MODBUS REGISTER MAP

INPUT REGISTERS

		Data type	Description	Raw data range	Values
1	Operating Mode	unsigned integer	Operating mode selected	0—7	0 = Standby 1 = Position 1 2 = Position 2 3 = Position 3 4 = Position 4 5 = Position 5 6 = Auto mode 7 = Remote mode
2	Temperature Sensor State	unsigned integer	Connected temperature sensor state	0—3	0 = Connected 1 = Not connected or temperature is greater than working range 2 = Short circuit or temperature is less than working range 3 = Not calibrated
3	Temperature Setpoint	unsigned integer	Temperature setpoint	50—350	50 = 5,0°C 350 = 35,0°C
4	Temperature Level	signed integer	Temperature value measured	-100—500	-100 = -10,0°C 500 = 50,0°C
5	Relay Output State	unsigned integer	Unregulated output state	0, 1	0 = Off / 0 VAC 1 = On / Us VAC
6	Output Control Mode	unsigned integer	Analogue output mode	0, 1	0 = 0—6 VDC 1 = 0—10 VDC
7	Output Value	unsigned integer	Analogue output	0—1000	0 = 0,0% output 1000 = 100,0% output
8	Control Mode	unsigned integer	Cooling or Heating mode	0, 1	0 = Cooling 1 = Heating
9	LED Indication	unsigned integer	LED indication	0—6	0 = Overwrite 1 = Blue 2 = Cyan 3 = Green 4 = Yellow 5 = Red 6 = White

HOLDING REGISTERS

		Data type	Description	Raw data range	Values	Factory default 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	0 = 4.800 1 = 9.600 2 = 19.200 3 = 38.400 4 = 57.600 5 = 115.200 6 = 230.400	2
3	Modbus Parity	unsigned integer	Parity check mode	0—2	0 = 8N1 1 = 8E1 2 = 8O1	1
4	Device Type	unsigned integer	Device type. *Read only*	2.117	2.117 = ECH-8-DM	
5	HW Version	unsigned integer	Hardware version of the device. *Read only*	XXXX	0x0100 = HW version 1.0	
6	FW Version	unsigned integer	Firmware version of the device. *Read only*	XXXX	0x0120 = FW version 1.2	
7			Reserved, returns 0			
8	Modbus Safety Timeout	unsigned integer	Timeout setting for no Modbus communication. After time runs out, analogue output will be set to "Analogue output position 1" value	0—60	0 = no timeout 60 = 60 minutes	0
9	Modbus Resistor Termination	unsigned integer	Modbus termination resistor	0, 1	0 = disconnected 1 = connected	0
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 = Idle 1 = Reset Modbus Registers	0
11	Proportional Range	unsigned integer	Proportional range in °C	1—100	1 = 0,1 °C 100 = 10,0 °C	20
12	Output (Position 1)	unsigned integer	Analogue output value position 1	0—1.000	250 = 25,0% output	250
13	Output (Position 2)	unsigned integer	Analogue output value position 2	0—1.000	400 = 40,0% output	400
14	Output (Position 3)	unsigned integer	Analogue output value position 3	0—1.000	600 = 60,0% output	600

HOLDING REGISTERS

		Data type	Description	Raw data range	Values	Factory default values
15	Output (Position 4)	unsigned integer	Analogue output value position 4	0—1.000	800 = 80,0% output	800
16	Output (Position 5)	unsigned integer	Analogue output value position 5	0—1.000	1.000 = 100,0% output	1.000
17	Minimum Temperature LED Indication	signed integer	Set minimum temperature for green indication	-100—500	50 = 5,0°C	50
18	Maximum Temperature LED Indication	signed integer	Set maximum temperature for green indication	-100—500	350 = 35,0°C	350
19	LED Indication Brightness	unsigned integer	Set brightness of indication LED	0—10	0 = Off 10 = 100% brightness	5
20	Remote Mode	unsigned integer	Remote mode (all manual control is disabled)	0, 1	0 = Off 1 = On - next 4 registers are allowed	0
21	Relay Output Control	unsigned integer	Unregulated output control (allowed in remote mode only)	0, 1	0 = Off / 0 VAC 1 = On / Us VAC	0
22	Output Range	unsigned integer	Analogue output mode range (allowed in remote mode only)	0, 1	0 = 0—6 VDC 1 = 0—10 VDC	0
23	Output Overwrite Value	unsigned integer	Analogue output overwrite value (allowed in remote mode only)	0—1.000	0 = 0,0% output 1000 = 100,0% output	0
24	LED Overwrite	unsigned integer	Indication LED overwrite value (allowed in remote mode only)	0—6	0 = LED off 1 = blue LED on 2 = cyan LED on 3 = green LED on 4 = yellow LED on 5 = red LED on 6 = white LED on	0

HOLDING REGISTERS

		Data type	Description	Raw data range	Values	Factory default values
25	Temperature Setpoint Overwrite Enable	unsigned integer	Select the source of temperature setpoint	0, 1	0 = Potentiometer 1 = Overwrite value in HR 26	0
26	Temperature Setpoint Overwrite Value	unsigned integer	Temperature setpoint overwrite value (Active only when register 25 is set to 1)	50—350	50 = 5,0°C 350 = 35,0°C	200
27	Temperature Correction Value	unsigned integer	Manual temperature offset correction value	-50—50	50 = 5,0°C	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*