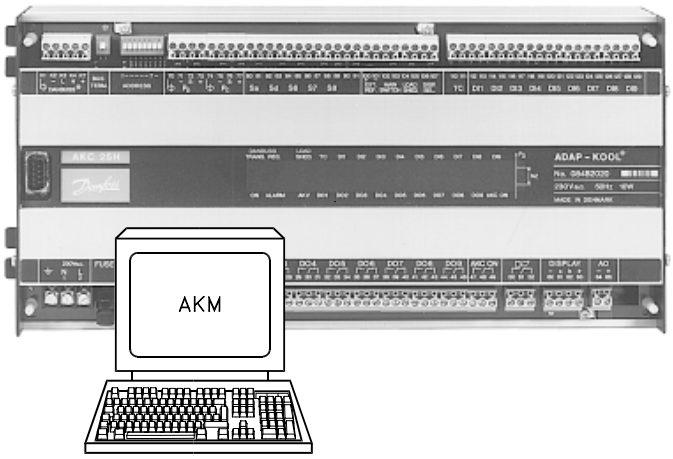
Menu operation via AKM

ADAP-KOOL®



Compressor Pack Controller
AKC 25H7

Software version 1.1x

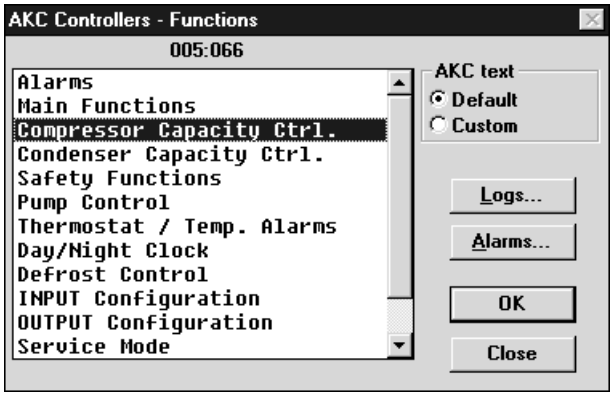
Menu list

This menu function can be used together with system software type AKM. The description is divided up into function groups that can be displayed on the PC screen. Within each group it is now possible to show the measured values, or settings. Regarding the use of AKM, reference is made to the AKM Manual.

Application

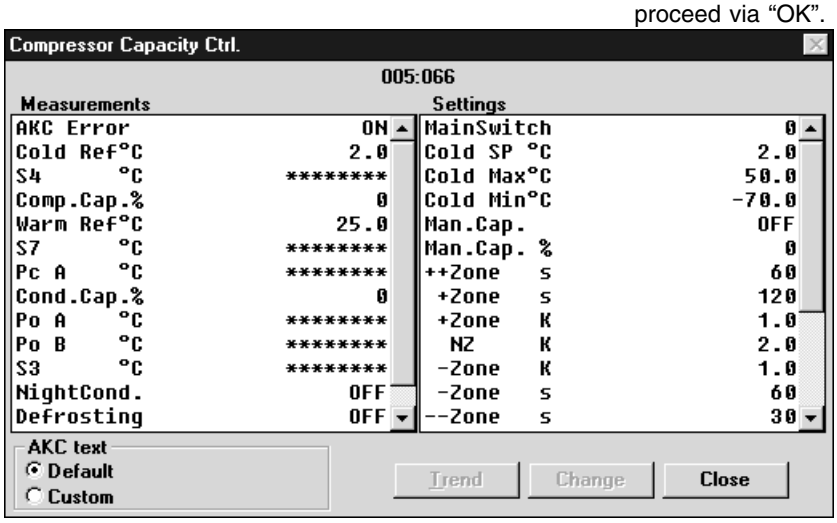
This menu operation (dated june 2001), applies to controller type AKC 25H7, code number 084B2022 and 084B2023 with programme version 1.1x.

Function groups



The operation is divided up into several function groups. When a selection has been made, push "OK", and you may continue to the next display. By way of example, "*Compressor capacity Ctrl.*" has been selected here.

From the measure line the different values can be read. The values are constantly updated.
In the list of settings the set values can be seen. If a setting has to be changed, select the parameter and proceed via "OK".

