Contents hide

Danfoss-LOGO

Danfoss 80G8280 Ejector Controller

Danfoss-80G8280-Ejector-Controller-PRODUCT

Product Information

- The EKE 80 Ejector Controller receives input signals from Danfoss controllers AK-PC 782A/AK-PC 782B or a PLC.
- It can control multiple HP/LP ejectors and up to 2 modulating control valves to

facilitate the ‘lift’ of the MT suction pressure, thereby decreasing energy consumption.

- The EKE 80 drive controller is suitable for both new and retrofit systems.
- Identify the connectors on the EKE 80 Ejector Controller according to the manual.
- Connect the necessary input signals from the Danfoss controllers or PLC to the designated connectors on the EKE 80.
- Ensure proper power supply connection to the controller.
- Follow the specific wiring instructions for connecting HP/LP ejectors and modulating control valves.
- Test the system to ensure proper functionality.
- Refer to the manual for detailed information on connecting various components to the EKE 80 Ejector Controller.
- Use the specified connectors and follow the wiring guidelines provided.
- Power on the EKE 80 Ejector Controller.
- Set the desired parameters using the interface connected to the controller.
- Monitor the system performance and make adjustments as needed for optimal efficiency.

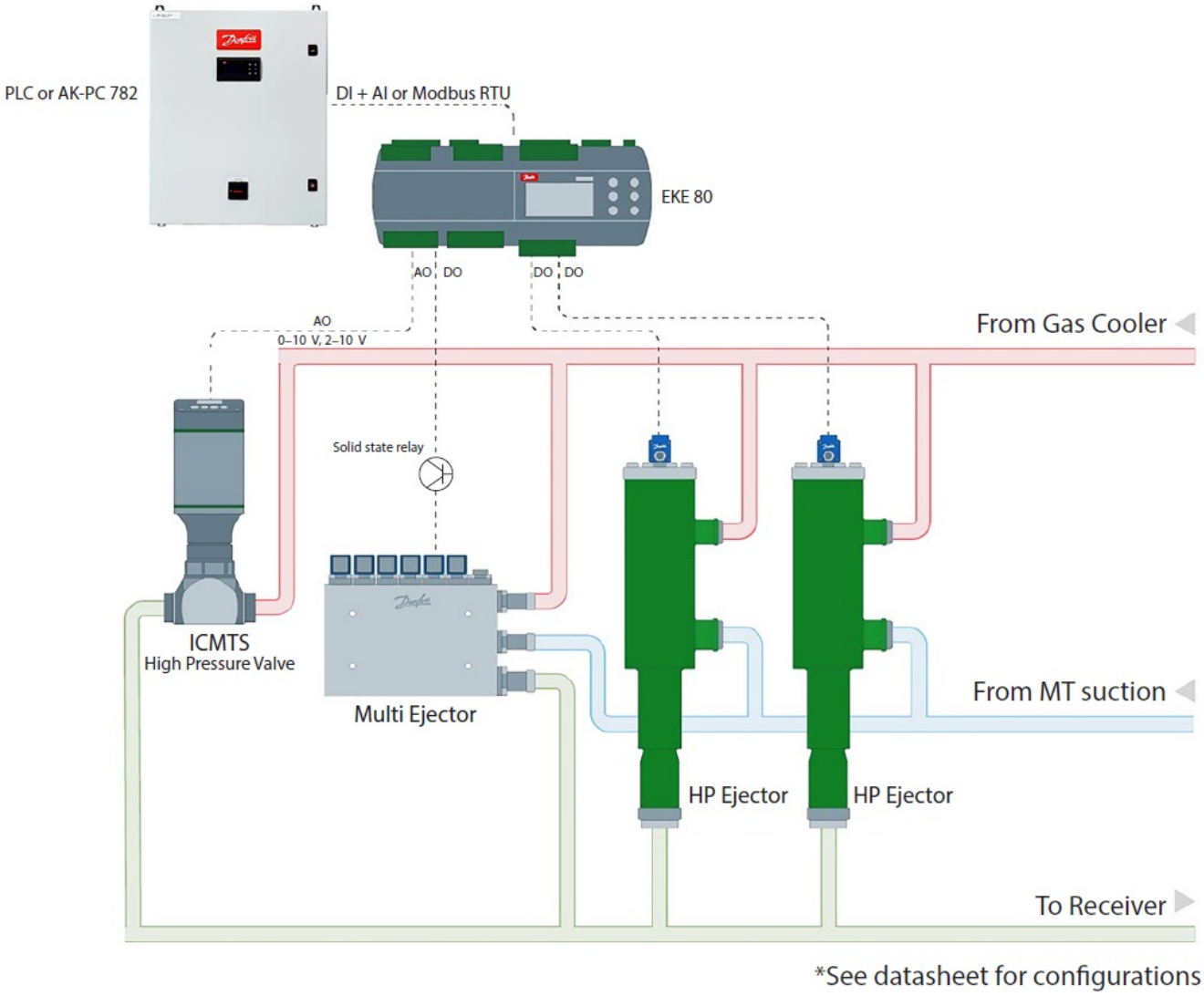
Introduction

- The EKE 80 Ejector Controller receive inputs signals from the Danfoss controllers AK-PC 782A/AK-PC 782B or a PLC.
- It can control multiple HP/LP ejectors and up to 2 modulating control valves to facilitate the ‘lift’ of the MT suction pressure and thereby decrease energy consumption.
- The EKE 80 drive controller is suitable for both new and retrofit systems.

Identification

Danfoss-80G8280-Ejector-Controller-FIG-2

Application example



General features and warnings

Plastic housing features

- DIN rail mounting complying with EN 60715
