Menu operation via AKM

Controller for controlling evaporators
AKC 114A, 115A and 116A
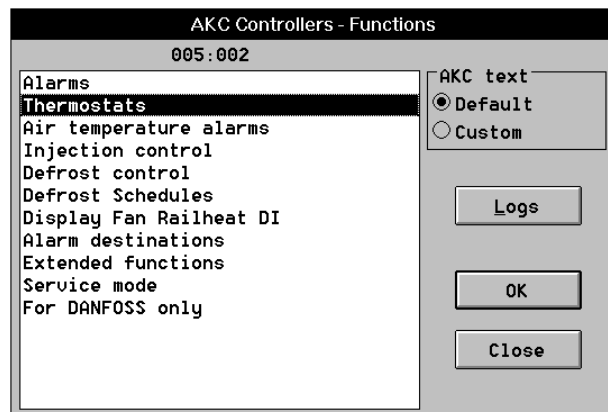
Software version 1.5x

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.

Validity

This menu operation was worked out in November 1998 and applies to AKC 114A, AKC 115A and AKC 116A with the following code numbers:
084B6171 and 084B6172 (AKC 114A), 084B6173 and 084B6174 (AKC 115A), 084B6175 and 084B6176 (AKC 116A) and are fitted with software version 1.5x.
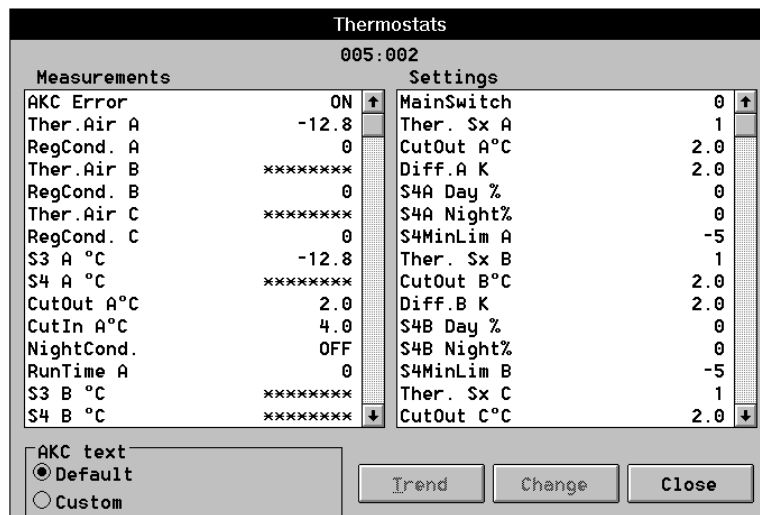
Function groups

```
AKC Controllers - Functions
         005:002
┌─────────────────────────┐  ┌AKC text────┐
│Alarms                   │  │ ● Default  │
│Thermostats              │  │ ○ Custom   │
│Air temperature alarms   │  └────────────┘
│Injection control        │
│Defrost control          │
│Defrost Schedules        │     ┌───────┐
│Display Fan Railheat DI  │     │ Logs  │
│Alarm destinations       │     └───────┘
│Extended functions       │
│Service mode             │     ┌───────┐
│For DANFOSS only         │     │  OK   │
│                         │     └───────┘
│                         │     ┌───────┐
│                         │     │ Close │
└─────────────────────────┘     └───────┘
```

