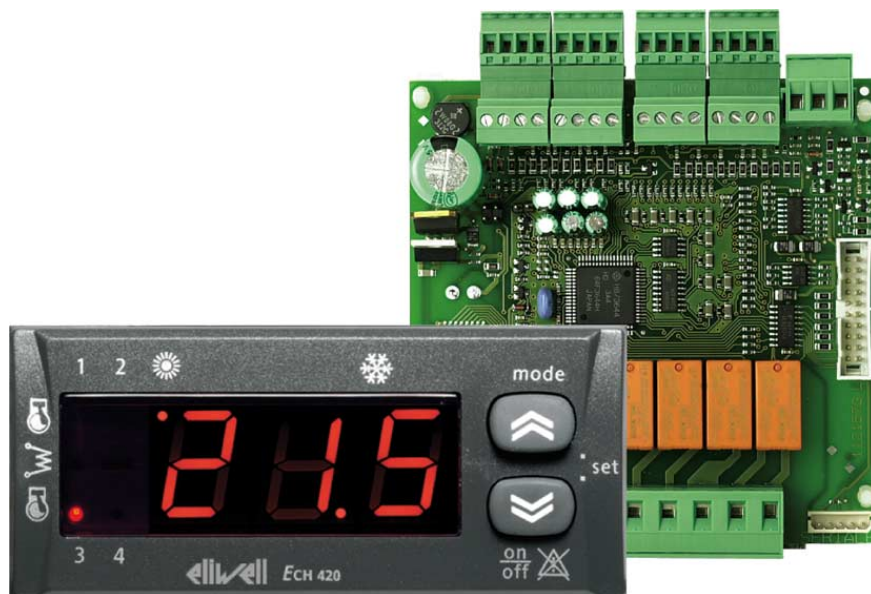


ECH400F Modbus

- Serial Communication Protocol - Four Steps Chiller Heat Pump Controller with Water Free Cooling Function



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1 FUNZIONI E RISORSE MODBUS

Modbus is a client/server communication protocol between devices connected on a *network*. Modbus instruments communicate using a master/slave technique in which only one device (master) can send messages. The other devices on the *network* (slave) respond by returning the data requested by the master or performing the action indicated in the message sent. A slave is a device connected to the *network* that processes information and sends the results to the master using the Modbus protocol. The master can send messages to individual slaves, or send messages to the whole *network* (broadcast), whereas the slave instruments respond to the messages only individually and to the master device. The Modbus standard used by Eliwell provides for the use of RTU coding for data transmission.

1.1 Data format (RTU)

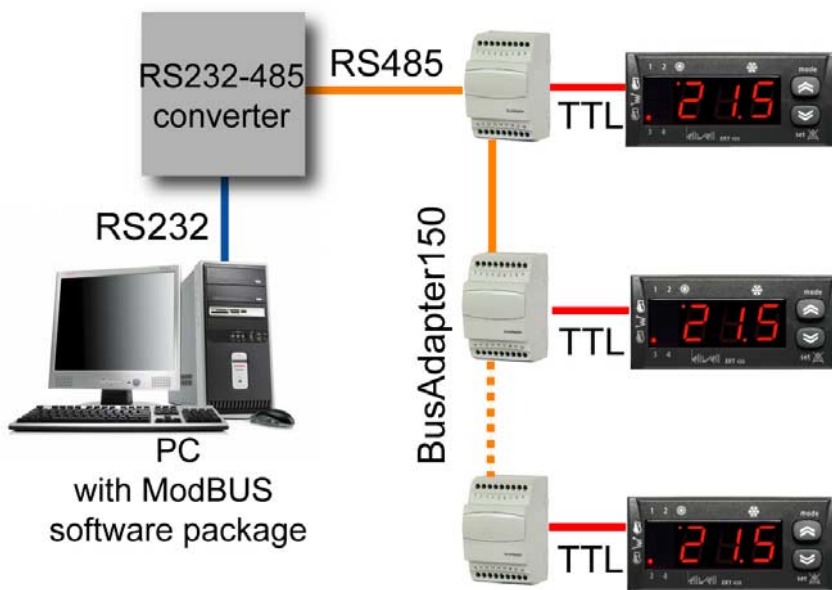
The coding model used defines the structure of messages transmitted on the *network* and the way in which this information is decoded. The type of coding is normally selected according to specific parameters (baud rate, parity, etc.), also, certain devices only support certain coding models, however it must be the same for all the instruments connected to a Modbus *network*.

The protocol uses the binary RTU method with the byte made up as follows:
8 bits for data, even parity bit (not configurable), 1 stop bit.

NOTE: the transmission speed must be set to 9600 baud.
Setting the parameters allows the *instrument* to be fully configurable
They can be modified by means of:
instrument keyboard
copy Card
sending the data using the ModBus protocol, directly to an individual instrument, or by broadcast, using *address* 0 (broadcast)

1.2 Network

ModBus to multiple device connection diagram



PC / Interface connection	RS232 cable
Device / Bus Adapter connection	5-way TTL connector cable (30cm) (other sizes/lengths available)
Bus Adapter	BA150
Bus Adapter / Interface connection	RS485 cable screened and twisted (e.g. Belden cable model 8762)

1.3 Modbus functions available and data areas

See [Parameters table](#) and [Client table](#)

Product identification

The product in question can be univocally recognised by means of the hexadecimal Family/Release version values. Regarding the product ECH 400:

Fam/Ver: "502B" formed of Family Code 50Hex = 80 and version 2BHex= 43



IMPORTANT! The reading of 2 registers (WORD) must be requested to obtain 1 in response. If reading of only one register is requested a reading of the highest byte will be obtained.



IMPORTANT! To write values to WORD it is necessary to send a write request with 2 registers, and a dimension 2 response will be obtained.

1.4 Address configuration

The [address](#) of a device inside a ModBus message is made up of one byte and is formed of the family code and the instrument code, made up of parameters H65 and H66 respectively.

The [address](#) (Device [Address](#)) is thus formed of two nibbles:

H66: low nibble

H65: high nibble

To calculate the [address](#) starting from parameters H65 and H66;

$$\text{address} = \text{H65} \times 16 + \text{H66}$$

For example: [address](#) (HEX) 16 (H44=01; H45=00)

INSTRUMENT CONFIGURATION PARAMETERS			
Par.	Description	Range	Value
H65	Family serial address	0...14	0
H66	Device serial address	0...14	1
H48	Communication protocol configuration Note: If H48 is changed the controller must be turned off and then on again after they are changed to operate correctly	1=Modbus 0=Televis	1

[Address](#) 0 is used for broadcast messages, which are recognised by all slaves. Slaves do not respond to a broadcast type request.

1.5 Address tables

1.5.1 Description of parameters

The [address tables](#) contain the information required to read, write and decode each individual resource accessible in the instrument.

There are two tables:

- the [parameters table](#) contains all the device configuration parameters stored in the instrument's non-volatile memory.
- the [client table](#) includes all the I/O and alarm status resources available in the instrument's volatile memory.

Description of columns:

INDEX For the [parameters table](#) this value represents the order in which the parameter is displayed in the instrument's menu. For the [client table](#) this value is not significant.

