



# Electronic thermostat control

## EET

## Description

The EET Series is the next generation of electronic thermostats which is a direct replacement of the mechanical thermostat (and timer) and Danfoss ETC series. It comes in two variants: EETc (Enhanced Electronic Thermostat, compact) which has one and two output model options for controlling compressor and fan/defrost heater and EETa (Enhanced Electronic Thermostat, advanced) which has two and three output model options for controlling compressor, fan, defrost heater or light.

With the EETc and the EETa, we continue building on the electronification legacy by bringing a high number of new features and capabilities to increase performance and flexibility, while keeping the familiar form factor and installation method.

## Features & benefits

- Ensure reliable performance with moisture protected design for cold space installations
- Simplify transitions with compatible dimensions and installation methods
  - Similar dimensions and installation method as ETC series and mechanical thermostat for easy transition (applicable for EETc)
- Versatile power support and configurable controls for optimal operation
  - Wide Voltage Power Support (110 – 230 V) (applicable for EETa)
  - Configurable auxiliary inputs and outputs to control fan, defrost heater, and light
- Intelligent management of alarms, fans, lights, and compressors
  - Alarms, fan & light control, compressor management using door sensor
  - Advanced fan control
  - Multiple defrost methods to choose from
- Flexible sensor compatibility and enhanced relay life
  - Supports multiple sensor types: NTC 5K, NTC 10K, PTC 990
  - Zero cross technology for longer relay life
- Streamlined production with mass programmability and quick factory tests
  - Mass programmable at production site with direct programming key access
  - Quick factory test mode to check if inputs/outputs are functioning
- Protect your equipment with comprehensive voltage and temperature safeguards
  - Compressor protection from voltage fluctuations, spikes, and surges
  - Condenser overheat protection
  - High and low temperature alarm indication
- Maximize energy savings with economy and holiday modes
  - Economy mode (eco mode) to give more energy saving potential during night and long hours of no use
  - EETa supports holiday mode, which allows longer than a day period of auto temperature offset
- Dual defrost control and emergency safety features for reliability
  - Dual defrost control (only EETa)
  - Safety/emergency mode in case of sensor and potentiometer failure

## Ordering

### Product code numbers

Type	Packing format	Quantity per packing format	Code number
EETc 12	Industrial pack	150	080N0010
EETc 22	Industrial pack	150	080N0011
EETc 11	Industrial pack	150	080N0012
EETc 21	Industrial pack	150	080N0013
EETa 2W	Industrial pack	150	080N0014
EETa 3W	Industrial pack	150	080N0015

## Accessories code numbers



080N0302

### Temperature sensor, NTC

Function: Temperature sensing,  
Packing format: Industrial pack,  
Quantity per packing format: 150

#### Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0313

### Electron. control accessories, EET Cable door sensor, 2m, EET

EET Cable door sensor, 2m, Used for product: EET, Packing format: Industrial pack, Quantity per packing format: 150

#### Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0303

### Temperature sensor, NTC

Function: Temperature sensing,  
Packing format: Industrial pack,  
Quantity per packing format: 150

#### Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0311

### Electron. control accessories, EET, Magnetic door sensor, 2m, EET

EET, Magnetic door sensor, 2m, Used for product: EET, Packing format: Industrial pack, Quantity per packing format: 150

#### Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0312

### Electron. control accessories, EET, Magnetic door sensor, 3m, EET

EET, Magnetic door sensor, 3m, Used for product: EET, Packing format: Industrial pack, Quantity per packing format: 150

#### Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0020

### Electron. control accessories, EKA 200 KoolKey, ERC, EET, AK-CC, EKE

EKA 200 KoolKey, Used for product: ERC, EET, AK-CC, EKE, Packing format: Single pack, Quantity per packing format: 1

#### Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)

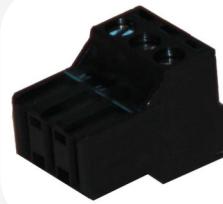


080N0021

**Accessories, electron. control,  
EKA 201 Programming Key**

EKA 201 Programming Key, Packing format: Multi pack, Quantity per packing format: 60

