Procon

MelcoBEMS MINI (A1M+)
MelcoBEMS MINI (A1M R5)

MODBUS REGISTER TABLES

Document version 1.0.2

MelcoBEMS MINI (A1M+)
Firmware version 4.1.2

MelcoBEMS MINI (A1M R5)
Firmware version 3.1.05

For safe and correct use of the PROCON MelcoBEMS MINI please read the *MelcoBEMS MINI (A1M+) - Installation Instructions* document.

Preface

Disclaimer

⚠ **Warning:**

Mitsubishi Electric UK assumes no liability for damages consequent to the user of this product. We reserve the right to change this manual at any time without notice. The information furnished by us is believed to be accurate and reliable. However, no responsibility is assumed by us for its use, nor for any infringements of patents or other rights of third parties resulting from its use.

Amendment Register

Document Version	A1M+ Latest Firmware Version	A1M R5 Latest Firmware Version	Date	Author	Notes
1.0.0	4.1.2	3.1.05	30/01/26	JNF/SC	Updated Holding Registers (added FTC7 column) Migrated A1M-R5 and A1M+ Modbus Register Table into this file
1.0.1	4.1.2	3.1.05	17/03/26	JNF/SC	FTC registers updated
1.0.2	4.1.2	3.1.05	13/05/26	JNF/SC	QAHV 3 and 6 sensor reading removed

Any additional notes since printing will be appended to the rear of this document on separate sheets of paper.

Contents

1. Modbus tables – Air-To-Air systems

Some BMS controllers can only read Modbus Holding Registers, so the MelcoBEMS MINI (A1M) also exposes all Discrete, Coil and Input Registers as Holding Registers. The Discrete Input registers and Input registers are not writable so their equivalent Holding Register is read only and marked [**READ ONLY**].

Some BMS controllers may not be able to read signed register values (i.e. values which can be negative in value), so the MelcoBEMS MINI (A1M) also exposes an unsigned version of those registers (these registers will not return a negative value).

1.1. Holding registers

Holding Registers are read using function code 03 and written to using either function code 06 or 16. Function code 06 is used when writing to a single holding register, function code 16 is used for writing to multiple holding registers in the same command.

Holding Registers (Analogue Outputs)			
Register Name	Address	Modicon Address	Details
Drive Mode	0	40001	1 = Heating 2 = Humidity reduction 3 = Cooling 7 = Ventilation, clean air operation 8 = Auto Operation 9 = i-see heating operation* 10 = i-see humidity reduction* 11 = i-see cooling * * indicates a read only value, writing this value will have no effect
Temperature Setpoint	1	40002	Temperature value in °C multiplied by 10. e.g. value 200 = 20°C

Holding Registers (Analogue Outputs)			
Register Name	Address	Modicon Address	Details
Fan Speed	2	40003	0 = Auto 2 = Quiet 3 = Weak 5 = Strong 6 = Very strong (SH i)
Air Direction	3	40004	0 = Auto 1 = Position 1 2 = Position 2 3 = Position 3 4 = Position 4 5 = Position 5 7 = Swing
Modbus Slave ID	4	40005	Values 1 – 247 valid
BACnet Station ID			Values 1 -127 valid
Modbus RS-485 Baud Rate	5	40006	0 = 9600 1 = 1200 2 = 2400 3 = 4800 4 = 9600 5 = 14400 6 = 19200 7 = 28800 8 = 38400 9 = 56000 10 = 57600 11 = 115200
BACnet RS-485 Baud Rate			0 = 9600 4 = 9600 6 = 19200 8 = 38400 10 = 57600
RS-485 Parity Type	6	40007	0 = None 1 = Even 2 = Odd

Holding Registers (Analogue Outputs)			
Register Name	Address	Modicon Address	Details
Drive On/Off	7	40008	0 = Drive OFF 1 = Drive ON
Room Temperature [**READ ONLY**]	8	40009	Temperature value in °C multiplied by 10. e.g. value 200 = 20°C
Fault Code (hex) [**READ ONLY**]	9	40010	0x8000 = No error 0x6999 = Bad communication with indoor unit
MelcoBEMS MINI (A1M) Firmware Version [**READ ONLY**]	10	40011	MelcoBEMS MINI (A1M) firmware version
Modbus Comms Counter [**READ ONLY**]	11	40012	Value of a counter which increments upon every valid Modbus command received. Value is automatically reset to zero when value exceeds 65535.
Fault Code (decimal) [**READ ONLY**]	12	40013	8000 = No error 6999 = Bad communication with indoor unit
System Type Detected [**READ ONLY**]	13	40014	0 = ATA 1 = ATW 2 = Lossnay 255 = Undetermined (no unit detected yet)
Deadband Enabled State [**READ ONLY**]	14	40015	0 = Deadband disabled (DIP switch 8 OFF) 1 = Deadband enabled (DIP switch 8 ON)
BMS Room Temperature (signed)	15	40016	Signed temperature value in ºC multiplied by 10. 0xFF9C = -10ºC … 0x01F4 = 50ºC
BMS Room Temperature	16	40017	Temperature value in ºC multiplied by 10. 0 = 0ºC … 500 = 50ºC
BMS Virtual Setpoint	17	40018	Temperature value in ºC multiplied by 10. 100 = 10ºC … 400 = 40ºC
Deadband Heating Setpoint	18	40019	Temperature in ºC (default 19ºC). Value must be at least 2ºC lower than the Deadband Cooling Setpoint.
Deadband Cooling Setpoint	19	40020	Temperature in ºC (default 23ºC). Value must be at least 2ºC higher than the Deadband Heating Setpoint.
BACnet Device Instance (most significant 16 bits)	272	40273	Most significant 16 bits of the 32-bit Device Instance

Holding Registers (Analogue Outputs)			
Register Name	Address	Modicon Address	Details
BACnet Device Instance (least significant 16 bits)	273	40274	Least significant 16 bits of the 32-bit Device Instance
BACnet Max Master	274	40275	Maximum number of masters to search for
BACnet Max Info Frames	275	40276	
BACnet APDU Timeout	276	40277	Timeout value in ms for client requests
BACnet APDU Retries	277	40278	Number of times to retry after timeout
External Temperature feedback function ON/OFF	430	40431	0 = Disable (Default) 1 = Enable A1M will feedback the [40432] to AC unit when write to [40432]
External Temperature feedback Value	431	40432	External Temperature feedback value in °C multiplied by 10. e.g. value 200 = 20°C
External Temperature Polling Feature	432	40433	0 = Disable 1 = Enable (Default) A1M will feedback the [40432] to AC unit for every 10 seconds

1.2. Input registers

Input Registers are read using function code 04.
Note the values of all Input registers have corresponding Holding registers which can be used instead.

Input Registers (Analogue Inputs)			
Register Name	Address	Modicon Address	Details
Room Temperature	0	30001	Temperature value in °C multiplied by 10. e.g. value 200 = 20°C
Fault Code (hex)	1	30002	0x8000 = No error 0x6999 = Bad communication with indoor unit
MelcoBEMS MINI (A1M) Firmware Version	3	30004	MelcoBEMS MINI (A1M) firmware version
Modbus Comms Counter	5	30006	Value of a counter which increments upon every valid Modbus command received. Counter is reset to zero when value exceeds 65535.
Fault Code (decimal)	8	30009	8000 = No error 6999 = Bad communication with indoor unit
System Type Detected	9	30010	0 = ATA 1 = ATW 2 = Lossnay 255 = Undetermined (no unit detected yet)
Deadband Enabled State	10	30011	0 = Deadband disabled (DIP switch 8 OFF) 1 = Deadband enabled (DIP switch 8 ON)

1.3. Discrete Inputs

There are no Discrete Inputs for Air-To-Air systems.

1.4. Coils

Coils are read using function code 01 and written to using either function code 05 or 15. Function code 05 is used when writing to a single coil register, function code 15 is used for writing to multiple coil registers in the same command.
Note the values of all Coil registers have corresponding Holding registers which can be used instead.

Coils (Digital Outputs)			
Register Name	Address	Modicon Address	Details
Drive On/Off *(Note: Holding register address 7 can also be used to change the Drive)*	0	00001	0 = Drive OFF 1 = Drive ON

2. Modbus tables – Lossnay systems

Some BMS controllers can only read Modbus Holding Registers, so the MelcoBEMS MINI (A1M) also exposes all Discrete, Coil and Input Registers as Holding Registers. The Discrete Input registers and Input registers are not writable so their equivalent Holding Register is read only and marked [**READ ONLY**].

Some BMS controllers may not be able to read signed register values (i.e. values which can be negative in value), so the A1M also exposes an unsigned version of those registers (these registers will not return a negative value).

2.1. Holding registers

Holding Registers are read using function code 03 and written to using either function code 06 or 16. Function code 06 is used when writing to a single holding register, function code 16 is used for writing to multiple holding registers in the same command.

Holding Register (Analogue Output)				**Applicable Unit Type**	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Modbus Slave ID	4	40005	Values 1 – 247 valid	✓	✓
Modbus RS-485 Baud Rate	5	40006	0 = 9600 1 = 1200 2 = 2400 3 = 4800 4 = 9600 5 = 14400 6 = 19200 7 = 28800 8 = 38400 9 = 56000 10 = 57600 11 = 115200	✓	✓
RS-485 Parity Type	6	40007	0 = None 1 = Even 2 = Odd	✓	✓
Fault/Error Code (hex) [**READ ONLY**]	9	40010	0x8000 = No error 0x6999 = Bad communication with unit	✓	✓
MelcoBEMS MINI (A1M) Firmware Version [**READ ONLY**]	10	40011	MelcoBEMS MINI (A1M) Firmware Version	✓	✓

Holding Register (Analogue Output)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Modbus Comms Counter [**READ ONLY**]	11	40012	Value of a counter which increments upon every valid Modbus command received. Counter is reset to zero when value exceeds 65535.	✓	✓
System Type Detected [**READ ONLY**]	13	40014	0 = ATA unit connected 1 = ATW system connected 2 = Lossnay system connected 255 = Undetermined (no unit detected yet)	✓	✓
Power On/Off	300	40301	0 = Power OFF 1 = Power ON	✓	✓
Operating Mode	301	40302	1 = Heat 3 = Cool 7 = Fan 8 = Auto		
Ventilation Mode	302	40303	0 = Lossnay mode 1 = Bypass mode 2 = Auto mode	✓	✓
Fan Speed A	303	40304	0 = Auto 1 = Speed 1 2 = Speed 2 3 = Speed 3 4 = Speed 4	✓#2	✓#2
Temperature Setpoint A	304	40305	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Supply Air Temperature [**READ ONLY**]	305	40306	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Supply Air Temperature Sensor' value = 1 (Equipped).		
Outdoor Temperature (signed) [**READ ONLY**]	306	40307	Temperature value in ºC multiplied by 10. (see note *) Note: Only available when 'Outdoor Temperature Sensor' value = 1 (Equipped).	✓	✓
Outdoor Temperature **[READ ONLY]**	307	40308	Temperature value in ºC multiplied by 10. (see note **) Note: Only available when 'Outdoor Temperature Sensor' value = 1 (Equipped).	✓	✓

Holding Register (Analogue Output)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Room Temperature A [**READ ONLY**]	308	40309	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Return Air Temperature Sensor' value = 1 (Equipped).	✓	✓
Room CO2 Level [**READ ONLY**]	309	40310	CO2 level multiplied by 10. 0 = 0ppm … 240 = 2400 and above. [Value 254 = Under detecting] [Value 255 = No sensor] Note: Only available when 'CO2 Level Sensor' value = 1 (Equipped).		
Fault/Error Code (hex) [**READ ONLY**]	310	40311	0x8000 = No error 0x6999 = Bad communication with unit	✓	✓
Fault/Error Code (decimal) [**READ ONLY**]	311	40312	8000 = No error 6999 = Bad communication with unit	✓	✓
Thermo On/Off [**READ ONLY**]	312	40313	0 = Thermo OFF 1 = Thermo ON		
Energy Consumption [**READ ONLY**]	313	40314	Value in kWh multiplied by 10. 0 = 0kWh … 65535 = 6553.5kWh	✓	✓
Actual Operation Mode [**READ ONLY**]	314	40315	0 = Not auto mode 1 = Determining 2 = Heating 3 = Cooling		
Auto Fan Speed Control Availability [**READ ONLY**]	315	40316	0 = Not available 1 = Available		
Night Purge [**READ ONLY**]	316	40317	0 = Normal operation 1 = In night purge operation During night-purge operation: - Pressing ON/OFF button starts normal operation. - When pressing the Ventilation button the Lossnay remains in bypass mode	✓	✓
Maintenance Sign [**READ ONLY**]	317	40318	0 = Inactive 1 = Active	✓	✓
Filter Sign [**READ ONLY**]	318	40319	0 = Inactive 1 = Active	✓	✓

