MODBUS Protocol

Product descritpion: **Sabiana New Cassette modbus protocol**

Rev	Date	Description	Author	Verified
1	20/01/12	First draft	I. Gioia	M.Felici
2	13/02/12	Registers table splitted into categories – examples added	M.Felici	I.Gioia
3	16/02/12	Added I/O Card data and examples	I.Gioia	M.Felici
4	20/02/12	Corrected serial communication configuration (no parity)	I.Gioia	M.Felici
5	15/07/14	Unified the documents for the different boards into this single document	I.Gioia	M.Felici
6	10/03/15	Set reduction via IN2, IAQ on/off, reset parameters via MB, ambiente probe via MB, bits for presence of T-MB/IR	I.Gioia	M.Felici
7	06/10/15	Added registers for T-MB dips, ±3 mode set variation Added registers for mode and ventilation bit commands Added CCP-ECM description	I.Gioia	M.Felici
8	16/03/17	Added dip switch addresssing	P.Saporiti	I.Gioia
9	11/05/17	Added writable data range	I.Gioia	P.Saporiti
10	14/06/17	Added register for writing time and week day	I.Gioia	M.Felici
11	22/02/19	Added documentation for Jumbo Cassette	I.Gioia	M.Felici
13	29/06/20	Added reg. 0x107A for CVP Added Atlas documentation Added CFF documentation	I.Gioia	M.Felici
14	08/04/21	Added CFF sub models, added new status registers, added dummy registers	I.Gioia	M.Felici
15	18/02/22	Added CFF reg 0x1064 for Night Mode	I.Gioia	M.Felici
16	28/02/22	Added CFF reg 0x1065 for Keyboard locked (EVO interface)	P.Saporiti	I.Gioia
17	14/10/22	Added CFF the 4 dip bank , only 15 address	P.Saporiti	I.Gioia
18	09/05/23	Added documentation for CVP2 and CRC	I.Gioia	
19	30/08/24	Correct unit names	P.Saporiti	I.Gioia
20	08/10/24	Added documentation for CFF OneWay	I.Gioia	

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Connectors

The MODBUS RTU interface is available via the RS485 port

- Cassette/Fancoil/Atlas: connectors JP4A and JP4B
- I/O Board: connectors M8 and M9
- CVP/CCP-ECM: daughter board on MC3
- QCV: connector M6
- Jumbo: M7A and M7B

Serial interface configuration

The serial interface has to be configured as follows:

Speed	9600 bit/sec (CFF via KNX 1200bit/sec)
Bit number	8
Parity	No
Stop bit	1

MODBUS protocol

The MODBUS address of the board is selected by the ADDRESS dips in the range 1-60.

Only the data type “Holding Register” is supported.

The available MODBUS functions are:

- 0x03(3 dec) “Read Holding Registers”
- 0x06(6 dec) “Write Single Register”
- 0x10(16 dec) “Preset Multiple Registers”

The following tables show the data accessible via the MODBUS interface. For each data, the following infomation is specified:

- **Addr**, hexadecimal address
- **Type**, data type (see next table)
- **Attr**, attributes (R read only, W write only, RW read/write)
- **Symb**, short symbolic data name, used only for machine parameters; identifies the parameter name as defined in the technical specifications
- **Description**, short data-specific description (parameter, measure, etc..)
- **Notes**, information about data interpretation, etc...

Writing contiguous registers with a single operation is allowed only if all the registers are marked as writable.

In case of an error for:
- function not supported
- wrong data address
- wrong data lenght
- data not acceptable

the response will be a MODBUS exception.

Table 1: Data types

Type	Description	Range	Dimension	Notes
uns16	16 bit unsigned integer	0..65535	2 bytes	
sig16	16 bit signed integer	–32768..32767	2 bytes	
uns32	32 bit unsigned integer	0..4294836225	4 bytes	2 contiguous MODBUS registers, the first one containing the most significant 16 bit

Regarding the supported MODBUS standard, one can refer to the MODBUS official website (Modbus Specifications) and particularly to the documents: Modbus Serial Line Protocol and Implementation Guide V1.02 e Mosbus Application Protocol V1.1b.

Board address Dip Switch setting

The 6 dips bank is used to define the address number of each machine machine**.(for CFF and CRC fan-coil only 4 dip bank, maximum 15 addresses**). The assignment works according to the binary method; the number is defined by placing the different Dips at On or at Off. Use the following table to set the numbering. Pay particular attention to avoid assigning the same number to more units. **The address is sampled after power on, so be sure to set the address while the machine is not powered.**

Indirizzo/Address	Dip Switches ON	Indirizzo/Address	Dip Switches ON	Indirizzo/Address	Dip Switches ON
1	1	21	1+3+5	41	1+4+6
2	2	22	2+3+5	42	2+4+6
3	1+2	23	1+2+3+5	43	1+2+4+6
4	3	24	4+5	44	3+4+6
5	1+3	25	1+4+5	45	1+3+4+6
6	2+3	26	2+4+5	46	2+3+4+6
7	1+2+3	27	1+2+4+5	47	1+2+3+4+6
8	4	28	3+4+5	48	5+6
9	1+4	29	1+3+4+5	49	1+5+6
10	2+4	30	2+3+4+5	50	2+5+6
11	1+2+4	31	1+2+3+4+5	51	1+2+5+6
12	3+4	32	6	52	3+5+6
13	1+3+4	33	1+6	53	1+3+5+6
14	2+3+4	34	2+6	54	2+3+5+6
15	1+2+3+4	35	1+2+6	55	1+2+3+5+6
16	5	36	3+6	56	4+5+6
17	1+5	37	1+3+6	57	1+4+5+6
18	2+5	38	2+3+6	58	2+4+5+6
19	1+2+5	39	1+2+3+6	59	1+2+4+5+6
20	3+5	40	4+6	60	3+4+5+6

Examples – Cassette, Fancoil and I/O Board

Following, one can find a few transaction examples (directed to a cassette with address 1 and to an I/O card with address 2).

Next to the identifiers Request and Response there are the complete packets respectively transmitted and received on the serial line, including the CRC16, with the bytes represented in hexadecimal format.

Example 1: Reading the temperature of T1, T2, T3 probes

Reading of the 3 registers 1002, 1003 and 1004 with function 3.

Request 01 03 1002 0003 A0CB

Response 01 03 06 00F9 00C0 00D3 FCC0

The temperatures read are rispectively F9, C0 e D3 in hexadecimal, or rather 249, 192 e 211.
The data description in the following tables explains that the data is conveyed as [°C*10], or rather the data is represented in fixed point with 1 decimal.
The temperatures are respectively T1=24,9°C, T2=19,2°C e T3=21,1°C

Example 2: Reading board identification and firmware release

Reading of the 2 registers 1000 and 1001 with the function 3.

Request 01 03 1000 0002 C0CB

Response 01 03 04 5000 002E 6B2F

The model number is 5000 (hexadecimal) which - as shown in the table - means Cassette, and the firmware release is 002E, or rather 0.46.

Example 3: Reading DIP 3 value

Reading of the register 1007 with the function 3.

Request 01 03 1007 0001 310B

Response 01 03 02 0001 7984

The configuration dip for T3 probe is set to 1, hence T3 probe is active.

Example 4: Reading the Summer set-point parameter

Reading of the register 102D with the function 3.

Request 01 03 102D 0001 10C3

Response 01 03 02 00F0 B800

The setpoint is equal to F0 (hexadecimal) and is conveyed as [°C*10], hence its value is 24,0°C.

Example 5: Writing the Summer set-point parameter

Writing of the register 102D with the function 6. The new setpoint is 23,5°C, so one has to write into the register 235 (EB hexadecimal)

Request 01 06 102D 00EB 5D4C

Response 01 06 102D 00EB 5D4C

Example 6: Writing the parameters "Fan maximum OFF time for antistratification" and "antistratification on time"

Writing of the 2 registers 1035 e 1036 with the function 16.

The two parameters new values are respectively 12min and 120sec, so one has to write into the first register C (hexadecimal) and into the second 78 (hexadecimal).

Request 01 10 1035 0002 04 000C 0078 3D65

Response 01 10 1035 0002 5506

Example 7: Setting the fan speed

Writing of the register 1059 with the function 6. The fan speed chosen for this example is maximum, hence the command value is 3.

Request 01 06 1059 0003 1D18

Response 01 06 1059 0003 1D18

Example 8: Reading the maximum fan speed on counter

One has to read the total active time of the relay that enables the fan maximum speed; the data type is uns32, hence a 32bit unsigned integer, so 2 contiguous registers are interested.

Reading of the 2 registers 1060 and 1061 with the function 3.

Request 01 03 1060 0002 C0D5

Response 01 03 04 00CA 05AB 98E2

The two values in the response are CA e 05AB, which combined form the value CA05AB, or 13239723 in decimal format, which in turn means 153days, 5hours, 42minutes and 3seconds.

Example 9: Reading inputs 2 and 3 from the I/O card

Reading of the registers 0103 and 0104, IN2 open and IN 3 closed

Request 02 03 0103 0002 35C4

Response 02 03 04 0001 0000 98F3

The value 1 for input 2 means open, the value 0 for input 3 means closed

Example 10: Activation of all of the 8 relays of the I/O card

Writing of the registers from 010A to 0111 with the function 16 (10 hex). The value to be written in each register is 1, relay activated.

Request 02 10 010A 0008 10 0001 0001 0001 0001 0001 0001 0001 0001 B2BF

Response 02 10 010A 0008 E002

MODBUS Data – Skystar and Carisma

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	5000 Cassette 5001 Cassette ECM 5002 FanCoil 5003 FanCoil ECM
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Temperature probe T1	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	1: 4 pipes machine 0: 2 pipes machine
1006	sig16	R	Dip 2 configuration	1: Thermoregulation with fan only 0: Complete thermoregulation
1007	sig16	R	Dip 3 configuration	1: T3 probe on 0: T3 probe off
1008	sig16	R	Dip 4 configuration	1: T3 used in winter/summer 0: T3 used in winter only
1009	sig16	R	Dip 5 configuration	1: Continuous ventilation off 0: Continuous ventilation on
100A	sig16	R	Dip 6 configuration	1: Electrical heater present 0: Electrical heater absent
100B	sig16	R	Dip 7 configuration	1: El.heater integrates T1 probe 0: El.heater integrates T2 probe
100C	sig16	R	Dip 8 configuration	1: Relay7 is associated to the condensation alarm (relay closed if alarm present) 0: Relay7 associated to the machine state (relay closed if machine on)
100D	sig16	R	Dip 9 configuration	1: IN1 indicates the season 0: IN1 indicates the remote on/off
100E	sig16	R	Dip 10 configuration	1: Slave Machine 0: Master Machine

