

H424W1 User manual

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1 Parameter list

Rem. P		Description Functions about storage	Minimum	Maximum	Default Unit
3	St				
	_	Functions about storage temperature	FF 0	145.0	20.96
	_	storage room temperature	-55.0		2.0 °C
			0.0	50.0	0.2 K
	Fd	Functions about defrost duration and timing			
	Fd0	immediate delay before next defrost		194 4:20:15	0 dd hh:mm:ss
				194 4:20:15	30:00 dd hh:mm:ss
		dripping time after defrost	0	194 4:20:15	2:00 dd hh:mm:ss
	FdE	evaporator fan activation delay after the defrost	0	194 4:20:15	7:00 dd hh:mm:ss
1	FdP	overall period of the defrost	0	194 4:20:15	4:00:00 dd hh:mm:ss
	FF	Functions about forced defrost			
	FFh	enable forced defrost by keyboard short cut	oFF	on	on /
	FFd	forced defrost duration	0	194 4:20:15	30:00 dd hh:mm:ss
2			oFF	on	oFF /
_	FP	Functions about defrost preference	0.1	_0"	011 /
		defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump /	0	4	2 /
	111	6=heat pump by hp	U	7	2 /
3	EDc	use door closure input as start command for remote defrost	oFF	on	oFF /
J		•	01.1	_011	011 /
	Ft	Functions about defrost temperature	FF 0	145.0	6.0.06
	Ftt	defrost stop temperature	-55.0	145.0	6.0 °C
n		Functions about fans			
	nE_	Functions about evaporator fans			
	nEH	force evaporator fans when refrigeration is off	oFF	_on	oFF /
V		Functions about electronic expansion valve		-	
	vP	Functions about electronic expansion valve preference			
4	νPΗ	·	oFF	_on	on /
	vPP	refrigerant gas type: 0=R134A / 1=R404A / 2=R507A / 3=R22 / 4=R407C	0	_ 4	0 /
5		network originating address of the pressure broadcast	0		0 /
J	vt	Functions about electronic expansion valve temperature	ŭ	200	• /
6		wanted overheating (similar to Danfoss thermostatic overheating spring regulation)	-999.0	999.0	8.0 K
7		maximum overheating	-999.0	999.0	99.0 K
8	vtL	minimum overheating	-999.0		6.0 K
		maximum pressure allowed in the suction line (similar to Danfoss MOP)	0.0	999.0	10.0 (gauge) bar
	vd_	Functions about electronic expansion valve timing			
9		on-off duty cycle duration	0	194 4:20:15	8 dd hh:mm:ss
10	vd2	on duty cycle duration at refrigeration start (set to 0 for previous stop value)	0	194 4:20:15	5 dd hh:mm:ss
11	vdd	on duty cycle adaptation speed (low value for slow adaptation and small swinging)	0	255	8 /
b)	Functions about probe calibration			
	b1	Probe nr. 1			
	b1C	room temperature	-999.0	999.0	0.0 K
	b1A	enable probe	oFF	on	on /
	b2	Probe nr. 2		_	_ ′
		suction temperature	-9.0	9.0	0.0 K
		enable probe	oFF	on	on /
L		Functions about alarm and stand-by	0	_0	_6 /
_	Lt	Temperature alarm			
10	_	·	FF 0	1450	20.96
12	LtL	low temperature alarm set point	-55.0		-2.0 °C
13		high temperature alarm set point	-55.0		14.0 °C
		alarm delay	0	194 4:20:15	30:00 dd hh:mm:ss
	Lo_	On / stand-by status			
	Loo	actual status: stand-by or on	oFF	_on	oFF /
P		Functions about master preferences			
	Pd_	Functions about network address			
	PdM	master address for global network communication	0	254	1 /
			1	3	3 /
I		Functions about input-output and machine state (read only)			
	ĪĀ	Analog inputs			
	ĪA1	room temperature	-55.0	145.0	-55.0 °C
		suction temperature	-55.0		-55.0 °C
	Id	Digital input	33.0	145.0	55.5
	Id_ Id4		_FF	٠	°EE /
		digital input 4 (door closure / remote defrost) - read by IA4	oFF	_on	oFF /
	OS_	Machine status	^	055	0 /
	LLA	actual alarm - read only (0 means no alarm)	0	255	0 /
		Digital output			'
	Od_		_		aEE /
14	Od_ Od1	solenoid	oFF	_on	oFF /
14	Od_ Od1 Od4	solenoid evaporator	oFF oFF		oFF /
	Od_ Od1 Od4	solenoid evaporator Functions about storage		_	
14	Od_ Od1 Od4	solenoid evaporator		_	
14	Od_ Od1 Od4 S St_	solenoid evaporator Functions about storage		_	
14	Od_ Od1 Od4 S St_ t0	solenoid evaporator Functions about storage Functions about storage temperature	oFF -55.0	on _145.0	oFF /
14	Od_ Od1 Od4 S St_ t0 td	solenoid evaporator Functions about storage Functions about storage temperature storage room temperature differential	oFF	on _145.0	oFF /
14	Od_ Od1 Od4 S St_ t0 td Fd_	solenoid evaporator Functions about storage Functions about storage temperature storage room temperature	oFF -55.0 0.0	on _145.0	oFF /