Holding Register (Analogue Output)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Actual Ventilation Mode [**READ ONLY**]	319	40320	0 = Lossnay ventilation 1 = Bypass ventilation	✓	✓
Actual Supply Fan Speed [**READ ONLY**]	320	40321	0 = Stop 1 = Speed 1 2 = Speed 2 3 = Speed 3 4 = Speed 4	✓	✓
Actual Extract Fan Speed [**READ ONLY**]	321	40322	0 = Stop 1 = Speed 1 2 = Speed 2 3 = Speed 3 4 = Speed 4	✓	✓
Setpoint 0.5ºC Increments Availability [**READ ONLY**]	322	40323	0 = Not available 1 = Available		
Heat/Cool or Cool-Only [**READ ONLY**]	323	40324	0 = Heat and Cool 1 = Cool only		
Auto Operation Mode Availability [**READ ONLY**]	324	40325	0 = Not available 1 = Available		
Heat/Cool or Heat-Only [**READ ONLY**]	325	40324	0 = Heat and Cool 1 = Heat only		
Minimum Cooling Setpoint [**READ ONLY**]	326	40327	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Maximum Cooling Setpoint [**READ ONLY**]	327	40328	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Minimum Heating Setpoint [**READ ONLY**]	328	40329	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Maximum Heating Setpoint [**READ ONLY**]	329	40330	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		

Holding Register (Analogue Output)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Minimum Auto Setpoint [**READ ONLY**]	330	40331	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Maximum Auto Setpoint [**READ ONLY**]	331	40332	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Energy Consumption Data Available [**READ ONLY**]	332	40333	0 = Not available 1 = Available	✓	✓
Number of Fan Speeds [**READ ONLY**]	333	40334	Values 1 – 4 valid.	✓	✓
Bypass Damper Available [**READ ONLY**]	334	40335	0 = Not available 1 = Available	✓	✓
Auto Ventilation Mode Available [**READ ONLY**]	335	40336	0 = Not available 1 = Available	✓	✓
Operation Mode of Temperature Control Unit [**READ ONLY**]	336	40337	0 = Not available (not connected) 1 = Available (connected)		
Set Temperature on Temperature Control Unit [**READ ONLY**]	337	40338	0 = No set temperature display 1 = RA (Return Air) temperature 2 = SA (Supply Air) temperature		
Outdoor Temperature Sensor [**READ ONLY**]	338	40339	0 = Not equipped 1 = Equipped	✓	✓
Return Air Temperature Sensor [**READ ONLY**]	339	40340	0 = Not equipped 1 = Equipped	✓	✓
Supply Air Temperature Sensor [**READ ONLY**]	340	40341	0 = Not equipped 1 = Equipped		
CO2 Level Sensor [**READ ONLY**]	341	40342	0 = Not equipped 1 = Equipped		

* Temperature in ºC multiplied by 10. 0xFDD0 = -56.0ºC 0xFDD5 = -55.5 ºC … 0xFFFB = -0.5ºC 0x0000 = 0.0ºC 0x0005 = 0.5 ºC … 0x0271 = 62.5ºC 0x0276 = 63.0ºC [0x7FFE = Under detecting] [0x7FFF = No thermistor connected]	** Temperature in ºC multiplied by 10. 0x0000 = 0.0ºC 0x0005 = 5.0ºC … 0x0271 = 62.5ºC 0x0276 = 63.0ºC [0x7FFE = Under detecting] [0x7FFF = No thermistor connected] #1 Lossnay ventilation mode supported only, Bypass and Auto modes not supported. #2 Auto fan speed (value 0) not supported.

2.2. Input registers

Input Registers are read using function code 04.

Input Register (Analogue Input)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
MelcoBEMS MINI Firmware Version	3	30004	MelcoBEMS MINI Firmware Version	✓	✓
Modbus Comms Counter	5	30006	Value of a counter which increments upon every valid Modbus command received. Value will automatically reset to zero when value exceeds 65535.	✓	✓
System Type Detected	9	30010	0 = ATA unit connected 1 = ATW system connected 2 = Lossnay system connected 255 = Undetermined (no unit detected yet)	✓	✓
Supply Air Temperature	174	30175	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Supply Air Temperature Sensor' value = 1 (Equipped).		
Outdoor Temperature (signed)	175	30176	Temperature value in ºC multiplied by 10. (see note *) Note: Only available when 'Outdoor Temperature Sensor' value = 1 (Equipped).	✓	✓
Outdoor Temperature	176	30177	Temperature value in ºC multiplied by 10. (see note **) Note: Only available when 'Outdoor Temperature Sensor' value = 1 (Equipped).	✓	✓
Room Temperature A	177	30178	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Return Air Temperature Sensor' value = 1 (Equipped).	✓	✓

Input Register (Analogue Input)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Room CO2 Level	178	30179	CO2 level divided by 10. 0 = 0ppm … 240 = 2400 and above. [Value 254 = Under detecting] [Value 255 = No sensor] Note: Only available when 'CO2 Level Sensor' value = 1 (Equipped).		
Fault/Error Code (hex)	179	30180	0x8000 = No error 0x6999 = Bad communication with unit	✓	✓
Fault/Error Code (decimal)	180	30181	8000 = No error 6999 = Bad communication with unit	✓	✓
Energy Consumption	181	30182	Value in kWh multiplied by 10. 0 = 0kWh … 65535 = 6553.5kWh	✓	✓
Actual Operation Mode	182	30183	0 = Not auto mode 1 = Determining 2 = Heating 3 = Cooling		
Actual Supply Fan Speed	183	30184	0 = Stop 1 = Speed 1 2 = Speed 2 3 = Speed 3 4 = Speed 4	✓	✓
Actual Extract Fan Speed	184	30185	0 = Stop 1 = Speed 1 2 = Speed 2 3 = Speed 3 4 = Speed 4	✓	✓
Minimum Cooling Setpoint	185	30186	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Maximum Cooling Setpoint	186	30187	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		

Input Register (Analogue Input)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Minimum Heating Setpoint	187	30188	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Maximum Heating Setpoint	188	30189	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Minimum Auto Setpoint	189	30190	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Maximum Auto Setpoint	190	30191	Temperature value in ºC multiplied by 10. 0 = 0ºC … 400 = 40ºC Note: Only available when 'Set Temperature on Temperature Control Unit' value = 1 or 2.		
Number of Fan Speeds	191	30192	Values 1 – 4 valid.	✓	✓
Set Temperature on Temperature Control Unit	192	30193	0 = No set temperature display 1 = RA (Return Air) temperature 2 = SA (Supply Air) temperature		

2.3. Coils

Coils are read using function code 01 and written to using either function code 05 or 15. Function code 05 is used when writing to a single coil register, function code 15 is used for writing to multiple coil registers in the same command.

Coil (Digital Output)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Power On/Off	3	00004	0 = Power OFF 1 = Power ON	✓	✓

2.4. Discrete Inputs

Discrete Inputs are read using function code 02.

Discrete Input (Digital Input)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Thermo On/Off	80	10081	0 = Thermo OFF 1 = Thermo ON		
Auto Fan Speed Control Availability	81	10082	0 = Not available 1 = Available		
Night Purge	82	10083	0 = Normal operation 1 = In night purge operation During night-purge operation: - Pressing ON/OFF button starts normal operation. - When pressing the Ventilation button the Lossnay remains in bypass mode	✓	✓
Maintenance Sign	83	10084	0 = Inactive 1 = Active	✓	✓
Filter Sign	84	10085	0 = Inactive 1 = Active	✓	✓
Actual Ventilation Mode	85	10086	0 = Lossnay ventilation 1 = Bypass ventilation	✓	✓
Setpoint 0.5ºC Increments Availability	86	10087	0 = Not available 1 = Available		
Heat/Cool or Cool-Only	87	10088	0 = Heat and Cool 1 = Cool only		
Auto Operation Mode Availability	88	10089	0 = Not available 1 = Available		
Heat/Cool or Heat-Only	89	10090	0 = Heat and Cool 1 = Heat only		
Energy Consumption Data Available	90	10091	0 = Not available 1 = Available	✓	✓

Discrete Input (Digital Input)				Applicable Unit Type	
Register Name	**Addr**	**Modicon Address**	**Details**	**Lossnay LGH Series**	**Lossnay VL Series**
Bypass Damper Available	91	10092	0 = Not available 1 = Available	✓	✓
Auto Ventilation Mode Available	92	10093	0 = Not available 1 = Available	✓	✓
Operation Mode of Temperature Control Unit	93	10094	0 = Not available (not connected) 1 = Available (connected)		
Outdoor Temperature Sensor	94	10095	0 = Not equipped 1 = Equipped	✓	✓
Return Air Temperature Sensor	95	10096	0 = Not equipped 1 = Equipped	✓	✓
Supply Air Temperature Sensor	96	10097	0 = Not equipped 1 = Equipped		
CO2 Level Sensor	97	10098	0 = Not equipped 1 = Equipped		

3. Modbus tables – Air-To-Water systems

Some BMS controllers can only read Modbus Holding Registers, so the MelcoBEMS MINI (A1M+) also exposes all Discrete, Coil and Input Registers as Holding Registers. The Discrete Input registers and Input registers are not writable so their equivalent Holding Register is read only and marked [**READ ONLY**].

Some BMS controllers may not be able to read signed register values (i.e. values which can be negative in value), so the A1M+ also exposes an unsigned version of those registers (these registers will not return a negative value).

3.1. Holding registers

Holding Registers are read using function code 03 and written to using either function code 06 or 16. Function code 06 is used when writing to a single holding register, function code 16 is used for writing to multiple holding registers in the same command.

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Modbus Slave ID	4	40005		Values 1 – 247 valid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modbus RS-485 Baud Rate	5	40006		0 = 9600 1 = 1200 2 = 2400 3 = 4800 4 = 9600 5 = 14400 6 = 19200 7 = 28800 8 = 38400 9 = 56000 10 = 57600 11 = 115200	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
RS-485 Parity Type	6	40007		0 = None 1 = Even 2 = Odd	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Fault/Error Code (hex) [**READ ONLY**]	9	40010		0x8000 = No error 0x6999 = Bad communication with unit	✓	✓	✓	✓	✓		✓		✓	✓	
A1M+ Firmware Version [**READ ONLY**]	10	40011		MelcoBEMS MINI (A1M+) Firmware Version	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modbus Comms Counter [**READ ONLY**]	11	40012		Value of a counter which increments upon every valid Modbus command received. Counter is reset to zero when value exceeds 65535.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fault Code (decimal) [**READ ONLY**]	12	40013		8000 = No error 6999 = Bad communication between A1M+ and unit	✓	✓	✓	✓	✓		✓		✓	✓	
System Type Detected [**READ ONLY**]	13	40014		0 = ATA unit connected 1 = ATW system connected 2 = Lossnay system connected 255 = Undetermined (no unit detected yet)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System On/Off	25	40026		0 = System OFF 1 = System ON 2 = Emergency Run (read only value) 3 = Test Run (read only value)	✓	✓	✓	✓	✓ #14	(✓) #18	✓ #14	(✓) #18	✓	✓ #14	(✓) #18
Operating Mode [**READ ONLY**]	26	40027		0 = Stop 1 = Hot Water 2 = Heating 3 = Cooling 5 = Freeze Stat 6 = Legionella	✓	✓	✓	✓	✓#4	✓	✓#5	✓	✓	✓ #13	✓
Operating Mode (DHW)	27	40028	BO2	0 = Normal 1 = Eco		✓	✓	✓							
A/C Mode – Zone 1	28	40029	MSO3	0 = Heating Room Temp 1 = Heating Flow Temp 2 = Heating Heat Curve 4 = Cooling Flow Temp 5 = Floor Dryup 6 = Cooling compensation curve (from FTC7)	✓	✓	✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
A/C Mode – Zone 2	29	40030	MSO4	0 = Heating Room Temp 1 = Heating Flow Temp 2 = Heating Heat Curve 4 = Cooling Flow Temp 5 = Floor Dryup 6 = Cooling compensation curve (from FTC7)	✓	✓	✓	✓							
Set Tank Water Temperature (signed)	30	40031	AV5	Temperature value in ºC multiplied by 100. (see note *)	✓#6	✓	✓	✓							
Thermo-off Temperature (signed)				Temperature value in ºC multiplied by 100. (see note *)									✓		
Set Tank Water Temperature	31	40032		Temperature value in ºC multiplied by 100. (see note **)	✓#6	✓	✓	✓							
Thermo-off Temperature				Temperature value in ºC multiplied by 100. (see note **)									✓		
H/C Thermostat Target Temperature – Zone 1 (signed)	32	40033	AV6	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
H/C Thermostat Target Temperature – Zone 1	33	40034		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
H/C Thermostat Target Temperature – Zone 2 (signed)	34	40035	AV7	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
H/C Thermostat Target Temperature – Zone 2	35	40036		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
MRC Prohibit	36	40037	AV8	Bit packed value: Bit 0 – System On/Off (0 = ON, 1 = Prohibit) Bit 1 – Running Mode (0 = ON, 1 = Prohibit) Bit 2 – Setting Temp (0 = ON, 1 = Prohibit) Bit 3 – Undefined (always 0) Bit 4 – Function Setting (0 = Normal, 1 = Function Setting) Bits 5, 6 and 7 – Undefined (always 0) (Before using this register see note ††)	✓	✓	✓	✓	✓#7		✓#7		✓	✓#7	

