



MCX Programmable Controls General Catalogue

# Take control of your HVAC System with unique versatility and freedom

## Modular

Hardware design

to fit even the most complex system

# 3

programmability levels

to perform any standard or custom control software algorithm.





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**Introduction**

**Programmability for all**

With its range of products, Danfoss 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 makes possible to work on several levels:

- a first level for setting and customising Danfoss' 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 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 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 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 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 (nvmmc.exe)*  
Developed and optimised for Danfoss 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 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 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 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 technical specifications	LCX06C	MCX06C	MCX06D	MCX061V	MCX08M	MCX15B	MCX20B
<b>ANALOG INPUTS</b>							
NTC 0/1 V, 0/5 V, selectable via software		2	2		4	4	6
NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software	2	2	2	3	4	6	10
NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, selectable via software	2						
NTC, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software				2			
Superheat S1: 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software				1			
Superheat: S2: Pt1000, 0/1V, 0/5 V, 0/10 V, ON/OFF, selectable via software				1			
Max number	4	4	4	7	8	10	16
<b>DIGITAL INPUTS</b>							
24 V optoisolated						18	22
230 Vac optoisolated						4	4
Voltage free contact	6	6	8	8	8		
Max number	6	6	8	8	8	18	22
<b>ANALOG OUTPUTS</b>							
0/10 Vdc				2			
0/10 Vdc optoisolated					2	4	6
0/10 Vdc, PWM, PPM selectable via software	2	1	2	1			
PWM, PPM cutting phase		1	1		2	2	
Max number	2	2	3	3	4	6	6
<b>DIGITAL OUTPUTS</b>							
SPST relay 5 A	6	6	5	6			
SPST relay 8 A					2	9	13
SPDT relay 8 A			1		4	4	4
SPST relay 16 A					2		2
SPDT relay 16 A						2	1
SSR 24 Vac/230 Vac (optional)			1		2	4	4
Max number	6	6	6	6	8	15	20
<b>POWER SUPPLY</b>							
20/60 Vdc - 24 Vac	•	•	•	°	°	°	°
110-230 Vac - 50/60 Hz				°	°	°	°
Isolated power supply	•	•	•	•	•	•	•
<b>OTHERS</b>							
Connection for programming key	•	•	•	•	•	•	•
Connection for remote display and keyboard		•	•	•	•	•	•
Buzzer			•	•	•	•	•
CANbus		•	•	•	•	•	•
RTC clock	°	°	°	•	•	•	•
Modbus RS485 serial interface (optional)	1 not isolated	1 not isolated	1	2	1	2	2
Ethernet/Web server				°			
Memory card slot				•			
Dimensions	33x75mm	33x75mm	4DIN	8DIN	8DIN	16DIN	16DIN
Mounting	Panel	Panel	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail

• Available for all models ° Available for some models

**Introduction****MCX network**

Danfoss 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.

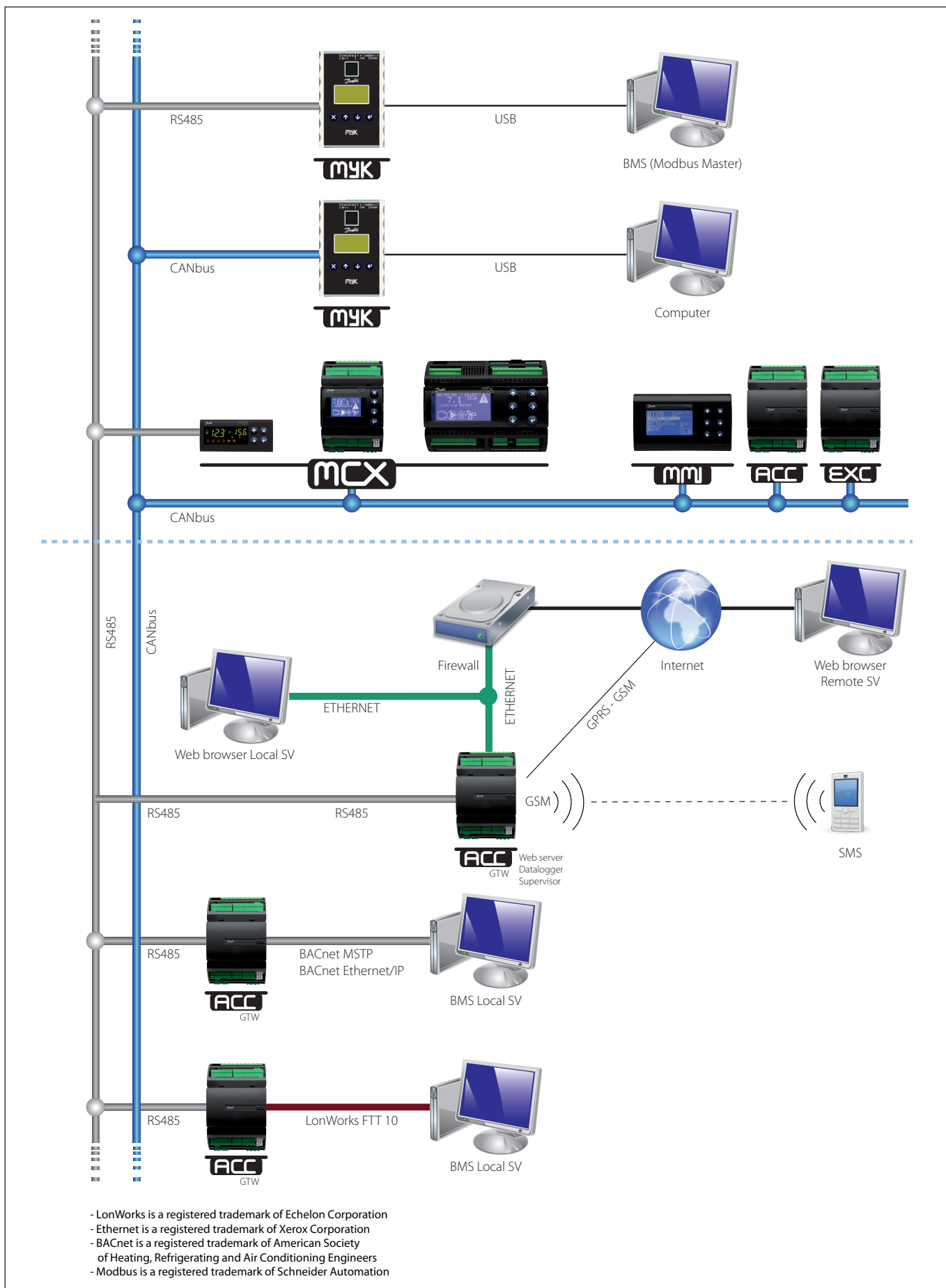
*User interface:*

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...



**Programmable control  
LCX06C**

LCX06C is the new low-end programmable controller in the 32x74 mm standard size. It also provides options for Modbus RS485 serial communication interface and Real Time Clock.



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



**Product part numbers**

Description	Code number
LCX06C, 24V, LED, S	080G0234
LCX06C, 24V, LED, RS485, RTC, S	080G0236

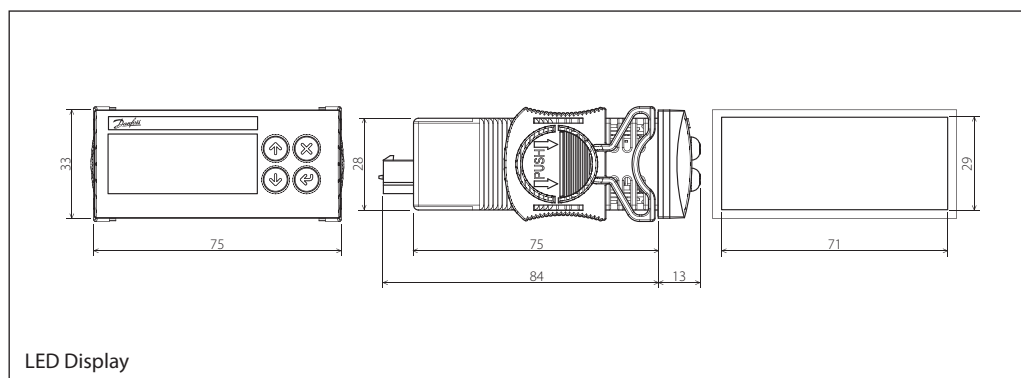
Note: The single pack codes (S) don't include standard kit connectors  
On request are available also the industrial pack codes (I) that don't include standard kit connectors



General features

	LCX06C
<b>ANALOG INPUTS</b>	
NTC, Pt1000, ON/OFF, 0/1 V, 0/5 V, 0/10 V, selectable via software	2
NTC, Pt1000, ON/OFF, 0/1 V, 0/5 V, 0/10 V, 0/20 mA, 4/20 mA, selectable via software	2
Total number	4
<b>DIGITAL INPUTS</b>	
Voltage-free contact	6
Total number	6
<b>ANALOG OUTPUTS</b>	
0/10 Vdc, PWM-PPM cutting phase selectable via software	2
Total number	2
<b>DIGITAL OUTPUTS</b>	
SPST Relay 5 A (normally open contacts)	6
Total number	6
<b>OTHERS</b>	
Power supply 20/30 Vdc - 24 Vac	•
Connection for programming key	•
Connection for remote display and keyboard	•
Buzzer	
CANbus	not available
RTC clock	•
Modbus RS485 serial interface	•
Display	LED 3½
Dimensions (mm)	33x75
Mounting	Panel

Dimensions



**Programmable control  
MCX06C**

MCX06C is an electronic controller that holds all the typical functionalities of MCX controllers in the 32x74 mm standard size: programmability, connection to the CANbus local network, Modbus RS485 serial communication interface.