FOLDER This indicates the [label](#) of the [folder](#) containing the parameter in question

LABEL This indicates the [label](#) used to display the **parameters** in the instrument's menu.

ADDRESS The whole part represents the [address](#) of the MODBUS register containing the value of the resource to be read or written in the instrument. The value after the point indicates the position of the most significant data bit inside the register; if not indicated it is taken as zero. This information is always provided when the register contains more than one information item, and it is necessary to distinguish which bits actually represent the data (the working size of the data indicated in the column [DATA SIZE](#) is also taken into consideration). Given that the modbus registers have the size of one WORD (16 bit), the [index](#) number after the point can vary from 0 (least significant bit –LSb–) to 15 (most significant bit –MSb–). Examples (in binary form the least significant bit is the first on the right):

ADDRESS	Contents of register	DATA SIZE	Value
-------------------------	----------------------	---------------------------	-------

8806	1350	(0000010101000110)	WORD	1350
8806	1350	(000001010 1000110)	Byte	70
8806,8	1350	(00001010 1000110)	Byte	5
8806,14	1350	(0000010101000110)	1 bit	0
8806,7	1350	(00000 1010 1000110)	4 bit	10

Important: when the register contains more than one data item, during the write operation proceed as follows:
 read current register value
 modify the bits that represent the resource concerned
 write the register

R/W Indicates the option of reading or writing the resource:

R	the resource is read-only
W	the resource is write-only
RW	the resource can be both read and written

DATA SIZE Indicates the size of the data in bits.

WORD	=	16 bits
Byte	=	8 bits
"n" bit	=	0...15 bits based on the value of "n"

CPL When the field indicates "Y", the value read by the register requires conversion, because the value represents a number with a sign. In the other cases the value is always positive or null.

To carry out conversion, proceed as follows:

- if the value in the register is between 0 and 32.767, the result is the value itself (zero and positive values)
- if the value in the register is between 32.768 and 65.535, the result is the value of the register – 65.536 (negative values)

RANGE Describes the interval of values that can be assigned to the parameter. It can be correlated with other parameters in the instrument (indicated with the parameter *label*).

DEFAULT Indicates the factory-set value for the standard model of the instrument.

EXP This is the multiplier *index* to be applied for converting the value read from the register to the values indicated in the *RANGE* and *DEFAULT* column to convert them into the final values according to the measurement unit indicated in the column *M.U.*

The multiplier is calculated with the base 10 exponential function and with the exponent indicated in the *EXP* column. When not indicated the value is 0. The following values are valid:

Value	=	Corresponding multiplier
-2	=	10 ⁻² (0.01)
-1	=	10 ⁻¹ (0.1)
0	=	10 ⁰ (1)
1	=	10 ¹ (10)
2	=	10 ² (100)

M.U. Measurement unit for values converted according to the rules indicated in the *CPL* and *EXP* columns.

1.5.2 Parameters Table

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
Read holding register: function code 3											
Write multiple registers: function code 16											
1	SET	G01	2049	RW	Set point Cooling	WORD	Y	H04 ... H03	120	-1	°C
2	SET	G02	2050	RW	Set point Heating	WORD	Y	H02 ... H01	400	-1	°C
3	CnF	H01	2051	RW	Max set point Heating	WORD	Y	H02 ... 900	600	-1	°C
4	CnF	H02	2052	RW	Min set point Heating	WORD	Y	-400 ... H01	300	-1	°C
5	CnF	H03	2053	RW	Max set point Cooling	WORD	Y	H04 ... 900	300	-1	°C
6	CnF	H04	2054	RW	Min set point Cooling	WORD	Y	-400 ... H03	-22	-1	°C
7	CnF	H05	2055	RW	Number of circuits	WORD		0 ... 2	1		Num
8	CnF	H06	2056	RW	Number of compressors per circuit	WORD		0 ... 4	2		Num
9	CnF	H07	2057	RW	Number of stages per compressor	WORD		0 ... 3	0		Num
10	CnF	H08	2058	RW	Compressor selection rule	WORD		0 ... 1	0		Flag
11	CnF	H09	2059	RW	Circuit selection rule	WORD		0 ... 1	1		Flag
12	CnF	H10	2060	RW	Heat pump presence	WORD		0 ... 1	1		Flag
13	CnF	H11	2061	RW	A11 configuration	WORD		0 ... 4	1		Num
14	CnF	H12	2062	RW	A12 configuration	WORD		0 ... 2	1		Num
15	CnF	H13	2063	RW	A13 configuration	WORD		0 ... 5	2		Num
16	CnF	H14	2064	RW	A14 configuration	WORD		0 ... 3	0		Num
17	CnF	H15	2065	RW	A15 configuration	WORD		0 ... 1	0		Num
18	CnF	H16	2066	RW	A16 configuration	WORD		0 ... 4	0		Num
19	CnF	H17	2067	RW	Pressure end of scale value	WORD		0 ... 350	300		Kpa*10
20	CnF	H18	2068	RW	ID1 ID2 ID3 ID4 polarity	WORD		0 ... 15	15		Num
21	CnF	H19	2069	RW	ID5 ID6 ID7 ID8 polarity	WORD		0 ... 15	15		Num
22	CnF	H20	2070	RW	ID9 ID10 ID11 A14 polarity	WORD		0 ... 15	12		Num
23	CnF	H21	2071	RW	A1 polarity	WORD		0 ... 1	0		Flag
24	CnF	H22	2072	RW	A1 polarity	WORD		0 ... 1	0		Flag
25	CnF	H23	2073	RW	ID1 configuration	WORD		0 ... 22	1		Num
26	CnF	H24	2074	RW	ID2 configuration	WORD		0 ... 22	2		Num
27	CnF	H25	2075	RW	ID3 configuration	WORD		0 ... 22	3		Num
28	CnF	H26	2076	RW	ID4 configuration	WORD		0 ... 22	4		Num
29	CnF	H27	2077	RW	ID5 configuration	WORD		0 ... 22	5		Num
30	CnF	H28	2078	RW	ID6 configuration	WORD		0 ... 22	12		Num
31	CnF	H29	2079	RW	ID7 configuration	WORD		0 ... 22	0		Num