Machine state and alarms

Addr	Type	Attr.	Description	Notes
100F	uns16	R	Machine state	0:OFF 1:ON
1010	uns16	R	Fan Only mode	0: OFF 1: ON
1011	uns16	R	Dead Zone(Auto) mode	0: OFF 1: ON
1012	uns16	R	Machine is in dead zone	0: OFF 1: ON
1013	uns16	R	Season in use	0: Summer 1: Winter
1014	uns16	R	T2 probe found	0: No 1: Yes
1015	uns16	R	Thermoregulation requested	0: No 1: Yes
1016	uns16	R	Electrical heater state	0: OFF 1: ON
1017	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
1018	uns16	R	Ventilation is stopped	0: OFF 1: ON
1019	uns16	R	Fan Speed Min (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101A	uns16	R	Fan Speed Med (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101B	uns16	R	Fan Speed Max (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101C	uns16	R	State of Relay 1 FAN LOW	0: OFF 1: ON
101D	uns16	R	State of Relay 2 FAN MED	0: OFF 1: ON
101E	uns16	R	State eof Relay 3 FAN HIGH	0: OFF 1: ON
101F	uns16	R	State of Relay 4 EV hot/Electrical heater (*)	0: OFF 1: ON
1020	uns16	R	State of Relay 5 EV cold/ Electrical heater (*)	0: OFF 1: ON
1021	uns16	R	State of Relay 6 Pump/IAQ (*)	0: OFF 1: ON
1022	uns16	R	State of Relay 7 Condensation alarm/Machine state (*)	0: OFF 1: ON
1023	uns16	R	Digital Input IN2	0: Closed 1: Opened

Addr	Type	Attr.	Description	Notes
1024	uns16	R	Digital Input IN1	0: Closed 1: Opened
1025	uns16	R	Digital Input LNC condensation level (Cassette)/ Horizontal configuration (FanCoil)	0: Closed 1: Opened
1026	uns16	R	Digital Input LNA condensation level (Cassette)/ Vertical configuration (FanCoil)	0: Closed 1: Opened
1027	uns16	R	Analog output 0-10V	Volt*10
1028	uns16	R	Alarm: T1 fault	0: OFF 1: ON
1029	uns16	R	Alarm: T2 fault	0: OFF 1: ON
102A	uns16	R	Alarm: T3 fault	0: OFF 1: ON
102B	uns16	R	Allarm: Condensation level	0: OFF 1: ON

(*) depending on the configuration

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
102C	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -3,0 ÷ 3,0
102D	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102E	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102F	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
1030	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
1031	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
1032	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1033	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1034	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1035	sig16	RW	F-t1	Fan maximum off time for antistratification	minutes; 5 ÷ 13
1036	sig16	RW	F-t2	Antistratification on time *(*)*	seconds; 30 ÷ 120
1037	sig16	RW	F-t3	Post-ventilation time	seconds; 5 ÷ 240
1038	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1039	sig16	RW	dEds	Dead zone central set	°C*10; 18,0 ÷ 30,0
103A	sig16	RW	dEdr	Dead zone range	°C*10; 1,0 ÷ 6,0
103B	sig16	RW	t1dS	T1 Compensation delta	°C*10; 0,5 ÷ 2,0
103C	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103E	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103F	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
1040	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
1041	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
1042	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1043	sig16	RW	dS	Allowed set point variation from ETN	°C*10; 0,0 ÷ 9,0
1044	sig16	RW	P-t1	Pump, delay time	seconds; 0 ÷ 300
1045	sig16	RW	P-t2	Pump, OFF time in summer	minutes; 30 ÷ 90
1046	sig16	RW	P-t2	Pump, minimum ON time in summer	minutes; 0 ÷ 5
1047	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1048	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1049	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
104A	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
104B	uns16	RW	BLK0	All settings locked (see the next 4 registers)	0: OFF 1: ON
104C	uns16	RW	BLK1	On-Off locked	0: OFF 1: ON
104D	uns16	RW	BLK2	Working mode locked	0: OFF 1: ON
104E	uns16	RW	BLK3	Set-point locked	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104F	uns16	RW	BLK4	Fan mode locked	0: OFF 1: ON
1050	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
1051	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
1052	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1053	sig16	RW	dTRE	Energy saving temperature delta	°C*10; 3,0 ÷ 8,0
1054	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1055	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1056	uns16	RW	REon	Energy saving function	0: OFF 1: ON

(*) depending on the configuration

Commands

Addr	Type	Attr.	Description	Notes
1057	uns16	W	ON-OFF command	1=ON 0=OFF
1058	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation 3=Auto(Dead Zone)
1059	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed 2= Med Fan Speed 3= Max Fan Speed

Additional functionalities (Cassette until v0.54 - Fancoil until v0.59)

Addr	Type	Attr.	Description	Notes
106C	uns16	RW	IAQ enabled	1 On 0 Off
106D	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
106E	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
106F	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
1070	uns16	RW	Ambient probe value	°C x10
1071	uns16	R	T-MB presence	1 Present 0 Absent
1072	uns16	R	IR presence	1 Present 0 Absent
1073	uns16	W	Parameters Reset	The reset takes place by writing 0x005A

Additional functionalities (Cassette from v0.55 - Fancoil from v0.60)

Addr	Type	Attr.	Description	Notes
106C	uns16	RW	IAQ enabled	1 On 0 Off
106D	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
106E	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
106F	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
1070	uns16	RW	Ambient probe value	°C x10
1071	uns16	R	T-MB presence	1 Present 0 Absent
1072	uns16	R	IR presence	1 Present 0 Absent
1073	uns16	R	Dip 1 T-MB	1: ON 0:OFF
1074	uns16	R	Dip 2 T-MB	1: ON 0:OFF
1075	uns16	RW	Set variation value (±3 mode)	°C*10; -(reg1043) ÷ reg1043
1076	uns16	W	Parameters Reset	The reset takes place by writing 0x005A

Additional functionalities (Cassette from v0.56 - Fancoil from v0.61)

Addr	Type	Attr.	Description	Note
1077	uns16	RW	Time set	MSB: Hour, LSB: Minutes
1078	uns16	RW	Week day set	1=Mon...7=Sun

Bit Commands (Cassette from v0.55 - Fancoil from v0.60)

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Auto mode	1 executes the command
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command
1105	uns16	W	Fan speed Min	1 executes the command
1106	uns16	W	Fan speed Med	1 executes the command
1107	uns16	W	Fan speed Max	1 executes the command

MODBUS data – I/O Board

Hardware and software identfication

Addr	Type	Attr.	Description	Notes
0100	uns16	R	Controller model, identifies the board type (hexadecimal data)	5101 I/O board
0101	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Inputs e Outputs

Addr	Type	Attr.	Description	Notes
0102	uns16	R	Digital input IN1	0: Closed 1: Opened
0103	uns16	R	Digital input IN2	0: Closed 1: Opened
0104	uns16	R	Digital input IN3	0: Closed 1: Opened
0105	uns16	R	Digital input IN4	0: Closed 1: Opened
0106	uns16	R	Digital input IN5	0: Closed 1: Opened
0107	uns16	R	Digital input IN6	0: Closed 1: Opened
0108	uns16	R	Digital input IN7	0: Closed 1: Opened
0109	uns16	R	Digital input IN8	0: Closed 1: Opened
010A	uns16	RW	Relay 1 state	0: Not active 1: Active
010B	uns16	RW	Relay 2 state	0: Not active 1: Active
010C	uns16	RW	Relay 3 state	0: Not active 1: Active
010D	uns16	RW	Relay 4 state	0: Not active 1: Active
010E	uns16	RW	Relay 5 state	0: Not active 1: Active
010F	uns16	RW	Relay 6 state	0: Not active 1: Active
0110	uns16	RW	Relay 7 state	0: Not active 1: Active
0111	uns16	RW	Relay 8 state	0: Not active 1: Active

Examples – CVP-MB

Following, one can find a few transaction examples (directed to a cassette with address 1 and to an I/O card with address 2).

Next to the identifiers Request and Response there are the complete packets respectively transmitted and received on the serial line, including the CRC16, with the bytes represented in hexadecimal format.

Example 1: Reading the temperature of T1, T2, T3 probes

Reading of the 3 registers 1002, 1003 and 1004 with function 3.

Request 01 03 1002 0003 A0CB

Response 01 03 06 00F9 00C0 00D3 FCC0

The temperatures read are rispectively F9, C0 e D3 in hexadecimal, or rather 249, 192 e 211.
The data description in the following tables explains that the data is conveyed as [°C*10], or rather the data is represented in fixed point with 1 decimal.
The temperatures are respectively T1=24,9°C, T2=19,2°C e T3=21,1°C

Example 2: Reading board identification and firmware release

Reading of the 2 registers 1000 and 1001 with the function 3.

Request 01 03 1000 0002 C0CB

Response 01 03 04 5003 0100 1AA3

The model number is 5003 (hexadecimal) which - as shown in the table - means CVP Asyncronous, and the firmware release is 0100, that means 1.00.

Example 3: Reading DIP 2 value

Reading of the register 1006 with the function 3.

Request 01 03 1006 0001 60CB

Response 01 03 02 0001 7984

The Master/Slave configuration dip is set to 1, hence the machine is configured as Slave.

Example 4: Reading the Summer set-point parameter

Reading of the register 102D with the function 3.

Request 01 03 102D 0001 10C3

Response 01 03 02 00F0 B800

The setpoint is equal to F0 (hexadecimal) and is conveyed as [°C*10], hence its value is 24,0°C.

Example 5: Writing the Summer set-point parameter

Writing of the register 102D with the function 6. The new setpoint is 23,5°C, so one has to write into the register 235 (EB hexadecimal)

Request 01 06 102D 00EB 5D4C

Response 01 06 102D 00EB 5D4C

Example 6: Writing the T3 minimum values for ventilation to begin in summer and in winter mode.

Writing of the 2 registers 1032 e 1033 with the function 16.

The two parameters new values are respectively 37°C and 21°C, so one has to write into the first register 172 (hexadecimal) e and into the second D2 (hexadecimal).

Request 01 10 1032 0002 04 0172 00D2 9D18

Response 01 10 1032 0002 E4C7

Example 7: Setting the fan speed

Writing of the register 105E with the function 6. The fan speed chosen for this example is maximum, hence the command value is 3.

Request 01 06 105E 0003 ACD9

Response 01 06 105E 0003 ACD9

Example 8: Reading the maximum fan speed on counter

One has to read the total active time of the relay that enables the fan maximum speed; the data type is uns32, hence a 32bit unsigned integer, so 2 contiguous registers are interested.

Reading of the 2 registers 1065 and 1066 with the function 3.

Request 01 03 1065 0002 D0D4

Response 01 03 04 00CA 05AB 98E2

The two values in the response are CA e 05AB, which combined form the value CA05AB, or 13239723 in decimal format, which in turn means 153days, 5hours, 42minutes and 3seconds.

