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
	Object Name (optional)	

Vendor Name: Electron do Brasil Tecnologia Digital Ltda

Device Name: DIGITAL VOLTAGE REGULATOR – DVR

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): Transmitted 292 . Received (must be 292)	Maximum Application Fragment Size (octets): Transmitted 1024. (if >2048, must be configurable) Received 249. (must be>= 249)
Maximum Data Link Re–tries: ☑None ☐ Fixed at _____ ☐ Configurable, range 1 to 255	Maximum Application Layer Re–tries: ☑ 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? _____

☐ Configurable If 'Configurable', how? _____

Timeouts while waiting for:

Data Link Confirm	☑ None	☐ Fixed at _____	☐ Variable	☐ Configurable
Complete Appl. Fragment	☑ None	☐ Fixed at _____	☐ Variable	☐ Configurable
Application Confirm	☑ None	☐ Fixed at _____	☐ Variable	☐ Configurable
Complete Appl. Response	☑ None	☐ Fixed at _____	☐ Variable	☐ Configurable

Others _____

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

Sends/Executes Control Operations:

WRITE Binary Outputs	☑ Never	☐ Always	☐ Sometimes	☐ Configurable
SELECT/OPERATE	☐ Never	☑ Always	☐ Sometimes	☐ Configurable
DIRECT OPERATE	☐ Never	☑ Always	☐ Sometimes	☐ Configurable
DIRECT OPERATE – NO ACK	☐ Never	☑ Always	☐ Sometimes	☐ Configurable
Count > 1	☑ Never	☐ Always	☐ Sometimes	☐ Configurable
Pulse On	☐ Never	☑ Always	☐ Sometimes	☐ Configurable

Pulse Off	☑ Never	☐ Always	☐ Sometimes	☐ Configurable
Latch On	☐ Never	☑ Always	☐ Sometimes	☐ Configurable
Latch Off	☐ Never	☑ Always	☐ Sometimes	☐ Configurable
Queue	☑ Never	☐ Always	☐ Sometimes	☐ Configurable
Clear Queue	☑ 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 (attachexplanation)

FILL OUT THE FOLLOWING ITEMS FOR SLAVE DEVICES ONLY:

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

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 _____ Default 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 listattached
Sends Multi–Fragment Responses: ☑ Yes ☐ No	

OBJECT			REQUEST (suported)		RESPONSE (maygenerate)	
Obj	**Var**	**Description**	**FuncCodes (dec)**	**Qual Codes (hex)**	**Func. Codes**	**Qual Codes (hex)**
1	0	Binary Input – All Variations	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 – All Variations	1	06		
10	1	Binary Output				
10	2	Binary Output Status			129	00, 01
12	0	Control Block – All Variations				
12	1	Control Relay Output Block	3, 4, 5, 6	17, 28	129	echoofrequest
12	2	Pattern ControlBlock				
12	3	Pattern Mask				
20	0	Binary Counter – AllVariations				
20	1	32–Bit Binary Counter				
20	2	16–Bit Binary Counter				
20	3	32–Bit Delta Counter				
20	4	16–Bit Binary Counter				
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	Frozen Counter – All Variations				
21	1	32–Bit Frozen Counter				
21	2	16–Bit Frozen Counter				
21	3	32–Bit Frozen Delta Counter				
21	4	16–Bit Frozen Delta Counter				
21	5	32–Bit Frozen Counter with Time of Freeze				
21	6	16–Bit Frozen Counter with Time of Freeze				
21	7	32–Bit Frozen Delta Counter with Time of Freeze				

OBJECT			REQUEST (suported)		RESPONSE (maygenerate)	
Obj	**Var**	**Description**	**FuncCodes (dec)**	**Qual Codes (hex)**	**Func. Codes**	**Qual Codes (hex)**
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 – All Variations	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 Frozen Analog Input				
31	2	16–Bit Frozen Analog Input				

OBJECT			REQUEST (suported)		RESPONSE (maygenerate)	
Obj	**Var**	**Description**	**FuncCodes (dec)**	**Qual Codes (hex)**	**Func. Codes**	**Qual Codes (hex)**
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				

OBJECT			REQUEST (suported)		RESPONSE (maygenerate)	
Obj	Var	Description	Obj	Var	Description	Obj
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 where quantity = 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	
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				