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
32	CnF	H30	2080	RW	ID8 configuration	WORD		0 ... 22	0		Num
33	CnF	H31	2081	RW	ID9 configuration	WORD		0 ... 22	0		Num
34	CnF	H32	2082	RW	ID10 configuration	WORD		0 ... 22	10		Num
35	CnF	H33	2083	RW	ID11 configuration	WORD		0 ... 22	0		Num
36	CnF	H34	2084	RW	AI4 configuration if digital input	WORD		0 ... 22	0		Num
37	CnF	H35	2085	RW	RL output relay configuration	WORD		0 ... 11	9		Num
38	CnF	H36	2086	RW	RL output relay configuration	WORD		0 ... 11	1		Num
39	CnF	H37	2087	RW	RL output relay configuration	WORD		0 ... 11	0		Num
40	CnF	H38	2088	RW	RL output relay configuration	WORD		0 ... 11	5		Num
41	CnF	H39	2089	RW	RL output relay configuration	WORD		0 ... 11	3		Num
42	CnF	H40	2090	RW	RL output relay configuration	WORD		0 ... 11	7		Num
43	CnF	H41	2091	RW	RL2 polarity	WORD		0 ... 1	0		Flag
44	CnF	H42	2092	RW	RL3 polarity	WORD		0 ... 1	1		Flag
45	CnF	H43	2093	RW	RL4 polarity	WORD		0 ... 1	0		Flag
46	CnF	H44	2094	RW	RL5 polarity	WORD		0 ... 1	0		Flag
47	CnF	H45	2095	RW	Alarm relay polarity	WORD		0 ... 1	0		Flag
48	CnF	H46	2096	RW	Fan output 1 configuration	WORD		0 ... 1	0		Flag
49	CnF	H47	2097	RW	Fan output 2 configuration	WORD		0 ... 1	0		Flag
50	CnF	H48	2098	RW	Communication protocol configuration	WORD		0 ... 1	0		Flag
51	CnF	H49	2099	RW	Configuration mode selection	WORD		0 ... 1	0		Flag
52	CnF	H50	2100	RW	Enabled "dynamic set point"	WORD		0 ... 1	0		Flag
53	CnF	H51	2101	RW	Offset "dynamic set point" Cooling	WORD	Y	-500 ... 800	0	-1	°C
54	CnF	H52	2102	RW	Offset "dynamic set point" Heating	WORD	Y	-500 ... 800	0	-1	°C
55	CnF	H53	2103	RW	set point "dynamic set point" Cooling	WORD	Y	-127 ... 127	0		°C
56	CnF	H54	2104	RW	Set point "dynamic Set point" Heating	WORD	Y	-127 ... 127	0		°C
57	CnF	H55	2105	RW	Proportional Band "dynamic set point" Cooling	WORD	Y	-500 ... 800	0	-1	°C
58	CnF	H56	2106	RW	Proportional Band "dynamic set point" Heating	WORD	Y	-500 ... 800	0	-1	°C
59	CnF	H57	2107	RW	AI1 offset	WORD	Y	-127 ... 127	0	-1	°C
60	CnF	H58	2108	RW	AI2 offset	WORD	Y	-127 ... 127	0	-1	°C
61	CnF	H59	2109	RW	AI3 offset	WORD	Y	-127 ... 127	0	-1	°C-Kpa*10
62	CnF	H60	2110	RW	AI4 offset	WORD	Y	-127 ... 127	0	-1	°C
63	CnF	H61	2111	RW	AI5 offset	WORD	Y	-127 ... 127	0	-1	°C
64	CnF	H62	2112	RW	AI6 offset	WORD	Y	-127 ... 127	0	-1	°C-Kpa*10

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
65	CnF	H63	2113	RW	Power supply frequency	WORD		0 ... 1	0		Flag
66	CnF	H64	2114	RW	Temperature unit (C/F)	WORD		0 ... 1	0		Flag
67	CnF	H65	2115	RW	Family serial address	WORD		0 ... 14	0		Num
68	CnF	H66	2116	RW	Device serial address	WORD		0 ... 14	0		Num
69	CnF	H67	2117	RW	User password	WORD		0 ... 255	0		Num
70	CnF	H68	2118	RW	Copy card password	WORD		0 ... 255	1		Num
71	CnF	H69	2119	RW	Keyboard presence	WORD		0 ... 1	0		Flag
72	ALL	A01	2120	RW	Low pressure bypass time	WORD		0 ... 255	120		s
73	ALL	A02	2121	RW	Low pressure alarm events per hour	WORD		0 ... 255	0		Num
74	ALL	A03	2122	RW	Bypass time for flow switch alarm following pump on	WORD		0 ... 255	10		s
75	ALL	A04	2123	RW	Active flow switch input duration	WORD		0 ... 255	15		s
76	ALL	A05	2124	RW	Inactive flow switch input duration	WORD		0 ... 255	15		s
77	ALL	A06	2125	RW	Flow switch events per hour	WORD		0 ... 255	0		Num
78	ALL	A07	2126	RW	Bypass thermal protection compressor alarm	WORD		0 ... 255	5		s
79	ALL	A08	2127	RW	Events per hour for thermal protection comp. alarm	WORD		0 ... 255	0		Num
80	ALL	A09	2128	RW	Events per hour for fan thermal alarm	WORD		0 ... 255	0		Num
81	ALL	A10	2129	RW	Bypass anti-freeze alarm	WORD		0 ... 255	4		Min
82	ALL	A11	2130	RW	Set point anti-freeze alarm	WORD	Y	-127 ... 127	3		°C
83	ALL	A12	2131	RW	Hysterisis anti-freeze alarm	WORD		0 ... 255	20	-1	°C
84	ALL	A13	2132	RW	Anti-freeze alarm events per hour	WORD		0 ... 255	0		Num
85	ALL	A14	2133	RW	Set point T triggering high temperature alarm from analogue input	WORD		0 ... 900	900		°C/10-Kpa*10
86	ALL	A15	2134	RW	Hysterisis of high temperature alarm from analogue input	WORD		0 ... 255	0		°C/10-Kpa*10
87	ALL	A16	2135	RW	Low pressure bypass time	WORD		0 ... 255	255		s
88	ALL	A17	2136	RW	Set point T triggering low temperature alarm from analogue input	WORD	Y	-500 ... 800	-500		°C/10-Kpa*10
89	ALL	A18	2137	RW	Hysterisis of low temperature alarm from analogue input	WORD		0 ... 255	0		°C/10-Kpa*10
90	ALL	A19	2138	RW	Events/hour for low pressure alarm from analogue input	WORD		0 ... 255	255		Num
91	ALL	A20	2139	RW	Machine empty differential	WORD		0 ... 255	0		°C
92	ALL	A21	2140	RW	Machine empty bypass time	WORD		0 ... 255	255		Min
93	ALL	A22	2141	RW	Machine empty duration	WORD		0 ... 255	255		Min
94	ALL	A23	2142	RW	Enabled machine empty	WORD		0 ... 1	0		Flag

