

Superheat Controller | EKE 1 Series

# Save on energy and maintenance costs while enhancing system reliability

Danfoss expert EKE superheat controls are designed to help OEMs develop more efficient chillers, rooftops, heat pumps, CRAC units, cold rooms and food retail faster to reduce development and operational costs.

Up to

**20%**

reduction in  
operational costs



### Optimized superheat control

**Increase** system protections while **reducing** installation and maintenance costs

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

When utilizing ETS Colibri® and EKE, your systems operational costs are reduced by up to 20% with best-in-class superheat control and through eliminating the need for a dedicated power transformer.

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.



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



## 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 opening 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 (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 algorithms 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 Power Supply

Galvanic isolation eliminates the need of one transformer for every EKE.

### Share Pressure Signal

1 sensor can be used with multiple controllers.

### Valves & Sensors

Compatible with a wide range of valves and sensors.

### Commutation Filter

The filter is inside the EKE and eliminates the need of external filter for greater cable lengths.

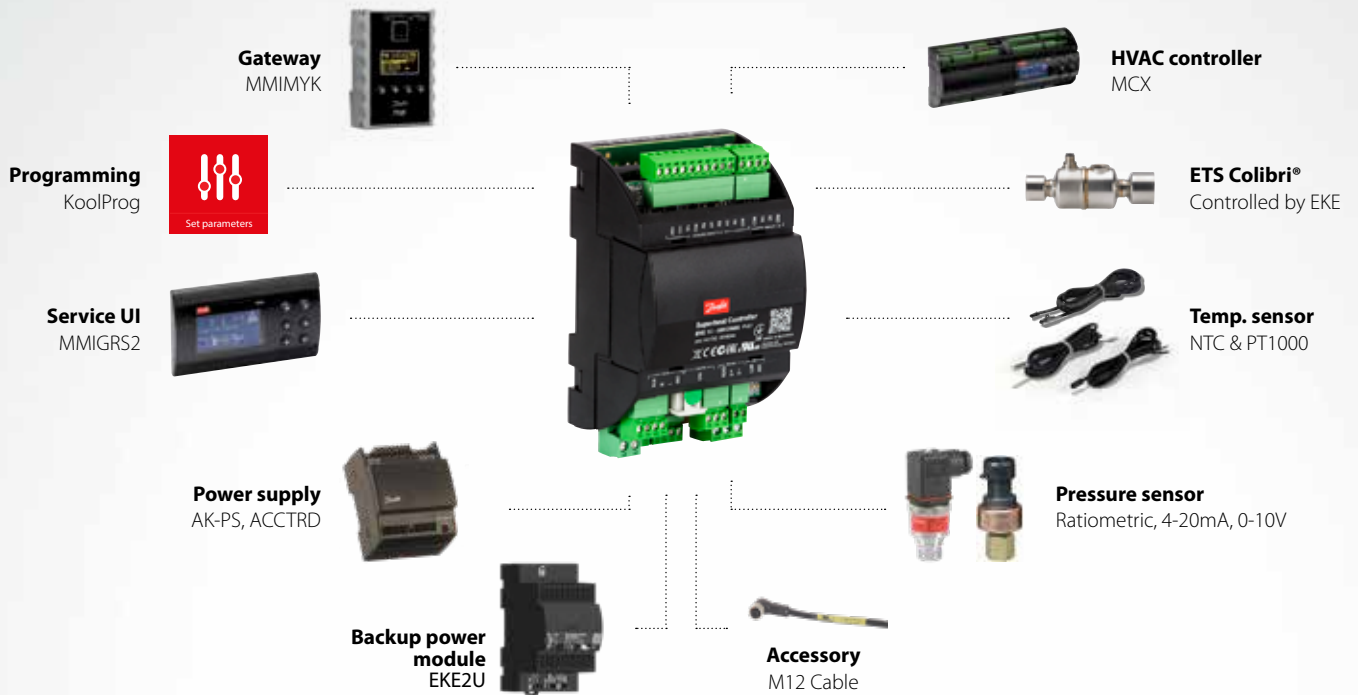
### KoolProg

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



# Superheat controller collection

for ideal chiller superheat control



## 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](http://www.airconditioning.danfoss.com)
- KoolProg Software: <http://koolprog.danfoss.com>
- Learning platform: [Learning.Danfoss.com](http://Learning.Danfoss.com)



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