Carel address	Modbus Address	Description	Notes	Unit measure	Read - write	Min value	Max Value
DIGITAL VARIABLES (COILS)							
1	2	System On		STATUS	r		
2	3	Compressor 1		STATUS	r		
3	4	Compressor 2		STATUS	r		
4	5	Compressor 3		STATUS	r		
5	6	Compressor 4		STATUS	r		
6	7	Circulating Pump 1		STATUS	r		
7	8	Circulating Pump 2		STATUS	r		
8	9	Circ. 1 Refrigerant shut-off valve		STATUS	r		
9	10	Circ. 2 Refrigerant shut-off valve		STATUS	r		
10	11	Heat recovery Pump	Option	STATUS	r		
11	12	Heat recovery Circuit 1	Option	STATUS	r		
12	13	Heat recovery Circuit 2	Option	STATUS	r		
13	14	Antifreeze heaters	Option	STATUS	r		
14	15	Circuit 1 Defrost	Heat pump	STATUS	r		
15	16	Circuit 2 Defrost	Heat pump	STATUS	r		
16	17	Low power consumption mode	Option	STATUS	r		
17	18	Winter mode	Heat pump	STATUS	r		
18	19	Free-cooling valve	Freecooling+Option	STATUS	r		
19	20	Free-cooling pump	Freecooling	STATUS	r		
20	21	Reserved		---	r		
21	22	Ucap working	Option	STATUS	r		
22	23	Inverter pump reduced speed					
31	32	Loss of water flow prealarm (Autom.Reset)		AL	r		
32	33	Loss of water flow alarm		AL	r		
33	34	Low Pressure 1 PreAlarm (Autom.Reset)		AL	r		
34	35	Low Pressure 2 PreAlarm (Autom.Reset)		AL	r		
35	36	Low Pressure 1 Alarm		AL	r		
36	37	Low Pressure 2 Alarm		AL	r		
37	38	High Pressure 1 Alarm		AL	r		
38	39	High Pressure 2 Alarm		AL	r		
39	40	Compressor 1 Overload Prealarm (Autom.Reset)		AL	r		
40	41	Compressor 2 Overload Prealarm (Autom.Reset)		AL	r		
41	42	Compressor 3 Overload Prealarm (Autom.Reset)		AL	r		
42	43	Compressor 4 Overload Prealarm (Autom.Reset)		AL	r		
43	44	Compressor 1 Overload Alarm		AL	r		
44	45	Compressor 2 Overload Alarm		AL	r		
45	46	Compressor 3 Overload Alarm		AL	r		
46	47	Compressor 4 Overload Alarm		AL	r		
47	48	Circulating Pump 1 Overload Alarm		AL	r		
48	49	Circulating Pump 2 Overload Alarm		AL	r		
49	50	Free-cooling Pump Overload Alarm		AL	r		
50	51	Antifreeze 1 Prealarm (Automatic Reset)		AL	r		
51	52	Antifreeze 2 Prealarm (Automatic Reset)		AL	r		
52	53	Antifreeze 1 Alarm		AL	r		
53	54	Antifreeze 2 Alarm		AL	r		
54	55	Fase sequence alarm (Automatic Reset)		AL	r		
55	56	Fase sequence alarm		AL	r		
56	57	Fans thermal Prealarm (Automatic Reset)		AL	r		
57	58	Fans thermal alarm		AL	r		
58	59	Net frequency error		AL	r		
59	60	Water inlet High Temperature Alarm		AL	r		
60	61	Water inlet Low Temperature Alarm		AL	r		
61	62	Water Inlet Temp. Sensor Failure/Disconnected		AL	r		
62	63	Water Outlet Temp. Sensor Failure/Disconnected		AL	r		
63	64	Water Tank Temp. Sensor Failure/Disconnected		AL	r		
64	65	Outdoor air Temp. Sensor Failure/Disconnected		AL	r		
65	66	Condensing 1 Press. Sensor Failure/Disconnected		AL	r		
66	67	Condensing 2 Press. Sensor Failure/Disconnected		AL	r		
67	68	Evaporating 1 Press. Sensor Failure/Disconnected		AL	r		
68	69	Evaporating 2 Press. Sensor Failure/Disconnected		AL	r		
69	70	Water Inlet Press. Sensor Failure/Disconnected		AL	r		
