MASTERTEMP SERIAL COMMUNICATION

Communication Protocol: ***DNP3 L2***
Baud Rate: 1.200 to 57.600 (Auto Baud Rate)
Data bits: 8
Parity: None / Even / Odd
Stop bits: 1

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
01	-50.0 – 250.0	-	-	Oil Sensor Temperature Alarm;	W / R	-1000:10
02	-50.0 – 250.0	-	-	Oil Temperature Alarm of the Sensor 1;	W / R	-1000:10
03	-50.0 – 250.0	-	-	Oil Temperature Alarm of the Sensor 2;	W / R	-1000:10
04	50.0 – 250.0			Oil Temperature Alarm of the Sensor 3;	W / R	-1000:10
256	0 – 1	-		Register – TRIP by loading:	-	
		0	0	TRIP by loading OFF;	W / R	-
			1	TRIP by loading ON;		
06	-50.0 – 250.0	-	-	TRIP Temperature of the Oil Sensor;	W / R	-1000:10
07	-50.0 – 250.0	-	-	TRIP Temperature from the Sensor of the winding 1;	W / R	-1000:10
08	-50.0 – 250.0	-	-	TRIP Temperature from the Sensor of the winding 2;	W / R	-1000:10
09	-50.0 – 250.0	-	-	TRIP Temperature from the Sensor of the winding 3;	W / R	-1000:10
10	0 – 3	-		Register – Cooling System activation type.	W / R	-
		0	0	Cooling System activation by loading disabled;		
			1	Cooling System activation by loading Enabled;		
11	-50.0 – 250.0	-	-	Activation Temperature of the 1st Cooling Group of the Oil Sensor;	W / R	-1000:10
12	-50.0 – 250.0	-	-	Activation Temperature of the 1st Cooling Group of the winding 1 Sensor;	W / R	-1000:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
13	-50.0 – 250.0	-	-	Activation Temperature of the 1st Cooling Group of the winding 2 Sensor;	W / R	-1000:10
14	-50.0 – 250.0	-	-	Activation Temperature of the 1st Cooling Group of the winding 3 Sensor;	W / R	-1000:10
16	-50.0 – 250.0	-	-	Activation Temperature of the 2nd Cooling Group of the Oil Sensor;	W / R	-1000:10
17	-50.0 – 250.0	-	-	Activation Temperature of the 2nd Cooling Group of the winding 1 Sensor;	W / R	-1000:10
18	-50.0 – 250.0	-	-	Activation Temperature of the 2nd Cooling Group of the winding 2 Sensor;	W / R	-1000:10
19	-50.0 – 250.0	-	-	Activation Temperature of the 2nd Cooling Group of the winding 3 Sensor;	W / R	-1000:10
21	-50.0 – 250.0	-	-	Activation Temperature of the 3rd Cooling Group of the Oil Sensor;	W / R	-1000:10
22	-50.0 – 250.0	-	-	Activation Temperature of the 3rd Cooling Group of the winding 1 Sensor;	W / R	-1000:10
23	-50.0 – 250.0	-	-	Activation Temperature of the 3rd Cooling Group of the winding 2 Sensor;	W / R	-1000:10
24	-50.0 – 250.0	-	-	Activation Temperature of the 3rd Cooling Group of the winding 3 Sensor;	W / R	-1000:10
25	0-100	-	-	Alarm Shutdown Hysteresis;	W / R	-1000:10
26	0-100	-	-	Cooling System Shutdown Hysteresis;	W / R	-1000:10
27	0-20	-	-	TRIP time delay (minutes);	W / R	1:1
28	0-1000	-	-	Winding 1 Temperature Gradient;	W / R	1:10
29	0-1000	-	-	Winding 2 Temperature Gradient;	W / R	1:10
30	0-1000	-	-	Winding 3 Temperature Gradient;	W / R	1:10
31	0-300	-	-	Thermal Inertia time constant of the winding 1;	W / R	1:1
32	0-300	-	-	Thermal Inertia time constant of the winding 2;	W / R	1:1
33	0-300	-	-	Thermal Inertia time constant of the winding 3;	W / R	1:1
34	0-200	-	-	HS+ Hotspot factor;	W / R	1:10
35	10-15	-	-	HS* Hotspot factor;	W / R	1:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
36	10-20	-	-	2M – Winding Expoent;	W / R	1:10
37	1-9999	-	-	Rated Current of the Winding 1;	W / R	1000:10
38	1-9999	-	-	Rated Current of the Winding 2;	W / R	1000:10
39	1-9999	-	-	Rated Current of the Winding 3;	W / R	1000:10
40	1-9999	-	-	Electrical Current Transformation Ratio of the CT1;	W / R	1:1
41	1-9999	-	-	Electrical Current Transformation Ratio of the CT2;	W / R	1:1
42	1-9999	-	-	Electrical Current Transformation Ratio of the CT3;	W / R	1:1
43	0 – 3	-		Register – Cooling system Activation Type:	-	
		-	0	Cooling Group Automatic Inversion Disabled;	W / R	-
			1	Cooling Group Automatic Inversion 1st and 2nd Groups;	W / R	-
			2	Cooling Group Automatic Inversion 1st, 2nd and 3rd Groups;	W / R	-
			3	Simultaneous activation of all the cooling groups;	W / R	-
44	0 – 3	-		Register – Analog Output Type:	-	
		-	0	When 0 it defines the analog output range as 0 to 1 mA;	W / R	-
			1	When 0 it defines the analog output range as 0 to 5 mA;	W / R	-
			2	When 0 it defines the analog output range as 0 to 10 mA;	W / R	-
			3	When 0 it defines the analog output range as 0 to 20 mA;	W / R	-
			4	When 0 it defines the analog output range as 4 to 20 mA;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – Temperature Reset and CPU;	-	
288		0	1	Temperature Reset on the Sensor 1;	W	-
289		1	1	Temperature Reset on the Sensor 2;	W	-
290		2	1	Temperature Reset on the Winding 1;	W	-
291		3	1	Temperature Reset on the Winding 2;	W	-
292		4	1	Temperature Reset on the Winding 3;	W	-
293		5	1	CPU Reset;	W	-
47	1 – 254	-		Serial Network Address;	R	1:1
-	-	-		Register – Forced Ventilation:	-	
304		0	0	Register – Forced Ventilation:	W / R	-
			1	Forced Ventilation as AUT GROUP 1;	W / R	-
305		1	0	Forced Ventilation as ON GROUP 1;	W / R	-
			1	Forced Ventilation as AUT GROUP 2;	W / R	-
306		2	0	Forced Ventilation as ON GROUP 2;	W / R	-
			1	Forced Ventilation as AUT GROUP 3;	W / R	-
-	-	-		Register – Winding Status	-	-
320		0	0	When 0 the reading type set as BKP;	-	-
			1	When 1 the reading type set as INDP;	-	-
51	0-100	-	-	Temperature Differential – MDTE;	W / R	1:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – CPU and Temperature Reset:	-	
336		2	1	Winding 1 Enabled;	W / R	-
			0	Winding 1 Disabled;	W / R	-
337		3	1	Winding 2 Enabled;	W / R	-
			0	Winding 2 Disabled;	W / R	-
338		4	1	Winding 3 Enabled;	W / R	-
			0	Winding 3 Disabled;	W / R	-
53	-50.0 – 250.0	-	-	Current Temperature on the Sensor 1;	R	-1000:10
54	-50.0 – 250.0	-	-	Current Temperature on the Sensor 2;	R	-1000:10
55	-50.0 – 250.0	-	-	Current Temperature on the Winding Sensor 1;	R	-1000:10
56	-50.0 – 250.0	-	-	Current Temperature on the Winding Sensor 2;	R	-1000:10
57	-50.0 – 250.0	-	-	Current Temperature on the Winding Sensor 3;	R	-1000:10
58	-50.0 – 250.0	-	-	Maximum temperature reached by the sensor1;	R	-1000:10
59	-50.0 – 250.0	-	-	Maximum temperature reached by the sensor2;	R	-1000:10
60	-50.0 – 250.0	-	-	Maximum temperature reached by the Winding Sensor 1;	R	-1000:10
61	-50.0 – 250.0	-	-	Maximum temperature reached by the Winding Sensor 2;	R	-1000:10
62	-50.0 – 250.0	-	-	Maximum temperature reached by the Winding Sensor 3;	R	-1000:10
63	-50.0 – 250.0	-	-	Final Gradient Temperature of the Winding 1;	R	1:10
64	-50.0 – 250.0	-	-	Final Gradient Temperature of the Winding 2;	R	1:10
65	-50.0 – 250.0			Final Gradient Temperature of the Winding 3;	R	1:10
66	0-9999		-	Loading Percentage of the Winding 1;	R	1:10
67	0-9999		-	Loading Percentage of the Winding 2;	R	1:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
68	0-9999		-	Loading Percentage of the Winding 3;	R	1:10
69	0-9999		-	Thermal Image CT1 Secondary Electrical Current;	R	1:100
70	0-9999		-	Thermal Image CT2 Secondary Electrical Current;	R	1:100
71	0-9999		-	Thermal Image CT3 Secondary Electrical Current;	R	1:100
72	0-9999		-	Thermal Image CT1 Primary Electrical Current;	R	1:100
73	0-9999		-	Thermal Image CT2 Primary Electrical Current;	R	1:100
74	0-9999		-	Thermal Image CT3 Primary Electrical Current;	R	1:100
-	-	-		Register – Auxiliary Relay Status:	-	
352	-	0	1	Enables the Auxiliary Relay 1;	W / R	-
353		1	1	Enables the Auxiliary Relay 1 – Sensor 1;	W / R	-
354		2	1	Enables the Auxiliary Relay 1 – Sensor 2;	W / R	-
355		3	1	Enables the Auxiliary Relay 1 – Winding 1;	W / R	-
356		4	1	Enables the Auxiliary Relay 1 – Winding 2;	W / R	-
357		5	1	Enables the Auxiliary Relay 1 – Winding 3;	W / R	-
358		6	1	Enables the Auxiliary Relay 1 –Differential Temperature;	W / R	-
359		7	1	Enables the Auxiliary Relay 1 – Cooling maintenance;	W / R	-
360		8	1	Enables the Auxiliary Relay 1 – Winding 1 Life Loss Alarm;	W / R	-
361		9	1	Enables the Auxiliary Relay 1 – Winding 2 Life Loss Alarm;	W / R	-
362		10	1	Enables the Auxiliary Relay 1 – Winding 3 Life Loss Alarm;	W / R	-
76	-50.0 – 250.0	-	-	Register – Time Delay of Auxiliary Relay Actuation;	W / R	-1000:10
77	0-100	-	-	Auxiliary Relay Hysteresis;	W / R	1:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
78	0 - 1	-		Register – Enabled Auxiliary Relay Time Delay:	W / R	-
		-	0	Time Delay Disabled;	W / R	-
			1	Time Delay Enabled;	W / R	-
-	-	-		Register – Alarms Return Logic:	W / R	-
368		0	0	Oil Alarm automatic return;	W / R	-
			1	Oil Alarm manual return;	W / R	-
369		1	0	TRIP automatic return.	W / R	-
			1	Oil Shutdown manual return;	W / R	-
370		2	0	Alarm of the Winding 1 automatic return;	W / R	-
			1	Alarm of the Winding 1 manual return;	W / R	-
371		3	0	Shutdown of the Winding 1 automatic return;	W / R	-
			1	Shutdown of the Winding 1 manual return;	W / R	-
372		4	0	Alarm of the Winding 2 automatic return;	W / R	-
			1	Alarm of the Winding 2 manual return;	W / R	-
373		5	0	Shutdown of the Winding 2 automatic return;	W / R	-
			1	Shutdown of the Winding 2 manual return;	W / R	-
374		6	0	Alarm of the Winding 3 automatic return;	W / R	-
			1	Alarm of the Winding 3 manual return;	W / R	-
375		7	0	Shutdown of the Winding 3 automatic return;	W / R	-
			1	Shutdown of the Winding 3 manual return;	W / R	-
376		8	0	Fail Relay automatic return;	W / R	-
			1	Fail Relay manual return;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
79	0 - 8	-		Register – Alarms Return Logic:	W / R	-
