

EP4 SERIAL COMMUNICATION IOT

Communication Protocol: MODBUS RTU

Baud Rate: 2,400 to 57,600 (Auto Baud Rate)

Data Bits: 8

Stop Bits: 1

Variable Type: Holding Register (40,000)

Address MODBUS	Range Reading	Bits Index	State	Description/Point Name	Written/ Reading	Scale
1	0 – 200,0	-	-	Sensor Alarm Temperature 1;	E/L	-1000:10
2	0 – 200,0	-	-	Sensor alarm temperature 2;	E/L	-1000:10
3	0 – 200,0	-	-	Sensor alarm temperature 3;	E/L	-1000:10
4	0 – 200,0	-	-	Sensor alarm temperature 4;	E/L	-1000:10
9	0 – 10	-	-	Alarm Hysteresis Value.	E/L	1:10
10	0 – 200,0	-	-	Sensor shutdown temperature 1;	E/L	-1000:10
11	0 – 200,0	-	-	Sensor shutdown temperature 2;	E/L	-1000:10
12	0 – 200,0	-	-	Sensor shutdown temperature 3;	E/L	-1000:10
13	0 – 200,0	-	-	Sensor Shutdown Temperature 4;	E/L	-1000:10
18	0 – 20	-	-	Delay time for shutdown in minutes.	E/L	-1000:10
19	0-200,0	-	-	Sensor cooling temperature 1;	E/L	-1000:10
20	0-200,0	-	-	Sensor cooling temperature 2;	E/L	-1000:10
21	0-200,0	-	-	Sensor cooling temperature 3;	E/L	-1000:10
22	0-200,0	-	-	Sensor cooling temperature 4;	E/L	-1000:10
24	0 - 1	-	-	Registrar – Forced Ventilation:	-	-
		-	0	Forced Ventilation - disabled;	E/L	-
		-	1	Forced Ventilation - Enabled;	E/L	-

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25	-	-		Recorder - Ventilation Exercise:	-	
		-	0	Ventilation Exercise Off;	E/L	-
		-	1	Ventilation Exercise On;	E/L	-
26	-	-		Registrar – Commands:	-	
		0	1	Reset of maximum temperatures reached;	E/L	-
		1	1	Equipment reset;	E/L	-
27	0 – 30,0	-	-	Refrigeration Shutdown Hysteresis;	E/L	1:10
28	0 - 2	-		Register – Display Presentation Mode:	-	
		-	0	Display in Hot mode;	E/L	-
		-	1	Display in Scan mode;	E/L	-
		-	2	Display in Manual mode;	E/L	-
29	0 – 200,0	-	-	Temperature measured by sensor 1;	L	-1000:10
30	0-200,0	-	-	Temperature measured by sensor 2;	L	-1000:10
31	0-200,0	-	-	Temperature measured by sensor 3;	L	-1000:10
32	0-200,0	-	-	Temperature measured by sensor 4;	L	-1000:10
33	-10,0 a + 10,0	-	-	OF7 Temperature Sensor 1;	E/L	-1000:10
34	-10,0 a + 10,0	-	-	OF7 Temperature Sensor 2;	E/L	-1000:10
35	-10,0 a + 10,0	-	-	OF7 Temperature Sensor 3;	E/L	-1000:10
36	-10,0 a + 10,0	-	-	OF7 Temperature Sensor 4;	E/L	-1000:10
37	0-200,0	-	-	Maximum Temperature reached by Sensor 1;	L	-1000:10

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38	0-200,0	-	-	Maximum Temperature reached by Sensor 2;	L	-1000:10
39	0-200,0	-	-	Maximum Temperature reached by Sensor 3;	L	-1000:10
40	0-200,0	-	-	Maximum Temperature reached by Sensor 4;	L	-1000:10
42	-	-		Logger – Sensor Status:	-	
		0	0	Sensor 1 disabled;	E/L	-
			1	Sensor 1 enabled;	E/L	-
		1	0	Sensor 2 disabled;	E/L	-
			1	Sensor 2 enabled;	E/L	-
		2	0	Sensor 3 disabled;	E/L	-
			1	Sensor 3 Enabled;	E/L	-
		3	0	Sensor 4 disabled;	E/L	-
			1	Sensor 4 Enabled;	E/L	-
43	-	-		Recorder – Alarm Return Logic:	-	
		0	0	Normal Relay Logic 1 (Alarm);	E/L	-
			1	Relay Logic 1 Inverse (Alarm);	E/L	-
		1	0	Normal Relay 2 Logic (Shutdown);	E/L	-
			1	Relay Logic 2 Inverse (Shutdown);	E/L	-
		2	0	Relay Logic 3 Normal (Fault);	E/L	-
			1	Relay Logic 3 Inverse (Failure);	E/L	-
		3	0	Normal Relay 4 Logic (Ventilation);	E/L	-
			1	Normal Relay 4 Logic (Ventilation);	E/L	-