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080G3357

**Electron. control accessories,  
Power plug 6-pin, with  
screw, 28A, 54pcs, ERC  
Thermostat**

Power plug 6-pin, with screw, 28A, 54pcs, Used for product: ERC Thermostat, Packing format: Industrial pack, Quantity per packing format: 54

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0314

**Electron. control accessories,  
EET Cable door sensor, 4m,  
EET**

EET Cable door sensor, 4m, Used for product: EET, Packing format: Industrial pack, Quantity per packing format: 150

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0308

**Temperature sensor, NTC**

Function: Temperature sensing, Packing format: Industrial pack, Quantity per packing format: 150

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0307

**Temperature sensor, NTC**

Function: Temperature sensing, Packing format: Industrial pack, Quantity per packing format: 150

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0305

**Temperature sensor, NTC**

Function: Temperature sensing, Packing format: Industrial pack, Quantity per packing format: 150

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0306

**Temperature sensor, NTC**

Function: Temperature sensing, Packing format: Industrial pack, Quantity per packing format: 150

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0325

**Electron. control accessories,  
Programming Key Cable EET,  
EETx**

Programming Key Cable EET, Used for product: EETx, Packing format: Single pack, Quantity per packing format: 1

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)



080N0301

**Temperature sensor, NTC**

Function: Temperature sensing,  
 Packing format: Industrial pack,  
 Quantity per packing format: 150

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0304

**Temperature sensor, NTC**

Function: Temperature sensing,  
 Packing format: Industrial pack,  
 Quantity per packing format: 150

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0324

**Electron. control accessories,  
KoolKey cable EET, EETx**

KoolKey cable EET, Used for  
 product: EETx, Packing format:  
 Single pack, Quantity per packing  
 format: 1

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0310

**Electron. control accessories,  
Power plug 4-pin, with  
screw, 31A, 50pcs, EET**

Power plug 4-pin, with  
 screw, 31A, 50pcs, Used for product:  
 EET, Packing format: Industrial pack,  
 Quantity per packing format: 50

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


080N0300

**Temperature sensor, NTC**

Function: Temperature sensing,  
 Packing format: Industrial pack,  
 Quantity per packing format: 150

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


077F8577

**Washer, ETP**

Used for product: EET Controllers

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)


077F8562

**Hand knob, ETP**

Used for product: EET Controllers

## Related products

[080N0010](#) [080N0011](#) [080N0012](#) [080N0013](#) [080N0014](#) [080N0015](#)

**Note:** For power plug (080N0310 and 080G3357), the connectors are rated for 28 Amps max.

## Overview

### Product portfolio

**Table: Key difference between EETc and EETa**

Features	EET Compact (EETc)	EET Advanced (EETa)
Variants	EETc 11: 1 output, 120 V EETc 12: 1 output, 230 V EETc 21: 2 outputs, 120 V EETc 22: 2 outputs, 230 V	EETa 2W: 2 outputs, wide voltage (100 – 240 V) EETa 3W: 3 outputs, wide voltage (100 – 240 V)
Sensor inputs	2 (1 AI, 1 AI/DI)	3 (1 AI, 2 AI/DI)
Power supply	120 V AC +/-10%, 50/60 Hz 230 V AC +/-10%, 50/60 Hz	100 – 240 V AC +/- 10%, 50/60 Hz,
Visible LED indication	Power on status	Power on status and Error indication
Temperature sensors supported	NTC 5K, NTC 10K	NTC 5K, NTC 10K, PTC
Output options	1 & 2 Relay	2 & 3 Relay
Parameter Programming	KoolKey with external 5V power	KoolKey with external 5 V power KoolKey with powered controller
Firmware update capability	No	Yes
Holiday mode	No	Yes
Light Control	No	Yes
Dual defrost	No	Yes
Dual compressor control	No	Yes
Anti-freeze function	No	Yes