		0	0	Oil Alarm automatic return;	W / R	-
			1	Oil Alarm manual return;	W / R	-
		1	0	TRIP automatic return.	W / R	-
			1	Oil Shutdown manual return;	W / R	-
		2	0	Alarm of the Winding 1 automatic return;	W / R	-
			1	Alarm of the Winding 1 manual return;	W / R	-
		3	0	Shutdown of the Winding 1 automatic return;	W / R	-
			1	Shutdown of the Winding 1 manual return;	W / R	-
		4	0	Alarm of the Winding 2 automatic return;	W / R	-
			1	Alarm of the Winding 2 manual return;	W / R	-
		5	0	Shutdown of the Winding 2 automatic return;	W / R	-
			1	Shutdown of the Winding 2 manual return;	W / R	-
		6	0	Alarm of the Winding 3 automatic return;	W / R	-
			1	Alarm of the Winding 3 manual return;	W / R	-
		7	0	Shutdown of the Winding 3 automatic return;	W / R	-
			1	Shutdown of the Winding 3 manual return;	W / R	-
		8	0	Fail Relay automatic return;	W / R	-
			1	Fail Relay manual return;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
80	0 - 15	-		Register – Reflecting channel of the analog output 1:	W / R	-
		-	0	Analog Output 1 OFF;	W / R	-
		-	1	It reflects the temperature of the Sensor 1 on the analog output 1;	W / R	-
		-	2	It reflects the temperature of the Sensor 2 on the analog output 1;	W / R	-
		-	3	It reflects the temperature of the Winding 1 on the analog output 1;	W / R	-
		-	4	It reflects the temperature of the Winding 2 on the analog output 1;	W / R	-
		-	5	It reflects the temperature of the Winding 3 on the analog outpu1;	W / R	-
		-	6	It reflects the primary electrical current of the Winding 1 on the analog output 1;	W / R	-
		-	7	It reflects the primary electrical current of the Winding 2 on the analog output 1;	W / R	-
		-	8	It reflects the primary electrical current of the Winding 3 on the analog output 1;	W / R	-
		-	9	It reflects the secondary electrical current of the Winding 1 on the analog output 1;	W / R	-
		-	10	It reflects the secondary electrical current of the Winding 2 on the analog output 1;	W / R	-
		-	11	It reflects the secondary electrical current of the Winding 3 on the analog output 1;	W / R	-
		-	12	It reflects Loading of the Winding 1 on the analog output 1;	W / R	-
		-	13	It reflects Loading of the Winding 2 on the analog output 1;	W / R	-
		-	14	It reflects Loading of the Winding 3 on the analog output 1;	W / R	-
		-	15	It reflects the Temperature Loading of the on the analog output 1;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
81	0 - 15	-		Register – Reflecting channel of the analog output 2:	W / R	-
		-	0	Analog Output 2 OFF;	W / R	-
		-	1	It reflects the temperature of the Sensor 1 on the analog output 2;	W / R	-
		-	2	It reflects the temperature of the Sensor 2 on the analog output 2;	W / R	-
		-	3	It reflects the temperature of the Winding 1 on the analog output 2;	W / R	-
		-	4	It reflects the temperature of the Winding 2 on the analog output 2;	W / R	-
		-	5	It reflects the temperature of the Winding 3 on the analog output 2;	W / R	-
		-	6	It reflects the primary electrical current of the Winding 1 on the analog output 2;	W / R	-
		-	7	It reflects the primary electrical current of the Winding 2 on the analog output 2;	W / R	-
		-	8	It reflects the primary electrical current of the Winding 3 on the analog output 2;	W / R	-
		-	9	It reflects the secondary electrical current of the Winding 1 on the analog output 2;	W / R	-
		-	10	It reflects the secondary electrical current of the Winding 2 on the analog output 2;	W / R	-
		-	11	It reflects the secondary electrical current of the Winding 3 on the analog output 2;	W / R	-
		-	12	It reflects Loading of the Winding 1 on the analog output 2;	W / R	-
		-	13	It reflects Loading of the Winding 2 on the analog output 2;	W / R	-
		-	14	It reflects Loading of the Winding 3 on the analog output 2;	W / R	-
		-	15	It reflects the Temperature Loading of the on the analog output 2;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
82	0 - 15	-		Register – Reflecting channel of the analog output 3:	W / R	-
		-	0	Analog Output 3 OFF;	W / R	-
		-	1	It reflects the temperature of the Sensor 1 on the analog output 3;	W / R	-
		-	2	It reflects the temperature of the Sensor 2 on the analog output 3;	W / R	-
		-	3	It reflects the temperature of the Winding 1 on the analog output 3;	W / R	-
		-	4	It reflects the temperature of the Winding 2 on the analog output 3;	W / R	-
		-	5	It reflects the temperature of the Winding 3 on the analog output 3;	W / R	-
		-	6	It reflects the primary electrical current of the Winding 1 on the analog output 3;	W / R	-
		-	7	It reflects the primary electrical current of the Winding 2 on the analog output 3;	W / R	-
		-	8	It reflects the primary electrical current of the Winding 3 on the analog output 3;	W / R	-
		-	9	It reflects the secondary electrical current of the Winding 1 on the analog output 3;	W / R	-
		-	10	It reflects the secondary electrical current of the Winding 2 on the analog output 3;	W / R	-
		-	11	It reflects the secondary electrical current of the Winding 3 on the analog output 3;	W / R	-
		-	12	It reflects Loading of the Winding 1 on the analog output 3;	W / R	-
		-	13	It reflects Loading of the Winding 2 on the analog output 3;	W / R	-
		-	14	It reflects Loading of the Winding 3 on the analog output 3;	W / R	-
		-	15	It reflects the Temperature Loading of the on the analog output 3;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
83	0 - 15	-		Register – Reflecting channel of the analog output 4:	W / R	-
		-	0	Analog Output 4 OFF;	W / R	-
		-	1	It reflects the temperature of the Sensor 1 on the analog output 4;	W / R	-
		-	2	It reflects the temperature of the Sensor 2 on the analog output 4;	W / R	-
		-	3	It reflects the temperature of the Winding 1 on the analog output 4;	W / R	-
		-	4	It reflects the temperature of the Winding 2 on the analog output 4;	W / R	-
		-	5	It reflects the temperature of the Winding 3 on the analog output 4;	W / R	-
		-	6	It reflects the primary electrical current of the Winding 1 on the analog output 4;	W / R	-
		-	7	It reflects the primary electrical current of the Winding 2 on the analog output 4;	W / R	-
		-	8	It reflects the primary electrical current of the Winding 3 on the analog output 4;	W / R	-
		-	9	It reflects the secondary electrical current of the Winding 1 on the analog output 4;	W / R	-
		-	10	It reflects the secondary electrical current of the Winding 2 on the analog output 4;	W / R	-
		-	11	It reflects the secondary electrical current of the Winding 3 on the analog output 4;	W / R	-
		-	12	It reflects Loading of the Winding 1 on the analog output 4;	W / R	-
		-	13	It reflects Loading of the Winding 2 on the analog output 4;	W / R	-
		-	14	It reflects Loading of the Winding 3 on the analog output 4;	W / R	-
		-	15	It reflects the Temperature Loading of the on the analog output 4;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
84	0 - 15	-		Register – Reflecting channel of the analog output 5:	W / R	-
		-	0	Analog Output 5 OFF;	W / R	-
		-	1	It reflects the temperature of the Sensor 1 on the analog output 5;	W / R	-
		-	2	It reflects the temperature of the Sensor 2 on the analog output 5;	W / R	-
		-	3	It reflects the temperature of the Winding 1 on the analog output 5;	W / R	-
		-	4	It reflects the temperature of the Winding 2 on the analog output 5;	W / R	-
		-	5	It reflects the temperature of the Winding 3 on the analog output 5;	W / R	-
		-	6	It reflects the primary electrical current of the Winding 1 on the analog output 5;	W / R	-
		-	7	It reflects the primary electrical current of the Winding 2 on the analog output 5;	W / R	-
		-	8	It reflects the primary electrical current of the Winding 3 on the analog output 5;	W / R	-
		-	9	It reflects the secondary electrical current of the Winding 1 on the analog output 5;	W / R	-
		-	10	It reflects the secondary electrical current of the Winding 2 on the analog output 5;	W / R	-
		-	11	It reflects the secondary electrical current of the Winding 3 on the analog output 5;	W / R	-
		-	12	It reflects Loading of the Winding 1 on the analog output 5;	W / R	-
		-	13	It reflects Loading of the Winding 2 on the analog output 5;	W / R	-
		-	14	It reflects Loading of the Winding 3 on the analog output 5;	W / R	-
		-	15	It reflects the Temperature Loading of the on the analog output 5;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	0 - 1	-		Register – RS485 Register Map Option:	W / R	-
384		-	0	Electron Register Map;	W / R	-
			1	Register Map TT;	W / R	-
86	100 – 30000	-	-	Aging Alarm of the Winding 1;	W / R	1:100
87	100 – 30000	-	-	Aging Alarm of the Winding 2;	W / R	1:100
88	100 – 30000	-	-	Aging Alarm of the Winding 3;	W / R	1:100
89	0 – 24	-	-	Time for the next Cooling System Exercise;	L	-
90	0 – 1	-		Register – Communication Protocol:	-	
		-	0	DNP3;	L	-
			1	Modbus RTU;	L	-
91	0 – 9999	-	-	Password Reminder;	L	-
92	0 - 2	-		Register – Communication Parity:	-	
		-	0	No Parity;	W / R	-
		-	1	Odd Parity;	W / R	-
		-	2	Even Parity;	W / R	-
93	0 – 1	-		Register – Protection Against Recording:	-	
		-	0	Disables Protection against Recording by RS485;	W / R	-
		-	1	Enables Protection against Recording by RS485;	W / R	-
94	0-59	-	-	Seconds;	W / R	1:1
95	0-59	-	-	Minute;	W / R	1:1
96	0-23	-	-	Hour;	W / R	1:1
97	1-6	-	-	Day of the Week;	W / R	1:1
98	1-31	-	-	Day of the Month;	W / R	1:1

