



Program. controller, 6 relays

CSTFR1

Electronic controller suitable for all HVAC/R software application needs.

Description

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.

Features & Benefits

- Inputs: 5 analog and 4 digital
- Outputs: 1 analog and 5 digital
- Insulated power supply 110 / 230 V AC, 50/60 Hz
- Remote access to data through CANbus connection for additional display (LCD available) and keyboard
- Modbus RS485 opto-insulated serial interface
- Available only without display
- Dimensions 8 DIN modules

Ordering

Product code numbers

Type	Material Description	Packing format	Quantity per packing format	Code number
CSTFR1	CSTFR1 Elect.Control 230V RS485 I/24	Industrial pack	24	080G0156

Note: Connectors kit is included in the Industrial Pack.

Product details

General data

Table: General features

Features	Description
Power supply	85 – 265 V AC, 50/60 Hz. Maximum power consumption: 6 V A Insulation between power supply and the extra-low voltage: reinforced
Plastic housing	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: ≥ 250 V according to IEC 60112
Operating conditions	CE: -20T60 / UL: 0T55, 90% RH non-condensing
Storage conditions	-30T80, 90% RH non-condensing
Integration	In Class I and / or II appliances
Index of protection	IP40 only on the front cover
Period of electric stress across insulating parts	Long
Resistance to heat and fire	Category D
Immunity against voltage surges	Category II
Software class and structure	Class A

Input/Output

Table: Analog inputs

Type	Num	Specifications
NTC	4	AI1, AI2, AI3, AI5 NTC temperature probes, 10 kΩ at 25 °C
NTC 0 / 5 V 4 / 20 mA	1	AI4 Pressure transducer with 4 / 20 mA or 0 / 5 V output or NTC temperature probe, default 10 kΩ at 25 °C The input type is selectable via software <ul style="list-style-type: none"> 12 V+ power supply for 4 / 20 mA transducers: 12 V DC, 120 mA max 5 V+ power supply for 0 / 5 V transducers: 5 V DC, 100 mA max Accuracy of measure: 3% f.s. - resolution: ±50 µA

Table: Digital inputs

Type	Num	Specifications
Voltage free contacts	4	DI1, DI2, DI3, DI4 Current consumption: 5 mA

Table: Analog outputs

Type	Num	Specifications
PWM PPM	1	Analog outputs selectable via software between: <ul style="list-style-type: none"> pulsing output, synchronous with the line, at modulation of impulse position (PPM) or modulation of impulse width (PWM) pulsing output, at modulation of impulse width (PWM) with range 20 Hz – 1 KHz: <ul style="list-style-type: none"> open circuit voltage: 5 V minimum load: 1 kΩ

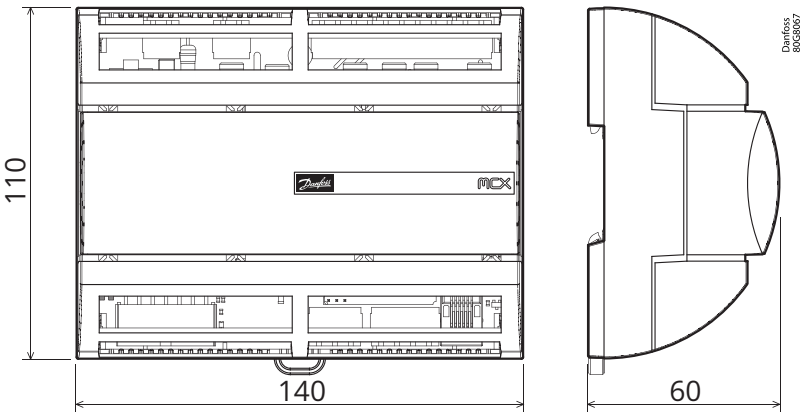


Table: Digital outputs

Type	Num	Specifications
Relay	4	<p>Insulation between relays: functional Insulation between relays and the extra-low voltage parts: reinforced</p> <p>C2-NO2, C3-NO3 Normally open contact relays 8 A Characteristics of each relay:</p> <ul style="list-style-type: none">• 6 A 250 V AC for resistive load - 100.000 cycles• 4 A 250 V AC for inductive loads - 100.000 cycles with $\cos(\phi) = 0.6$ <p>C1-NO1-NC1 Changeover contacts relay 8 A Characteristics of each relay:</p> <ul style="list-style-type: none">• 6 A 250 V AC for resistive load - 100.000 cycles• 4 A 250 V AC for inductive loads - 100.000 cycles with $\cos(\phi) = 0.6$ <p>C4-NO4 High inrush current normally open contact relays 16 A Characteristics of each relay:</p> <ul style="list-style-type: none">• 1000 W incandescent lamp, 250 V AC, NO contact: 80.000 cycles• 10 A, 240 V AC, NO contact, 85 °C, VDE/UL508: 50.000 cycles• 21 / 3.5 A, 230 V AC, compressor, $\cos(\phi) = 0.5$, NO contact: 230.000
Solid state relay	1	<p>Insulation between SSR and relays: functional Insulation between SSR and the extra-low voltage parts: reinforced Type of SSR action: 1C (micro-interruption)</p> <p>C6-NO6 SSR, with output AC Zero-crossing:</p> <ul style="list-style-type: none">• load current: 1 A• load voltage: 75 – 250 V AC