- Self-extinguishing V0 according to IEC 60695-11-10 and glowing/hot wire test at 960 °C according to IEC 60695-2-12
- Ball test: 125 °C according to IEC 60730-1. Leakage current: ≥ 250 V according to IEC 60112

Other features

- Operating conditions CE: -20T60 / UL: 0T50, 90% RH non-condensing
- Storage conditions: -30T80, 90% RH non-condensing
- To be integrated into Class I and/or II appliances
- Index of protection: IP40 only on the front cover

- Period of electric stress across insulating parts: long
- Suitable for use in environments with a degree of pollution 2
- Category of resistance to heat and fire: D
- Immunity against voltage surges: category II, category III for versions without display
- Software class and structure: class A

Compliance

CE mark

- This product is designed to comply with the following EU standards:
- Low voltage directive LVD 2014/35/EU:
  - EN60730-1: 2011 (Automatic electrical control for household and similar use. General requirements)
  - EN60730-2-9: 2010 (Particular Requirements for Temperature Sensing Controls)
- Electromagnetic compatibility EMC directive 2014/30/EU:
- EN 61000-6-3: 2007 +A1: 2011 (Emission standard for residential, commercial and light-industrial environments)
- EN 61000-6-2: 2005 (Immunity for industrial environments)
- RoHS directive 2011/65/EU and 2015/863/EU:
  - EN50581: 2012
- China RoHS
  UL approval:
- UL file E31024

General warnings

- Every use that is not described in this manual is considered incorrect and is not authorised by the manufacturer
- Verify that the installation and operating conditions of the device respect the ones specified in the manual, especially concerning the supply voltage and environmental conditions
- This device contains live electrical components therefor,e all the service and maintenance operations must be performed by qualified personnel
- The device can’t be used as a safety device

- Liability for injury or damage caused by the incorrect use of the device lies solely with the user