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45	-	-		Recorder – Alarm Statuses:	-	
		0	1	Non-sensor High Temperature Alarm 1;	L	-
		1	1	High Temperature Alarm Non-Sensor 2;	L	-
		2	1	High Temperature Alarm Non-Sensor 3;	L	-
		3	1	High Temperature Alarm No Sensor 4;	L	-
46	-	-		Recorder – Counting Status for Shutdown:	-	
		0	1	High Temperature Shutdown Count Sensor 1;	L	-
		1	1	High Temperature Shutdown Count Sensor 2;	L	-
		2	1	High Temperature Shutdown Count Sensor 3;	L	-
		3	1	Shutdown count by High Temperature Sensor 4 (ambient);	L	-
47		-		Registrar – Shutdown Status:	-	
		0	1	High temperature shutdown Sensor 1;	L	-
		1	1	High temperature shutdown Sensor 2;	L	-
		2	1	High temperature shutdown Sensor 3;	L	-
		3	1	High Temperature Shutdown Sensor 4 (ambient);	L	-

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48		-		Recorder – Ventilation Status:	-	
		0	1	Cooler activated by Sensor 1;	L	-
		1	1	Refrigerator activated by Sensor 2;	L	-
		2	1	Cooler activated by Sensor 3;	L	-
		3	1	Cooler activated by Sensor 4;	L	-
		4	1	Refrigerator activated by forced ventilation;	L	-
		6	1	Due to a reading error in the sensor;	L	-
		7	1	By ventilation exercise;	L	-
49	-	-		Registrar – Failure Situation:	-	
		0	1	Reading Failure on Sensor 1;	L	-
		1	1	Sensor 2 Reading Failure;	L	-
		2	1	Reading Failure in Sensor 3;	L	-
		3	1	Sensor 4 Reading Failure;	L	-
50	1-254	-	-	Serial Network Address.	L	-
51	-	-		Registration – Protection against parameter change by RS485	-	
		-	0	Disables write protection via RS485	E/L	-
		-	1	Enables write protection via RS485	E/L	-

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60	0 - 6	-	-	Logger – Analog Output Mirroring Sensor:	-	-
		-	0	Analog output off	E/L	-
		-	1	Fixed analog output on sensor 1;	E/L	-
		-	2	Fixed analog output on sensor 2;	E/L	-
		-	3	Fixed analog output on sensor 3;	E/L	-
		-	4	Fixed analog output on sensor 4;	E/L	-
		-	5	Fixed analog output at the highest temperature (HOT function);	E/L	-
		-	6	Analog output in Scan mode;	E/L	-
61	-	-	-	Logger - Enables/Disables sensor at the "Hot" Current output:	-	-
		0	0	Disables Sensor 1 at Current Output;	E/L	-
			1	Enables Sensor 1 on Current Output;	E/L	-
		1	0	Disables Sensor 2 at Current Output;	E/L	-
			1	Enables Sensor 2 at Current Output	E/L	-
		2	0	Disables Sensor 3 at Current Output;	E/L	-
			1	Enables Sensor 3 at Current Output;	E/L	-
		3	0	Disables Sensor 4 at Current Output;	E/L	-
			1	Enables Sensor 4 on Current Output;	E/L	-
62	5 – 50	-	-	Time to Scan Current Output (x*500 ms);	E/L	100:1
63	-1,00 a 1,00	-	-	Current Output Correction;	E/L	-1000:100
70	0-2000	-	-	Minimum Current Output Range – Sensor Temperature 1;	E/L	-1000:10
71	0-2000	-	-	Minimum Current Output Range – Sensor Temperature 2;	E/L	-1000:10
72	0-2000	-	-	Minimum Current Output Range – Sensor Temperature 3;	E/L	-1000:10

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Address MODBUS	Range Reading	Bits Index	State	Description/Point Name	Writing/Reading	Scale
73	0-2000	-	-	Minimum Current Output Range – Sensor Temperature 4;	E/L	-1000:10
75	0-2000	-	-	Maximum Current Output Range – Sensor Temperature 1;	E/L	-1000:10
76	0-2000	-	-	Maximum Current Output Range – Sensor Temperature 2;	E/L	-1000:10
77	0-2000	-	-	Maximum Current Output Range – Sensor Temperature 3;	E/L	-1000:10
80		-	-	Latitude Maps – MSB;	L	-
81		-	-	Latitude Maps – LSB;	L	-
82		-	-	Latitude Maps – MSB;	L	-
83		-	-	Latitude Maps – LSB;	L	-
92	-50,0 a 250,0	-	-	Internal Current Temperature;	L	-1000:10
93	-50,0 a 250,0	-	-	Maximum temperature reached by the internal sensor;	L	-1000:10
94	1 - 31	-	-	Equipment calibration day;	L	-
95	1 – 12	-	-	Equipment calibration month;	L	-
96	2020 - 2099	-	-	Year of equipment calibration;	L	-
97	-	-	-	Equipment serial number - MSB;	L	-1000:10
98	-	-	-	Equipment serial number – LSB;	L	-1000:10
99	0 - 999	-	-	Password reminder;	L	