The operation is divided up into several function groups. When a selection has been made, push "OK", and you may continue from the next display. By way of example, the thermostat group 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".

```
                    Thermostats
                     005:002
 Measurements                  Settings
┌──────────────────┐  ┌───────────────────┐
│AKC Error     ON ↑│  │MainSwitch      0 ↑│
│Ther.Air A  -12.8 │  │Ther. Sx A      1  │
│RegCond. A      0 │  │CutOut A°C    2.0  │
│Ther.Air B ×××××××│  │Diff.A K      2.0  │
│RegCond. B      0 │  │S4A Day %       0  │
│Ther.Air C ×××××××│  │S4A Night%      0  │
│RegCond. C      0 │  │S4MinLim A     -5  │
│S3 A °C     -12.8 │  │Ther. Sx B      1  │
│S4 A °C    ×××××××│  │CutOut B°C    2.0  │
│CutOut A°C    2.0 │  │Diff.B K      2.0  │
│CutIn A°C     4.0 │  │S4B Day %       0  │
│NightCond.    OFF │  │S4B Night%      0  │
│RunTime A       0 │  │S4MinLim B     -5  │
│S3 B °C    ×××××××│  │Ther. Sx C      1  │
│S4 B °C    ×××××××↓│  │CutOut C°C    2.0 ↓│
└──────────────────┘  └───────────────────┘
┌AKC text──────┐  ┌───────┐┌────────┐┌───────┐
│ ● Default    │  │ Trend ││ Change ││ Close │
│ ○ Custom     │  └───────┘└────────┘└───────┘
└──────────────┘
```
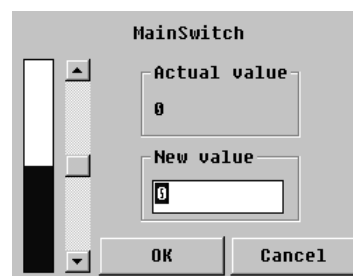
Measurements

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".

```
        Man. Def.
┌Actual value┐ ┌New value┐
│            │ │ ● ON    │
│    OFF     │ │ ○ OFF   │
│            │ │         │
└────────────┘ └─────────┘
┌────────┐  ┌──────────┐
│   OK   │  │  Cancel  │
└────────┘  └──────────┘
```

Set the required value and push "OK"

```
              MainSwitch
┌─┐ ┌─▲─┐ ┌Actual value┐
│ │ │   │ │            │
│ │ │   │ │     0      │
│ │ │   │ └────────────┘
│ │ │   │ ┌New value───┐
│ │ │   │ │            │
│ │ │   │ │  [0]       │
│ │ │   │ └────────────┘
│ │ │ ▼ │ ┌──────┐ ┌────────┐
└─┘ └───┘ │  OK  │ │ Cancel │
          └──────┘ └────────┘
```

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 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 (df. also the AKM Manual).
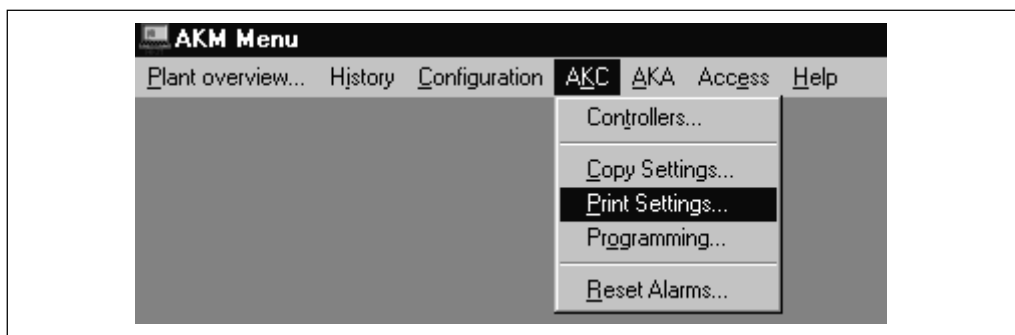
Functions

Indicated 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 15.

Thermostats

| Measurements | AKC Error | When "ON", there is an alarm message. See page 15. |
| | Ther.Air A | Actual air temperature (section A) |

	RegCond.A	Regulating condition:	0: No cooling	5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)

	Ther.Air B	Actual air temperature (section B)
	RegCond.B	Regulating condition:	0: No cooling 5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)

	Ther.Air C	Actual air temperature (section C)
	RegCond.C	Regulating condition:	0: No cooling 5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)

	S3 A °C	Air temperature at evaporator inlet (section A) (air on)
	S4 A °C	Air temperature at evaporator outlet (section A) (air off)
	CutOut A °C	Actual thermostat(s) cut-out value
	CutIn A °C	Actual thermostat(s) cut-in value
	NightCond	Status for day-/night operation (ON/OFF)
	Runtime A	Actual thermostat cut-in time of section A or duration of the latest finished cut-in
	S3 B °C	Air temperature at evaporator inlet (section B) (air on)

