PROBE, 4 – 20 MA, 0…30 BAR, 7/16-20 UNF FLARE FITTING, DIN CONNECTOR 43650 – A PG 9
060G1034	ACCPBP, PRESSURE PROBE CABLE, DIN CONNECTOR 43650, 5m CABLE

ACCCBI

The ACCCBI connecting cables can provide all different needs for connection between MCX controller and MMI user interface

Family:|ACC| Type:|Cable|

Product part number

code	description
080G0074	ACCCBI, TELEPHONE CABLE USER INTERFACE CONNECTOR, 0.8m CABLE
080G0075	ACCCBI, TELEPHONE CABLE USER INTERFACE CONNECTOR, 1.5m CABLE
080G0076	ACCCBI, TELEPHONE CABLE USER INTERFACE CONNECTOR, 3m CABLE
080G0077	ACCCBI, TELEPHONE CABLE USER INTERFACE CONNECTOR, 6m CABLE
080G0061	ACCCBI, TELEPHONE CABLE, 12V, 0.8m CABLE
080G0062	ACCCBI, TELEPHONE CABLE, 12V, 1.5m CABLE
080G0063	ACCCBI, TELEPHONE CABLE, 12V, 3m CABLE
080G0064	ACCCBI, TELEPHONE CABLE, 12V, 6m CABLE
080G0238	ACCCBI, MMILDS CABLE RJ12/JST PH, 1m CABLE
080G0239	ACCCBI, MMILDS CABLE RJ12/JST PH, 2m CABLE

ACCCBI

Accessory

ACCCNX

ACCCNX kit connectors are available for any of the MCX and EXC controllers

Family:|ACC| Type:|Connector kit|

Product part number

code	description
080G0175	MCX06C CONNECTORS KIT
080G0176	MMIMYK CONNECTORS KIT
080G0177	LCX06C CONNECTORS KIT
080G0179	MCX06D/EXC06D CONNECTORS KIT
080G0180	MCX08M CONNECTORS KIT
080G0181	MCX15B CONNECTORS KIT
080G0182	MCX20B CONNECTORS KIT
080G0183	EXC12M CONNECTORS KIT
080G0184	ACCMMR CONNECTORS KIT
080G0185	CSTFR1 CONNECTORS KIT
080G0081	ACCCNX, WIRED CONNECTORS KIT FOR MCX06C, 1m CABLE
080G0082	ACCCNX, WIRED CONNECTORS KIT FOR MCX06C, 2m CABLE
080G0083	ACCCNX, WIRED CONNECTORS FOR MCX06D TO MMIGRS, 2m CABLE
080G0170	ACCCNX, WIRED CONNECTORS KIT FOR MCX06C, 1m MARKED CABLE
080G0171	ACCCNX, WIRED CONNECTORS KIT FOR MCX06C, 2m MARKED CABLE

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