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Rem. Description Description Period Uniter Description Period Uniter Description		_				
Fig. Processing the process of process 1	Rem. F		•	Minimum		
Field						
Fig			•			
FF	1					
First Firs	1		•	U	194 4.20.13	4.00.00 du III.IIIII.55
FFd Forced defrost duration		_		٥FF	on	on /
Fig.						_ ′
FPF	2					
Section Sect		FP	Functions about defrost preference		_	,
Section Sect		FPt	defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump /	0	4	2 /
First Functions about defrost temperature						
Fit	3		•	oFF	_on	oFF /
Functions about fans Functions about fans Functions about fans Tell Functions about fans Functions about exporator fans when refigeration is off Functions about electronic expansion valve Functions			·			
Ref			·	-55.0	145.0	6.0 °€
New Year Committed New Year Committed New Year New Yea	n	1				
V		_	•	,EE	on.	°EE /
Particions about electronic expansion valve preference vPPH vPP				OFF	_011	OFF /
4 VPH chable electronic expansion valve vPP	V	′ vP				
VPP	4		·	٥FF	on	on /
5	•				_	
Viction Functions about electronic expansion valve temperature 0.990.0 999.0 8.0 K 7 vtH 0.990.0 999.0 990.0 8.0 K 0.990.0 999.0 990.0 8.0 K 0.990.0 999.0 990.0 990.0 990.0 990.0 990.0 990.0 990.0 990.0 900.0 9	5					,
Fig.						,
8	6		·	-999.0	999.0	8.0 K
vtU maximum pressure allowed in the suction line (similar to Danfoss MOP) 0.0 999.0 10.0 (gauge) bar 9 vd1 functions about electronic expansion valve timing 0.194 4:20:15 8 dd hh.mm.ss 10 vd2 on duty cycle duration at refrigeration start (set to 0 for previous stop value) 0.194 4:20:15 5 dd hh.mm.ss 11 vd0 on duty cycle adaptation speed (low value for slow adaptation and small swinging) 0.255 8 / hm.mm.ss 10 LC runctions about probe calibration oFF on		vtH	maximum overheating		999.0	
vd_ or solutions about electronic expansion valve timing 0 194 4:20:15 8 dd hh.mm.ss 10 vd2 on on-fluty cycle duration at refrigeration start (set to 0 for previous stop value) 0 194 4:20:15 5 dd hh.mm.ss 11 vdd on duty cycle duration at refrigeration start (set to 0 for previous stop value) 0 194 4:20:15 5 dd hh.mm.ss b	8					
9 vol. vol			·	0.0	999.0	10.0 (gauge) bar
10						
11			• •			
B						
bit room temperature speed spe				0	255	8 /
Sil Commemperature	b		·			
b1A case b2C Probe nr. 2 probe nr.				000.0	000.0	0.0 1/
b2						
December				OFF	_on	_on /
b2A enable probe continue		_		0.0	0.0	0 0 K
L			•			
Temperature alarm 12	1			011	_011	_011 /
12	_		•			
13	12	_		-55.0	145.0	-2.0 °C
Lo On / stand-by status Lo actual status: stand-by or on FF / Functions about input-output and machine state (read only) IA	13	LtH		-55.0	145.0	14.0 °C
Coc actual status: stand-by or on FF Coc Functions about input-output and machine state (read only) Functions about storage Functions about storage temperature Functions about defrost duration and timing Functions about forced defrost Functions about forced def		Ltd	alarm delay	0	194 4:20:15	30:00 dd hh:mm:ss
Functions about input-output and machine state (read only) IA1		Lo_	On / stand-by status			
A Analog inputs IA1 room temperature -55.0 145.0 -55.0 °C IA2 suction temperature -55.0 145.0 -55.0 °C IA3 Digital input (door closure / remote defrost) - read by IA4 oFF on oFF / OS Machine status ODE Digital output IA1 Odd Digital output ODE Odd OFF on oFF / IA2 Odd Odd OFF on oFF / IA3 Odd OFF on oFF / IA4 Odd evaporator OFF on oFF / IA5 Odd OFF ODE ODE ODE IA5 ODE ODE ODE ODE ODE IA5 ODE ODE ODE ODE ODE ODE ODE ODE IA5 ODE ODE ODE ODE ODE ODE ODE ODE ODE IA5 ODE OD		Loo		oFF	_on	oFF /
All room temperature	I					
IA2 Suction temperature -55.0 145.0 -55.0 °C Id			0 1			
Id_ Digital input Id4 digital input digital input 4 (door closure / remote defrost) - read by IA4 OFF						
Tell digital input 4 (door closure / remote defrost) - read by IA4			•	-55.0	145.0	-55.0 °C
OS		_		- FF	_	oFF /
LLA actual alarm - read only (0 means no alarm) Od Digital output 14 Od1 solenoid				off	_on	orr /
Od Digital output 14 Od1 solenoid				0	255	0 /
14 Od1 solenoid OFFonoFF /_ 14 Od4 evaporator			,	U	200	· /
14 Od4 evaporator S Functions about storage St Functions about storage temperature 10 storage room temperature 11 differential Fd Functions about defrost duration and timing immediate delay before next defrost Fd on-time duration of the defrost Fdd dripping time after defrost FdE evaporator fan activation delay after the defrost Ff FP Functions about forced defrost FF FF Functions about forced defrost FF FF Start immediate forced defrost FF FP Functions about defrost preference FF defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump / 6=heat pump by hp FF Cond of FF Cond	14			oFF	On	oFF /
S Functions about storage St Functions about storage temperature t0 storage room temperature						
