HECU - Control for condensing unit

PARAMETER TABLE

CAREL

Parameters table

Mask index	Mask description	Extended description	Def.	UOM	Possible value descr.
A - Unit status					
Ab01	User setp.	Setpoint set by the user for suction regulation under pressure, proportional regulation	0	---	
Ac03	Enable unit OnOff By supervisor	Enable unit on-off from supervisor	0	---	0: NO 1: YES
	By black out	Enable on-off due to black out	0	---	0: NO 1: YES
	By load refrig.	Enable on-off due to refrigerant load	0	---	0: NO 1: YES
Ac04	Unit on delay after blackout	Delay unit startup after blackout	0	s	
B - Inputs/Outputs					
Baa02-27	Alarm 1-2 compressor 1-4	Alarm 1-2 compressor DI position	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic alarm 1-2 compressor DI	0	---	0: NC 1: NO
Baa56	Common low pressostat	Low pressostat alarm	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic of low pressostat alarm	0	---	0: NC 1: NO
Baa57	Common high pressostat	High pressostat alarm	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic of high pressostat alarm	0	---	0: NC 1: NO
Baaau	Fan 1 overload	Fan circuit overload 1	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic fan circuit overload 1	0	---	0: NC 1: NO
Baaav	Fan 2 overload	Fan circuit overload 2	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic fan circuit overload 2	0	---	0: NC 1: NO
Baabk	Fan common overload	Common fan circuit overload	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic common fan circuit overload	0	---	0: NC 1: NO
Baacf - Baacj	Generic DI F - G - H - I - J	DI generic input F-G-H-I-J	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic DI generic input F-G-H-I-J	0	---	0: NC 1: NO
Baada	Comp. inverter warning	Compressor inverter warning	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic compressor inverter warning	0	---	0: NC 1: NO
Baadc	Fans inverter warning	Fan inverter warning	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic fan inverter warning	0	---	0: NC 1: NO
Baadg	Alarm backup comp.	Alarm backup compressor	0	---	0: -- 1: ID01 ... 10: ID10
	Logic	Logic alarm backup compressor	0	---	0: NC 1: NO
Bab01	Suction press. probe	Suction pressure probe value	6	---	0: -- 1: B1 ... 12: B12
	Type	Suction pressure probe type	6	---	2: 0-1V 3: 0-10V 4: 4-20mA 6: 0-5V
	Upper value	Suction pressure upper limit	0	---	
	Lower val.	Suction pressure lower limit	0	---	
	Calibration	Suction pressure probe calibration	0	---	
Bab02	Suction backup press.	Suction pressure backup probe value	0	---	0: -- 1: B1 ... 12: B12
	Type	Suction pressure backup probe type	6	---	2: 0-1V 3: 0-10V 4: 4-20mA 6: 0-5V
	Upper value	Suction pressure backup upper limit	0	---	
	Lower val.	Suction pressure backup lower limit	0	---	
	Calibration	Suction pressure backup probe calibration	0	---	
Bab03	Suction temperature	Suction pressure temperature value	3	---	0: -- 1: B1 ... 12: B12
	Type	Suction temperature probe type	0	---	0: NTC 7: HTNTC
	Upper value	Suction temperature upper limit	0	°C	
	Lower value	Suction temperature lower limit	0	°C	
	Calibration	Suction temperature probe calibration	0	---	
Bab04	Discharge pressure	Discharge pressure probe value	7	---	0: -- 1: B1 ... 12: B12