70	71	Water Outlet Press. Sensor Failure/Disconnected		AL	r		
71	72	EXV 1 Temp. Sensor Failure/Disconnected		AL	r		
72	73	EXV 2 Temp. Sensor Failure/Disconnected		AL	r		
73	74	EXV 1 Press. Sensor Failure/Disconnected		AL	r		
74	75	EXV 2 Press. Sensor Failure/Disconnected		AL	r		
75	76	Heat recovery Water Input Temp. Sensor Failure/Disconnected		AL	r		
76	77	Heat recovery Water Output Temp. Sensor Failure/Disconnected		AL	r		
77	78	Water Tank Temp. Sensor Failure/Disconnected		AL	r		
78	79	Additional Temp. Sensor Failure/Disconnected		AL	r		
79	80	Reserved		---	r		
80	81	pCOe (address 3) expansion board offline		AL	r		
81	82	Compressor 1: hour counter threshold Alarm		AL	r		
82	83	Compressor 2: hour counter threshold Alarm		AL	r		
83	84	Compressor 3: hour counter threshold Alarm		AL	r		
84	85	Compressor 4: hour counter threshold Alarm		AL	r		
85	86	Circulating Pump 1: hour counter threshold Alarm		AL	r		
86	87	Circulating Pump 2: hour counter threshold Alarm		AL	r		
87	88	Free-Cooling Pump: hour counter threshold Alarm		AL	r		
88	89	Wrong password Alarm		AL	r		

89	90	Main Board EEPROM failure		AL	r		
90	91	Interrupted LAN Alarm		AL	r		
91	92	Heat recovery 1 limit PreAlarm (Autom.Reset)		AL	r		
92	93	Heat recovery 2 limit PreAlarm (Autom.Reset)		AL	r		
93	94	Heat recovery 1 limit Alarm		AL	r		
94	95	Heat recovery 2 limit Alarm		AL	r		
95	96	Expansion valve 1 alarm		AL	r		
96	97	Expansion valve 2 alarm		AL	r		
97	98	Expansion valve 1 Low Superheat		AL	r		
98	99	Expansion valve 2 Low Superheat		AL	r		
99	100	Expansion valve 1 LOP protection alarm		AL	r		
100	101	Expansion valve 2 LOP protection alarm		AL	r		
101	102	Expansion valve 1 MOP protection alarm		AL	r		
102	103	Expansion valve 2 MOP protection alarm		AL	r		
103	104	Expansion valve 1 motor alarm		AL	r		
104	105	Expansion valve 2 motor alarm		AL	r		
105	106	Expansion valve 1 driver EEPROM failure		AL	r		
106	107	Expansion valve 2 driver EEPROM failure		AL	r		
107	108	Expansion valve 1 driver offline		AL	r		
108	109	Expansion valve 2 driver offline		AL	r		
109	110	Reserved		---	r		
110	111	Reserved		---	r		
111	112	Expansion valve driver firmware failure		AL	r		
112	113	Freecooling motorized valve blocked		AL	r		
113	114	Water High Pressure Alarm		AL	r		
114	115	Water Low Pressure Alarm		AL	r		
115	116	Inverter pump driver offline		AL	r		
116	117	Inverter pump driver alarm not serius		---	r		
117	118	Inverter pump driver alarm serius		AL	r		
118	119	Powersupply failure		AL	r		
119	120	OMI Offline		AL	r		
120	121	Heat recovery Loss of water flow alarm		AL	r		
121	122	Energy meter offline		AL	r		
122	123	Motorized switch offline		AL	r		
123	124	Electric Heaters Fuse Fault		AL	r		
124	125	Too many exchanges of power supply line		AL	r		
125	126	BMS Writing errore (value out of range)		AL	r		
126	127	BMS Writing cycles Exceeded		AL	r		
127	128	Gas Leakage Detection		AL	r		
128	129	Gas Leakage Detection: hour counter threshold Alarm		AL	r		