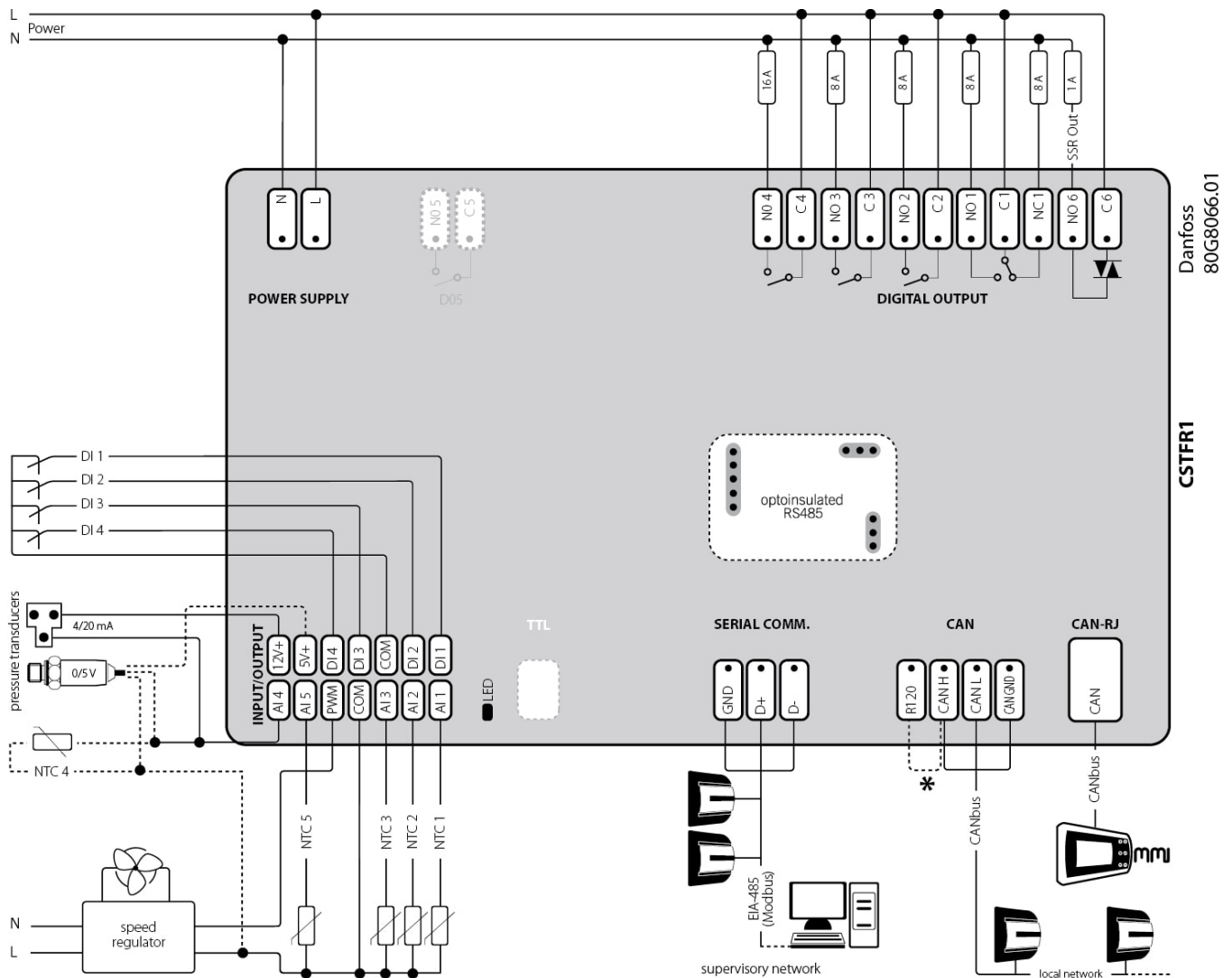
Dimensions & weights

Figure: Dimensions



Connections

Figure: Connection diagram



Note:

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

Table: Connection

Connectors	Type	Dimensions
Power supply connector	2 way screw plug-in connector type	<ul style="list-style-type: none"> pitch 5 mm section cable 0.2 – 2.5 mm²
Digital output connector	11 way screw plug-in connector type	<ul style="list-style-type: none"> pitch 5 mm section cable 0.2 – 2.5 mm²
Input/output connector	Molex® Mini-Fit JrTM type or compatible	
Female connector	14 way, Molex® code: 39012140 Molex® cod of contact For the crimping to use the appropriate instrument, Molex® code 690080724	<ul style="list-style-type: none"> 39000077 for cable with section: AWG16, (1.30 mm²) 39000038 for cable with section: AWG18, 20, 22, 24 (0.82...0.20 mm²) 39000046 for cable with section: AWG22, 24, 26, 28 (0.32...0.08 mm²)
Serial com connector	3 way screw plug-in connector type	<ul style="list-style-type: none"> pitch 5 mm section cable 0.2 – 2.5 mm²
CAN connector	4 way screw plug-in connector type	<ul style="list-style-type: none"> pitch 5 mm section cable 0.2 – 2.5 mm²
CAN-RJ connector	6 / 6 way telephone RJ12 plug type	

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
Export Control Declaration	MCX programmable controller accessories	Danfoss	
Manufacturer's Declaration	Danfoss MD 080R4002.01	Danfoss	China RoHS
EU-UK Declaration	Danfoss EU-UK 080R1224.02	Danfoss	EMC
Manufacturer's Declaration	Danfoss MD 080R1240.00	Danfoss	EU RoHS
Electrical Safety Certificate	UL E31024	UL - Underwriters Laboratories inc.	

Contact details

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