OBJECT			REQUEST (suported)		RESPONSE (maygenerate)	
Obj	**Var**	**Description**	**Obj**	**Var**	**Description**	**Obj**
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)			

SERIAL COMMUNICATION

Protocol: **DNP 3 L2**
Baud Rate: 2400 a 57.600 bps **(Auto BaudRate)**
Data Bits: 8 bits
Parity: **None/Even/Odd;**
Stop Bits: **1**

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
1	1 to 6	–		Register – Phase Regulation:	–	
		–	1	Phase Regulation Set A A;	W / R	–
		–	2	Phase Regulation Set B B;	W / R	–
		–	3	Phase Regulation Set C C;	W / R	–
		–	4	Phase Regulation Set AB A;	W / R	–
		–	5	Phase Regulation Set AB B;	W / R	–
		–	6	Phase Regulation Set AB C;	W / R	–
2	1 to 4	–		Register – Regulation Operation mode	–	
		–	0	Automatic;	W / R	–
		–	1	Local Operation;	W / R	–
		–	2	Remote Operation;	W / R	–
		–	3	Local/Remote Operation;	W / R	–
		–	4	Blockage Operation;	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
–	–	–		Register – Enable and/or Disable Regulation Set.	–	
0		0	0	Disable Regulation Set 1;	W / R	–
			1	Enable Regulation Set 1;	W / R	–
1		1	0	Disable Regulation Set 2;	W / R	–
			1	Enable Regulation Set 2;	W / R	–
2		2	0	Disable Regulation Set 3;	W / R	–
			1	Enable Regulation Set 3;	W / R	–
3		3	0	Disable Regulation Set 4;	W / R	–
			1	Enable Regulation Set 4;	W / R	–
4		4	0	Disable Regulation Set 5;	W / R	–
			1	Enable Regulation Set 5;	W / R	–
5		5	0	Disable Regulation Set 6;	W / R	–
			1	Enable Regulation Set 6;	W / R	–
6		6	0	Disable Regulation Set 7;	W / R	–
			1	Enable Regulation Set 7;	W / R	–
7		7	0	Disable Regulation Set 8;	W / R	–
			1	Enable Regulation Set 8;	W / R	–
10	400 to 2800	–		Rated Voltage Reg.Set.1	W / R	1:10
11	1 to 100	–		Maximum Deviation Percent Step 1; Reg.Set.1	W / R	1:10
12	0 to 100	–		Maximum Deviation Percent Step 2; Reg.Set.1	W / R	1:10
13	0 to 100	–		Maximum Deviation Percent Step 3; Reg.Set.1	W / R	1:10
14	0 to 2	–		Register – Timing Type Reg.Set.1	–	
		–	0	Inverse timing; Reg.Set.1	W / R	–
		–	1	Linear Timing; Reg.Set.1	W / R	–
		–	2	Step timing; Reg.Set.1	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
15	0 to 180	–		Time to raise step 1 (seconds);	Reg.Set.1	W / R	1:1
16	0 to 180	–		Time to raise step 2 (seconds);	Reg.Set.1	W / R	1:1
17	0 to 180	–		Time to raise step 3 (seconds);	Reg.Set.1	W / R	1:1
18	0 to 180	–		Time to lower step 1 (seconds);	Reg.Set.1	W / R	1:1
19	0 to 180	–		Time to lower step 2 (seconds);	Reg.Set.1	W / R	1:1
20	0 to 180	–		Time to lower step 3 (seconds);	Reg.Set.1	W / R	1:1
21	0 to 180	–		Subsequent Time	Reg.Set.1	W / R	1:1
22	0 to 180	–		Register – Line Fall Compensation Time – LDC	Reg.Set.1	–	
	0 to 180	–	0	Compensation – Z;	Reg.Set.1	W / R	–
	0 to 180	–	1	Compensation – RX;	Reg.Set.1	W / R	–
23	0 to 500	–		Line fall resistive component; – Volts;	Reg.Set.1	W / R	–250:10
24	0 to 500	–		Line fall reactive component; – Volts;	Reg.Set.1	W / R	–250:10
25	0 to 150	–		Line fall percentage – Z Compensation;	Reg.Set.1	W / R	1:10
26	1 to 250	–		Maximum line percentage Compensation;	Reg.Set.1	W / R	1:10
40	400 to 2800	–		Ratio Voltage	Reg.Set.2	W / R	1:10
41	1 to 100	–		Line fall resistive component; – Volts;	Reg.Set.1	W / R	1:10
42	1 to 100	–		Line fall reactive component; – Volts;	Reg.Set.1	W / R	1:10
43	1 to 100	–		Line fall percentage – Z Compensation;	Reg.Set.1	W / R	1:10
44	0 to 2	–		Register – Timing type.	Reg.Set.2	–	
		–	0	Inverse timing;	Reg.Set.2	W / R	–
		–	1	Linear timing;	Reg.Set.2	W / R	–
		–	2	Step Timing;	Reg.Set.2	W / R	–
45	0 to 180	–		Step 1 raising time (seconds);	Reg.Set.2	W / R	1:1
46	0 to 180	–		Step 2 raising time (seconds);	Reg.Set.2	W / R	1:1
47	0 to 180	–		Step 3 raising time (seconds);	Reg.Set.2	W / R	1:1