S4 B °C	Air temperature at evaporator outlet (section B) (air off)	
CutOut B °C	Actual thermostat(s) cut-out value	
CutIn B °C	Actual thermostat(s) cut-in value	
Runtime B	Actual thermostat cut-in time of section B or duration of the latest finished cut-in	
S3 C °C	Air temperature at evaporator inlet (section C) (air on)	
S4 C °C	Air temperature at evaporator outlet (section C) (air off)	
CutOut C °C	Actual thermostat(s) cut-out value	
CutIn C °C	Actual thermostat(s) cut-in value	
Runtime C	Actual thermostat cut-in time of section C or duration of the latest finished cut-in	

Settings

MainSwitch	Main switch:	1: Regulation 0: Controller stop -1: Service
Ther. Sx A	Definition of thermostat sensor(s)	1: S3 is used 2: S4 is used 3: S3, S4 is used. CPT (calculated product temperature)
CutOut A °C	Setting of thermostat cut-out value MUST BE SET. Even if the thermostat has not been selected (The value is used by the injection function).	
Diff. A K	Setting of thermostat differential	
S4A Day %	S4 weighting by day. S3 is automatically weighted. Must only be set if "Ther.Sx" = 3.	
S4A Night %	S4 weighting at night. S3 is automatically weighted.	
S4MinLim A	Setting of low S4 temperature alarm limit. The funciton is only active, if weighting between S3 and S4 is used for the thermostat function	
Ther. Sx B	Definition of thermostat sensor(s)	1: S3 is used 2: S4 is used 3: S3, S4 is used. CPT (calculated product temperature)
CutOut B °C	Setting of thermostat cut-out value MUST BE SET. Even if the thermostat has not been selected (The value is used by the injection function).	
Diff. B K	Setting of thermostat differential	
S4B Day %	S4 weighting by day. S3 is automatically weighted. Must only be set if "Ther.Sx" = 3.	
S4B Night %	S4 weighting at night. S3 is automatically weighted.	
S4MinLim B	Setting of low S4 temperature alarm limit. The funciton is only active, if weighting between S3 and S4 is used for the thermostat function	
Ther. Sx C	Definition of thermostat sensor(s)	1: S3 is used 2: S4 is used 3: S3, S4 is used. CPT (calculated product temperature)
CutOut C °C	Setting of thermostat cut-out value MUST BE SET. Even if the thermostat has not been selected (The value is used by the injection function).	
Diff. C K	Setting of thermostat differential	
S4C Day %	S4 weighting by day. S3 is automatically weighted. Must only be set if "Ther.Sx" = 3.	
S4C Night %	S4 weighting at night. S3 is automatically weighted.	
S4MinLim C	Setting of low S4 temperature alarm limit. The funciton is only active, if weighting between S3 and S4 is used for the thermostat function	
Ther. Mode	Definition of thermostat function:	0: No thermostat function 1: The thermostat function is attached to section A (cutout and cutin of section B and C will come after section A) 2: There is one thermostat function in each section 3: Modulating thermostat regulation (There is one thermostat function in each section)
Day/Night	Choose day-/night operation function 0: No night setback 1: Change between day and night operation according to signal on S6 input 2: Change between day and night operation according to internal time clock 3: Change between day and night operation according to the signal from the master controller (Signal via DANBUSS)	

Dt Night K	Night set back value		
Mo day h	Time table for day-/night operation on Mondays.		
	End of night setback		
	At setting = 0 there is no night setback this day		
Mo night h	Time table continued:		
	Start (of night setback)		
	At setting =0 there is no night setback this day.		
	If day and night settings are identical, or if night is set before day, the function will be changed. See functional 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		

Air temperature alarms

Measurements	AKC Error	When "ON", there is an alarm message. See page 15.		
	Ther.Air A	Actual air temperature (section A)		
	RegCond.A	Regulating condition:	0: No cooling	5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air B	Actual air temperature (section B)		
	RegCond.B	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air C	Actual air temperature (section C)		
	RegCond.C	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	AlarmAir A	Actual air temperature for the alarm function in section A		
	AlarmAir B	Actual air temperature for the alarm function in section B		
	AlarmAir C	Actual air temperature for the alarm function in section C		
Settings	MainSwitch	Main switch:	1: Regulation	
			0: Controller stop	
			-1: Service	
	AlarmModeA	Definition of alarm thermostat		
			0: No alarm thermostat	
			1: S3 used as alarm sensor	
			2: S4 used as alarm sensor	
			3: TherAir used as alarm sensor	
	High LimA °C	High air temperature alarm limit (absolute value)		
		When there is night setback operation, the alarm limit is raised by the night setback value		
	High1DelA	Time delay of high air temperature alarm during pull-down.		
		This value will apply until the actual air temperature has dropped below the "upper alarm limit". Thereafter shift to the time delay "High2Del A".		
	High2DelA	Time delay of high air temperature alarm during normal regulation		
	Low LimA °C	Low air temperature alarm limit (absolute value)		

