Danfoss EKC 368 Media Temperature Controller Instructions

Contents

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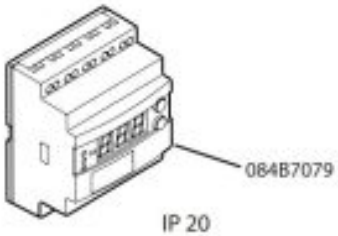
EKC 368

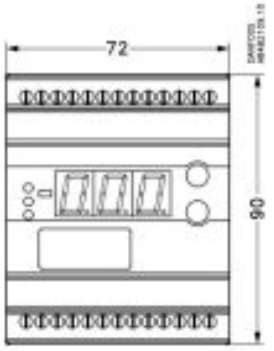
Identification



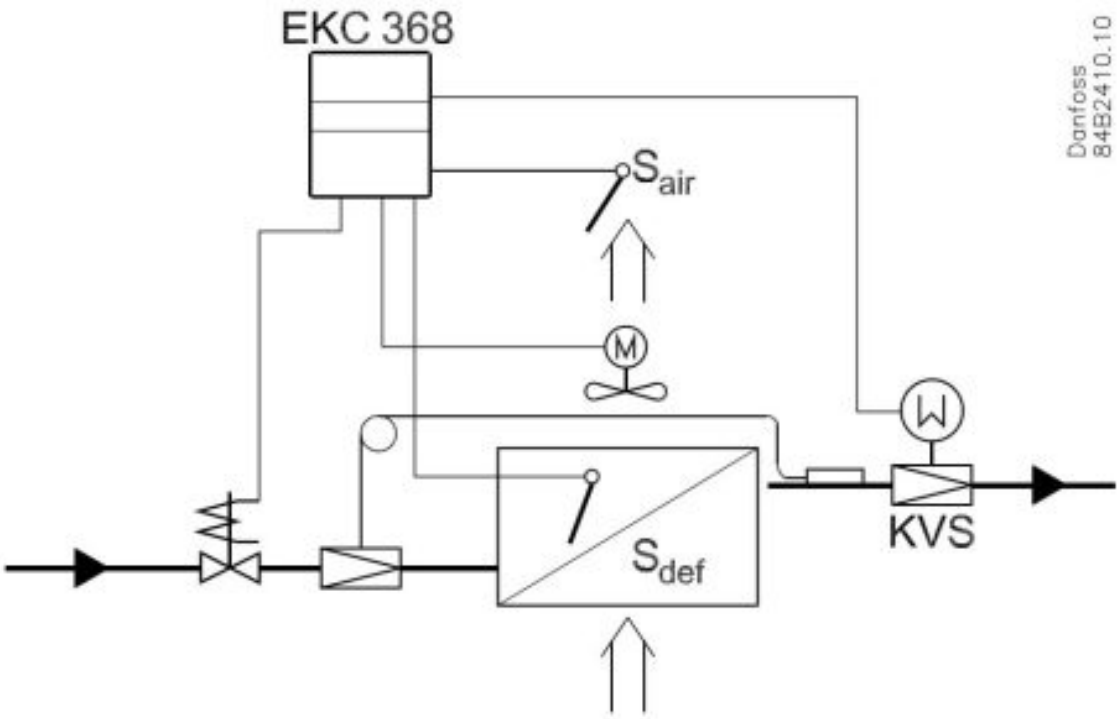
IP 20

CE

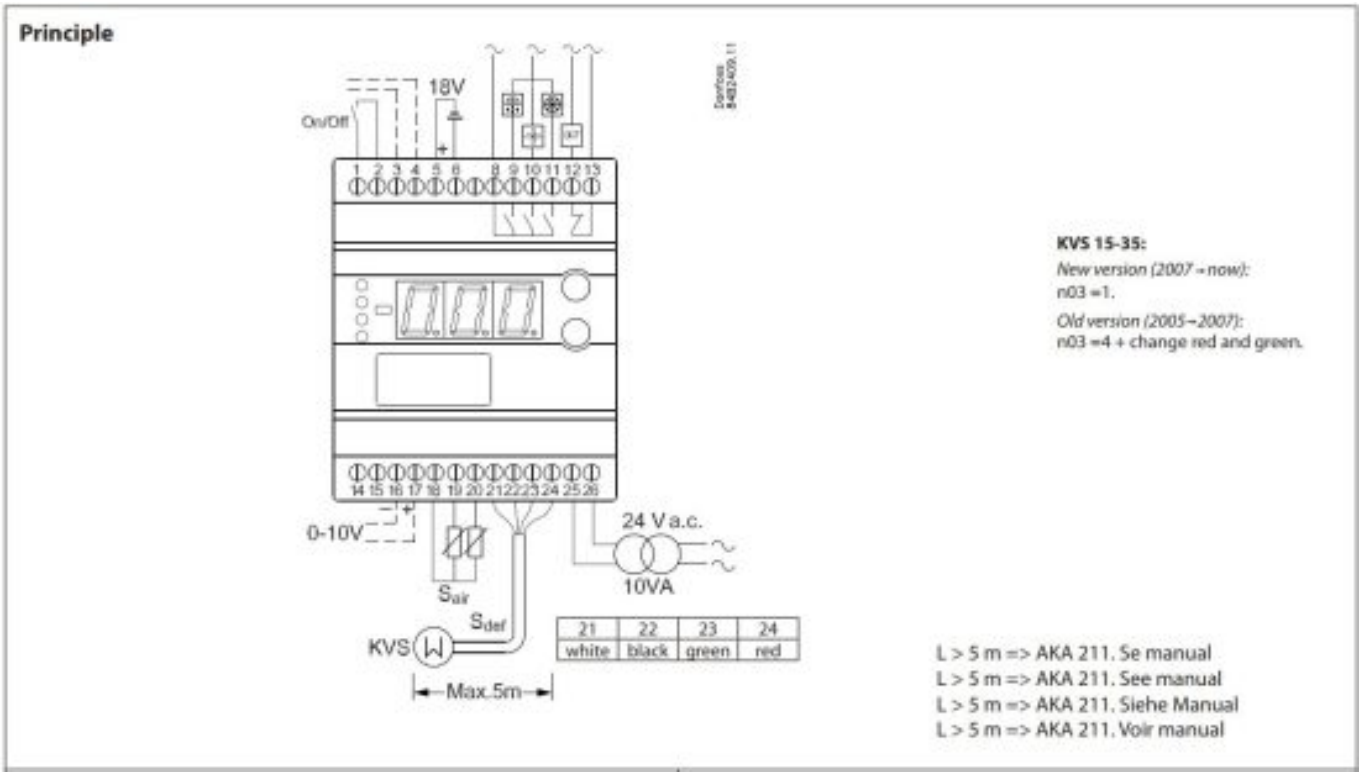
Dimensions



Principle



Sair, Sdef:
Pt 1000 ohm /0°C
(AKS 11)



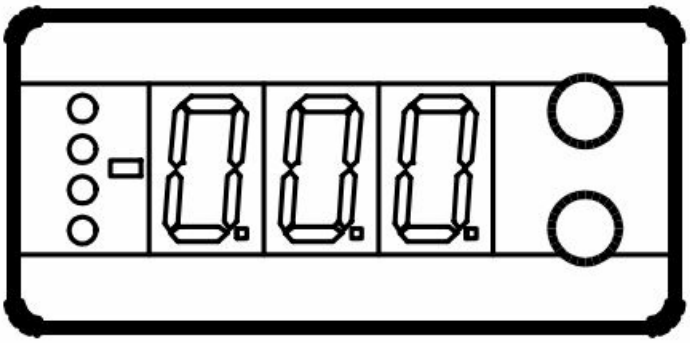
Connections

Necessary connections
Terminals:
25-26 Supply voltage 24 V a.c.
18-19 Pt 1000 sensor at evaporator outlet
21-24 Supply to step motor
1-2 Switch function for start/stop of regulation. If a switch is not connected, terminals 1 and 2 must be shortcircuited.
5-6 Battery (the voltage will open the KVS valve if the controller loses its supply voltage)

Application dependent connections
Terminal:
12-13 Alarm relay
There is connection between 12 and 13 in alarm situations and when the controller is dead
8-9 Relay switch for start/stop of defrost
8-10 Relay switch for start/stop of fan
8-11 Relay switch for start/stop of cooling
16-17 Voltage signal from other regulation (Ext.Ref.)
If the voltage signal is received from a PLC or the like, a data com munication module, if any, must be with galvanic separation.
18-20 Pt 1000 sensor for defrost function.
Short-circuit of the terminals for two seconds (pulse signal) will start a defrost
3-4 Data communication
Mount only, if a data communication module has been mounted.
It is important that the installation of the data communication cable be done correctly.
Cf. separate literature No. RC8AC..

Operation

Display
The values will be shown with three digits, and with a setting you can determine whether the temperature are to be shown in °C or in °F.



Light-emitting diodes (LED) on front panel
There are LED's on the front panel which will light up when the belonging relay is activated.
The three lowermost LED's will flash, if there is an error in the regulation.
In this situation you can upload the error code on the display and cancel the alarm by giving the uppermost button a brief push.