St_ Functions about storage temperature _t0 storage room temperature				51.1		J /
		St				
Ted differential 0.0 50.0 0.2 K Fd Functions about defrost duration and timing Fd0 immediate delay before next defrost 0 194 4:20:15 0 0 0 0 0 0 0 0 0		_		-55.0	145.0	2.0 °C
Fd0 immediate delay before next defrost 0 194 4:20:15 0 dd hh:mm:ss on-time duration of the defrost 0 194 4:20:15 30:00 dd hh:mm:ss on-time duration of the defrost 0 194 4:20:15 2:00 dd hh:mm:ss on-time duration delay after the defrost 0 194 4:20:15 2:00 dd hh:mm:ss on-time duration delay after the defrost 0 194 4:20:15 15:00 dd hh:mm:ss on-time duration delay after the defrost 0 194 4:20:15 15:00 dd hh:mm:ss on-time duration delay after the defrost 0 194 4:20:15 4:00:00 dd hh:mm:ss on-time duration of the defrost on-time duration of the defrost of the defrost duration of the defrost of the de		td				
Fdd on-time duration of the defrost 0 194 4:20:15 30:00 dd hh:mm:ss Fdg dripping time after defrost 0 194 4:20:15 2:00 dd hh:mm:ss FdE evaporator fan activation delay after the defrost 0 194 4:20:15 15:00 dd hh:mm:ss FdE period of air renew cycle 0 194 4:20:15 4:00:00 dd hh:mm:ss FF Functions about forced defrost FFh enable forced air renew by keyboard short cut oFF on forced defrost duration 0 194 4:20:15 30:00 dd hh:mm:ss FF Start immediate forced defrost oFF on oFF on oFF FP Functions about defrost preference FP Gefrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump / 0 4 2 / 6=heat pump by hp The start immediate for ced defrost of the start immediate for the start immediate forced defrost oFF on oFF / of the start immediate for the star		_	<u> </u>			
Fdg dripping time after defrost FdE evaporator fan activation delay after the defrost 1 FdP period of air renew cycle FFL Functions about forced defrost FFH enable forced air renew by keyboard short cut FFH forced defrost duration FFH forced defrost defrost defrost FFH forced defrost defrost defrost FFH forced defrost defrost preference FFH forced defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump / 0						
FdE evaporator fan activation delay after the defrost 1 FdP period of air renew cycle 5 FF Functions about forced defrost FFh enable forced air renew by keyboard short cut 6 FFd forced defrost duration 7 Fd forced defrost duration 8 FF Functions about defrost duration 9 194 4:20:15 4:00:00 dd hh:mm:ss 9 FF On						
1 FdP period of air renew cycle FF_ Functions about forced defrost FFh enable forced air renew by keyboard short cut FFd forced defrost duration 2 FFo start immediate forced defrost FP_ Functions about defrost preference FPt defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump / 0 4 2 / 6=heat pump by hp 3 FPc use door closure input as start command for remote defrost 0 194 4:20:15 4:00:00 dd hh:mm:ss oFF _on _on / oFF _on _or F/ oFF _on _oFF /						
FF_ Functions about forced defrost FFh enable forced air renew by keyboard short cut FFd forced defrost duration 2 FFo start immediate forced defrost FP_ Functions about defrost preference FPt defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump / 0 4 2 / 6=heat pump by hp 3 FPc use door closure input as start command for remote defrost FFT on of						
FFh enable forced air renew by keyboard short cut FFd forced defrost duration 2 FFo start immediate forced defrost FP_ Functions about defrost preference FPt defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump / 0 4 2 / 6=heat pump by hp 3 FPc use door closure input as start command for remote defrost OFFonon / on / on / on / on / on / on	1			0	194 4:20:15	4:UU:UU dd hh:mm:ss
FFd forced defrost duration 0 194 4:20:15 30:00 dd hh:mm:ss 2 FFo start immediate forced defrost oFF on oFF / FP_ Functions about defrost preference FPt defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump / 0 4 2 / 6=heat pump by hp 3 FPc use door closure input as start command for remote defrost oFF on oFF /		_				/
2 FFo start immediate forced defrost			, , , , , , , , , , , , , , , , , , ,		_	
FP_ Functions about defrost preference FPt defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump / 0 4 2 / 6=heat pump by hp 3 FPc use door closure input as start command for remote defrost oFF _ on oFF /	2					
FPt defrost type: 0=none / 1=pause / 2=air / 3=electric / 4=hot gas / 5=heat pump / 0 4 2 / 6=heat pump by hp 3 FPc use door closure input as start command for remote defrost oFF _on oFF /	2			OFF	_on	OFF /
6=heat pump by hp 3 FPc use door closure input as start command for remote defrost oFF _on oFF /			•	0	1	2 /
3 FPc use door closure input as start command for remote defrost oFF _on oFF /		FFL		0	4	4 /
	3	FPc	use door closure input as start command for remote defrost	oFF	on	oFF /
	_					,
		_				