## Product details

### General data

#### Technical specification: EETc 11, 12, 21 and 22

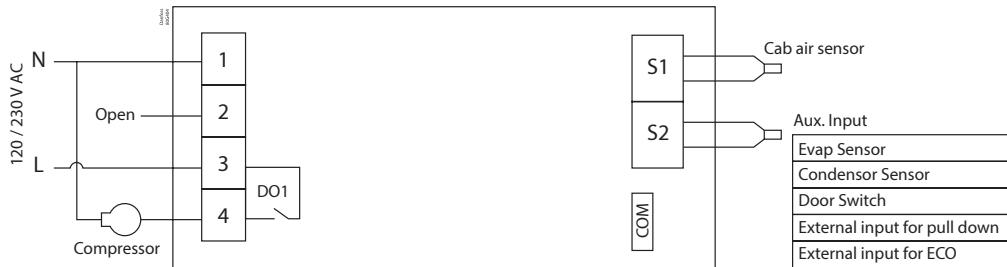
Product specification	EETc 11, EETc 21	EETc 12, EETc 22
Purpose of control	Operating temperature sensing control suitable for incorporation into commercial air-conditioning and refrigeration applications	
Construction of control	Incorporated control	
Voltage	120 V, 50/60 Hz, Non-Isolated	230 V, 50/60 Hz, Non-Isolated
Types/Models	EETc 11 (One relay 120 V) EETc 21 (Two relay 120 V)	EETc 12 (One relay 230 V) EETc 22 (Two relay 230 V)
Power supply	120 V AC +10%/-15%, 50/60 Hz	230 V AC +10%/-15%, 50/60 Hz
Relay ratings	DO1 (Relay 1) <b>UL 60730:</b> 16 A Resistive, 100k cycles 16 FLA, 72 LRA, 30k cycles  <b>EN 60730:</b> 16 A Resistive, 100k cycles 16 A (break) (0.75 – 0.8 p.f.), 72 A (make) (0.4 – 0.5 p.f.), 30k cycles	DO1 (Relay 1) <b>UL 60730:</b> 16 A Resistive, 100k cycles 10 FLA, 60 LRA, 30k cycles  <b>EN 60730:</b> 16 A Resistive, 100k cycles 10 A (break) (0.75 – 0.8 p.f.), 60 A (make) (0.4 – 0.5 p.f.), 30k cycles
	DO2 (Relay 2) <b>UL 60730:</b> 5 A Resistive, 30k cycles 2 FLA, 12 LRA, 30k cycles  <b>EN 60730:</b> 5 A Resistive, 30k cycles	DO2 (Relay 2) <b>UL 60730:</b> 5 A Resistive, 30k cycles 2 FLA, 12 LRA, 30k cycles  <b>EN 60730:</b> 5 A Resistive, 30k cycles
Product dimension	Length: 79 mm, Width: 37.5 mm, Height: 30.5 mm	
Temperature control	Potentiometer with Spindle	
Number of inputs	2 (1 Analogue + 1 Analogue / Digital)	
Supported sensor types	NTC 5K (Beta value 3980 @ 25/100 °C) NTC 10K (Beta Value 3980 @ 25/100 °C)	
Measuring accuracy	±1 K below -35 °C ±0.5 K between -35 – +25 °C ±1 K above 25 °C	
Measurement range	-40 – +80 °C	
Number of outputs	One relay version: Compressor relay Two relay version: Compressor relay + Aux relay (Defrost heater / Evaporator fan)	
Input connector type	Plug & Header type	
Output connector type	Tab connector	
Communication	TTL (MODBUS)	
Operating temperature range	-25 – +55 °C	
Humidity range	93% RH, Condensing	
Installation	Spindle mounted Cold Space Installability	
Relay switching	Zero cross technology (All relays)	
Overvoltage category	III: 230 V supply version (CE, UL recognized) III: 115 V supply version (UL recognized)	
Surge Protection	4 KV	