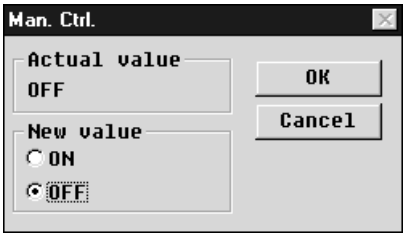


Measurements

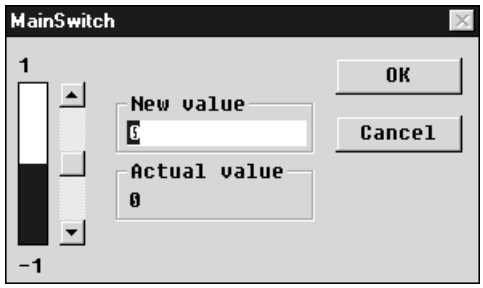
The various measurements can be read directly. If a graphic display of the measurements is required, up to eight of them can be shown. Select the required measurements and push "Trend".

Settings

There are four kinds of settings, ON/OFF settings, settings with a variable value, time settings and "reset alarms".



Set the required value and push "OK"



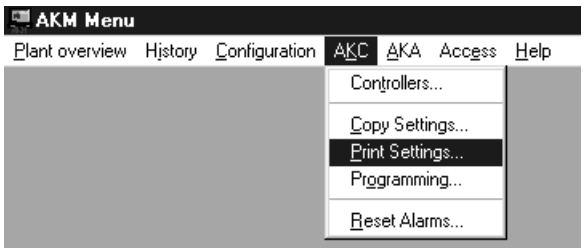
Enter the new value or move the sliding scale up or down. The new value will apply, when "OK" is pushed.

Go through the individual functions one by one and make the required settings. When settings have been made for one controller, the set values may be used as basis in the other controllers *of the same type* and *with the same software version*. Copy the settings by using the copy settings function in the AKM programme, and adjust subsequently any settings where there are deviations.

NB! If a list is required for noting down the individual settings, a printout can be made of it with a function in the AKM programme. Read the next section, "Documentation".

Documentation

Documentation of the settings of the individual controllers can be made with the print function in the AKM programme. Select the controller for which documentation of the settings is required and select the "Print Settings" function (cf. also the AKM Manual).



Functions

Shown below are function groups with corresponding measurements and settings. A printout of the given settings can be made using the AKM function "Print Settings" (see above).

Alarms

See page 14.

Main Function

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
	Rfg.Type R	Reading of set refrigerant type

Settings	Main Switch	Function switch:	1:	Regulation
			0:	Controller stopped
			-1:	Service function

Rfg. Type	Refrigerant selection:	0:	No refrigerant selection	12:	R142b
		1:	R12	13:	User defined
		2:	R22	14:	R32
		3:	R134a	15:	R227
		4:	R502	16:	R401A
		5:	R717 (ammonia)	17:	R507
		6:	R13	18:	R402A
		7:	R13b1	19:	R404A
		8:	R23	20:	R407C
		9:	R500	21:	R407A
		10:	R503	22:	R407B
		11:	R114	23:	R410A

Language	Selection of language. Three languages have been entered in the controller.	
	Either:	Or:
	0: English	0: English
	1: German	3: Danish
	2: Franch	6: Swedish

NB! If this setting is changed, another “Upload Configuration” must be made of the controller's data for the AKM programme. You do it this way:
- Select one of the available languages.
- Close the menu
- Proceed to menu “Delete description file”
- Push file type “Default”
- Select controller's code number and software version
- Push “OK”
- Proceed to menu “Upload”
- Complete the fields “Network”, “Net configuration” and “AKC description”
- Push “OK”

Texts will now be obtained from the controller in the required language.

Compressor Capacity Ctrl.