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
48	0 to 180	–		Step 1 lower time (seconds);	Reg.Set.2	W / R	1:1
49	0 to 180	–		Step 2 lower time (seconds);	Reg.Set.2	W / R	1:1
50	0 to 180	–		Step 3 lower time (seconds);	Reg.Set.2	W / R	1:1
51	0 a 30	–		Subsequent time (Seconds);	Reg.Set.2	W / R	1:1
52	0 to 1	–		Register – Line Fall Compensation Time – LDC	Reg.Set.2	–	
		–	0	Compensation – Z;	Reg.Set.2	W / R	–
		–	1	Compensation – RX;	Reg.Set.2	W / R	–
53	0 to 500	–		Line fall resistive componente – Volts;	Reg.Set.2	W / R	–250:10
54	0 to 500	–		Line fall reactive componente – Volts;	Reg.Set.2	W / R	–250:10
55	0 to 150	–		Line fall percentage – Compensation Z;	Reg.Set.2	W / R	1:10
56	1 to 250	–		Maximum compensation percentage.	Reg.Set.2	W / R	1:10
57	0 to 23	–		Regulation starting hour;	Reg.Set.2	W / R	1:1
58	0 a 59	–		Regulation starting minute;	Reg.Set.2	W / R	1:1
59	0 to 23	–		Regulation final hour;	Reg.Set.2	W / R	1:1
60	0 a 59	–		Regulation final minute;	Reg.Set.2	W / R	1:1
61	0 a 7	–		Register – Regulation day;	Reg.Set.2	W / R	1:1
		–	0	Regulation Set – Daily;	Reg.Set.2	W / R	–
		–	1	Regulation Set – Sunday;	Reg.Set.2	W / R	–
		–	2	Regulation Set – Monday;	Reg.Set.2	W / R	–
		–	3	Regulation Set – Tuesday;	Reg.Set.2	W / R	–
		–	4	Regulation Set – Wednesday;	Reg.Set.2	W / R	–
		–	5	Regulation Set – Thursday;	Reg.Set.2	W / R	–
		–	6	Regulation Set – Friday;	Reg.Set.2	W / R	–
		–	7	Regulation Set – Saturday;	Reg.Set.2	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
62	0 to 1	–		Register – Hour Calendar	Reg.Set.2	–	
		–	0	Turn off Regulation Set by the Hour and Calendar;	Reg.Set.2	W / R	–
		–	1	Turn on Regulation Set by the Hour and Calendar;	Reg.Set.2	W / R	–
70	400 to 2800	–		Rated Voltage;	Reg.Set.3	–	
71	1 to 100	–		Maximum Deviation Percentage – Step 1;	Reg.Set.3	W / R	–
72	0 to 100	–		Maximum Deviation Percentage – Step 2;	Reg.Set.3	W / R	–
73	0 to 100	–		Maximum Deviation Percentage – Step 3;	Reg.Set.3	W / R	–
74	0 to 2	–		Register – Timing type;	Reg.Set.3	W / R	–
			0	Inverse Timing;	Reg.Set.3	W / R	–
			1	Linear Timing;	Reg.Set.3	W / R	–
			2	Step Timing;	Reg.Set.3	W / R	–
75	0 to 180	–		Step 1 raising time (Seconds);	Reg.Set.3	W / R	1:1
76	0 to 180	–		Step 2 raising time (Seconds);	Reg.Set.3	W / R	1:1
77	0 to 180	–		Step 3 raising time (Seconds);	Reg.Set.3	W / R	1:1
78	0 to 180	–		Step 1 lower time (Seconds);	Reg.Set.3	W / R	1:1
79	0 to 180	–		Step 2 lower time (Seconds);	Reg.Set.3	W / R	1:1
80	0 to 180	–		Step 3 lower time (Seconds);	Reg.Set.3	W / R	1:1
81	0 a 30	–		Subsequent time (Seconds);	Reg.Set.3	W / R	1:1
82	0 to 1	–		Register – Line fall Compensation Time – LDC;	Reg.Set.3	–	
		0		Compensation – Z;	Reg.Set.3	W / R	–
		1		Compensation – RX;	Reg.Set.3	W / R	–
83	0 to 500	–		Line fall resistance component – Volts;	Reg.Set.3	W / R	–250:10
84	0 to 500	–		Line fall reactive component – Volts;	Reg.Set.3	W / R	–250:10
85	0 to 150	–		Line fall percentage – Z Compensation;	Reg.Set.3	W / R	1:10
86	0 to 250	–		Maximum compensation percentage;	Reg.Set.3	W / R	1:10