	Type	Discharge pressure probe type	6	---	2: 0-1V 3: 0-10V 4: 4-20mA 6: 0-5V
	Upper value	Discharge pressure upper limit	0	---	
	Lower val.	Discharge pressure lower limit	0	---	
	Calibration	Discharge pressure probe calibration	0	---	
Bab14	Comp. bkp. disch. temp.	Compressor backup temperature probe value	8	---	0: -- 1: B1 ... 12: B12
	Type	Compressor backup temperature probe type	7	---	0: NTC 7: HTNTC
	Upper value	Compressor backup upper limit	0	°C	
	Lower value	Compressor backup lower limit	0	°C	
	Calibration	Compressor backup temperature probe calibration	0	---	
Bab15	External temperature	External temperature probe	9	---	0: -- 1: B1 ... 12: B12
	Type	External temperature probe type	0	°C	0: NTC 7: HTNTC
	Upper value	External temperature upper limit	0	°C	
	Lower value	External temperature lower limit	0	°C	
	Calibration	External temperature probe calibration	0	---	
Bab19 - 28	Generic an. input A - B - C - D - E	Generic analog input A-B-C-D-E	0	---	0: -- 1: B1 ... 12: B12
	Type	Generic analog input A-B-C-D-E type	0	---	0: NTC 1: ---- 2: 0-1V 3: 0-10V 4: 4-20mA 5: ---- 6: 0-5V 7: HTNTC
	Upper val.	Generic analog input A-B-C-D-E upper limit	0	°C	
	Lower val.	Generic analog input A-B-C-D-E lower limit	0	°C	
	Calibration	Generic analog input A-B-C-D-E calibration	0	---	
Bab29	BLDC disch. temp.	Discharge temperature probe compressor	4	---	0: -- 1: B1 ... 12: B12
	Type	Discharge temperature probe compressor type	7	---	0: NTC 7: HTNTC
	Upper value	Discharge temperature probe compressor maximum value	0	°C	
	Lower value	Discharge temperature probe compressor minimum value	0	°C	
	Calibration	Discharge temperature probe compressor calibration	0	---	
Bac02	Compressor 1 Line relay DO	Line relay digital output compressor 1	0	---	0: -- 1: 1 ... 12: 12
Bacep	Compressor backup Line relay DO	Backup line relay digital output compressor	7	---	0: -- 1: 1 ... 12: 12
C - Compressors					
Cab01	Regulation type	Compressor regulation type	0	---	1: FIXED SETP. 2: FLOATING SETP.
Cab02	Setpoint limits Minimum	Compressor setpoint lower limit	*	---	
	Maximum	Compressor setpoint upper limit	*	---	
Cab03	Setpoint	Compressor setpoint	*	---	
Cab14	PID press. regulation Prop. band	PID pressure regulation proportional band	12	barg	
	Integral time	PID pressure regulation integral time	50	s	
Cab17	Backup Compressor Req. activation	Backup compressor activation request	*	s	
	Backup Compressor Req. deactivation	Backup compressor deactivation request	*	s	
	Delay On	Backup compressor delay	*	s	
Cab18	Maximum floating setpoint	Maximum floating setpoint value	*	---	
	Minimum floating setpoint	Minimum floating setpoint value	*	---	
Cac13	Comp. working hours threshold	Compressor maintenance threshold hours	0	h	
Cae01	Number of alarms for each compressor	Number of alarms for each compressor	0	---	max 2
Cae02	Alarm 1 description	Selection of first compressor alarm description: Generic, Overload, High pressure, Low pressure, Oil	0	---	Generic Overload High pressure Low pressure Oil
Cae04	Alarm 1 Activ. delay	Activation delay for alarm 1 during operation	0	s	
	Start up delay	Activation delay for alarm 1 at startup	0	s	
	Reset	Type of reset for compressor alarm 1	0	---	0: AUT. 1: MAN.