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

**Product part numbers**

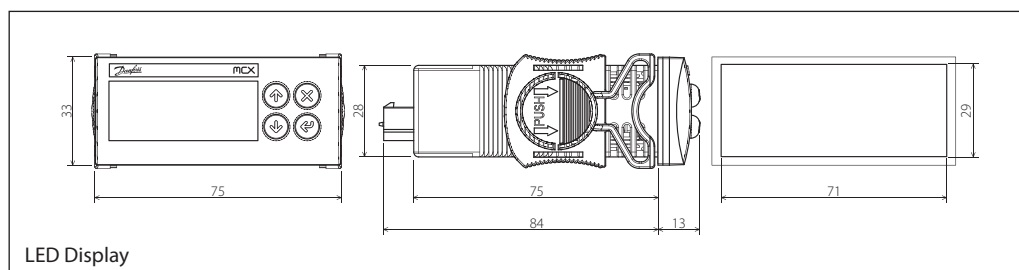
Description	Code number
MCX06C, 24V, LED, S	080G0065
MCX06C, 24V, LED, RS485, RTC, S	080G0066

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

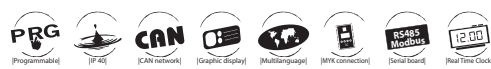
	MCX06C
<b>ANALOG INPUTS</b>	
NTC, 0/1 V, 0/5 V, selectable via software	2
NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software	2
Total number	4
<b>DIGITAL INPUTS</b>	
Voltage-free contact	6
Total number	6
<b>ANALOG OUTPUTS</b>	
0/10 Vdc, PWM, PPM selectable via software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

Dimensions



**Programmable control  
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.



Family:|MCX| Type:|06DIN|  
Display:|LED-LCD| Dimensions:|04 DIN|

**Product part numbers**

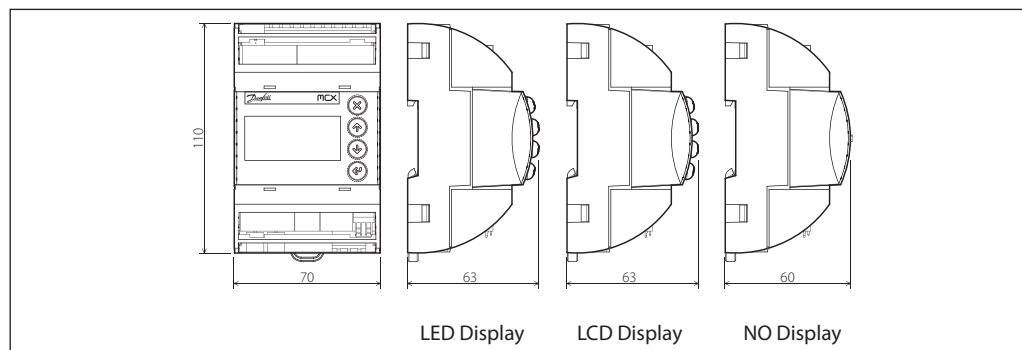
Description	Code number
MCX06D, 24V, LED, S	080G0108
MCX06D, 24V, LED, RS485, RTC, S	080G0109
MCX06D, 24V, LCD, S	080G0111
MCX06D, 24V, LCD, RS485, RTC, S	080G0112
MCX06D, 24V, S	080G0114
MCX06D, 24V, RS485, RTC, S	080G0115

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

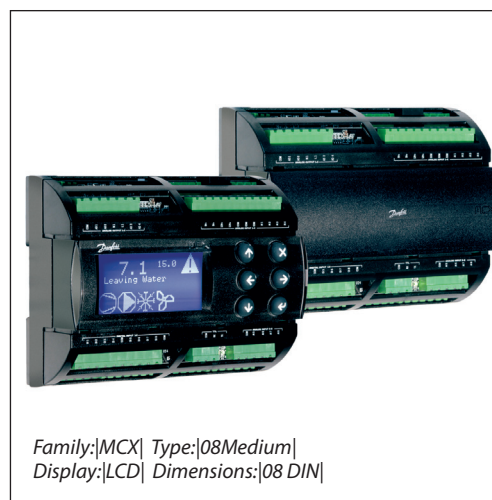
	MCX06D
<b>ANALOG INPUTS</b>	
NTC, 0/1 V, 0/5 V, selectable via software	2
NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software	2
Total number	4
<b>DIGITAL INPUTS</b>	
Voltage-free contact	8
Total number	8
<b>ANALOG OUTPUTS</b>	
0/10 Vdc, PWM, PPM selectable via software	2
PWM, PPM selectable via software	1
Total number	3
<b>DIGITAL OUTPUTS</b>	
SPST relay 5 A (normally open contacts)	5
SPDT relay 8 A (changeover contacts)	1
Total number	6
<b>OTHERS</b>	
Insulated power supply 20/60 Vdc - 24 Vac	•
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

Dimensions



**Programmable control  
MCX061V**

MCX061V is a standard MCX electronic controller with integrated superheat algorithm and one electronic expansion valve driver. It is available in the version with or without graphic LCD display, and 110-230 Vac or 24 Vac power supply. It 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 fitted with a slot for memory card and Ethernet connection. The memory card assures SW download and datalogging function.



Family:|MCX| Type:|08Medium|  
Display:|LCD| Dimensions:|08 DIN|



**Product part numbers**

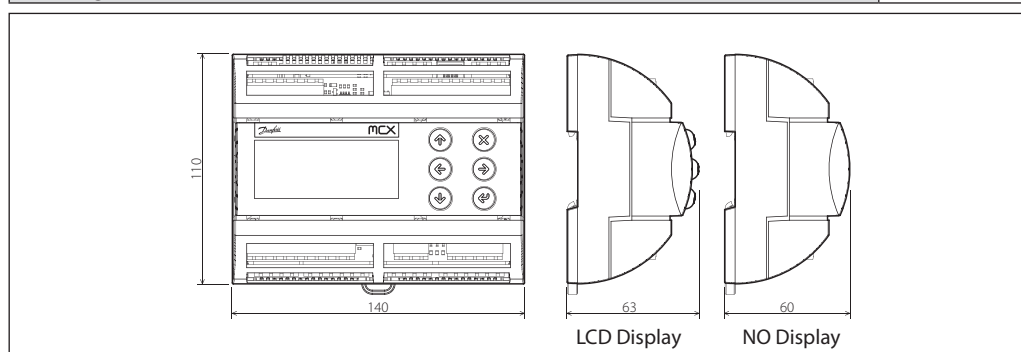
Description	Code number
MCX061V, 230V, LCD, RTC, S	080G0248
MCX061V, 24V, LCD, RTC, S	080G0249
MCX061V, 230V, LCD, RS485, RTC, S	080G0250
MCX061V, 24V, LCD, RS485, RTC, S	080G0251
MCX061V, 230V, LCD, RS485, RTC, ETH, S	080G0254
MCX061V, 24V, LCD, RS485, RTC, ETH, S	080G0255
MCX061V, 230V, RTC, S	080G0244
MCX061V, 24V, RTC, S	080G0245
MCX061V, 230V, RS485, RTC, S	080G0246
MCX061V, 24V, RS485, RTC, S	080G0247
MCX061V, 230V, RS485, RTC, ETH, S	080G0252
MCX061V, 24V, RS485, RTC, ETH, S	080G0253