MODBUS Data – CVP-MB

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	5004 CVP Asynchronous 5005 CVP ECM
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Temperature probe T1	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	<u>CVP (machines without resistance)</u> 1: Continuous ventilation off 0: Continuous ventilation on <u>CVP (machines with resistance)</u> 1:ECM machine 0: Asynchronous machine
1006	sig16	R	Dip 2 configuration	1: Slave machine 0: Master machine
1007	sig16	R	Non used	
1008	sig16	R	Non used	
1009	sig16	R	Non used	
100A	sig16	R	Non used	
100B	sig16	R	Non used	
100C	sig16	R	Non used	
100D	sig16	R	Non used	
100E	sig16	R	Non used	

Machine state and alarms

Addr	Type	Attr.	Description	Notes
100F	uns16	R	Machine state	0:OFF 1:ON
1010	uns16	R	Fan Only mode	0: OFF 1: ON
1011	uns16	R	Dead Zone(Auto) mode	0: OFF 1: ON
1012	uns16	R	Machine is in dead zone	0: OFF 1: ON
1013	uns16	R	Season in use	0: Summer 1: Winter
1014	uns16	R	T2 probe found	0: No 1: Yes
1015	uns16	R	Thermoregulation requested	0: No 1: Yes
1016	uns16	R	Electrical heater state	0: OFF 1: ON
1017	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
1018	uns16	R	Ventilation is stopped	0: OFF 1: ON
1019	uns16	R	Fan Speed Min (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101A	uns16	R	Fan Speed Med (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101B	uns16	R	Fan Speed Max (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101C	uns16	R	State of Relay 1 - Electrovalve	0: OFF 1: ON
101D	uns16	R	State of Relay 2 - Resistance (if present)	0: OFF 1: ON
101E	uns16	R	State of Relay 3 - FAN LOW (if present)	0: OFF 1: ON
101F	uns16	R	State of Relay 4 - FAN MED (if present)	0: OFF 1: ON
1020	uns16	R	Non used	
1021	uns16	R	Non used	
1022	uns16	R	State of Relay 5 - FAN HIGH/Inverter on (if ECM)	0: OFF 1: ON
1023	uns16	R	Digital Input - Window	0: Closed 1: Opened
1024	uns16	R	Digital Input – Pump Alarm	0: Closed 1: Opened

Addr	Type	Attr.	Description	Notes
1025	uns16	R	Non used	
1026	uns16	R	Resistance availability	0: Not available 1: Available
1027	uns16	R	Analog output 0-10V	Volt*10
1028	uns16	R	Alarm: T1 fault	0: OFF 1: ON
1029	uns16	R	Alarm: T2 fault	0: OFF 1: ON
102A	uns16	R	Alarm: T3 fault	0: OFF 1: ON
102B	uns16	R	Allarm: Condensation level	0: OFF 1: ON

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
102C	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -3,0 ÷ 3,0
102D	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102E	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102F	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
1030	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
1031	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
1032	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1033	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1034	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1035	sig16	RW		Non used	minutes; 5 ÷ 13
1036	sig16	RW		Non used	seconds; 30 ÷ 120
1037	sig16	RW		Non used	seconds; 5 ÷ 240
1038	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1039	sig16	RW	dEds	Dead zone central set	°C*10; 18,0 ÷ 30,0
103A	sig16	RW	dEdr	Dead zone range	°C*10; 1,0 ÷ 6,0
103B	sig16	RW	t1dS	T1 Compensation delta	°C*10; 0,5 ÷ 2,0
103C	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103E	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103F	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
1040	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
1041	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
1042	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1043	sig16	RW	dS	Allowed set point variation from ETN	°C*10; 0,0 ÷ 9,0
1044	sig16	RW		Non used	seconds; 0 ÷ 300
1045	sig16	RW		Non used	minutes; 30 ÷ 90
1046	sig16	RW		Non used	minutes; 0 ÷ 5
1047	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1048	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1049	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
104A	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
104B	uns16	RW	BLK0	All settings locked (see the next 4 registers)	0: OFF 1: ON
104C	uns16	RW	BLK1	On-Off locked	0: OFF 1: ON
104D	uns16	RW	BLK2	Working mode locked	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104E	uns16	RW	BLK3	Set-point locked	0: OFF 1: ON
104F	uns16	RW	BLK4	Fan mode locked	0: OFF 1: ON
1050	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
1051	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
1052	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1053	sig16	RW	dTRE	Energy saving temperature delta	°C*10; 3,0 ÷ 8,0
1054	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1055	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1056	uns16	RW	REon	Energy saving function	0: OFF 1: ON
1057	sig16	RW	Ft1	Anti-stratification wait time	minutes; 10 ÷ 20
1058	sig16	RW	t1SE	T1 Summer base compensation	°C*10; 0,5 ÷ 2,0
1059	sig16	RW	Ft2E	Summer anti-stratification time	Seconds; 30 ÷ 180
105A	sig16	RW	t1SI	T1 Winter base compensation	°C*10; 0,5 ÷ 5,0
105B	sig16	RW	Ft2I	Winter anti-stratification time	Seconds; 30 ÷ 180

Commands

Addr	Type	Attr.	Description	Notes
105C	uns16	W	ON-OFF command	1=ON 0=OFF
105D	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation 3=Auto(Dead Zone)
105E	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed 2= Med Fan Speed 3= Max Fan Speed

Additional functionalities (Async until v1.15 - ECM until v0.14 - R until v 0.12)

Addr	Type	Attr.	Description	Notes
106D	uns16		Not used	
106E	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
106F	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
1070	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
1071	uns16	RW	Ambient probe value	°C x10
1072	uns16	R	T-MB presence	1 Present 0 Absent
1073	uns16	R	IR presence	1 Present 0 Absent
1074	uns16	W	Parameters Reset	The reset takes place by writing 0x005A

Additional functionalities (Async from v1.16 - ECM from v0.15 - R from v 0.13)

Addr	Type	Attr.	Description	Notes
106D	uns16	RW	IAQ enabled	1 On 0 Off
106E	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
106F	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
1070	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
1071	uns16	RW	Ambient probe value	°C x10
1072	uns16	R	T-MB presence	1 Present 0 Absent
1073	uns16	R	IR presence	1 Present 0 Absent
1074	uns16	R	Dip 1 T-MB	1: ON 0:OFF
1075	uns16	R	Dip 2 T-MB	1: ON 0:OFF
1076	uns16	RW	Set variation value (±3 mode)	°C*10; -(reg1043) ÷ reg1043
1077	uns16	W	Parameters Reset	The reset takes place by writing 0x005A

Additional functionalities (Async from v1.17 - ECM from v0.16 - R from v 0.14)

Addr	Type	Attr.	Description	Note
1078	uns16	RW	Time set	MSB: Hour, LSB: Minutes
1079	uns16	RW	Week day set	1=Mon...7=Sun

Additional functionalities (Async from v1.23 - ECM from v0.21 - R from v 0.16)

Addr	Type	Attr.	Description	Note
107A	uns16	RW	Force flap position	0: Flap standard position (or swing stop) 1: Force summer position 2: Force winter position 3: Force all open position 4: Force flap swing

Bit Commands (Async from v1.16 - ECM from v0.15 - R from v 0.13)

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Auto mode	1 executes the command
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command
1105	uns16	W	Fan speed Min	1 executes the command
1106	uns16	W	Fan speed Med	1 executes the command
1107	uns16	W	Fan speed Max	1 executes the command

Examples – QCV-MB

Following, one can find a few transaction examples (directed to a QCV with address 1).

Next to the identifiers Request and Response there are the complete packets respectively transmitted and received on the serial line, including the CRC16, with the bytes represented in hexadecimal format.

Example 1: Reading the temperature of T1, T2, T3 probes

Reading of the 3 registers 1002, 1003 and 1004 with function 3.

Request 01 03 1002 0003 A0CB

Response 01 03 06 00F9 00C0 00D3 FCC0

The temperatures read are rispectively F9, C0 e D3 in hexadecimal, or rather 249, 192 e 211.
The data description in the following tables explains that the data is conveyed as [°C*10], or rather the data is represented in fixed point with 1 decimal.
The temperatures are respectively T1=24,9°C, T2=19,2°C e T3=21,1°C

Example 2: Reading board identification and firmware release

Reading of the 2 registers 1000 and 1001 with the function 3.

Request 01 03 1000 0002 C0CB

Response 01 03 04 5000 0009 6B2F

The model number is 5006 (hexadecimal) which - as shown in the table - means QCV Asyncronous, and the firmware release is 0009, or rather 0.09.

Example 3: Reading DIP 4 value

Reading of the register 1008 with the function 3.

Request 01 03 1008 0001 0108

Response 01 03 02 0001 7984

The configuration dip for the electric heater (resistance) is 1, hence the resistance is used.

Example 4: Reading the Summer set-point parameter

Reading of the register 102D with the function 3.

Request 01 03 102D 0001 10C3

Response 01 03 02 00F0 B800

The setpoint is equal to F0 (hexadecimal) and is conveyed as [°C*10], hence its value is 24,0°C.

Example 5: Writing the Summer set-point parameter

Writing of the register 102D with the function 6. The new setpoint is 23,5°C, so one has to write into the register 235 (EB hexadecimal)

Request 01 06 102D 00EB 5D4C

Response 01 06 102D 00EB 5D4C

Example 6: Writing the parameters "Fan on by T3 probe" for Summer and Winter

Writing of the 2 registers 1032 e 1033 with the function 16.

The two parameters new values are respectively 33,0°C and 19,0°C, so one has to write into the first register 14A (330 in hexadecimal format) and into the second BE (190 in hexadecimal format).

Request 01 10 1032 0002 04 014A 00BE 1CF8

Response 01 10 1032 0002 5506

Example 7: Setting the fan speed

Writing of the register 1059 with the function 6. The fan speed chosen for this example is maximum, hence the command value is 3.

Request 01 06 1059 0003 1D18

Response 01 06 1059 0003 1D18

Example 8: Reading the maximum fan speed on counter

One has to read the total active time of the relay that enables the fan maximum speed; the data type is uns32, hence a 32bit unsigned integer, so 2 contiguous registers are interested.

Reading of the 2 registers 1060 and 1061 with the function 3.

Request 01 03 1060 0002 C0D5

Response 01 03 04 00CA 05AB 98E2

The two values in the response are CA e 05AB, which combined form the value CA05AB, or 13239723 in decimal format, which in turn means 153days, 5hours, 42minutes and 3seconds.

MODBUS Data – QCV-MB

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	0x5006 QCV Asynchronous 0x5007 QCV ECM
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Temperature probe T1	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	1: 4 pipes machine 0: 2 pipes machine
1006	sig16	R	Dip 2 configuration	1: Continuous ventilation off 0: Continuous ventilation on
1007	sig16	R	Dip 3 configuration	1: T3 used in winter/summer 0: T3 used in winter only
1008	sig16	R	Dip 4 configuration	1: Electrical heater present 0: Electrical heater absent
1009	sig16	R	Dip 5 configuration	1: El.heater integrates T1 probe 0: El.heater integrates T2 probe
100A	sig16	R	Dip 6 configuration	1: IN1 indicates the season 0: IN1 indicates the remote on/off
100B	sig16	R	Dip 7 configuration	1: Slave Machine 0: Master Machine
100C	sig16	R	Dip 8 configuration	Actuator time configuration bit0
100D	sig16	R	Dip 9 configuration	Actuator time configuration bit1
100E	sig16	R	Dip 10 configuration	Actuator time configuration bit2

Machine state and alarms

Addr	Type	Attr.	Description	Notes
100F	uns16	R	Machine state	0:OFF 1:ON
1010	uns16	R	Fan Only mode	0: OFF 1: ON
1011	uns16	R	Dead Zone(Auto) mode	0: OFF 1: ON
1012	uns16	R	Machine is in dead zone	0: OFF 1: ON
1013	uns16	R	Season in use	0: Summer 1: Winter
1014	uns16	R	T2 probe found	0: No 1: Yes
1015	uns16	R	Thermoregulation requested	0: No 1: Yes
1016	uns16	R	Electrical heater state	0: OFF 1: ON
1017	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
1018	uns16	R	Ventilation is stopped	0: OFF 1: ON
1019	uns16	R	Fan Speed Min (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101A	uns16	R	Fan Speed Med (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101B	uns16	R	Fan Speed Max (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101C	uns16	R	State of Relay 1 FAN LOW/Inverter ON (if ECM)	0: OFF 1: ON
101D	uns16	R	State of Relay 2 FAN MED	0: OFF 1: ON
101E	uns16	R	State eof Relay 3 FAN HIGH	0: OFF 1: ON
101F	uns16	R	State of Relay 4 Electrical heater 1	0: OFF 1: ON
1020	uns16	R	Not used	0: OFF 1: ON
1021	uns16	R	Not used	0: OFF 1: ON
1022	uns16	R	State of Relay 5 Electrical heater 2/IAQ (IAQ if electrical heater is absent, see reg.1008)	0: OFF 1: ON
1023	uns16	R	Digital Input IN2	0: Closed 1: Opened