SERIAL COMMUNICATION

DNP3 L2f Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
87	0 to 23	–		Regulation Starting Hour;	Reg.Set.3	W / R	1:1
88	0 to 59	–		Regulation Starting Minute;	Reg.Set.3	W / R	1:1
89	0 to 23	–		Regulation Final Hour;	Reg.Set.3	W / R	1:1
90	0 a 59	–		Regulation Final Minute;	Reg.Set.3	W / R	1:1
91	0 a 7	–		Register – Regulation day.	Reg.Set.3	W / R	1:1
		–	0	Regulation Set – Daily;	Reg.Set.3	W / R	–
		–	1	Regulation Set – Sunday;	Reg.Set.3	W / R	–
		–	2	Regulation Set – Monday;	Reg.Set.3	W / R	–
		–	3	Regulation Set – Tuesday;	Reg.Set.3	W / R	–
		–	4	Regulation Set – Wednesday;	Reg.Set.3	W / R	–
		–	5	Regulation Set – Thursday;	Reg.Set.3	W / R	–
		–	6	Regulation Set – Friday;	Reg.Set.3	W / R	–
		–	7	Regulation Set – Saturday;	Reg.Set.3	W / R	–
92	0 to 1	–		Register – Hour Calendar	Reg.Set.3	–	
		–	0	Turn on Regulation Set by the Hour and Calendar;	Reg.Set.4	W / R	–
		–	1	Turn on Regulation Set by the Hour and Calendar;	Reg.Set.4	W / R	–
100	400 to 2800	–		Rated Voltage;	Reg.Set.4	W / R	–
101	1 to 100	–		Maximum Deviation Percentage – Step 1;	Reg.Set.4	W / R	–
102	0 to 100	–		Maximum Deviation Percentage – Step 2;	Reg.Set.4	W / R	–
103	0 to 100	–		Maximum Deviation Percentage – Step 3;	Reg.Set.4	W / R	–
104	0 to 2	–		Register – Timing type;	Reg.Set.4	W / R	–
		–	0	Inverse Timing;	Reg.Set.4	W / R	–
		–	1	Linear Timing;	Reg.Set.4	W / R	–
		–	2	Step Timing;	Reg.Set.4	W / R	–
105	0 to 180	–		Step 1 raising time (Seconds);	Reg.Set.4	W / R	1:1