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
	P0 A °C	Evaporating pressure in °C (measured with pressure transmitter P0A)
	P0 B °C	Evaporating pressure in °C (measured with pressure transmitter P0B)
	S3 °C	Temperature of cold brine return flow
	NightCond.	Status of night setback function ON: Setback of cold brine temperature allowed OFF: Normal situation
	Defrosting	Status of defrost function: ON: Defrost going on OFF: Normal situation
	Req.Cap.%	Reference compressor capacity
Settings	Main Switch	Function switch: 1: Regulation 0: Controller stopped -1: Service function
	Cold SP °C	Temperature reference for cold brine forward flow
	Cold Max °C	Max. limit for temperature reference for cold brine forward flow
	Cold Min °C	Min. limit for temperature reference for cold brine forward flow
	Man.Cap.	Forced control function OFF: No forced control ON: There may be forced control of the compressor capacity
	Man.Cap.%	Forced control function Manual setting of compressor capacity The value is in % of total capacity controlled by the controller
	++Zone s	Time delay between step cut-ins in the regulation band over the "+Zone band"
	+Zone s	Time delay between step cut-ins in the regulation band over the neutral zone
	+Zone K	Regulation band over the neutral zone
	NZ K	Neutral zone for suction pressure
	-Zone K	Regulation band under the neutral zone
	-Zone s	Time delay between step cut-outs in the regulation band under the neutral zone
	--Zone s	Time delay between step cut-outs in the regulation band under the "-Zone band"
	Step mode	Cut-in and cut-out sequence for compressors 1: Sequential (first in, last out) 2: Cyclic (equalisation of run time)
	LoadShed %	Max. permissible compressor capacity when "LOAD SHED" input is shortcircuited
	Dt.Night K	Temperature displacement when at active nicht setback signal

	K1	Displacement of "Cold Ref°C" when there is an increase of the "U Cold" signal of 1 V (K1 = 0 gives no displacement)
	UrefCold V	Reference for input signal "U Cold"
	K2	Displacement of "Cold Ref°C" when there is an increase of the S3 temperature of 1°C (K2 = 0 gives no displacement)
	TrefCold°C	Reference for input signal S3

Condenser Capacity Ctrl.

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
	Heat Ref°C	Reference temperature for condenser during heat recovery (Saux)
	Sout °C	Outdoor temperature of Sout sensor (may be used for displacement of condenser's reference temperature)
	Saux °C	Temperature at Saux sensor (warm brine forward flow) (when there is heat recovery, regulation is based on this temperature)
	Heat Recov	Status of heat recovery function ON: Heat recovery function active OFF: Normal situation
	Req.Cap. %	Reference for condenser capacity
Settings	Main Switch	Function switch: 1: Regulation 0: Controller stopped -1: Service function
	NZ K	Neutral zone for condensing temperature
	Warm SP °C	Reference temperature for condenser (S7 or PcA)
	Dt Heat K	Displacement value for condensing pressure in connection with an active heat recovery signal (set in Kelvin)
	Pc/S7 Max °C	Max. limit for Pc or S7 temperature
	Pc/S7 Min °C	Min. limit for Pc or S7 temperature (if temperature becomes lower than the set limit, the heat recovery function will be cut out temporarily)
	Min tm K	Minimum temperature differential between air- and condensing temperature (temperature differential tc - Sout)
	Man.Cap.	Forced control function OFF: No forced control ON: There may be forced control of the condenser capacity
	Man.Cap.%	Forced control function Manual setting of condenser capacity The value is in % of total capacity controlled by the controller
	Zone delay	The time delay at the start of the "+Zone band" and "-Zone band" is set
	K3	Displacement of "Warm Ref°C" when there is an increase of the "U Warm" signal of 1 V (K3 = 0 gives no displacement)
	K4	Displacement of "Heat Ref°C" when there is an increase of the "U Warm" signal of 1 V (K4 = 0 gives no displacement)
	UrefWarm V	Reference for input signal "U Warm"
	K5	Displacement of "Heat Ref°C" when there is an increase of the Sout temperature of 1°C (K5 = 0 gives no displacement)
	TrefWarm°C	Reference for input signal Sout

Safety Functions

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
Settings	Main Switch	Function switch: 1: Regulation 0: Controller stopped -1: Service function
	HP Max°C	Max. value for Pc/S7 in °C (Pc is used, if both Pc and S7 have been installed) (If the value is exceeded, the entire compressor capacity will be cut out) (at 3 K under "HP Max. °C" the entire condenser capacity is cut in)
	LP Min °C	Min. value for evaporating pressure in °C (If the evaporating pressure becomes lower, the entire compressor capacity will be cut out)
	Restart m	Time delay before restart (Applies to the two earlier functions "HP Max" and "LP Min")