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Force DHW	37	40038	BO9	0 = Normal 1 = Force DHW	✓	✓	✓	✓							
Holiday	38	40039	BO10	0 = Normal 1 = Holiday	✓	✓	✓	✓							
DHW On Prohibit **[READ ONLY]**	39	40040	BO11	0 = On 1 = Prohibit	✓	✓	✓	✓							
Heating On Prohibit – Zone 1 **[READ ONLY]**	40	40041	BO12	0 = On 1 = Prohibit	✓	✓	✓	✓							
Cooling On Prohibit – Zone 1 **[READ ONLY]**	41	40042	BO13	0 = On 1 = Prohibit	✓#6	✓	✓	✓							
Heating On Prohibit – Zone 2 **[READ ONLY]**	42	40043	BO14	0 = On 1 = Prohibit	✓	✓	✓	✓							
Cooling On Prohibit – Zone 2 **[READ ONLY]**	43	40044	BO15	0 = On 1 = Prohibit		✓	✓	✓							
Unused	44	40045		Value 0 always returned											
Capacity Mode	45	40046	BO16	0 = COP priority 1 = Capacity priority					✓		✓#8		✓	✓	
Capacity Control Ratio	46	40047	AV17	Value in %. 0 = 0% ... 100 = 100%					✓		✓		✓	✓	
Fan Mode	47	40048	BO18	0 = Ordinary 1 = Coercion							✓		✓	✓	
Current Hour	48	40049	AV19	0 … 23					✓	(✓) #18	✓	(✓) #18	✓	✓	(✓) #18
Current Minute	49	40050	AV20	0 … 59					✓	(✓) #18	✓	(✓) #18	✓	✓	(✓) #18

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Outdoor Temperature By BMS (signed)	50	40051	AV21	Temperature value in ºC multiplied by 10. 0xFE70 = -40ºC … 0x036B = 87.5ºC					✓ #9		✓ #9			✓#9	
Outdoor Temperature By BMS	51	40052		Temperature value in ºC multiplied by 10. 0x0000 = 0.0ºC ... 0x036B = 87.5ºC.					✓ #10		✓ #10			✓ #10	
Setting Water Temperature (signed)	52	40053	AV22	Temperature value in ºC multiplied by 100. (see note *)					✓ #11		✓ #12		✓ #15	✓ #16	✓ #16
Setting Water Temperature	53	40054		Temperature value in ºC multiplied by 100. (see note **)					✓ #11		✓ #12		✓ #15	✓ #16	✓ #16
Thermostat Target Temperature – Zone 1 (signed)	54	40055	AV23	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Thermostat Target Temperature – Zone 1	55	40056		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Thermostat Target Temperature – Zone 2 (signed)	56	40057	AV24	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Thermostat Target Temperature – Zone 2	57	40058		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
HC Control Type	58	40059	MSO25	0 = Heating 1 = Cooling	✓	✓	✓	✓							
Own Refrigerant Address **[READ ONLY]**	66	40067	AI26	0 … 32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Defrost **[READ ONLY]**	67	40068	AI27	0 = Normal 1 = Standby 2 = Defrost 3 = Waiting Restart	✓	✓	✓	✓	✓	✓			✓	✓	✓
Residual Heat Removal **[READ ONLY]**	68	40069	AI28	0 = Normal 1 = Prepared 2 = Residual Heat Removal	✓	✓	✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Refrigerant Error Info [**READ ONLY**]	69	40070	AI29	0 = Normal 1 = Error (System) 2 = Error (Startup) 3 = Maintenance Error	✓	✓	✓	✓	✓ #17		✓ #17		✓ #17	✓	
7-Segment Display Error Code Digit 1 [**READ ONLY**]	70	40071	AI30	(see note ^)	✓	✓	✓	✓							
7-Segment Display Error Code Digit 2 **[READ ONLY]**	71	40072	AI31	(see note ^^)	✓	✓	✓	✓							
Status Of Heating **[READ ONLY]**	72	40073	AI32	0 = No type 1 = Heating C1 2 = Heating C2 3 = Heating C3	✓										
				0 = No type 1 = Heating/Cooling A1, Heating/Cooling B1, Heating/Cooling C1 2 = Heating/Cooling A2, Heating/Cooling B2, Heating/Cooling C2 3 = Heating/Cooling A3, Heating/Cooling B3, Heating/Cooling C3		✓	✓	✓						
Heat Pump Frequency – Master **[READ ONLY]**	73	40074	AI33	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 1 **[READ ONLY]**	74	40075	AI34	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 2 **[READ ONLY]**	75	40076	AI35	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 3 **[READ ONLY]**	76	40077	AI36	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 4 **[READ ONLY]**	77	40078	AI37	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 5 **[READ ONLY]**	78	40079	AI38	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Heat Pump Frequency – Slave 6 **[READ ONLY]**	79	40080	AI39	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓		
Heat Source Status **[READ ONLY]**	80	40081	AI40	0 = H/P 1 = IH 2 = BH 3 = IH + BH 4 = Boiler	✓	✓	✓	✓							
Temperature Setpoint – Zone 1 (signed) **[READ ONLY]**	81	40082	AI41	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Temperature Setpoint – Zone 1 **[READ ONLY]**	82	40083		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Temperature Setpoint – Zone 2 (signed) **[READ ONLY]**	83	40084	AI42	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Temperature Setpoint – Zone 2 **[READ ONLY]**	84	40085		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Flow Temperature Setpoint – Zone 1 (signed) **[READ ONLY]**	85	40086	AI43	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Flow Temperature Setpoint – Zone 1 **[READ ONLY]**	86	40087		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Flow Temperature Setpoint – Zone 2 (signed) **[READ ONLY]**	87	40088	AI44	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Flow Temperature Setpoint – Zone 2 **[READ ONLY]**	88	40089		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Legionella Temperature Setpoint (signed) **[READ ONLY]**	89	40090	AI45	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Legionella Temperature Setpoint **[READ ONLY]**	90	40091		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
DHW Temperature Drop (signed) **[READ ONLY]**	91	40092	AI46	Temperature value in ºC multiplied by 10. 0xFF38 = -20.0ºC … 0x0433 = 107.5ºC	✓	✓	✓	✓							
DHW Temperature Drop **[READ ONLY]**	92	40093		Temperature value in ºC multiplied by 10. 0x0000 = 0ºC … 0x0433 = 107.5ºC 0 = 0.0ºC … 1075 = 107.5ºC	✓	✓	✓	✓							
Room Temperature – Zone 1 (signed) **[READ ONLY]**	93	40094	AI47	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Room Temperature – Zone 1 **[READ ONLY]**	94	40095		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Room Temperature – Zone 2 (signed) **[READ ONLY]**	95	40096	AI48	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Room Temperature – Zone 2 **[READ ONLY]**	96	40097		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Refrigerant Liquid Temperature (signed) **[READ ONLY]**	97	40098	AI49	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Refrigerant Liquid Temperature **[READ ONLY]**	98	40099		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Outdoor Ambient Temperature (signed) **[READ ONLY]**	99	40100	AI50	Temperature value in ºC multiplied by 10. 0xFE70 = -40.0ºC … 0x036B = 87.5ºC	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Outdoor Ambient Temperature **[READ ONLY]**	100	40101		Temperature value in ºC multiplied by 10. 0x0000 = 0.0ºC ... 0x036B = 87.5ºC.	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Flow Temperature (signed) **[READ ONLY]**	101	40102	AI51	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Water Outlet Temperature (signed) **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓	✓	✓	✓
Flow Temperature **[READ ONLY]**	102	40103		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Water Outlet Temperature **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓	✓	✓	✓
Return Temperature (signed) **[READ ONLY]**	103	40104	AI52	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Water Inlet Temperature (signed) **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓	✓	✓	✓
Return Temperature **[READ ONLY]**	104	40105		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Water Inlet Temperature **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓	✓	✓	✓
Tank Water Temperature (signed) **[READ ONLY]**	105	40106	AI53	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Tank Water Temperature **[READ ONLY]**	106	40107		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Flow Temperature – Zone 1 (signed) **[READ ONLY]**	107	40108	AI54	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
External Water Temperature 1 (signed) **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note *)					✓		✓		✓	✓	

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Flow Temperature – Zone 1 **[READ ONLY]**	108	40109		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
External Water Temperature 1 **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note **)					✓		✓		✓	✓	
Return Temperature – Zone 1 (signed) **[READ ONLY]**	109	40110	AI55	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
External Water Temperature 3 (signed) **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note *)									✓		
Return Temperature – Zone 1 **[READ ONLY]**	110	40111		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
External Water Temperature 3 **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note **)									✓		
Flow Temperature – Zone 2 (signed) **[READ ONLY]**	111	40112	AI56	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
External Water Temperature 2 (signed) **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note *)					✓		✓				
External Water Temperature 4 (signed) **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note *)											
Flow Temperature – Zone 2 **[READ ONLY]**	112	40113		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
External Water Temperature 2 **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note **)					✓		✓				
External Water Temperature 4 **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note **)											

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Return Temperature – Zone 2 (signed) **[READ ONLY]**	113	40114	AI57	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
External Water Temperature 6 (signed) **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note **)											
Return Temperature – Zone 2 **[READ ONLY]**	114	40115		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
External Water Temperature 6 **[READ ONLY]**				Temperature value in ºC multiplied by 100. (see note **)											
Boiler Flow Temperature (signed) **[READ ONLY]**	115	40116	AI58	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Boiler Flow Temperature **[READ ONLY]**	116	40117		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Boiler Return Temperature (signed) **[READ ONLY]**	117	40118	AI59	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Boiler Return Temperature **[READ ONLY]**	118	40119		Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Room Thermo 1 (IN1) **[READ ONLY]**	119	40120	AI60	0 = OFF, 1 = ON	✓	✓	✓	✓							
Room Thermo 2 (IN6) **[READ ONLY]**	120	40121	AI61	0 = OFF, 1 = ON	✓	✓	✓	✓							
Flow SW1 (IN2) **[READ ONLY]**	121	40122	AI62	0 = OFF, 1 = ON	✓	✓	✓	✓							
Flow SW2 (IN3) **[READ ONLY]**	122	40123	AI63	0 = OFF, 1 = ON	✓	✓	✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Flow SW3 (IN7) **[READ ONLY]**	123	40124	AI64	0 = OFF, 1 = ON	✓	✓	✓	✓							
Demand (IN4) **[READ ONLY]**	124	40125	AI65	0 = OFF, 1 = ON	✓	✓	✓	✓							
Outdoor Thermo (IN5) **[READ ONLY]**	125	40126	AI66	0 = OFF, 1 = ON	✓	✓	✓	✓							
DIP Switch SW2 **[READ ONLY]**	126	40127	AI67	Bit 0 = Switch 2-1 (0 = OFF, 1 = ON) … Bit 9 = Switch 2-10 (0 = OFF, 1 = ON)	✓	✓	✓	✓							
Heat Pump Master ON/OFF **[READ ONLY]**	127	40128	AI68	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Slave 1 ON/OFF (address 2 for CAHV/CRHV) **[READ ONLY]**	128	40129	AI69	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Slave 2 ON/OFF (address 3 for CAHV/CRHV) **[READ ONLY]**	129	40130	AI70	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				
Heat Pump Slave 3 ON/OFF (address 4 for CAHV/CRHV) **[READ ONLY]**	130	40131	AI71	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				
Heat Pump Slave 4 ON/OFF (address 5 for CAHV/CRHV) **[READ ONLY]**	131	40132	AI72	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				

Holding Register (Analogue Output)					Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Heat Pump Slave 5 ON/OFF (address 6 for CAHV/CRHV) **[READ ONLY]**	132	40133	AI73	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				
Heat Pump Slave 6 ON/OFF (address 7 for CAHV/CRHV) **[READ ONLY]**	133	40134	AI74	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				
Heat Pump Slave 7 ON/OFF (address 8 for CAHV/CRHV) **[READ ONLY]**	134	40135	AI75	0 = Stop, 1 = Run					✓		✓				
Heat Pump Slave 8 ON/OFF (address 9 for CAHV/CRHV) **[READ ONLY]**	135	40136	AI76	0 = Stop, 1 = Run					✓		✓				
Heat Pump Run Time (hours) **[READ ONLY]**	136	40137	AI77	Value in hours 0 = 0 Hours … 99 = 99 Hours	✓	✓	✓	✓	✓		✓				
Heat Pump Run Time (hours x100) **[READ ONLY]**	137	40138	AI78	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓	✓		✓				
Heat Pump Refrigerant Address 1 Run Time (hours x100) **[READ ONLY]**	138	40139	AI79	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Heat Pump Refrigerant Address 2 Run Time (hours x100) **[READ ONLY]**	139	40140	AI80	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Heat Pump Refrigerant Address 3 Run Time (hours x100) **[READ ONLY]**	140	40141	AI81	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Heat Pump Refrigerant Address 4 Run Time (hours x100) **[READ ONLY]**	141	40142	AI82	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Heat Pump Refrigerant Address 5 Run Time (hours x100) **[READ ONLY]**	142	40143	AI83	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Heat Pump Refrigerant Address 6 Run Time (hours x100) **[READ ONLY]**	143	40144	AI84	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Boiler ON/OFF **[READ ONLY]**	144	40145	AI85	0 = Stop, 1 = Run	✓	✓	✓	✓						✓	✓
External Heater Operation 1 **[READ ONLY]**				0 = Stop, 1 = Run					✓		✓				
Booster Heater 1 ON/OFF **[READ ONLY]**	145	40146	AI86	0 = Stop, 1 = Run	✓	✓	✓	✓							
Booster Heater 2 ON/OFF **[READ ONLY]**	146	40147	AI87	0 = Stop, 1 = Run	✓	✓	✓	✓							
Booster Heater 2+ ON/OFF **[READ ONLY]**	147	40148	AI88	0 = Stop, 1 = Run	✓	✓									
Immersion Heater ON/OFF **[READ ONLY]**	148	40149	AI89	0 = Stop, 1 = Run	✓	✓	✓	✓							
Water Pump 1 ON/OFF **[READ ONLY]**	149	40150	AI90	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Water Pump 2 ON/OFF **[READ ONLY]**	150	40151	AI91	0 = Stop, 1 = Run	✓	✓	✓	✓	✓						
Water Pump 3 ON/OFF **[READ ONLY]**	151	40152	AI92	0 = Stop, 1 = Run	✓	✓	✓	✓	✓						

