

Installation Guide

KoolKey Type **EKA 200**



KoolKey is a multi-functional device designed to serve both as a communication gateway and a programming tool for Danfoss electronic controllers. Its primary functions include:

- Gateway Mode: Connects Danfoss electronic controllers to a PC, enabling online access through the KoolProg® application.
- Programming Key: Enables stand-alone programming of parameter configuration files into Danfoss controllers.

Supported controller types:

- | | | | |
|----------------------|--------------------------------------|-----------------|------------|
| 1. ERC 111, 112, 113 | 3. EETc 11, 12, 21, 22 & EETa 2W, 3W | 5. EKC 223, 224 | 7. AK-CC25 |
| 2. ERC 211, 213, 214 | 4. EKF 1A, 2A | 6. EKE 100, 110 | |

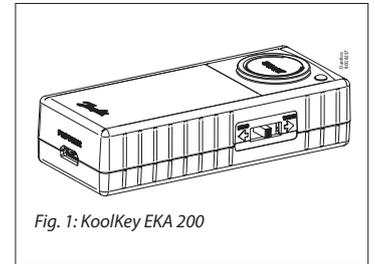


Fig. 1: KoolKey EKA 200

Warning:

1. Ensure to disconnect non-isolated controllers (ERC 11X & EET) from mains power, before connecting to KoolKey.
2. Do not leave the interface cable hanging from powered-up controller.

KoolKey as a Gateway

KoolKey can operate in Gateway Mode, enabling direct online communication between a compatible controller and the KoolProg® software installed on a PC. This allows users to configure, program, and monitor controllers in real time.

KoolProg® allows following functions:

- Set Parameters – Create, view and edit controller settings.
- Copy to Controller – Program settings file created offline to the connected controller.
- Online service – Monitor real time operations of the controllers and adjust parameters live.

Connection:

- Connect the KoolKey using a standard USB type-C cable to the USB port of a PC installed with KoolProg® software
- Connect the controller to KoolKey other end using the interface cable of the respective controller type.

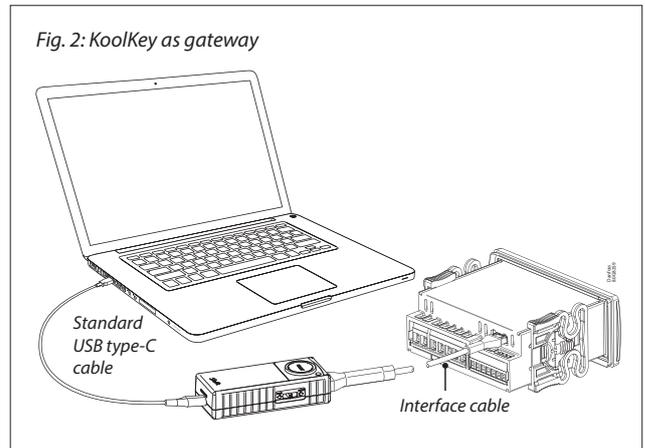


Fig. 2: KoolKey as gateway

The controller is powered by the PC through the connected KoolKey (EKF and EKE controllers require an external power supply). (Refer to the KoolProg® [User Guide](#) for detailed instructions on how to use KoolProg. Download KoolProg® at: koolprog.danfoss.com)

KoolKey as Programming Key

The programming key function is used for transferring parameter settings files from the KoolKey to the controller.

Transfer or copy the parameter file in below format to KoolKey like any other storage device.

Recommendation: Save only the parameter file relevant to the specific target controller on KoolKey to avoid confusion.

a. Steps to program a powered-up controller:

1. Connect the KoolKey to the controller's communication port using an interface cable.
2. Power up the controller using 120 V/230 V power supply.
3. Move the slider switch to required position and short press (1 sec) the start button to transfer data.
4. After successful data transfer, switch off the controller power supply and remove the KoolKey.