**Technical specification: EETa 2W and EETa 3W**

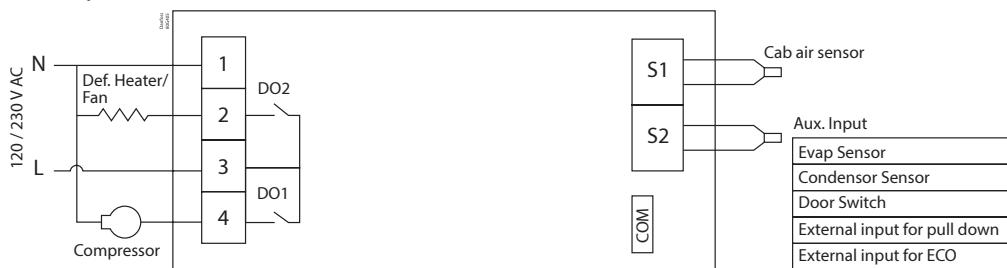
Product specification	EETa 2W	EETa 3W
Purpose of control	Operating temperature sensing control suitable for incorporation into commercial air-conditioning and refrigeration applications	
Construction of control	Incorporated control	
Power supply	100 – 240 V AC +/- 10%, 50/60 Hz, Non isolated	
Relay ratings	<p>DO1 (Relay 1):  <b>UL 60730:</b>            16 A Resistive, 100k cycles            16 FLA, 72 LRA, 30k cycles @ 120 V AC            10 FLA, 60 LRA, 30k cycles @ 240 V AC  <b>EN 60730:</b>            16 A Resistive, 100k cycles            16 A (break) (0.75 – 0.8 p.f.), 72 A (make) (0.4 – 0.5 p.f.), 30k cycles @ 115 V AC            10 A (break) (0.75 – 0.8 p.f.), 60 A (make) (0.4 – 0.5 p.f.), 30k cycles @ 230 V AC</p> <p>DO2 (Relay 2):  <b>UL 60730:</b>            8 A Resistive, 30k cycles            2 FLA, 12 LRA, 100k cycles  <b>EN 60730:</b>            8 A Resistive, 30k cycles</p>	<p>DO1 (Relay 1):  <b>UL 60730:</b>            16 A Resistive, 100k cycles            16 FLA, 72 LRA, 30k cycles @ 120 V AC            10 FLA, 60 LRA, 30k cycles @ 240 V AC  <b>EN 60730:</b>            16 A Resistive, 100k cycles            16 A (break) (0.75 – 0.8 p.f.), 72 A (make) (0.4 – 0.5 p.f.), 30k cycles @ 115 V AC            10 A (break) (0.75 – 0.8 p.f.), 60 A (make) (0.4 – 0.5 p.f.), 30k cycles @ 230 V AC</p> <p>DO2 (Relay 2):  <b>UL 60730:</b>            8 A Resistive, 30k cycles            2 FLA, 12 LRA, 100k cycles  <b>EN 60730:</b>            8 A Resistive, 30k cycles</p> <p>DO3 (Relay 3)  <b>UL 60730:</b>            5 A Resistive, 30k cycles            2 FLA, 12 LRA, 30k cycles  <b>EN 60730:</b>            5 A Resistive, 30k cycles</p>
Product dimension	Length: 83.5 mm, Width: 43.5 mm, Height: 30.5 mm	
Temperature control	Potentiometer with spindle	
Number of inputs	3 (1 Analogue, 2 Analogue / Digital)	
Supported sensor types	NTC 5K (Beta value 3980 @ 25/100 °C) NTC 10K (Beta value 3980 @25/100 °C) PTC 990 ohms @ 25 °C	
Measuring accuracy	±1 K below -35 °C ±0.5 K between -35 – +25 °C ±1 K above +25 °C	
Measurement range	NTC 5K: -40 – +80 °C NTC 10K: -40 – +80 °C PTC 990: -55 – +100 °C	
Output configuration	DO1: Compressor DO2: Def. Heater/Fan/Light/Second comp/Alarm	DO1: Compressor DO2 and DO3: Def. Heater/Fan/Light/ Second comp/Alarm
Input connector type	Plug and header type	
Output connector type	Tab Connector	
Communication	TTL (MODBUS)	
Operating temperature range	-25 – +55 °C	
Humidity range	93% RH, Condensing	
Installation	Spindle mounted and Cold space installability	
Relay switching	Zero cross technology (all relays)	
Overvoltage category	III: 100 – 240 V (CE, UL recognized)	
Surge protection	4 KV	