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
3-Way Valve ON/OFF **[READ ONLY]**	152	40153	AI93	0 = Stop, 1 = Run	✓	✓	✓	✓							
2-Way Valve 2 ON/OFF **[READ ONLY]**	153	40154	AI94	0 = Stop, 1 = Run	✓	✓	✓	✓							
Mixing Valve Step **[READ ONLY]**	154	40155	AI95	0 = Step 0 … 10 = Step 10	✓	✓	✓	✓							
Refrigerant 1 Error Code Digit 1 **[READ ONLY]**	155	40156	AI96	(see note ^)	✓	✓	✓	✓							
Refrigerant 1 Error Code Digit 2 **[READ ONLY]**	156	40157	AI97	(see note ^^)	✓	✓	✓	✓							
Refrigerant 2 Error Code Digit 1 **[READ ONLY]**	157	40158	AI98	(see note ^)	✓	✓	✓	✓							
Refrigerant 2 Error Code Digit 2 **[READ ONLY]**	158	40159	AI99	(see note ^^)	✓	✓	✓	✓							
Refrigerant 3 Error Code Digit 1 **[READ ONLY]**	159	40160	AI100	(see note ^)	✓	✓	✓	✓							
Refrigerant 3 Error Code Digit 2 **[READ ONLY]**	160	40161	AI101	(see note ^^)	✓	✓	✓	✓							
Refrigerant 4 Error Code Digit 1 **[READ ONLY]**	161	40162	AI102	(see note ^)	✓	✓	✓	✓							
Refrigerant 4 Error Code Digit 2 **[READ ONLY]**	162	40163	AI103	(see note ^^)	✓	✓	✓	✓							
Refrigerant 5 Error Code Digit 1 **[READ ONLY]**	163	40164	AI104	(see note ^)	✓	✓	✓	✓							
Refrigerant 5 Error Code Digit 2 **[READ ONLY]**	164	40165	AI105	(see note ^^)	✓	✓	✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Refrigerant 6 Error Code Digit 1 **[READ ONLY]**	165	40166	AI106	(see note ^)	✓	✓	✓	✓							
Refrigerant 6 Error Code Digit 2 **[READ ONLY]**	166	40167	AI107	(see note ^^)	✓	✓	✓	✓							
Heat Pump Frequency – Slave 7 **[READ ONLY]**	167	40168	AI108	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 8 **[READ ONLY]**	168	40169	AI109	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 9 **[READ ONLY]**	169	40170	AI110	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 10 **[READ ONLY]**	170	40171	AI111	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 11 **[READ ONLY]**	171	40172	AI112	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 12 **[READ ONLY]**	172	40173	AI113	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 13 **[READ ONLY]**	173	40174	AI114	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 14 **[READ ONLY]**	174	40175	AI115	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 15 **[READ ONLY]**	175	40176	AI116	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump 10 ON/OFF **[READ ONLY]**	176	40177	AI117	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 11 ON/OFF **[READ ONLY]**	177	40178	AI118	0 = Stop, 1 = Run					✓		✓		✓		

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Heat Pump 12 ON/OFF **[READ ONLY]**	178	40179	AI119	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 13 ON/OFF **[READ ONLY]**	179	40180	AI120	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 14 ON/OFF **[READ ONLY]**	180	40181	AI121	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 15 ON/OFF **[READ ONLY]**	181	40182	AI122	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 16 ON/OFF **[READ ONLY]**	182	40183	AI123	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 17 ON/OFF **[READ ONLY]**	183	40184	AI124	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 18 ON/OFF **[READ ONLY]**	184	40185	AI125	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 19 ON/OFF **[READ ONLY]**	185	40186	AI126	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 20 ON/OFF **[READ ONLY]**	186	40187	AI127	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 21 ON/OFF **[READ ONLY]**	187	40188	AI128	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 22 ON/OFF **[READ ONLY]**	188	40189	AI129	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 23 ON/OFF **[READ ONLY]**	189	40190	AI130	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 24 ON/OFF **[READ ONLY]**	190	40191	AI131	0 = Stop, 1 = Run					✓#1		✓#1				

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Heat Pump 25 ON/OFF **[READ ONLY]**	191	40192	AI132	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 26 ON/OFF **[READ ONLY]**	192	40193	AI133	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 27 ON/OFF **[READ ONLY]**	193	40194	AI134	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 28 ON/OFF **[READ ONLY]**	194	40195	AI135	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 29 ON/OFF **[READ ONLY]**	195	40196	AI136	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 30 ON/OFF **[READ ONLY]**	196	40197	AI137	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 31 ON/OFF **[READ ONLY]**	197	40198	AI138	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 32 ON/OFF **[READ ONLY]**	198	40199	AI139	0 = Stop, 1 = Run					✓#1		✓#1				
	199 - 214	40200 - 40215		Reserved											
External Heater ON/OFF **[READ ONLY]**	215	40216	AI140	0 = Stop, 1 = Run							✓#1				
Water Pump 4 ON/OFF **[READ ONLY]**	216	40217	AI141	0 = Stop, 1 = Run					✓						
Water Pump 5 ON/OFF **[READ ONLY]**	217	40218	AI142	0 = Stop, 1 = Run					✓						
Water Pump 6 ON/OFF **[READ ONLY]**	218	40219	AI143	0 = Stop, 1 = Run					✓						

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Water Pump 7 ON/OFF **[READ ONLY]**	219	40220	AI144	0 = Stop, 1 = Run					✓						
Water Pump 8 ON/OFF **[READ ONLY]**	220	40221	AI145	0 = Stop, 1 = Run					✓						
Water Pump 9 ON/OFF **[READ ONLY]**	221	40222	AI146	0 = Stop, 1 = Run					✓						
Water Pump 10 ON/OFF **[READ ONLY]**	222	40223	AI147	0 = Stop, 1 = Run					✓						
Water Pump 11 ON/OFF **[READ ONLY]**	223	40224	AI148	0 = Stop, 1 = Run					✓						
Water Pump 12 ON/OFF **[READ ONLY]**	224	40225	AI149	0 = Stop, 1 = Run					✓						
Water Pump 13 ON/OFF **[READ ONLY]**	225	40226	AI150	0 = Stop, 1 = Run					✓						
Water Pump 14 ON/OFF **[READ ONLY]**	226	40227	AI151	0 = Stop, 1 = Run					✓						
Water Pump 15 ON/OFF **[READ ONLY]**	227	40228	AI152	0 = Stop, 1 = Run					✓						
Water Pump 16 ON/OFF **[READ ONLY]**	228	40229	AI153	0 = Stop, 1 = Run					✓						
Drain Pan Heater ON/OFF **[READ ONLY]**	229	40230	AI154	0 = Stop, 1 = Run							✓	✓		✓	✓
Antifreeze piping heater operation ON/OFF **[READ ONLY]**				0 = Stop, 1 = Run									✓		

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Evaporating Temperature (signed) **[READ ONLY]**	230	40231	AI155	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓	✓	✓	✓
Evaporating Temperature **[READ ONLY]**	231	40232		Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓	✓	✓	✓
Condensing Temperature (signed) **[READ ONLY]**	232	40233	AI156	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓	✓	✓	✓
Condensing Temperature **[READ ONLY]**	233	40234		Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓	✓	✓	✓
Electric Energy 1 **[READ ONLY]**	234	40235	AI157	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 2 **[READ ONLY]**	235	40236	AI158	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 3 **[READ ONLY]**	236	40237	AI159	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 4 **[READ ONLY]**	237	40238	AI160	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 5 **[READ ONLY]**	238	40239	AI161	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 6 **[READ ONLY]**	239	40240	AI162	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 7 **[READ ONLY]**	240	40241	AI163	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 8 **[READ ONLY]**	241	40242	AI164	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 9 **[READ ONLY]**	242	40243	AI165	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Electric Energy 10 **[READ ONLY]**	243	40244	AI166	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 11 **[READ ONLY]**	244	40245	AI167	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 12 **[READ ONLY]**	245	40246	AI168	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 13 **[READ ONLY]**	246	40247	AI169	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 14 **[READ ONLY]**	247	40248	AI170	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 15 **[READ ONLY]**	248	40249	AI171	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 16 **[READ ONLY]**	249	40250	AI172	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Brine Inlet Temperature (signed) **[READ ONLY]**	250	40251	AI173	Temperature value in ºC multiplied by 100. (see note *)							✓	✓			
Brine Inlet Temperature **[READ ONLY]**	251	40252		Temperature value in ºC multiplied by 100. (see note **)							✓	✓			
Brine Outlet Temperature 1 (signed) **[READ ONLY]**	252	40253	AI174	Temperature value in ºC multiplied by 100. (see note *)							✓	✓			
Brine Outlet Temperature 1 **[READ ONLY]**	253	40254		Temperature value in ºC multiplied by 100. (see note **)							✓	✓			
Brine Outlet Temperature 2 (signed) **[READ ONLY]**	254	40255	AI175	Temperature value in ºC multiplied by 100. (see note *)							✓	✓			
Brine Outlet Temperature 2 **[READ ONLY]**	255	40256		Temperature value in ºC multiplied by 100. (see note **)							✓	✓			