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
95	ALL	A24	2143	RW	Enabled low pressure alarm during defrost	WORD		0 ... 1	0		Flag
96	ALL	A25	2144	RW	Set point inlet over temperature alarm	WORD		0 ... 255	100		°C
97	ALL	A26	2145	RW	Inlet Over temperature duration	WORD		0 ... 255	255		s*10
98	CP	C01	2146	RW	ON-OFF compressor delay	WORD		0 ... 255	18		s*10
99	CP	C02	2147	RW	ON-ON compressor delay	WORD		0 ... 255	36		s*10
100	CP	C03	2148	RW	Cooling mode hysteresis	WORD		0 ... 255	10	-1	°C
101	CP	C04	2149	RW	Heating mode hysteresis	WORD		0 ... 255	10	-1	°C
102	CP	C05	2150	RW	Steps differential	WORD		0 ... 255	10	-1	°C
103	CP	C06	2151	RW	Delay ON/ON compressors	WORD		0 ... 255	10		s
104	CP	C07	2152	RW	Delay OFF/OFF compressors	WORD		0 ... 255	1		s
105	CP	C08	2153	RW	Steps insertion/disinsertion delay	WORD		0 ... 255	0		s
106	FAn	F01	2154	RW	Fan output configuration	WORD		0 ... 2	0		Num
107	FAn	F02	2155	RW	Fan pickup time	WORD		0 ... 255	30		s/10
108	FAn	F03	2156	RW	Fan phase shift	WORD		0 ... 100	8		NUM
109	FAn	F04	2157	RW	Triac pulse length	WORD		0 ... 255	30		uS*200
110	FAn	F05	2158	RW	Operation on compressor ON	WORD		0 ... 1	0		Flag
111	FAn	F06	2159	RW	Min fan speed Cooling	WORD		0 ... 100	30		NUM
112	FAn	F07	2160	RW	Silent fan speed Heating	WORD		0 ... 100	100		NUM
113	FAn	F08	2161	RW	T/P set point for min fan speed Cooling	WORD	Y	-500 ... 800	130		°C/10-Kpa*10
114	FAn	F09	2162	RW	Proportional band Cooling	WORD		0 ... 800	40		°C/10-Kpa*10
115	FAn	F10	2163	RW	Cut-off differential	WORD		0 ... 255	20		°C/10-Kpa*10
116	FAn	F11	2164	RW	Cut-off hysteresis	WORD		0 ... 255	5		°C/10-Kpa*10
117	FAn	F12	2165	RW	Cut-off bypass time	WORD		0 ... 255	10		s
118	FAn	F13	2166	RW	Max fan speed Cooling	WORD		0 ... 100	100		NUM
119	FAn	F14	2167	RW	T/P set point for max fan speed Cooling	WORD	Y	-500 ... 800	170		°C/10-Kpa*10
120	FAn	F15	2168	RW	Min fan speed Heating	WORD		0 ... 100	30		NUM
121	FAn	F16	2169	RW	Silent fan speed Heating	WORD		0 ... 100	100		NUM
122	FAn	F17	2170	RW	T/P set point for min fan speed Heating	WORD	Y	-500 ... 800	70		°C/10-Kpa*10
123	FAn	F18	2171	RW	Proportional band Heating	WORD		0 ... 800	20		°C/10-Kpa*10
124	FAn	F19	2172	RW	Max fan speed in Heating	WORD		0 ... 100	100		NUM
125	FAn	F20	2173	RW	T/P set point for max fan speed Heating	WORD	Y	-500 ... 800	50		°C/10-Kpa*10
126	FAn	F21	2174	RW	Pre-ventilation	WORD		0 ... 255	0		s
127	FAn	F22	2175	RW	Single or separate configuration	WORD		0 ... 1	1		Flag

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
128	FAn	F23	2176	RW	Set point T/P fan in defrost	WORD	Y	-500 ... 800	800		°C/10-Kpa*10
129	FAn	F24	2177	RW	Isteresis fan in defrost	WORD		0 ... 255	0		°C/10-Kpa*10
130	FAn	F25	2178	RW	Not used	WORD		0 ... 255	0		s
131	PUP	P01	2179	RW	Running hours pump	WORD		0 ... 1	0		Flag
132	PUP	P02	2180	RW	Pump ON - compressor ON delay	WORD		0 ... 255	15		s
133	PUP	P03	2181	RW	Compressor OFF - pump OFF delay	WORD		0 ... 255	15		s
134	Fro	r01	2182	RW	Electric heater configuration in defrost	WORD		0 ... 1	0		Flag
135	Fro	r02	2183	RW	Enabled electric heater Cooling mode	WORD		0 ... 1	0		Flag
136	Fro	r03	2184	RW	Enabled electric heater Heating mode	WORD		0 ... 1	0		Flag
137	Fro	r04	2185	RW	Configuration electric heater 1 probe	WORD		0 ... 3	2		Num
138	Fro	r05	2186	RW	Configuration electric heater 2 probe	WORD		0 ... 3	2		Num
139	Fro	r06	2187	RW	Electric heater configuration in OFF or STANDBY	WORD		0 ... 1	1		Flag
140	Fro	r07	2188	RW	Set point electric heater 1 Heating	WORD	Y	r10 ... r09	4		°C
141	Fro	r08	2189	RW	Set point electric heater 1 Cooling	WORD	Y	r10 ... r09	4		°C
142	Fro	r09	2190	RW	Max set point electric heater	WORD	Y	r10 ... 127	10		°C
143	Fro	r10	2191	RW	Min set point electric heater	WORD	Y	-127 ... r09	-10		°C
144	Fro	r11	2192	RW	Hysteresis electric heater	WORD		0 ... 255	10	-1	°C
145	Fro	r12	2193	RW	Enabled electric heater linked	WORD		r10 ... r09	0		Flag
146	Fro	r13	2194	RW	Set point electric heater 2 Heating	WORD	Y	r10 ... r09	4		°C
147	Fro	r14	2195	RW	Set point electric heater 2 Cooling	WORD	Y	r10 ... r09	4		°C
148	Fro	r15	2196	RW	Enabled supplementary Electrical Heaters	WORD		0 ... 1	0		Flag
149	Fro	r16	2197	RW	Differential supplementary electric heater 1	WORD		0 ... 255	0	-1	°C
150	Fro	r17	2198	RW	Differential supplementary electric heater 2	WORD		0 ... 255	0	-1	°C
151	dFr	d01	2199	RW	Defrost enable	WORD		0 ... 1	0		Flag
152	dFr	d02	2200	RW	Set point T/P start defrost	WORD	Y	-500 ... 800	-20		°C/10-Kpa*10
153	dFr	d03	2201	RW	Cumulative time before defrost start	WORD		0 ... 255	2		Min
154	dFr	d04	2202	RW	Set point T/P end defrost	WORD	Y	-500 ... 800	100		°C/10-Kpa*10
155	dFr	d05	2203	RW	Max defrost time	WORD		0 ... 255	10		Min
156	dFr	d06	2204	RW	Valve delay at defrost start	WORD		0 ... 255	5		s
157	dFr	d07	2205	RW	Dripping time	WORD		0 ... 255	5		s
158	dFr	d08	2206	RW	Delay circuits defrost	WORD		0 ... 255	30		Min
159	dFr	d09	2207	RW	Configuration end defrost probe circuit 1	WORD		0 ... 3	0		Num
160	dFr	d10	2208	RW	Configuration end defrost probe circuit 2	WORD		0 ... 3	0		Num