	Priority	Type of priority for compressor alarm 1	0	---	0: LIGHT 1: SERIOUS
Cae24	Suction high pressure alarm	Type of high suction pressure/ temperature alarm threshold	0	---	0: ABSOLUTE 1: RELATIVE
	Threshold	High suction pressure/temperature alarm threshold	*	---	
Cae25	Alarm diff.	High suction pressure/temperature alarm differential	0	---	
	Alarm delay	High suction pressure/temperature alarm delay	0	s	
Cae26	Suction low pressure alarm	Type of low suction pressure/ temperature alarm	0	---	0: ABSOLUTE 1: RELATIVE
	Threshold	Low suction pressure/temperature alarm threshold	0	---	
Cae27	Alarm diff.	Low suction pressure/temperature alarm differential	0	---	
	Alarm delay	Low suction pressure/temperature alarm delay	0	s	
Cae41	Liquid flow back alarm Start up delay	Delay for liquid flow back alarm (SSH<0K and DSH<10K) during start up	15	min	
	Alarm delay	Delay for liquid flow back alarm	60	s	
	Alarm delay defrost and washing funct.	Delay for liquid flow back alarm during defrost and washing	180	s	
	Reset	Type of alarm reset	0	---	0: MANUAL 1: AUTO
Caf03	Cmp1	Enable compressor 1	1	---	0: DIS 1: EN
	backup	Enable backup compressor	0	---	0: DIS 1: EN
Caf04	Refrigerant	Type of refrigerant	0	---	2: R404A 4: R410A
Caf15	Modulate speed device	Compressor modulating device	2	---	2: BLDC
Caf17	Min on time	Minimum time on for BLDC compressor	30	s	
	Min off time	Minimum time off for BLDC compressor	60	s	
	Min time to start same compressor	Minimum time between two start up of the BLDC compressor	180	s	
Caf20	Equalization using oil injection valve	Equalization using oil injection valve	0	---	0: NO 1: YES
	Valve opening	Valve % opening in case of EEV valve.	100	%	
Caf94	Backup Compressor Min on time	Minimum time on for backup compressor start up	30	s	
	Min off time	Minimum time off for backup compressor	60	s	
	Min time to start same compressor	Minimum time between two start up of the backup compressor	180	s	
Cag12	BLDC settings Motor Type	BLDC settings Motor Type	0	---	0: SIAM ANB33F-R410A 1: SIAM ANB42F-R410A 2: SIAM ANB52F-R410A 3: SIAM AEB33F-R404A 4: SIAM AEB60F-R404A 5: SIAM ANB66F-R410A 6: SIAM AEB78F-R404A 7: SIAM ANB78F-R410A
	Poles numbers	BLDC compressor poles numbers	**	---	0: 0 1: 2 2: 4 3: 6 4: 8 5: 10
	Type drive	Drive type for BLDC compressor	**	---	9: PSD1*184** 10: PSD1*244** 11: PSD1*354**
Cag51	Start-up failure control Restart delay	Delay between two restart in case of start-up failure of BLDC compressor	60	s	
	Max retry number	Number of retries for BLDC compressor start up in case of failure	5	---	
Cag52	Speed management Start-up forced speed	BLDC compressor speed during startup phase	50	rps	
	Max speed	Maximum speed of the selected compressor	**	rps	
	Min speed	Minimum speed of the selected compressor	**	rps	
Cag55	Envelope control Out of envelope alarm timeout	Alarm delay in case of out of envelope condition	60	s	
	Low pressure diff. alarm timeout	Alarm timeout in case of low pressure differential	60	s	
Cag56	Discharge gas control in zone 1a High discharge temp. Limit	Maximum limit for discharge temperature in envelope zone 1a	105	°C/°F	
	Alarm	Alarm threshold for discharge temperature in zone envelope 1a	110	°C/°F	
Cag57	High discharge temp. Limit	Maximum limit for discharge temperature in zone envelope 1b	115	°C/°F	