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

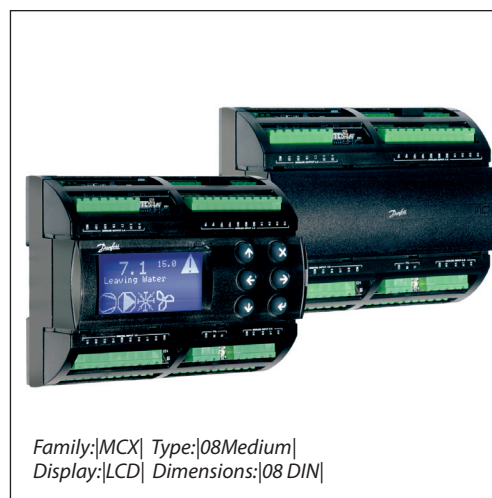
	MCX061V
<b>ANALOG INPUTS</b>	
NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software	3
NTC, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software	2
Superheat S1: 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software	1
Superheat S2: Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, selectable via software	1
Total number	7
<b>DIGITAL INPUTS</b>	
Voltage free contact	8
Total number	8
<b>ANALOG OUTPUTS</b>	
0/10 Vdc	2
0/10 V, PWM, PPM selectable via software	1
Total number	3
<b>DIGITAL OUTPUTS</b>	
SPST relay 5 A (normally open contacts)	6
Total number	6
<b>OTHERS</b>	
Power supply 24 Vac	•
Power supply 110V/230 Vac	•
Connection for programming key	•
Connection for remote display and keyboard	•
CANbus	•
RTC clock	•
Modbus RS485 serial interface	•
Ethernet/ Webserver	•
MMC expansion slot (Multi Media Card) up to 2 GB	•
Bipolar and unipolar motor output	•
Dimensions (DIN modules)	8
Mounting	DIN rail

Dimensions



**Programmable control  
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 110-230 Vac or 24 Vac.



Family:|MCX| Type:|08Medium|  
Display:|LCD| Dimensions:|08 DIN|



**Product part numbers**

Description	Code number
MCX08M, 24V, LCD, RTC, S	080G0084
MCX08M, 230V, LCD, RTC, S	080G0085
MCX08M, 24V, LCD, RS485, RTC, S	080G0028
MCX08M, 230V, LCD, RS485, RTC, S	080G0029
MCX08M, 24V, RTC, S	080G0086
MCX08M, 230V, RTC, S	080G0087
MCX08M, 24V, RS485, RTC, S	080G0034
MCX08M, 230V, RS485, RTC, S	080G0035

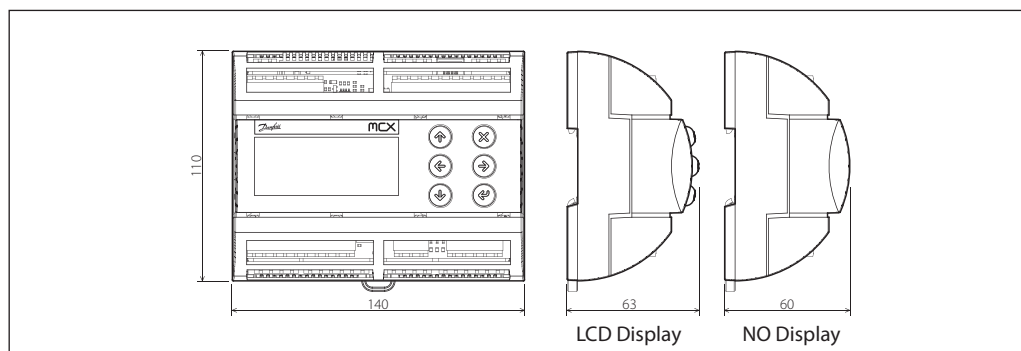
Note: The single pack codes (S) include standard kit connectors  
On request are available also the industrial pack codes (I) that don't include standard kit connectors



General features

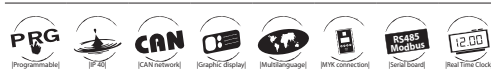
	MCX08M
<b>ANALOG INPUTS</b>	
NTC, 0/1 V, 0/5 V, selectable via software	4
NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software	4
Total number	8
<b>DIGITAL INPUTS</b>	
Voltage free contact	8
Total number	8
<b>ANALOG OUTPUTS</b>	
0/10 Vdc optoinsulated	2
PWM, PPM selectable via software	2
Total number	4
<b>DIGITAL OUTPUTS</b>	
SPST relay 16 A (normally open contacts)	2
SPST relay 8 A (normally open contacts)	2
SPDT relay 8 A (changeover contacts)	4
Total number	8
<b>OTHERS</b>	
Power supply 24 Vac/20-60 Vdc	•
Power supply 110 V/230 Vac	•
Connection for programming key	•
Connection for remote display and keyboard	•
Buzzer	•
CANbus	•
RTC clock	•
Modbus RS485 serial interface	•
Dimensions (DIN modules)	8
Mounting	DIN rail

Dimensions



**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 110-230 Vac or 24 Vac.



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

**Product part numbers**

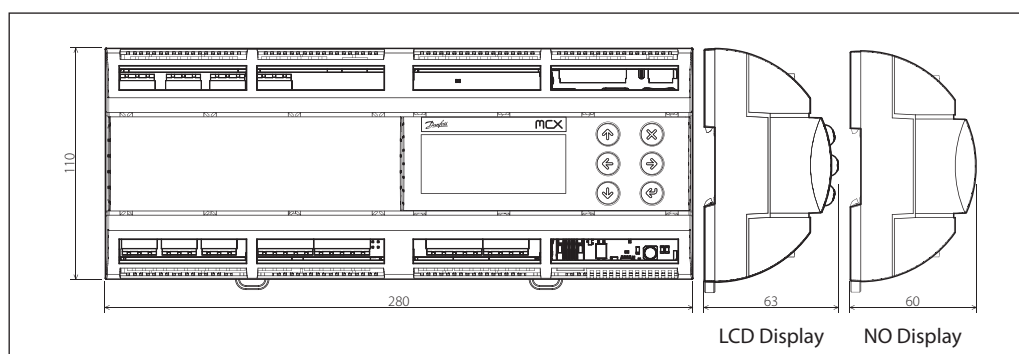
Description	Code number
MCX15B, 24V, LCD, RTC, S	080G0088
MCX15B, 230V, LCD, RTC, S	080G0089
MCX15B, 24V, LCD, RS485, RTC, S	080G0036
MCX15B, 230V, LCD, RS485, RTC, S	080G0037
MCX15B, 24V, LCD, 2xRS485, RTC, S	080G0053
MCX15B, 230V, LCD, 2xRS485, RTC, S	080G0054
MCX15B, 24V, RTC, S	080G0090
MCX15B, 230V, RTC, S	080G0091
MCX15B, 24V, RS485, RTC, S	080G0042
MCX15B, 230V, RS485, RTC, S	080G0043
MCX15B, 24V, 2xRS485, RTC, S	080G0055
MCX15B, 230V, 2xRS485, RTC, S	080G0056

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

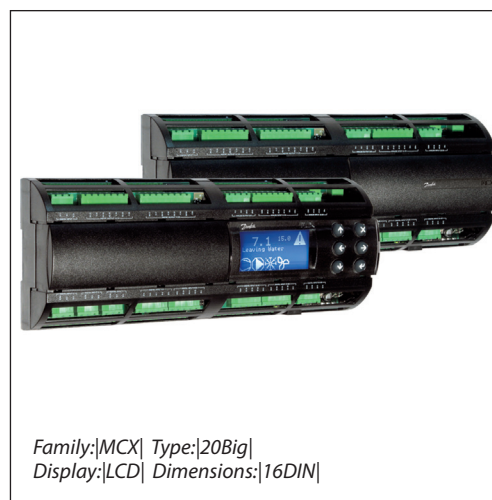
	MCX15B
<b>ANALOG INPUTS</b>	
NTC, 0/1 V, 0/5 V, selectable via software	4
NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software	6
Total number	10
<b>DIGITAL INPUTS</b>	
24 V optoinsulated	18
230 Vac optoinsulated	4
Total number	18
<b>ANALOG OUTPUTS</b>	
0/10 Vdc optoinsulated	4
PWM, PPM selectable via software	2
Total number	6
<b>DIGITAL OUTPUTS</b>	
SPDT relay 16 A (changeover contacts)	2
SPST relay 8 A (normally open contacts)	9
SPDT relay 8 A (changeover contacts)	14
Total number	15
<b>OTHERS</b>	
Power supply 24 Vac/20-60 Vdc	•
Power supply 110 V/230 Vac	•
Connection for programming key	•
Connection for remote display and keyboard	•
Buzzer	•
CANbus	•
RTC clock	•
Modbus RS485 serial interface	•
Dimensions (DIN modules)	16
Mounting	DIN rail

Dimensions

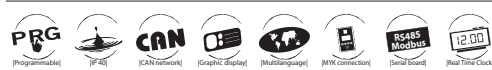


**Programmable control  
MCX20B**

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 110-230 Vac or 24 Vac.