129	130	Compressor inverter discharge Temp. Sensor Failure/Disconnected		AL	r		
130	131	Compressor inverter low oil level		AL	r		
131	132	Compressor inverter trip alarm		AL	r		
132	133	Compressor inverter no trip alarm		AL	r		
133	134	EVD Driver Error trasmission parameters		AL	r		
134	135	Water circuit 2 Outlet Temp. Sensor Failure/Disconnected (ERA bicircuit)		AL	r		
135	136	pCOe (address 4) expansion board offline		AL	r		
136	137	Compressor inverter hi discharge temperature		AL	r		
137	138	Compressor inverter operative limits		STATUS	r		
147	148	General Alarm State		STATUS	r		
148	149	Alarm Rotation		STATUS	r		
149	150	Type A Alarm		STATUS	r		
150	151	Type B Alarm		STATUS	r		
151	152	Condensing coil 1 Refrigerant shut-off valve		STATUS	r		
152	153	Condensing coil 2 Refrigerant shut-off valve		STATUS	r		
153	154	Reserved (SPW read/write)		STATUS	r		
199	200	Reserved OMI watchdog		---	R/W		
201	202	Summer/Winter mode remote control	Heat pump	STATUS	R/W		
202	203	Unit Remote Switch-On/Off Control		STATUS	R/W		
203	204	Buzzer and Alarm Remote Reset Control		STATUS	R/W		
204	205	Reserved		---			
205	206	Low power consumption enable	Option	STATUS	R/W		
206	207	Pump 1-2 Switch-over remote control		STATUS	R/W		
207	208	Set Back Mode (Sleep Mode)		STATUS	R/W		
ANALOG VARIABLES (HOLDING or INPUT REGISTERS) (all values x 10)							
1	2	Water Outlet Temperature		°C	r		
2	3	Water Outlet Temp. used b ator		°C	r		
3	4	Water Inlet Temperature		°C	r		
4	5	Water Tank Temperature		°C	r		
5	6	Outdoor Air Temperature		°C	r		
6	7	Circuit 1 Condensing Temperature		°C	r		
7	8	Circuit 2 Condensing Temperature		°C	r		
8	9	Circuit 1 Evaporating Temperature		°C	r		
9	10	Circuit 2 Evaporating Temperature		°C	r		
10	11	Circuit 1 Condensing Pressure		Bar	r		
11	12	Circuit 2 Condensing Pressure		Bar	r		
12	13	Circuit 1 Evaporating Pressure		Bar	r		
13	14	Circuit 2 Evaporating Pressure		Bar	r		
14	15	Fan Speed Modul.Ramp (0-100,0%)		%	r		
15	16	Delivery Water Temp. Actual Set Point		°C	r		
16	17	Delivery Water Temp. Max. Hysteresi		°C	r		
17	18	Offset supervisor		°C	R/W	0,1	

18	19	Delivery Water Temp. Summer STD Set Point		°C	R/W	6.0 (2)	13.0 (2)
19	20	Delivery Water Temp. Summer OPT Set Point		°C	R/W	6.0 (2)	13.0 (2)
20	21	Del.Water T. Summer SetBack mode SetP.		°C	R/W	6.0 (2)	13.0 (2)
21	22	Delivery Water Temp. Winter Set Point	Heat pump	°C	R/W	28,0	53,0
22	23	Del.Water T. Winter SetBack mode SetP	Heat pump	°C	R/W	28,0	53,0
23	24	CW inlet High Temp.Summer Alarm Threshold		°C	R/W	-15,0	25,0
24	25	CW inlet Low Temp.Summer Alarm Threshold		°C	R/W	-15,0	25,0
25	26	CW inlet High Temp. Alarm Winter Threshold		°C	R/W	30,0	58,0
26	27	CW inlet Low Temp. Alarm Winter Threshold		°C	R/W	20,0	50,0
27	28	Summer T.ext Compens.: P1 T.ext SetP.		°C	R/W	-10,0	45,0
28	29	Summer T.ext Compens.: P2 T.wout SetP.		°C	R/W	6.0 (2)	13.0 (2)
29	30	Summer T.ext Compens.: P2 T.ext SetP.		°C	R/W	-10,0	45,0
30	31	Winter T.ext Compens.: P1 T.ext SetP.	Heat pump	°C	R/W	-10,0	15,0