	Alarm	Alarm threshold for discharge temperature in zone envelope 1b	120	°C/°F	
Cag58	Speed control due to discharge gas Action distance	Distance before starting action to reduce BLDC compressor speed and acceleration	20	°C/°F	
	Action pause	Action delay	30	s	
	Compressor speed reduction	Percentage of speed reduction	0	%	
Cag65	Enable anti liquid return MPX valve	If the compressor can not start for timing or alarm the valve of the evaporators are forced closed	0	---	0: NO 1: YES
D - Condensers					
Dab02	Setpoint limits Minimum	Condenser setpoint lower limit	0	---	
	Maximum	Condenser setpoint upper limit	0	---	
Dab03	Setpoint	Condenser setpoint	0	---	
Dab05	Cut-Off enable	Enable fan cut-off	0	---	0: NO 1: YES
	Cut-Off request	Cut-off value	0	%	
	Setpoint	Setpoint cut-off	0	---	
	Diff.	Differential cut-off	0	---	
	Hysteresis	Hysteresis cut-off	0	---	
Dab06	Pressure regulation Reg.type	Proportional regulation type	0	---	0: PROPORT. 1: PROP.+INT. 2: PID
	Integral time	Integral time for proportional regulation	300	s	
Dab07	Pressure regulation Differential	Differential for proportional regulation	4	---	
Dad01	Enable condenser setpoint compensation	Enable condenser setpoint compensation	0	---	0: NO 1: YES
Dad02	Winter offset	Offset applied for the Winter period	0	---	
	Closing offset	Offset applied for closing period	0	---	
Dad05	Enable floating condensing setpoint	Enable floating condensing setpoint	0	---	0: NO 1: YES
Dad06	Float.condens. setpoint Offset for external temperature	Floating condensing setpoint variation for external temperature	0	---	
Dad07	Change set by digital input	Enable setpoint compensation by digital input	0	---	0: NO 1: YES
Dae01	Condenser pressure high alarm	Condenser high pressure alarm threshold	0	---	0: ABSOLUTE 1: RELATIVE
	Alarm delay	Condenser high pressure alarm delay	0	---	
Dae02	Threshold	Condenser high pressure alarm threshold	0	---	
	Alarm diff.	Condenser high pressure alarm differential	0	---	
Dae03	Condenser pressure low alarm	Condenser low pressure alarm threshold	0	---	0: ABSOLUTE 1: RELATIVE
	Alarm delay	Condenser low pressure alarm delay	0	s	
Dae04	Alarm diff.	Condenser low pressure alarm differential	0	---	
	Threshold	Condenser low pressure alarm threshold	0	---	
Dae05	Common fan overload	Enable common fan overload	0	---	0: NO 1: YES
	Delay	Common fan alarm delay	0	s	
	Reset	Common fan alarm reset type	0	---	0: MANUAL 1: AUTOMATIC
Daf01	Number of present fans	Number of fans	0	---	max 2
Daf02	Fan 1	Enable fan 1	0	---	0: DIS 1: EN
	Fan 2	Enable fan 2	0	---	0: DIS 1: EN
Daf04	Refrigerant type	Type of refrigerant	0	---	2: R404A 4: R410A
Dag01	Modulate speed device	Modulating condenser device type	0	---	0: NONE 1: 0-10V INVERTER EC FANS 2: PHASE CUT CONTROL
Dag02	Modulate device config Min out value	Minimum voltage for fan modulating device configuration	0	---	
	Max out value	Maximum voltage for fan modulating device configuration	0	---	
	Min. power refer.	Minimum capacity of fan modulating device	0	%	
	Max. power refer.	Maximum capacity of fan modulating device	0	%	
Dag03	Modulate device config Rising time	Time to pass from minimum to maximum capacity for fan modulating device	0	s	
	Falling time	Time to pass from maximum to minimum capacity for fan modulating device	0	s	
	Num. control. fans	Number of fans under inverter	1	---	