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
161	dFr	d11	2209	RW	Delay ON compressors defrost	WORD		0 ... 255	0		s
162	ESP	N01	2210	RW	ID12 ID13 ID14 ID15 polarity	WORD		0 ... 15	0		Num
163	ESP	N02	2211	RW	ID12 configuration	WORD		0 ... 22	0		Num
164	ESP	N03	2212	RW	ID13 configuration	WORD		0 ... 22	19		Num
165	ESP	N04	2213	RW	ID14 configuration	WORD		0 ... 22	6		Num
166	ESP	N05	2214	RW	ID15 configuration	WORD		0 ... 22	7		Num
167	ESP	N06	2215	RW	RL9 output relay configuration	WORD		0 ... 11	10		Num
168	ESP	N07	2216	RW	RL10 output relay configuration	WORD		0 ... 11	11		Num
169	SPL	L01	2217	RW	Enabled freecooling	WORD		0...3	0		Num
170	SPL	L02	2218	RW	Differential T freecooling	WORD		-100...100	-20		°C
171	SPL	L03	2219	RW	Freecooling T hysteresis	WORD		0...100	20		°C
172	SPL	L04	2220	RW	Set point preventive antrifreeze	WORD		-100...100	20		°C
173	SPL	L05	2221	RW	Freecooling proportional band	WORD		0...100	10		°C
174	SPL	L06	2222	RW	Freecooling min temperature	WORD		-100...100	-10		°C
175	SPL	L07	2223	RW	Differential T cut-off free cooling	WORD		-100...100	-10		°C
176	SPL	L08	2224	RW	Time preventive antifreeze	WORD		0...900	180		Sec
Read holding register: function code 3											
Write multiple registers: function code 16											
191		G01	34817	RW	Label visibility	WORD		0 ... 770	3		Num
192		G02	34818	RW	Label visibility	WORD		0 ... 770	3		Num
193		H01	34819	RW	Label visibility	WORD		0 ... 770	3		Num
194		H02	34820	RW	Label visibility	WORD		0 ... 770	3		Num
195		H03	34821	RW	Label visibility	WORD		0 ... 770	3		Num
196		H04	34822	RW	Label visibility	WORD		0 ... 770	3		Num
197		H05	34823	RW	Label visibility	WORD		0 ... 770	3		Num
198		H06	34824	RW	Label visibility	WORD		0 ... 770	3		Num
199		H07	34825	RW	Label visibility	WORD		0 ... 770	3		Num
200		H08	34826	RW	Label visibility	WORD		0 ... 770	3		Num
201		H09	34827	RW	Label visibility	WORD		0 ... 770	3		Num
202		H10	34828	RW	Label visibility	WORD		0 ... 770	3		Num
203		H11	34829	RW	Label visibility	WORD		0 ... 770	3		Num
204		H12	34830	RW	Label visibility	WORD		0 ... 770	3		Num
205		H13	34831	RW	Label visibility	WORD		0 ... 770	3		Num

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
206		H14	34832	RW	Label visibility	WORD		0 ... 770	3		Num
207		H15	34833	RW	Label visibility	WORD		0 ... 770	3		Num
208		H16	34834	RW	Label visibility	WORD		0 ... 770	3		Num
209		H17	34835	RW	Label visibility	WORD		0 ... 770	3		Num
210		H18	34836	RW	Label visibility	WORD		0 ... 770	3		Num
211		H19	34837	RW	Label visibility	WORD		0 ... 770	3		Num
212		H20	34838	RW	Label visibility	WORD		0 ... 770	3		Num
213		H21	34839	RW	Label visibility	WORD		0 ... 770	3		Num
214		H22	34840	RW	Label visibility	WORD		0 ... 770	3		Num
215		H23	34841	RW	Label visibility	WORD		0 ... 770	3		Num
216		H24	34842	RW	Label visibility	WORD		0 ... 770	3		Num
217		H25	34843	RW	Label visibility	WORD		0 ... 770	3		Num
218		H26	34844	RW	Label visibility	WORD		0 ... 770	3		Num
219		H27	34845	RW	Label visibility	WORD		0 ... 770	3		Num
220		H28	34846	RW	Label visibility	WORD		0 ... 770	3		Num
221		H29	34847	RW	Label visibility	WORD		0 ... 770	3		Num
222		H30	34848	RW	Label visibility	WORD		0 ... 770	3		Num
223		H31	34849	RW	Label visibility	WORD		0 ... 770	3		Num
224		H32	34850	RW	Label visibility	WORD		0 ... 770	3		Num
225		H33	34851	RW	Label visibility	WORD		0 ... 770	3		Num
226		H34	34852	RW	Label visibility	WORD		0 ... 770	3		Num
227		H35	34853	RW	Label visibility	WORD		0 ... 770	3		Num
228		H36	34854	RW	Label visibility	WORD		0 ... 770	3		Num
229		H37	34855	RW	Label visibility	WORD		0 ... 770	3		Num
230		H38	34856	RW	Label visibility	WORD		0 ... 770	3		Num
231		H39	34857	RW	Label visibility	WORD		0 ... 770	3		Num
232		H40	34858	RW	Label visibility	WORD		0 ... 770	3		Num
233		H41	34859	RW	Label visibility	WORD		0 ... 770	3		Num
234		H42	34860	RW	Label visibility	WORD		0 ... 770	3		Num
235		H43	34861	RW	Label visibility	WORD		0 ... 770	3		Num
236		H44	34862	RW	Label visibility	WORD		0 ... 770	3		Num
237		H45	34863	RW	Label visibility	WORD		0 ... 770	3		Num
238		H46	34864	RW	Label visibility	WORD		0 ... 770	3		Num

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
239		H47	34865	RW	Label visibility	WORD		0 ... 770	3		Num
240		H48	34866	RW	Label visibility	WORD		0 ... 770	3		Num
241		H49	34867	RW	Label visibility	WORD		0 ... 770	3		Num
242		H50	34868	RW	Label visibility	WORD		0 ... 770	3		Num
243		H51	34869	RW	Label visibility	WORD		0 ... 770	3		Num
244		H52	34870	RW	Label visibility	WORD		0 ... 770	3		Num
245		H53	34871	RW	Label visibility	WORD		0 ... 770	3		Num
246		H54	34872	RW	Label visibility	WORD		0 ... 770	3		Num
247		H55	34873	RW	Label visibility	WORD		0 ... 770	3		Num
248		H56	34874	RW	Label visibility	WORD		0 ... 770	3		Num
249		H57	34875	RW	Label visibility	WORD		0 ... 770	3		Num
250		H58	34876	RW	Label visibility	WORD		0 ... 770	3		Num
251		H59	34877	RW	Label visibility	WORD		0 ... 770	3		Num
252		H60	34878	RW	Label visibility	WORD		0 ... 770	3		Num
253		H61	34879	RW	Label visibility	WORD		0 ... 770	3		Num
254		H62	34880	RW	Label visibility	WORD		0 ... 770	3		Num
255		H63	34881	RW	Label visibility	WORD		0 ... 770	3		Num
256		H64	34882	RW	Label visibility	WORD		0 ... 770	3		Num
257		H65	34883	RW	Label visibility	WORD		0 ... 770	3		Num
258		H66	34884	RW	Label visibility	WORD		0 ... 770	3		Num
259		H67	34885	RW	Label visibility	WORD		0 ... 770	3		Num
260		H68	34886	RW	Label visibility	WORD		0 ... 770	3		Num
261		H69	34887	RW	Label visibility	WORD		0 ... 770	3		Num
262		A01	34888	RW	Label visibility	WORD		0 ... 770	3		Num
263		A02	34889	RW	Label visibility	WORD		0 ... 770	3		Num
264		A03	34890	RW	Label visibility	WORD		0 ... 770	3		Num
265		A04	34891	RW	Label visibility	WORD		0 ... 770	3		Num
266		A05	34892	RW	Label visibility	WORD		0 ... 770	3		Num
267		A06	34893	RW	Label visibility	WORD		0 ... 770	3		Num
268		A07	34894	RW	Label visibility	WORD		0 ... 770	3		Num
269		A08	34895	RW	Label visibility	WORD		0 ... 770	3		Num
270		A09	34896	RW	Label visibility	WORD		0 ... 770	3		Num
271		A10	34897	RW	Label visibility	WORD		0 ... 770	3		Num