Addr	Type	Attr.	Description	Notes
1024	uns16	R	Digital Input IN1	0: Closed 1: Opened
1025	uns16	R	Not used	0: Closed 1: Opened
1026	uns16	R	Not used	0: Closed 1: Opened
1027	uns16	R	Analog output 0-10V	Volt*10
1028	uns16	R	Alarm: T1 fault	0: OFF 1: ON
1029	uns16	R	Alarm: T2 fault	0: OFF 1: ON
102A	uns16	R	Alarm: T3 fault	0: OFF 1: ON

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
102C	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -3,0 ÷ 3,0
102D	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102E	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102F	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
1030	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
1031	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
1032	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1033	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1034	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1035	sig16	RW		Not used	minutes; 5 ÷ 13
1036	sig16	RW		Not used	seconds; 30 ÷ 120
1037	sig16	RW	F-t3	Post-ventilation time	seconds; 5 ÷ 240
1038	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1039	sig16	RW	dEds	Dead zone central set	°C*10; 18,0 ÷ 30,0
103A	sig16	RW	dEdr	Dead zone range	°C*10; 1,0 ÷ 6,0
103B	sig16	RW		Not used	°C*10; 0,5 ÷ 2,0
103C	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103E	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103F	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
1040	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
1041	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
1042	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1043	sig16	RW	dS	Allowed set point variation from ETN	°C*10; 0,0 ÷ 9,0
1044	sig16	RW		Not used	seconds; 0 ÷ 300
1045	sig16	RW		Not used	minutes; 30 ÷ 90
1046	sig16	RW		Not used	minutes; 0 ÷ 5
1047	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1048	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1049	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
104A	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
104B	uns16	RW	BLK0	All settings locked (see the next 4 registers)	0: OFF 1: ON
104C	uns16	RW	BLK1	On-Off locked	0: OFF 1: ON
104D	uns16	RW	BLK2	Working mode locked	0: OFF 1: ON
104E	uns16	RW	BLK3	Set-point locked	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104F	uns16	RW	BLK4	Fan mode locked	0: OFF 1: ON
1050	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
1051	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
1052	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1053	sig16	RW	dTRE	Energy saving temperature delta	°C*10; 3,0 ÷ 8,0
1054	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1055	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1056	uns16	RW	REon	Energy saving function	0: OFF 1: ON

Commands

Addr	Type	Attr.	Description	Notes
1057	uns16	W	ON-OFF command	1=ON 0=OFF
1058	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation 3=Auto(Dead Zone)
1059	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed 2= Med Fan Speed 3= Max Fan Speed

Additional functionalities (until v0.13)

Addr	Type	Attr.	Description	Notes
1066	uns16	RW	IAQ enabled	1 On 0 Off
1067	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
1068	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
1069	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
106A	uns16	RW	Ambient probe value	°C x10
106B	uns16	R	T-MB presence	1 Present 0 Absent
106C	uns16	R	IR presence	1 Present 0 Absent
106D	uns16	W	Parameters Reset	The reset takes place by writing 0x005A

Additional functionalities (from v0.14)

Addr	Type	Attr.	Description	Notes
1066	uns16	RW	IAQ enabled	1 On 0 Off
1067	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
1068	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
1069	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
106A	uns16	RW	Ambient probe value	°C x10
106B	uns16	R	T-MB presence	1 Present 0 Absent
106C	uns16	R	IR presence	1 Present 0 Absent
106D	uns16	R	Dip 1 T-MB	1: ON 0:OFF
106E	uns16	R	Dip 2 T-MB	1: ON 0:OFF
106F	uns16	RW	Set variation value (±3 mode)	°C*10; -(reg1043) ÷ reg1043
1070	uns16	W	Parameters Reset	The reset takes place by writing 0x005A

Additional functionalities (from v 0.16)

Addr	Type	Attr.	Description	Note
1071	uns16	RW	Time set	MSB: Hour, LSB: Minutes
1072	uns16	RW	Week day set	1=Mon...7=Sun

Bit Commands (from v0.14)

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Auto mode	1 executes the command
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command

Addr	Type	Attr.	Descrizione	Note
1105	uns16	W	Fan speed Min	1 executes the command
1106	uns16	W	Fan speed Med	1 executes the command
1107	uns16	W	Fan speed Max	1 executes the command

Examples – Carisma Floor CCP/CFP-ECM

Following, one can find a few transaction examples (directed to a CCP-ECM with address 1).

Next to the identifiers Request and Response there are the complete packets respectively transmitted and received on the serial line, including the CRC16, with the bytes represented in hexadecimal format.

Example 1: Reading the temperature of T1, T2, T3 probes

Reading of the 3 registers 1002, 1003 and 1004 with function 3.

Request 01 03 1002 0003 A0CB

Response 01 03 06 00F9 00C0 00D3 FCC0

The temperatures read are rispectively F9, C0 e D3 in hexadecimal, or rather 249, 192 e 211.
The data description in the following tables explains that the data is conveyed as [°C*10], or rather the data is represented in fixed point with 1 decimal.
The temperatures are respectively T1=24,9°C, T2=19,2°C e T3=21,1°C

Example 2: Reading board identification and firmware release

Reading of the 2 registers 1000 and 1001 with the function 3.

Request 01 03 1000 0002 C0CB

Response 01 03 04 5008 0100 6B61

The model number is 5008 (hexadecimal) which means CCP-ECM and the firmware release is 0100, that means 1.00.

Example 3: Reading DIP 2 value

Reading of the register 1006 with the function 3.

Request 01 03 1006 0001 60CB

Response 01 03 02 0001 7984

The Master/Slave configuration dip is set to 1, hence the machine is configured as Slave.

Example 4: Reading the Summer set-point parameter

Reading of the register 102D with the function 3.

Request 01 03 102D 0001 10C3

Response 01 03 02 00F0 B800

The setpoint is equal to F0 (hexadecimal) and is conveyed as [°C*10], hence its value is 24,0°C.

Example 5: Writing the Summer set-point parameter

Writing of the register 102D with the function 6. The new setpoint is 23,5°C, so one has to write into the register 235 (EB hexadecimal)

Request 01 06 102D 00EB 5D4C

Response 01 06 102D 00EB 5D4C

Example 6: Writing the T3 minimum values for ventilation to begin in summer and in winter mode.

Writing of the 2 registers 1032 e 1033 with the function 16.

The two parameters new values are respectively 37°C and 21°C, so one has to write into the first register 172 (hexadecimal) e and into the second D2 (hexadecimal).

Request 01 10 1032 0002 04 0172 00D2 9D18

Response 01 10 1032 0002 E4C7

Example 7: Setting the fan speed

Writing of the register 105E with the function 6. The fan speed chosen for this example is maximum, hence the command value is 3.

Request 01 06 105E 0003 ACD9

Response 01 06 105E 0003 ACD9

MODBUS Data -Carisma Floor CCP/CFP-ECM

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	5008 CCP/CFP-ECM
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Temperature probe T1	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	1: Continuous ventilation on 0: Continuous ventilation off
1006	sig16	R	Dip 2 configuration	1: Slave machine 0: Master machine
1007	sig16	R	Non used	
1008	sig16	R	Non used	
1009	sig16	R	Non used	
100A	sig16	R	Non used	
100B	sig16	R	Non used	
100C	sig16	R	Non used	
100D	sig16	R	Non used	
100E	sig16	R	Non used	

Machine state and alarms

Addr	Type	Attr.	Description	Notes
100F	uns16	R	Machine state	0:OFF 1:ON
1010	uns16	R	Fan Only mode	0: OFF 1: ON
1011	uns16	R	Dead Zone(Auto) mode	0: OFF 1: ON
1012	uns16	R	Machine is in dead zone	0: OFF 1: ON
1013	uns16	R	Season in use	0: Summer 1: Winter
1014	uns16	R	T2 probe found	0: No 1: Yes
1015	uns16	R	Thermoregulation requested	0: No 1: Yes
1016	uns16	R	Not used	Returns 0
1017	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
1018	uns16	R	Ventilation is stopped	0: OFF 1: ON
1019	uns16	R	Fan Speed Min (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101A	uns16	R	Fan Speed Med (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101B	uns16	R	Fan Speed Max (for ECM machines, this field is not valid with automatic fan speed)	0: OFF 1: ON
101C	uns16	R	State of Relay 1 - Electrovalve cold water	0: OFF 1: ON
101D	uns16	R	State of Relay 2 - Electrovalve hot water	0: OFF 1: ON
101E	uns16	R	Not used	
101F	uns16	R	Not used	
1020	uns16	R	Not used	
1021	uns16	R	Not used	
1022	uns16	R	Not used	
1023	uns16	R	Digital Input - Window	0: Closed 1: Opened
1024	uns16	R	Digital Input - 4 pipes mode	0: Closed (2 pipes) 1: Opened (4 pipes)
1025	uns16	R	Non used	
1026	uns16	R	Not used	
1027	uns16	R	Analog output 0-10V	Volt*10

Addr	Type	Attr.	Description	Notes
1028	uns16	R	Alarm: T1 fault	0: OFF 1: ON
1029	uns16	R	Alarm: T2 fault	0: OFF 1: ON
102A	uns16	R	Alarm: T3 fault	0: OFF 1: ON
102B	uns16	R	Not used	Returns 0

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
102C	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -3,0 ÷ 3,0
102D	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102E	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102F	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
1030	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
1031	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
1032	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1033	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1034	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1035	sig16	RW		Not used	minutes; 5 ÷ 13
1036	sig16	RW		Not used	seconds; 30 ÷ 120
1037	sig16	RW	F-t3	Post-ventilation time	seconds; 5 ÷ 240
1038	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1039	sig16	RW	dEds	Dead zone central set	°C*10; 18,0 ÷ 30,0
103A	sig16	RW	dEdr	Dead zone range	°C*10; 1,0 ÷ 6,0
103B	sig16	RW	t1dS	T1 Compensation delta	°C*10; 0,5 ÷ 2,0
103C	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103E	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103F	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
1040	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
1041	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
1042	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1043	sig16	RW	dS	Allowed set point variation from ETN	°C*10; 0,0 ÷ 9,0
1044	sig16	RW		Not used	seconds; 0 ÷ 300
1045	sig16	RW		Non used	minutes; 30 ÷ 90
1046	sig16	RW		Non used	minutes; 0 ÷ 5
1047	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1048	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1049	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
104A	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
104B	uns16	RW	BLK0	All settings locked (see the next 4 registers)	0: OFF 1: ON
104C	uns16	RW	BLK1	On-Off locked	0: OFF 1: ON
104D	uns16	RW	BLK2	Working mode locked	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104E	uns16	RW	BLK3	Set-point locked	0: OFF 1: ON
104F	uns16	RW	BLK4	Fan mode locked	0: OFF 1: ON
1050	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
1051	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
1052	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1053	sig16	RW	dTRE	Energy saving temperature delta	°C*10; 3,0 ÷ 8,0
1054	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1055	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1056	uns16	RW	REon	Energy saving function	0: OFF 1: ON