Dag04	Split condenser	Enable split condenser	0	---	0: DIS 1: EN
	External temp.	Split condenser controlled by external temperature	0	---	0: NO 1: YES
Dag15	Request in case of regulat.probes fault	Value of fan forcing in case of regulation probe error	0	%	
E - Evaporator					
Eab01	N. of evaporators	Number of evaporators	0	---	
	Evap 1	Evaporator 1 cooling capacity	4000	W	
	Evap 2	Evaporator 2 cooling capacity	4000	W	
	Evap 3	Evaporator 3 cooling capacity	4000	W	
	Evap 4	Evaporator 4 cooling capacity	4000	W	
	Evap 5	Evaporator 5 cooling capacity	4000	W	
Eab02	Device number	Number of the device	1	---	from 1 to 5
	Bus address	Serial address of the evaporator	0	---	from 11 to 15
	Enable device	Enable of the device	0	---	0: NO 1: YES
	Description	Description of the evaporators	0	---	
Eab03	On/Off device	Device ON/OFF	0	---	0: ON 1: OFF

Eab04	Real time clock	Real time clock synchronization	0	---	0: sinc with MPX 1: sinc with CDU
...Eab16	…				
Eac01	St -Reg. setp.	Regulation setpoint	---	---	
	rd -Diff. setp.	Setpoint differential	4	---	
	PLt	Smooth Lines - Off set to stop control below set point	4	°C/°F	
	PHs	Smooth Lines - Maximum superheat off set	9	K	
Eac02	P3 -SH setpoint	Superheat set point	10	K	
	P4 -SH Gain	Proportional gain	8	K	
	P5 -SH Integral	Integration time	400	s	
	P6 -SH Derivat.	Derivative time	0	s	
	P7 -LSH Thresh.	LowSH: low superheat threshold	3	K	
Eac03	Smooth lines	Enable Smooth Lines function	1	---	0: DISABLE 1: ENABLE
	PSP	Smooth Lines proportional band	3	K	
	PSI	Smooth Lines integral time	360	s	
	PSD	Smooth Lines derivative time	0	s	
Eac04	Evaporat. power	Cooling capacity of the evaporator	4000	W	
	Initial valve position at startup	Initial valve position when control starts	30	%	
	time after defr.	Initial valve position maintenance time after defrost	0	s	
...Eac20	…				
F - Other functions					
Faaa54	Common oil level Solenoid valve	Digital output position for solenoid valve for oil injection	0	---	0: -- 1: 01 ... 12: 12
	Logic	Logic of solenoid valve for oil injection	0	---	0: NO 1: NC
Faaa55	Oil max level (Red)	Digital input position for oil max level from oil separator	ID09	---	0: -- 1: ID01 ... 10: ID10
Faaa56	Oil min level (Yellow)	Digital input position for oil min level from oil separator	ID08	---	0: -- 1: ID01 ... 10: ID10
Faab15	Oil injection mode	Option to inject the oil from the oil separator to the suction line	2	---	0: NONE 1: SOLENOID 2: EEV LEVEL MNG 3: EEV COMP SPEED
	Oil recovery mode: Speed boost	Enable of oil speed boost function	1	---	0: NO 1: YES
	Evap. washing	Enable of oil recovery washing function	0	---	0: NO 1: YES
Faab18	Valve max opening	Maximum opening of EEV valve for oil injection	75	%	
	Valve min opening	Minimum opening of EEV valve for oil injection	1	%	
Faab19	Solenoid oil injection Time ON	Time on of solenoid valve for oil injection	60	s	
	Solenoid oil injection Time OFF	Time off of solenoid valve for oil injection	600	s	
Faab20	EEV oil injection: Emergency HL	Delay before to start to force opened EEV oil injection valve	5	min	
	EEV oil injection: Emergency LL	Delay before to start to force closed EEV oil injection valve	5	min	
	EEV oil injection: Alarm HL Delay	Delay before to switch off the BLDC compressor	60	min	
	EEV oil injection: Alarm LL Delay	Delay before to switch off the BLDC compressor	120	min	
