

# TCMF8 | DUAL UNIVERSAL FAN SPEED CONTROLLER

## Modbus register map



## MODBUS REGISTER MAP

INPUT REGISTERS					
		Data type	Description	Data	Values
1	Analogue / Modulating input 1 value	unsigned int.	Measured input value 1 when voltage / current / PWM/ digital input selected	0—1.000	0 = 0,0% 600 = 60,0% or 0 = false/low in digital mode 1000 = true/high in digital mode
2	Analogue input 1 frequency	unsigned int.	Measured input 1 frequency in PWM mode	0-8.000	8.000 = 8,000 kHz
3	Output 1 value	unsigned int.	Actual voltage level in % Us over output 1	0 - 1.000	800 = 80% Us
4	Current output 1	unsigned int.	Current measured through output 1	0—1.000	0 = 0A 10 = 0,1A 100 = 1,0A 1.000 = 10,0A
5	Output 1 operation status	unsigned int.	Operation status output 1	0 - 1	0 = Stop 1 = Run
6	Thermal protection input 1 enable	unsigned int.	TK input 1 enable	0 - 1	0 = TK Off 1 = TK On
7	Output 1 thermal protection input	unsigned int.	Thermal protection TK flag when fan/motor over temperature occurs	0 - 1	0 = OK 1 = High temperature
8			Reserved, returns 0		
9			Reserved, returns 0		
10			Reserved, returns 0		
11	Analogue / Modulating input 2 value	unsigned int.	Measured input value 2 when voltage / current / PWM/ digital input selected	0 - 1.000	0 = 0,0% 600 = 60,0% or 0 = false/low in digital mode 1000 = true/high in digital mode
12	Analogue input 2 frequency	unsigned int.	Measured input 2 frequency in PWM mode	0 - 8.000	8.000 = 8,000 kHz

## INPUT REGISTERS

		Data type	Description	Data	Values
13	Output 2 value	unsigned int.	Actual voltage level in % Us over output 2	0—1.000	800 = 80% Us
14	Current output 2	unsigned int.	Current measured through output 2	0—1.000	0 = 0A 10 = 0,1A 100 = 1,0A 1.000 = 10,0A
15	Output 2 operation status	unsigned int.	Operation status output 2	0 - 1	0 = Stop 1 = Run
16	Thermal protection input 2 enable	unsigned int.	TK input 2 enable	0 - 1	0 = TK Off 1 = TK On
17	Output 2 thermal protection input	unsigned int.	Thermal protection TK flag when fan/motor over temperature occurs	0 - 1	0 = OK 1 = High Temperature
18—28			Reserved, returns 0		
29	Circuit temperature protection	unsigned int.	Temperature protection when too high temperature measurement on the electronics board	0 - 1	0 = OK 1 = High Temperature
30	Device status	unsigned int.	Device status	0 - 65535	Bitwise status support for the device

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

HOLDING REGISTERS						
		Data type	Description	Raw data range	Default values	Values
1	Device slave address	unsigned int.	Modbus device address		1	
2	Modbus baud rate	unsigned int.	Modbus communication baud rate	0 - 6	2	0 = 4.800 1 = 9.600 2 = 19.200 3 = 38.400 4 = 57.600 5 = 115.200 6 = 230.400
3	Modbus parity	unsigned int.	Parity check mode	0-2	1	0 = 8N1 1 = 8E1 2 = 8O1
4	Device type	unsigned int.	Device type (Read only)	TCMF8-302DM = 2111 TCMF8-302WF = 2112 TCMF8-302EW = 2113 TCMF8-602DM = 2114 TCMF8-602WF = 2115 TCMF8-602EW = 2116		
5	HW version	unsigned int.	Hardware version of the device (Read only)	XXXX		0 x 0100 = HW version 1.0
6	FW version	unsigned int.	Firmware version of the device (Read only)	XXXX		0 x 0100 = FW version 1.0
7			Reserved, returns 0			
8	Modbus Time Out	unsigned int.	Time Out Of Modbus, after which the output is set to minimum output	0 - 60	0	0 = Time Out - Min Value 1 = 1 min 60 = 60 min
9	Modbus network bus termination (NBT)	unsigned int.	Set device as end device of the line / or not by connecting NBT	0 - 1	0	0 = disconnected 1 = connected
10	Modbus registers reset	unsigned int.	Resets Modbus Holding registers to default values. When finished this register is automatically reset to '0'	0 - 1	0	0 = Idle 1 = Reset Modbus Registers
11	Control type input 1	unsigned int.	Input control type of output 1	0 - 1	0	0 = Single input (In1) 1 = Differential input (In1 - In2)
12	Input source output 1	unsigned int.	Input source selection for output 1	0 - 2	0	0 = Analogue / Modulating input 1 = Modbus 2 = Overwrite