Low Del A	Time delay for low air temperature alarm
AlarmModeB	Definition of alarm thermostat
	0: No alarm thermostat
	1: S3 used as alarm sensor
	2: S4 used as alarm sensor
	3: TherAir used as alarm sensor
High LimB °C	High air temperature alarm limit (absolute value)
	When there is night setback operation, the alarm limit is raised by the night setback value
High1DelB	Time delay of high air temperature alarm during pull-down.
	This value will apply until the actual air temperature has dropped below the "upper alarm limit". Thereafter shift to the time delay "High2Del B".
High2DelB	Time delay of high air temperature alarm during normal regulation
Low LimB °C	Low air temperature alarm limit (absolute value)
Low Del B	Time delay for low air temperature alarm
AlarmModeC	Definition of alarm thermostat
	0: No alarm thermostat
	1: S3 used as alarm sensor
	2: S4 used as alarm sensor
	3: TherAir used as alarm sensor
High LimC °C	High air temperature alarm limit (absolute value)
	When there is night setback operation, the alarm limit is raised by the night setback value
High1DelC	Time delay of high air temperature alarm during pull-down.
	This value will apply until the actual air temperature has dropped below the "upper alarm limit". Thereafter shift to the time delay "High2Del C".
High2DelC	Time delay of high air temperature alarm during normal regulation
Low LimC °C	Low air temperature alarm limit (absolute value)
Low Del C	Time delay for low air temperature alarm

Injection control

Measurements	AKC Error	When "ON", there is an alarm message. See page 15.
	Ther.Air A	Actual air temperature (section A)

	RegCond.A	Regulating condition:	0: No cooling	5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)

	Ther.Air B	Actual air temperature (section B)

	RegCond.B	Regulating condition:	0: No cooling 5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)

	Ther.Air C	Actual air temperature (section C)

	RegCond.C	Regulating condition:	0: No cooling 5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)

	Rfg. Type R	Reading of set refrigerant type
	SuperheatA	Superheat section A
	SH Ref K A	Actual superheat reference of the regulation
	AKV OD % A	Actual valve opening degree
	T0 °C	Evaporting temperature
	S2 A °C	Gas temperature at evaporator outlet
	SuperheatB	Superheat section A
	SH Ref K B	Actual superheat reference of the regulation
	AKV OD % B	Actual valve opening degree
	S2 B °C	Gas temperature at evaporator outlet
	SuperheatC	Superheat section A
	SH Ref K C	Actual superheat reference of the regulation
	AKV OD % C	Actual valve opening degree
	S2 C °C	Gas temperature at evaporator outlet

Settings	MainSwitch	Main switch:	1: Regulation
			0: Controller stop
			-1: Service

	Rfg. Type	Refrigerant selection:			
		0:	No refrigerant selection	12:	R142b
		1:	R12	13:	Users def
		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

	Inj.Ctrl A	Choose expansion valve function ON/OFF
	Inj.Ctrl B	Choose expansion valve function ON/OFF
	Inj.Ctrl C	Choose expansion valve function ON/OFF
	SH Max K	Max. superheat reference value
	SH Min K	Min. superheat reference value
	MOP Ctrl.	Choose MOP function ON/OFF
	MOP °C	MOP point value

Defrost control

Measurements	AKC Error	When "ON", there is an alarm message. See page 15.		
	Ther.Air A	Actual air temperature (section A)		
	RegCond.A	Regulating condition:	0: No cooling	5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air B	Actual air temperature (section B)		
	RegCond.B	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air C	Actual air temperature (section C)		
	RegCond.C	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Def. Cond.	Defrost condition:	0: Defrost not started	4: Not used
			1: Pump down	5: Draining
			2: Not used	6: Injection delay
			3: Defrosting	7: Fan delay
	S5 A °C	Defrost sensor temperature in section A		
	S5 B °C	Defrost sensor temperature in section B		
	S5 C °C	Defrost sensor temperature in section C		
	DefTime m	Actual defrost cut-in time or duration of the latest finished defrosting period.		
	MDefTime m	Average value of the latest 4 defrosting periods.		
	AccDefSkip	Total number of skipped defrosts since start		
	AccNo.Def	Total number of sustained defrosts since start		

