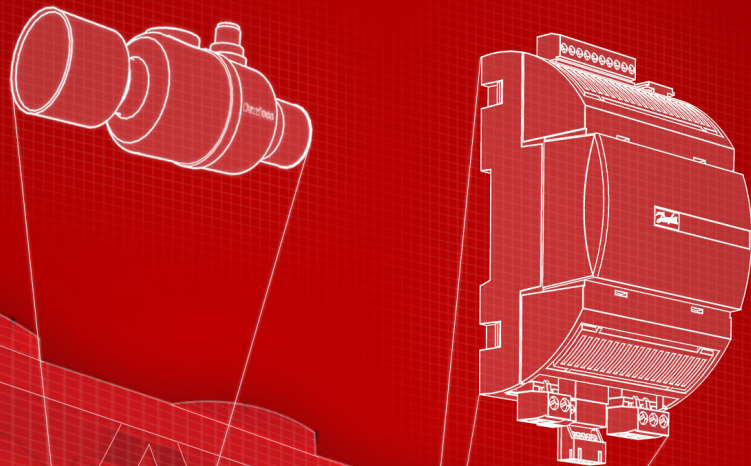**Superheat Controller | EKE Series**

Obtain **high system reliability** with **precise superheat control** and valve management

Danfoss superheat controls are designed to support the attainment of high system efficiency and reliability, while helping OEMs reduce development costs for chillers, rooftop units, heat pumps, CRAC units and cold rooms.

More than

20 years

best-in-class superheat management

airconditioning.danfoss.com

Optimized superheat control

Increase system protections while reducing development costs

With tuned up software and easy installation, the EKE series of superheat controllers are a perfect complement to our ETS expansion devices.

When utilizing Danfoss ETS and EKE, your system will have best-in-class superheat management with precise valve control.

EKE combined with a full collection of Danfoss pressure and temperature sensors will enable the next generation of HVAC systems to be more precise, energy efficient by using the most stable superheat solution available.

System Protection

Fail Safe Operation
In case of sensor error, system can continue cooling in emergency mode based on a user-defined parameter (i.e. pre-defined operning degree).

Low Operating Pressure (LOP)
Allows applications to start-up at lower ambient conditions, to prevent compressor from stopping due to low suction pressure, by quickly opening the expansion valve.

High Condensing Temperature Protection (For EKE 1x series) (HCTP)
Ensures that the load on the condenser is reduced, in cases where the condensing temperature gets too high, by reducing the flow in the expansion valve.

Superheat Close
When the superheat is below a set minimum value, the valve will close faster in order to protect the compressor from the risk of getting liquid in the suction line.

Max Operating Pressure (MOP)
Keeps evaporating pressure below the MOP set point, to avoid overload of the compressor, by reducing the flow in the expansion valve.

Backup power module
Enables to quickly shut down the valves , in case the mains power fail, thus prevents liquid from entering the compressor.

Efficiency

Adaptive Superheat Control
Several control aglorithms available to match your application that guarantee low and stable superheat.

Compressor Feed Forward
Provides proper superheat by synchronizing valve reactivity to compressor speed. (great for variable speed or when operating conditions vary)

Heating & Cooling Selection Mode
Optimizes evaporator performance by allowing 2 different sets of superheat settings (i.e. reversible systems).

Fast Start-Up
Ensures optimal superheat in the shortest period of time by quickly opening the valve and avoiding low pressure cut-out during start-up.

Ease of Use/Installation/Applied Costs

Share DC Power Supply
Galvanic isolation eliminates the need of one transformer for every EKE.