HOLDING REGISTERS						
		Data type	Description	Raw data range	Default values	Values
13	TK monitoring input 1	unsigned int.	Enable thermal protection monitoring for TK input 1 (TK1).	0 - 1	0	0 = Disabled 1 = Enabled
14	Analogue/Modulating input 1	unsigned int.	Analogue/Modulating Input mode selection	1 - 4	1	1 = 0 - 10 VDC 2 = 0 - 20 mA 3 = PWM 4 = Digital
15	Control mode output 1	unsigned int.	Output 1 control mode	0 - 2	1	0 = OFF 1 = Kick start 2 = Soft start
16	Kick start time output 1	unsigned int.	Kick start time	1 - 10	10	1 = 1s 10 = 10s
17	Control type output 1	unsigned int.	Output 1 control type	0 - 1	0	0 = Output 1 1 = Output 1 and 2
18	Minimum voltage output 1	unsigned int.	Minimum output voltage output 1	200 - 600	200	300 = 30% 600 = 60%
19	Maximum voltage output 1	unsigned int.	Maximum output voltage output 1	600 - 1.000	1.000	600 = 60% 1.000 = 100%
20	Value overwrite output 1	unsigned int.	Value overwrite for output 1	0 - 1.000	0	0 = OFF 400 = 40% 1.000 = 100%
21	Off level Output 1	unsigned int.	Off level Output 1	0-400	0	0 = 0% 400 = 40%
22	Output 1 Inverse mode	unsigned int.	Inverse mode output 1	0 - 1	0	0 = Disabled 1 = Enabled
23-30			Reserved, returns 0			
31	Control type input 2	unsigned int.	Input control type of output 2	0 - 1	0	0 = Single input (In2) 1 = Differential input (In2 - In1)
32	Input source output 2	unsigned int.	Input source selection for output 2	0 - 2	0	0 = Analogue / Modulating input 1 = Modbus 2 = Overwrite

HOLDING REGISTERS						
		Data type	Description	Raw data range	Default values	Values
33	TK monitoring input 2	unsigned int.	Enable thermal protection monitoring for TK input 2 (TK2).	0 - 1	0	0 = Disabled 1 = Enabled
34	Analogue/Modulating input 2	unsigned int.	Analogue/Modulating Input mode selection	1 - 4	1	1 = 0 - 10 VDC 2 = 0 - 20 mA 3 = PWM 4 = Digital
35	Control mode output 2	unsigned int.	Output 2 control mode	0 - 2	1	0 = OFF 1 = Kick start 2 = Soft start
36	Kick start time output 2	unsigned int.	Kick start time	1 - 10	10	1 = 1s 10 = 10s
37	Control type output 2	unsigned int.	Output 2 control type	0 - 1	0	0 = output 2 1 = output 2 and 1
38	Minimum voltage output 2	unsigned int.	Minimum voltage output 2	200 - 600	200	300 = 30% 600 = 60%
39	Maximum voltage output 2	unsigned int.	Maximum voltage output 2	600 - 1.000	1.000	600 = 60% 1.000 = 100%
40	Value overwrite output 2	unsigned int.	Value overwrite for output 2	0 - 1.000	0	0 = OFF 400 = 40% 1.000 = 100%
41	Off level Output 2	unsigned int.	Off level output 2	0 - 400	0	0 = 0% 400 = 40%
42	Output 2 Inverse mode	unsigned int.	Inverse mode output 2	0 - 1	0	0 = Disabled 1 = Enabled
43-51			Reserved, returns 0			

HOLDING REGISTERS						
		Data type	Description	Raw data range	Default values	Values
52	LED's brightness control	unsigned int.	The intensity of the LED 2	0 - 10	5	0 = 0% 1 = 10% 2 = 20% 3 = 30% 4 = 40% 5 = 50% 6 = 60% 7 = 70% 8 = 80% 9 = 90% 10 = 100%
53-60			Reserved, returns 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>