Commands

Addr	Type	Attr.	Description	Notes
1057	uns16	W	ON-OFF command	1=ON 0=OFF
1058	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation 3=Auto(Dead Zone)
1059	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed 2= Med Fan Speed 3= Max Fan Speed

Counters

Addr	Type	Attr.	Description	Notes
105A	uns32	R	Board power-on time counter	seconds
105C	uns32	R	Inverter analog output on time counter (ECM)	seconds
105E	uns32	R	Inverter output voltage sum [V*10] updated every 1 second	seconds*Volt*10
1060	uns32	R	Machine on time counter	seconds
1062	uns32	R	Hot water valve on time	seconds
1064	uns32	R	Cold water valve on time	seconds

Additional functionalities

Addr	Type	Attr.	Description	Notes
1066	uns16		Not used	
1067	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
1068	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
1069	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
106A	uns16	RW	Ambient probe value	°C x10
106B	uns16	R	T-MB presence	1 Present 0 Absent
106C	uns16	R	IR presence	1 Present 0 Absent
106D	uns16	R	Dip 1 T-MB	1: ON 0:OFF
106E	uns16	R	Dip 2 T-MB	1: ON 0:OFF
106F	uns16	RW	Set variation value (±3 mode)	°C*10; -(reg1043) ÷ reg1043
1070	uns16	RW	Antistratification mode	0:Off 1:Summer 2:Winter
1071	uns16	W	Parameters reset	The reset takes effect by writing 0x005A

Additional functionalities (from v 0.04)

Addr	Type	Attr.	Description	Note
1072	uns16	RW	Time set	MSB: Hour, LSB: Minutes
1073	uns16	RW	Week day set	1=Mon...7=Sun

Bit Commands

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Auto mode	1 executes the command
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command
1105	uns16	W	Fan speed Min	1 executes the command
1106	uns16	W	Fan speed Med	1 executes the command
1107	uns16	W	Fan speed Max	1 executes the command

MODBUS Data – Skystar Jumbo

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	500A Skystar Jumbo
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Temperature probe T1	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	1: 4 pipes machine 0: 2 pipes machine
1006	sig16	R	Dip 2 configuration	1: Thermoregulation with fan only 0: Complete thermoregulation
1007	sig16	R	Dip 3 configuration	1: T3 probe on 0: T3 probe off
1008	sig16	R	Dip 4 configuration	1: T3 used in winter/summer 0: T3 used in winter only
1009	sig16	R	Dip 5 configuration	1: Continuous ventilation off 0: Continuous ventilation on
100A	sig16	R	Dip 6 configuration	1: Electrical heater present 0: Electrical heater absent
100B	sig16	R	Dip 7 configuration	1: El.heater integrates T1 probe 0: El.heater integrates T2 probe
100C	sig16	R	Dip 8 configuration	1: Relay7 is associated to the condensation alarm (relay closed if alarm present) 0: Relay7 associated to the machine state (relay closed if machine on)
100D	sig16	R	Dip 9 configuration	1: IN1 indicates the season 0: IN1 indicates the remote on/off
100E	sig16	R	Dip 10 configuration	1: Slave Machine 0: Master Machine

Machine state and alarms

Addr	Type	Attr.	Description	Notes
100F	uns16	R	Machine state	0:OFF 1:ON
1010	uns16	R	Fan Only mode	0: OFF 1: ON
1011	uns16	R	Dead Zone(Auto) mode	0: OFF 1: ON
1012	uns16	R	Machine is in dead zone	0: OFF 1: ON
1013	uns16	R	Season in use	0: Summer 1: Winter
1014	uns16	R	T2 probe found	0: No 1: Yes
1015	uns16	R	Thermoregulation requested	0: No 1: Yes
1016	uns16	R	Electrical heater state	0: OFF 1: ON
1017	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
1018	uns16	R	Ventilation is stopped	0: OFF 1: ON
1019	uns16	R	Fan Speed Min (this field is not valid with automatic fan speed)	0: OFF 1: ON
101A	uns16	R	Fan Speed Med (this field is not valid with automatic fan speed)	0: OFF 1: ON
101B	uns16	R	Fan Speed Max (this field is not valid with automatic fan speed)	0: OFF 1: ON
101C	uns16	R	State of Relay 1 EV hot/Electric heater	0: OFF 1: ON
101D	uns16	R	Stato Relè 2 EV cold	0: OFF 1: ON
101E	uns16	R	State of Relay 3 Pump	0: OFF 1: ON
101F	uns16	R	State of Relay 4 Inverter activation	0: OFF 1: ON
1020	uns16	R	State of Relay 5 Alarm/ Machine state State *(*)*	0: OFF 1: ON
1021	uns16	R	Output connector 3-4 state IAQ	0: OFF 1: ON
1022	uns16	R	Not used	
1023	uns16	R	Digital Input IN2	0: Closed 1: Opened
1024	uns16	R	Digital Input IN1	0: Closed 1: Opened
1025	uns16	R	Digital Input LNC condensation level	0: Closed 1: Opened

Addr	Type	Attr.	Description	Notes
1026	uns16	R	Digital Input LNA condensation level	0: Closed 1: Opened
1027	uns16	R	Analog output 0-10V	Volt*10
1028	uns16	R	Alarm: T1 fault	0: OFF 1: ON
1029	uns16	R	Alarm: T2 fault	0: OFF 1: ON
102A	uns16	R	Alarm: T3 fault	0: OFF 1: ON
102B	uns16	R	Allarm: Condensation level	0: OFF 1: ON

(*) depending on the configuration

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
102C	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -3,0 ÷ 3,0
102D	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102E	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102F	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
1030	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
1031	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
1032	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1033	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1034	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1035	sig16	RW	F-t1	Fan maximum off time for antistratification	minutes; 5 ÷ 13
1036	sig16	RW	F-t2	Antistratification on time *(*)*	seconds; 30 ÷ 120
1037	sig16	RW	F-t3	Post-ventilation time	seconds; 5 ÷ 240
1038	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1039	sig16	RW	dEds	Dead zone central set	°C*10; 18,0 ÷ 30,0
103A	sig16	RW	dEdr	Dead zone range	°C*10; 1,0 ÷ 6,0
103B	sig16	RW	t1dS	T1 Compensation delta	°C*10; 0,5 ÷ 2,0
103C	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103E	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103F	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
1040	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
1041	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
1042	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1043	sig16	RW	dS	Allowed set point variation from ETN	°C*10; 0,0 ÷ 9,0
1044	sig16	RW	P-t1	Pump, delay time	seconds; 0 ÷ 300
1045	sig16	RW	P-t2	Pump, OFF time in summer	minutes; 30 ÷ 90
1046	sig16	RW	P-t2	Pump, minimum ON time in summer	minutes; 0 ÷ 5
1047	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1048	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1049	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
104A	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
104B	uns16	RW	BLK0	All settings locked (see the next 4 registers)	0: OFF 1: ON
104C	uns16	RW	BLK1	On-Off locked	0: OFF 1: ON
104D	uns16	RW	BLK2	Working mode locked	0: OFF 1: ON
104E	uns16	RW	BLK3	Set-point locked	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104F	uns16	RW	BLK4	Fan mode locked	0: OFF 1: ON
1050	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
1051	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
1052	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1053	sig16	RW	dTRE	Energy saving temperature delta	°C*10; 3,0 ÷ 8,0
1054	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1055	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1056	uns16	RW	REon	Energy saving function	0: OFF 1: ON

(*) at 5Volt, plus 40seconds at 3Volt

Commands

Addr	Type	Attr.	Description	Notes
1057	uns16	W	ON-OFF command	1=ON 0=OFF
1058	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation 3=Auto(Dead Zone)
1059	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed 2= Med Fan Speed 3= Max Fan Speed

Additional functionalities

Addr	Type	Attr.	Description	Notes
106C	uns16	RW	IAQ enabled	1 On 0 Off
106D	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
106E	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
106F	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
1070	uns16	RW	Ambient probe value	°C x10
1071	uns16	R	T-MB presence	1 Present 0 Absent
1072	uns16	R	IR presence	1 Present 0 Absent
1073	uns16	R	Dip 1 T-MB	1: ON 0:OFF
1074	uns16	R	Dip 2 T-MB	1: ON 0:OFF
1075	uns16	RW	Set variation value (mode ±3)	°C*10; -(reg1043) ÷ reg1043
1076	uns16	W	Parameters reset	The reset takes effect by writing 0x005A
1077	uns16	RW	Current Time	MSB: Ora, LSB: Minuti
1078	uns16	RW	Current Day	1=Lun...7=Dom
1079	uns16	RW	Flap Swing	1: ON 0:OFF
107A	uns16	RW	Force flap position	0: Flap standard position 1: Force summer position 2: Force winter position 3: Force all open position 4: Force flap swing
107B	uns16	RW	Flap1 activation	1: ON 0:OFF
107C	uns16	RW	Flap2 activation	1: ON 0:OFF
107D	uns16	RW	Flap3 activation	1: ON 0:OFF
107E	uns16	RW	Flap4 activation	1: ON 0:OFF

Bit Commands

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Auto mode	1 executes the command
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command
1105	uns16	W	Fan speed Min	1 executes the command
1106	uns16	W	Fan speed Med	1 executes the command
1107	uns16	W	Fan speed Max	1 executes the command

MODBUS Data –WM-UH-ECM for Atlas and Janus

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	0x500B Atlas 0x500C Janus
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Temperature probe T1	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	1: Janus 0: Atlas
1006	sig16	R	Dip 2 configuration	1: Thermoregulation with fan only 0: Complete thermoregulation
1007	sig16	R	Dip 3 configuration	1: Continuous ventilation off 0: Continuous ventilation on
1008	sig16	R	Dip 4 configuration	1: T3 probe on 0: T3 probe off
1009	sig16	R	Dip 5 configuration	1: D0D0 output used for pump or boiler/chiller 0: D0D0 output used for machine state
100A	sig16	R	Dip 6 configuration	1: IN1 for season choice 0: IN1 for remote Off
100B	sig16	R	Dip 7 configuration	1: IN2 for night mode choice 0: IN2 for anti freeze mode
100C	sig16	R	Dip 8 configuration	Not used
100D	sig16	R	Dip 9 configuration	Not used
100E	sig16	R	Dip 10 configuration	1: Slave Machine 0: Master Machine

Machine state and alarms

Addr	Type	Attr.	Description	Notes
100F	uns16	R	Machine state	0:OFF 1:ON
1010	uns16	R	Fan Only mode	0: OFF 1: ON
1011	uns16	R	Not used	
1012	uns16	R	Machine is in dead zone	0: OFF 1: ON
1013	uns16	R	Season in use	0: Summer 1: Winter
1014	uns16	R	T2 probe used for season choice	0: No 1: Yes
1015	uns16	R	Thermoregulation requested	0: No 1: Yes
1016	uns16	R	Not used	
1017	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
1018	uns16	R	Ventilation is stopped	0: OFF 1: ON
1019	uns16	R	Fan Speed Min (legacy)	0: OFF 1: ON
101A	uns16	R	Fan Speed Med (legacy)	0: OFF 1: ON
101B	uns16	R	Fan Speed Max (legacy)	0: OFF 1: ON
101C	uns16	R	State of Relay 1	0: OFF 1: ON
101D	uns16	R	State of Relay 2	0: OFF 1: ON
101E	uns16	R	State eof Relay 3	0: OFF 1: ON
101F	uns16	R	State of Relay 4	0: OFF 1: ON
1020	uns16	R	State of Relay 5	0: OFF 1: ON
1021	uns16	R	State of Relay 6	0: OFF 1: ON
1022	uns16	R	State of Relay 7	0: OFF 1: ON
1023	uns16	R	Digital Input IN2	0: Closed 1: Opened
1024	uns16	R	Digital Input IN1	0: Closed 1: Opened
1025	uns16	R	Not used	
1026	uns16	R	Not used	0: Closed 1: Opened

