

# SPV-8-010-MF | 0-10 V POTENTIOMETER WITH MODBUS COMMUNICATION

## Modbus register map



## MODBUS REGISTER MAP

| INPUT REGISTERS                                                                              |                        |           |                                                                                                          |                |                                      |
|----------------------------------------------------------------------------------------------|------------------------|-----------|----------------------------------------------------------------------------------------------------------|----------------|--------------------------------------|
| Input register                                                                               |                        | Data Type | Description                                                                                              | Raw Data Range | Values                               |
| ↓ General ↓                                                                                  |                        |           |                                                                                                          |                |                                      |
| 1                                                                                            | Output                 | R         | Output value                                                                                             | 0-1.000        | 100 = 10,0 %                         |
| 2                                                                                            | Output type            | R         | Analogue output type                                                                                     | 1              | 1 = 0-10 VDC                         |
| 3                                                                                            | Output control logic   | R         | Controls the output to be either normal (from minimum to maximum) or inverted (from maximum to minimum). | 0-1            | 0 = Min. to max.<br>1 = Max. to min. |
| 4                                                                                            | Potentiometer position | R         | The actual position of the potentiometer                                                                 | 0-1.000        | 0 = 0 %<br>1.000 = 100 %             |
| <b>Note:</b> The input registers can be read via the Modbus command: "Read input registers". |                        |           |                                                                                                          |                |                                      |

| HOLDING REGISTERS |                      |           |                                |                |                                                                                                |                        |
|-------------------|----------------------|-----------|--------------------------------|----------------|------------------------------------------------------------------------------------------------|------------------------|
| Holding register  |                      | Data Type | Description                    | Raw Data Range | Values                                                                                         | Factory Default Values |
| 1                 | Device slave address | R/W       | Modbus device address          | 1-247          |                                                                                                | 1                      |
| 2                 | Modbus baud rate     | R/W       | Modbus communication baud rate | 0-6            | 0 = 4.800<br>1 = 9.600<br>2 = 19.200<br>3 = 38.400<br>4 = 57.600<br>5 = 115.200<br>6 = 230.400 | 2                      |
| 3                 | Modbus parity        | R/W       | Parity check mode              | 0-2            | 0 = 8N1<br>1 = 8E1<br>2 = 8O1                                                                  | 1                      |

| HOLDING REGISTERS                                                                                                                                                            |                                      |             |                                                                                                                                                 |                      |                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------|
| Holding register                                                                                                                                                             | Data Type                            | Description | Raw Data Range                                                                                                                                  | Values               | Factory Default Values                    |
| 4                                                                                                                                                                            | Device type                          | R           | Device type                                                                                                                                     | SPV-8-010-MF = 2.310 |                                           |
| 5                                                                                                                                                                            | HW version                           | R           | Hardware version of the device                                                                                                                  | XXXX                 | 0x0100 = HW version 1.0                   |
| 6                                                                                                                                                                            | FW version                           | R           | Firmware version of the device                                                                                                                  | XXXX                 | 0x0100 = FW version 1.0                   |
| 8                                                                                                                                                                            | Modbus timeout                       | R/W         | After time with no Modbus communication, the outputs are set to 0.                                                                              | 0-60                 | 0 = no timeout<br>60 = 60 minutes         |
| 9                                                                                                                                                                            | Modbus network Bus termination (NBT) | R/W         | To avoid communication losses and reflections on the Modbus line, the NBT in two devices (at both ends of the line) must be activated.          | 0-1                  | 0 = NBT disconnected<br>1 = NBT connected |
| 10                                                                                                                                                                           | Modbus registers reset               | R/W         | Resets Modbus Holding registers 8 and above 10 to their default values. When the reset is completed, this register automatically resets to '0'. | 0-1                  | 0 = Idle<br>1 = Reset Modbus Registers    |
| 12                                                                                                                                                                           | Overwrite enable / disable           | R/W         | Enables the direct control over output 1                                                                                                        | 0-1                  | 0 = Disabled<br>1 = Enabled               |
| 13                                                                                                                                                                           | Overwrite value                      | R/W         | Overwrite value for output 1. Active only if Holding register 12 is set to 1.                                                                   | 0-1.000              | 0 = 0 %<br>1.000 = 100 %                  |
| 15                                                                                                                                                                           | Minimum output value                 | R/W         | Minimum output value with a range from 0 to 40 %.                                                                                               | 0-400                | 400 = 40 %                                |
| 16                                                                                                                                                                           | Maximum output value                 | R/W         | Maximum output value with a range from 60 to 100 %.                                                                                             | 600-1.000            | 600 = 60 %                                |
| 17                                                                                                                                                                           | Output control logic                 | R/W         | Controls the output to be either normal (from minimum to maximum) or inverted (from maximum to minimum).                                        | 0-1                  | 0 = Min. to max.<br>1 = Max. to min.      |
| <b>Note:</b> 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: <a href="https://www.sentera.eu/en/3SMCenter">https://www.sentera.eu/en/3SMCenter</a> |                                      |             |                                                                                                                                                 |                      |                                           |