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
106	0 to 180	–		Step 2 Raise Time; (Seconds)	Reg.Set.4	W / R	1:1
107	0 to 180	–		Step 3 Raise Time; (Seconds)	Reg.Set.4	W / R	1:1
108	0 to 180	–		Step 1 Lower Time; (Seconds)	Reg.Set.4	W / R	1:1
109	0 to 180	–		Step 2 Lower Time; (Seconds)	Reg.Set.4	W / R	1:1
110	0 to 180	–		Step 3 Lower Time; (Seconds)	Reg.Set.4	W / R	1:1
111	0 a 30	–		Subsequent Time; (Seconds)	Reg.Set.4	W / R	1:1
112	0 to 1	–		Register – Line fall compensation time – LDC	Reg.Set.4	–	
		0		Compensation – Z;	Reg.Set.4	W / R	–
		1		Compensation – RX;	Reg.Set.4	W / R	–
113	0 to 500	–		Line fall resistance component – Volts;	Reg.Set.4	W / R	–250:10
114	0 to 500	–		Line fall reactive component – Volts;	Reg.Set.4	W / R	–250:10
115	0 to 150	–		Line fall percentage – Z Compensation;	Reg.Set.4	W / R	1:10
116	1 to 250	–		Maximum compensation percentage;	Reg.Set.4	W / R	1:10
117	0 to 23	–		Regulation Starting Hour;	Reg.Set.4	W / R	1:1
118	0 a 59	–		Regulation Starting Minute;	Reg.Set.4	W / R	1:1
119	0 to 23	–		Regulation Final Hour;	Reg.Set.4	W / R	1:1
120	0 a 39	–		Regulation Final Minute;	Reg.Set.4	W / R	1:1
121	0 a 7	–		Register – Regulation day.;	Reg.Set.4	W / R	1:1
		–	0	Regulation Set – Daily;	Reg.Set.4	W / R	–
		–	1	Regulation Set – Sunday;	Reg.Set.4	W / R	–
		–	2	Regulation Set – Monday;	Reg.Set.4	W / R	–
		–	3	Regulation Set – Tuesday;	Reg.Set.4	W / R	–
		–	4	Regulation Set – Wednesday;	Reg.Set.4	W / R	–
		–	5	Regulation Set – Thursday;	Reg.Set.4	W / R	–
		–	6	Regulation Set – Friday;	Reg.Set.4	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
121	0 a 7	–	7	Regulation Set – Saturday; (Seconds)	Reg.Set.4	W / R	–
122	0 to 2	–		Register – Timing type;	Reg.Set.5	–	
		–	0	Turn Off Regulation Set by the Hour and Calendar;	Reg.Set.5	W / R	–
		–	1	Turn on Regulation Set by the Hour and Calendar;	Reg.Set.5	W / R	–
130	400 to 2800	–		Rated Voltage;	Reg.Set.5	W / R	1:10
131	1 to 100	–		Maximum Deviation Percentage – Step 1;	Reg.Set.5	W / R	1:10
132	0 to 100	–		Maximum Deviation Percentage – Step 2;	Reg.Set.5	W / R	1:10
133	0 to 100	–		Maximum Deviation Percentage – Step 3;	Reg.Set.5	W / R	1:10
134	0 to 2	–		Register – Timing type;	Reg.Set.5	–	
		0		Inverse Timing;	Reg.Set.5	W / R	–
		1		Linear Timing;	Reg.Set.5	W / R	–
		2		Step Timing;	Reg.Set.5	W / R	–
135	0 to 180	–		Step 1 raising time (Seconds);	Reg.Set.5	W / R	1:1
136	0 to 180	–		Step 2 raising time (Seconds);	Reg.Set.5	W / R	1:1
137	0 to 180	–		Step 3 raising time (Seconds);	Reg.Set.5	W / R	1:1
138	0 to 180	–		Step 1 lower time (Seconds);	Reg.Set.5	W / R	1:1
139	0 to 180	–		Step 2 lower time (Seconds);	Reg.Set.5	W / R	1:1
140	0 to 180	–		Step 3 lower time (Seconds);	Reg.Set.5	W / R	1:1
141	0 to 180	–		Subsequent time (Seconds);	Reg.Set.5	W / R	1:1
142	0 to 1	–		Register – Regulation day.	Reg.Set.5	–	
		–	0	Compensation – Z;	Reg.Set.5	W / R	–
		–	1	Compensation – RX;	Reg.Set.5	W / R	–
143	0 to 500	–		Line fall resistive component – Volts;	Reg.Set.5	W / R	–250:10
144	0 to 500	–		Line fall reactive component – Volts;	Reg.Set.5	W / R	–250:10
145	0 to 150	–		Line fall percentage – Z Compensation;	Reg.Set.5	W / R	1:10