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
99	1 - 12	-	-	Month of the Year;	W / R	1:1
100	2015 - 2099	-	-	Year;	W / R	1:1
-	-	-		Register – LOG memorization Option:	-	
400		0	0	Data Log Disabled;	W / R	-
		0	1	Log by variation Enabled;	W / R	-
401		1	1	Log by time Enabled;	W / R	-
102	5 – 180	-		Data Log Time;	W / R	1:1
-	-	-		Register – Cooling System Exercise:	-	
416		0	0	Cooling System Exercise Disabled;	W / R	-
			1	Cooling System Exercise Enabled;	W / R	
104	-	-		Register – Day of the week for Cooling Exercise;	-	
		0	0	Weekly Cooling Exercise;	W / R	-
			1	Daily Cooling Exercise;		
105	0-6	-		Register – Day of the week for Cooling Exercise;	-	
		-	0	Sunday Exercise;	W / R	-
			1	Monday Exercise;	W / R	-
			2	Tuesday Exercise;	W / R	-
			3	Wednesday Exercise;	W / R	-
			4	Thursday Exercise;	W / R	-
			5	Friday Exercise;	W / R	-
			6	Saturday Exercise;	W / R	-
106	0-23	-		Initial Hour of the Cooling Exercise;	W / R	1:1
107	0-59	-		Initial Minute of the Cooling Exercise;	W / R	1:1

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
108	0-23	-		Loading Percentage of the Winding 3;	W / R	1:1
109	0-59	-		Initial Hour of the Cooling Exercise;	W / R	1:1
110	0-59	-		Initial Minute of the Cooling Exercise;	W / R	1:1
111	0-23	-		Final Hour of the Cooling Exercise;	W / R	1:1
112	0-9999	-		Hour meter Hour of the First Cooling Group;	W / R	1:1
113	0-59	-		Hour meter Day of the First Cooling Group;	W / R	1:1
114	0-23	-		Hour meter Hour of the Second Cooling Group;	W / R	1:1
115	0-999	-		Hour meter Day of the Second Cooling Group;	W / R	1:1
116	0-59	-		Hour meter Minute of the Third Cooling Group;	W / R	1:1
117	0-23	-		Hour meter Hour of the Third Cooling Group;	W / R	1:1
118	0-999	-		Hour meter Day of the Third Cooling Group;	W / R	1:1
119	0 - 2	-		Register – Insulation Thermal Class:	-	
		-	0	Kraft Paper – Class 55;	W / R	-
		-	1	Stabilized Term Paper – Class 65;	W / R	-
		-	2	Nomex Paper – Class 95;	W / R	-
120	0 – 1000	-		Winding 1 Life Percentage;	W / R	1:10
121	0 – 1000	-		Winding 2 Life Percentage;	W / R	1:10
122	0 – 1000	-		Winding 3 Life Percentage;	W / R	1:10
123	0 – 2000	-		Percentage of activation of the 1st Ventilation Group 1 from the Sensor of the wnd.1;	W / R	1:10
124	0 – 2000	-		Percentage of activation of the 1st Ventilation Group 1 from the Sensor of the wnd.2;	W / R	1:10
125	0 – 2000	-		Percentage of activation of the 1st Ventilation Group 1 from the Sensor of the wnd.3;	W / R	1:10
126	0 – 2000	-		Percentage of activation of the 2nd Ventilation Group 1 from the Sensor of the wnd.1;	W / R	1:10
127	0 – 2000	-		Percentage of activation of the 2nd Ventilation Group 1 from the Sensor of the wnd.2;	W / R	1:10