Installation warnings

- Mounting position recommended: vertical
- The installation must be executed according the local standards and legislation of the country
- Always operate on the electrical connections with the device disconnected from the main power supply
- Before carrying out any maintenance operations on the device, disconnect all the electrical connections
- For safety reasons, the appliance must be fitted inside an electrical panel with no live parts accessible
- Don’t expose the device to continuous water sprays or to relative humidity greater than 90%.
- Avoid exposure to corrosive or pollutant gases, natural elements, environments where explosives or mixes of fiammable gases are present, dust, strong vibrations or shock, large and rapid fluctuations in ambient temperature that in combination with high humidity,y can condensate, strong magnetic and/or radio interference (e.g., transmitting antennae)
- When connecting loads, beware of the maximum current for each relay and connector
- Use cable ends suitable for the corresponding connectors. After tightening the screws of the connectors, slightly tug the cables to check their tightness
- Use appropriate data communication cables. Refer to the Installation Guide “MCX hardware network specification” for the kind of cable to be used and setup recommendations
- Reduce the path of the probe and digital input cables as much as possible, and avoid spiral paths enclosing power devices. Separate from inductive loads and power cables to avoid possible electromagnetic noises
- Avoid touching or nearly touching the electronic components fitted on the board to avoid electrostatic discharges
- The product is not suitable to be exposed directly to the Internet

DISCLAIMER: Professional Use Only

- This product is not subject to the UK PSTI regulation, as it is for supply to and use only by professionals with the necessary expertise and qualifications.
- Any misuse or improper handling may result in unintended consequences. By purchasing or using this product, you acknowledge and accept the professional-use-only nature of its application.
- Danfoss does not assume any liability for damages, injuries, or adverse consequences (“damage”) resulting from the incorrect or improper use of the product and you agree to indemnify Danfoss for any such damage resulting from your incorrect or improper use of the product.

Technical specications

Power supply

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

Communication interface

Interface	Use	Connector label
CANbus	Fieldbus for connection to user interfaces, MCX controllers, service tools etc.	CAN CAN-RJ
USB device	Prepared for future use	USB-DEV
USB host	For connection to the Flash drive for application software update, datalogging and service	USB-H

RS485-1 RS485-2 (MCX20B2 only)	Communication bus to BMS (e.g. Modbus slave), service tools, smart devices (e.g. Modbus master), RS485-1 can be polarized as master from the application	RS485-1 RS485-2
	For web server functionality, integration (e.g. Modbus TCP)	
Ethernet	NOTICE! Do not route cable outside of buildings. Connect only to IT equipment compliant with EN 60950 or EN 62368 (Information technology equipment. Safety. General requirements)	ETHERNET

Wire lengths

Interface	Max wire length (m)	Max. baudrate (bps)	Min. w
Ethernet	100	10/100 M	
	1000	50 K	AWG1
	500	125 K	AWG2
CANbus	250	250 K	AWG2
	80	500 K	AWG2
	30	1 M	AWG2
RS485	1000	125 K	AWG2
Signal wiring	30		

Connection

Connectors	Type	Dimensions
Top Board		

Digital input 1 connector	3-way screw plug-in connector type	• pitch 5 mn • section ca
Analog input 11-14 connector	7-way screw plug-in connector type	• pitch 5 mn • section ca
Digital input 2 connector	3-way screw plug-in connector type	• pitch 5 mn • section ca
Digital input 3 connector	3-way screw plug-in connector type	• pitch 5 mn • section ca
Digital input 4 connector	3-way screw plug-in connector type	• pitch 5 mn • section ca
Digital input 5-8 connector	5-way screw plug-in connector type	• pitch 5 mn • section ca
Bottom Board		
Digital output 1-5 connector	10-way screw plug-in connector type	• pitch 5 mn • section ca
Digital output 6 connector	6-way screw plug-in connector type	• pitch 5 mn • section ca
Ethernet connector	8 / 8 way RJ 45 plug type	
USB host connector	USB Type A	
Analog input 1-5 connector	11-way screw plug-in connector type	• pitch 5 mn • section ca

Power supply connector	2-way screw plug-in connector type	• pitch 5 mn • section ca
Digital output 9-13 connector	10-way screw plug-in connector type	• pitch 5 mn • section ca
Analog output 1-2 connector	8-way screw plug-in connector type	• pitch 5 mn • section ca
RS485 -2 connector	3-way screw plug-in connector type	• pitch 5 mn • section ca
RS485-1connector	3-way screw plug-in connector type	• pitch 5 mn • section ca
CAN connector	4-way screw plug-in connector type	• pitch 5 mn • section ca
CAN-RJ connector	6/6 way telephone RJ12 plug type	
USB DEV connector	USB Mini B	