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
146	1 to 250	–		Maximum compensation percentage;	Reg.Set.5	W / R	1:10
147	0 to 23	–		Regulation Starting Hour;	Reg.Set.5	W / R	1:1
148	0 a 59	–		Regulation Starting Minute;	Reg.Set.5	W / R	1:1
149	0 to 23	–		Regulation Final Hour;	Reg.Set.5	W / R	1:1
150	0 a 59	–		Regulation Final Minute;	Reg.Set.5	W / R	1:1
151	0 a 7	–		Register – Regulation day.	Reg.Set.5	–	
		–	0	Regulation Set – Daily;	Reg.Set.5	W / R	–
		–	1	Regulation Set – Sunday;	Reg.Set.5	W / R	–
		–	2	Regulation Set – Monday;	Reg.Set.5	W / R	–
		–	3	Regulation Set – Tuesday;	Reg.Set.5	W / R	–
		–	4	Regulation Set – Wednesday;	Reg.Set.5	W / R	–
		–	5	Regulation Set – Thursday;	Reg.Set.5	W / R	–
		–	6	Regulation Set – Friday;	Reg.Set.5	W / R	–
		–	7	Regulation Set – Sunday;	Reg.Set.5	W / R	–
152	0 to 2	–		Register – Hour Calendar	Reg.Set.6	W / R	–
		–	0	Rated Voltage;	Reg.Set.5	W / R	–
		–	1	Shut down Regulation Set by the Hour;	Reg.Set.5	W / R	–
		–	2	Turn on Regulation Set by the Hour and Calendar;	Reg.Set.5	W / R	–
160	400 to 2800	–		Rated Voltage;	Reg.Set.6	W / R	1:10
161	1 to 100	–		Maximum Deviation Percentage – Step 1;	Reg.Set.6	W / R	1:10
162	0 to 100	–		Maximum Deviation Percentage – Step 2;	Reg.Set.6	W / R	1:10
163	0 to 100	–		Maximum Deviation Percentage – Step 3;	Reg.Set.6	W / R	1:10
164	0 to 2	–		Register – Timing type;	Reg.Set.6	–	
		–	0	Inverse Timing;	Reg.Set.6	W / R	–
		–	1	Linear Timing;	Reg.Set.6	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
164	0 to 2	–	2	Step Timing;	Reg.Set.6	W / R	1:1
165	0 to 180	–		Step 1 raising time (Seconds);	Reg.Set.6	W / R	1:1
166	0 to 180	–		Step 2 raising time (Seconds);	Reg.Set.6	W / R	1:1
167	0 to 180	–		Step 3 raising time (Seconds);	Reg.Set.6	W / R	1:1
168	0 to 180	–		Step 1 lower time (Seconds);	Reg.Set.6	W / R	1:1
169	0 to 180	–		Step 2 lower time (Seconds);	Reg.Set.6	W / R	1:1
170	0 to 180	–		Step 3 lower time (Seconds);	Reg.Set.6	W / R	1:1
171	0 to 180	–		Subsequent time (Seconds);	Reg.Set.6	W / R	1:1
172	0 to 1	–		Register – Line fall compensation time – LDC	Reg.Set.6	–	
		–	0	Compensation – Z	Reg.Set.6	W / R	–
		–	1	Compensation – RX	Reg.Set.6	W / R	–
173	0 to 500	–		Line fall resistance component – Volts;	Reg.Set.6	W / R	–250:10
174	0 to 500	–		Line fall reactive component – Volts;	Reg.Set.6	W / R	–250:10
175	0 to 150	–		Line fall component – Z Compensation;	Reg.Set.6	W / R	1:10
176	1 to 250	–		Maximum compensation percentage;	Reg.Set.6	W / R	1:10
177	0 to 23	–		Regulation Starting Hour;	Reg.Set.6	W / R	1:1
178	0 a 59	–		Regulation Starting Minute;	Reg.Set.6	W / R	1:1
179	0 to 23	–		Regulation Final Hour;	Reg.Set.6	W / R	1:1
180	0 a 59	–		Regulation Final Minute;	Reg.Set.6	W / R	1:1
181	0 a 7	–		Register – Regulation day.;	Reg.Set.6	W / R	1:1
		–	0	Regulation Set – Daily;	Reg.Set.6	1:1	–
		–	1	Regulation Set – Sunday;	Reg.Set.6	1:1	–
		–	2	Regulation Set – Monday;	Reg.Set.6	W / R	–
		–	3	Regulation Set – Tuesday;	Reg.Set.6	W / R	–
		–	4	Regulation Set – Wednesday;	Reg.Set.6	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
181	0 a 7	–	5	Regulation Set – Thursday;	Reg.Set.6	W / R	–
		–	6	Regulation Set – Friday;	Reg.Set.6	W / R	–
		–	7	Regulation Set – Sunday;	Reg.Set.6	W / R	–
182	0 to 1	–		Register – Hour Calendar	Reg.Set.6	–	
		–	0	Turn on Regulation Set by the Hour and Calendar;	Reg.Set.6	W / R	–
		–	1	Turn on Regulation Set by the Hour and Calendar;	Reg.Set.6	W / R	–
190	400 to 2800	–		Rated Voltage;	Reg.Set.7	W / R	–
191	1 to 100	–		Maximum Deviation Percentage – Step 1;	Reg.Set.7	W / R	–
192	1 to 100	–		Maximum Deviation Percentage – Step 2;	Reg.Set.7	W / R	–
193	1 to 100	–		Maximum Deviation Percentage – Step 3;	Reg.Set.7	W / R	–
194	0 to 2	–		Register – Timing type;	Reg.Set.7	W / R	–
		–	0	Inverse Timing;	Reg.Set.7	W / R	–
		–	1	Linear Timing;	Reg.Set.7	W / R	–
		–	2	Step Timing;	Reg.Set.7	W / R	–
195	0 to 180	–		Step 1 raising time (Seconds);	Reg.Set.7	W / R	1:1
196	0 to 180	–		Step 2 raising time (Seconds);	Reg.Set.7	W / R	1:1
197	0 to 180	–		Step 3 raising time (Seconds);	Reg.Set.7	W / R	1:1
198	0 to 180	–		Step 1 lower time (Seconds);	Reg.Set.7	W / R	1:1
199	0 to 180	–		Step 2 lower time (Seconds);	Reg.Set.7	W / R	1:1
200	0 to 180	–		Step 3 lower time (Seconds);	Reg.Set.7	W / R	1:1
201	0 a 30	–		Subsequent time (Seconds);	Reg.Set.7	W / R	1:1
202	0 to 1	–		Register – Line fall Compensation Time – LDC	Reg.Set.7	–	
		–	0	Compensation – Z;	Reg.Set.7	W / R	–
		–	1	Compensation – RX;	Reg.Set.7	W / R	–
203	0 a 300	–	–	Line fall resistive component – Volts;	Reg.Set.7	W / R	–250:10