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
128	0-2000	-		Percentage of activation of the 2nd Ventilation Group 1 from the Sensor of the wnd.3;	W / R	1:10
129	0-2000	-		Percentage of activation of the 3rd Ventilation Group 1 from the Sensor of the wnd.1;	W / R	1:10
130	0-2000	-		Percentage of activation of the 3rd Ventilation Group 1 from the Sensor of the wnd.2;	W / R	1:10
131	0-2000	-		Percentage of activation of the 3rd Ventilation Group 1 from the Sensor of the wnd.3;	W / R	1:10
132	0-2000	-		Percentage for para TRIP by loading do Winding 1;	W / R	1:10
133	0-2000	-		Percentage for para TRIP by loading do Winding 2;	W / R	1:10
134	0-2000	-		Percentage for para TRIP by loading do Winding 3;	W / R	1:10
135	0 - 16	-		Register – Cooling of the of the line 1 presentation:	-	
		-	0	Temperature of the Sensor 1;	W / R	1:10
		-	1	Temperature of the Sensor 2;	W / R	1:10
		-	2	Winding Temperature 1;	W / R	1:10
		-	3	Winding Temperature 2;	W / R	1:10
		-	4	Winding Temperature 3;	W / R	1:10
		-	5	Final Gradient of the Winding 1;	W / R	1:10
		-	6	Final Gradient of the Winding 2;	W / R	1:10
		-	7	Final Gradient of the Winding 3;	W / R	1:10
		-	8	Percentage for Loading of the Winding 1;	W / R	1:10
		-	9	Percentage for Loading of the Winding 2;	W / R	1:10
		-	10	Percentage for Loading of the Winding 3;	W / R	1:10
		-	11	Secondary Electrical Current of the Winding 1;	W / R	1:10
		-	12	Primary Electrical Current of the Winding 1;	W / R	1:10
		-	13	Secondary Electrical Current of the Winding 2;	W / R	1:10
		-	14	Primary Electrical Current of the Winding 2;	W / R	1:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
135	0-16	-	15	Secondary Electrical Current of the Winding 3;	W / R	1:10
		-	16	Primary Electrical Current of the Winding 3;	W / R	1:10
136	0-16	-		Register – Presentation Variables on line 2:	-	
		-	0	Temperature of the Sensor 1;	W / R	1:10
		-	1	Temperature of the Sensor 2;	W / R	1:10
		-	2	Winding Temperature 1;	W / R	1:10
		-	3	Winding Temperature 2;	W / R	1:10
		-	4	Winding Temperature 3;	W / R	1:10
		-	5	Final Gradient of the Winding 1;	W / R	1:10
		-	6	Final Gradient of the Winding 2;	W / R	1:10
		-	7	Final Gradient of the Winding 3;	W / R	1:10
		-	8	Percentage for Loading of the Winding 1;	W / R	1:10
		-	9	Percentage for Loading of the Winding 2;	W / R	1:10
		-	10	Percentage for Loading of the Winding 3;	W / R	1:10
		-	11	Secondary Electrical Current of the Winding 1;	W / R	1:10
		-	12	Primary Electrical Current of the Winding 1;	W / R	1:10
		-	13	Secondary Electrical Current of the Winding 2;	W / R	1:10
		-	14	Primary Electrical Current of the Winding 2;	W / R	1:10
		-	15	Secondary Electrical Current of the Winding 3;	W / R	1:10
		-	16	Primary Electrical Current of the Winding 3;	W / R	1:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
137	0-16	-		Register – Presentation Variables on line 3:	W / R	1:10
		-	0	Temperature of the Sensor 1;	W / R	1:10
		-	1	Temperature of the Sensor 2;	W / R	1:10
		-	2	Winding Temperature 1;	W / R	1:10
		-	3	Winding Temperature 2;	W / R	1:10
		-	4	Winding Temperature 3;	W / R	1:10
		-	5	Final Gradient of the Winding 1;	W / R	1:10
		-	6	Final Gradient of the Winding 2;	W / R	1:10
		-	7	Final Gradient of the Winding 3;	W / R	1:10
		-	8	Percentage for Loading of the Winding 1;	W / R	1:10
		-	9	Percentage for Loading of the Winding 2;	W / R	1:10
		-	10	Percentage for Loading of the Winding 3;	W / R	1:10
		-	11	Secondary Electrical Current of the Winding 1;	W / R	1:10
		-	12	Primary Electrical Current of the Winding 1;	W / R	1:10
		-	13	Secondary Electrical Current of the Winding 2;	W / R	1:10
		-	14	Primary Electrical Current of the Winding 2;	W / R	1:10
		-	15	Secondary Electrical Current of the Winding 3;	W / R	1:10
		-	16	Primary Electrical Current of the Winding 3;	W / R	1:10