User interface

LCD Display

- display mode: STN blue transmissive
- back-light: white LED back-light, adjustable via software
- display format: 128 x 64 dots
- active visible area: 58 x 29 mm
- contrast: adjustable via software

Display settings adjustment

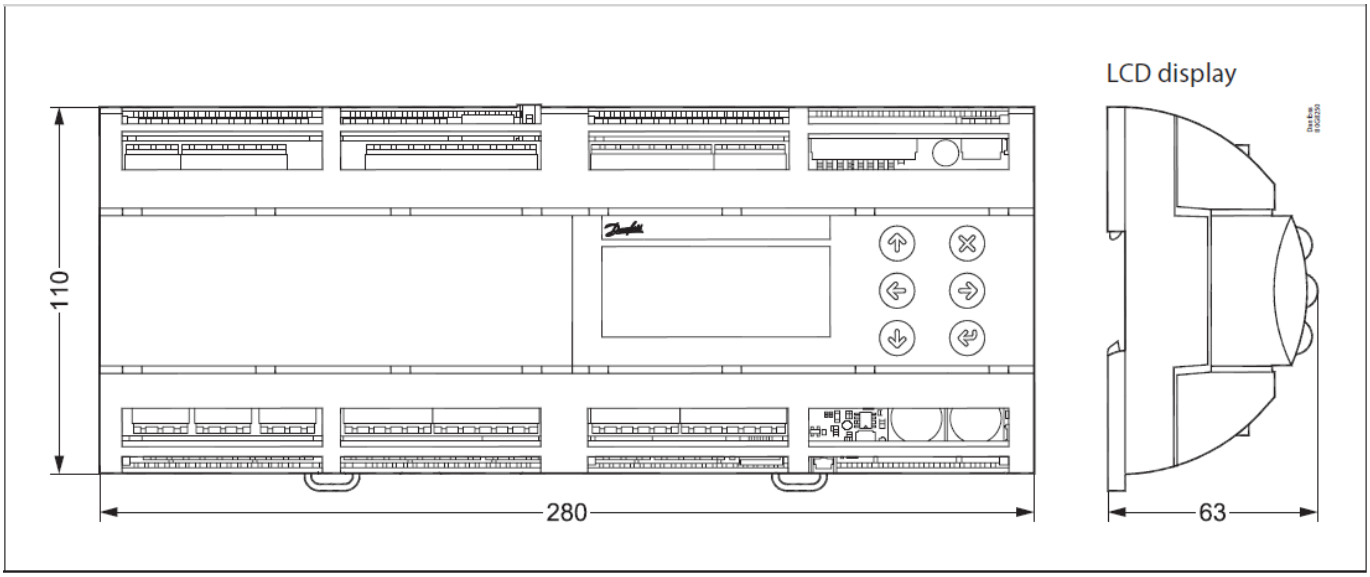
- Settings of the LCD display like contrast and brightness, might need to be adjusted due to external ambient factors.
- Press and release the Enter and X key after powering on to access the BIOS menu and select the DISPLAY menu.
- Use UP and DOWN arrow keys to adjust the contrast or the brightness of the display at the desired level.