Settings	MainSwitch	Main switch:	1: Regulation
			0: Controller stop
			-1: Service
	Def. Ctrl.	Choose defrost function ON/OFF	
	Man. Def.	Manual defrost is activated when ON (changes automatically to OFF)	
	DOD Ctrl.	Choose defrost on demand ON/OFF	
	Fan run	Choose fan operation during defrost ON/OFF	
	Temp/Time	Defrosting stop:	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	
	Inj.Del m	Liquid injection delay time	
	FanOnDel m	Max. permissible fan start delay after defrosting.	
		The delay time runs from the expiry of the delay time, if applicable, for the liquid injection	
	Fan On °C	Temperature at which the fan starts after defrost.	
		Fans starts when all S5 temperatures are below the value.	
	DefStop Sx	Definition of sensor for defrost	
		2: S2	3: S3
		4: S4	5: S5 (default setting)
	FanStopS4	Define if there should be fan stop during defrost	
		ON: Fans stops	
	FanStop°C	Temperature limit for stop of fans	
		Stops when S4A temperature is higher than "FanStop °C"	
		Starts when S4A temperature is lower than "FanStop °C" - 2 K	
	ResAccDef	Resets the two defrost counters	

Defrost Schedules

Measurements	AKC Error	When "ON", there is an alarm message. See page 15.		
	Ther.Air A	Actual air temperature (section A)		
	RegCond.A	Regulating condition:	0: No cooling	5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air B	Actual air temperature (section B)		
	RegCond.B	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air C	Actual air temperature (section C)		
	RegCond.C	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)

Settings	MainSwitch	Main switch:	1: Regulation
			0: Controller stop
			-1: Service
	Mon. Sched.	Choose defrost programme for Mondays	1: "Def_ Sc1"
	Tue. Sched.	- for Tuesdays	2: "Def_ Sc2"
	Wed. Sched.	- for Wednesdays	3: "Def_ Sc3"
	Thu. Sched.	- for Thursdays	
	Fri. Sched.	- for Fridays	
	Sat. Sched.	- for Saturdays	
	Sun. Sched.	- for Sundays	
	No.Per Day	Copy function. Number of defrosts/24 hours	
	FirstDef	Copy function. Setting of time the 1st defrost begins	
	LastDef	Copy function. Setting of time the last defrost begins	
	Auto Set.	Transfer the values to the three subsequent defrost programmes.	
		In pos. ON they are entered in "Def_ Sc1", "Def_ Sc2" and "Def_ Sc3".	
		If the three defrost programmes are not to be identical, corrections subsequent must be made in the individual programmes	
	No.Per Day	Number of defrosts / 24 hours for defrost programme 1	
	Def1 Sc1	Setting of time for defrost start	
	Def2 Sc1	-	
	Def3 Sc1	-	
	Def4 Sc1	-	
	Def5 Sc1	-	
	Def6 Sc1	-	
	Def7 Sc1	-	
	Def8 Sc1	-	
	No.Per Day	Number of defrosts / 24 hours for defrost programme 2	
	Def1 Sc2	Setting of time for defrost start	
	Def2 Sc2	-	
	Def3 Sc2	-	
	Def4 Sc2	-	
	Def5 Sc2	-	
	Def6 Sc2	-	
	Def7 Sc2	-	
	Def8 Sc2	-	
	No.Per Day	Number of defrosts / 24 hours for defrost programme 3	
	Def1 Sc3	Setting of time for defrost start	
	Def2 Sc3	-	
	Def3 Sc3	-	
	Def4 Sc3	-	
	Def5 Sc3	-	
	Def6 Sc3	-	
	Def7 Sc3	-	
	Def8 Sc3	-	

Display Fan Railheat DI

Measurements	AKC Error	When "ON", there is an alarm message. See page 15.
	Ther.Air A	Actual air temperature (section A)