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



**Product part numbers**

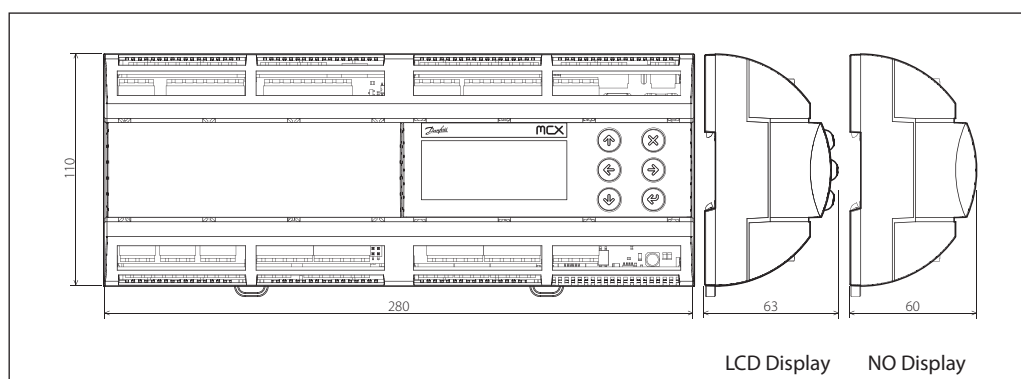
Description	Code number
MCX20B, 24V, LCD, RTC, S	080G0092
MCX20B, 230V, LCD, RTC, S	080G0093
MCX20B, 24V, LCD, RS485, RTC, S	080G0044
MCX20B, 230V, LCD, RS485, RTC, S	080G0045
MCX20B, 24V, LCD, 2XRS485, RTC, S	080G0057
MCX20B, 230V, LCD, 2XRS485, RTC, S	080G0058
MCX20B, 24V, RTC, S	080G0094
MCX20B, 230V,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

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

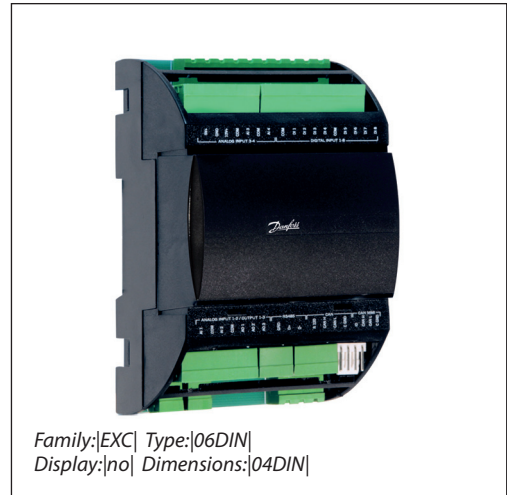
	MCX20B
<b>ANALOG INPUTS</b>	
NTC, 0/1 V, 0/5 V, selectable via software	6
NTC, Pt1000, 0/1 V, 0/5 V, 0/10 V, ON/OFF, 0/20 mA, 4/20 mA, selectable via software	10
Total number	16
<b>DIGITAL INPUTS</b>	
24 V optoinsulated	22
230 Vac optoinsulated	4
Total number	22
<b>ANALOG OUTPUTS</b>	
0/10 Vdc optoinsulated	6
Total number	6
<b>DIGITAL OUTPUTS</b>	
SPST relay 16 A (normally open contacts)	2
SPDT relay 16 A (changeover contacts)	1
SPST relay 8 A (normally open contacts)	13
SPDT relay 8 A (changeover contacts)	4
Total number	20
<b>OTHERS</b>	
Power supply 24 Vac/20-60 Vdc	•
Power supply 110 V/230 Vac	•
Connection for programming key	•
Connection for remote display and keyboard	•
Buzzer	•
CANbus	•
RTC clock	•
Modbus RS485 serial interface	•
Dimensions (DIN modules)	16
Mounting	DIN rail

Dimensions



**Expansion control  
EXC06D**

The EXC06D expansion control presents a configuration of 12 inputs and 9 outputs to offer the maximum flexibility to expand the MCX system.



**Product part numbers**

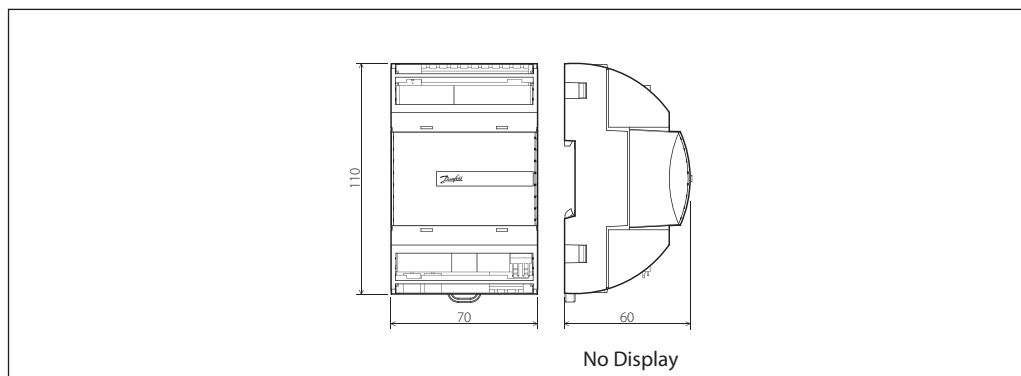
Description	Code number
EXC06D, 24V, S	080G0069

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

	EXC06D
<b>ANALOG INPUTS</b>	
NTC, 0/1 V, 0/5 V, selectable via software	2
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
<b>DIGITAL INPUTS</b>	
Voltage-free contact	8
Total number	8
<b>ANALOG OUTPUTS</b>	
0/10 Vdc, PWM, PPM selectable via software	2
PWM, PPM selectable via software	1
Total number	3
<b>DIGITAL OUTPUTS</b>	
SPST relè 5 A (normally open contacts)	5
SPDT relè 8 A (changeover contacts)	1
Total number	6
<b>OTHERS</b>	
Insulated power supply 20/60 Vdc - 24 Vac	•
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

Dimensions



**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. The connection with every unit of the MCX range is made through the CANbus network. All the information about the user interface is loaded inside the MCX controller; that's why there is no need of programming the MMIGRS interface. MMIGRS is powered from the controller which it is connected to and automatically shows its user interface; but it can also show the interface of any other device connect to the same network.



**Product part numbers**

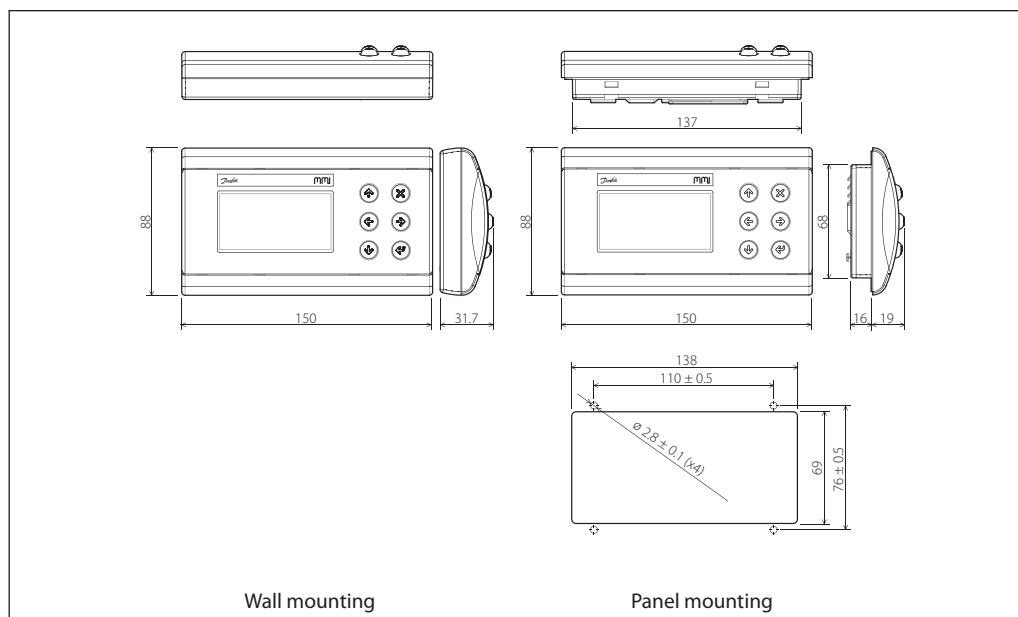
Description	Code number
MMIGRS, REMOTE DISPLAY, PANEL, S	080G0010
MMIGRS, REMOTE DYSPLAY, WALL, S	080G0020



General features

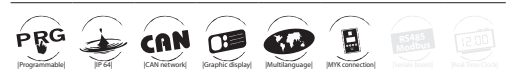
MMIGRS	
<b>TECHNICAL DATA</b>	
Power supply	from the MCX through the RJ11 telephone connector
	12 Vdc ± 20% external power supply
	12 Vac ± 15% external transformers
	maximum power consumption: 1.5 W
<b>USER INTERFACE</b>	
Display	graphical LCD blue transmissive
	white LED backlight with adjustable brightness via software
	display format 128x64 dots
	active visible area 66.5x33.2 mm
Keyboard	contrast adjustable via software
	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
<b>OTHERS</b>	
CANbus	•
Modbus RS485 serial interface	
Buzzer	•
RTC clock	
Protection degree	IP64 ~ NEMA3R (panel version)
	IP40 (wall version)

Dimensions



**User interface module  
MMIGRS CLOSE CONTROL**

MMIGRS is MCX's family remote interface. It's fitted with a graphic display that allows a complete customization of the user interface. The connection with every unit of the MCX range is made through the CANbus network. All the information about the user interface is loaded inside the MCX controller; that's why there is no need of programming the MMIGRS interface. MMIGRS is powered from the controller which it is connected to and automatically shows its user interface; but it can also show the interface of any other device connect to the same network.