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
272		A11	34898	RW	Label visibility	WORD		0 ... 770	3		Num
273		A12	34899	RW	Label visibility	WORD		0 ... 770	3		Num
274		A13	34900	RW	Label visibility	WORD		0 ... 770	3		Num
275		A14	34901	RW	Label visibility	WORD		0 ... 770	3		Num
276		A15	34902	RW	Label visibility	WORD		0 ... 770	3		Num
277		A16	34903	RW	Label visibility	WORD		0 ... 770	3		Num
278		A17	34904	RW	Label visibility	WORD		0 ... 770	3		Num
279		A18	34905	RW	Label visibility	WORD		0 ... 770	3		Num
280		A19	34906	RW	Label visibility	WORD		0 ... 770	3		Num
281		A20	34907	RW	Label visibility	WORD		0 ... 770	3		Num
282		A21	34908	RW	Label visibility	WORD		0 ... 770	3		Num
283		A22	34909	RW	Label visibility	WORD		0 ... 770	3		Num
284		A23	34910	RW	Label visibility	WORD		0 ... 770	3		Num
285		A24	34911	RW	Label visibility	WORD		0 ... 770	3		Num
286		A25	34912	RW	Label visibility	WORD		0 ... 770	3		Num
287		A26	34913	RW	Label visibility	WORD		0 ... 770	3		Num
288		C01	34914	RW	Label visibility	WORD		0 ... 770	3		Num
289		C02	34915	RW	Label visibility	WORD		0 ... 770	3		Num
290		C03	34916	RW	Label visibility	WORD		0 ... 770	3		Num
291		C04	34917	RW	Label visibility	WORD		0 ... 770	3		Num
292		C05	34918	RW	Label visibility	WORD		0 ... 770	3		Num
293		C06	34919	RW	Label visibility	WORD		0 ... 770	3		Num
294		C07	34920	RW	Label visibility	WORD		0 ... 770	3		Num
295		C08	34921	RW	Label visibility	WORD		0 ... 770	3		Num
296		F01	34922	RW	Label visibility	WORD		0 ... 770	3		Num
297		F02	34923	RW	Label visibility	WORD		0 ... 770	3		Num
298		F03	34924	RW	Label visibility	WORD		0 ... 770	3		Num
299		F04	34925	RW	Label visibility	WORD		0 ... 770	3		Num
300		F05	34926	RW	Label visibility	WORD		0 ... 770	3		Num
301		F06	34927	RW	Label visibility	WORD		0 ... 770	3		Num
302		F07	34928	RW	Label visibility	WORD		0 ... 770	3		Num
303		F08	34929	RW	Label visibility	WORD		0 ... 770	3		Num
304		F09	34930	RW	Label visibility	WORD		0 ... 770	3		Num

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
305		F10	34931	RW	Label visibility	WORD		0 ... 770	3		Num
306		F11	34932	RW	Label visibility	WORD		0 ... 770	3		Num
307		F12	34933	RW	Label visibility	WORD		0 ... 770	3		Num
308		F13	34934	RW	Label visibility	WORD		0 ... 770	3		Num
309		F14	34935	RW	Label visibility	WORD		0 ... 770	3		Num
310		F15	34936	RW	Label visibility	WORD		0 ... 770	3		Num
311		F16	34937	RW	Label visibility	WORD		0 ... 770	3		Num
312		F17	34938	RW	Label visibility	WORD		0 ... 770	3		Num
313		F18	34939	RW	Label visibility	WORD		0 ... 770	3		Num
314		F19	34940	RW	Label visibility	WORD		0 ... 770	3		Num
315		F20	34941	RW	Label visibility	WORD		0 ... 770	3		Num
316		F21	34942	RW	Label visibility	WORD		0 ... 770	3		Num
317		F22	34943	RW	Label visibility	WORD		0 ... 770	3		Num
318		F23	34944	RW	Label visibility	WORD		0 ... 770	3		Num
319		F24	34945	RW	Label visibility	WORD		0 ... 770	3		Num
320		F25	34946	RW	Label visibility	WORD		0 ... 770	3		Num
321		P01	34947	RW	Label visibility	WORD		0 ... 770	3		Num
322		P02	34948	RW	Label visibility	WORD		0 ... 770	3		Num
323		P03	34949	RW	Label visibility	WORD		0 ... 770	3		Num
324		r01	34950	RW	Label visibility	WORD		0 ... 770	3		Num
325		r02	34951	RW	Label visibility	WORD		0 ... 770	3		Num
326		r03	34952	RW	Label visibility	WORD		0 ... 770	3		Num
327		r04	34953	RW	Label visibility	WORD		0 ... 770	3		Num
328		r05	34954	RW	Label visibility	WORD		0 ... 770	3		Num
329		r06	34955	RW	Label visibility	WORD		0 ... 770	3		Num
330		r07	34956	RW	Label visibility	WORD		0 ... 770	3		Num
331		r08	34957	RW	Label visibility	WORD		0 ... 770	3		Num
332		r09	34958	RW	Label visibility	WORD		0 ... 770	3		Num
333		r10	34959	RW	Label visibility	WORD		0 ... 770	3		Num
334		r11	34960	RW	Label visibility	WORD		0 ... 770	3		Num
335		r12	34961	RW	Label visibility	WORD		0 ... 770	3		Num
336		r13	34962	RW	Label visibility	WORD		0 ... 770	3		Num
337		r14	34963	RW	Label visibility	WORD		0 ... 770	3		Num

