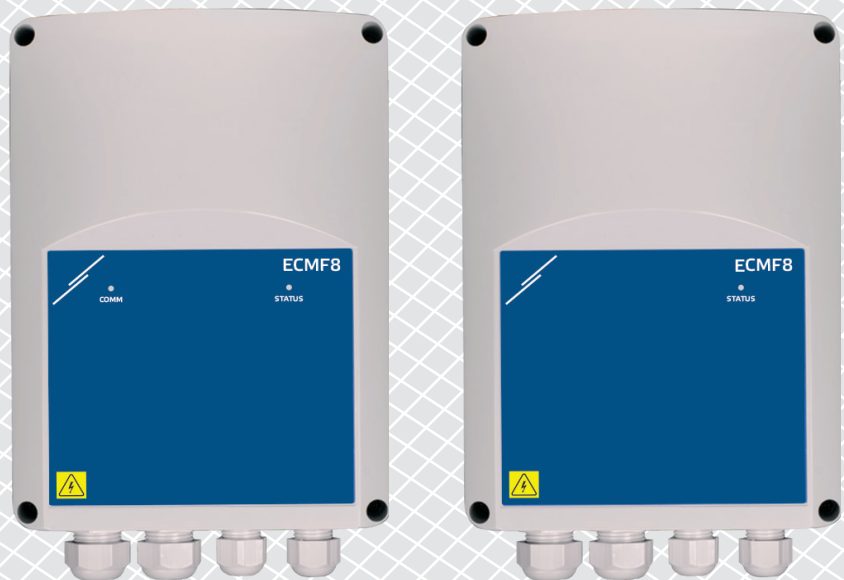


ECMF8 | HVAC CONTROLLER FOR EC FANS / VFD

Modbus register map



MODBUS REGISTER MAP

INPUT REGISTERS					
		Data type	Description	Data	Values
1	Analogue / Modulating input 1 value	unsigned integer	Measured input value 1 when voltage / current / PWM/ digital input selected	0—1.000	600 = 60,0% 1000 = 100,0 %
2	Analogue input 1 frequency	unsigned integer	Measured input 1 frequency in PWM mode	0—8.000	8.000 = 8.000 Hz
3	AO1 output value	unsigned integer	Output Value of AO1	0—1.000	100 = 10% Output
4	AO1 Output type	unsigned integer	Output type of AO1	0—3	0 = OFF 1 = Voltage 2 = Current 3 = PWM
5	TI 1 Measured RPM	unsigned integer	Measured RPM Input 1	0—10.000	0 = Stop or signal loss 100 RPM
6—10			Reserved, return 0		
11	Analogue / Modulating input 2 value	unsigned integer	Measured input value 2 when voltage / current / PWM	0—1.000	600 = 60,0% 1000 = 100,0 %
12	Analogue input 2 frequency	unsigned integer	Measured input 1 frequency in PWM mode	0—8.000	8.000 = 8.000 Hz
13	AO2 output value	unsigned integer	Output Value of AO2	0—1.000	100 = 10% Output
14	AO2 output type	unsigned integer	Output type of AO2	0—3	0 = OFF 1 = Voltage 2 = Current 3 = PWM
15	TI 2 Measured RPM	unsigned integer	Measured RPM Input 2	0—10.000	0 = Stop or signal loss 100 RPM
16—29			Reserved, return 0		
30	Device State	unsigned integer	Device status	0—65.535	Bit 3: Tacho input 2 error - (0 = OK, 1 = Fault) Bit 2: Tacho input 1 error - (0 = OK, 1 = Fault) Bit 1: Sensor 2 (outside) communication status (0 = OK, 1 = Lost) Bit 0: Sensor 1 (outside) communication status (0 = OK, 1 = Lost)

Note: The input registers can be read via the Modbus command: "Read input registers".

HOLDING REGISTERS							
		Data type	Description	Raw data range	Default values	Values	
1	Device slave address	unsigned integer	Modbus device address	1–247	1		
2	Modbus baud rate	unsigned integer	Modbus communication baud rate	0–6	2		0 = 4.800 1 = 9.600 2 = 19.200 3 = 38.400 4 = 57.600 5 = 115.200 6 = 230.400
3	Modbus parity	unsigned integer	Parity check mode	0–2	1		0 = 8N1 1 = 8E1 2 = 8O1
4	Device type	unsigned integer	Device type (Read only)	ECMF8-AO-DM = 2.108 ECMF8-AO-WF = 2.109 ECMF8-AO-EW = 2.110			
5	HW version	unsigned integer	Hardware version of the device (Read only)	XXXX			0 x 0100 = HW version 1.0
6	FW version	unsigned integer	Firmware version of the device (Read only)	XXXX			0 x 0100 = FW version 1.0
7			Reserved, returns 0				
8	Modbus Time Out	unsigned integer	Time Out Of Modbus, after which the output is set to OFF	0–60	0		0 = Time Out OFF 1 = 1 min 60 = 60 min
9	Modbus network bus termination (NBT)	unsigned integer	Set device as end device of the line / or not by connecting NBT	0, 1	0		0 = disconnected 1 = connected
10	Modbus registers reset	unsigned integer	Resets Modbus Holding registers to default values. When finished this register is automatically reset to '0'	0, 1	0		0 = Idle 1 = Reset Modbus Registers
11	Control type input 1	unsigned integer	Input control type of output 1	0, 1	0		0 = Single input (In1) 1 = Differential input (In1 – In2)
12	Input source output 1	unsigned integer	Input source selection for output 1	0–2	0		0 = Analogue / Modulating input 1 = Modbus 2 = Overwrite