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Condensing Temperature 2 (signed) **[READ ONLY]**	256	40257	AI176	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓		✓	✓
Condensing Temperature 2 **[READ ONLY]**	257	40258		Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓		✓	✓
Water Outlet Temperature 2 (signed) **[READ ONLY]**	258	40259	AI177	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓		✓	✓
Water Outlet Temperature 2 **[READ ONLY]**	259	40260		Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓		✓	✓
Evaporating Temperature 2 (signed) **[READ ONLY]**	260	40261	AI178	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓		✓	✓
Evaporating Temperature 2 **[READ ONLY]**	261	40262		Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓		✓	✓
Water Pump 1 – PWM Duty **[READ ONLY]**	262	40263	AI179	Duty value in % 0 = 0% … 100 = 100%									✓		
Water Pump 1 – PWM Duty Feedback **[READ ONLY]**	263	40264	AI180	Duty value in % 0 = 0% … 100 = 100%											
3-Way Valve 1 **[READ ONLY]**	264	40265	AI181	0 = OFF (stop) 1 = ON (run)					✓				✓		
Version of Protocol (upper) **[READ ONLY]**	265	40266	AI182	Version of Protocol is a value in BCD e.g. V3.01 = 3 (upper) and 1 (lower)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Version of Protocol (lower) **[READ ONLY]**	266	40267	AI183	Version of Protocol is a value in BCD e.g. V3.01 = 3 (upper) and 1 (lower)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Version of Model (upper) **[READ ONLY]**	267	40268	AI184	Version of Model is a value in BCD e.g. V2.00 = 2 (upper) and 0 (lower)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Version of Model (lower) **[READ ONLY]**	268	40269	AI185	Version of Model is a value in BCD e.g. V2.00 = 2 (upper) and 0 (lower)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Capacity of Supplying Electricity **[READ ONLY]**	269	40270	AI186	Value in Watts 0 = 0,0 W … 255 = 25,5 W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Model Profile 1 **[READ ONLY]**	270	40271	AI187	0 = FTC2B 1 = FTC4 2 = FTC5 3 = FTC6 5 = FTC7 128 = CAHV1A 129 = CAHV1B 130 = CRHV1A 131 = CRHV1B 132 = EAHV1A 133 = EAHV1B 134 = QAHV1A 135 = QAHV1B 144 = PWFY1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Model Profile 2 (refrigerant address) **[READ ONLY]**	271	40272	AI188	0 = Address 0 … 255 = Address 255 (addresses 7 – 255 not used for FTC)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Energy Consumption Measured Date – Year **[READ ONLY]**	279	40280	AI189	Date of last energy consumption measurement – Year		✓	✓	✓							
Energy Consumption Measured Date – Month **[READ ONLY]**	280	40281	AI190	Date of last energy consumption measurement – Month		✓	✓	✓							
Energy Consumption Measured Date – Day **[READ ONLY]**	281	40282	AI191	Date of last energy consumption measurement – Day		✓	✓	✓							
Last Measured Heating Energy Consumption – kWh part **[READ ONLY]**	282	40283	AI192	Last measured heating energy consumption – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Last Measured Heating Energy Consumption – Wh part **[READ ONLY]**	283	40284	AI193	Last measured heating energy consumption – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured Cooling Energy Consumption – kWh part **[READ ONLY]**	284	40285	AI194	Last measured cooling energy consumption – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured Cooling Energy Consumption – Wh part **[READ ONLY]**	285	40286	AI195	Last measured cooling energy consumption – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured DHW Energy Consumption – kWh part **[READ ONLY]**	286	40287	AI196	Last measured DHW energy consumption – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured DHW Energy Consumption – Wh part **[READ ONLY]**	287	40288	AI197	Last measured DHW energy consumption – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured Total Energy Consumption – kWh **[READ ONLY]**	288	40289	AI198	Last measured total energy consumption in Kwh. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Energy Produced Measured Date – Year **[READ ONLY]**	289	40290	AI199	Date of last energy produced measurement – Year		✓	✓	✓							
Energy Produced Measured Date – Month **[READ ONLY]**	290	40291	AI200	Date of last energy produced measurement – Month		✓	✓	✓							
Energy Produced Measured Date – Day **[READ ONLY]**	291	40292	AI201	Date of last energy produced measurement – Day		✓	✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Last Measured Heating Energy Produced – kWh part **[READ ONLY]**	292	40293	AI202	Last measured heating energy produced – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured Heating Energy Produced – Wh part **[READ ONLY]**	293	40294	AI203	Last measured heating energy produced – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured Cooling Energy Produced – kWh part **[READ ONLY]**	294	40295	AI204	Last measured cooling energy produced – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured Cooling Energy Produced – Wh part **[READ ONLY]**	295	40296	AI205	Last measured cooling energy produced – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured DHW Energy Produced – kWh part **[READ ONLY]**	296	40297	AI206	Last measured DHW energy produced – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured DHW Energy Produced – Wh part **[READ ONLY]**	297	40298	AI207	Last measured DHW energy produced – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured Total Energy Produced – kWh **[READ ONLY]**	298	40299	AI208	Last measured total energy produced in Kwh. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Flow Rate **[READ ONLY]**	299	40300	AI209	Litres per minute 0 = 0 l/min … 255 = 255 l/min		✓	✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Date – Year **[READ ONLY]**	342	40343	AI210	Date(year): 0 = 2000 … 99 = 2099			✓	✓							
Date – Month **[READ ONLY]**	343	40344	AI211	Date(month): 1 = January … 12 = December			✓	✓							
Date – Day **[READ ONLY]**	344	40345	AI212	Date(day): 1 … 31			✓	✓							
Time – Hour **[READ ONLY]**	345	40346	AI213	Time(hour): 0 … 255			✓	✓							
Time – Minute **[READ ONLY]**	346	40347	AI214	Time(minute): 0 … 59			✓	✓							
Time - Sec **[READ ONLY]**	347	40348	AI215	Time(sec): 0 … 59			✓	✓							
Version of main software **[READ ONLY]**	348	40349	AI216	Version of Software: e.g. version 01.23 is entered as 0123			✓	✓							
Sub-version of software **[READ ONLY]**	349	40350	AI217	Sub-code Version of Software: e.g. “r01” = 0001, “t02” = 0102, “c03” = 0203			✓	✓							
Legionella Prevention **[READ ONLY]**	350	40351	AI218	Demand of Legionella Prevention; 0 = Normal, 1 = Legionella Prevention			✓	✓							
Emergency Operation Type **[READ ONLY]**	351	40352	AI219	Type of Emergency Prevention: 0 = Normal, 1 = Standby, 2 = Backup			✓	✓							
Sensor Setting – Zone 1 **[READ ONLY]**	352	40353	AI220	Zone 1 sensor setting: 0 = Main RC, 1-8 = RoomRC1-8, 15 = TH1			✓	✓							
Auto Restart at Pwr Failure **[READ ONLY]**	356	40357	AI224	Auto restart at power failure: 0 = Normal, 1 = Standby, 2 = IT initial setting standby			✓	✓							
Demand of Heater **[READ ONLY]**	357	40358	AI225	Demand of heater operation: 0 = No demand, 1 = Run, 2 = Prohibit			✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Type Heating / Cooling **[READ ONLY]**	358	40359	AI226	Type Heating / Cooling: 0 = Type A, 1 = Type B, 2 = Type C			✓	✓							
HP Thermo diff adj control – Zone 1 **[READ ONLY]**	359	40360	AI227	Zone1 H/P thermos diff. adjustment control: 0 = Normal, 1 = discriminating, 2 = adjustment α 3 = β, 4 = γ			✓	✓							
HP Thermo diff adj control – Zone 2 **[READ ONLY]**	360	40361	AI228	Zone2 H/P thermos diff. adjustment control: 0 = Normal, 1 = discriminating, 2 = adjustment α 3 = β, 4 = γ			✓	✓							
Slave Unit Connection Status **[READ ONLY]**	361	40362	AI229	Slave Unit Connection Status: Bit 0 = address 1…….. Bit 5 = address 5 Value: 0 = unconnected, 1 = connected			✓	✓							
Slave Unit Operating status **[READ ONLY]**	362	40363	AI230	Slave Unit Operation Status: Bit 0 = address 1…….. Bit 5 = address 5 Value: 0 = Stop, 1 = Running			✓	✓							
H/P Freq 4 Status **[READ ONLY]**	363	40364	AI231	Status of H/P frequency 4: 0 = 0 Hz … 255 = 255 Hz			✓	✓							
Heat Source Phase – DHW **[READ ONLY]**	364	40365	AI232	Heat Source Phase of DHW: 0 = Normal, 1 = H/P Phase, 2 = Heater Phase			✓	✓							
Heat Source Type **[READ ONLY]**	365	40366	AI233	Type of Heat Source: 0 = Fixed, 1 = Auto			✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Heat Source – judgement condition **[READ ONLY]**	366	40367	AI234	1 = Boiler - Emergency operation 2 = Heater - Emergency operation 3 = Boiler - External input (IN5) 4 = Boiler - Heat source setting [Boiler] 5 = Heater - Heat source setting [Heater] 6 = Standard - Heatsource setting [Standard] 7 = Heater - External input (IN5) 8 = Heater - Backup operation 9 = Heater - Demand from outdoor unit 10 = Boiler - External input (IN4) 11 = Boiler - Backup operation 12 = Boiler - Heat source setting [Hyblid] 13 = Heater - Low outdoor temp. operation 14 = Standard - Pumpdown operation 15 = Standard - Floor dry up operation 16 = Boiler - Indoor unit only operation 17 = Heater - Indoor unit only operation			✓	✓							
Boiler Operation Hybrid Settings **[READ ONLY]**	367	40368	AI235	Boiler operation hybrid settings – Priority mode 0 = Ambient, 1 = Cost, 2 = CO2			✓	✓							
CP Boiler (Upper) **[READ ONLY]**	368	40369	AI236	CP boiler: (upper)(middle)(lower) 00h 00h 00h = 0.000 */kW 00h 00h 01h = 0.001 */kW . . FFh FFh FFh = 16777.215 */kW • – unit of user's currency			✓	✓							
CP Boiler (Middle) **[READ ONLY]**	369	40370					✓	✓							
CP Boiler (Lower) **[READ ONLY]**	370	40371					✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
CO2 Boiler (Upper) **[READ ONLY]**	371	40372	AI237	CO2 boiler: (upper)(middle)(lower) 00h 00h 00h = 0.000 kg-CO2 00h 00h 01h = 0.001 kg-CO2 . . FFh FFh FFh = 16777.215 kg-CO2			✓	✓							
CO2 Boiler (Middle) **[READ ONLY]**	372	40373					✓	✓							
CO2 Boiler (Lower) **[READ ONLY]**	373	40374					✓	✓							
Energy Price – Electricity(Upper) **[READ ONLY]**	374	40375	AI238	Energy Price Electricity: (upper)(middle)(lower) 00h 00h 00h = 0.000 */kW 00h 00h 01h = 0.001 */kW . . FFh FFh FFh = 16777.215 */kW • – unit of user's currency			✓	✓							
Energy Price – Electricity(Middle) **[READ ONLY]**	375	40376					✓	✓							
Energy Price – Electricity(Lower) **[READ ONLY]**	376	40377					✓	✓							
OC Connection Error **[READ ONLY]**	377	40378	AI239	OC Connection Error:			✓	✓							
RC Connection Error **[READ ONLY]**	378	40379	AI240	RC Connection Error:			✓	✓							
Consumed Electric Power **[READ ONLY]**	379	40380	AI241	Consumed electric power/energy: 0 = 0 kW or Wh …… 65535 = 65535 kW or Wh			✓	✓							
Produced Power **[READ ONLY]**	380	40381	AI242	Produced heat power/energy: 0 = 0 kW or Wh …… 65535 = 65535 kW or Wh			✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Calc Func Consumed Elec Energy **[READ ONLY]**	381	40382	AI243	Calculation function of consumed electrical energy: 0 = no function, 1 = with function			✓	✓							
Calc Func Produced Energy **[READ ONLY]**	382	40383	AI244	Calculation function of produced energy: 0 = no function, 1 = with function			✓	✓							
Heating Func On/Off **[READ ONLY]**	383	40384	AI245	Heating Function: 0 = OFF (inactive) 1 = ON (active)			✓	✓							
Ext Outdoor Ambient **[READ ONLY]**	384	40385	AI246	Extended Outdoor Ambient Temperature: 0 = OFF 1 = ON			✓	✓							
Mix Tank Water Temp (signed) **[READ ONLY]**	385	40386	AI247	Mixing tank water temperature: see note *			✓	✓							
Mix Tank Water Temp **[READ ONLY]**	386	40387		Mixing tank water temperature: see note *			✓	✓							
Condensing Temp (signed) **[READ ONLY]**	387	40388	AI248	Condensing temperature: see note *			✓	✓							
Condensing Temp **[READ ONLY]**	388	40389		Condensing temperature: see note *			✓	✓							
DipSwitch SW1 **[READ ONLY]**	389	40390	AI249	DipSW setting (SW1) lower byte: bit 0 = SW1-1….. bit 7 = SW1-8 upper byte: bit 0 = SW1-9 … bit 1 = SW1-10			✓	✓							
DipSwitch SW3 **[READ ONLY]**	390	40391	AI250	DipSW setting (SW3) lower byte: bit 0 = SW3-1….. bit 7 = SW3-8 upper byte: bit 0 = SW3-9 … bit 1 = SW3-10			✓	✓							
DipSwitch SW4 **[READ ONLY]**	391	40392	AI251	DipSW setting (SW4) lower byte: bit 0 = SW4-1….. bit 5 = SW4-6			✓	✓							
DipSwitch SW5 **[READ ONLY]**	392	40393	AI252	DipSW setting (SW5) lower byte: bit 0 = SW5-1….. bit 7 = SW5-8			✓	✓							
DipSwitch SW6 **[READ ONLY]**	393	40394	AI253	DipSW setting (SW6) lower byte: bit 0 = SW6-1….. bit 4 = SW6-5			✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Flow Rate 2 **[READ ONLY]**	394	40395	AI254	Flow rate 2: 0 = 0.0 L/min, 1 = 1.0 L/min ….. 255 = 255 L/min			✓	✓							
Water Pump 4 On/Off **[READ ONLY]**	395	40396	AI255	Water Pump 4 On/Off: 0 = Stop, 1 = Run			✓	✓							
2way Valve 2a On/Off **[READ ONLY]**	396	40397	AI256	2-way Valve 2a On/Off: 0 = Stop, 1 = Run			✓	✓							
2way Valve 2b On/Off **[READ ONLY]**	397	40398	AI257	2-way Valve 2b On/Off: 0 = Stop, 1 = Run			✓	✓							
Error Status 1 **[READ ONLY]**	398	40399		Error Status 1: 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 2 **[READ ONLY]**	399	40400		Error Status 2 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 3 **[READ ONLY]**	400	40401		Error Status 3 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 4 **[READ ONLY]**	401	40402		Error Status 4 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 5 **[READ ONLY]**	402	40403		Error Status 5 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 6 **[READ ONLY]**	403	40404		Error Status 6 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 7 **[READ ONLY]**	404	40405		Error Status 7 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 8 **[READ ONLY]**	405	40406		Error Status 8 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 9 **[READ ONLY]**	406	40407		Error Status 9 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Error Status 10 **[READ ONLY]**	407	40408		Error Status 10 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 34 **[READ ONLY]**	408	40409		Error Status 34 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 11 **[READ ONLY]**	409	40410		Error Status 11: 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 12 **[READ ONLY]**	410	40411		Error Status 12 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 13 **[READ ONLY]**	411	40412		Error Status 13 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 14 **[READ ONLY]**	412	40413		Error Status 14 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 15 **[READ ONLY]**	413	40414		Error Status 15 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 16 **[READ ONLY]**	414	40415		Error Status 16 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 17 **[READ ONLY]**	415	40416		Error Status 17 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 18 **[READ ONLY]**	416	40417		Error Status 18 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 19 **[READ ONLY]**	417	40418		Error Status 19 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 20 **[READ ONLY]**	418	40419		Error Status 20 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 21 **[READ ONLY]**	419	40420		Error Status 21 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							