	RegCond.A	Regulating condition:	0: No cooling	5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)

	Ther.Air B	Actual air temperature (section B)

	RegCond.B	Regulating condition:	0: No cooling 5: Start after defrost
			1: Start up — 6: Forced closing
			2: Adaptive control — 8: Sensor error
			4: Defrosting — 9: Modulating thermostat regulation
			10: Forced cutout (melt function)

	Ther.Air C	Actual air temperature (section C)

	RegCond.C	Regulating condition:	0: No cooling 5: Start after defrost
			1: Start up — 6: Forced closing
			2: Adaptive control — 8: Sensor error
			4: Defrosting — 9: Modulating thermostat regulation
			10: Forced cutout (melt function)

	Fan	Status of fan output (terminal 10-11)
	Railheat	Status of railheat output (terminal 12-13)

Settings	MainSwitch	Main switch:	1: Regulation
			0: Controller stop
			-1: Service
	Disp. Ctrl	Choose read-out for display:	
			0: No display function
			1: S3 read out
			2: S4 read-out
			3: Ther.Air read-out
	Offset K A	Off-set adjustment of display signal, display A	
	Offset K B	Off-set adjustment of display signal, display B	
	Offset K C	Off-set adjustment of display signal, display C	
	Fan On %	Setting of fans' ON period in percent of the "FanCycl m" time	
		(the function is only active in the cut-out period during night operation)	
	FanCycl.m	Period time for total ON/OFF time	
	RailOnDay%	During day operation: Setting of railheat ON period in percent of the "RailCycl m" time	
	RailOnNgt%	During night operation: Setting of railheat ON period in percent of "RailCycl m" time	
	RailCycl m	Period time for total ON/OFF time	
	DI Alarm	Choose alarm function ON/OFF	
	DI Text	Select the alarm text:	
		0: DI alarm	
		1: Door alarm	
		2: Safety cutout	
		3: Fan failure	
		4: Leak alarm	
	DI Delay m	Time delay from the alarm is registered until executed	

Alarm destinations

Measurements	AKC Error	When "ON", there is an alarm message. See page 15.		
	Ther.Air A	Actual air temperature (section A)		
	RegCond.A	Regulating condition:	0: No cooling	5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air B	Actual air temperature (section B)		
	RegCond.B	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air C	Actual air temperature (section C)		
	RegCond.C	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)

Settings	MainSwitch	Main switch: 1: Regulation
		0: Controller stop
		-1: Service
	Network	ON: When alarms are registered via PC or Gateway printer
		OFF: When alarms are registered 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 15.

StandbyMod	(Regulation is stopped via the main switch)
RfgNoSelec	(No selection of refrigerant)
RfgChanged	(Changed refrigerant)
ChClockSet	(Check AKC clock settings)
DI Alarm	(DI alarm)
AI Alarm	(Too high or too low level on analog input)
Overfloat	(Overfilled evaporator)
LowS4Temp	(Too low S4 temperature)
HighAirTem	(Too high air temperature)
LowAirTem	(Too low air temperature)
DefPerExce	(Max. defrosting period exceeded)
FanDelExce	(Max. fan delay exceeded)
230VDefInp	(Wrong defrost demand)
AKS32Error	(AKS 32 sensor error)
S2 Error	(S2 sensor error)
S3 Error	(S3 sensor error)
S4 Error	(S4 sensor error)
S5 Error	(S5 sensor error)
Liq.Supply	(Flashgas/liquid supply)

Extended functions

Measurements	AKC Error	When "ON", there is an alarm message. See page 15.		
	Ther.Air A	Actual air temperature (section A)		
	RegCond.A	Regulating condition:	0: No cooling 1: Start up 2: Adaptive control 4: Defrosting	5: Start after defrost 6: Forced closing 8: Sensor error 9: Modulating thermostat regulation 10: Forced cutout (melt function)
	Ther.Air B	Actual air temperature (section B)		
	RegCond.B	Regulating condition:	0: No cooling 5: Start after defrost 1: Start up 2: Adaptive control 4: Defrosting	6: Forced closing 8: Sensor error 9: Modulating thermostat regulation 10: Forced cutout (melt function)
	Ther.Air C	Actual air temperature (section C)		
	RegCond.C	Regulating condition:	0: No cooling 5: Start after defrost 1: Start up 2: Adaptive control 4: Defrosting	6: Forced closing 8: Sensor error 9: Modulating thermostat regulation 10: Forced cutout (melt function)
	ExtRef K	Display of reference (input signal + displacement)		
	AI Input %	Input signal value in per cent		