Addr	Type	Attr.	Description	Notes
1027	uns16	R	Analog output 0-10V	Volt*10
1028	uns16	R	Alarm: T1 fault	0: OFF 1: ON
1029	uns16	R	Alarm: T2 fault	0: OFF 1: ON
102A	uns16	R	Alarm: T3 fault	0: OFF 1: ON
102B	uns16	R	Allarm: Condensation level	0: OFF 1: ON

(*) depending on the configuration

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
102C	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -3,0 ÷ 3,0
102D	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102E	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102F	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
1030	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
1031	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
1032	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1033	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1034	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1035	sig16	RW		Not used	
1036	sig16	RW		Not used	
1037	sig16	RW	F-t3	Post-ventilation time	seconds; 5 ÷ 240
1038	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1039	sig16	RW		Not used	
103A	sig16	RW		Not used	
103B	sig16	RW		Not used	
103C	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103E	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103F	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
1040	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
1041	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
1042	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1043	sig16	RW	dS	Allowed set point variation from ETN	°C*10; 0,0 ÷ 9,0
1044	sig16	RW		Not used	
1045	sig16	RW		Not used	
1046	sig16	RW		Not used	
1047	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1048	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1049	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
104A	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
104B	uns16	RW	BLK0	All settings locked (see the next 4 registers)	0: OFF 1: ON
104C	uns16	RW	BLK1	On-Off locked	0: OFF 1: ON
104D	uns16	RW	BLK2	Working mode locked	0: OFF 1: ON
104E	uns16	RW	BLK3	Set-point locked	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104F	uns16	RW	BLK4	Fan mode locked	0: OFF 1: ON
1050	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
1051	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
1052	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1053	sig16	RW	dTRE	Energy saving or night mode temperature delta	°C*10; 3,0 ÷ 8,0
1054	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1055	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1056	uns16	RW	REon	Energy saving function	0: OFF 1: ON

Commands

Addr	Type	Attr.	Description	Notes
1057	uns16	W	ON-OFF command	1=ON 0=OFF
1058	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation
1059	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed (legacy) 2= Med Fan Speed (legacy) 3= Max Fan Speed (legacy)

Additional functionalities

Addr	Type	Attr.	Description	Notes
105A	uns16	RW	Not used	
105B	uns16	RW	Not used	
105C	uns16	RW	Not used	
105D	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
105E	uns16	RW	Ambient probe value	°C x10
105F	uns16	R	T-MB presence	1 Present 0 Absent
1060	uns16	R	IR presence	1 Present 0 Absent
1061	uns16	R	Dip 1 T-MB	1: ON 0:OFF
1062	uns16	R	Dip 2 T-MB	1: ON 0:OFF
1063	uns16	RW	Set variation value (±3 mode)	°C*10; -(reg1043) ÷ reg1043
1064	uns16	W	Parameters Reset	The reset takes place by writing 0x005A
1065	uns16	RW	Time set	MSB: Hour, LSB: Minutes
1066	uns16	RW	Week day set	1=Mon...7=Sun
1067	uns16	RW	Fan Voltage Set	10 (1.0V) --- 100 (10.0V)

Bit Commands

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Auto mode	1 executes the command
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command
1105	uns16	W	Fan speed Min (legacy)	1 executes the command
1106	uns16	W	Fan speed Med (legacy)	1 executes the command
1107	uns16	W	Fan speed Max (legacy)	1 executes the command

MODBUS Data – Carisma Whisper CFF-ECM

(for CFF fan-coil only 4 dip bank ,maximum 15 address)

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	0x5020 CFF Evo Display Evo 0x5023 CFF Evo Display Eco 0x5024 CFF Evo w/o Display
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Temperature probe T1	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	1: Continuous ventilation off 0: Continuous ventilation on
1006	sig16	R	Dip 2 configuration	1: Slave machine 0: Master machine
1007	sig16	R	Dip 3 configuration	1: Radiant panel present 0: Radiant panel not present
1008	sig16	R	Dip 4 configuration	1: Connectivity OFF 0: Connectivity ON

Machine state and alarms

Addr	Type	Attr.	Description	Notes
1009	uns16	R	Machine state	0:OFF 1:ON
100A	uns16	R	Fan Only mode	0: OFF 1: ON
100B	uns16	R	Not used	
100C	uns16	R	Not used	
100D	uns16	R	Season in use	0: Summer 1: Winter
100E	uns16	R	T2 probe used for season choice	0: No 1: Yes
100F	uns16	R	Thermoregulation requested	0: No 1: Yes
1010	uns16	R	Radiant panel state	0: Off 1: On
1011	uns16	R	Night mode	0: Not active 1: Active
1012	uns16	R	Not used	
1013	uns16	R	Keyboard locked (EVO Interface)	0: Off 1: On
1014	uns16	R	Not used	
1015	uns16	R	On/Off memorized machine state (regardless of remote off input)	0: OFF 1: ON
1016	uns16	R	Slave Machine	0: OFF 1: ON
1017	uns16	R	Not used	
1018	uns16	R	Not used	
1019	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
101A	uns16	R	Ventilation is stopped	0: OFF 1: ON
101B	uns16	R	Fan Speed Min (legacy-only T-MB)	0: OFF 1: ON
101C	uns16	R	Fan Speed Med (legacy-only T-MB)	0: OFF 1: ON
101D	uns16	R	Fan Speed Max (legacy-only T-MB)	0: OFF 1: ON
101E	uns16	R	Fan Speed Linear (Free User Choice)	0: OFF 1: ON
101F	uns16	R	State of Relay 1 (Inverter)	0: OFF 1: ON
1020	uns16	R	State of Relay 2 (Valve)	0: OFF 1: ON

Addr	Type	Attr.	Description	Notes
1021	uns16	R	State eof Relay 3 (Radiant panel)	0: OFF 1: ON
1022	uns16	R	State of Relay 4 (Boiler)	0: OFF 1: ON
1023	uns16	R	State of Relay 5 (Chiller)	0: OFF 1: ON
1024	uns16	R	Digital Input IN1	1: Closed 0: Opened
1025	uns16	R	Analog output 0-10V	Volt*10
1026	uns16	R	Alarm: T1 fault	0: OFF 1: ON
1027	uns16	R	Alarm: T2 fault	0: OFF 1: ON
1028	uns16	R	Alarm: T3 fault	0: OFF 1: ON

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
1029	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -3,0 ÷ 3,0
102A	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102B	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102C	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
102D	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
102E	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
102F	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1030	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1031	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1032	sig16	RW		Not used	
1033	sig16	RW		Not used	
1034	sig16	RW		Not used	
1035	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1036	sig16	RW		Not used	
1037	sig16	RW		Not used	
1038	sig16	RW		Not used	
1039	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103A	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103B	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103C	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
103E	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
103F	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1040	sig16	RW	dS	Allowed set point variation from T-MB	°C*10; 0,0 ÷ 9,0
1041	sig16	RW		Not used	
1042	sig16	RW		Not used	
1043	sig16	RW		Not used	
1044	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1045	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1046	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
1047	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
1048	uns16	RW	BLK0	All settings locked (see the next 4 registers) only T-MB	0: OFF 1: ON
1049	uns16	RW	BLK1	On-Off locked (only T-MB)	0: OFF 1: ON
104A	uns16	RW	BLK2	Working mode locked (only T-MB)	0: OFF 1: ON
104B	uns16	RW	BLK3	Set-point locked (only T-MB)	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104C	uns16	RW	BLK4	Fan mode locked (only T-MB)	0: OFF 1: ON
104D	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
104E	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
104F	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1050	sig16	RW	dTRE	Energy saving or night mode temperature delta	°C*10; 3,0 ÷ 8,0
1051	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1052	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1053	uns16	RW	REon	Energy saving function	0: OFF 1: ON

Commands

Addr	Type	Attr.	Description	Notes
1054	uns16	W	ON-OFF command	1=ON 0=OFF
1055	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation
1056	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed (legacy) 2= Med Fan Speed (legacy) 3= Max Fan Speed (legacy)

Additional functionalities

Addr	Type	Attr.	Description	Notes
1057	uns16	RW	Not used	
1058	uns16	RW	Reserved	Must be 0
1059	uns16	RW	Not used	
105A	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
105B	uns16	RW	Ambient probe value	°C x10
105C	uns16	R	T-MB presence	1 Present 0 Absent
105D	uns16	R	Mode ±3	0: OFF 1:ON
105E	uns16	R	NTC T-MB	0: ON 1:OFF
105F	uns16	RW	Set variation value (±3 mode)	°C*10; -(reg1043) ÷ reg1043
1060	uns16	W	Parameters Reset	The reset takes place by writing 0x005A
1061	uns16	RW	Time set	MSB: Hour, LSB: Minutes
1062	uns16	RW	Week day set	1=Mon...7=Sun
1063	uns16	RW	Fan Voltage Set	10 (1.0V) --- 100 (10.0V)
1064	uns16	RW	Night mode	1: Night mode On 0: Night mode Off
1065	uns16	RW	Keyboard locked (EVO Interface)	1: On 0: Off
1066	uns16	RW	Not used	When read returns 0
1067	uns16	RW	Not used	When read returns 0
1068	uns16	RW	Not used	When read returns 0
1069	uns16	RW	Not used	When read returns 0
106A	uns16	RW	Not used	When read returns 0
106B	uns16	RW	Not used	When read returns 0
106C	uns16	RW	Not used	When read returns 0
106D	uns16	RW	Not used	When read returns 0

Bit Commands

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Not used	1 executes the command
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command
1105	uns16	W	Fan speed Min (legacy)	1 executes the command
1106	uns16	W	Fan speed Med (legacy)	1 executes the command
1107	uns16	W	Fan speed Max (legacy)	1 executes the command

MODBUS Data – CVP-MBA

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	0x500D CVP2
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Ambient temperature	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	1: Continuous ventilation off 0: Continuous ventilation on
1006	sig16	R	Dip 2 configuration	1: Anti-stratification w/o EV or Res 0: Standard anti-stratification
1007	sig16	R	Dip 3 configuration	1: ECM motor 0: Async motor
1008	sig16	R	Dip 4 configuration	1: Slave 0: Master
1009	sig16	R	Dip 5 configuration	1: Resistance on if water is cold 0: Resistance instead of water
100A	sig16	R	Dip 6 configuration	1: Connectivity Off 0: Connectivity On
100B	sig16	R	Not used	
100C	sig16	R	Not used	
100D	sig16	R	Not used	
100E	sig16	R	Not used	