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
338		r15	34964	RW	Label visibility	WORD		0 ... 770	3		Num
339		r16	34965	RW	Label visibility	WORD		0 ... 770	3		Num
340		r17	34966	RW	Label visibility	WORD		0 ... 770	3		Num
341		d01	34967	RW	Label visibility	WORD		0 ... 770	3		Num
342		d02	34968	RW	Label visibility	WORD		0 ... 770	3		Num
343		d03	34969	RW	Label visibility	WORD		0 ... 770	3		Num
344		d04	34970	RW	Label visibility	WORD		0 ... 770	3		Num
345		d05	34971	RW	Label visibility	WORD		0 ... 770	3		Num
346		d06	34972	RW	Label visibility	WORD		0 ... 770	3		Num
347		d07	34973	RW	Label visibility	WORD		0 ... 770	3		Num
348		d08	34974	RW	Label visibility	WORD		0 ... 770	3		Num
349		d09	34975	RW	Label visibility	WORD		0 ... 770	3		Num
350		d10	34976	RW	Label visibility	WORD		0 ... 770	3		Num
351		d11	34977	RW	Label visibility	WORD		0 ... 770	3		Num
352		N01	34978	RW	Label visibility	WORD		0 ... 770	3		Num
353		N02	34979	RW	Label visibility	WORD		0 ... 770	3		Num
354		N03	34980	RW	Label visibility	WORD		0 ... 770	3		Num
355		N04	34981	RW	Label visibility	WORD		0 ... 770	3		Num
356		N05	34982	RW	Label visibility	WORD		0 ... 770	3		Num
357		N06	34983	RW	Label visibility	WORD		0 ... 770	3		Num
358		N07	34984	RW	Label visibility	WORD		0 ... 770	3		Num
359	SPL	L01	34985	RW	Label visibility	WORD		0 ... 770	3		Num
360	SPL	L02	34986	RW	Label visibility	WORD		0 ... 770	3		Num
361	SPL	L03	34987	RW	Label visibility	WORD		0 ... 770	3		Num
362	SPL	L04	34988	RW	Label visibility	WORD		0 ... 770	3		Num
363	SPL	L05	34989	RW	Label visibility	WORD		0 ... 770	3		Num
364	SPL	L06	34990	RW	Label visibility	WORD		0 ... 770	3		Num
365	SPL	L07	34991	RW	Label visibility	WORD		0 ... 770	3		Num
366	SPL	L08	34992	RW	Label visibility	WORD		0 ... 770	3		Num
367		SeT	34993	RW	Label visibility	WORD		0 ... 770	3		Num
368		TP	34994	RW	Label visibility	WORD		0 ... 770	3		Num
369		ERR	34995	RW	Label visibility	WORD		0 ... 770	3		Num
370		ID	34996	RW	Label visibility	WORD		0 ... 770	3		Num

INDEX	FOLDER	LABEL	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE*	DEFAULT	EXP	M.U.
371		PAr	34997	RW	Label visibility	WORD		0 ... 770	3		Num
372		PSS	34998	RW	Label visibility	WORD		0 ... 770	3		Num
373		OHr	34999	RW	Label visibility	WORD		0 ... 770	3		Num
374		COO	35000	RW	Label visibility	WORD		0 ... 770	3		Num
375		HEA	35001	RW	Label visibility	WORD		0 ... 770	3		Num
376		Cnf	35002	RW	Label visibility	WORD		0 ... 770	3		Num
377		CP	35003	RW	Label visibility	WORD		0 ... 770	3		Num
378		FAN	35004	RW	Label visibility	WORD		0 ... 770	3		Num
379		ALL	35005	RW	Label visibility	WORD		0 ... 770	3		Num
380		PUP	35006	RW	Label visibility	WORD		0 ... 770	3		Num
381		Fro	35007	RW	Label visibility	WORD		0 ... 770	3		Num
382		dFr	35008	RW	Label visibility	WORD		0 ... 770	3		Num
383		ESP	35009	RW	Label visibility	WORD		0 ... 770	3		Num
384		SLP	35010	RW	Label visibility	WORD		0 ... 770	3		Num
385		OH1	35011	RW	Label visibility	WORD		0 ... 770	3		Num
386		OH2	35012	RW	Label visibility	WORD		0 ... 770	3		Num
387		OH3	35013	RW	Label visibility	WORD		0 ... 770	3		Num
388		OH4	35014	RW	Label visibility	WORD		0 ... 770	3		Num
389		OHP	35015	RW	Label visibility	WORD		0 ... 770	3		Num

* **NOTE:** Each parameter can be assigned a “visibility value” as described below:

Value	Meaning
3	The parameter or label is always visible
258	The parameter or label is visible if the user password is entered correctly (password = Pa H67)
770	The parameter or label is visible if the user password is entered correctly (password = Pa H67). The parameter cannot be modified.
768	The parameter is only visible using a PC

1.5.3 Client Table

INDEX	FOLDER	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT	EXP	M.U.
Read input register: function code 4										
1		4097	R	Analog input 1 – AI1	WORD	Y	-670 ... 3020	0	-1	°C/°F
2		4098	R	Analog input 2 – AI2	WORD	Y	-670 ... 3020	0	-1	°C/°F
3		4099	R	Analog input 3 – AI3	WORD	Y	-670 ... 3020	0	-1	°C/°F
4		4100	R	Analog input 4 – AI4	WORD	Y	-670 ... 3020	0	-1	°C/°F
5		4101	R	Analog input 5 – AI5	WORD	Y	-670 ... 3020	0	-1	°C/°F
6		4102	R	Analog input 6 – AI6	WORD	Y	-670 ... 3020	0	-1	°C/°F
Read registers (coils): function code 1										
7		10241	R	OUT1	1 bit		0 ... 1	0		num
8		10242	R	OUT2	1 bit		0 ... 1	0		num
9		10243	R	OUT3	1 bit		0 ... 1	0		num
10		10244	R	OUT4	1 bit		0 ... 1	0		num
11		10245	R	OUT5	1 bit		0 ... 1	0		num
12		10246	R	OUT6	1 bit		0 ... 1	0		num
13		10247	R	OUT7	1 bit		0 ... 1	0		num
14		10248	R	OUT8	1 bit		0 ... 1	0		num
15		10249	R	OUT9	1 bit		0 ... 1	0		num
16		10250	R	OUT10	1 bit		0 ... 1	0		num
Read holding register: function code 3										
17		14337	R	Analogic output 1 – AN1	BYTE		0 ... 255	0		num
18		14338	R	Analogic output 2 – AN2	BYTE		0 ... 255	0		num
Read discrete inputs: function code 2										
19		8193	R	Digital input 1 – DI1	1 bit		0 ... 1	0		num
20		8194	R	Digital input 2 – DI2	1 bit		0 ... 1	0		num
21		8195	R	Digital input 3 – DI3	1 bit		0 ... 1	0		num
22		8196	R	Digital input 4 – DI4	1 bit		0 ... 1	0		num
23		8197	R	Digital input 5 – DI5	1 bit		0 ... 1	0		num
24		8198	R	Digital input 6 – DI6	1 bit		0 ... 1	0		num
25		8199	R	Digital input 7 – DI7	1 bit		0 ... 1	0		num
26		8200	R	Digital input 8 – DI8	1 bit		0 ... 1	0		num