Settings	MainSwitch	Main switch:	1: Regulation 0: Controller stop -1: Service	
	Language	Selection of language. Three languages have been entered in the controller.	Either: 0: English 1: German 2: Franch	Or: 0: English 3: Danish 4: Spanish

NB! If this setting is changed, another "Upload" 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 "Configuration" - "Advanced Configuration"- "Delete description file"
- Push file type "Default"
- Select controller's code number and software version
- Push "OK"
- Proceed to menu "Configuration" - "Upload"
- Complete the fields "Network", "Net configuration" and "AKC description"
- Push "OK"
Texts will now be obtained from the controller in the required language.

	S2 A Corr.	Correction of signal from S2 A sensor
	S3 A Corr.	Correction of signal from S3 A sensor
	S4 A Corr.	Correction of signal from S4 A sensor
	S5 A Corr.	Correction of signal from S5 A sensor
	S2 B ....S5 B	Same as for S2 A to S5 A
	S2 C ... S5 C	Same as for S2 A to S5 A
	Liq.AlDelA	Time delay for flashgas/liquid alarm
	Liq.AlDelB	Time delay for flashgas/liquid alarm
	Liq.AlDelC	Time delay for flashgas/liquid alarm
	OutputCtrl	Output functions when tere is forced control 1: Fan outlet is ON 2: Fan outlet is OFF 3: All outlets are OFF and alarm thermostat function is stopped
	FanStopS5	Define fan stop function ON or OFF
	FanStop°C	Temperature limit for fan stop (the fans are stopped when the S5A temperatures is higher than this value. The fans will start again when S5A is lower than "FanStop°C" - 2K)
	ExtRefSig	Definition for extern AL reference signal 1: 0 - 10 V signal 2: 2 - 10 V signal
	ExtRefTemp	Displacement to be produced by max. reference signal (10 V) (With setting = 0 the function is OFF)

AI MaxLim%	Upper alarm limit. Set in percentage of input signal	
AI MinLim %	Lower alarm limit. Set in percentage of input signal	
AI Delay m	Time delay for alarm	
ON-InpMode	Definition of AKC-ON input (terminals 32-33)	
	0: Connection not used, as the regulation is controlled by the gateway's override function	
	1: Connection <u>must</u> be made (when voltage is interrupted, the valve closes)	

Service mode

Measurements	AKC Error	When "ON", there is an alarm message. See page 15.		
	Ther.Air A	Actual air temperature (section A)		
	RegCond.A	Regulating condition:	0: No cooling	5: Start after defrost
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air B	Actual air temperature (section B)		
	RegCond.B	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	Ther.Air C	Actual air temperature (section C)		
	RegCond.C	Regulating condition:	0: No cooling 5: Start after defrost	
			1: Start up	6: Forced closing
			2: Adaptive control	8: Sensor error
			4: Defrosting	9: Modulating thermostat regulation
				10: Forced cutout (melt function)
	P0 Bar	Suction pressure (measured with P0 pressure transmitter)		
	T0 °C	Evaporating temperature		
	S2 A °C	Gas temperature at evaporator outlet		
	S3 A °C	Air temperature at evaporator inlet		
	S4 A °C	Air temperature at evaporator outlet		
	S5 A °C	Temperature at defrost sensor		
	S2 B °C	Gas temperature at evaporator outlet		
	S3 B °C	Air temperature at evaporator inlet		
	S4 B °C	Air temperature at evaporator outlet		
	S5 B °C	Temperature at defrost sensor		
	S2 C °C	Gas temperature at evaporator outlet		
	S3 C °C	Air temperature at evaporator inlet		
	S4 C °C	Air temperature at evaporator outlet		
	S5 C °C	Temperature at defrost sensor		
	S6 input	Statement of S6 inlet (terminal 60 - 61)		
	Def. Start	Statement of defrost start signal (terminal 30 - 31)		
	ON input	Statement of forced closing input (terminal 32 - 33)		
	DI input	Statement of DI input		
	Ext.Ref. V	Voltage signal on "Ext.Ref." input		
Settings	MainSwitch	Main switch:	1: Regulation	
			0: Controller stop	
			-1: Service	
	Man. Ctrl.	ON: Manual control is permitted when "Main Switch" = -1.		
		NOTE! No monitoring		
		When manal setting is finished, setting must be changed to OFF.		
	Fan	Forced operation of fan outlet (terminal 10-11)		
	Railheat	Forced operation of railheat outlet (terminal 12-13)		
	AKV OD% A	Forced operation of expansion valve opening degree (terminal 14-15)		
		(Fan must be operating during forced control operation)		
	AKV OD% B	Forced operation of expansion valve opening degree (terminal 110-111)		
		(Fan must be operating during forced control operation)		
	AKV OD% C	Forced operation of expansion valve opening degree (terminal 120-121)		
		(Fan must be operating during forced control operation)		