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
204	0 a 300	–		Line fall reactive component – Volts	Reg.Set.7	W / R	–250:10
205	0 a 300	–		Line fall percentage – Z Compensation	Reg.Set.7	W / R	1:10
206	0 a 300	–		Maximum compensation percentage;	Reg.Set.7	W / R	1:10
207	0 a 300	–		Regulation Starting Hour;	Reg.Set.7	W / R	1:1
208	0 a 300	–		Regulation Starting Minute;	Reg.Set.7	W / R	1:1
209	0 a 300	–		Final Hour Regulation;	Reg.Set.7	W / R	1:1
210	0 a 300	–		Minuto Final da Regulação.	Reg.Set.7	W / R	1:1
211	0 a 7	–		Register – Regulation day;	Reg.Set.7	W / R	1:1
		–	0	Regulation Set – Daily;	Reg.Set.7	W / R	–
		–	1	Regulation Set – Sunday;	Reg.Set.7	W / R	–
		–	2	Regulation Set – Monday;	Reg.Set.7	W / R	–
		–	3	Regulation Set – Tuesday;	Reg.Set.7	W / R	–
		–	4	Regulation Set – Wednesday;	Reg.Set.7	W / R	–
		–	5	Regulation Set – Thursday;	Reg.Set.7	W / R	–
		–	6	Regulation Set – Friday;	Reg.Set.7	W / R	–
		–	7	Regulation Set – Sunday;	Reg.Set.7	W / R	–
212	0 to 1	–		Register – Hour Calendar	Reg.Set.7	W / R	–
		–	0	Turn Off Regulation Set by the Hour and Calendar;	Reg.Set.7	W / R	–
		–	1	Turn on Regulation Set by the Hour and Calendar;	Reg.Set.7	W / R	–
214	–	–		Register – Turn on Regulation Set by the Hour and Calendar;		–	
		0	1	Intermediate Position 1– Enabled;		W / R	–
		1	1	Intermediate Position 2 – Enabled;		W / R	–
		2	1	Intermediate Position 3 – Enabled;		W / R	–
		3	1	Intermediate Position 4 – Enabled;		W / R	–
		4	1	Intermediate Position 5 – Enabled;		W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
215	–50 to 50	–		Intermediate Position Initial Percentage 1;		W / R	–100
216	–50 to 50	–		Intermediate Position Initial Percentage 2;		W / R	–100
217	–50 to 50	–		Intermediate Position Initial Percentage 3;		W / R	–100
218	–50 to 50	–		Intermediate Position Initial Percentage 4;		W / R	–100
219	–50 to 50	–		Intermediate Position Initial Percentage 5;		W / R	–100
220	400 to 2800	–		Rated Voltage;	Reg.Set.8	W / R	–100
221	1 to 100	–		Maximum Deviation Percentage – Step 1;	Reg.Set.8	W / R	1:10
222	0 to 100	–		Maximum Deviation Percentage – Step 2;	Reg.Set.8	W / R	1:10
223	0 to 100	–		Maximum Deviation Percentage – Step 3;	Reg.Set.8	W / R	1:10
224	0 to 2	–		Register – Timing type;	Reg.Set.8	–	
		–	0	Inverse Timing;	Reg.Set.8	W / R	–
		–	1	Linear Timing;	Reg.Set.8	W / R	–
		–	2	Step Timing;	Reg.Set.8	W / R	–
225	0 to 180	–		Step 1 raising time (Seconds);	Reg.Set.8	W / R	1:1
226	0 to 180	–		Step 2 raising time (Seconds);	Reg.Set.8	W / R	1:1
227	0 to 180	–		Step 3 raising time (Seconds);	Reg.Set.8	W / R	1:1
228	0 to 180	–		Step 1 lower time (Seconds);	Reg.Set.8	W / R	1:1
229	0 to 180	–		Step 2 lower time (Seconds);	Reg.Set.8	W / R	1:1
230	0 to 180	–		Step 3 lower time (Seconds);	Reg.Set.8	W / R	1:1
231	0 a 30	–		Subsequent time (Seconds);	Reg.Set.8	W / R	1:1
232	0 to 1	–		Register – Line fall Compensation Time – LDC;	Reg.Set.8	–	
		–	0	Compensation – Z;	Reg.Set.8	W / R	–
		–	1	Compensation – RX;	Reg.Set.8	W / R	–
233	0 to 500	–		Line fall resistance component – Volts;	Reg.Set.8		–250:10
234	0 to 500	–		Line fall reactive component – Volts	Reg.Set.8		–250:10