Pump Control

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
	Act.C Pump	Display of pumps status 0: Pumps stopped 1: Cold pump 1 operating (DO1) 2: Cold pump 2 operating (DO3) 3: Both pumps operating
	Act.W Pump	Display of pump status 0: Pumps stopped 1: Cold pump 1 operating (DO2) 2: Cold pump 2 operating (DO4) 3: Both pumps operating
Settings	Main Switch	Function switchs: 1: Regulation 0: Controller stopped -1: Service function
	CPump Ctrl	Definition of pump operation 0: Both pumps stopped 1: Cold pump 1 constantly operating 2: Cold pump 2 constantly operating 3: Both pumps constantly operating 4: Equalisation of operating time between the two pumps
	CPumpDel.s	Overlapping time where both pumps are operating (only of interest, if the subsequent menu is set at 4)
	WPump Ctrl	Definition of pump operation 0: Both pumps stopped 1: Warm pump 1 constantly operating 2: Warm pump 2 constantly operating 3: Both pumps constantly operating 4: Equalisation of operating time between the two pumps
	WPumpDel.s	Overlapping time where both pumps are operating (only of interest, if the subsequent menu is set at 4)
	PumpCycl.h	Pump operating time before change of pump is made (pump operating time before you change over to the other pump)

Thermostat / Temp.Alarms

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
	Th.temp.°C	Display of thermsotat temperature
	S3 °C	Temperature of cold brine return flow
	Saux °C	Temperature at Saux sensor (warm brine forward flow) (when there is heat recovery, regulation is based on this temperature)
Settings	Main Switch	Function switch: 1: Regulation 0: Controller stopped -1: Service function
	ThCutin °C	Setting of thermostat's cutin value
	ThCutout °C	Setting of thermostat's cutout value
	High S3 °C	Upper alarm limit for S3 temperature
	High1Del.m	Time delay for alarm during cooling (value applies until the S3 temperature has fallen below the value of the upper alarm limit. Then there will be a change-over to the next time delay.)
	High2Del.m	Time delay for alarm during normal regulation
	Low S3 °C	Lower alarm limit for S3 temperature
	Low Del. m	Time delay for lower alarm limit
	High S4 °C	Upper alarm limit for S4 temperature
	High1Del.m	Time delay for alarm during cooling (value applies until the S4 temperature has fallen below the value of the upper alarm limit. Then there will be a change-over to the next time delay.)
	High2Del.m	Time delay for alarm during normal regulation
	Low S4 °C	Lower alarm limit for S4 temperature
	Low Del. m	Time delay for lower alarm limit
	High Saux °C	Upper alarm limit for the Saux temperature
	High1Del.m	Time delay for alarm during cooling (value applies until the Saux temperature has fallen below the value of the upper alarm limit. Then there will be a change-over to the next time delay.)
	High2Del.m	Time delay for alarm during normal regulation
	Low S4 °C	Lower alarm limit for Saux temperature
	Low Del. m	Time delay for lower alarm limit

Day/Night Clock

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
	NightCond.	Status of night setback function ON: Setback of cold brine temperature allowed OFF: Normal situation

Settings	Main Switch	Function switch:	1: Regulation 0: Controller stopped -1: Service function
	Mo day h	Time table for displacement of evaporating pressure on Mondays. End of night setback (normal suction pressure) At setting = 0 there is no displacement this day	
	Mo night h	Time table continued: Start (of night setback) when the suction pressure is changed with setting "Dt.Night K". At setting =0 there is no displacement this day. If day and night settings are identical, or if night comres before day, there will be a different function. Seefunctional description.	
	Tu day h	As above, Tuesdays	
	Tu night h	As above, Tuesdays	
	We day h	As above, Wednesdays	
	We night h	As above, Wednesdays	
	Th day h	As above, Thursdays	
	Th night h	As above, Thursdays	
	Fr day h	As above, Fridays	
	Fr night h	As above, Fridays	
	Sa day h	As above, Saturdays	
	Sa night h	As above, Saturdays	
	Su day h	As above, Sundays	
	Su night h	As above, Sundays	

Defrost Control

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
	Sdef. °C	Defrost sensor temperature
	Defrosting	Status of defrost function
	Def. Time m	Actual defrost cut-in time or duration of the latest finished defrosting period