Holding Register (Analogue Output)					Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**BACnet Object ID**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Error Status 22 **[READ ONLY]**	420	40421		Error Status 22 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 23 **[READ ONLY]**	421	40422		Error Status 11: 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 24 **[READ ONLY]**	422	40423		Error Status 12 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 25 **[READ ONLY]**	423	40424		Error Status 13 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 26 **[READ ONLY]**	424	40425		Error Status 14 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status J* **[READ ONLY]**	425	40426		Error Status 15 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 27 **[READ ONLY]**	426	40427		Error Status 16 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 28 **[READ ONLY]**	427	40428		Error Status 17 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 29 **[READ ONLY]**	428	40429		Error Status 18 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 39 **[READ ONLY]**	429	40430		Error Status 39 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							

* Temperature in ºC multiplied by 100. 0x8000 = -327.68ºC 0x8001 = -327.67ºC … 0xFFFF = -0.01ºC 0x0000 = 0.00ºC … 0x7FFE = 327.66ºC 0x7FFF = 327.67ºC ** Temperature in ºC multiplied by 100. 0x0000 = 0.00ºC 0x0001 = 0.01ºC … 0x7FFE = 327.66ºC 0x7FFF = 327.67ºC	^ 7-Segment Display Error Code Digit 1 0 = A 1 = b 2 = E 3 = F 4 = J 5 = L 6 = P 7 = U ^^ 7-Segment Display Error Code Digit 2 1 – 15 = 1 - F 16 = O 17 = H 18 = J 19 = L 20 = P 21 = U	† Electric Energy 0x0000 = 0.00 kWh 0x0001 = 0.01 kWh … 0xFFFE = 655.34 kWh 0xFFFF = 655.35 kWh †† MRC Prohibit command must NOT be written to Shizuoka designed models #1 Value always read as 0 on CAHV/CRHV 2013 models #2 Value always read as 0 on CAHV/CRHV 2013 models #3 Value always read as 0 on CAHV/CRHV 2013 models #4 Stop and Cooling modes not supported on CAHV 2013 models #5 Stop, Cooling and Legionella modes not supported on CRHV 2013 models #6 This value is read only on FTC4 models #7 Bit 4 not supported on CAHV/CRHV 2013 models and EAHV 2015 models #8 This setting is not supported on CAHV 2013 models #9 Range is -30..+50ºC for CRHV/CAHV/EAHV models #10 Range is 0..+50ºC for CRHV/CAHV/EAHV models #11 Range is +30..+65ºC for CAHV models #12 Range is +25..+65ºC for CRHV models #13 For EAHV 2015 models the modes Stop, Hot Water, No-Voltage Contact and Legionella are unsupported #14 For CAHV/CRHV 2013 models and EAHV 2015 models settings Emergency Run and Test Run are unsupported #15 Range is +40..+90ºC for QAHV models #16 Range is +30..+55ºC for EAHV models (Heating) Range is +5..+25ºC for EAHV models (Cooling) #17 “Error information of refrigerant system” for CAHV/CRHV/QAHV models #18 Read only value

3.2. Input registers

Input Registers are read using function code 04.

Input Register (Analogue Input)				Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Fault/Error Code (hex)	1	30002	0x8000 = No error 0x6999 = Bad communication with unit	✓	✓	✓	✓	✓		✓		✓	✓	
MelcoBEMS MINI (A1M+) Firmware Version	3	30004	MelcoBEMS MINI (A1M+) Firmware Version	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modbus Comms Counter	5	30006	Value of a counter which increments upon every valid Modbus command received. Value will automatically reset to zero when value exceeds 65535.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fault Code (decimal)	8	30009	8000 = No error 6999 = Bad communication between A1M+ and unit	✓	✓	✓	✓	✓		✓		✓	✓	
System Type Detected	9	30010	0 = ATA unit connected 1 = ATW system connected 2 = Lossnay system connected 255 = Undetermined (no unit detected yet)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Own Refrigerant Address	25	30026	0 … 32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Defrost	26	30027	0 = Normal 1 = Standby 2 = Defrost 3 = Waiting Restart	✓	✓	✓	✓	✓	✓			✓	✓	✓
Residual Heat Removal	27	30028	0 = Normal 1 = Prepared 2 = Residual Heat Removal	✓	✓	✓	✓							
Refrigerant Error Info	28	30029	0 = Normal 1 = Error (System) 2 = Error (Startup) 3 = Maintenance Error	✓	✓	✓	✓	✓#2		✓#2		✓#2	✓	

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
7-Segment Display Error Code Digit 1	29	30030	(see note ^)	✓	✓	✓	✓							
7-Segment Display Error Code Digit 2	30	30031	(see note ^^)	✓	✓	✓	✓							
Status Of Heating	31	30032	0 = No type 1 = Heating C1 2 = Heating C2 3 = Heating C3	✓										
			0 = No type 1 = Heating/Cooling A1, Heating/Cooling B1, Heating/Cooling C1 2 = Heating/Cooling A2, Heating/Cooling B2, Heating/Cooling C2 3 = Heating/Cooling A3, Heating/Cooling B3, Heating/Cooling C3		✓	✓	✓							
Heat Pump Frequency – Master	32	30033	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 1	33	30034	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 2	34	30035	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 3	35	30036	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 4	36	30037	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 5	37	30038	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Frequency – Slave 6	38	30039	Frequency value in Hz 0 = 0Hz … 255 = 255Hz	✓	✓	✓	✓	✓		✓		✓		
Heat Source Status	39	30040	0 = H/P 1 = IH 2 = BH 3 = IH + BH 4 = Boiler	✓	✓	✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Temperature Setpoint – Zone 1 (signed)	40	30041	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Temperature Setpoint – Zone 1	41	30042	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Temperature Setpoint – Zone 2 (signed)	42	30043	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Temperature Setpoint – Zone 2	43	30044	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Flow Temperature Setpoint – Zone 1 (signed)	44	30045	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Flow Temperature Setpoint – Zone 1	45	30046	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Flow Temperature Setpoint – Zone 2 (signed)	46	30047	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Flow Temperature Setpoint – Zone 2	47	30048	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Legionella Temperature Setpoint (signed)	48	30049	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Legionella Temperature Setpoint	49	30050	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
DHW Temperature Drop (signed)	50	30051	Temperature value in ºC multiplied by 10. 0xFF38 = -20.0ºC … 0x0433 = 107.5ºC	✓	✓	✓	✓							
DHW Temperature Drop	51	30052	Temperature value in ºC multiplied by 10. 0x0000 = 0ºC … 0x0433 = 107.5ºC 0 = 0.0ºC … 1075 = 107.5ºC	✓	✓	✓	✓							
Room Temperature – Zone 1 (signed)	52	30053	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Room Temperature – Zone 1	53	30054	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Room Temperature – Zone 2 (signed)	54	30055	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Room Temperature – Zone 2	55	30056	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Refrigerant Liquid Temperature (signed)	56	30057	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Refrigerant Liquid Temperature	57	30058	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Outdoor Ambient Temperature (signed)	58	30059	Temperature value in ºC multiplied by 10. 0xFE70 = -40.0ºC … 0x036B = 87.5ºC	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Outdoor Ambient Temperature	59	30060	Temperature value in ºC multiplied by 10. 0x0000 = 0.0ºC ... 0x036B = 87.5ºC.	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Flow Temperature (signed)	60	30061	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Water Outlet Temperature (signed)			Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓	✓	✓	✓
Flow Temperature	61	30062	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Water Outlet Temperature			Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓	✓	✓	✓
Return Temperature (signed)	62	30063	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Water Inlet Temperature (signed)			Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓	✓	✓	✓
Return Temperature	63	30064	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Water Inlet Temperature			Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓	✓	✓	✓

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Tank Water Temperature (signed)	64	30065	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Tank Water Temperature	65	30066	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Flow Temperature – Zone 1 (signed)	66	30067	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
External Water Temperature 1 (signed)			Temperature value in ºC multiplied by 100. (see note *)					✓		✓		✓	✓	
Flow Temperature – Zone 1	67	30068	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
External Water Temperature 1			Temperature value in ºC multiplied by 100. (see note **)					✓		✓		✓	✓	
Return Temperature – Zone 1 (signed)	68	30069	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
External Water Temperature 3 (signed)			Temperature value in ºC multiplied by 100. (see note *)									✓		
Return Temperature – Zone 1	69	30070	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
External Water Temperature 3			Temperature value in ºC multiplied by 100. (see note **)									✓		
Flow Temperature – Zone 2 (signed)	70	30071	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
External Water Temperature 2 (signed)			Temperature value in ºC multiplied by 100. (see note *)					✓		✓				
External Water Temperature 4 (signed)			Temperature value in ºC multiplied by 100. (see note *)									✓		

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Flow Temperature – Zone 2	71	30072	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
External Water Temperature 2			Temperature value in ºC multiplied by 100. (see note **)					✓		✓				
External Water Temperature 4			Temperature value in ºC multiplied by 100. (see note **)									✓		
Return Temperature – Zone 2 (signed)	72	30073	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
External Water Temperature 6 (signed)			Temperature value in ºC multiplied by 100. (see note **)									✓		
Return Temperature – Zone 2	73	30074	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
External Water Temperature 6			Temperature value in ºC multiplied by 100. (see note **)									✓		
Boiler Flow Temperature (signed)	74	30075	Temperature value in ºC multiplied by 100. (see note *)	✓	✓	✓	✓							
Boiler Flow Temperature	75	30076	Temperature value in ºC multiplied by 100. (see note **)	✓	✓	✓	✓							
Boiler Return Temperature (signed)	76	30077	Temperature value in ºC multiplied by 100. (see note *)	✓	✓									
Boiler Return Temperature	77	30078	Temperature value in ºC multiplied by 100. (see note **)	✓	✓									
DIP Switch SW2	78	30079	Bit 0 = Switch 2-1 (0 = OFF, 1 = ON) … Bit 9 = Switch 2-10 (0 = OFF, 1 = ON)	✓	✓	✓	✓							
Heat Pump Run Time (hours)	79	30080	Value in hours 0 = 0 Hours … 99 = 99 Hours	✓	✓	✓	✓	✓		✓				
Heat Pump Run Time (hours x100)	80	30081	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓	✓		✓				

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Heat Pump Refrigerant Address 1 Run Time (hours x100)	81	30082	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Heat Pump Refrigerant Address 2 Run Time (hours x100)	82	30083	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Heat Pump Refrigerant Address 3 Run Time (hours x100)	83	30084	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Heat Pump Refrigerant Address 4 Run Time (hours x100)	84	30085	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Heat Pump Refrigerant Address 5 Run Time (hours x100)	85	30086	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Heat Pump Refrigerant Address 6 Run Time (hours x100)	86	30087	Value in hours multiplied by 100 0 = 0 hours … 65535 = 6553500 hours	✓	✓	✓	✓							
Mixing Valve Step	87	30088	0 = Step 0 … 10 = Step 10	✓	✓	✓	✓							
Refrigerant 1 Error Code Digit 1	88	30089	(see note ^)	✓	✓	✓	✓							
Refrigerant 1 Error Code Digit 2	89	30090	(see note ^^)	✓	✓	✓	✓							
Refrigerant 2 Error Code Digit 1	90	30091	(see note ^)	✓	✓	✓	✓							
Refrigerant 2 Error Code Digit 2	91	30092	(see note ^^)	✓	✓	✓	✓							
Refrigerant 3 Error Code Digit 1	92	30093	(see note ^)	✓	✓	✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Refrigerant 3 Error Code Digit 2	93	30094	(see note ^^)	✓	✓	✓	✓							
Refrigerant 4 Error Code Digit 1	94	30095	(see note ^)	✓	✓	✓	✓							
Refrigerant 4 Error Code Digit 2	95	30096	(see note ^^)	✓	✓	✓	✓							
Refrigerant 5 Error Code Digit 1	96	30097	(see note ^)	✓	✓	✓	✓							
Refrigerant 5 Error Code Digit 2	97	30098	(see note ^^)	✓	✓	✓	✓							
Refrigerant 6 Error Code Digit 1	98	30099	(see note ^)	✓	✓	✓	✓							
Refrigerant 6 Error Code Digit 2	99	30100	(see note ^^)	✓	✓	✓	✓							
Heat Pump Frequency – Slave 7	100	30101	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 8	101	30102	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 9	102	30103	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 10	103	30104	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 11	104	30105	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 12	105	30106	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 13	106	30107	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Heat Pump Frequency – Slave 14	107	30108	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		

