ODVCM-R | MULTIFUNCTIONAL TRANSMITTER FOR HARSH ENVIRONMENTS

Modbus register map

MODBUS REGISTER MAP

INPUT REGISTERS

		Data type	Description	Raw data range	Values
1	Actual temperature value	signed integer	Actual temperature level	-300—700	500 = 50,0°C
2	Temperature output value	unsigned integer	Output value according to temperature	0—1.000	0 = 0 % 1.000 = 100 %
3	Temperature alert flag	unsigned integer	Flag indicates that measured Temperature is outside set alert values. Set to '1' when the measured value is outside the Temperature alert values defined by holding registers 13 and 14	0,1	0 = Temperature measurement OK 1 = Temperature measurement too low/high
4	Temperature range limit flag	unsigned integer	Flag indicates that measured temperature is outside set range limit values. Set to '1' when the measured temperature is outside limit range values defined by holding registers 11 and 12	0, 1	0 = Temperature range OK 1 = Temperature range too low/high
5	Temperature sensor state	unsigned integer	Flag that shows if the communication with temperature sensor is lost	0, 1	0 = OK 1 = Sensor Problem
6—9			Reserved, return 0		
10	Actual relative humidity value	unsigned integer	Actual relative humidity level	0—1.000	1.000 = 100,0 % rH
11	Relative humidity output value	unsigned integer	Output value according to relative humidity	0—1.000	0 = 0 % 1.000 = 100 %
12	Relative humidity alert flag	unsigned integer	Flag indicates that measured Relative humidity is outside set alert values. Set to '1' when the measured value is outside the Relative humidity alert values defined by holding registers 21 and 22	0, 1	0 = Relative humidity measurement OK 1 = Relative humidity measurement too low/high
13	Relative humidity range limit flag	unsigned integer	Flag indicates that measured Relative humidity is outside set range limit values. Set to '1' when the measured Relative humidity is outside limit range values defined by holding registers 19 and 20	0, 1	0 = Relative humidity range OK 1 = Relative humidity range too low/high
14	Humidity sensor state	unsigned integer	Flag that shows if the communication with humidity sensor is lost	0, 1	0 = OK 1 = Sensor Problem
15	Calculated dew point	signed integer	Calculated dew point	-700—700	200 = 20,0°C

INPUT REGISTERS

		Data type	Description	Raw data range	Values
16—25			Reserved, return 0		
26	Actual TVOC value	unsigned integer	TVOC level	0—60.000	2.000 = 2.000 ppb
27	TVOC output value	unsigned integer	Output value according to TVOC	0—1.000	0 = 0 % 1.000 = 100 %
28	TVOC range limit flag	unsigned integer	Flag indicates that measured TVOC level is outside set alert values. Set to '1' when the measured value is outside the TVOC values defined by holding registers 29 and 30	0, 1	0 = TVOC measurement OK 1 = TVOC measurement too low / high
29	TVOC range limit flag	unsigned integer	Flag indicates that measured TVOC is outside set range limit values. Set to '1' when the measured TVOC is outside limit range values set defined by holding registers 27 and 28	0, 1	0 = TVOC range OK 1 = TVOC range too low / high
30	TVOC Sensor state	unsigned integer	Flag that shows if the communication with the TVOC sensor is lost Flag that shows if the communication with the TVOC sensor is lost	0, 1, 4	0 = OK 1 = Sensor problem 4 = Preheating
31—40			Reserved, return 0		
41	Ambient light intensity	unsigned integer	Measured ambient light intensity	0—32.000	1.000 = 1.000 lux
42	Active / Standby	unsigned integer	Active or Standby indication according the Active / Standby light level defined by holding registers 35 and 36. If the measured light level is between the two levels the indication is 0 (Low intensity)	0—2	0 = Low light intensity 1 = Active 2 = Standby
43	Ambient light sensor state	unsigned integer	Flag that shows if the communication with the ambient light sensor is lost	0, 1	0 = OK 1 = Sensor problem
44—50			Reserved, return 0		

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

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 = 1 = 2 =	8N1 8E1 8O1		1
4	Device type	unsigned integer	Device type, read only	1.108	ODVCM-R =	1.108		
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	0x0100 =	FW version 1.0		
7—8			Reserved, return 0					
9	Modbus network bus termination (NBT)	unsigned integer	Set device as end device on the line / or not by connecting NBT	0, 1	0 = 1 =	NBT disconnected NBT 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 = 1 =	Idle Reset Modbus Registers		0
11	Minimum temperature range	signed integer	Minimum value of temperature range, cannot be set higher than maximum temperature range minus 5°C	-300—(Max. range —50)	100 =	10,0°C		-300
12	Maximum temperature range	signed integer	Maximum value of temperature range, cannot be set less than minimum temperature range plus 5°C	(Min. range + 50) —700	700 =	70,0°C		700
13	Minimum temperature alert	signed integer	Minimum temperature alarm value	Min. temperature range—Max. temperature alarm	100 =	10,0°C		-300

HOLDING REGISTERS

		Data type	Description	Raw data range	Values		Factory default values
14	Maximum temperature alert	signed integer	Maximum temperature alarm value	Min. temperature alarm—Max. temperature range	700 =	70,0°C	700
15—18			Reserved, return 0				
19	Minimum relative humidity range	unsigned integer	Minimum value of relative humidity range, cannot be set higher than maximum relative humidity range minus 5 %	0—(Max. range - 50)	200 =	20,0 % rH	0
20	Maximum relative humidity range	unsigned integer	Maximum value of relative humidity range, cannot be set less than minimum relative humidity range plus 5%	(Min. range + 50) —1000	1.000 =	100 % rH	1.000
21	Minimum relative humidity alert	unsigned integer	Minimum relative humidity alarm value	Min. relative humidity range —Max. relative humidity alarm	200 =	20,0 % rH	0
22	Maximum relative humidity alert	unsigned integer	Maximum relative humidity alarm value	Min. relative humidity alarm —Max. relative humidity range	1.000 =	100 % rH	1.000
23	Minimum TVOC range	unsigned integer	Minimum TVOC range, cannot be set higher than maximum TVOC range minus 100 ppb	0 —(Max. range—100)	1.000 =	1.000 ppb	0
24	Maximum TVOC range	unsigned integer	Maximum TVOC range, cannot be set less than minimum TVOC range plus 100 ppb	(Min + 100)—60.000	2.000 =	2.000 ppb	2.000
25	Minimum TVOC alert	unsigned integer	Minimum TVOC alarm value	Min. TVOC range—Max. TVOC alarm	100 =	100 ppb	0
26	Maximum TVOC alert	unsigned integer	Maximum TVOC alarm value	Min. TVOC alarm—Max. TVOC range	2.000 =	2.000 ppb	2.000
27—34			Reserved, return 0				
35	Active level	unsigned integer	The ambient light level above which ‘Active’ is indicated in input register 42	0—32.000	100 =	100 lux	100

HOLDING REGISTERS

		Data type	Description	Raw data range	Values	Factory default values
36	Standby level	unsigned integer	The ambient light level below which 'Standby' is indicated in input register 42	0—32.000	10 = 10 lux	10
37—80			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***