31	32	Winter T.ext Compens.: P2 T.wout SetP.	Heat pump	°C	R/W	28,0	53,0
32	33	Winter T.ext Compens.: P2 T.ext SetP.	Heat pump	°C	R/W	-10,0	15,0
33	34	Free-Cooling Activation Set Point	Freecooling	°C	R/W	3,0	9,9
34	35	Circuit 1 superheating		°C	r		
35	36	Circuit 2 superheating		°C	r		
36	37	Delivery Water Temp. Winter OPT Set Point	Heat pump	°C	R/W	28,0	53,0
37	38	Summer/Winter Autom.Switch On Winter	Heat pump	°C	R/W	-15,0	18,0
38	39	Summer/Winter Autom.Switch On Summer	Heat pump	°C	R/W	8,0	18,0
39	40	Circuit 1 liquid refrigerant temperature	Optional	°C	r		
40	41	Circuit 2 liquid refrigerant temperature	Optional	°C	r		
41	42	Circuit 1 subcooling	Optional	°C	r		
42	43	Circuit 2 subcooling	Optional	°C	r		
43	44	Expansion valve 1 position percentage		%	r		
44	45	Expansion valve 2 position percentage		%	r		
45	46	Circuit 1 superheating setpoint		°C	r		
46	47	Circuit 2 superheating setpoint		°C	r		
47	48	Heat recovery water inlet temperature	Optional	°C	r		
48	49	Heat recovery water outlet temperature	Optional	°C	r		
49	50	Regulation Ramp		%	r		
50	51	Inverter Pump speed max	Optional	%	R/W	0,0	100,0
51	52	Inverter Pump speed min	Optional	%	R/W	0,0	100,0
61	62	Water Circuit 1 Outlet Temperature	ERA bicircuit	°C	r		
62	63	Water Circuit 2 Outlet Temperature	ERA bicircuit	°C	r		
63	64	Compressor 1 discharge temperature	ISA	°C	r		
64	65	Compressor 1 Frequency	ISA	Hz	r		
65	66	Compressor 1 Required	ISA	%	r		
66	67						
67	68						
68	69	Reserved (FC Regramp)	Freecooling	%	r		
69	70	Reserved (SetP_regcond)	Reserved	---	r		
70	71	Reserved (kp_regcond)	Reserved	---	r		

Notes:

(2) SetPoin t that can be changed via user display

INTEGER VARIABLES (HOLDING or INPUT REGISTERS)							
1	5003	Compressor 1 hour counter		h	r		
2	5004	Compressor 2 hour counter		h	r		
3	5005	Compressor 3 hour counter		h	r		
4	5006	Compressor 4 hour counter		h	r		
5	5007	Circulating Pump 1 hour counter		h	r		
6	5008	Circulating Pump 2 hour counter		h	r		
7	5009	Free-cooling Pump hour counter		h	r		
8	5010	Compressor 1 Starting counter		h	r		
9	5011	Compressor 1 Starting counter x10.000		$nx10^4$	r		
10	5012	Compressor 2 Starting counter		n	r		
11	5013	Compressor 2 Starting counter x10.000		$nx10^4$	r		
12	5014	Compressor 3 Starting counter		n	r		
13	5015	Compressor 3 Starting counter x10.000		$nx10^4$	r		
14	5016	Compressor 4 Starting counter		n	r		
15	5017	Compressor 4 Starting counter x10.000		$nx10^4$	r		
16	5018	Circuit 1 Defrost counter		n	r		
17	5019	Circuit 1 Defrost counter x10.000		$nx10^4$	r		
18	5020	Circuit 2 Defrost counter		n	r		
19	5021	Circuit 2 Defrost counter x10.000		$nx10^4$	r		
20	5022	Both Circuit Defrost counter		n	r		
21	5023	Both Circuit Defrost counter x10.000		$nx10^4$	r		
22	5024	Non Performing Defrost counter		n	r		
23	5025	Non Performing Defrost counter x10.000		$nx10^4$	r		
24	5026	Unit Type		n	r		
25	5027	Circulating Pump Config. (0,1 or 2 Pumps)		n	r		
26	5028	Total of units connected in LAN		n	r		