External display

Danfoss-80G8280-Ejector-Controller-FIG-4

Dimension

Dimension EKE 80



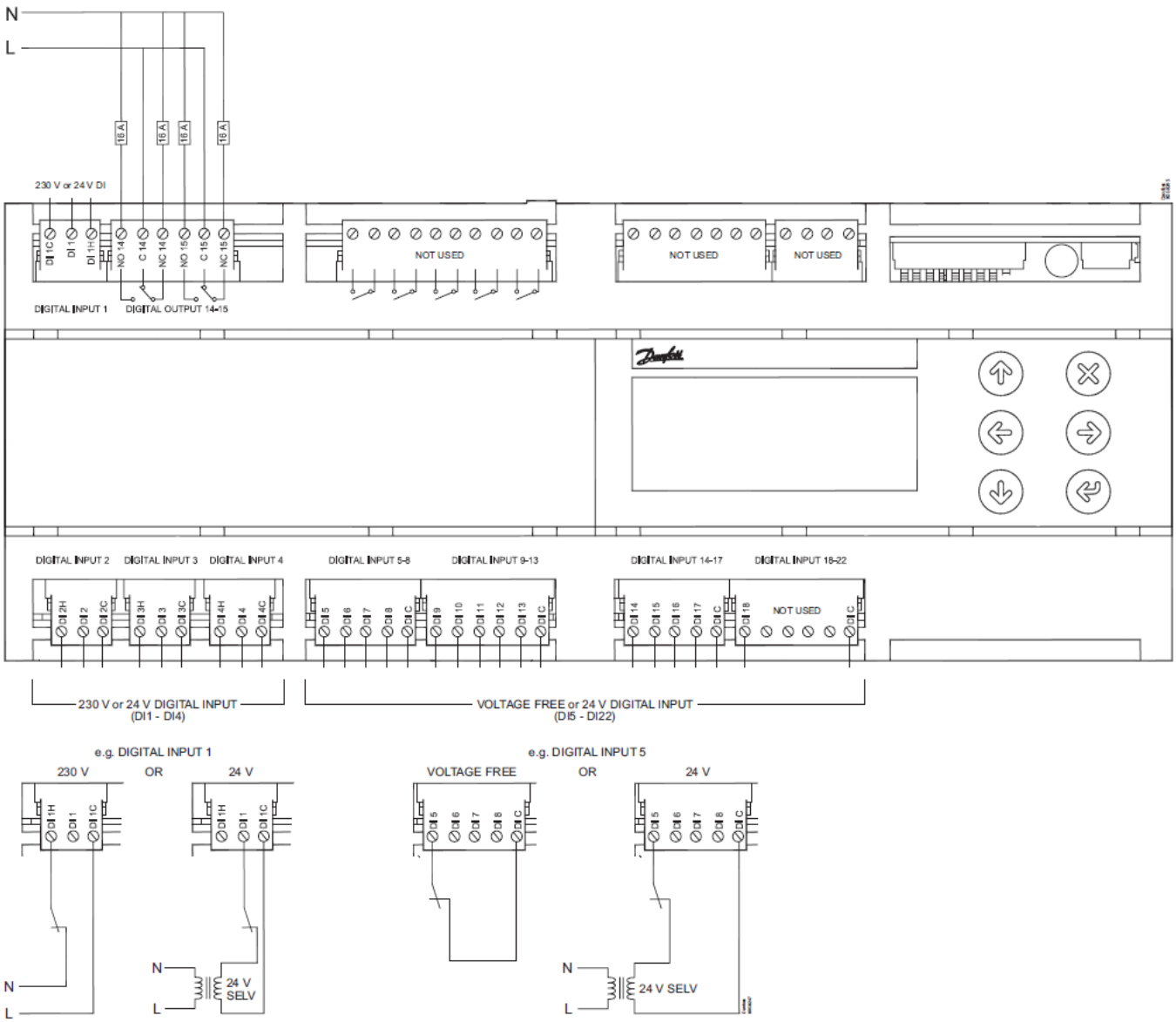
Connection, lower level

Warning

The supply voltage of AI may not share the signal with other controllers

Danfoss-80G8280-Ejector-Controller-FIG-6

Connection, upper level



AI	Label	Description	Signal type choice Via software or fieldbus	Default	Modbus regist
AI-01	AI1	Capacity Reference	0–10 V 0–5 V 2–10 V 0–20 mA 4–20 mA	0–10 V	17902