Note: KoolKey requires to be connected to an external power source (5 V) while programming EETc, EKF and EKE 100/110 controllers as mentioned in Fig. 4.

Supported parameter file formats

Controller	File format	Naming convention
EETa, EETc	.xml	080Nxxxx.xml
ERC 11x	.xml / .erc	080Gxxxx.xml / xxxx.erc
ERC 21x	.xml / .erc	080Gxxxx.xml / xxxx.erc
EKC 22x	.xml / .erc	084Bxxxx.xml / xxxx.erc
EKF 1A/2A, EKE 100, EKE 110	.xml	080Gxxxx.xml
AK-CC25	.xml	084Bxxxx.xml

Note: xxxx is the last four digits of controller's code no.

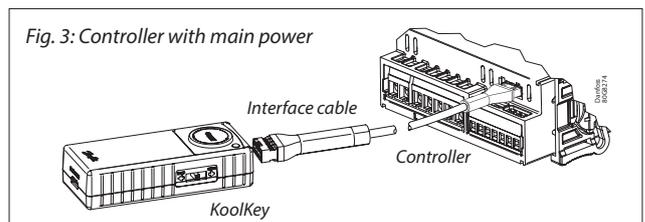
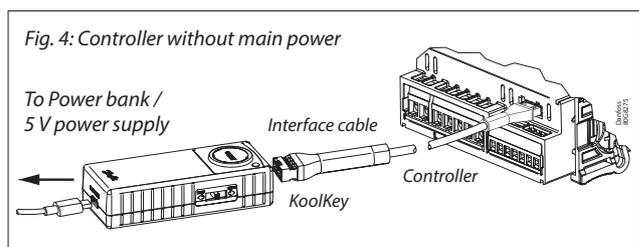


Fig. 3: Controller with main power

b. Steps to program an unpowered controller (write function only):

1. Connect a Power bank or a 5 V power supply to KoolKey USB type-C port.
2. Connect the KoolKey to the controller's communication port using an interface cable.
3. Write function gets initiated as soon as the KoolKey is connected to controller (no need to press the start button).

Note: This use case is not applicable for EKF and EKE 100/110 controllers.



Parameter file transfer steps and LED indications

Function	Action	Illustration	LED info
Power-up	KoolKey can be powered up by connecting to an external power bank (Mass programming mode) or a powered-up controller (Copy key mode) ¹⁾ . ¹⁾ Not supported by EETc.		<ul style="list-style-type: none"> • The LED will flash red slowly, indicating that KoolKey is powered up. • After a few seconds, the LED will turn steady green, indicating successful connection and data transfer readiness
Write and Read function	a. Write function: <ul style="list-style-type: none"> • Move the slider switch to "Write" position • Short press the start button (1 s) to transfer data from the KoolKey to the controller Note: When KoolKey is connected to a power bank, the write functions get initiated automatically as soon as the KoolKey is connected to a controller without pressing the start button.		Yellow LED flashes rapidly. Indicating parameter file download
	b. Read Function: <ul style="list-style-type: none"> • Move the slider switch to "Read" position • Short press the start button (1 s) to transfer data from the controller to the KoolKey Note: Read function is not supported when KoolKey is powered up from a power bank.		Yellow LED blinks rapidly. Indicating parameter file download
File transfer confirmation	Successful file transfers (Write function can take up to 10 s and read function can take 15 – 20 s to successfully complete)		Constant green
	Unsuccessful file transfer (Check connection and ensure compatible programming file saved in KoolKey).		Rapid red flashes

Ordering

Description	Code no.
KoolKey, EKA 200	080N0020
Interface cable for EET / EKF / EKA 201, 1 m	080N0324
Interface cable for ERC 21x / EKC 22x, 1 m	080N0326
Interface cable for ERC 11x, 1 m	080N0328
Interface cable for AK-CC25, 1 m	080N0334



Scan the QR code to learn more about KoolKey use cases.