Dama I	Davamatau	Description	Minimum	Maxima	Default Unit
Rem. I		Description	4.0	146.0	6.0 °C
		defrost stop temperature Functions about fans	4.0	140.0	0.0 °C
ı	n	Functions about evaporator fans			
	nE_	· ·			-FF /
			oFF	_on	oFF /
,	v	Functions about electronic expansion valve			
	vP_	Functions about electronic expansion valve preference			,
4	vPH	enable electronic expansion valve	oFF	_on	_on /
_	vPP	refrigerant gas type: 0=R134A / 1=R404A / 2=R507A / 3=R22 / 4=R407C	0	1	0 /
5	vPd	network originating address of the pressure broadcast	0	255	0 /
	vt_	Functions about electronic expansion valve temperature			0.0.17
6	vtt	wanted overheating (similar to Danfoss thermostatic overheating spring regulation)	2.0	40.0	8.0 K
7	vtH	maximum overheating	6.0	55.0	99.0 K
8	vtL	minimum overheating	0.0	10.0	6.0 K
	vtU	maximum pressure allowed in the suction line (similar to Danfoss MOP)	0.0	30.0	10.0 (gauge) bar
	vd_	Functions about electronic expansion valve timing			
9	vd1	on-off duty cycle duration		194 4:20:15	8 dd hh:mm:ss
10	vd2	on duty cycle duration at refrigeration start (set to 0 for previous stop value)	0	194 4:20:15	5 dd hh:mm:ss
11	vdd	on duty cycle adaptation speed (low value for slow adaptation and small swinging)	0	255	8 /
ŀ	b	Functions about probe calibration			
	b1	Probe nr. 1			
	b1C	room temperature	-9.0	9.0	0.0 K
	b1A	enable probe	oFF	on	on /
	b2	Probe nr. 2		_	_ '
	b2C	suction temperature	-9.0	9.0	0.0 K
	b2A	enable probe	oFF	on	_on /
L	L	Functions about alarm and stand-by		_	_ ′
	Lt	Temperature alarm			
12	LtL	low temperature alarm set point	-55.0	145.0	-2.0 °C
13	LtH	high temperature alarm set point	-55.0	145.0	14.0 °C
	Ltd	alarm delay		194 4:20:15	30:00 dd hh:mm:ss
	Lo	On / stand-by status	Ū	2320.20	00.00 44
	Loo	actual status: stand-by or on	oFF	on	oFF /
		Functions about input-output and machine state (read only)	011	_0,,	011 /
	IA	Analog inputs			
	IA_ IA1	room temperature	-55.0	145.0	-55.0 °C
	IA1	suction temperature	-55.0	145.0	-55.0 °C
	Id	Digital input	-55.0	145.0	33.0 C
	Id_	digital input 4 (door closure / remote defrost) - read by IA4	oFF	62	oFF /
	OS	Machine status	OFF	_on	ULF /
			0	255	0 /
		actual alarm - read only (0 means no alarm)	0	255	0 /
1 4	Od	Digital output			-FF /
14		solenoid	oFF	_on	oFF /
14	Od4	evaporator	oFF	_on	oFF /

