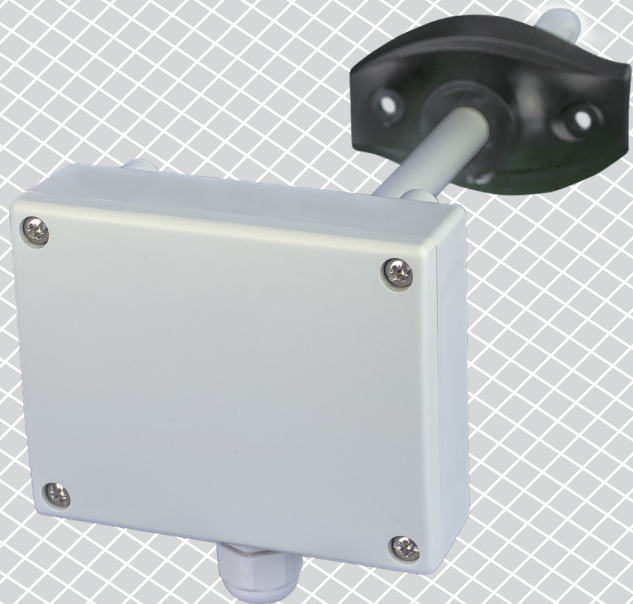


DSTHX-2 | COMBINED TEMPERATURE AND RELATIVE HUMIDITY DUCT TRANSMITTER

Modbus register map



MODBUS REGISTER MAP

| INPUT REGISTERS | | | | | |
|-----------------|------------------------------------|------------------|---|----------------|--|
| | | Data type | Description | Raw data range | Values |
| 1 | Temperature reading | signed integer | Actual temperature level | -300—700 | 500 = 50,0°C |
| 2 | Output value 1 (T) | unsigned integer | Output value 1 (T) | 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 | Humidity, temperature sensor fault | unsigned integer | Flag that shows if the communication with temperature & humidity sensor is lost | 0—1 | 0 = No 1 = Yes |
| 6—9 | | | Reserved, return 0 | | |
| 10 | Relative humidity level | unsigned integer | Actual relative humidity level | 0—1.000 | 1.000 = 100 % rH |
| 11 | Output value 2 (rH) | unsigned integer | Output value 2 (rH) | 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 |

| INPUT REGISTERS | | | | | |
|-----------------|------------------------------------|------------------|---|----------------|-------------------|
| | | Data type | Description | Raw data range | Values |
| 14 | Humidity, temperature sensor fault | unsigned integer | Flag that shows if the communication with temperature & humidity sensor is lost | 0–1 | 0 = No 1 = Yes |
| 15 | Dew point level | signed integer | Calculated dew point | -700–700 | 200 = 20,0°C |
| 16–20 | | | 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 = 8N1 1 = 8E1 2 = 8O1 | 1 |
| 4 | Device type | unsigned integer | Device type. Read only | 1.632–1.633 | 1.632 = DSTHG-2 1.633 = DSTHF-2 | |
| 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 | 0x0210 = FW version 2.1 | |
| 7 | | | Reserved, returns 0 | | | |
| 8 | Modbus safety timeout | unsigned integer | Timeout setting for no Modbus communication. After time runs out, output(s) is/are set to 0 | 0–60 | 0 = no timeout 60 = 60 minutes | 0 |
| 9 | Modbus network resistor termination (NBT) | unsigned integer | Set device as end device of the line / or not by connecting NBT | 0–1 | 0 = NBT disconnected 1 = 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 = Idle 1 = Reset Modbus Registers | 0 |
| 11 | Minimum temperature range | unsigned integer | Minimum value of temperature range, cannot be set higher than maximum temperature range minus 5°C | -300–(Max - 50) | 100 = 10,0°C | 0 |
| 12 | Maximum temperature range | unsigned integer | Maximum value of temperature range, cannot be set less than minimum temperature range plus 5°C | (Min + 50)–700 | 500 = 50,0°C | 500 |

| HOLDING REGISTERS | | | | | | |
|-------------------|--|------------------|--|---|--|------------------------|
| | | Data type | Description | Raw data range | Values | Factory default values |
| 13 | Minimum temperature alert | unsigned integer | Minimum temperature alarm value | Min. temperature range—Max. temperature alarm | 500 = 50,0°C | 0 |
| 14 | Maximum temperature alert | unsigned integer | Maximum temperature alarm value | Min. temperature alarm—Max. temperature range | 500 = 50,0°C | 500 |
| 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 - 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 + 50)—1000 | 850 = 85 % 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 | 850 = 85 % rH | 1.000 |
| 23–40 | | | Reserved, return 0 | | | |
| 41 | Output 1 type (T) | | Select analogue / modulating output 1 type | 1–3 | 1 = 0–10 VDC 2 = 0–20 mA 3 = PWM | 1 |
| 42 | Output 1 overwrite (T) | unsigned integer | Enables the direct control over the temperature output | 0–1 | 0 = Disabled 1 = Enabled | 0 |
| 43 | Output 1 overwrite value (T) | unsigned integer | Overwrite value for output 1 | 0–1.000 | 0 = 0 % 1.000 = 100% | 0 |
| 44 | Internal voltage source selection Output 1 (T) | unsigned integer | Selection of internal voltage source for PWM output 1 | 0 - 1 | 0 = 3,3 VDC 1 = 12,0 VDC | 0 |
| 45–50 | | | Reserved, return 0 | | | |

| HOLDING REGISTERS | | | | | | |
|-------------------|---|------------------|--|----------------|--|------------------------|
| | | Data type | Description | Raw data range | Values | Factory default values |
| 51 | Output 2 type (rH) | 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 (rH) | unsigned integer | Enables the direct control over the relative humidity output | 0–1 | 0 = Disabled 1 = Enabled | 0 |
| 53 | Output 2 overwrite value (rH) | unsigned integer | Overwrite value for output 2 | 0–1.000 | 0 = 0 % 1.000 = 100 % | 0 |
| 54 | Internal voltage source selection Output 2 (rH) | unsigned integer | Selection of internal voltage source for PWM output 2 | 0–1 | 0 = 3,3 VDC 1 = 12,0 VDC | 0 |
| 55–60 | | | 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>