Machine state and alarms

Addr	Type	Attr.	Description	Notes
100F	uns16	R	Machine state	0:OFF 1:ON
1010	uns16	R	Fan Only mode	0: OFF 1: ON
1011	uns16	R	Auto mode	0: OFF 1: ON
1012	uns16	R	Machine is in dead zone	0: OFF 1: ON
1013	uns16	R	Season in use	0: Summer 1: Winter
1014	uns16	R	T2 probe used for season choice	0: No 1: Yes
1015	uns16	R	Thermoregulation requested	0: No 1: Yes
1016	uns16	R	Resistance state	0: Off 1: On
1017	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
1018	uns16	R	Ventilation is stopped	0: OFF 1: ON
1019	uns16	R	Fan Speed Min (legacy-only T-MB/IR)	0: OFF 1: ON
101A	uns16	R	Fan Speed Med (legacy-only T-MB/IR)	0: OFF 1: ON
101B	uns16	R	Fan Speed Max (legacy-only T-MB/IR)	0: OFF 1: ON
101C	uns16	R	State of Relay 1 (Fan Min)	0: OFF 1: ON
101D	uns16	R	State of Relay 2 (Fan Med)	0: OFF 1: ON
101E	uns16	R	State eof Relay 3 (Fan Max or Inverter On)	0: OFF 1: ON
101F	uns16	R	State of Relay 4 (Resistance)	0: OFF 1: ON
1020	uns16	R	State of Relay 5 (EV)	0: OFF 1: ON
1021	uns16	R	State of Relay 6 (Boiler)	0: OFF 1: ON
1022	uns16	R	State of Relay 7 (Chiller)	0: OFF 1: ON
1023	uns16	R	Digital Input - Window	0: Closed 1: Opened
1024	uns16	R	Digital Input – Pump Alarm	0: Closed 1: Opened
1025	uns16	R	Not used	

Addr	Type	Attr.	Description	Notes
1026	uns16	R	Not used	
1027	uns16	R	Analog output 0-10V	Volt*10
1028	uns16	R	Alarm: T1 fault	0: OFF 1: ON
1029	uns16	R	Alarm: T2 fault	0: OFF 1: ON
102A	uns16	R	Alarm: T3 fault	0: OFF 1: ON
102B	uns16	R	Alarmp: Pump input	0: OFF 1: ON

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
102C	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -5,0 ÷ 5,0
102D	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102E	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102F	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
1030	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
1031	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
1032	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1033	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1034	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1035	sig16	RW		Not used	°C*10; 18,0 ÷ 30,0
1036	sig16	RW		Not used	°C*10; 1,0 ÷ 6,0
1037	sig16	RW		Not used	
1038	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1039	sig16	RW	dEds	Auto mode Setpoint	°C*10; 18,0 ÷ 30,0
103A	sig16	RW	dEdr	Auto mode Range	°C*10; 1,0 ÷ 6,0
103B	sig16	RW		Not used	
103C	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103E	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103F	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
1040	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
1041	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
1042	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1043	sig16	RW	dS	Allowed set point variation from T-MB	°C*10; 0,0 ÷ 9,0
1044	sig16	RW		Not used	
1045	sig16	RW		Not used	
1046	sig16	RW		Not used	
1047	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1048	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1049	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
104A	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
104B	uns16	RW	BLK0	All settings locked (see the next 4 registers) only T-MB/IR	0: OFF 1: ON
104C	uns16	RW	BLK1	On-Off locked (only T-MB/IR)	0: OFF 1: ON
104D	uns16	RW	BLK2	Working mode locked (only T-MB/IR)	0: OFF 1: ON
104E	uns16	RW	BLK3	Set-point locked (only T-MB/IR)	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104F	uns16	RW	BLK4	Fan mode locked (only T-MB/IR)	0: OFF 1: ON
1050	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
1051	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
1052	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1053	sig16	RW	dTRE	Energy saving or night mode temperature delta	°C*10; 3,0 ÷ 8,0
1054	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1055	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1056	uns16	RW	REon	Energy saving function	0: OFF 1: ON
1057	sig16	RW	Ft1	Anti-stratification wait time	minutes; 10 ÷ 45
1058	sig16	RW	t1SE	T1 Summer base compensation	°C*10; 0,0 ÷ 2,0
1059	sig16	RW	Ft2E	Summer anti-stratification time	Seconds; 0 ÷ 180
105A	sig16	RW	t1SI	T1 Winter base compensation	°C*10; 0,0 ÷ 5,0
105B	sig16	RW	Ft2I	Winter anti-stratification time	Seconds; 0 ÷ 210

Commands

Addr	Type	Attr.	Description	Notes
105C	uns16	W	ON-OFF command	1=ON 0=OFF
105D	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation 3=Auto
105E	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed 2= Med Fan Speed 3= Max Fan Speed

Additional functionalities

Addr	Type	Attr.	Description	Notes
106D	uns16	RW	Not used	
106E	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
106F	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
1070	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
1071	uns16	RW	Ambient probe value	°C x10
1072	uns16	R	T-MB presence	1 Present 0 Absent
1073	uns16	R	IR presence	1 Present 0 Absent
1074	uns16	R	Mode ±3	0: OFF 1:ON
1075	uns16	R	NTC T-MB	0: ON 1:OFF
1076	uns16	RW	Set variation value (±3 mode)	°C*10; -(reg1043) ÷ reg1043
1077	uns16	W	Parameters Reset	The reset takes place by writing 0x005A
1078	uns16	RW	Time set	MSB: Hour, LSB: Minutes
1079	uns16	RW	Week day set	1=Mon...7=Sun
107A	uns16	RW	Force flap position	0: Flap standard position (or swing stop) 1: Force summer position 2: Force winter position 3: Force all open position 4: Force flap swing
107B	uns16	RW	Fan Voltage Set	10 (1.0V) --- 100 (10.0V)
107C	uns16	RW	Night mode	1: Night mode On 0: Night mode Off

Bit Commands

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Auto Mode	1 executes the command
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command
1105	uns16	W	Fan speed Min	1 executes the command
1106	uns16	W	Fan speed Med	1 executes the command
1107	uns16	W	Fan speed Max	1 executes the command

MODBUS Data – CRC-ECM with UP-Touch

(for CRC fan-coil only 4 dip bank ,maximum 15 address)

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	0x5025 CRC-Ecm with up-Touch
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Temperature probe T1	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	1: 4 tubes 0: 2 tubes
1006	sig16	R	Dip 2 configuration	1: Continuous ventilation off 0: Continuous ventilation on
1007	sig16	R	Dip 3 configuration	1: T3 for summer and winter 0: T3 for winter
1008	sig16	R	Dip 4 configuration	1: Slave machine 0: Master machine

Machine state and alarms

Addr	Type	Attr.	Description	Notes
1009	uns16	R	Machine state	0:OFF 1:ON
100A	uns16	R	Fan Only mode	0: OFF 1: ON
100B	uns16	R	Not used	
100C	uns16	R	Machine is in dead zone	0: OFF 1: ON
100D	uns16	R	Season in use	0: Summer 1: Winter
100E	uns16	R	T2 probe used for season choice	0: No 1: Yes
100F	uns16	R	Thermoregulation requested	0: No 1: Yes
1010	uns16	R	Resistance state	0: Off 1: On
1011	uns16	R	Night mode	0: Not active 1: Active
1012	uns16	R	Not used	
1013	uns16	R	Keyboard locked (EVO Interface)	0: Off 1: On
1014	uns16		Not used	
1015	uns16		On/Off memorized machine state (regardless of remote off input)	0: OFF 1: ON
1016	uns16		Slave Machine	0: OFF 1: ON
1017	uns16		Not used	
1018	uns16		Not used	
1019	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
101A	uns16	R	Ventilation is stopped	0: OFF 1: ON
101B	uns16	R	Fan Speed Min (legacy-only T-MB)	0: OFF 1: ON
101C	uns16	R	Fan Speed Med (legacy-only T-MB)	0: OFF 1: ON
101D	uns16	R	Fan Speed Max (legacy-only T-MB)	0: OFF 1: ON
101E	uns16	R	Fan Speed Linear (Free User Choice)	0: OFF 1: ON
101F	uns16	R	State of Relay 1 (Inverter)	0: OFF 1: ON
1020	uns16	R	State of Relay 2 (Valve)	0: OFF 1: ON

Addr	Type	Attr.	Description	Notes
1021	uns16	R	State eof Relay 3 (Hot water valve/resistance)	0: OFF 1: ON
1022	uns16	R	State of Relay 4 (Boiler)	0: OFF 1: ON
1023	uns16	R	State of Relay 5 (Chiller)	0: OFF 1: ON
1024	uns16	R	Digital Input IN1	1: Closed 0: Opened
1025	uns16	R	Analog output 0-10V	Volt*10
1026	uns16	R	Alarm: T1 fault	0: OFF 1: ON
1027	uns16	R	Alarm: T2 fault	0: OFF 1: ON
1028	uns16	R	Alarm: T3 fault	0: OFF 1: ON

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
1029	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -3,0 ÷ 3,0
102A	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102B	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102C	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
102D	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
102E	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
102F	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1030	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1031	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1032	sig16	RW		Not used	
1033	sig16	RW		Not used	
1034	sig16	RW		Not used	
1035	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1036	sig16	RW		Not used	
1037	sig16	RW		Not used	
1038	sig16	RW		Not used	
1039	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103A	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103B	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103C	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
103E	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
103F	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1040	sig16	RW	dS	Allowed set point variation from T-MB	°C*10; 0,0 ÷ 9,0
1041	sig16	RW		Not used	
1042	sig16	RW		Not used	
1043	sig16	RW		Not used	
1044	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1045	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1046	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
1047	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
1048	uns16	RW	BLK0	All settings locked (see the next 4 registers) only T-MB	0: OFF 1: ON
1049	uns16	RW	BLK1	On-Off locked (only T-MB)	0: OFF 1: ON
104A	uns16	RW	BLK2	Working mode locked (only T-MB)	0: OFF 1: ON
104B	uns16	RW	BLK3	Set-point locked (only T-MB)	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104C	uns16	RW	BLK4	Fan mode locked (only T-MB)	0: OFF 1: ON
104D	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
104E	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
104F	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1050	sig16	RW	dTRE	Energy saving or night mode temperature delta	°C*10; 3,0 ÷ 8,0
1051	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1052	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1053	uns16	RW	REon	Energy saving function	0: OFF 1: ON

Commands

Addr	Type	Attr.	Description	Notes
1054	uns16	W	ON-OFF command	1=ON 0=OFF
1055	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation
1056	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed (legacy) 2= Med Fan Speed (legacy) 3= Max Fan Speed (legacy)

Additional functionalities

Addr	Type	Attr.	Description	Notes
1057	uns16	RW	Not used	
1058	uns16	RW	Reserved	Must be 0
1059	uns16	RW	Not used	
105A	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
105B	uns16	RW	Ambient probe value	°C x10
105C	uns16	R	T-MB presence	1 Present 0 Absent
105D	uns16	R	Mode ±3	0: OFF 1:ON
105E	uns16	R	NTC T-MB	0: ON 1:OFF
105F	uns16	RW	Set variation value (±3 mode)	°C*10; -(reg1043) ÷ reg1043
1060	uns16	W	Parameters Reset	The reset takes place by writing 0x005A
1061	uns16	RW	Time set	MSB: Hour, LSB: Minutes
1062	uns16	RW	Week day set	1=Mon...7=Sun
1063	uns16	RW	Fan Voltage Set	10 (1.0V) --- 100 (10.0V)
1064	uns16	RW	Night mode	1: Night mode On 0: Night mode Off
1065	uns16	RW	Keyboard locked (EVO Interface)	1: On 0: Off
1066	uns16	RW	Not used	When read returns 0
1067	uns16	RW	Not used	When read returns 0
1068	uns16	RW	Not used	When read returns 0
1069	uns16	RW	Not used	When read returns 0
106A	uns16	RW	Not used	When read returns 0
106B	uns16	RW	Not used	When read returns 0
106C	uns16	RW	Not used	When read returns 0
106D	uns16	RW	Not used	When read returns 0