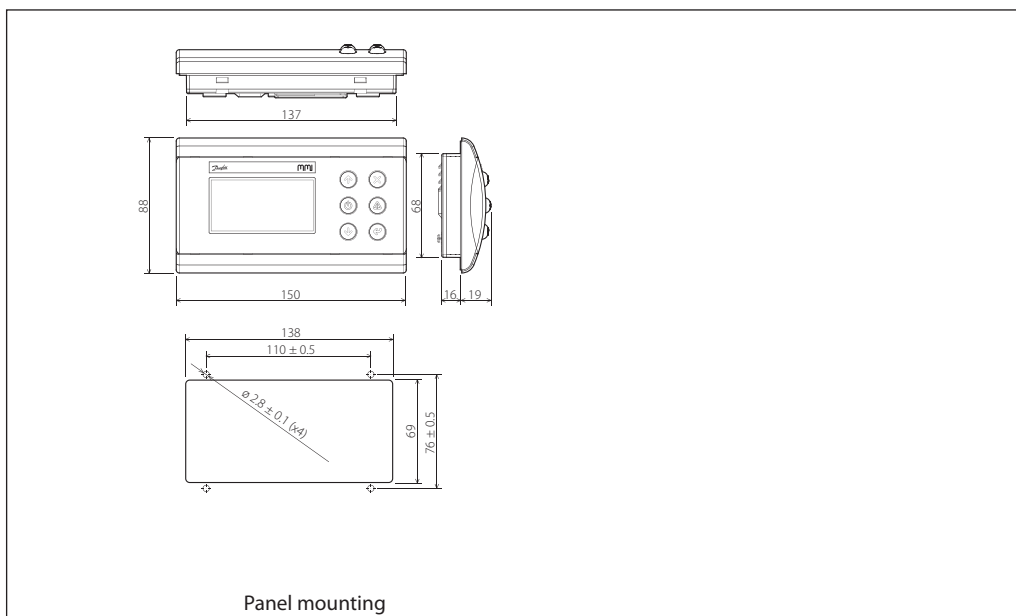
**Product part numbers**

Description	Code number
MMIGRS, REMOTE DISPLAY, PANEL, CLOSE CONTROL	080G0174

General features

MMIGRS	
<b>TECHNICAL DATA</b>	
Power supply	from the MCX through the RJ11 telephone connector 12 Vdc ± 20% external power supply 12 Vac ± 15% external transformers maximum power consumption: 1.5 W
<b>USER INTERFACE</b>	
Display	graphical LCD blue transmissive white LED backlight with adjustable brightness via software display format 128x64 dots active visible area 66.5x33.2 mm contrast adjustable via software
Keyboard	6 keys, 3 of them with respectively green, red, orange LEDs that can be individually managed via software function key configurable by means the application software
Mounting	panel mounting
<b>OTHERS</b>	
CANbus	•
Modbus RS485 serial interface	
Buzzer	•
RTC clock	
Protection degree	IP64 ~ NEMA3R

Dimensions



**User interface module  
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.



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



**Product part numbers**

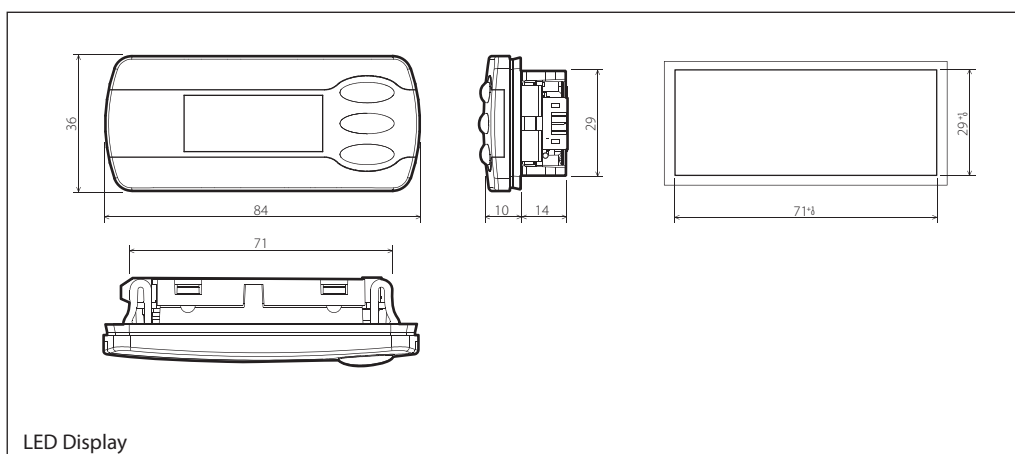
Description	Code number
MMILDS, 12V, LED, CAN, REMOTE DISPLAY, PANEL, S	080G0232

Note: On request is available also the industrial pack code (I)

**General features**

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

**Dimensions**



**Programmable module  
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.



Family:|MMI| Type:|Prg|  
 Display:|OLED| Dimensions:|72x105mm|



**Product part numbers**

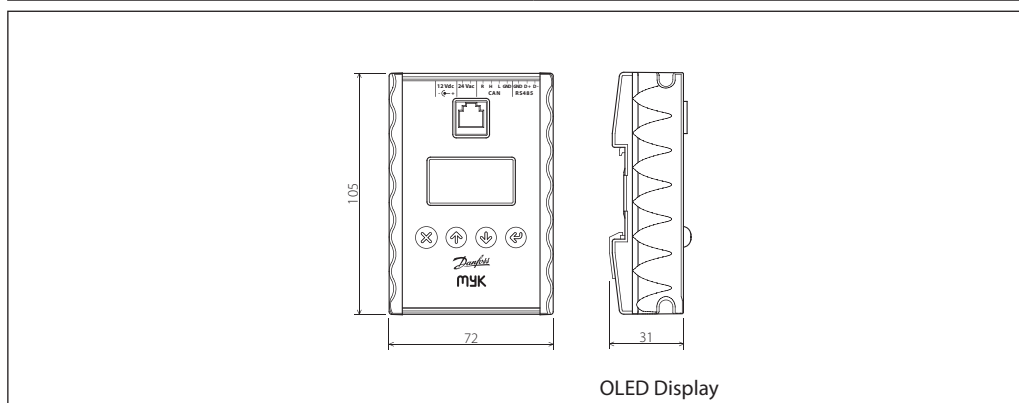
Description	Code number
MMIMYK, PC/MCX INTERFACE AND MCX PROGRAMMING, S	080G0072
MMIMYK, PC/MCX INTERFACE AND MCX PROGRAMMING, DATA LOGGING, S	080G0073

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

**General features**

MMIMYK	
<b>TECHNICAL DATA</b>	
Power supply	from the MCX through the RJ11 telephone connector
	12 Vdc (from DC connector)
	24 Vac (from screw plug-in connector type pitch 3.5 mm): on this supply it is advisable to use a dedicated transformer 24 Vac-10 VA
	from USB 2.0 (maximum 500 mA)
Memory	internal 2 MB
	MMC expansion slot (Multi Media Card) up to 2 GB
<b>USER INTERFACE</b>	
Display	graphic OLED
	display format 128x64 dots
	active visible area 35x17.5 mm
Keyboard	4 keys
Mounting	DIN rail or portable
<b>OTHERS</b>	
CANbus	isolated with respect to USB
Modbus RS485 serial interface	isolated with respect to USB
Buzzer	•
RTC clock	•
Protection degree	IP20

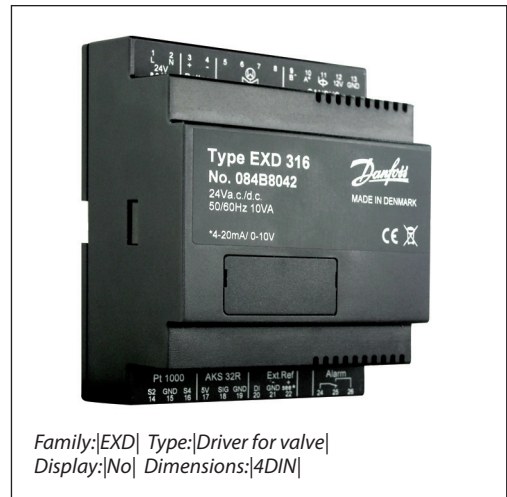
**Dimensions**



OLED Display

**Driver for electronic valve  
EXD316**

EXD316 can be used where there are requirements to accurate control of superheat and temperature. 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.