Faab21	EEV oil injection: Enable manual mng	Enable manual management of EEV oil injection valve	0	---	0: NO 1: YES
	EEV oil injection: Valve	% opening with manual management of EEV oil injection valve	0	%	
Faab23	Speed boost recovery Speed Thr.	Critical low speed threshold for oil return	35	rps	
	Speed boost recovery Thr. diff	Differential of the critical low speed threshold	5	rps	
	Speed boost recovery Speed force	Speed to recovery the oil from the circuit to the compressor	50	rps	
	Speed boost recovery Act. Delay	Evaluation time at critical low speed before to force the compressor speed to the higher value	15	min	
	Speed boost recovery Force time	Duration of speed boost action	3	min	
Faab24	Evap. washing recovery mode	Oil recovery washing mode	0	---	0: ONE CABINET EACH TIME
	Evap. washing recovery Time ON	Washing duration	3	min	
	Evap. washing recovery Time OFF	Time off between two washing on the same evaporator	480	min	
	Evap. washing recovery Fixing time function	Fixing time at the end of each washing	60	s	
Faab25	EEV oil injection EEV fixed opening with backup comp. on	% opening of EEV oil injection valve with backup compressor active	50	%	
Fbaa01	Defrost 4 way valve	Digital output position of 4 ways valve to reverse the cycle	0	---	0: -- 1: 01 ... 12: 12
	Defrost 4 way valve logic	Logic of 4 ways valve to reverse the cycle	0	---	0: NO 1: NC
	Defrost mode	Defrost mode selection	0	---	0: MPX-air static 1: CDU-sat. temp. 2: MPX-air heaters
Fbab02	Defrost by CDU Setpoint	Setpoint for defrost increasing suction pressure	-0.5	°C	
	Defrost by CDU Active Ton	Maximum defrost duration	30	min	
	Defrost by CDU Not Active Toff	Time between two defrost	4	h	
	Cabinet Superheat setp 1) SH set	Superheat setpoint during defrost	18	K	
	Cabinet Superheat setp 2) SH set	Superheat setpoint during defrost	18	K	
	Cabinet Superheat setp 3) SH set	Superheat setpoint during defrost	18	K	
	Cabinet Superheat setp 4) SH set	Superheat setpoint during defrost	18	K	
	Cabinet Superheat setp 5) SH set	Superheat setpoint during defrost	18	K	
Fbab03	Defrost by 4 Way valve Run defrost every	Time between two defrost	4	h	
	Defrost by 4 Way valve Min speed to reverse cycle changeover	Minimum speed to reduce the cycle	10	rps	
Fbab05	Defrost by 4 Way valve Max delta press. for cycle changeover	Maximum deltaP to reverse the cycle	2	bar	
	Defrost by 4 Way valve Max time to wait for delta pressure	Maximum time to wait the deltaP to reverse the cycle	120	s	
Fbab06	4 way valve mng. Delay before ON	4 way valve mng. Delay before ON	0	s	
	4 way valve mng. Delay after ON	4 way valve mng. Delay after ON	0	s	
	4 way valve mng. Delay before OFF	4 way valve mng. Delay before OFF	0	s	
	4 way valve mng. Delay after OFF	4 way valve mng. Delay after OFF	0	s	
Fbab07	Out of envelope alarm delay during defrost	Out of envelope alarm delay during defrost	300	s	
Fbab08	Enable compressor stop before reverse cycle for defrost: - in entering	Enable compressor stop before reverse cycle for defrost: - in entering	0	---	0: NO 1: YES
	- in exiting	Enable compressor stop before reverse cycle for defrost: - in exiting	0	---	0: NO 1: YES
Fbab10	Maximum duration defrost	Maximum duration defrost	5	min	
	Temp. stop thr.	Temperature threshold to stop a defrost	8	°C	