INDEX	FOLDER	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT	EXP	M.U.
27		8201	R	Digital input 9 – DI9	1 bit		0 ... 1	0		num
28		8202	R	Digital input 10 – DI10	1 bit		0 ... 1	0		num
29		8203	R	Digital input 11 – DI11	1 bit		0 ... 1	0		num
30		8204	R	Digital input 12 – DI12	1 bit		0 ... 1	0		num
31		8205	R	Digital input 13 – DI13	1 bit		0 ... 1	0		num
32		8206	R	Digital input 14 – DI14	1 bit		0 ... 1	0		num
33		8207	R	Digital input 15 – DI15	1 bit		0 ... 1	0		num
Read holding register: function code 3										
Write multiple registers: function code 16										
34		16491,0	R	Digital Input AI1	1 bit		0 ... 1	0		num
35		16491,1	R	Digital Input AI2	1 bit		0 ... 1	0		num
Read discrete inputs: function code 2										
36		8208	R	Digital Input AI4	1 bit		0 ... 1	0		num
Read holding register: function code 3										
Write multiple registers: function code 16										
37		16495,0	RW	Cool mode	1 bit		0 ... 1	0		num
38		16495,1	RW	Heat mode	1 bit		0 ... 1	0		num
39		16495,7	RW	On	1 bit		0 ... 1	0		num
40		16903,0	R	remote on off	1 bit		0 ... 1	0		num
41		16903,1	R	High pressure switch circuit 1	1 bit		0 ... 1	0		num
42		16903,2	R	low pressure switch circuit 1	1 bit		0 ... 1	0		num
43		16903,3	R	thermal protection compressor 1	1 bit		0 ... 1	0		num
44		16903,4	R	thermal protection condenser fan 1	1 bit		0 ... 1	0		num
45		16903,5	R	antifreeze alarm on probe 2	1 bit		0 ... 1	0		num
46		16903,6	R	probe 2 faulty	1 bit		0 ... 1	0		num
47		16903,7	R	probe 3 faulty	1 bit		0 ... 1	0		num
48		16904,0	R	high pressure comp 1	1 bit		0 ... 1	0		num
49		16904,1	R	Discharge high pressure circuit 1	1 bit		0 ... 1	0		num
50		16904,2	R	Discharge low pressure circuit 1	1 bit		0 ... 1	0		num
51		16904,3	R	thermal protection compressor 2	1 bit		0 ... 1	0		num
52		16904,4	R	high pressure compressor 2	1 bit		0 ... 1	0		num
53		16904,5	R	high pressure switch circuit 2	1 bit		0 ... 1	0		num
54		16904,6	R	low pressure switch circuit 2	1 bit		0 ... 1	0		num

INDEX	FOLDER	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT	EXP	M.U.
55		16904,7	R	thermal protection compressor 3	1 bit		0 ... 1	0		num
56		16905,0	R	thermal protection condenser fan 2	1 bit		0 ... 1	0		num
57		16905,1	R	antifreeze alarm on probe 5	1 bit		0 ... 1	0		num
58		16905,2	R	probe 5 faulty	1 bit		0 ... 1	0		num
59		16905,3	R	probe 6 faulty	1 bit		0 ... 1	0		num
60		16905,4	R	high pressure compressor 3	1 bit		0 ... 1	0		num
61		16905,5	R	discharge high pressure circuit 2	1 bit		0 ... 1	0		num
62		16905,6	R	discharge low pressure circuit 2	1 bit		0 ... 1	0		num
63		16905,7	R	thermal protection compressor 4	1 bit		0 ... 1	0		num
64		16906,0	R	high pressure compressor 4	1 bit		0 ... 1	0		num
65		16906,1	R	probe 1 faulty	1 bit		0 ... 1	0		num
66		16906,2	R	flow switch error	1 bit		0 ... 1	0		num
67		16906,3	R	probe 4 faulty	1 bit		0 ... 1	0		num
68		16906,4	R	antifreeze on external water circuit (water -water machine)	1 bit		0 ... 1	0		num
69		16906,5	R	low level coolant	1 bit		0 ... 1	0		num
70		16906,6	R	configuration error	1 bit		0 ... 1	0		num
71		16906,7	R	high temperature on inlet water	1 bit		0 ... 1	0		num
72		16907,0	R	remote on off (manual reset)	1 bit		0 ... 1	0		num
73		16907,1	R	high pressure switch circuit 1 (manual)	1 bit		0 ... 1	0		num
74		16907,2	R	low pressure switch circuit 1(manual)	1 bit		0 ... 1	0		num
75		16907,3	R	thermal protection compressor 1(manual)	1 bit		0 ... 1	0		num
76		16907,4	R	thermal protection fan 1(manual)	1 bit		0 ... 1	0		num
77		16907,5	R	antifreeze alarm on probe 2 (manual)	1 bit		0 ... 1	0		num
78		16907,6	R	probe 2 faulty	1 bit		0 ... 1	0		num
79		16907,7	R	probe 3 faulty	1 bit		0 ... 1	0		num
80		16908,0	R	high pressure compressor 1	1 bit		0 ... 1	0		num
81		16908,1	R	discharge high pressure circuit 1(manual)	1 bit		0 ... 1	0		num
82		16908,2	R	Discharge low pressure circuit 1(manual)	1 bit		0 ... 1	0		num
83		16908,3	R	thermal protection compressor 2(manual)	1 bit		0 ... 1	0		num
84		16908,4	R	high pressure compressor 2	1 bit		0 ... 1	0		num
85		16908,5	R	high pressure switch circuit 2(manual)	1 bit		0 ... 1	0		num
86		16908,6	R	low pressure switch circuit 2 (manual)	1 bit		0 ... 1	0		num
87		16908,7	R	thermal protection compressor 3 (manual)	1 bit		0 ... 1	0		num

INDEX	FOLDER	ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT	EXP	M.U.
88		16909,0	R	thermal protection fan 2 (manual)	1 bit		0 ... 1	0		num
89		16909,1	R	antifreeze on probe 5 (manual)	1 bit		0 ... 1	0		num
90		16909,2	R	probe 5 faulty	1 bit		0 ... 1	0		num
91		16909,3	R	probe 6 faulty	1 bit		0 ... 1	0		num
92		16909,4	R	high pressure compressor 3	1 bit		0 ... 1	0		num
93		16909,5	R	discharge high pressure circuit 2(manual)	1 bit		0 ... 1	0		num
94		16909,6	R	discharge low pressure circuit 2 (manual)	1 bit		0 ... 1	0		num
95		16909,7	R	thermal protection compressor 4	1 bit		0 ... 1	0		num
96		16910,0	R	thermal protection compressor 4	1 bit		0 ... 1	0		num
97		16910,1	R	probe 1 faulty	1 bit		0 ... 1	0		num
98		16910,2	R	flow switch error (manual)	1 bit		0 ... 1	0		num
99		16910,3	R	probe 4 faulty	1 bit		0 ... 1	0		num
100		16910,4	R	high pressure compressor 4	1 bit		0 ... 1	0		num
101		16910,5	R	coolant low level	1 bit		0 ... 1	0		num
102		16910,7	R	high temperature on inlet water (manual)	1 bit		0 ... 1	0		num
103		16498	R	operation hours compressor 1	WORD		0 ... 65535	0		num
104		16500	R	operation hours compressor 2	WORD		0 ... 65535	0		num
105		16502	R	operation hours compressor 3	WORD		0 ... 65535	0		num
106		16504	R	operation hours compressor 4	WORD		0 ... 65535	0		num
107		16506	R	operation hours pump	WORD		0 ... 65535	0		num

Errors Possible / Subject to Alterations
 Con riserva di errori e modifiche
 Bajo reserva de error o modificación
 Irrtum und Änderungen vorbehalten
 Sous réserve d'erreurs et de modifications
 Fouten en wijzigingen voorbehouden

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