

# EKC 202, Refrigeration controller

The series of EKC 202 controllers can be used for a wide range of different refrigeration applications - from control of air temperatures

and defrost to more advanced applications, including control of light and fans.



## Thermostat

- ON / OFF heating or cooling thermostat
- Sensors: Danfoss Pt1000, PTC1000 or NTC
- Day / night control
- Thermostat band
- Alarm thermostat with delay

## DI input

- Multi purpose DI input for defrost start, door function, night setback, main switch, appliance cleaning, general alarm, defrost coordination and thermostat band



## Fan

- Fan delay during defrost
- Fan stop when compressor cuts out
- Fan stop at high S5 temperature

## Light control

- Light control of day / night, door, or via network

## Defrost

- Electrical, natural or hot gas defrost
- Start via DI input, time interval or schedule (RTC)
- Defrost on demand
- Stop on time or temperature
- Coordinated defrost

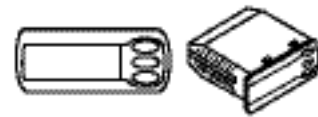
## Compressor

- Anti cycle timers for optimum compressor protection
- High-effect 16 A relays for connection of compressors without use of intermediate relay

## Facts

- Integrated refrigeration-technical functions
- Defrost on demand in 1:1 systems
- Buttons and seal imbedded in the front
- IP65 density from the front panel
- Digital input for either:
  - door contact function with alarm
  - defrost start
  - start/stop of regulation
  - night operation
  - change-over between two temperature reference
  - case cleaning function
- Instant programming via programming key
- HACCP  
Factory calibration that will guarantee a better measuring accuracy than stated in the standard EN 441-13 without subsequent calibration (Pt 1000 ohm sensor)

# Technical data and ordering



## EKC 202 - Refrigeration controller

### Technical data

Features	Description															
Supply voltage	230 V AC 10 – 15%. 1.5 V A															
Sensors for EKC 202A, 202B, 202C	Pt 1000 ohm (0 °C) PTC 1000 ohm (25 °C) NTC 5000 ohm (25 °C) M 2020															
Sensors for EKC 202C-MS	NTC 2000 ohm (25 °C) NTC 2500 ohm (0 °C) NTC 3000 ohm (25 °C) NTC 5000 ohm (25 °C) M 2020 NTC 10000 ohm (25 °C) NTC 10000 ohm (25 °C) Beta 3435															
Accuracy	Measuring range: -60 – 99 °C Controller: ± 1 K below -35 °C, ± 0,5 K between -35 – 25 °C, ± 1 K above 25 °C Pt 1000 sensor: ± 0.3 K at 0 °C, ± 0.005 K per grad															
Display	LED, 3 digits															
Digital inputs	Signal from contact functions Requirements to contacts: gold plating Cable length must be max. 15 m Use auxiliary relays when the cable is longer															
Electrical connection cable	Max. 1.5 mm <sup>2</sup> multi-core cable on supply and relays Power current terminals are mounted on the circuit board Max. 1 mm <sup>2</sup> on sensors - and DI inputs															
Relays *)	<table border="1"> <thead> <tr> <th></th> <th>CE (250 V AC)</th> <th>UL (***) (240 V AC)</th> </tr> </thead> <tbody> <tr> <td>DO1. Refrigeration</td> <td>8 (6) A</td> <td>10 A Resistive 5 FLA, 30 LRA</td> </tr> <tr> <td>DO2. Defrost</td> <td>8 (6) A</td> <td>10 A Resistive 5 FLA, 30 LRA</td> </tr> <tr> <td>DO3. Fan</td> <td>6 (3) A</td> <td>6 A Resistive 3 FLA, 18 LRA - 131 V A Pilot duty</td> </tr> <tr> <td>DO4. Alarm or light</td> <td>4 (1) A Min. 100 mA **)</td> <td>4 A Resistive 131 V A Pilot duty</td> </tr> </tbody> </table>		CE (250 V AC)	UL (***) (240 V AC)	DO1. Refrigeration	8 (6) A	10 A Resistive 5 FLA, 30 LRA	DO2. Defrost	8 (6) A	10 A Resistive 5 FLA, 30 LRA	DO3. Fan	6 (3) A	6 A Resistive 3 FLA, 18 LRA - 131 V A Pilot duty	DO4. Alarm or light	4 (1) A Min. 100 mA **)	4 A Resistive 131 V A Pilot duty
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Environments	0 – 55 °C, During operations, -40 – 70 °C, During transport 20 – 80% Rh, not condensed No shock influence / vibrations															
Enclosure	IP65 from front Buttons and packing are imbedded in the front															
Escapement reserve for the clock	4 hours															
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 og EN 60730-2-9, A1, A2 EMC tested acc. EN50082-1 og EN 60730-2-9, A2															



\*) DO1 and DO2 are 16 A relays. DO3 and DO4 are 8 A relays. Max. load must be kept

\*\*) Gold plating ensures make function with small contact loads

\*\*\*) UL-approval based on 30000 couplings

### Ordering

Type	Description	Code no.
EKC 202A	Refrigeration controller	084B8521
EKC 202B	Refrigeration controller with fan function	084B8522
EKC 202C	Refrigeration controller for electric defrost	084B8523
EKC 202C-MS	Refrigeration controller multi sensor (only NTC)	084B8543

### Accessory

Type	Description	Code no.
EKA 178A	Data communication module MODBUS	084B8564
EKA 179A	RS485 LON	084B8565
EKA 181C	Battery module that will protect the clock in case of lengthy power failure	084B8577
EKA 182A	Copy key EKC - EKC	084B8567
EKA 183A	Programming key EKC	084B8582
AKS 12	Pt 1000 Sensor, 1,5 m	084N0036
EKS 111	PTC 1000 Sensor, 1,5 m	084N1178
EKS 211	NTC 5000 Sensor, 1,5 m	084N1220
EKS 221	NTC 10000 Beta 3435 Sensor, 3,5 m	084N3206