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

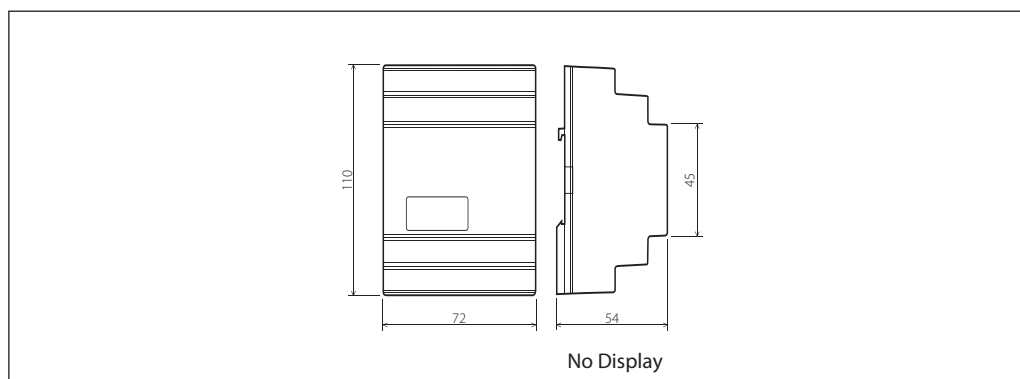
**Product part numbers**

Description	Code number
EXD316, SUPERHEAT CONTROLLER, S	084B8042

General features

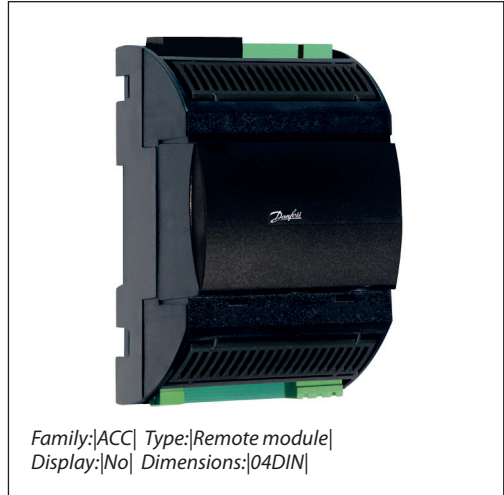
EXD316	
<b>TECHNICAL DATA</b>	
Power supply	24 Vac/dc +/- 15% 50-60 Hz, 10 VA
Battery backup	18-24 Vdc
Input signal	Current signal: 4-20 mA or 0-20 mA Voltage signal: 0-10 V or 1-5 V
Digital input	1
Alarm relay	1 (AC-1:4 A ohmic , AC-15:3 A inductive)
<b>OTHERS</b>	
CANbus	•
Modbus RS485 serial interface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

Dimensions



**Remote connection MMIGRS  
ACCMMR**

ACCMMR allows to connect up to two MMI user interface giving them the required power supply. ACCMMR has 24 Vac or 230 Vac power supply and DIN rail mounting.



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



**Product part numbers**

Description	Code number
ACCMMR, 24V, S	080G0011
ACCMMR, 230V, S	080G0052

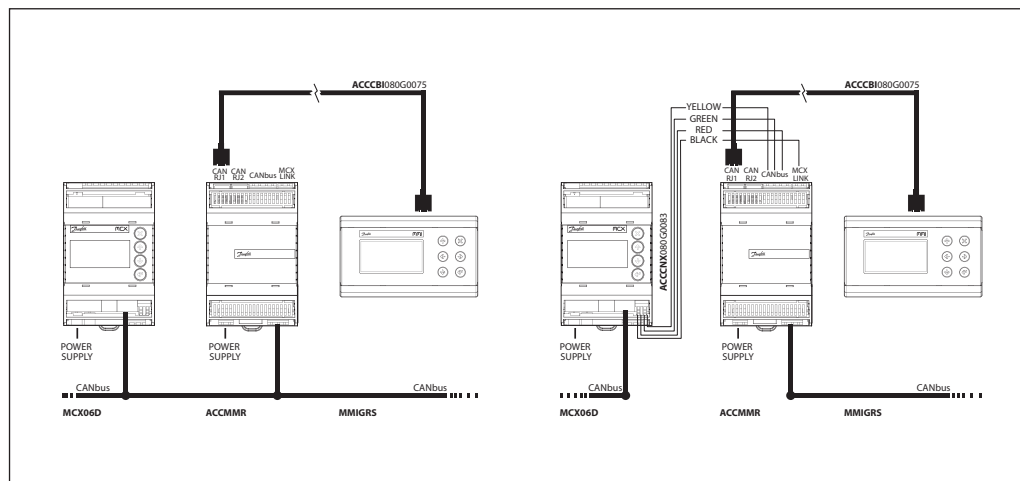
Note: The single pack codes (S) include standard kit connectors  
On request are available also the industrial pack codes (I) that don't include standard kit connectors



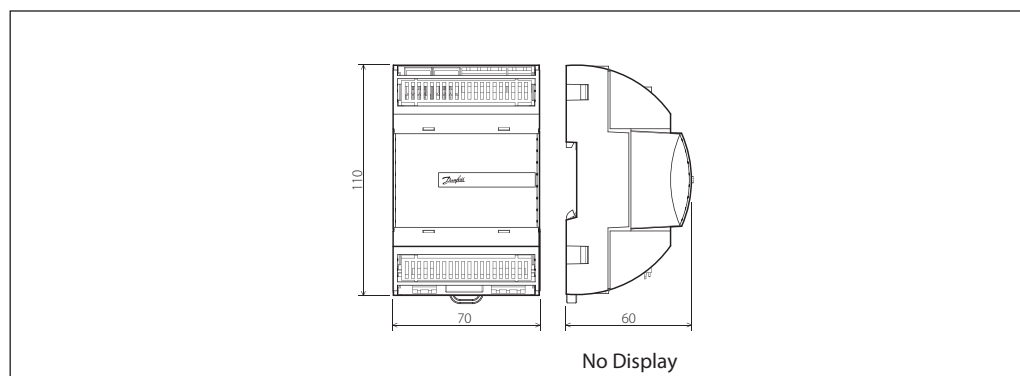
General features

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

Connection diagram

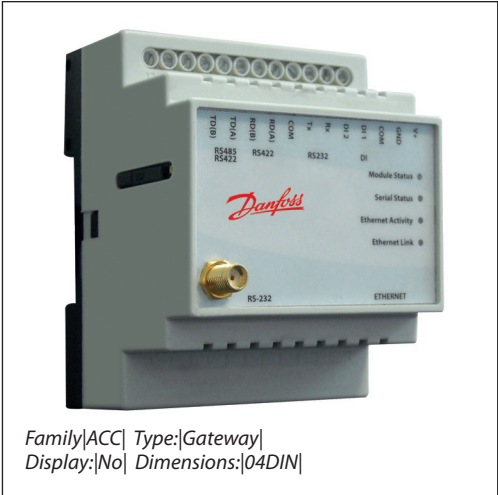


Dimensions



**Accessory  
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.



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



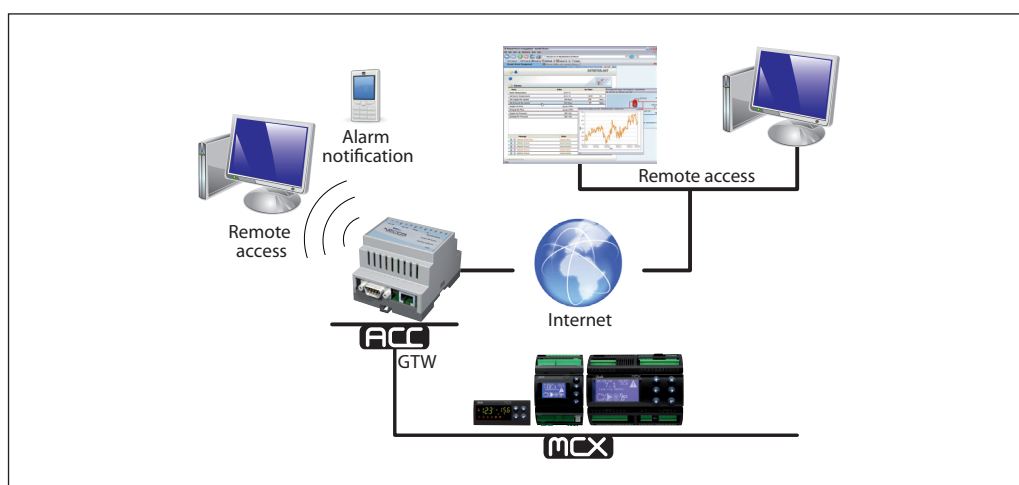
**Product part numbers**

Description	Code number
ACCGTW, USB-RS485 CONVERTER	080G0068
ACCGTW, WEB SERVER GATEWAY	080G0187
ACCGTW, WEB SERVER GATEWAY WITH GSM MODEM	080G0188