Settings	Main Switch	Function switch:	1: Regulation 0: Controller stopped -1: Service function
	Man. Def.	Manual defrost is activated when ON (automatically changes to OFF, when defrost period has ended)	
	Def.Sched.	Define here whether the internal defrost table is to be used.	
	Temp/Time	1: Temperature stop (time as security) 2: Stop on time	
	MaxDefTime	Max. permissible defrost time in minutes (Security time on Temperature stop)	
	Def. Stop°C	Temperature value of defrost stop (defrost is stopped when the temperature of the selected defrost sensor reaches the set value)	
	DefStop Sx	Select defrost sensor 3: S3 is selected 4: S4 is selected	
	Mon.Sched.	Choose defrost programme for Mondays	
	Tue.Sched.	Choose defrost programme for Tuesdays	
	Wed. Sched.	Choose defrost programme for Wednesdays	
	Thu. Sched.	Choose defrost programme for Thursdays	
	Fri.Sched.	Choose defrost programme for Fridays	
	Sat.Sched.	Choose defrost programme for Saturdays	
	Sun.Sched.	Choose defrost programme for Sundays	
	No.Per Day	Number of defrost / 24 hours	
	Def1 Sc1	Setting of time the 1st defrost begins	
	Def2 Sc1	Setting of time the 2nd defrost begins	

Def3 Sc1	Setting of time the 3rd defrost begins
Def4 Sc1	Setting of time the 4th defrost begins
No.Per Day	Number of defrost / 24 hours
Def1 Sc2	Setting of time the 1st defrost begins
Def2 Sc2	Setting of time the 2nd defrost begins
Def3 Sc2	Setting of time the 3rd defrost begins
Def4 Sc2	Setting of time the 4th defrost begins
No.Per Day	Number of defrost / 24 hours
Def1 Sc3	Setting of time the 1st defrost begins
Def2 Sc3	Setting of time the 2nd defrost begins
Def3 Sc3	Setting of time the 3rd defrost begins
Def4 Sc3	Setting of time the 4th defrost begins

INPUT Configuration

Measurements

AKC Error	When "ON", there is an alarm message. See page 14.
Cold Ref°C	Reference temperature of cold brine forward flow
S4 °C	Temperature of cold brine forward flow
Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
S7 °C	Temperature of S7 sensor (warm brine return flow)
Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
Cond.Cap.%	Cut-in condenser capacity in %

Settings

Settings can only be made when the MAIN SWITCH input is cut out.

Main Switch — Function switchs:
- 1: Regulation
- 0: Controller stopped
- -1: Service function

Appl. Mode — Select application
1: One compressor group where PcA is used for controlling the condenser
2: One compressor group where S7 is used for controlling the condenser
3: Two compressor groups where S7 is used for controlling the condenser
Compr. A1 - Compr. B1 - Compr. A2 - Compr. B2 - etc.
(see functional description for further details)

Th. sensor — Select thermostat sensor
1: PoA
2: PcA/PoB
3: S3
4: S4
5: S7
6: Sout
7: Saux

DI1 Type — Alarm input DI 1
- 0: Input not used
- 1: Input registers the compressors' safety circuit
  Compressors no. is selected in the next menu
- 2: Input registers the condensers' safety circuit
  Condensers no. i selected in the next menu
- 3: Other alarm monitoring. (Alarm text is selected in next menu)
- 4: The input registers the safety circuit for cold pump 1 and cold pump 2

DI1 Dev.No — Depending on the selected type, make the follwing settings:
Type = 1: (see above): Select the compressor no.
Type = 2: (see above): Select the condenser no.
Type = 3: (see above): Select the alarm text
- 0: Factory setting. Correct setting to one of the following values:
- 1: Oil pressure fault
- 2: High pressure fault
- 3: Low pressure fault
- 4: Fan fault
- 5: Phase fault
- 6: Low liquid fault
- 7: Liquid flow switch
- 8: Refrigerant leak

Type = 4: No setting (the above definition will do)

	DI1 Del. s	Time delay from the alarm is registered until executed
	DI 2 …	DI 2 As DI 1, but type 4 is different Type 4 registers the safety circuit for warm pump 1 and warm pump 2
	DI 3 …	DI 3 As DI 1, but there is no type 4
	DI 4 …	DI 4 As DI 1, but there is no type 4
	DI 5 …	DI 5 As DI 1, but there is no type 4
	DI 6 …	DI 6 As DI 1, but there is no type 4
	DI 7 …	DI 7 As DI 1, but there is no type 4
	DI 8 …	DI 8 As DI 1, but type 4 is different Type 4 is selected, if the input is to start and stop the heat recovery function