The controller can give the following messages:		
E1	**Error message**	Errors in the controller
E6		Change battery in timer. Set the timer.
E7		Cut-out Sair
E8		Shortcircuited Sair
E12		Analog input signal is outside the range
A1	**Alarm message**	High-temperature alarm
A2		Low-temperature alarm
A43		Check supply voltage for the step engine
A44		Battery alarm (no voltage or too low voltage)

The buttons
When you want to change a setting, the two buttons will give you a higher or lower value depending on the button you are pushing.

But before you change the value, you must have access to the menu. You obtain this by pushing the upper button for a couple of seconds – you will then enter the column with parameter codes.

Find the parameter code you want to change and push the two buttons simultaneously. When you have changed the value, save the new value by once more pushing the two buttons simultaneously.

Gives access to the menu (or cutout an alarm)

Gives access to changes

Saves a change

Examples of operations
Set reference temperature

1. Push the two buttons simultaneously
2. Push one of the buttons and select the new value
3. Push both buttons again to conclude the setting

Set one of the other menus

1. Push the upper button until a parameter is shown
2. Push one of the buttons and find the parameter you want to change
3. Push both buttons simultaneously until the parameter value is shown
4. Push one of the buttons and select the new value
5. Push both buttons again to conclude the setting

Menu survey

Function	Para-meter	Min.	Max.	Fac. set-ting
Normal display				
Shows the temperature at the room sensor	-		°C	
Give the lower button a brief push to see the temperature at the defrost sensor	-		°C	
Reference				
Set the required room temperature	-	-70°C	160°C	10
Temperature unit	r05	°C	°F	°C
External contribution to the reference	r06	-50 K	50 K	0
Correction of the signal from Sair	r09	-10,0 K	10,0 K	0
Correction of the signal from Sdef	r11	-10,0 K	10,0 K	0
Start/stop of refrigeration	r12	OFF	On	On
Alarm				
Upper deviation (above the temperature setting)	A01	0	50 K	5
Lower deviation (below the temperature setting)	A02	0	50 K	5
Alarm's time delay	A03	0	180 min	30
Monitoring of battery	A34	Off	On	Off
Defrost				
Defrost method (ELECTRICITY/GAS)	d01	Off	GAS	Off
Defrost stop temperature	d02	0	25°C	6
Max. defrost duration	d04	0	180 min	45

Drip-off time	d06	0	20 min	0
Delay for fan start or defrost	d07	0	20 min	0
Fan start temperature	d08	-15°C	0°C	-5
Fan cut in during defrost (yes/no)	d09	no	yes	no
Delay for temperature alarm after defrost	d11	0	199 min	90
Regulating parameters				
Actuator type: 1=KVS15, 2=KVS28-35, 3=KVS42-54 4=User defined via AKM / For Danfoss only Setting of menu only when r12 = off.	n03	1	4	1
P: Amplification factor Kp	n04	1	50	4
I: Integration time Tn (600 = off)	n05	60 s	600 s	120
D: Differentiation time Td (0 = off)	n06	0 s	60 s	0
Transient phenomenon 0: Fast cooling 1: Cooling with less underswing 2: Cooling where underswing is unwanted	n07	0	2	1
Start-up time after hotgas defrost	n08	0 min	20 min	1

Miscellaneous				
Controller's address	o03*	1	60	0
ON/OFF switch (service-pin message)	o04*	-	-	Off
Define input signal of analog input 0: no signal 1: 0 - 10 V 2: 2 - 10 V	o10	0	2	0
Set supply voltage frequency	o12	50 Hz	60 Hz	50
Service				
Read temperature at the Sair sensor	u01		°C	
Read regulation reference	u02		°C	
Read value of external voltagt signal	u07		V	
Read temperature at the Sdef sensor	u09		°C	
Read status of input DI	u10		on/off	
Read duration of defrost	u11		m	
Opening degree of the valve	u23		%	

*) This setting will only be possible if a data communication module has been installed in the controller.

Factory setting
If you need to return to the factory-set values, it can be done in this way:

- Cut out the supply voltage to the controller
- Keep both buttons depressed at the same time as you reconnect the supply voltage

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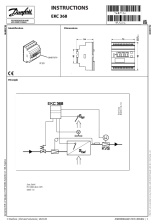	Danfoss EKC 368 Media Temperature Controller [pdf] Instructions EKC 368, EKC 368 Media Temperature Controller, Media Temperature Controller, Temperature Controller, Controller

References

- User Manual