

Data Sheet

# Thermometer Accessory

Type **EKA 153**

For monitoring with 3 temperature sensors



The EKA 153 is a thermometer used for registering up to three temperatures in connection with Refrigeration Appliance Controls. The temperatures can be read from the display and sent to a central system unit via data communication.

Alarm limits for high and low temperatures can be adjusted. If the alarm setting is activated, the LED lights will flash and an alarm signal will be sent to the system unit via data communication.

Design, fitting and operation are the same as controllers in the Danfoss EKC 202 series.

**Product specification**

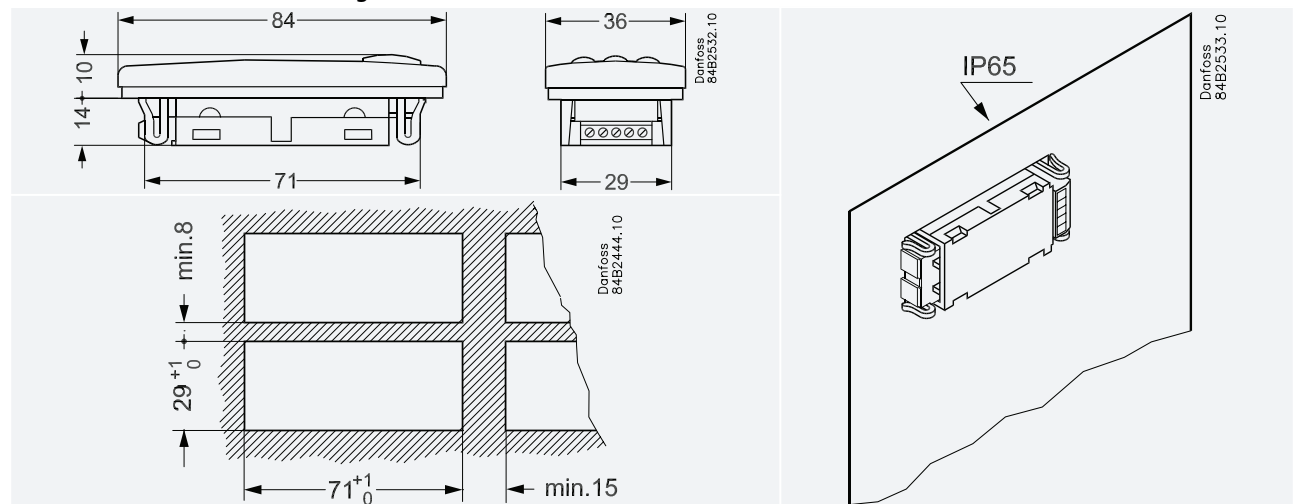
**Technical data**

Table 1: Technical data

Features	Description
Supply voltage	12 V AC $\pm 15\%$ , 1 VA 12 V DC $\pm 15\%$ , 50 mA
Sensor connection	Up to 3 identical sensors of type either Pt 1000 ohm at 0 °C PTC 1000 ohm at 25 °C Sensors with AMP plug has to be used
Sensor cable	Max. 10 m
Display	LED, 3 digits with 1 decimal
Measurement range	-60 – 120 °C
Degree of accuracy	<b>Controller</b> $\pm 1$ K below -35 °C $\pm 0.5$ K between -35 – 25 °C $\pm 1$ K above 25 °C  <b>Pt 1000 sensor</b> $\pm 0.3$ K at 0 °C $\pm 0.005$ K per degree
Data communication	MODBUS
Enclosure	IP 10 IP 65 from front Buttons and gaskets are imbedded in the front
Environments	0 – 55 °C, during operation (-20 – 55 °C by placement in the return air to evaporator) -40 – 70 °C, during transport 20 – 80% Rh, not condensed No shock influence / vibrations
Approvals	EU Low Voltage Directive and EMC demands re CE-marking complied with LVD tested acc. EN 60730-1 and EN 60730-2-9, A1, A2 EMC tested acc. EN 61000-6-3 and EN 61000-6-2

**Dimensions and Mounting**

Table 2: Dimensions and Mounting



## Connection

**Table 3: Connection**

Sensor connection	Power supply	Data communication
Eg. AKS 12 The sensor must be with AMP plug. 	If a number of EKA 153's are to be supplied from the same transformer, the polarity must be kept. Ground must be connected to ground. 	MODBUS 

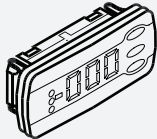
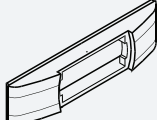
## Settings

**Table 4: Settings**

Parameters		Min. value	Max. value	Factory setting	Actual setting
<b>Functions</b>	<b>Codes</b>				
<b>Normal operation</b>					
Display of the selected temperature sensor	---	t1	t3	t1	
<b>Thermostat</b>					
Adjustment of temperature indication (the setting applies to all measurements)	r04	-20 K	20 K	0.0 K	
Temperature unit(°C/°F)	r05	°C	°F	°C	
Correction of the signal from sensor 1 (t1)	r41	-10 K	10 K	0 K	
Correction of the signal from sensor 2 (t2)	r42	-10 K	10 K	0 K	
Correction of the signal from sensor 3 (t3)	r43	-10 K	10 K	0 K	
<b>Alarm</b>					
Delay for temperature alarm	A03	0 min	240 min	30 min	
Alarm limit for t1- high temperature	A38	-50 °C	50 °C	50 °C	
Alarm limit for t1- low temperature	A39	-50 °C	50 °C	-50 °C	
Alarm limit for t2- high temperature	A40	-50 °C	50 °C	50 °C	
Alarm limit for t2- low temperature	A41	-50 °C	50 °C	-50 °C	
Alarm limit for t3- high temperature	A42	-50 °C	50 °C	50 °C	
Alarm limit for t3- low temperature	A43	-50 °C	50 °C	-50 °C	
<b>Miscellaneous</b>					
Network address	o03	0	240	0	
Access code (all settings)	o05	0	100	0	
Used sensor type (Pt /PTC)	o06	Pt	PTC	Pt	
Display step = 0.5 (normal 0.1 at Pt sensor)	o15	no	yes	no	
<b>Service</b>					
Temperature measured with t1 sensor	u72				
Temperature measured with t2 sensor	u73				
Temperature measured with t3 sensor	u74				

## Ordering

**Table 5: Ordering**

Type		Description	Code no.
EKA 153		Thermometer with MODBUS	084B8561
EKA mounting kit		Display consol (to be used only with forward mounting)	084B8584

AKS 11 or AKS 12 temperature sensors are recommended when taking reading for the food safety log. The sensor must have an AMP plug.

## 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.

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**Table 6: Certificates, declarations, and approvals**

File name	Document type	Document topic	Approval authority
080R1228.1	Manufacturers Declaration	RoHS	Danfoss

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