OUTPUT Configuration

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
Settings	**Settings can only be made when the MAIN SWITCH input is cut out.**	
	Main Switch	Function switches: 1: Regulation 0: Controller stopped -1: Service function
	DO1 Type	Relay outputs are used for: 0: Not used 1: Compressor / compressor steps 2: Condenser / condenser steps 3: Cold pump 1
	A0 Type	Select one of the following: 1: 0-10 V signal for showing cut-in compressor capacity 2: 0-10 V signal for either three-way valve or frequency converter 3: 0-5 V for three-way valve and 5-10 V for frequency converter 4: 10-0 V signal for either three-way valve or frequency converter (see functional description for further details)
	DO1 Dev.No	Depending on the selected type, make the following settings: Type = 1: (see above): Select the compressor no. Type = 2: (see above): Select the condenser no. Type = 3: (see above): No setting (the above definition will do)
	DO1 Recy m	Minimum period of time between two successive starts
	DO1 ON m	Minimum duration of ON period
	DO1 Time h	Reading and adjustment, if applicable, of hourmeter
	DO 2 …	DO 2 As DO 1, but type 3 is different Select type 3, if output is to be used for warm pump 1
	DO 3 …	DO 3 As DO 1, but type 3 is different Select type 3, if output is to be used for cold pump 2
	DO 4 …	DO 4 As DO 1, but type 3 is different Select type 3, if output is to be used for warm pump 2

	DO 5 …	DO 5 As DO 1, but type 3 is different (there is no type 3 option)
	DO 6 …	DO 6 As DO 1, but type 3 is different Select type 3, if output is to be used for injection function B
	DO 7 …	DO 7 As DO 1, but type 3 is different Select type 3, if output is to be used for injection function A
	DO 8 …	DO 8 As DO 1, but type 3 is different Select type 3, if output is to be used for defrost
	DO 9 …	DO 9 As DO 1, but type 3 is different Select type 3, if output is to follow the night setback function
	DO 10 …	DO 10 As DO 1, but type 3 is different Select type 3, if output is to be used for the thermostat function
	DO 11 …	DO 11 As DO 1, but type 3 is different Select type 3, if output is to be used for the heat recovery function

Service Mode

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %
	P0A Bar	Suction pressure (measured with P0A pressure transmitter)
	P0B Bar	Suction pressure (measured with P0B pressure transmitter)
	PcA Bar	Discharge pressure (measured with PcA pressure transmitter)
	S3 °C	Temperature of cold brine return flow
	U Cold V	Voltage signal on "U Cold" input
	Sout °C	Outdoor temperature
	U Warm V	Voltage signal on "U Warm" input
	Saux °C	Temperature of warm brine forward flow
	Ext.Main	Status of "Main Switch" input. In pos. "OFF" the regulation is stopped by force
	Load Shed.	Status of "Load Sheding" input. 0: No capacity limitation 1: Max. capacity limitation is activated
	Disp. Sel.	Status of "Disp Sel" input (parameters Nos. 1 to 9 are displayed)
	Def.input	Status of input "DEFR". In pos "ON" there is signal on the input (= defrost)
	DI 1	Status of input DI 1. In pos. "ON" the signal is OK, and the controller can regulate
	DI …	As above for DI 2 to DI 8
	Night inp.	Status of "NIGHT. In pos. "ON" there is signal on the input (= night operation)
	DO1 Relay	Status of relay output DO 1. In pos. "ON" the relay is operated
	DO …	As above for DO 2 to DO 11
	A0 Volt	Status of "A0" output (analog signal 0 - 10 V d.c.)
	Alarm Relay	Status of alarm output. In pos. "ON" the relay is operated, and there is no alarm

Settings	Main Switch	Function switches: 1: Regulation 0: Controller stopped -1: Service function
	Man. Ctrl.	ON: Manual control permitted PLEASE NOTE! No monitoring When manual setting has been concluded, the setting must be changed to OFF
	DO 1 Relay	Manual operation of relay output DO 1 ON: Relay activated OFF: Relay not activated
	DO …	As above for DO 2 to DO 11
	AO Volt	Manual control of analog output "AO"
	Alarm Relay	Manual operation of alarm relay ON: Relay activated (no alarm) OFF: Relay not activated