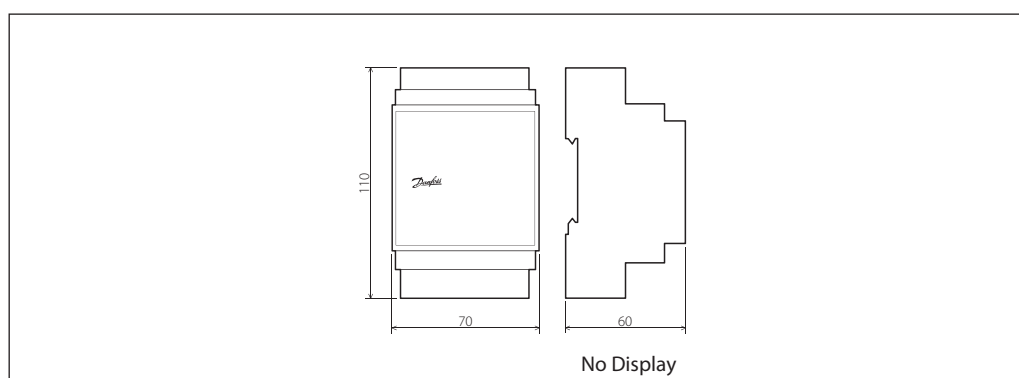
General features

	ACCGTW
<b>DIGITAL INPUTS</b>	
Voltage free contacts	2
<b>POWER SUPPLY</b>	
9-24 Vac/dc (080G0187)	•
9-24 Vdc (080G0188)	•
<b>CONNECTIONS</b>	
Ethernet	RJ45 (10/100 Mbit/sec)
RS232	Female DB9
RS485	Screw connectors
<b>OTHERS</b>	
Protocols	Modbus RTU, ASCII, TCP/IP
Dimensions (DIN module)	4
Mounting	DIN rail

Connection diagram

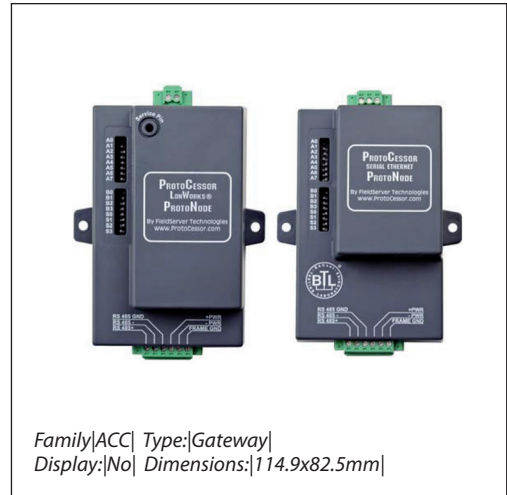


Dimensions



**Accessory  
ACCGTW**

ACCGTW is a programmable gateway for protocol conversion, that allows the connectivity from the MCX's Modbus to BACnet and LonWorks fieldbus .



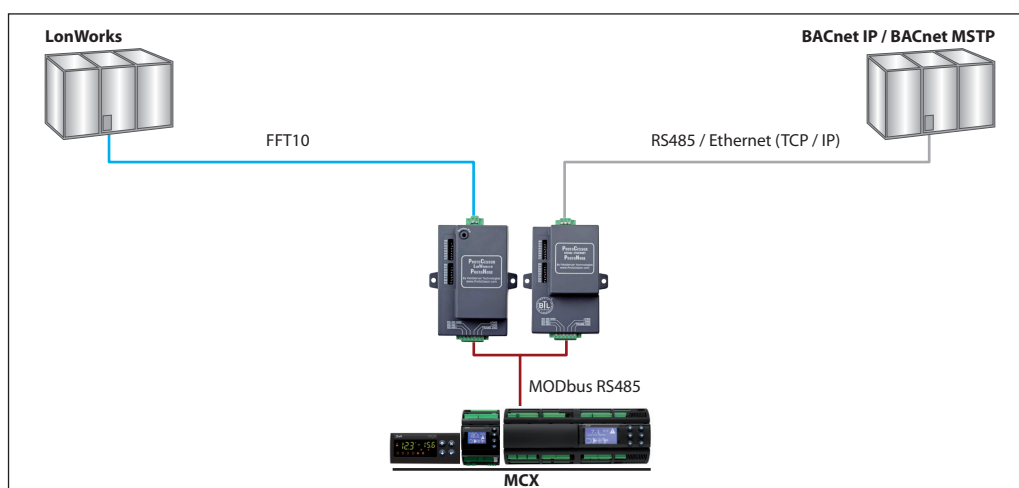
**Product part numbers**

Description	Code number
ACCGTW, BACnet GATEWAY	080G0269
ACCGTW, Lonworks-FTT10 GATEWAY	080G0270

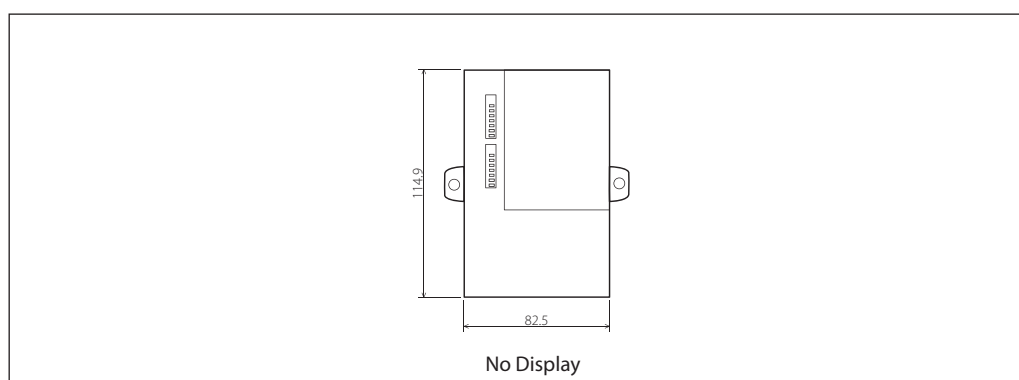
General features

	ACCGTW
<b>POWER SUPPLY</b>	
5 Vdc or 9 ~ 30 Vdc/Vac	•
<b>CONNECTIONS</b>	
Ethernet	•
RS232	
RS485	•
<b>OTHERS</b>	
Protocols BACnet MSTP - BACnet IP - Lonworks	•
Dimensions (DIN module)	4
Mounting	DIN RAIL

Connection diagram

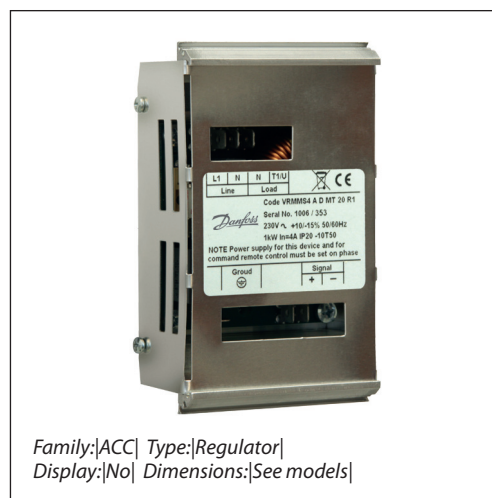


Dimensions



**Accessory  
ACCSCS**

ACCSCS is a voltage regulator device designed to regulate the speed of fans proportionally and continuously. The regulating curve depend on the load and on the supply voltage. ACCSCS is fitted with 1 control input for 0...10V, 4...20mA or pwm signal delivered from a remote control. Multiple motors can be connected in parallel provided that the maximum control current absorption does not exceed the nominal current of the controller.