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
138	0-16	-		Register – Presentation Variables on line 4:	W / R	1:10
		-	0	Temperature of the Sensor 1;	W / R	1:10
		-	1	Temperature of the Sensor 2;	W / R	1:10
		-	2	Winding Temperature 1;	W / R	1:10
		-	3	Winding Temperature 2;	W / R	1:10
		-	4	Winding Temperature 3;	W / R	1:10
		-	5	Final Gradient of the Winding 1;	W / R	1:10
		-	6	Final Gradient of the Winding 2;	W / R	1:10
		-	7	Final Gradient of the Winding 3;	W / R	1:10
		-	8	Percentage for Loading of the Winding 1;	W / R	1:10
		-	9	Percentage for Loading of the Winding 2;	W / R	1:10
		-	10	Percentage for Loading of the Winding 3;	W / R	1:10
		-	11	Secondary Electrical Current of the Winding 1;	W / R	1:10
		-	12	Primary Electrical Current of the Winding 1;	W / R	1:10
		-	13	Secondary Electrical Current of the Winding 2;	W / R	1:10
		-	14	Primary Electrical Current of the Winding 2;	W / R	1:10
		-	15	Secondary Electrical Current of the Winding 3;	W / R	1:10
		-	16	Primary Electrical Current of the Winding 3;	W / R	1:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
139	0-16	-		Register – Presentation Variables on line 5:	W / R	1:10
		-	0	Temperature of the Sensor 1;	W / R	1:10
		-	1	Temperature of the Sensor 2;	W / R	1:10
		-	2	Winding Temperature 1;	W / R	1:10
		-	3	Winding Temperature 2;	W / R	1:10
		-	4	Winding Temperature 3;	W / R	1:10
		-	5	Final Gradient of the Winding 1;	W / R	1:10
		-	6	Final Gradient of the Winding 2;	W / R	1:10
		-	7	Final Gradient of the Winding 3;	W / R	1:10
		-	8	Percentage for Loading of the Winding 1;	W / R	1:10
		-	9	Percentage for Loading of the Winding 2;	W / R	1:10
		-	10	Percentage for Loading of the Winding 3;	W / R	1:10
		-	11	Secondary Electrical Current of the Winding 1;	W / R	1:10
		-	12	Primary Electrical Current of the Winding 1;	W / R	1:10
		-	13	Secondary Electrical Current of the Winding 2;	W / R	1:10
		-	14	Primary Electrical Current of the Winding 2;	W / R	1:10
		-	15	Secondary Electrical Current of the Winding 3;	W / R	1:10
		-	16	Primary Electrical Current of the Winding 3;	W / R	1:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
140	-1,00 a 1,00	-	-	Electrical Current Output Correction 1;	W / R	-1000:1000
141	-1,00 a 1,00	-	-	Electrical Current Output Correction 2;	W / R	-1000:10000
142	-1,00 a 1,00	-	-	Electrical Current Output Correction 3;	W / R	-1000:1000
143	-1,00 a 1,00	-	-	Electrical Current Output Correction 4;	W / R	-1000:1000
144	-1,00 a 1,00	-	-	Electrical Current Output Correction 5;	W / R	-1000:1000
145	-1,00 a 1,00	-	-	Temperature of the Sensor 1 Correction;	W / R	-1000:10
146	-1,00 a 1,00	-	-	Temperature of the Sensor 2 Correction;	W / R	-1000:10
147	-1,00 a 1,00	-	-	CT 1 Electrical Current Correction;	W / R	-1000:10
148	-1,00 a 1,00	-	-	CT 2 Electrical Current Correction;	W / R	-1000:10
149	-1,00 a 1,00	-	-	CT 3 Electrical Current Correction;	W / R	-1000:10
-	0 – 1	-		Register – Presentation mode:	-	
448		-	0	White Display and Black Letters;	W / R	-
		-	1	Black Display and White Letters;	W / R	-
151	0 – 255	-	-	OLED Display Contrast;	W / R	1:1
-	0 – 1	-		Register – OLED Display presentation language;	-	
464		-	0	Language – Portuguese;	W / R	-
		-	1	Language – English;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	0 – 1	-		Register – OLED Display Line Display Mode:	-	
464		-	0	Fixed display in the chosen quantity;	W / R	-
		-	1	The monitor scans the chosen magnitude set;	W / R	-
-	0 – 255	-		Register – 1st OLED Display Line 1 presentation set:	-	
480		0	1	Enable Temperature of the Sensor 1;	W / R	-
481		1	1	Enable Temperature of the Sensor 2;	W / R	-
482		2	1	Not Used;	W / R	-
483		3	1	Not Used;	W / R	-
484		4	1	Enable Winding Temperature 1;	W / R	-
485		5	1	Enable Winding Temperature 2;	W / R	-
486		6	1	Enable Winding Temperature 3;	W / R	-
487		7	1	Enable Gradient of the Winding 1;	W / R	-
-	0 – 255	-		Register – 2nd OLED Display Line 1 presentation set:	-	
496		0	1	Enable Gradient of the Winding 1;	W / R	-
497		1	1	Enable Gradient of the Winding 2;	W / R	-
498		2	1	Enable Loading of the Winding 1;	W / R	-
499		3	1	Enable Loading of the Winding 2;	W / R	-
500		4	1	Enable Loading of the Winding 3;	W / R	-
501		5	1	Enable Secondary Electrical current of the Winding 1;	W / R	-
502		6	1	Enable Secondary Electrical current of the Winding 2;	W / R	-
503		7	1	Enable Secondary Electrical current of the Winding 3;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	0 – 7	-		Register – 3rd OLED Display Line Display Mode:	-	
512		0	1	Enable Primary Electrical Current of the do Winding 1;	W / R	-
513		1	1	Enable Primary Electrical Current of the do Winding 2;	W / R	-
514		2	1	Enable Primary Electrical Current of the do Winding 3;	W / R	-
157	0 – 4	-		Register – Sensor Function 1;	-	
		-	0	Sensor 1 OFF;	W / R	-
		-	1	Sensor 1 Reading the Environment Temperature;	W / R	-
		-	2	Sensor 1 Reading the Oil Top Temperature;	W / R	-
		-	3	Sensor 1 Reading the bottom Oil level Temperature;	W / R	-
		-	4	Sensor 1 Reading the TAP Changer Temperature;	W / R	-
158	0 – 4	-		Register – Sensor Function 1;	-	
		-	0	Sensor 2 OFF;	W / R	-
		-	1	Sensor 2 Reading the Environment Temperature;	W / R	-
		-	2	Sensor 2 Reading the Oil Top Temperature;	W / R	-
		-	3	Sensor 2 Reading the bottom Oil level Temperature;	W / R	-
		-	4	Sensor 2 Reading the TAP Changer Temperature;	W / R	-

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – Activation Logic:	W / R	-
528		0	0	Normal Logic – 1st Cooling Group;	W / R	-
			1	Inverted Logic – 1st Cooling Group;	W / R	-
529		1	0	Normal Logic – 2nd Cooling Group;	W / R	-
			1	Inverted Logic – 2nd Cooling Group;	W / R	-
530		2	0	Normal Logic – Oil Alarm;	W / R	-
			1	Inverted Logic – Oil Alarm;	W / R	-
531		3	0	Normal Logic – Oil Shutdown;	W / R	-
			1	Inverted Logic – Oil Shutdown;	W / R	-
532		4	0	Normal Logic – Alarm of the Winding 1;	W / R	-
			1	Inverted Logic – Alarm of the Winding 1;	W / R	-
533		5	0	Normal Logic – Shutdown of the Winding 1;	W / R	-
			1	Inverted Logic – Shutdown of the Winding 1;	W / R	-
534		6	0	Normal Logic – Alarm of the Winding 2;	W / R	-
			1	Inverted Logic – Alarm of the Winding 2;	W / R	-
535		7	0	Normal Logic – Shutdown of the Winding 2;	W / R	-
			1	Inverted Logic – Shutdown of the Winding 2;	W / R	-
536		8	0	Normal Logic – Alarm of the Winding 3;	W / R	-
			1	Inverted Logic – Alarm of the Winding 3;	W / R	-
537		9	0	Normal Logic – Shutdown of the Winding 3;	W / R	-
			1	Inverted Logic – Shutdown of the Winding 3;	W / R	-
538		10	0	Normal Logic – Fail Relay;	W / R	-
			1	Inverted Logic – Fail Relay;	W / R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
539	-	11	0	Normal Logic – Auxiliary Relay;	W / R	-
			1	Inverted Logic – Auxiliary Relay;	W / R	-
540		12	0	Normal Logic – 3° Cooling Group;	W / R	-
			1	Inverted Logic – 3° Cooling Group;	W / R	-
160	0 – 50000	-		Hour for Maintenance of the Group 1;	W / R	1:1
161	0 – 50000	-		Hour for Maintenance of the Group 2;	W / R	1:1
162	0 – 50000	-		Hour for Maintenance of the Group 3;	W / R	1:1
163	0.2 a 10.0	-		Temperature Variation for SD Card Recording (°C)	W / R	1:10
164	0.1 a 1.0	-		Electrical Current Variation for SD Card Recording (A)	W / R	1:10
165	-50.0 a 250.0	-		Electrical Current Minimum Temperature of the Sensor 1;	W / R	-1000:10
166	-50.0 a 250.0	-		Electrical Current Minimum Temperature of the Sensor 2;	W / R	-1000:10
167	-50.0 a 250.0	-		Electrical Current Minimum Temperature of the Winding 1;	W / R	-1000:10
168	-50.0 a 250.0	-		Electrical Current Minimum Temperature of the Winding 2;	W / R	-1000:10
169	-50.0 a 250.0	-		Electrical Current Minimum Temperature of the Winding 3;	W / R	-1000:10
170	0 – 9.990	-		Primary minimum electrical current of the Winding 1;	W / R	1000:10
171	0 – 9.990	-		Primary minimum electrical current of the Winding 2;	W / R	1000:10
172	0 – 9.990	-		Primary minimum electrical current of the Winding 3;	W / R	1000:10
173	0 – 9.990	-		Secondary minimum electrical current of the Winding 1;	W / R	1000:10
174	0 – 9.990	-		Secondary minimum electrical current of the Winding 2;	W / R	1000:10
175	0 – 9.990	-		Secondary minimum electrical current of the Winding 3;	W / R	1000:10
176	0 – 9.990	-		Minimum Load of the Winding 1;	W / R	1000:10