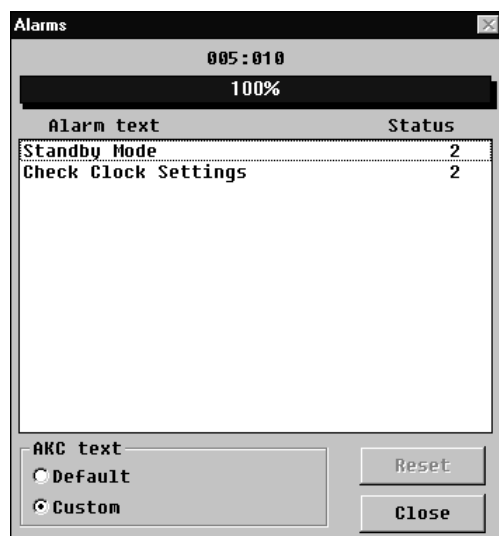|	
DO Output	Forced operation of DO Output (terminal 16-17)
Compressor	Forced operation of compressor outlet (terminal 18-19)
Alarm	Forced opeation of alarm outlet (terminal 20 - 21)
	ON: Relay switch closed (no alarm)
	OFF: Relay switch interrupted (alarm)
Defrost A	Forced operation of defrost outlet (terminal 22-23)
Defrost B	Forced operation of defrost outlet (terminal 112-113)
Defrost C	Forced operation of defrost outlet (terminal 122-123)

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                              ☒
          005:010
             100%

Alarm text                    Status
Standby Mode                      2
Check Clock Settings              2




AKC text                      Reset
  ○ Default
  ● Custom                    Close
```

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

```
        Standby Mode

    Reset alarm in AKC ?

    OK          Cancel
```

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

Alarm message	Meaning	Action/Cause
S2 Error ( )	S2 sensor error	Check sensor connection / sensor resistance
S3 Error ( )	S3 sensor error	Check sensor connection / sensor resistance
S4 Error ( )	S4 sensor error	Check sensor connection / sensor resistance
S5 Error ( )	S5 sensor error	Check sensor connection / sensor resistance
AKS 32 Error	AKS 32 sensor error	Check sensor connection
High Air Temp ( )	Too high air temperature	
Low Air Temp ( )	Too high air temperature	
Low S4 Temp. A	Too low S4 temperature	
Overfloated evaporator ( )	Overfilled evaporator	
Max Def. period exceeded ( )	Max. defrosting period exceeded	Defrosting finished according to time not as selected according to temperature
Max fan del time exceeded ( )	Max. fan delay exceeded	When defrost has been completed, the fan start will be based on time and not on temperature
230 Volt on Def.Start input	Wrong defrost demand	Active defrost signal on terminal 30 - 31 contrary to just finished defrosting
Check clock settings		After power failure, time must be set.
Standby mode		The main switch is either set in the position "Controller stop" or "Service".
Refrigerant not selected	No selection of refrigerant	Select refrigerant
Rfg. Changed	Changed refrigerant	Check choosen refrigerant. Regulation with changed refrigerant has come into force.
DI Alarm / Door Alarm / Safety Cutout / Fan failure / Leak alarm	Alarm on digital input	Check the function
AI Max alarm limit exceeded	Too high level on analog input	
AI Min alarm limit exceeded	Too low level on analog input	
Liquid supply fault alarm ( )	Flashgas or liquid	Check for flashgas or liquid