

DSVCX-R | MULTIFUNCTIONAL DUCT TRANSMITTER FOR TVOC

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	When set to '1' this indicates that the measured temperature exceeds the alert values defined in holding registers 13 and 14	0, 1	0 = Temperature measurement OK 1 = Temperature measurement too low / high
4	Temperature range limit flag	unsigned integer	When set to '1' this indicates that the measured temperature is outside of the range of values specified in holding registers 11 and 12	0, 1	0 = Temperature range OK 1 = Temperature range too low / high
5	Temperature sensor state	unsigned integer	Flag indicating whether communication with the temperature sensor has been lost	0, 1	0 = OK 1 = Fault
6—9			Reserved, return 0		
10	Actual relative humidity value	unsigned integer	Actual relative humidity level	0—1.000	1.000 = 100 % 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	When set to '1' this indicates that the measured relative humidity exceeds the alert values defined in 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	When set to '1' this indicates that the measured relative humidity is outside of the range of values specified in 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 indicating whether communication with the humidity sensor has been lost	0, 1	0 = OK 1 = Fault
15	Dew point level	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 alert flag	unsigned integer	When set to '1' this indicates that the measured TVOC level exceeds the alert values defined in holding registers 29 and 30	0, 1	0 = TVOC measurement OK 1 = TVOC measurement too low / high
29	TVOC range limit flag	unsigned integer	When set to '1' this indicates that the measured TVOC level is outside of the range of values specified in holding registers 27 and 28	0, 1	0 = TVOC range OK 1 = TVOC range too low / high
30	TVOC Sensor state	unsigned integer	Flag indicating whether communication with the TVOC sensor has been lost	0, 1, 4	0 = OK 1 = Fault 4 = Warming up
31–50			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 3 = 38.400 6 = 230.400 1 = 9.600 4 = 57.600 2 = 19.200 5 = 115.200	2
3	Modbus parity	unsigned integer	Parity check mode	0–2	0 = 8N1 1 = 8E1 2 = 8O1	1

HOLDING REGISTERS						
		Data type	Description	Raw data range	Values	Factory default values
4	Device type	unsigned integer	Device type, read only	1.641, 1.642	DSVCF-R = 1.642 DSVCG-R = 1.641	
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	0x0170 = FW version 1.7	
7			Reserved, returns 0			
8	Modbus safety timeout	unsigned integer	Setting a timeout for no Modbus communication. When the time expires, the output(s) is/are set to 0	0–60	0 = no timeout 1 = 1 minute 2 = 2 minutes ...	0
9	Modbus network Bus termination (NBT)	unsigned integer	If the unit is used as end device of the line, NBT should be connected	0, 1	0 = NBT disconnected 1 = NBT connected	0
10	Modbus registers reset	unsigned integer	Modbus Holding registers (from HR11 onwards) are reset to their default values. This register is automatically reset to '0' once completed	0, 1	0 = Idle 1 = Reset Modbus Registers	0
11	Minimum temperature range	signed integer	The minimum temperature range value - it cannot be set higher than the maximum temperature range value minus 5°C	-300—(Max. range–50)	100 = 10,0°C	0
12	Maximum temperature range	signed integer	The maximum temperature range value - it cannot be less than the minimum temperature range value plus 5°C	(Min. range + 50)—700	700 = 70,0°C	500
13	Minimum temperature alert	signed integer	Minimum temperature alarm value	Min. temperature range— Max. temperature alarm	100 = 10,0°C	0
14	Maximum temperature alert	signed integer	Maximum temperature alarm value	Min. temperature alarm— Max. temperature range	700 = 70,0°C	500
15–18			Reserved, return 0			

HOLDING REGISTERS						
		Data type	Description	Raw data range	Values	Factory default values
19	Minimum relative humidity range	unsigned integer	The minimum relative humidity range value - it cannot be set higher than the maximum relative humidity range value minus 5%	0—(Max. range —50)	200 = 20,0 % rH	0
20	Maximum relative humidity range	unsigned integer	The maximum relative humidity range value - it cannot be less than the minimum relative humidity range value 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—26			Reserved, return 0			
27	Minimum TVOC range	unsigned integer	The minimum TVOC range value - it cannot be set higher than the maximum TVOC range value minus 100 ppb	0—(Max. range—100)	1.000 = 1.000 ppb	0
28	Maximum TVOC range	unsigned integer	The maximum TVOC range value - it cannot be less than the minimum TVOC range value plus 100 ppb	(Min + 100)—60.000	2.000 = 2.000 ppb	2.000
29	Minimum TVOC alert	unsigned integer	Minimum TVOC alarm value	Min. TVOC range—Max. TVOC alarm	100 = 100 ppb	0
30	Maximum TVOC alert	unsigned integer	Maximum TVOC alarm value	Min. TVOC alarm—Max. TVOC range	2.000 = 2.000 ppb	2.000
31—40			Reserved, return 0			
41	Output 1 type	unsigned integer	Select analogue / modulating output 1 type	1—3	1 = 0—10 VDC 2 = 0—20 mA 3 = PWM	1
42	Output 1 overwrite enable/disable	unsigned integer	Enables the direct control over output 1	0, 1	0 = Disabled 1 = Enabled	0

HOLDING REGISTERS						
		Data type	Description	Raw data range	Values	Factory default values
43	Output 1 overwrite value	unsigned integer	Overwrite value for output 1. Active only if Holding register 42 is set to 1	0–1.000	1.000 = 100 %	0
44	Output 1 internal voltage source selection	unsigned integer	Select internal voltage source for PWM output 1	0, 1	0 = 3,3 VDC 1 = 12 VDC	0
45–50			Reserved, return 0			
51	Output 2 type	unsigned integer	Select analogue / modulating output 2 type	1–3	1 = 0–10 VDC 2 = 0–20 mA 3 = PWM	1
52	Output 2 overwrite enable/disable	unsigned integer	Enables the direct control over output 2	0, 1	0 = Disabled 1 = Enabled	0
53	Output 2 overwrite value	unsigned integer	Overwrite value for output 2. Active only if Holding register 52 is set to 1	0–1.000	1.000 = 100 %	0
54	Output 2 internal voltage source selection	unsigned integer	Select internal voltage source for PWM output 2	0, 1	0 = 3,3 VDC 1 = 12 VDC	0
55–60			Reserved, return 0			
61	Output 3 type	unsigned integer	Select analogue / modulating output 3 type	1–3	1 = 0–10 VDC 2 = 0–20 mA 3 = PWM	1
62	Output 3 overwrite enable/disable	unsigned integer	Enables the direct control over output 3	0, 1	0 = Disabled 1 = Enabled	0
63	Output 3 overwrite value	unsigned integer	Overwrite value for output 3. Active only if Holding register 62 is set to 1	0–1.000	1.000 = 100 %	0
64	Output 3 internal voltage source selection	unsigned integer	Select internal voltage source for PWM output 3	0, 1	0 = 3,3 VDC 1 = 12 VDC	0

HOLDING REGISTERS

	Data type	Description	Raw data range	Values	Factory default values
65–80		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>