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



**Product part numbers**

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

**General features**

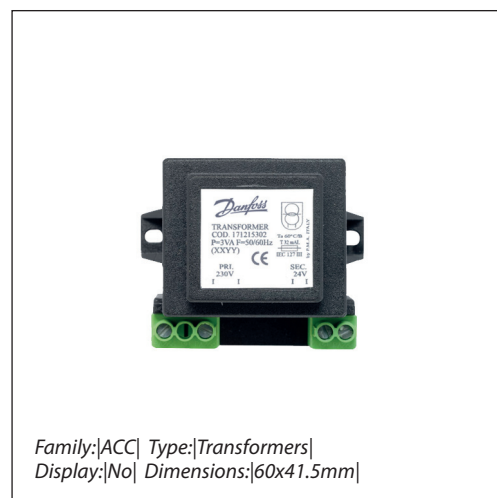
OTHERS		ACCSCS single-phase
Input voltage		Single-phase 230 V – 15+10% 50 Hz
Output voltage		0...99% of power supply
Command signal		PWM synchronous with the line
Protection degree		Metallic cover IP20
OTHERS		ACCSCS three-phase
Input voltage		Three-phase 400 V – 15% +10% 50 Hz
Output voltage		0...99% of power supply
Command signal		- 0...10 V - 4..20 mA - PWM 5/10 V
Aux output supply		+10 V (Imax = 50 mA)
Protection degree		Self-extinguishing plastic cover IP55

**Dimensions**

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

**Accessory  
ACCTRS**

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



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

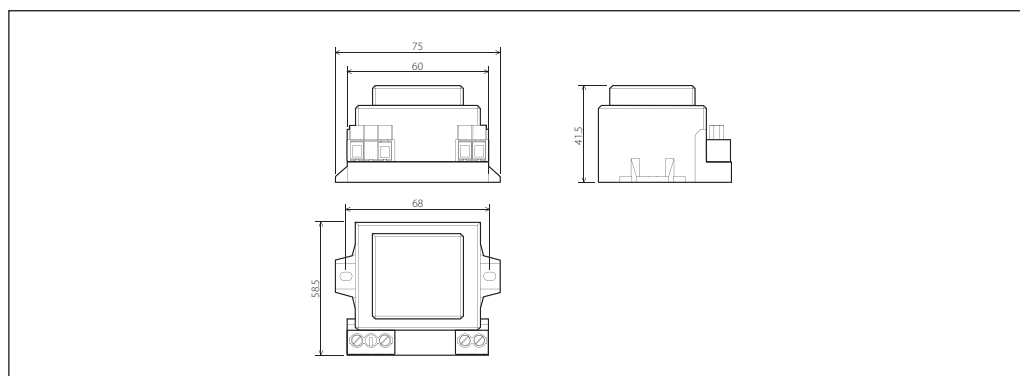
**Product part numbers**

Description	Code number
ACCTRS, EMERGENCY TRANSFORMER, 230VAC/24VAC, 10VA, SCREW MOUNTING	080G0224

**General features**

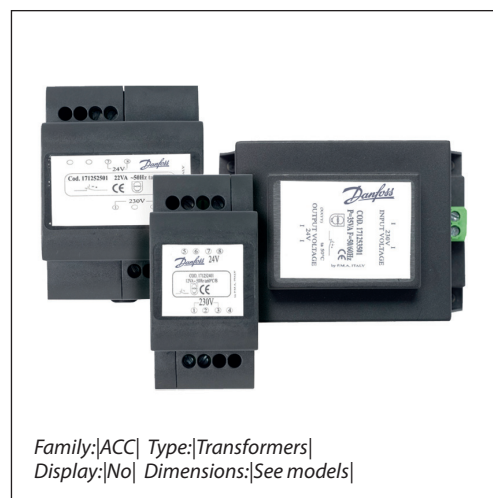
	ACCTRS
<b>TECHNICAL DATA</b>	
Primar voltage	230 Vac
Secondar voltage	24 Vac
<b>OTHERS</b>	
Nominal power	10 VA
Mounting	Screw

**Dimensions**



**Accessory**  
**ACCTRD**

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



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

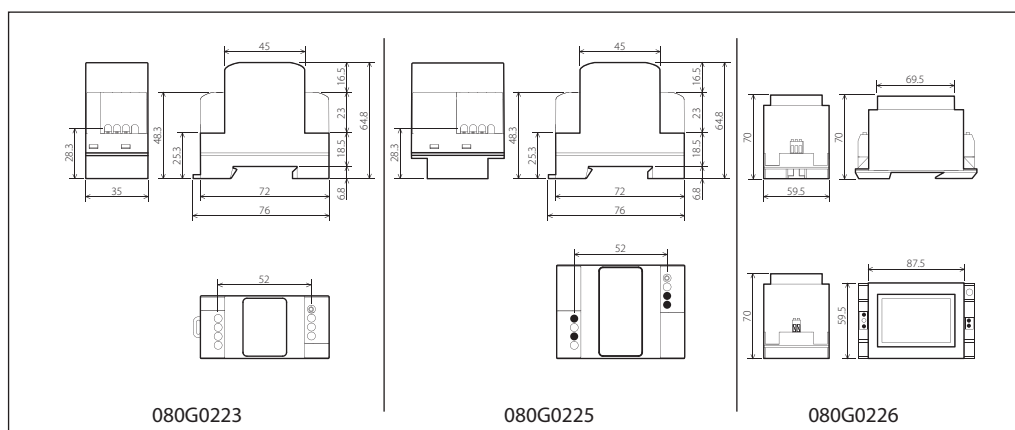
**Product part numbers**

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

**General features**

	ACCTRD
<b>TECHNICAL DATA</b>	
Primary voltage	230 Vac
Secondary voltage	24
<b>OTHERS</b>	
Internal protection device	PTC thermistor
Mounting	DIN rail

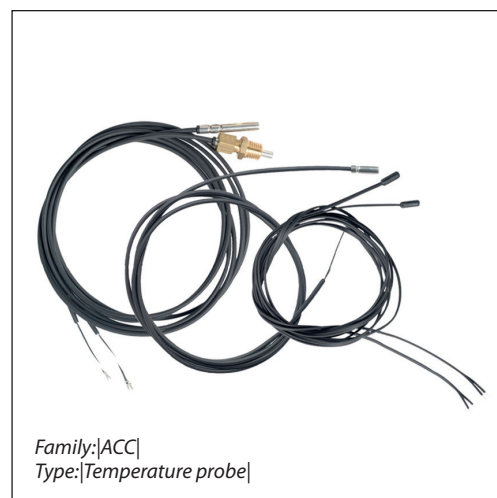
**Dimensions**





**Accessory  
ACCPBT**

The ACCPBT temperature probes series 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.

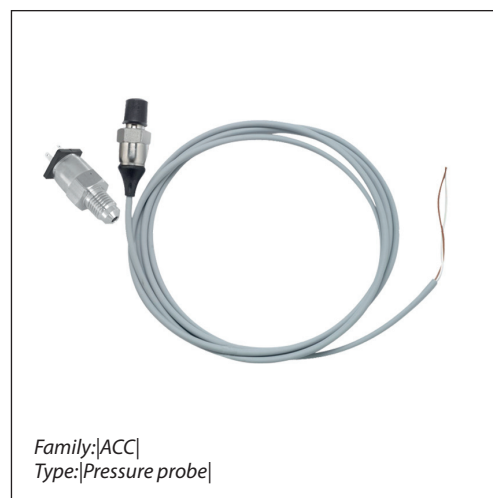


**Product part numbers**

Description	Code number
ACCPBT, NTC TEMP. PROBE, IP67, 1.5m CABLE	080G0199
ACCPBT, NTC TEMP. PROBE, IP67, 3m CABLE	080G0200
ACCPBT, NTC TEMP. PROBE, IP67, 6m CABLE	080G0201
ACCPBT, NTC TEMP. PROBE, IP68 6x20, 1.5m CABLE	080G0203
ACCPBT, NTC TEMP. PROBE, IP68 6x20, 3m CABLE	080G0202
ACCPBT, NTC TEMP. PROBE, IP68 6x20, 6m CABLE	080G0204
ACCPBT, NTC TEMP. PROBE, IP68 6x40, 1.5m CABLE	080G0205
ACCPBT, NTC TEMP. PROBE, IP68 6x40, 3m CABLE	080G0206
ACCPBT, NTC TEMP. PROBE, IP68 6x40, 6m CABLE	080G0207
ACCPBT, PT1000 TEMP. PROBE, IP68 6x40, 1.5m CABLE	080G0209
ACCPBT, PT1000 TEMP. PROBE, IP68 6x40, 3m CABLE	080G0208
ACCPBT, PT1000 TEMP. PROBE, IP68 6x40, 6m CABLE	080G0210
ACCPBT, PT1000 TEMP. PROBE, IP44 5x40, 1.5m CABLE, 0 +550°C	080G0211
ACCPBT, NTC TEMP. PROBE, IP67 6x40, 1.5m CABLE, -50+200°C, 100kOhm@25°C	080G0212
ACCPBT, REMOVIBLE FITTING, 1/4 GAS FOR TEMP. PROBES, 6x40 BULB	080G0213

**Accessory  
ACCPBP**

The ACCPBP pressure probes series come to cover all needs of pressure monitoring, both for refrigeration and air conditioning applications. They include pressure transmitters with 0..5 V ratiometric signal output and 4...20 mA standard current signal. They are available with DIN 43650 standard connector.



**Product part numbers**

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

**Accessory  
ACCCBI**

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



**Product part numbers**

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

**Accessory  
ACCCNX**

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



**Product part numbers**

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