AI-02	AI2	ICAD Ejector Mode Feedback	0–20 mA 4–20 mA	4–20 mA	17903
AI-03	AI3	ICAD Bypass Mode Feedback	0–20 mA 4–20 mA	4–20 mA	17904
AI-04	AI4	Pressure Transmitter	0–5 V 0–10 V 0–20 mA 4–20 mA	4–20 mA	17905
AI-05	AI5	Temperature Sensor	0–10 V NTC–10K PT1000	PT1000	17906
AI-06					
AI-07					
AI-08	N/A	Not available for customer use	N/A	N/A	Reserved
AI-09					
AI-10					
AI-11	AI11		None NTC–10K PT1000 0–5 V		17907
AI-12	AI12				17908
AI-13	AI13		0–10 V		17909
		Not used in logic. User configurable IO	2–10 V	None	
AI-14	AI14		0–20 mA 4–20 mA		17910
AI-15					
		Not available for			

AI-16	N/A	customer use	N/A	N/A	Reserved

A0	Label	Description	Signal type choice	Default	Modbus regist
A0-01	AO1	ICAD Ejector Mode Request OD	0–10 V 2–10 V	0–10 V	18102
A0-02	AO2	ICAD Bypass Mode Request OD	0–10 V 2–10 V	0–10 V	18103
A0-03 A0-04 A0-05 A0-06	N/A	Not available for customer use	N/A	–	Reserved

DI	Label	Description	Signal type choice	Default	Modbus regis
DI-01	DI1	Not used in logic, User configurable IO			17498
DI-02	DI2	Not used in logic, User configurable IO	24 V or 230 V Depending on port used. See upper level diagram		17499
DI-03	DI3	Not used in logic, User configurable IO			17500
DI-04	DI4	Not used in logic, User configurable IO		–	17501
DI-05	DI5	Suction Flow Control			17503
DI-06	DI6	Ejector Mode Signal Error			17504
			Dry contact and/or		

			24 V AC		
DI-07	DI7	Bypass Mode Error Signal		–	17505
DI-08					
DI-09					
DI-10					
DI-11					
DI-12					
DI-13					
DI-14					
DI-15	N/A	Not used in logic	N/A	N/A	Reserved
DI-16					
DI-17					
DI-18					
DI-19					
DI-20					
DI-21					
DI-22					

DO	**Label**	**Description**	**Signal type choice**	**Default**	**Modbus register**

DO-01	DO1	Alarm output		–	17702
DO-02	N/A	Not used in logic	N/A	N/A	Reserved
DO-03	DO3	User-assigned Ejector		Not assigned	17703
DO-04	DO4	User-assigned Ejector		Not assigned	17704
DO-05	DO5	User-assigned Ejector		Not assigned	17705

			Not assigned Ejector 1 Ejector 2 Ejector 3 Ejector 4 Ejector 5-8 expansion module only		
DO-06	DO6	User-assigned Ejector		Not assigned	17706
DO-07					
DO-08					
DO-09					
DO-10					

DO-11					
DO-12					
DO-13	N/A	Not used in logic	N/A	N/A	Reserved
DO-14					
DO-15					
DO-16					
DO-17					
DO-18					
DO-19					
DO-20					

CONTACT

- Danfoss A/S
- Climate Solutions
- danfoss.com
- +45 7488 2222

FAQ

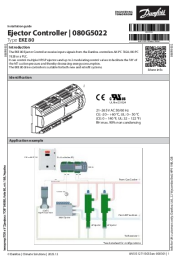
Q: Can the EKE 80 Ejector Controller be used with third-party controllers?

A: The EKE 80 is designed to work with Danfoss controllers AK-PC 782A/AK-PC 782B or a PLC. Compatibility with third-party controllers may vary, it is recommended to consult with Danfoss support for further information.

Q: What is the maximum wire length supported for Ethernet connection?

A: The maximum wire length for Ethernet connection is 100 meters.

Documents / Resources



Danfoss 80G8280 Ejector Controller [pdf] Installation Guide
080G5022, 080R9502, 80G8280, 80G8280 Ejector Controller, 80G8280, Ejector Controller, Controller

References

- User Manual

Danfoss080G5022, 080R9502, 80G8280, 80G8280 Ejector Controller, controller, Danfoss, Ejector Controller

Leave a comment

Your email address will not be published. Required fields are marked *

Comment *

Name

Email

Website

Save my name, email, and website in this browser for the next time I comment.

Post Comment

Search:

e.g. whirlpool wrf535swhz

Search