Input Register (Analogue Input)				Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Heat Pump Frequency – Slave 15	108	30109	Frequency value in Hz 0 = 0Hz … 255 = 255Hz					✓		✓		✓		
Evaporating Temperature (signed)	109	30110	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓	✓	✓	✓
Evaporating Temperature	110	30111	Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓	✓	✓	✓
Condensing Temperature (signed)	111	30112	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓	✓	✓	✓
Condensing Temperature	112	30113	Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓	✓	✓	✓
Electric Energy 1	113	30114	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 2	114	30115	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 3	115	30116	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 4	116	30117	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 5	117	30118	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 6	118	30119	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 7	119	30120	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 8	120	30121	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 9	121	30122	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 10	122	30123	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1

Input Register (Analogue Input)				Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Electric Energy 11	123	30124	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 12	124	30125	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 13	125	30126	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 14	126	30127	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 15	127	30128	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Electric Energy 16	128	30129	Electric Energy in kWh multiplied by 100 (see note †)					✓#1	✓#1	✓#1	✓#1		✓#1	✓#1
Brine Inlet Temperature (signed)	129	30130	Temperature value in ºC multiplied by 100. (see note *)							✓	✓			
Brine Inlet Temperature	130	30131	Temperature value in ºC multiplied by 100. (see note **)							✓	✓			
Brine Outlet Temperature 1 (signed)	131	30132	Temperature value in ºC multiplied by 100. (see note *)							✓	✓			
Brine Outlet Temperature 1	132	30133	Temperature value in ºC multiplied by 100. (see note **)							✓	✓			
Brine Outlet Temperature 2 (signed)	133	30134	Temperature value in ºC multiplied by 100. (see note *)							✓	✓			
Brine Outlet Temperature 2	134	30135	Temperature value in ºC multiplied by 100. (see note **)							✓	✓			
Condensing Temperature 2 (signed)	135	30136	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓		✓	✓
Condensing Temperature 2	136	30137	Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓		✓	✓
Water Outlet Temperature 2 (signed)	137	30138	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓		✓	✓

Input Register (Analogue Input)				Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Water Outlet Temperature 2	138	30139	Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓		✓	✓
Evaporating Temperature 2 (signed)	139	30140	Temperature value in ºC multiplied by 100. (see note *)					✓	✓	✓	✓		✓	✓
Evaporating Temperature 2	140	30141	Temperature value in ºC multiplied by 100. (see note **)					✓	✓	✓	✓		✓	✓
Water Pump 1 – PWM Duty	141	30142	Duty value in % 0 = 0% … 100 = 100%									✓		
Water Pump 1 – PWM Duty Feedback	142	30143	Duty value in % 0 = 0% … 100 = 100%											
3-Way Valve 1	143	30144	0 = OFF (stop) 1 = ON (run)					✓				✓		
H/C Control Type	144	30145	0 = Heating 1 = Cooling	✓	✓	✓	✓							
MRC Prohibit	145	30146	Bit packed value: Bit 0 – System On/Off (0 = ON, 1 = Prohibit) Bit 1 – Running Mode (0 = ON, 1 = Prohibit) Bit 2 – Setting Temp (0 = ON, 1 = Prohibit) Bit 3 – Undefined (always 0) Bit 4 – Function Setting (0 = Normal, 1 = Function Setting) Bits 5, 6 and 7 – Undefined (always 0)	✓	✓	✓	✓	✓		✓				
Version of Protocol (upper)	146	30147	Version of Protocol is a value in BCD e.g. V3.01 = 3 (upper) and 1 (lower)	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Version of Protocol (lower)	147	30148	Version of Protocol is a value in BCD e.g. V3.01 = 3 (upper) and 1 (lower)	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Version of Model (upper)	148	30149	Version of Model is a value in BCD e.g. V2.00 = 2 (upper) and 0 (lower)	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Version of Model (lower)	149	30150	Version of Model is a value in BCD e.g. V2.00 = 2 (upper) and 0 (lower)	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Input Register (Analogue Input)				Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Capacity of Supplying Electricity	150	30151	Value in Watts 0 = 0,0 W … 255 = 25,5 W	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Model Profile 1	151	30152	0 = FTC2B 1 = FTC4 2 = FTC5 128 = CAHV1A 129 = CAHV1B 130 = CRHV1A 131 = CRHV1B 132 = EAHV1A 133 = EAHV1B 134 = QAHV1A 135 = QAHV1B 144 = PWFY1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Model Profile 2 (refrigerant address)	152	30153	0 = Address 0 … 255 = Address 255 (addresses 7 – 255 not used for FTC)	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Energy Consumption Measured Date – Year	153	30154	Date of last energy consumption measurement – Year		✓	✓	✓							
Energy Consumption Measured Date – Month	154	30155	Date of last energy consumption measurement – Month		✓	✓	✓							
Energy Consumption Measured Date – Day	155	30156	Date of last energy consumption measurement – Day		✓	✓	✓							
Last Measured Heating Energy Consumption – kWh part	156	30157	Last measured heating energy consumption – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured Heating Energy Consumption – Wh part	157	30158	Last measured heating energy consumption – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured Cooling Energy Consumption – kWh part	158	30159	Last measured cooling energy consumption – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured Cooling Energy Consumption – Wh part	159	30160	Last measured cooling energy consumption – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Last Measured DHW Energy Consumption – kWh part	160	30161	Last measured DHW energy consumption – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured DHW Energy Consumption – Wh part	161	30162	Last measured DHW energy consumption – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured Total Energy Consumption – kWh	162	30163	Last measured total energy consumption in Kwh. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Energy Produced Measured Date – Year	163	30164	Date of last energy produced measurement – Year		✓	✓	✓							
Energy Produced Measured Date – Month	164	30165	Date of last energy produced measurement – Month		✓	✓	✓							
Energy Produced Measured Date – Day	165	30166	Date of last energy produced measurement – Day		✓	✓	✓							
Last Measured Heating Energy Produced – kWh part	166	30167	Last measured heating energy produced – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured Heating Energy Produced – Wh part	167	30168	Last measured heating energy produced – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured Cooling Energy Produced – kWh part	168	30169	Last measured cooling energy produced – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured Cooling Energy Produced – Wh part	169	30170	Last measured cooling energy produced – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured DHW Energy Produced – kWh part	170	30171	Last measured DHW energy produced – kWh part of the value. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Last Measured DHW Energy Produced – Wh part	171	30172	Last measured DHW energy produced – Wh part of the value multiplied by 10. 0 = 0Wh … 99 = 990Wh		✓	✓	✓							
Last Measured Total Energy Produced – kWh	172	30173	Last measured total energy produced in Kwh. 0 = 0kWh … 65535 = 65535kWh		✓	✓	✓							
Flow Rate	173	30174	Litres per minute 0 = 0 l/min … 255 = 255 l/min		✓	✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Date – Year	193	30194	Date(year): 0 = 2000 … 99 = 2099			✓	✓							
Date – Month	194	30195	Date(month): 1 = January … 12 = December			✓	✓							
Date – Day	195	30196	Date(day): 1 … 31			✓	✓							
Time – Hour	196	30197	Time(hour): 0 … 255			✓	✓							
Time – Minute	197	30198	Time(minute): 0 … 59			✓	✓							
Time_Sec	198	30199	Time(sec): 0 … 59			✓	✓							
Version of main software	199	30200	Version of Software: e.g. version 01.23 is entered as 0123			✓	✓							
Sub-version of software	200	30201	Sub-code Version of Software: e.g. “r01” = 0001, “t02” = 0102, “c03” = 0203			✓	✓							
Emergency Operation Type	201	30202	Type of Emergency Prevention: 0 = Normal, 1 = Standby, 2 = Backup			✓	✓							
Sensor Setting – Zone 1	202	30203	Zone 1 sensor setting: 0 = Main RC, 1-8 = RoomRC1-8, 15 = TH1			✓	✓							
Sensor Setting – Zone 2	203	30204	Zone 2 sensor setting: 0 = Main RC, 1-8 = RoomRC1-8, 15 = TH1			✓	✓							
Boiler Protection	204	30205	Boiler Protection: 0 = Normal, 1 = Prepared, 2 = Protected			✓	✓							
Auto Restart at Pwr Failure	205	30206	Auto restart at power failure: 0 = Normal, 1 = Standby, 2 = IT initial setting standby			✓	✓							
Demand of Heater	206	30207	Demand of heater operation: 0 = No demand, 1 = Run, 2 = Prohibit			✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Type Heating / Cooling	207	30208	Type Heating / Cooling: 0 = Type A, 1 = Type B, 2 = Type C			✓	✓							
HP Thermo diff adj control – Zone 1	208	30209	Zone1 H/P thermos diff. adjustment control: 0 = Normal, 1 = discriminating, 2 = adjustment α 3 = β, 4 = γ			✓	✓							
HP Thermo diff adj control – Zone 2	209	30210	Zone2 H/P thermos diff. adjustment control: 0 = Normal, 1 = discriminating, 2 = adjustment α 3 = β, 4 = γ			✓	✓							
Slave Unit Connection Status	210	30211	Slave Unit Connection Status: Bit 0 = address 1…….. Bit 5 = address 5 Value: 0 = unconnected, 1 = connected			✓	✓							
Slave Unit Operating status	211	30212	Slave Unit Operation Status: Bit 0 = address 1…….. Bit 5 = address 5 Value: 0 = Stop, 1 = Running			✓	✓							
H/P Freq 4 Status	212	30213	Status of H/P frequency 4: 0 = 0 Hz … 255 = 255 Hz			✓	✓							
Heat Source Phase – DHW	213	30214	Heat Source Phase of DHW: 0 = Normal, 1 = H/P Phase, 2 = Heater Phase			✓	✓							
Heat Source – judgement condition	214	30215	1 = Boiler - Emergency operation 2 = Heater - Emergency operation 3 = Boiler - External input (IN5) 4 = Boiler - Heat source setting [Boiler] 5 = Heater - Heat source setting [Heater] 6 = Standard - Heatsource setting [Standard] 7 = Heater - External input (IN5) 8 = Heater - Backup operation 9 = Heater - Demand from outdoor unit 10 = Boiler - External input (IN4) 11 = Boiler - Backup operation 12 = Boiler - Heat source setting [Hyblid] 13 = Heater - Low outdoor temp. operation 14 = Standard - Pumpdown operation 15 = Standard - Floor dry up operation 16 = Boiler - Indoor unit only operation 17 = Heater - Indoor unit only operation			✓	✓							
Boiler Operation Hybrid Settings	215	30216	Boiler operation hybrid settings – Priority mode 0 = Ambient, 1 = Cost, 2 = CO2			✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
CP Boiler (Upper)	216	30217	CP boiler: (upper)(middle)(lower) 00h 00h 00h = 0.000 */kW 00h 00h 01h = 0.001 */kW . . FFh FFh FFh = 16777.215 */kW • – unit of user's currency			✓	✓							
CP Boiler (Middle)	217	30218				✓	✓							
CP Boiler (Lower)	218	30219				✓	✓							
CO2 Boiler (Upper)	219	30220	CO2 boiler: (upper)(middle)(lower) 00h 00h 00h = 0.000 kg-CO2 00h 00h 01h = 0.001 kg-CO2 . . FFh FFh FFh = 16777.215 kg-CO2			✓	✓							
CO2 Boiler (Middle)	220	30221				✓	✓							
CO2 Boiler (Lower)	221	30222				✓	✓							
Energy Price – Electricity(Upper)	222	30223	Energy Price Electricity: (upper)(middle)(lower) 00h 00h 00h = 0.000 */kW 00h 00h 01h = 0.001 */kW . . FFh FFh FFh = 16777.215 */kW • – unit of user's currency			✓	✓							
Energy Price – Electricity(Middle)	223	30224				✓	✓							
Energy Price – Electricity(Lower)	224	30225				✓	✓							
CO2 Boiler (Upper)	219	30220	CO2 boiler: (upper)(middle)(lower) 00h 00h 00h = 0.000 kg-CO2 00h 00h 01h = 0.001 kg-CO2 . . FFh FFh FFh = 16777.215 kg-CO2			✓	✓							
CO2 Boiler (Middle)	220	30221				✓	✓							
CO2 Boiler (Lower)	221	30222				✓	✓							
Energy Price – Electricity(Upper)	222	30223	Energy Price Electricity: (upper)(middle)(lower) 00h 00h 00h = 0.000 */kW 00h 00h 01h = 0.001 */kW . . FFh FFh FFh = 16777.215 */kW • – unit of user's currency			✓	✓							
Energy Price – Electricity(Middle)	223	30224				✓	✓							
Energy Price – Electricity(Lower)	224	30225				✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
OC Connection Error	225	30226	OC Connection Error:			✓	✓							
RC Connection Error	226	30227	RC Connection Error:			✓	✓							
Consumed Electric Power	227	30228	Consumed electric power/energy: 0 = 0 kW or Wh …… 65535 = 65535 kW or Wh			✓	✓							
Produced Power	228	30229	Produced heat power/energy: 0 = 0 kW or Wh …… 65535 = 65535 kW or Wh			✓	✓							
Mix Tank Water Temp (signed)	229	30230	Mixing tank water temperature: see note *			✓	✓							
Mix Tank Water Temp	230	30231	Mixing tank water temperature: see note *			✓	✓							
Condensing Temp (signed)	231	30232	Condensing temperature: see note *			✓	✓							
Condensing Temp	232	30233	Condensing temperature: see note *			✓	✓							
DipSwitch SW1	233	30234	DipSW setting (SW1) lower byte: bit 0 = SW1-1….. bit 7 = SW1-8 upper byte: bit 0 = SW1-9 … bit 1 = SW1-10			✓	✓							
DipSwitch SW3	234	30235	DipSW setting (SW3) lower byte: bit 0 = SW3-1….. bit 7 = SW3-8 upper byte: bit 0 = SW3-9 … bit 1 = SW3-10			✓	✓							
DipSwitch SW4	235	30236	DipSW setting (SW4) lower byte: bit 0 = SW4-1….. bit 5 = SW4-6			✓	✓							
DipSwitch SW5	236	30237	DipSW setting (SW5) lower byte: bit 0 = SW5-1….. bit 7 = SW5-8			✓	✓							
DipSwitch SW6	237	30238	DipSW setting (SW6) lower byte: bit 0 = SW6-1….. bit 4 = SW6-5			✓	✓							
Flow Rate 2	238	30239	Flow rate 2: 0 = 0.0 L/min, 1 = 1.0 L/min ….. 255 = 255 L/min			✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Error Status 1	239	30240	Error Status 1: 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 2	240	30241	Error Status 2 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 3	241	30242	Error Status 3 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 4	242	30243	Error Status 4 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 5	243	30244	Error Status 5 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 6	244	30245	Error Status 6 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 7	245	30246	Error Status 7 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 8	246	30247	Error Status 8 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 9	247	30248	Error Status 9 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 10	248	30249	Error Status 10 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 34	249	30250	Error Status 34 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 11	250	30251	Error Status 11: 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 12	251	30252	Error Status 12 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 13	252	30253	Error Status 13 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 14	253	30254	Error Status 14 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							