## Connections

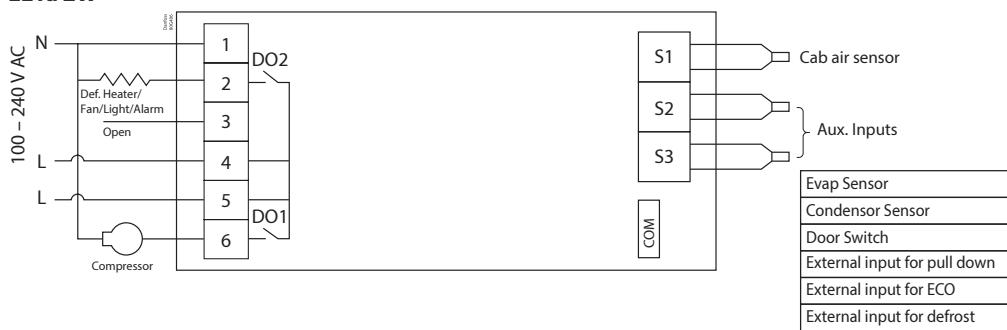
### EETc 11, EETc 12



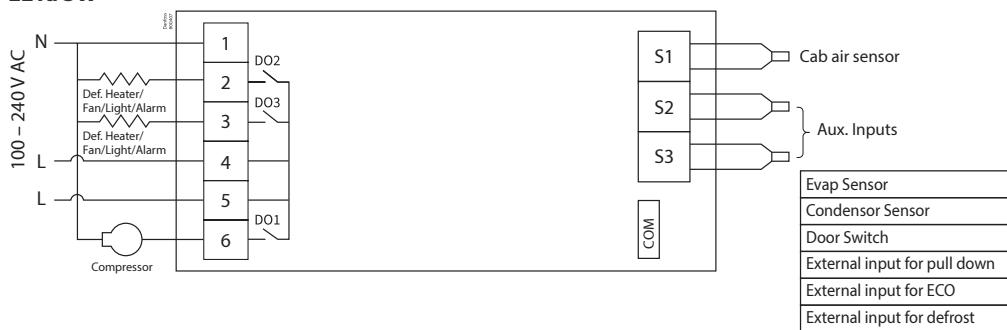
### EETc 21, EETc 22



### EETa 2W



### EETa 3W



## 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
Electrical Safety Certificate	<a href="#">NSF 3H670</a>	NSF International	
Export Control Declaration	<a href="#">EET Electronic Thermostats Controllers</a>	Danfoss	
Electrical Safety Certificate	<a href="#">UL E31024</a>	UL - Underwriters Laboratories inc.	UL-CSA
Electrical Safety Certificate	<a href="#">CQC 20002261984</a>	CQC - China Quality Certification Centre	
EMC Certificate	<a href="#">ACMA CF14033 AU-Rev.00</a>	ACMA - Australian Communication and Media Authority	RCM
ENEC License	<a href="#">UL ENEC-03122</a>	UL Demko - UL International DEMKO A - S	ENEC
CB Test Certificate	<a href="#">IEC US-36578-UL</a>	UL - Underwriters Laboratories inc.	
Manufacturer's Declaration	<a href="#">Danfoss MD 080R1234.02</a>	Danfoss	EU RoHS
Electrical Safety Certificate	<a href="#">EAC KZ 7100841.01.01.01391</a>	EAC - Eurasian Customs Union	EMC
EU-UK Declaration	<a href="#">Danfoss EU-UK 080R1233.02</a>	Danfoss	LVD
UA Declaration	<a href="#">Danfoss UA 8537</a>	Danfoss	UA RoHS
Manufacturer's Declaration	<a href="#">Danfoss MD 080R1235.01</a>	Danfoss	EAEU RoHS
Manufacturer's Declaration	<a href="#">Danfoss MD 080R3920.02</a>	Danfoss	China RoHS
Logo Printing Permission	<a href="#">CQC 2020-23321</a>	CQC - China Quality Certification Centre	
Electrical Safety Certificate	<a href="#">CQC 20002258548</a>	CQC - China Quality Certification Centre	

## Contact details

### Online support

Danfoss offers a wide range of support along with our products, including digital information, software, mobile apps and expert guidance. See the possibilities below.



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