

RDCV9

DIGITAL RESIDENTIAL
FAN SPEED
CONTROLLER

Modbus register map



MODBUS REGISTER MAP

| INPUT REGISTERS | | | | | |
|-----------------|-----------------------|------------------|--------------------------------------|----------|---|
| | | Data type | Description | Raw data | Values |
| 1 | Output value | unsigned integer | Output value in % | 0–100 | 100 = 10 VDC / 20 mA / 100 % PWM 50 = 5 VDC / 10 mA / 50 % PWM |
| 2 | Output step | unsigned integer | Current step selected | 0–9 | 8 = step 8 |
| 3 | Output type | unsigned integer | Output mode: voltage / current / PWM | 0–2 | 0 = 0–10 VDC 1 = 0–20 mA 2 = 0–100% PWM |
| 4 | Minimum output value | unsigned integer | Minimum value of output signal | 0–80 | 20 = 2 VDC / 4 mA / 20% PWM |
| 5 | Maximum output value | unsigned integer | Maximum value of output signal | 20–100 | 80 = 8 VDC / 16 mA / 80% PWM |
| 6–7 | | | Reserved, return 0 | | |
| 8 | Output overwrite mode | unsigned integer | Overwrite mode active | 0, 1 | 0 = Manual 1 = Overwrite |
| 9–10 | | | Reserved, return 0 | | |

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

| HOLDING REGISTERS | | | | | | |
|-------------------|----------------------|------------------|--|----------|---|------------------------|
| | | Data type | Description | Raw data | 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 mode | unsigned integer | Modbus parity check mode | 0–2 | 0 = 8N1 1 = 8E1 2 = 8O1 | 1 |
| 4 | Device type | unsigned integer | Device type: Read only | 2.300 | RDCV9 = 2.300 | |
| 5 | HW version | unsigned integer | Hardware version of the device (read only) | XXXX | 0x0110 = HW version 1.1 | |
| 6 | FW version | unsigned integer | Firmware version of the device (read only) | XXXX | 0x0520 = FW version 5.2 | |
| 7–8 | | | Reserved, return 0 | | | |
| 9 | Output steps | | Number of output steps defined | 0–9 | 0 = 1% per step 1 = 1 step 8 = 8 steps | 0 |
| 10 | Start step | | Starting step | 0–9 | 0 = step 0 | 0 |
| 11 | Minimum output value | unsigned integer | Set minimum value of output signal | 0–80 | 20 = 2 VDC / 4 mA / 20% PWM | 20 |
| 12 | Maximum output value | unsigned integer | Set maximum value of output signal | 20–100 | 80 = 8 VDC / 16 mA / 80% PWM | 100 |
| 13 | Overwrite mode | unsigned integer | Selection of overwrite mode | 0, 1 | 0 = Inactive 1 = Active | 0 |

HOLDING REGISTERS

| | | Data type | Description | Raw data | Values | Factory default values |
|----|--|------------------|---|----------|--|------------------------|
| 14 | Overwrite value | unsigned integer | Output value in overwrite mode in percentage | 0–100 | 50 = 50% | 50 |
| 15 | Output type | unsigned integer | Mimumum output value (between 0 and 40 %) | 0–2 | 0 = 0–10 VDC 1 = 0–20 mA 2 = 0–100% PWM | 0 |
| 16 | PWM output | unsigned integer | Selection of PWM output type: Open collector (OC) / Pull-up +12 VDC | 0, 1 | 0 = Open collector 1 = Pull-up +12 VDC | 0 |
| 17 | Run / Standby | unsigned integer | Selection of Run / Standby mode | 0, 1 | 0 = Run 1 = Standby | 0 |
| 18 | Start output value | unsigned integer | Start level output signal when switched on | 0–100 | 20 = 20 % = 2 VDC / 4mA / 20% PWM | 20 |
| 19 | | | Reserved, returns 0 | | | |
| 20 | Network Bus Termination Resistor (NBT) | unsigned integer | Set unit as first or last unit of the line by connecting network termination resistor | 0, 1 | 0 = Disconnected (NBT open) 1 = Connected (NBT connected) | 0 |
| 21 | Master / Slave mode | unsigned integer | Master or slave mode selection | 0, 1 | 0 = Slave mode 1 = Master mode | 0 |
| 22 | Temperature Setpoint | unsigned integer | Temperature setpoint value | 0–700 | 200 = 20,0 °C | 200 |
| 23 | CO ₂ setpoint | unsigned integer | CO ₂ setpoint value | 0–2.000 | 700 = 700 ppm | 700 |
| 24 | TVOC setpoint | unsigned integer | TVOC setpoint value | 0–9.900 | 100 = 100 ppb 2.000 = 2.000 ppb | 100 |
| 25 | Pressure setpoint | unsigned integer | Pressure setpoint value | 0–4.000 | 100 = 100 Pa 2.000 = 2.000 Pa | 100 |

HOLDING REGISTERS

| | | Data type | Description | Raw data | Values | Factory default values |
|-------|----------------------------|------------------|---|----------|--|------------------------|
| 26 | Relative humidity setpoint | unsigned integer | Relative humidity setpoint value | 0–1.000 | 400 = 40,0 % rH | 400 |
| 27 | | | Reserved, returns 0 | | | |
| 28 | Sensor range | unsigned integer | Sensor measurement range | 50–500 | 50 = 5,0°C (T) 50 = 50 Pa (P) 100 = 10,0 % rH (rH) | |
| 29 | PI control | unsigned integer | Enable PI-control | 0, 1 | 0 = Disabled 1 = Enabled | 0 |
| 30 | PI control: Kp value | unsigned integer | Proportional gain for PI-control | 0–50 | 20 = 2,0 | 20 |
| 31 | PI control: Ki value | unsigned integer | Integration time for PI-control | 0–50 | 20 = 0,2 s | 20 |
| 32 | | | Reserved, returns 0 | | | |
| 33 | Display mode | unsigned integer | Shows either input or output values on the display during startup | 0, 1 | 0 = Input value 1 = Output value | 0 |
| 34 | Output overrule timer | unsigned integer | Time for output overwrite value in HR 14 to be stopped | 10–120 | 10 = 10 min 120 = 120 min | 10 |
| 35–40 | | | 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>