Alarm destinations

Measurements	AKC Error	When "ON", there is an alarm message. See page 14.
	Cold Ref°C	Reference temperature of cold brine forward flow
	S4 °C	Temperature of cold brine forward flow
	Comp.Cap.%	Cut-in compressor capacity in % (of total capacity)
	Warm Ref°C	Reference temperature for condenser (either S7 or PcA)
	S7 °C	Temperature of S7 sensor (warm brine return flow)
	Pc A °C	Condensing pressure in °C (if PcA is not used, "xxx.x" will be shown)
	Cond.Cap.%	Cut-in condenser capacity in %

Settings	Main Switch	Function switches: 1: Regulation 0: Controller stopped -1: Service function
	Network	ON: When alarms are registrated via PC or Gateway printer OFF: When alarm are registrated via AKA 21, only

Set the priority for the following alarm texts (choose between 1, 2, 3 or 0. They have the following meaning:)

1: Alarm at relay output + DANBUSS message
2: DANBUSS message only
3: Alarm at relay output + DANBUSS message, but the DO2 output on a master gateway will not be activated
0: No alarm and no DANBUSS message
The individual alarms are explained in more detail on page 14

StandbyMod	(Regulation has stopped)
Rfg. Type	(Changed refrigerant)
ChClockSet	(The controller has been without supply voltage)
Man. Ctrl.	(Manual control has been activated)
Load Shed	(Peak load limitation takes effect)
LP Min	(The suction pressure becomes lower than the set min. value)
HP Max	(the condensing pressure or the S7 temperature approaches the max. limit))
High S3	(The S3 temperature exceeds the max. limit)
Low S3	(The S3 temperature goes below the min. value)
High S4	(The S4 temperature exceeds the max. limit)
Low S4	(The S4 temperature goes below the min. value)
High Saux	(The Saux temperature exceeds the max. limit)
Low Saux	(The Saux temperature goes below the min. value)
DefPerExce	(Defrost is stopped on max. time (defrost stop temperature not reached within the set safety time))
DI Def. ON	(There is still signal on the DEFR input 30 minutes after the termination of a defrost)
2PumpAlarm	(There are faults on both parallel pumps in one of the refrigeration circuits)

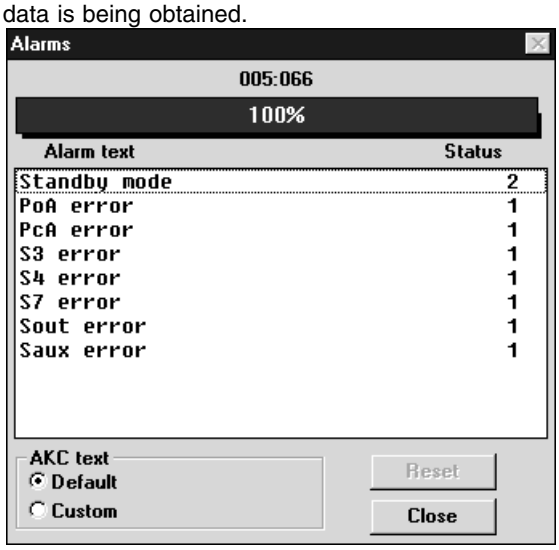
DI1 AlDest	(There is an alarm on the DI 1 input (voltage disappears))
DI2 AlDest	(There is an alarm on the DI 2 input (voltage disappears))
DI3 AlDest	(There is an alarm on the DI 3 input (voltage disappears))
DI4 AlDest	(There is an alarm on the DI 4 input (voltage disappears))
DI5 AlDest	(There is an alarm on the DI 5 input (voltage disappears))
DI6 AlDest	(There is an alarm on the DI 6 input (voltage disappears))
DI7 AlDest	(There is an alarm on the DI 7 input (voltage disappears))
DI8 AlDest	(There is an alarm on the DI 8 input (voltage disappears))
P0A	(P0A sensor fault)
PcA/P0B	(PcA/P0B sensor fault)
S3	(S3 sensor fault)
S4	(S4 sensor fault)
S7	(S7 sensor fault)
Sout	(Sout sensor fault)
Saux	(Saux sensor fault)

AKM menu "For DANFOSS only"

This menu contains data and setting values for special internal controller functions.
Do not chage the stated values.

Alarms

The menu display for alarms shows the active alarms. Dots will appear at the top of the menu for as long as data is being obtained.