Input Register (Analogue Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Error Status 15	254	30255	Error Status 15 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 16	255	30256	Error Status 16 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 17	256	30257	Error Status 17 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 18	257	30258	Error Status 18 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 19	258	30259	Error Status 19 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 20	259	30260	Error Status 20 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 21	260	30261	Error Status 21 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 22	261	30262	Error Status 22 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 23	262	30263	Error Status 11: 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 24	263	30264	Error Status 12 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 25	264	30265	Error Status 13 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 26	265	30266	Error Status 14 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status J*	266	30267	Error Status 15 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 27	267	30268	Error Status 16 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 28	268	30269	Error Status 17 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							

Input Register (Analogue Input)				Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Error Status 29	269	30270	Error Status 18 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							
Error Status 39	270	30271	Error Status 39 0 = Normal, 1 = Error Standby, 2 = Error			✓	✓							

* Temperature in ºC multiplied by 100.
0x8000 = -327.68ºC
0x8001 = -327.67ºC
…
0xFFFF = -0.01ºC
0x0000 = 0.00ºC
…
0x7FFE = 327.66ºC
0x7FFF = 327.67ºC

** Temperature in ºC multiplied by 100.
0x0000 = 0.00ºC
0x0001 = 0.01ºC
…
0x7FFE = 327.66ºC
0x7FFF = 327.67ºC

^ 7-Segment Display Error Code Digit 1
0 = A
1 = b
2 = E
3 = F
4 = J
5 = L
6 = P
7 = U

^^ 7-Segment Display Error Code Digit 2
1 – 15 = 1 - F
16 = O
17 = H
18 = J
19 = L
20 = P
21 = U

† Electric Energy
0x0000 = 0.00 kWh
0x0001 = 0.01 kWh
…
0xFFFE = 655.34 kWh
0xFFFF = 655.35 kWh

#1 Value always read as 0 on CAHV/CRHV 2013 models
#2 “Error information of refrigerant system” for CAHV/CRHV/QAHV models

3.3. Coils

Coils are read using function code 01 and written to using either function code 05 or 15. Function code 05 is used when writing to a single coil register, function code 15 is used for writing to multiple coil registers in the same command.

Coil (Digital Output)				Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
System ON/OFF	1	00002	0 = System OFF 1 = System ON (Note: Reading back value 1 could indicate the unit is in Emergency Run or Test Run mode)	✓	✓	✓	✓	✓	(✓) #1	✓	(✓) #1	✓	✓	(✓) #1

#1 Read only value

3.4. Discrete Inputs

Discrete Inputs are read using function code 02.

Discrete Input (Digital Input)				Applicable Unit Type										
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Room Thermo 1 (IN1)	0	10001	0 = OFF, 1 = ON	✓	✓	✓	✓							
Room Thermo 2 (IN6)	1	10002	0 = OFF, 1 = ON	✓	✓	✓	✓							
Flow SW1 (IN2)	2	10003	0 = OFF, 1 = ON	✓	✓	✓	✓							
Flow SW2 (IN3)	3	10004	0 = OFF, 1 = ON	✓	✓	✓	✓							
Flow SW3 (IN7)	4	10005	0 = OFF, 1 = ON	✓	✓	✓	✓							
Demand (IN4)	5	10006	0 = OFF, 1 = ON	✓	✓	✓	✓							
Outdoor Thermo (IN5)	6	10007	0 = OFF, 1 = ON	✓	✓	✓	✓							
Heat Pump Master ON/OFF	7	10008	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Slave 1 ON/OFF (address 2 for CAHV/CRHV)	8	10009	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓		✓	✓	
Heat Pump Slave 2 ON/OFF (address 3 for CAHV/CRHV)	9	10010	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				
Heat Pump Slave 3 ON/OFF (address 4 for CAHV/CRHV)	10	10011	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				
Heat Pump Slave 4 ON/OFF (address 5 for CAHV/CRHV)	11	10012	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				

Discrete Input (Digital Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Heat Pump Slave 5 ON/OFF (address 6 for CAHV/CRHV)	12	10013	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				
Heat Pump Slave 6 ON/OFF (address 7 for CAHV/CRHV)	13	10014	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓				
Heat Pump Slave 7 ON/OFF (address 8 for CAHV/CRHV)	14	10015	0 = Stop, 1 = Run					✓		✓				
Heat Pump Slave 8 ON/OFF (address 9 for CAHV/CRHV)	15	10016	0 = Stop, 1 = Run					✓		✓				
Boiler ON/OFF	16	10017	0 = Stop, 1 = Run	✓	✓	✓	✓						✓	✓
External Heater Operation 1			0 = Stop, 1 = Run					✓		✓				
Booster Heater 1 ON/OFF	17	10018	0 = Stop, 1 = Run	✓	✓	✓	✓							
Booster Heater 2 ON/OFF	18	10019	0 = Stop, 1 = Run	✓	✓	✓	✓							
Booster Heater 2+ ON/OFF	19	10020	0 = Stop, 1 = Run	✓	✓									
Immersion Heater ON/OFF	20	10021	0 = Stop, 1 = Run	✓	✓	✓	✓							
Water Pump 1 ON/OFF	21	10022	0 = Stop, 1 = Run	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Water Pump 2 ON/OFF	22	10023	0 = Stop, 1 = Run	✓	✓	✓	✓	✓						
Water Pump 3 ON/OFF	23	10024	0 = Stop, 1 = Run	✓	✓	✓	✓	✓						
3-Way Valve ON/OFF	24	10025	0 = Stop, 1 = Run	✓	✓	✓	✓							
2-Way Valve 2 ON/OFF	25	10026	0 = Stop, 1 = Run	✓	✓	✓	✓							

Discrete Input (Digital Input)				Applicable Unit Type											
Register Name	Addr	Modicon Address	Details	FTC4	FTC5	FTC6	FTC7	CAHV master	CAHV slave	CRHV master	CRHV slave	QAHV master	EAHV / EACV master	EAHV / EACV slave
Heat Pump 10 ON/OFF	26	10027	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 11 ON/OFF	27	10028	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 12 ON/OFF	28	10029	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 13 ON/OFF	29	10030	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 14 ON/OFF	30	10031	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 15 ON/OFF	31	10032	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 16 ON/OFF	32	10033	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 17 ON/OFF	33	10034	0 = Stop, 1 = Run					✓		✓		✓		
Heat Pump 18 ON/OFF	34	10035	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 19 ON/OFF	35	10036	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 20 ON/OFF	36	10037	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 21 ON/OFF	37	10038	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 22 ON/OFF	38	10039	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 23 ON/OFF	39	10040	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 24 ON/OFF	40	10041	0 = Stop, 1 = Run					✓#1		✓#1				

Discrete Input (Digital Input)				Applicable Unit Type											
Register Name	Addr	Modicon Address	Details	FTC4	FTC5	FTC6	FTC7	CAHV master	CAHV slave	CRHV master	CRHV slave	QAHV master	EAHV / EACV master	EAHV / EACV slave
Heat Pump 25 ON/OFF	41	10042	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 26 ON/OFF	42	10043	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 27 ON/OFF	43	10044	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 28 ON/OFF	44	10045	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 29 ON/OFF	45	10046	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 30 ON/OFF	46	10047	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 31 ON/OFF	47	10048	0 = Stop, 1 = Run					✓#1		✓#1				
Heat Pump 32 ON/OFF	48	10049	0 = Stop, 1 = Run					✓#1		✓#1				
	49 - 64	10050 - 10065	Reserved											
External Heater ON/OFF	65	10066	0 = Stop, 1 = Run							✓#1				
Water Pump 4 ON/OFF	66	10067	0 = Stop, 1 = Run					✓						
Water Pump 5 ON/OFF	67	10068	0 = Stop, 1 = Run					✓						
Water Pump 6 ON/OFF	68	10069	0 = Stop, 1 = Run					✓						
Water Pump 7 ON/OFF	69	10070	0 = Stop, 1 = Run					✓						
Water Pump 8 ON/OFF	70	10071	0 = Stop, 1 = Run					✓						

Discrete Input (Digital Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Water Pump 9 ON/OFF	71	10072	0 = Stop, 1 = Run					✓						
Water Pump 10 ON/OFF	72	10073	0 = Stop, 1 = Run					✓						
Water Pump 11 ON/OFF	73	10074	0 = Stop, 1 = Run					✓						
Water Pump 12 ON/OFF	74	10075	0 = Stop, 1 = Run					✓						
Water Pump 13 ON/OFF	75	10076	0 = Stop, 1 = Run					✓						
Water Pump 14 ON/OFF	76	10077	0 = Stop, 1 = Run					✓						
Water Pump 15 ON/OFF	77	10078	0 = Stop, 1 = Run					✓						
Water Pump 16 ON/OFF	78	10079	0 = Stop, 1 = Run					✓						
Drain Pan Heater ON/OFF	79	10080	0 = Stop, 1 = Run							✓	✓		✓	✓
Antifreeze piping heater operation ON/OFF			0 = Stop, 1 = Run									✓		
Legionella Prevention	98	10099	Demand of Legionella Prevention; 0 = Normal, 1 = Legionella Prevention			✓	✓							
Outdoor Unit – Freeze Stat Func	99	10100	Freeze stat function for outdoor unit: 0 = Normal, 1 = Freeze stat			✓	✓							
Heat Source Type	100	10101	Type of Heat Source: 0 = Fixed, 1 = Auto			✓	✓							
Calc Func Consumed Elec Energy	101	10102	Calculation function of consumed electrical energy: 0 = no function, 1 = with function			✓	✓							

Discrete Input (Digital Input)				Applicable Unit Type											
Register Name	**Addr**	**Modicon Address**	**Details**	**FTC4**	**FTC5**	**FTC6**	**FTC7**	**CAHV master**	**CAHV slave**	**CRHV master**	**CRHV slave**	**QAHV master**	**EAHV / EACV master**	**EAHV / EACV slave**
Calc Func Produced Energy	102	10103	Calculation function of produced energy: 0 = no function, 1 = with function			✓	✓							
Heating Func On/Off	103	10104	Heating Function: 0 = OFF (inactive) 1 = ON (active)			✓	✓							
Ext Outdoor Ambient	104	10105	Extended Outdoor Ambient Temperature: 0 = OFF 1 = ON			✓	✓							
Water Pump 4 On/Off	105	10106	Water Pump 4 On/Off: 0 = Stop, 1 = Run			✓	✓							
2way Valve 2a On/Off	106	10107	2-way Valve 2a On/Off: 0 = Stop, 1 = Run			✓	✓							
2way Valve 2b On/Off	107	10108	2-way Valve 2b On/Off: 0 = Stop, 1 = Run			✓	✓							

[#1] Value always read as 0 on CAHV/CRHV 2013 models

Please be sure to put the contact address/telephone number on this manual before handing it to the customer.

MITSUBISHI ELECTRIC UK

MITSUBISHI ELECTRIC UK, TRAVELLERS LANE, HATFIELD, HERTFORDSHIRE, AL10 8XB