SPVL8-010-EP

EC FAN CONTROLLER WITH
MODBUS DCI/OUTPUT

Modbus register map

MODBUS REGISTER MAP

INPUT REGISTERS

		Data type	Description	Raw data	Values
1	Potentiometer value	unsigned integer	Actual position of the potentiometer	0—1.000	100 = 10 % 1.000 = 100 %
2	Input source	unsigned integer	Current source of input value	0—1	0 = Potentiometer 1 = Modbus (overwriting)
3	Input value	unsigned integer	Actual input value	0—1.000	0 = 0% 1.000 = 100%
4	Output value	unsigned integer	Actual output value	0—1.000	0 = 0 % 1.000 = 100 %
5	Installation status	unsigned integer	Actual status of the installation. This register affects the LED indication	0—7	0 = OK (green) 1 = Configuration required (blinking green) 2 = Single motor doesn't respond (blue) 3 = Multiple motors don't respond (blinking blue) 4 = Single warning (yellow) 5 = Multiple warnings (blinking yellow) 6 = Single error (red) 7 = Multiple errors (blinking red)
6—10			Reserved		
11	Motor 1 status	unsigned integer	"bit 1" correspond to the rightmost bit (LSB) in the register. "bit 16" correspond to the leftmost bit (MSB) in the register If a bit is set, correspond event has occurred. If none of the bits are set, device is OK.	0—65.535	Warnings: bit 1 = no connection bit 2 = braking mode bit 3 = DC-link voltage low bit 4 = 0 bit 5 = 0 bit 6 = temperature inside electronics high bit 7 = motor temperature high bit 8 = output stage temperature high Errors: bit 9 = general error (set for every error) bit 10 = motor blocked bit 11 = DC-link undervoltage bit 12 = DC-link overvoltage bit 13 = Hall sensor error bit 14 = line undervoltage bit 15 = motor overheating bit 16 = output stage overheating
12	Motor 2 status	unsigned integer			
13	Motor 3 status	unsigned integer			
14—29	Motor X status	unsigned integer			
30	Motor 20 status	unsigned integer			

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	unsigned integer	Parity check mode	0—2	0 = 8N1 1 = 8E1 2 = 8O1	1
4	Device type	unsigned integer	Device type, read only	2.308	SPVL8-010-EP = 2.308	
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	Modbus timeout value	unsigned integer	Default output value on Modbus timeout. The value will be adjusted according to Holding register 11 and Holding register 12. *Active only when Holding register 8 is not zero*	0—5	0 = 0 % 1 = 25 % 2 = 50 % 3 = 75 % 4 = 100 % 5 = potentiometer value (Input register 1)	
8	Modbus safety timeout	unsigned integer	Timeout setting for no Modbus communication when the devise is a slave. After time runs out, input register 4 will be rewritten by Holding register 7 value. *Active only when Holding register 14 is not zero*	0—60	0 = no timeout 60 = 60 minutes	0
9	Modbus termination resistor	unsigned integer	Modbus termination resistor state	0—1	0 = disconnected 1 = connected	0
10	Modbus registers reset	unsigned integer	Resets Modbus Holding registers (11—20) to default values. This register is automatically reset to '0'	0—1	0 = Idle 1 = Reset Modbus registers	0
11	Minimum Output Value	unsigned integer	Restrict minimum value of the output. Cannot exceed (Holding registers 12—100)	0—1.000	0 = 0 % 1.000 = 100 %	0

HOLDING REGISTERS

		Data type	Description	Raw data	Values	Factory default values
12	Maximum Output Value	unsigned integer	Restrict maximum value of the output. Cannot be less than (Holding registers 11+100)	0—1.000	0 = 0 % 1.000 = 100 %	1.000
13	Output inversion	unsigned integer	Controls output to be normal (min-max) or inverted (max-min)	0—1	0 = no inversion 1 = inverse output	0
14	Input Source	unsigned integer	Selection of the input source	0—1	0 = Potentiometer 1 = Modbus (Holding register 15)	0
15	Input Overwrite Value	unsigned integer	Overwrite value for the output *Active only when Holding register 14 is set to 1*	0—1.000	0 = 0 % 1.000 = 100 %	1.000
16	Request Period	unsigned integer	Controls how often the devise will send requests to EBM motors	150—10.000	150 = 150 ms 10.000 = 10 s	1.000
17	Allow broadcast commands	unsigned integer	Enabling the broadcast command allows to speed up adjusting of motor speed but will affect other slave devices connected	0—1	0 = broadcast disabled 1 = broadcast enabled	0
18	Keep Warnings and Errors	unsigned integer	Controls the device behaviour when some warnings or errors occur on EBM motor side	0—1	0 = do not keep 1 = once appeared event will be kept until reset	0
19	Reset Warnings and Errors	unsigned integer	Resets all warnings and errors that were been kept	0—1	0 = do nothing 1 = reset	0
20			Reserved. Returns "0".			
21	Configure Motor Running Direction	unsigned integer	Allows to change default motor running direction during the configuration procedure	0—1	0 = do not configure 1 = configure	0
22	Motor Running Direction	unsigned integer	Controls preferred running direction of every motor in the installation. *Active only when Holding register 21 is set to 1*	0—1	0 = counter-clockwise 1 = clockwise	0

HOLDING REGISTERS

		Data type	Description	Raw data	Values	Factory default values
23	Configure EBM Fail-Safe	unsigned integer	Allows to change default fail-safe for EBM motor during the configuration procedure	0—1	0 = do not configure 1 = configure	1
24	EBM Fail-Safe	unsigned integer	Controls fail-safe feature of every motor in the installation. *Active only when Holding register 23 is set to 1*	0—1	0 = disable 1 = enable	1
25	EBM Fail-Safe Delay	unsigned integer	Controls fail-safe delay of every motor in the installation. *Active only when Holding register 23 is set to 1*	1—60	1 = 1 minute 60 = 60 minutes	1
26	EBM Fail-Safe Value	unsigned integer	Controls fail-safe value of every motor in the installation. *Active only when Holding register 23 is set to 1*	0—1.000	0 = 0 % 1.000 = 100 %	0
27	Motors Slave ID Start	unsigned integer	Controls slave ID of the first motor that will be set during the configuration procedure	51—226	51 = first slave ID is 51 226 = first slave ID is 226	101
28	Number of Motors Connected	unsigned integer	Keeps the number of motors were connected during the configuration procedure Read only	0—20	0 = 0 motors have been connected 20 = 20 motors have been connected	0
29	Reconfiguration required	unsigned integer	Sets to 1, if some of the configuration parameters (Holding registers 21—27) was changed after installation had been configured. *Read only.*	0—1	0 = configuration parameters match actual configuration of the motors 1 = configuration parameters do not match actual configuration of the motors	1
30	Reconfigure Installation	unsigned integer	Resets the installation and starts configuration procedure from the beginning. This register is automatically reset to '0' when the installation will be configured.	0—1	0 = idle 1 = start configuration procedure	1

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