Alarms may be acknowledged one by one by selecting one, and then pushing "OK". An Alarm message will now appear, e.g.:

Push "OK" to acknowledge.
The following alarm messages may occur:

Alarm message	Meaning	Action/cause
P0A error	Faulty pressure transmitter	Check connection
P0B error	Faulty pressure transmitter	Check connection
PcA error	Faulty pressure transmitter	Check connection
S3 error	Faulty sensor	Check sensor connection / sensor resistance
S4 error	Faulty sensor	Check sensor connection / sensor resistance
Saux error	Faulty sensor	Check sensor connection / sensor resistance
S7 error	Faulty sensor	Check sensor connection / sensor resistance
Sout error	Faulty sensor	Check sensor connection / sensor resistance
Standby mode	Regulation has stopped	The function switch (Main Switch) is either set in the position "Controller stopped" or "Service function" or the "Main Switch" input has been cut out
Check Clock setting	Voltage has been interrupted	Check time in controller
Rfg.type not selected	No selection of refrigerant	Select refrigerant
Rfg.Type change after power up	Changed refrigerant	Check the selected refrigerant. Regulation with changed refrigerant may not be done until the controller has been de-energised
Condensing temp. too high	Too high condensing temperature	Pc or S7 exceeds the "HP Max. °C" setting Check the condenser's function
Suction temp. too low	Too low suction pressure temperature	P0 lower than "LP Min °C" setting
Man. compr. cap. Ctrl. set ON	Regulation is overridden	The forced control function for the compressor capacity is active
Man. cond. cap Ctrl. set ON	Regulation is overridden	The forced control function for the condenser capacity is active

Compr. no ( ) safety cut-out	Signal on terminal DI ( ) interrupted	Check compressor safety circuit
Compr. no ( ) not in auto	Wrong setting of switch on AKC 22H	Put switch in pos. "AUT."
Compr. no ( ) disch temp. cut-out	Alarm from AKC 22H	Check compressor safety circuit Too high pressure gas temperature
Compr. no ( ) motor prot. cut-out	Alarm from AKC 22H	Check compressor safety circuit Motor protection cut out
Compr. no ( ) current cut-out	Alarm from AKC 22H	Check compressor safety circuit Motor starter cut out
Compr. no ( ) oil press. cut-out	Alarm from AKC 22H	Check compressor safety circuit Oil pressure cut out
Compr. no ( ) disch press cut-out	Alarm from AKC 22H	Check compressor safety circuit High pressure cut out
Load sheeding activated	Peak load limitation	Peak load limitation activated via "Load shed" input
No DI defined for compressor	A "DI-input" for a compressor is not defined	Define the input under "configuration of inputs" or set alarm destination at "0"
Cond. no ( ) safety cut-out	Signal on terminal DI ( ) interrupted	Check condenser's safety circuit
Cold Brine Pump 1 Alarm	Signal on terminal DI 1 interrupted	Check the pumps safety circuit
Cold Brine Pump 2 Alarm	Signal on terminal DI 1 interrupted	Check the pumps safety circuit
Warm Brine Pump 1 Alarm	Signal on terminal DI 2 interrupted	Check the pumps safety circuit
Warm Brine Pump 2 Alarm	Signal on terminal DI 2 interrupted	Check the pumps safety circuit
Max Def. Time exceeded	Max. defrosting period exceeded	Defrosting finished according to time not as selected according to temperature
Wrong signal on Def. start input	Wrong defrost demand	Active defrost signal on DEFR-input contrary to just finished defrosting
Oil pressure fault	Too low oil pressure	Check compressure oil pressure
High pressure fault	High-pressure fault	Check high-pressure monitoring and condenser operation
Low pressure fault	Low-pressure fault	Check low-pressure monitoring and compressor operation
Fan fault	Fan fault	Chcek fan operation
Phase fault	Wrong supply voltage	Check supply voltage
Low liquid level	Low level of refrigerant	Check refrigerant quantity
Liquid flow switch alarm	Error message from liquid flow switch	Check the flow switch
Refrigerant leak	Refrigerant leaking	Check the unit that monitors refrigerant leaks

High S3 temperature	Too high S3 temp.	The set temperature limit has been exceeded
Low S3 temperature	Too low S3 temp.	The temperature has fallen below the set limit
High S4 temperature	Too high S4 temp.	The set temperature limit has been exceeded
Low S4 temperature	Too low S4 temp.	The temperature has fallen below the set limit
High Saux temperature	Too high Saux temp.	The set temperature limit has been exceeded
Low Saux temperature	Too low Saux temp.	The temperature has fallen below the set limit

RC-ET