2 Parameter remarks

Nr Remark

- 1 The period of each cycle includes on-time + off-time, that is the overall duration of the cycle.
- 2 Following defrost cycles will be aligned to the end of forced one.
- 3 For defrost synchronization of refrigerated expositors.
- 4 When off, the refrigeration solenoid is steadily on during cooling.
- 5 The address of the central unit who is broadcasting pressure (usually 1). Use 0 for previous application H425V1 with no origin specification.
- Caution! Low overheating causes liquid return and compressor damage.
- 7 Overheating over the maximum forces valve anticipated opening.
- 8 Overheating under the minimum delays valve opening.
- 9 Caution! Short duty cycle reduces valve life.
- 10 Caution! Low overheating causes liquid return and compressor damage.
- 11 Caution! High adaptation speed causes swing in the suction line and damage to the compressor.
- 12 The low temperature differential is fixed, and alarm status stops at 0.2 °C above the set point.
- 13 The high temperature differential is fixed, and alarm status stops at $0.2~^{\circ}\text{C}$ under the set point.
- 14 The minus sign on display ("-") signals that output is going to start after a delay.

3 Alarm list

Display Alarm

A01 low temperature Low temperature limit has been reached.



Display Alarm

A02 high temperature High temperature limit has been reached.

4 Slave alarm list

Display Alarm

none This instrument has no slave alarm.

5 Button list

Push	button	Function
B1	esc - silence	Exit without saving from any menu - alarm buzzer silence.
B2	up	Up navigation in the menu.
B3	on/stand-by - pause	Toggle between on and stand-by - toggle evaporator fan stop.
B4	left - light	Left navigation in the menu - switch the light on and off.
B5	down - defrost	Down navigation in the menu - force immediate defrost.
B6	right - menu - set	Right navigation in the menu - display and modify the set point - enter menu.

6 Led list

Led		Function
L1	cooling	On during cooling.
L2	evaporator	On during evaporator run - blinking slowly during activation delay.
L3	unused	Unused in this application.
L4	unused	Unused in this application.
L5	unused	Unused in this application.
L6	unused	Unused in this application.
L7	light	On when lighting is on - blinking slowly during deactivation delay.

7 Soft command list

Soft command Function

8 How to ...

How to ... Function
Switch between on and stand-by. Keep pressed B3 button, to activate and deactivate stand-by. In stand-by every output is disabled except light,

leds from L1 to L6 blink, timers continue to count.

Stop or restart evaporator fans.

Press shortly the B3 button. When the evaporator fans are stopped, the display blinks.

Keep pressed B6 to enter the menu. Navigate up and down with B2 and B5. Select

Keep pressed B6 to enter the menu. Navigate up and down with B2 and B5. Select the submenu by B6. Change the parameter by B2 and B5, press B6 to confirm, or B4 to go back without saving. The changes will have effect after the exit from programming pressing B4 repeatedly. Press B1 to exit immediately without

saving any parameter.

Show or change temperature set. Press shortly B6 - the display shows the current set point - change it by B2 and B5, and confirm it by B6. As

alternative, enter the menu program as explained above, modify the parameter t0, then confirm it.

Force a defrost. Keep pressed B5.

9 Shortcut list

Buttons to press

Shortcut description - keep pressed 5 seconds Force an immediate defrost.

10 Led and push button location