Share Pressure Signal via Modbus
1 sensor can be used with multiple controllers.
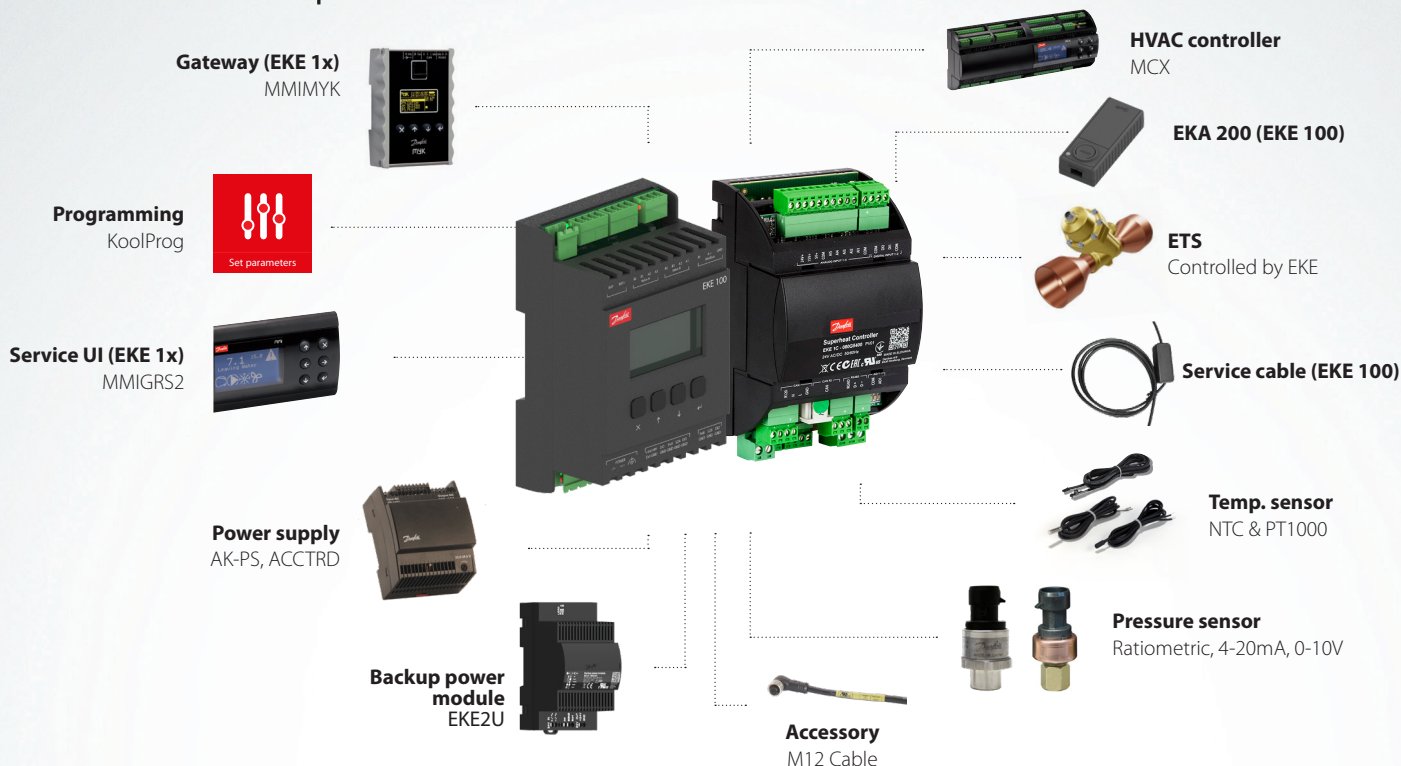
Valves & Sensors
Compatible with a wide range of valves and sensors.

KoolProg
The Koolprog wizard tool will guide the user to set up the controller in a fast and easy way.

Comparison table

		EKE 1A	EKE 1B	EKE 1C	EKE 100
Dimensions (W x H x D)		70 x 130 x 60 mm	70 x 130 x 60 mm	70 x 130 x 60 mm	70 x 110 x 49.5
Power supply type	24 V AC / DC	•	•	•	•
Temperature Sensor Type	PT1000	-	-	•	•
	NTC 10K	•	•	•	•
No of temperature sensors		1	2	3	1 for 1V model and 2 for 2V model
Pressure Transmitter types	Ratiometric 0.5 - 4.5 V DC	•	•	•	•
	0 – 20 mA signal	-	-	•	•
	1 – 5 V / 0 – 10 V	•	•	•	•
No of pressure sensors		1	1	2 or (1 P and 1 ext. ref.)	1 for 1V model and 2 for 2V model
External reference	4 – 20 mA	-	-	•	•
	0 – 20 mA	-	-	•	•
	User defined current	-	-	•	•
	0 – 10 V	•	•	•	•
	1 – 5 V	•	•	•	1 for 1V model and 2 for 2V model
	User defined voltage	•	•	•	•
No. of external reference		1	1	1	-
Communication	Modbus RS 485	-	•	•	•
	Wired CAN Bus	-	-	•	-

Superheat controller collection
for ideal superheat control

Gateway (EKE 1x)
MMIMYK

Programming
KoolProg
Set parameters

Service UI (EKE 1x)
MMIGRS2

Power supply
AK-PS, ACCTRD

Backup power module
EKE2U

Accessory
M12 Cable

HVAC controller
MCX

EKA 200 (EKE 100)

ETS
Controlled by EKE

Service cable (EKE 100)

Temp. sensor
NTC & PT1000

Pressure sensor
Ratiometric, 4-20mA, 0-10V

Access our **online services 24/7**

You can find many helpful resources on our website, including product catalogues, educational and training programs, downloadable manuals and apps, and troubleshooting tools.

Danfoss online self-services

- Superheat controllers: www.airconditioning.danfoss.com
- KoolProg Software: http://koolprog.danfoss.com
- Learning platform: Learning.Danfoss.com

Scan QR code for more EKE info

Scan QR code for more ETS info

Scan QR code for more programmable controllers