177	0 – 300.0	-	Minimum Load of the Winding 2;	W / R	1000:10
178	0 – 300.0	-	Minimum Load of the Winding 3;	W / R	1000:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
179	-50.0 – 250.0	-		Minimum Temperature Differential;	W / R	-1000:10
181	-50.0 – 250.0	-		Electrical Current Maximum Temperature of the Sensor 1;	W / R	-1000:10
182	-50.0 – 250.0	-		Electrical Current Maximum Temperature of the Sensor 2;	W / R	-1000:10
183	-50.0 – 250.0	-		Electrical Current Maximum Temperature of the Winding 1;	W / R	1000:10
184	-50.0 – 250.0	-		Electrical Current Maximum Temperature of the Winding 2;	W / R	1000:10
185	-50.0 – 250.0	-		Electrical Current Maximum Temperature of the Winding 3;	W / R	1000:10
186	-50.0 – 250.0	-		Maximum primary electrical current of the winding 1;	W / R	1:1000
187	-50.0 – 250.0	-		Maximum primary electrical current of the winding 2;	W / R	1:1000
188	0 – 9.990	-		Maximum primary electrical current of the winding 3;	W / R	1:1000
189	0 – 9.990	-		Maximum secondary electrical current of the winding 1;	W / R	1:1000
190	0 – 9.990	-		Maximum secondary electrical current of the winding 2;	W / R	1:1000
191	0 – 9.990	-		Maximum secondary electrical current of the winding 3;	W / R	1:1000
192	0 – 9.990	-		Maximum Loading of the Winding 1;	W / R	1:10
193	0 – 9.990	-		Maximum Loading of the Winding 2;	W / R	1:10
194	0 – 9.990	-		Maximum Loading of the Winding 3;	W / R	1:10
195	-50.0 a 250.0	-		Minimum Temperature Differential;	W / R	-1000:10

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-		-		Register – Auxiliary Relay Actuation Status;	-	
0		0	1	Activated by the Sensor 1;	R	-
1		1	1	Activated by the Sensor 2;	R	-
2		2	1	Activated by the Winding 1;	R	-
3	-	3	1	Activated by the Winding 2;	R	-
4		4	1	Activated by the Winding 3;	R	-
5		5	1	Enabled by the Temperature Differential;	R	-
6		6	1	Enabled by the maintenance of the Group 1;	R	-
7		7	1	Enabled by the maintenance of the Group 2;	R	-
-		-		Register – Ventilation/Pump of the Group 1 Status;	-	
16		0	0	Ventilation/Pump of the Oil Disabled (Sensor 1);	R	-
			1	Ventilation/Pump of the Oil Enabled (Sensor 1);	R	-
17		1	0	Ventilation/Pump of the Oil Disabled (Sensor 2);	R	-
			1	Ventilation/Pump of the Oil Disabled (Sensor 2);	R	-
18		2	0	Ventilation/Pump of the Winding 1 Disable;	R	-
	-		1	Ventilation/Pump of the Winding 1 Enabled;	R	-
19		3	0	Ventilation/Pump of the Winding 2 Disable;	R	-
			1	Ventilation/Pump of the Winding 2 Enabled;	R	-
20		4	0	Ventilation/Pump of the Winding 3 Disable;	R	-
			1	Ventilation/Pump of the Winding 3 Enabled;	R	-
21		5	0	Ventilation/Pump Manual Exercise Disable;	R	-
			1	Ventilation/Pump Manual Exercise Enabled;	R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
22	-	6	0	Ventilation/Pump automatic exercise Disable;	R	-
			1	Ventilation/Pump automatic exercise Enabled;	R	-
-	-	-		Register – Group 2 Ventilation/Pump status;	-	
32		0	0	Ventilation/Pump of the Oil Disabled (Sensor 1);	R	-
			1	Ventilation/Pump of the Oil Enabled (Sensor 1);	R	-
33		1	0	Ventilation/Pump of the Oil Disabled (Sensor 2);	R	-
			1	Ventilation/Pump of the Oil Disabled (Sensor 2);	R	-
34		2	0	Ventilation/Pump of the Winding 1 Disable;	R	-
			1	Ventilation/Pump of the Winding 1 Enabled;	R	-
35		3	0	Ventilation/Pump of the Winding 2 Disable;	R	-
			1	Ventilation/Pump of the Winding 2 Enabled;	R	-
36		4	0	Ventilation/Pump of the Winding 3 Disable;	R	-
			1	Ventilation/Pump of the Winding 3 Enabled;	R	-
37		5	0	Ventilation/Pump exercise Disable;	R	-
			1	Ventilation/Pump exercise Enabled;	R	-
38		6	0	Ventilation/Pump automatic exercise Disable;	R	-
			1	Ventilation/Pump automatic exercise Enabled;	R	-

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Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – Group 2 Ventilation/Pump status;	-	
48		0	0	Ventilation/Pump of the Oil Disabled (Sensor 1);	R	-
			1	Ventilation/Pump of the Oil Enabled (Sensor 1);	R	-
49		1	0	Ventilation/Pump of the Oil Disabled (Sensor 2);	R	-
			1	Ventilation/Pump of the Oil Disabled (Sensor 2);	R	-
50		2	0	Ventilation/Pump of the Winding 1 Disable;	R	-
			1	Ventilation/Pump of the Winding 1 Enabled;	R	-
51		3	0	Ventilation/Pump of the Winding 2 Disable;	R	-
			1	Ventilation/Pump of the Winding 2 Enabled;	R	-
52		4	0	Ventilation/Pump of the Winding 3 Disable;	R	-
			1	Ventilation/Pump of the Winding 3 Enabled;	R	-
53		5	0	Ventilation/Pump exercise Disable;	R	-
			1	Ventilation/Pump exercise Enabled;	R	-
54		6	0	Ventilation/Pump automatic exercise Disable;	R	-
			1	Ventilation/Pump automatic exercise Enabled;	R	-

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – Sensors Failure Status:	-	
64		0	1	System Failure of the Sensor 1;	R	-
65		1	1	System Failure of the Oil Sensor;	R	-
66		2	1	System Failure of the Winding 1;	R	-
67		3	1	System Failure of the Winding 2;	R	-
68		4	1	System Failure of the Winding 3;	R	-
-	-	-		Register – Alarms Status:	-	
80		0	0	Oil Alarm Disabled (Sensor 1);	R	-
			1	Oil Alarm Enabled (Sensor 1);	R	-
81		1	0	Oil Alarm Disabled (Sensor 2);	R	-
			1	Oil Alarm Enabled (Sensor 2);	R	-
82		2	0	Alarm of the Winding 1 Disabled;	R	-
			1	Alarm of the Winding 1 Enabled;	R	-
83		3	0	Alarm of the Winding 2 Disabled;	R	-
			1	Alarm of the Winding 2 Enabled;	R	-
84		4	0	Alarm of the Winding 3 Disabled;	R	-
			1	Alarm of the Winding 3 Enabled;	R	-

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – TRIP Counter Status	-	
96		0	0	Countage to Oil Shutdown Disabled (Sensor 1);	R	-
			1	Countage to Oil Shutdown Enabled (Sensor 1);	R	-
97		1	0	Countage to Oil Shutdown Disabled (Sensor 2);	R	-
			1	Countage to Oil Shutdown Enabled (Sensor 2);	R	-
98		2	0	Countage to Shutdown of the Winding 1 Disabled;	R	-
			1	Countage to Shutdown of the Winding 1 Enabled;	R	-
99		3	0	Countage to Shutdown of the Winding 2 Disabled;	R	-
			1	Countage to Shutdown of the Winding 2 Enabled;	R	-
100		4	0	Countage to Shutdown of the Winding 3 Disabled;	R	-
			1	Countage to Shutdown of the Winding 3 Enabled;	R	-
101		5	0	Countage to Auxiliary Relay 1 Disabled;	R	-
			1	Countage to Auxiliary Relay 1 Enabled;	R	-
102		6	0	Countage to Auxiliary Relay 2 Disabled;	R	-
			1	Countage to Auxiliary Relay 2 Enabled;	R	-

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – TRIP Counter Status:	-	
112		0	0	Countage to Oil Shutdown Disabled (Sensor 1);	R	-
			1	Countage to Oil Shutdown Enabled (Sensor 1);	R	-
113		1	0	Countage to Oil Shutdown Disabled (Sensor 2);	R	-
			1	Countage to Oil Shutdown Enabled (Sensor 2);	R	-
114		2	0	Countage to Shutdown of the Winding 1 Disabled;	R	-
			1	Countage to Shutdown of the Winding 1 Enabled;	R	-
115		3	0	Countage to Shutdown of the Winding 2 Disabled;	R	-
			1	Countage to Shutdown of the Winding 2 Enabled;	R	-
116		4	0	Countage to Shutdown of the Winding 3 Disabled;	R	-
			1	Countage to Shutdown of the Winding 3 Enabled;	R	-
117		5	0	Countage to Auxiliary Relay 1 Disabled;	R	-
			1	Countage to Auxiliary Relay 1 Enabled;	R	-
118		6	0	Countage to Auxiliary Relay 2 Disabled;	R	-
			1	Countage to Auxiliary Relay 2 Enabled;	R	-
-		-		Register – 1st Group Cooling System Activation – Loading:	-	
130		2	0	Cooling of the do Winding 1 Disabled;	R	-
			1	Cooling of the do Winding 1 Enabled;	R	-
131		3	0	Cooling of the do Winding 2 Disabled;	R	-
			1	Cooling of the do Winding 2 Enabled;	R	-
132		4	0	Cooling of the do Winding 3 Disabled;	R	-
			1	Cooling of the do Winding 3 Enabled;	R	-