27	5029	Comp.1 Status (0=Wait to start, 1=Off, 2=On, 3=Pump.Down, 4=alarm, 5=Manual)		n	r		
28	5030	Comp.2 Status		n	r		
29	5031	Comp.3 Status		n	r		
30	5032	Comp.4 Status		n	r		
31	5033	Pump 1 Status		n	r		
32	5034	Pump 2 Status		n	r		
33	5035	FC Pump Status	Freecooling	n	r		
34	5036	Actual set Point mode (0=std,1= T.ext Compens., 2=OPT SetP., 3=Setback SetP., 4=Remote Offset		n	r		
35	5037	Reserved		n	r		

36	5038	Reserved		n	r		
37	5039	Last Defrost Lenght	Heat pump	n	r		
38	5040	Restart Delay		s	R/W	0	300
39	5041	Regulation Start Transitory		s	R/W	15	99
40	5042	Low Pressure Delay		s	R/W	0	300
41	5043	Water High/Low Temp. Alarm Delay		min	R/W	0	99
42	5044	Not used					
43	5045	Stand-by Unit Switch-over time		h	R/W	0	999
44	5046	Run-Stand-by pump switch-over time		H	R/W	1	99
45	5047	Setback Mode Cyclical start		Min	R/W	15	99
46	5048	Compr.1 working hours threshold		h *100	R/W	0	320
47	5049	Compr.2 working hours threshold		h *100	R/W	0	320
48	5050	Compr.3 working hours threshold		h *100	R/W	0	320
49	5051	Compr.4 working hours threshold		h *100	R/W	0	320
50	5052	Pump 1 working hours threshold		h *100	R/W	0	320
51	5053	Pump 2 working hours threshold		h *100	R/W	0	320
52	5054	FC Pump working hours threshold		h *100	R/W	0	320
53	5055	Reserved			r		
54	5056	Reserved			r		
55	5057	Expansion valve 1 position steps		steps			
56	5058	Expansion valve 2 position steps		steps			
57	5059	Water pressure: max. pressure recorded	optional	kPa	r		
58	5060	Not used					
59	5061	Current hour					
60	5062	current minute					
61	5063	current day					
62	5064	current month					
63	5065	current year					
64	5066	Unit series					
65	5067	Unit type					
66	5068	Unit model					
67	5069	Gas type					
68	5070	Reserved					
69	5071	Reserved					
70	5072	Unit serial number Part 3					
71	5073	Unit serial number Part 4					
72	5074	Unit serial number Part 5					
73	5075	Not used					
74	5076	Not used					
75	5077	Software versione					
76	5078	Software date					
77	5079	Summer/Winter Autom.Switch Delay on Winter	Heat pump	s	R/W	1	300
78	5080	Summer/Winter Autom.Switch Delay on Summer	Heat pump	s	R/W	1	300
79	5081	Inverter Pump Total head setpoint	optional	kPa	R/W	5	350
80	5082	Reserved (Special parameter BMS ports)			R/W		
81	5083	Reserved (PMS1)	optional	---	r		
82	5084	Reserved (digital compressed 1)			r		
83	5085	Reserved (ti_regcond_calc)			r		
84	5086	Reserved (td_regcond_calc)			r		
85	5087	Total head pressure	Inverter pump	kPa	r		
86	5088	Water input pressure	Inverter pump	kPa	r		
87	5089	Water output pressure	Inverter pump	kPa	r		
88	5090	Unit serial number Part 1			r		
89	5091	Unit serial number Part 2			r		
90	5092	Unit serial number Part 3			r		
100	5102	Reserved (serial password)			R/W		
101	5103	Reserved (ID serial password)			r		
123	5125	Reserved (OMI unit connected)			r		
125	5127	Reserved (OMI pCO_Type)			r		
126	5128	Reserved (OMI BMS_EXTENSION)			r		
127	5129	Reserved (OMI offset)			R/W		