	Delay between two defrost	Minimum time between two defrost	10	min	
Fbab11	Bypass low pressure during defrost	Bypass low pressure during defrost	0	---	0: NO 1: YES
	High pressure control in defrost	High pressure control in defrost	0	---	0: NO 1: YES
Fbab13	Manual defrost start	Start a defrost manually	0		0: NO 1: YES
	Manual defrost stop	Stop a defrost manually	0		0: NO 1: YES
Fbab14	Defrost by 4 Way valve Disch. press. control Setpoint	Discharge pressure control setpoint during reverse cycle defrost	5	barg/ psig	
	Defrost by 4 Way valve Band	Defrost by 4 Way valve Proportional Band	1	barg/ psig	
	Defrost by 4 Way valve Integral time	Defrost by 4 Way valve Integral time	30	s	
	Defrost by 4 Way valve Speed-rate	Defrost by 4 Way valve Speed-rate	2	---	
Fdaa01	Comp.1 disch. temp.	Discharge temperature probe position and type	0	---	0: NTC 1: PT1000 2: 0-1V 3: 0-10V 4: 4-20mA 5: ---- 6: 0-5V 7: HTNTC
	Comp.1 disch. temp. Upper value	Discharge temperature probe upper value	0	°C	
	Comp.1 disch. temp. Lower value	Discharge temperature probe lower value	0	°C	
	Comp.1 disch.temp. Calibration	Discharge temperature probe calibration	0	---	
Fdaa11	Pressure Vapour Injection	Vapour injection pressure probe position	0	---	0: -- 1: B1 ... 12: B12
	Pressure Vapour Injection	Vapour injection pressure probe type	0	---	0: ---- 1: ---- 2: 0-1V 3: 0-10V 4: 4-20mA 5: ---- 6: 0-5V
	Pressure Upper value	Vapour injection pressure probe upper value	34,5	---	
	Pressure Lower value	Vapour injection pressure probe lower value	0	---	
	Pressure Calibration	Vapour injection pressure probe calibration	0	---	
	Power failure valve position	Power failure valve position	0	---	0: -- 1: 01 ... 12: 12
	Power failure valve logic	Power failure valve logic	0	---	0: NO 1: NC
Fdaa12	Temperature Vapour Injection position	Vapour injection temperature probe position	0	---	0: -- 1: B1 ... 12: B12
	Temperature Vapour Injection type	Vapour injection temperature probe type	0	---	0: NTC 1: PT1000 2: 0-1V 3: 0-10V 4: 4-20mA 5: ---- 6: 0-5V 7: HTNTC
	Temperature Calibration	Vapour injection temperature probe calibration	0	---	
Fdab02	injection mode	Liquid injection mode selection	0	---	0: None 1: Solenoid valve 2: EEV expansion valve
Fdab03	Solenoid liquid inj.: Threshold	Threshold for solenoid liquid injection valve activation	0	°C/°F	
	Solenoid liquid inj.: Differential	Differential for solenoid liquid injection valve deactivation	0	°C/°F	
Fdab04	EEV Liq. Injection Minimum temp.	Minimum discharge temperature to start liquid injection with EEV valve	0	°C/°F	
	EEV Liq. Injection EEV percent	EEV minimum % opening for minimum discharge temperature threshold	0	%	
	EEV Liq. Injection Maximum temp.	Maximum discharge temperature for liquid injection with EEV valve	0	°C/°F	
	EEV Liq. Injection EEV percent	EEV maximum % opening for maximum discharge temperature threshold	0	%	
Fdab05	EEV injection: Enable manual mng	Enable manual management of EEV liquid injection valve	0	---	0: NO 1: YES
	EEV injection: Valve	% opening with manual management of EEV liquid injection valve	0	%	
Fdab06	Settings Setpoint SH	SH setpoint with vapour injection for LT application	8	°C/°F	
	Settings LowSH thresh.	Low superheat threshold	3	°C/°F	
	Settings LOP thresh.	LOP threshold	-50	°C/°F	
	Settings MOP thresh.	MOP threshold	50	°C/°F	