HOLDING REGISTERS						
		Data type	Description	Raw data range	Default values	Values
13			Reserved, returns 0			
14	Analogue/Modulating input 1	unsigned integer	Analogue/Modulating Input type selection	1–4	1	1 = 0–10 VDC 2 = 0–20 mA 3 = PWM 4 = Digital
15–16			Reserved, return 0			
17	Control type output 1	unsigned integer	Output 1 control type	0–1	0	0 = Output 1 1 = Output 1 and 2
18	Minimum output 1	unsigned integer	Output 1 minimum value	200–600	200	300 = 30% 600 = 60%
19	Maximum output 1	unsigned integer	Output 1 maximum value	600–1.000	1.000	600 = 60% 1.000 = 100%
20	Value overwrite output 1	unsigned integer	Value overwrite for output 1	0–1.000	0	0 = OFF 400 = 40% 1.000 = 100%
21	Off level Output 1	unsigned integer	Off level Output 1	0–400	0	0 = 0% 400 = 40%
22	Output 1 Inverse mode	unsigned integer	Inverse mode output 1	0–1	0	0 = Disabled 1 = Enabled
23	Analogue / Modulating Output 1 mode	unsigned integer	Output type Analogue / Modulating output 1	0–3	1	0 = OFF 1 = Voltage 2 = Current 3 = PWM
24	AO1 PWM Voltage Source selection	unsigned integer	AO1 PWM voltage source	0, 1	0	0 = +12 VDC 1 = Open Collector
25	PWM Frequency	unsigned integer	Select the PWM frequency of the outputs AO1 and AO2	1–8	1	1 = 1 kHz 2 = 2 kHz 3 = 3 kHz 4 = 4 kHz 5 = 5 kHz 6 = 6 kHz 7 = 7 kHz 8 = 8 kHz
26	Tacho Input 1 Enable	unsigned integer	Tacho Input 1 enable / disable.	0, 1	0	0 = Disable 1 = Enable

HOLDING REGISTERS						
		Data type	Description	Raw data range	Default values	Values
27	Tacho Input 1 Setup	unsigned integer	Setup number of pulses per revolution for tacho signal of the motor / fan.	1–100	1	10 = 10 pulses per revolution
28–30			Reserved, return 0			
31	Control type input 2	unsigned integer	Input control type of output 2	0, 1	0	0 = Single input (In2) 1 = Differential input (In2 – In1)
32	Input source output 2	unsigned integer	Input source selection for output 2	0–2	0	0 = Analogue / Modulating input 1 = Modbus 2 = Overwrite
33			Reserved, returns 0			
34	Analogue/Modulating input 2 mode	unsigned integer	Analogue/Modulating Input type selection	1–4	1	1 = 0–10 VDC 2 = 0–20 mA 3 = PWM 4 = Digital
35–36			Reserved, return 0			
37	Control type output 2	unsigned integer	Output 2 control type	0, 1	0	0 = output 2 1 = output 2 and 1
38	Minimum output 2 value	unsigned integer	Output 2 minimum value	100–600	200	300 = 30% 600 = 60%
39	Maximum output 2 value	unsigned integer	Output 2 maximum value	600–1.000	1.000	600 = 60% 1.000 = 100%
40	Output overwrite 2 value	unsigned integer	Value overwrite for output 2	0–1.000	0	0 = OFF 400 = 40% 1.000 = 100%
41	Off level Output 2	unsigned integer	Off level output 2	0–400	0	0 = 0% 400 = 40%
42	Output 2 Inverse mode	unsigned integer	Inverse mode output 2	0, 1	0	0 = Disabled 1 = Enabled

HOLDING REGISTERS						
		Data type	Description	Raw data range	Default values	Values
43	Analogue / Modulating Output 2 mode	unsigned integer	Output type Analogue / Modulating output 2	0–3	1	0 = OFF 1 = Voltage 2 = Current 3 = PWM
44	AO2 PWM Voltage Source selection	unsigned integer	AO2 PWM voltage source	0, 1	0	0 = +12 VDC 1 = Open Collector
45			Reserved, returns 0			
46	Tacho Input 2 Enable	unsigned integer	Tacho Input 2 enable / disable.	0, 1	0	0 = Disabled 1 = Enabled
47	Tacho Input 2 Setup	unsigned integer	Setup number of pulses per revolution for tacho signal of the motor / fan.	1–100	1	10 = 10 pulses per revolution
48–51			Reserved, return 0			
52	LED's brightness control	unsigned integer	The intensity of LED 2	0–10	5	0 = 0% 1 = 10% 2 = 20% 3 = 30% 4 = 40% 5 = 50% 6 = 60% 7 = 70% 8 = 80% 9 = 90% 10 = 100%
53–60			Reserved, return 0			

Note: The holding registers can be managed via the following Modbus commands: "Read Holding Registers", "Write Single Register" or "Write Multiple Registers".

The free Sentera configuration and monitoring software 3SModbus can be downloaded via: <https://www.sentera.eu/en/3smcenter>