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – 1st Group Cooling System Activation - Temperature:	-	
144		0	0	Cooling of the do Sensor 1 Disabled;	R	-
			1	Cooling of the do Sensor 1 Enabled;	R	-
145		1	0	Cooling of the do Sensor 2 Disabled;	R	-
			1	Cooling of the do Sensor 2 Enabled;	R	-
146		2	0	Cooling of the do Winding 1 Disabled;	R	-
			1	Cooling of the do Winding 1 Enabled;	R	-
147		3	0	Cooling of the do Winding 2 Disabled;	R	-
			1	Cooling of the do Winding 2 Enabled;	R	-
148		4	0	Cooling of the do Winding 3 Disabled;	R	-
			1	Cooling of the do Winding 3 Enabled;	R	-
-		-		Register – 2nd Group Cooling System Activation – Loading:	-	
162		2	0	Cooling of the do Winding 1 Disabled;	R	-
			1	Cooling of the do Winding 1 Enabled;	R	-
163		3	0	Cooling of the do Winding 2 Disabled;	L	-
			1	Cooling of the do Winding 2 Enabled;	L	-
164		4	0	Cooling of the do Winding 3 Disabled;	L	-
			1	Cooling of the do Winding 3 Enabled;	L	-

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – 2nd Group Cooling System Activation - Temperature:	-	
176		0	0	Cooling of the do Sensor 1 Disabled;	R	-
			1	Cooling of the do Sensor 1 Enabled;	R	-
177		1	0	Cooling of the do Sensor 2 Disabled;	R	-
			1	Cooling of the do Sensor 2 Enabled;	R	-
178		2	0	Cooling of the do Winding 1 Disabled;	R	-
			1	Cooling of the do Winding 1 Enabled;	R	-
179		3	0	Cooling of the do Winding 2 Disabled;	R	-
			1	Cooling of the do Winding 2 Enabled;	R	-
180		4	0	Cooling of the do Winding 3 Disabled;	R	-
			1	Cooling of the do Winding 3 Enabled;	R	-
-		-		Register – 3rd Group Cooling System Activation – Loading:	-	
194		2	0	Cooling of the do Winding 1 Enabled;	R	-
			1	Cooling of the do Winding 1 Disabled;	R	-
195		3	0	Cooling of the do Winding 1 Enabled;	R	-
			1	Cooling of the do Winding 2 Disabled;	R	-
196		4	0	Cooling of the do Winding 2 Enabled;	R	-
			1	Cooling of the do Winding 3 Disabled;	R	-

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-	-	-		Register – 3rd Group Cooling System Activation – Temperature:	-	
208		0	0	Cooling of the do Sensor 1 Disabled;	R	-
			1	Cooling of the do Sensor 1 Enabled;	R	-
209		1	0	Cooling of the do Sensor 2 Disabled;	R	-
			1	Cooling of the do Sensor 2 Enabled;	R	-
210		2	0	Cooling of the do Winding 1 Disabled;	R	-
			1	Cooling of the do Winding 1 Enabled;	R	-
211		3	0	Cooling of the do Winding 2 Disabled;	R	-
			1	Cooling of the do Winding 2 Enabled;	R	-
212		4	0	Cooling of the do Winding 3 Disabled;	R	-
			1	Cooling of the do Winding 3 Enabled;	R	-
-	-	-		Register – TRIP by Temperature:	-	
224		0	0	Sensor 1 Disabled;	R	-
			1	Sensor 1 Enabled;	R	-
225		1	0	Sensor 2 Enabled;	R	-
			1	Sensor 2 Disabled;	R	-
226		2	0	Winding 1 Disabled;	R	-
			1	Winding 1 Enabled;	R	-
227		3	0	Winding 2 Disabled;	R	-
			1	Winding 2 Enabled;	R	-
228		4	0	Winding 3 Disabled;	R	-
			1	Winding 3 Enabled;	R	-

MASTERTEMP SERIAL COMMUNICATION

Address DNP3	Reading Range	Bits Index	State	Description Point Name	Writing Reading	Scale
-		-		Register – TRIP by loading:	-	
242		2	0	Cooling of the do Winding 1 Disabled;	R	-
			1	Cooling of the do Winding 1 Enabled;	R	-
243		3	0	Cooling of the do Winding 2 Disabled;	R	-
			1	Cooling of the do Winding 2 Enabled;	R	-
244		4	0	Cooling of the do Winding 3 Disabled;	R	-
			1	Cooling of the do Winding 3 Enabled;	R	-

DNP V3.00

DEVICE PROFILE DOCUMENT

This document must be accompanied by a table having the following headings:

Object Group Request Function Codes Response Function Codes
Object Variation Request Qualifiers Response Qualifiers
ObjectName (optional)

VendorName: Electron do Brasil Tecnologia Digital Ltda

Device Name: MASTERTEMP – VERSÃO FULL

Highest DNP Level Supported:	Device Function:
For Requests **Level 2**	☐ Master ☑Slave
For Responses **Level 2**	

Notable objects, functions, and/or qualifiers supported in addition to the Highest DNP Levels Supported (the complete list is described in the attached table):

Maximum Data Link Frame Size (octets):	Maximum Application Fragment Size (octets):
Transmitted 292 .	Transmitted 1024 . (if >2048, must be configurable)
Received (must be 292)	Received 249. (must be>= 249)

Maximum Data Link Re-tries:	Maximum Application Layer Re-tries:
☑None ☐ Fixed at _____ ☐ Configurable, range __1 to ____255	☑ None ☐ Configurable, range ___1 to ____127 (Fixed is not permitted)

Requires Data Link Layer Confirmation:

☑ Never
☐ Always
Sometimes If 'Sometimes', when? _____

☐Configurable If 'Configurable', how? Através de arquivo de configuração. _____

Requires Application Layer Confirmation:

☐ Never
☐ Always (not recommended)
☑ When reporting Event Data (Slave devices only)
☑ When sending multi-fragment responses (Slave devices only)

Sometimes If 'Sometimes', when? _____

☐ ConfigurableIf 'Configurable', how? _____

Timeouts while waiting for:

☑ None ☐ Fixed at _____ ☐ Variable ☐ Configurable
☑ None ☐ Fixed at _____ ☐ Variable ☐ Configurable
☑ None ☐ Fixed at _____ ☐ Variable ☐ Configurable
☑ None ☐ Fixed at _____ ☐ Variable ☐ Configurable

Others _____

Attach explanation if 'Variable' or 'Configurable' was checked for any timeout

Sends/Executes Control Operations: ☑ Never ☐ Always ☐ Sometimes ☐ Configurable ☐ Never ☑ Always ☐ Sometimes ☐ Configurable ☐ Never ☑ Always ☐ Sometimes ☐ Configurable ☐ Never ☑ Always ☐ Sometimes ☐ Configurable ☑ Never ☐ Always ☐ Sometimes ☐ Configurable ☐ Never ☑ Always ☐ Sometimes ☐ Configurable ☑ Never ☐ Always ☐ Sometimes ☐ Configurable ☐ Never ☑ Always ☐ Sometimes ☐ Configurable ☐ Never ☑ Always ☐ Sometimes ☐ Configurable ☑ Never ☐ Always ☐ Sometimes ☐ Configurable ☑ Never ☐ Always ☐ Sometimes ☐ Configurable Attach explanation if 'Sometimes' or 'Configurable' was checked for any operation.
FILL OUT THE FOLLOWING ITEM FOR MASTER DEVICES ONLY:
Expects Binary Input Change Events: ☐ Either time-tagged or non-time-tagged for a single event ☐ Both time-tagged and non-time-tagged for a single event ☐Configurable (attach explanation)
FILL OUT THE FOLLOWING ITEMS FOR SLAVE DEVICES ONLY:

Reports Binary Input Change Events when no specific variation requested: ☐ Never ☑ Only time-tagged ☐ Only non-time-tagged ☐ Configurable to send both, one or the other (attach explanation)	Reports time-tagged Binary Input Change Events when no specific variation requested: ☐ Never ☑ Binary Input Change With Time ☐ Binary Input Change With Relative Time ☐Configurable (attach explanation)

Sends Unsolicited Responses: ☑ Never ☐ Configurable (attach explanation) ☐ Only certain objects ☐ Sometimes (attach explanation) ☐ ENABLE/DISABLE UNSOLICITED Function codes supported	Sends Static Data in Unsolicited Responses: ☑ Never ☐ When Device Restarts ☐ When Status Flags Change No other options are permitted.
Default Counter Object/Variation: ☑ No Counters Reported ☐ Configurable (attach explanation) Default Object _____ efault Variation _____ ☐ Point-by-point list attached	Counters Roll Over at: ☑ No Counters Reported ☐ Configurable (attach explanation) ☐ 16 Bits ☐ 32 Bits ☐ Other Value _____ ☐ Point-by-point list attached
Sends Multi-Fragment Responses: ☑ Yes ☐ No	

OBJECT			REQUEST (supported)		RESPONSE (may generate)	
Obj	**Var**	**Description**	**FuncCodes (dec)**	**Qual Codes (hex)**	**FuncCodes**	**Qual Codes (hex)**
1	0	Binary Input - AllVariations	1	06, 01, 08		
1	1	Binary Input			129	00, 01
1	2	Binary Input with Status			129	00, 01
2	0	Binary Input Change – All Variations	1	06, 01, 07, 08		
2	1	Binary Input Change without Time	1	06, 01, 07, 08	129	17, 28
2	2	Binary Input Change with Time	1	06, 01, 07, 08	129	17, 28
2	3	Binary Input Change with Relative Time	1	06, 01, 07, 08	129	17, 28
10	0	Binary Output - AllVariations	1	06		
10	1	Binary Output				
10	2	Binary Output Status			129	00, 01
12	0	ControlBlock - AllVariations				
12	1	Control Relay Output Block	3, 4, 5, 6	17, 28	129	echoofrequest
12	2	PatternControlBlock				
12	3	PatternMask				

OBJECT			REQUEST (supported)		RESPONSE (may generate)	
Obj	**Var**	**Description**	**FuncCodes (dec)**	**Qual Codes (hex)**	**FuncCodes**	**Qual Codes (hex)**
20	0	BinaryCounter - AllVariations				
20	1	32-Bit BinaryCounter				
20	2	16-Bit BinaryCounter				
20	3	32-Bit Delta Counter				
20	4	16-Bit BinaryCounter				
20	5	32-Bit Binary Counter without Flag				
20	6	16-Bit Binary Counter without Flag				
20	7	32-Bit Delta Counter without Flag				
20	8	16-Bit Delta Counter without Flag				
21	0	FrozenCounter - AllVariations				
21	1	32-Bit FrozenCounter				
21	2	16-Bit FrozenCounter				
21	3	32-Bit Frozen Delta Counter				
21	4	16-Bit Frozen Delta Counter				

OBJECT			REQUEST (supported)		RESPONSE (may generate)	
Obj	**Var**	**Description**	**FuncCodes (dec)**	**Qual Codes (hex)**	**FuncCodes**	**Qual Codes (hex)**
21	5	32-Bit Frozen Counter with Time of Freeze				
21	6	16-Bit Frozen Counter with Time of Freeze				

OBJECT			REQUEST (suported)		RESPONSE (maygenerate)	
Obj	**Var**	**Description**	**Obj**	**Var**	**Description**	**Obj**
21	7	32-Bit Frozen Delta Counter with Time of Freeze				
21	8	16-Bit Frozen Delta Counter with Time of Freeze				
21	9	32-Bit Frozen Counter without Flag				
21	10	16-Bit Frozen Counter without Flag				
21	11	32-Bit Frozen Delta Counter without Flag				
21	12	16-Bit Frozen Delta Counter without Flag				
22	0	Counter Change Event - All Variations				
22	1	32-Bit Counter Change Event without Time				
22	2	16-Bit Counter Change Event without Time				
22	3	32-Bit Delta Counter Change Event without Time				
22	4	16-Bit Delta Counter Change Event without Time				
22	5	32-Bit Counter Change Event with Time				
22	6	16-Bit Counter Change Event with Time				
22	7	32-Bit Delta Counter Change Event with Time				

22	8	16-Bit Delta Counter Change Event with Time				
23	0	Frozen Counter Event - All Variations				
23	1	32-Bit Frozen Counter Event without Time				
23	2	16-Bit Frozen Counter Event without Time				
23	3	32-Bit Frozen Delta Counter Event without Time				
23	4	16-Bit Frozen Delta Counter Event without Time				
23	5	32-Bit Frozen Counter Event with Time				
23	6	16-Bit Frozen Counter Event with Time				
23	7	32-Bit Frozen Delta Counter Event with Time				
23	8	16-Bit Frozen Delta Counter Event with Time				
30	0	Analog Input - AllVariations	1	06		
30	1	32-Bit Analog Input				
30	2	16-Bit Analog Input	1	06, 01, 07, 08	129	00, 01
30	3	32-Bit Analog Input without Flag				
30	4	16-Bit Analog Input without Flag	1	06, 01, 07, 08	129	00, 01
31	0	Frozen Analog Input - All Variations				
31	1	32-Bit FrozenAnalog Input				
31	2	16-Bit FrozenAnalog Input				

OBJECT			REQUEST (suported)		RESPONSE (maygenerate)	
Obj	**Var**	**Description**	**Obj**	**Var**	**Description**	**Obj**
31	3	32-Bit Frozen Analog Input with Time of Freeze				
31	4	16-Bit Frozen Analog Input with Time of Freeze				
31	5	32-Bit Frozen Analog Input without Flag				
31	6	16-Bit Frozen Analog Input without Flag				
32	0	Analog Change Event - All Variations	1	06,07,08		
32	1	32-Bit Analog Change Event without Time				
32	2	16-Bit Analog Change Event without Time			129	17,28
32	3	32-Bit Analog Change Event with Time				
32	4	16-Bit Analog Change Event with Time				
33	0	Frozen Analog Event - All Variations				
33	1	32-Bit Frozen Analog Event without Time				
33	2	16-Bit Frozen Analog Event without Time				
33	3	32-Bit Frozen Analog Event with Time				
33	4	16-Bit Frozen Analog Event with Time				
40	0	Analog Output Status - All Variations	1	06		

40	1	32-Bit Analog Output Status				
40	2	16-Bit Analog Output Status			129	00, 01
41	0	Analog Output Block - All Variations				
41	1	32-Bit Analog Output Block				
41	2	16-Bit Analog Output Block	3, 4, 5, 6	17, 28	129	echoofrequest
50	0	Time and Date - All Variations				
50	1	Time and Date	2 (see 4.14)	07 wherequantity = 1		
50	2	Time and Date with Interval				
51	0	Time and Date CTO - All Variations				
51	1	Time and Date CTO				
51	2	Unsynchronized Time and Date CTO				
52	0	Time Delay - AllVariations				
52	1	Time DelayCoarse				
52	2	Time Delay Fine				
60	0					
60	1	Class 0 Data	1	06	129	
60	2	Class 1 Data	1	06,07,08	129	

OBJECT			REQUEST (suported)		RESPONSE (maygenerate)	
Obj	**Var**	**Description**	**Obj**	**Var**	**Description**	**Obj**
60	3	Class 2 Data	1	06,07,08	129	
60	4	Class 3 Data	1	06,07,08	129	
70	1	File Identifier				
80	1	InternalIndications	2	00 index=7		
81	1	StorageObject				
82	1	Device Profile				
83	1	Private RegistrationObject				
83	2	Private RegistrationObjectDescriptor				
90	1	ApplicationIdentifier				
100	1	Short Floating Point				
100	2	Long Floating Point				
100	3	Extended Floating Point				
101	1	Small Packed Binary-Coded Decimal				
101	2	Medium Packed Binary-Coded Decimal				
101	3	Large Packed Binary-Coded Decimal				
110		String				
		No Object	13			
		No Object	23 (see 4.14)			