Fdab07	PID parameters Prop. gain	Vapour injection EEV valve proportional gain	15	steps	
	Integral time	Vapour injection EEV valve integral time	150	s	
	Derivat. time	Vapour injection EEV valve derivative time	5	s	
Ffa05	Gen.funct. 1 - 2 - 3 - 4 - 5	Enable thermostats generic function	0	---	0: DISABLE 1: ENABLE
Ffa06	Regulation variable	Regulation variable related to the generic function	0	---	
	Mode	Generic function mode	0	---	0: DIRECT 1: REVERSE
Ffa07	Enable	Action enabled with the generic function	0	---	
Ffa08	Setpoint	Setpoint of generic function stage	0	---	
	Differential	Differential of generic function stage	0	---	
Ffa09	High alarm	Enable generic alarm	0	---	0: DISABLE 1: ENABLE
	Delay time	Delay of generic alarm	0	s	
	Alarm type	Alarm type	0	---	0: NORMAL 1: SERIOUS
	Low alarm	Enable generic alarm	0	---	0: DISABLE 1: ENABLE
	Delay time	Delay of generic alarm	0	s	
Ffa09	Alarm type	Alarm type	0	---	0: NORMAL 1: SERIOUS
Ffe05	Gen. A - B - C - D - E measure	Generic probe measure type	0	---	0: °C 1: °F 2: barg 3: psig 4: % 5: -
Ffe06	Generic an. input A	Generic analogue input position	0	---	0: -- 1: B1 ... 12: B12
	Type	Generic analogue input type	0	---	0: NTC 1: ---- 2: 0-1V 3: 0-10V 4: 4-20mA 5: ---- 6: 0-5V 7: HTNTC
	Upper val.	Generic analogue input upper value	0	°C	
	Lower val.	Generic analogue input lower value	0	°C	
Ffe06-28	Calibration	Generic analogue input calibration	0	---	
G - Settings					
Gca01	Address	BMS serial address	1	---	
	Protocol	Serial protocol	2	---	0: -- 2: MODBUS SLAVE 3: pRack MANAGER
	Baudrate	Baudrate	4	---	0: 1200 1: 2400 2: 4800 3: 9600 4: 19200 5: 38400
Gda01	Modbus master settings Baudrate	Modbus master settings Baudrate	4	---	0: 1200 1: 2400 2: 4800 3: 9600 4: 19200
	Stop bit	Stop bit	0	---	0: 1 1: 2
	Parity mode	Parity mode	0	---	0: NONE 1: EVEN 2: ODD
	Timeout	Timeout	300	ms	
H - Safety					
Hca01	Common HP type	High pressure alarm reset	0	---	0: AUTO 1: MAN
	Common HP delay	High pressure alarm delay	0	s	
Hca02	Common LP start delay	Low pressure alarm start delay	0	s	
	Common LP delay	Low pressure alarm delay	0	s	
Hca03	Low pressure Time of semi-automatic alarm evaluation	Evaluation time for low pressure alarm	0	---	
	N. of retries before alarm becomes manual	Number of retrues before low pressure alarm becomes manual	5	---	
Hca05	Leak detector alarm Enable alarm	Leak detector alarm Enable alarm	0	---	0: NO 1: YES
	Switch OFF compr.	Leak detector alarm switches off compressor	0	---	0: NO 1: YES
	Switch ON fans	Leak detector alarm switches on fan	0	---	0: NO 1: YES
	Leak alarm delay	Leak detector alarm delay	0	s	
Hca07	BLDC Compressor Envelope Reset	BLDC Compressor Envelope Reset type	0	---	0: MAN 1: AUTO
	Evaluation time	Evaluation time before alarm becomes manual	60	min	
	N. of retries before alarm becomes manual	N. of retries before alarm becomes manual	5	---	
Hca09	BLDC Compressor Power+ Reset	BLDC Compressor Power+ Reset type	0	---	0: MAN 1: AUTO
	Evaluation time	Evaluation time before alarm becomes manual	60	min	
	N. of retries before alarm becomes manual	N. of retries before alarm becomes manual	5	---	

*** the valve is variable according to the refrigerant type**
****the valve is variable according to the compressor model**

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