Bit Commands

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Not used	1 executes the command
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command
1105	uns16	W	Fan speed Min (legacy)	1 executes the command
1106	uns16	W	Fan speed Med (legacy)	1 executes the command
1107	uns16	W	Fan speed Max (legacy)	1 executes the command

MODBUS Data – CFF OneWay

Hardware and software identification

Addr	Type	Attr.	Description	Notes
1000	uns16	R	Controller model, identifies the board type (hexadecimal data)	0x500E CFF OneWay
1001	uns16	R	Firmware Release (most significant byte major release, less significant byte minor release)	Ex. If this register contains 106 (hexadecimal) then the release is 1.06

Temperatures read by the probes

Addr	Type	Attr.	Description	Notes
1002	sig16	R	Ambient temperature	°C*10
1003	sig16	R	Temperature probe T2	°C*10
1004	sig16	R	Temperature probe T3	°C*10

Dip switches configuration

Addr	Type	Attr.	Description	Notes
1005	sig16	R	Dip 1 configuration	1: Continuous ventilation off 0: Continuous ventilation on
1006	sig16	R	Dip 2 configuration	1: Anti-stratification w/o EV or Res 0: Standard anti-stratification
1007	sig16	R	Dip 3 configuration	1: Fan speed full scale to 10V 0: Fan speed limited to 8.6V
1008	sig16	R	Dip 4 configuration	1: Slave 0: Master
1009	sig16	R	Dip 5 configuration	1: Green led OFF when machine ON 0: Green led ON when machine ON
100A	sig16	R	Dip 6 configuration	1: Connectivity Off 0: Connectivity On
100B	sig16	R	Not used	
100C	sig16	R	Not used	
100D	sig16	R	Not used	
100E	sig16	R	Not used	

Machine state and alarms

Addr	Type	Attr.	Description	Notes
100F	uns16	R	Machine state	0:OFF 1:ON
1010	uns16	R	Fan Only mode	0: OFF 1: ON
1011	uns16	R	Not used	
1012	uns16	R	Machine is in dead zone	0: OFF 1: ON
1013	uns16	R	Season in use	0: Summer 1: Winter
1014	uns16	R	T2 probe used for season choice	0: No 1: Yes
1015	uns16	R	Thermoregulation requested	0: No 1: Yes
1016	uns16	R	Not used	
1017	uns16	R	State of Automatic Ventilation	0: OFF 1: ON
1018	uns16	R	Ventilation is stopped	0: OFF 1: ON
1019	uns16	R	Fan Speed Min (legacy-only T-MB/IR)	0: OFF 1: ON
101A	uns16	R	Fan Speed Med (legacy-only T-MB/IR)	0: OFF 1: ON
101B	uns16	R	Fan Speed Max (legacy-only T-MB/IR)	0: OFF 1: ON
101C	uns16	R	Not used	
101D	uns16	R	Not used	
101E	uns16	R	State eof Relay 3 (Inverter On)	0: OFF 1: ON
101F	uns16	R	Not used	
1020	uns16	R	State of Relay 5 (EV)	0: OFF 1: ON
1021	uns16	R	State of Relay 6 (Boiler)	0: OFF 1: ON
1022	uns16	R	State of Relay 7 (Chiller)	0: OFF 1: ON
1023	uns16	R	Digital Input - Window	0: Closed 1: Opened
1024	uns16	R	Digital Input – Pump Alarm	0: Closed 1: Opened
1025	uns16	R	Not used	
1026	uns16	R	Not used	
1027	uns16	R	Analog output 0-10V	Volt*10
1028	uns16	R	Alarm: T1 fault	0: OFF 1: ON

Addr	Type	Attr.	Description	Notes
1029	uns16	R	Alarm: T2 fault	0: OFF 1: ON
102A	uns16	R	Alarm: T3 fault	0: OFF 1: ON
102B	uns16	R	Alarmp: Pump input	0: OFF 1: ON

Machine Parameters

Addr	Type	Attr.	Symb	Description	Notes
102C	sig16	RW	OFS	T-MB NTC probe offset	°C*10; -5,0 ÷ 5,0
102D	sig16	RW	LSE	Summer set-point	°C*10; reg1047 ÷ reg1048
102E	sig16	RW	LSI	Winter set-point	°C*10; reg1049 ÷ reg104A
102F	sig16	RW	T2-1	T2 change-over temperature: ventilation-->cooling	°C*10; 12,0 ÷ 22,0
1030	sig16	RW	T2-2	T2 change-over temperature: ventilation-->heating	°C*10; 28,0 ÷ 36,0
1031	sig16	RW	T2-3	T2 change-over hysteresis	°C*10; 2,0 ÷ 5,0
1032	sig16	RW	T3-1	T3 Fan ON when heating	°C*10; 30,0 ÷ 40,0
1033	sig16	RW	T3-2	T3 Fan ON when cooling	°C*10; 10,0 ÷ 25,0
1034	sig16	RW	I-T3	T3 Fan control hysteresis	°C*10; 2,0 ÷ 8,0
1035	sig16	RW		Not used	°C*10; 18,0 ÷ 30,0
1036	sig16	RW		Not used	°C*10; 1,0 ÷ 6,0
1037	sig16	RW		Not used	
1038	sig16	RW	I-rL	Thermoregulation hysteresis	°C*10; 0,5 ÷ 2,0
1039	sig16	RW		Not used	
103A	sig16	RW		Not used	
103B	sig16	RW		Not used	
103C	sig16	RW	SLu1	ECM Voltage MIN Speed	Volt*10; 1,0 ÷ 6,0
103D	sig16	RW	SCu2	ECM Voltage MED Speed	Volt*10; 3,0 ÷ 8,0
103E	sig16	RW	SHu3	ECM Voltage MAX Speed	Volt*10; 6,0 ÷ 10,0
103F	sig16	RW	LLSI	ECM auto fan speed minimum voltage in Winter	Volt*10; 1,0 ÷ 6,0
1040	sig16	RW	HLSI	ECM auto fan speed maximum voltage in Winter	Volt*10; 5,0 ÷ 10,0
1041	sig16	RW	PFC	Summer proportional bandwidth	°C*10; 2,0 ÷ 6,0
1042	sig16	RW	PFH	Winter proportional bandwidth	°C*10; 2,0 ÷ 6,0
1043	sig16	RW	dS	Allowed set point variation from T-MB	°C*10; 0,0 ÷ 9,0
1044	sig16	RW		Not used	
1045	sig16	RW		Not used	
1046	sig16	RW		Not used	
1047	sig16	RW	SminE	Summer set-point min limit	°C*10; 10,0 ÷ 30,0
1048	sig16	RW	SmaxE	Summer set-point max limit	°C*10; 10,0 ÷ 30,0
1049	sig16	RW	SminI	Winter set-point min limit	°C*10; 10,0 ÷ 30,0
104A	sig16	RW	SmaxI	Winter set-point max limit	°C*10; 10,0 ÷ 30,0
104B	uns16	RW	BLK0	All settings locked (see the next 4 registers) only T-MB/IR	0: OFF 1: ON
104C	uns16	RW	BLK1	On-Off locked (only T-MB/IR)	0: OFF 1: ON
104D	uns16	RW	BLK2	Working mode locked (only T-MB/IR)	0: OFF 1: ON
104E	uns16	RW	BLK3	Set-point locked (only T-MB/IR)	0: OFF 1: ON

Addr	Type	Attr.	Symb	Description	Notes
104F	uns16	RW	BLK4	Fan mode locked (only T-MB/IR)	0: OFF 1: ON
1050	sig16	RW	LLSE	ECM auto fan speed minimum voltage in Summer	Volt*10; 1,0 ÷ 6,0
1051	sig16	RW	HLSE	ECM auto fan speed maximum voltage in Summer	Volt*10; 5,0 ÷ 10,0
1052	sig16	RW	T-AG	Antifreeze temperature	°C*10; 4,0 ÷ 8,0
1053	sig16	RW	dTRE	Energy saving or night mode temperature delta	°C*10; 3,0 ÷ 8,0
1054	uns16	RW	t-Pr	Weekly Timer programmed by the T-MB	0: OFF 1: ON
1055	uns16	RW	AGon	Antifreeze function	0: OFF 1: ON
1056	uns16	RW	REon	Energy saving function	0: OFF 1: ON
1057	sig16	RW	Ft1	Anti-stratification wait time	minutes; 10 ÷ 45
1058	sig16	RW	t1SE	T1 Summer base compensation	°C*10; 0,0 ÷ 2,0
1059	sig16	RW	Ft2E	Summer anti-stratification time	Seconds; 0 ÷ 180
105A	sig16	RW	t1SI	T1 Winter base compensation	°C*10; 0,0 ÷ 5,0
105B	sig16	RW	Ft2I	Winter anti-stratification time	Seconds; 0 ÷ 210

Commands

Addr	Type	Attr.	Description	Notes
105C	uns16	W	ON-OFF command	1=ON 0=OFF
105D	uns16	W	Mode command	0=Summer 1=Winter 2=Only Ventilation
105E	uns16	W	Fan command	0= Automatic Fan Speed 1= Min Fan Speed 2= Med Fan Speed 3= Max Fan Speed

Additional functionalities

Addr	Type	Attr.	Description	Notes
106D	uns16	RW	Not used	
106E	uns16	RW	IN2 used for decreasing setpoint	1 Yes 0 No
106F	uns16	RW	decreasing setpoint from IN2 value	3°C - 6°C
1070	uns16	RW	Enabling of ambient probe value via MB	1 Yes 0 No
1071	uns16	RW	Ambient probe value	°C x10
1072	uns16	R	T-MB presence	1 Present 0 Absent
1073	uns16	R	IR presence	1 Present 0 Absent
1074	uns16	R	Mode ±3	0: OFF 1:ON
1075	uns16	R	NTC T-MB	0: ON 1:OFF
1076	uns16	RW	Set variation value (±3 mode)	°C*10; -(reg1043) ÷ reg1043
1077	uns16	W	Parameters Reset	The reset takes place by writing 0x005A
1078	uns16	RW	Time set	MSB: Hour, LSB: Minutes
1079	uns16	RW	Week day set	1=Mon...7=Sun
107A	uns16	RW	Force flap position	0: Flap standard position (or swing stop) 1: Force summer position 2: Force winter position 3: Force all open position 4: Force flap swing
107B	uns16	RW	Fan Voltage Set	10 (1.0V) --- 100 (10.0V)
107C	uns16	RW	Night mode	1: Night mode On 0: Night mode Off

Bit Commands

Addr	Type	Attr.	Descrizione	Note
1100	uns16	W	Summer mode	1 executes the command
1101	uns16	W	Winter mode	1 executes the command
1102	uns16	W	Not used	
1103	uns16	W	Only Fan mode	1 executes the command
1104	uns16	W	Fan speed Auto	1 executes the command
1105	uns16	W	Fan speed Min	1 executes the command
1106	uns16	W	Fan speed Med	1 executes the command
1107	uns16	W	Fan speed Max	1 executes the command