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
235	0 to 150	–		Intermediate Position Initial Percentage 1;	Reg.Set.8	W / R	1:10
236	1 to 250	–		Maximum compensation percentage;	Reg.Set.8	W / R	1:10
237	0 to 23	–		Regulation Starting Hour;	Reg.Set.8	W / R	1:1
238	0 a 59	–		Regulation Starting Minute;	Reg.Set.8	W / R	1:1
239	0 to 23	–		Regulation Final Hour;	Reg.Set.8	W / R	1:1
240	0 a 59	–		Regulation Final Number;	Reg.Set.8	W / R	1:1
241	0 a 7	–		Register – Regulation day.	Reg.Set.8	W / R	1:1
		–	0	Regulation Set – Daily;	Reg.Set.8	W / R	–
		–	1	Regulation Set – Sunday;	Reg.Set.8	W / R	–
		–	2	Regulation Set – Monday;	Reg.Set.8	W / R	–
		–	3	Regulation Set – Tuesday;	Reg.Set.8	W / R	–
		–	4	Regulation Set – Wednesday;	Reg.Set.8	W / R	–
		–	5	Regulation Set – Thursday;	Reg.Set.8	W / R	–
		–	6	Regulation Set – Friday;	Reg.Set.8	W / R	–
		–	7	Regulation Set – Saturday;	Reg.Set.8	W / R	–
242	0 to 1	–		Register – Hour Calendar	Reg.Set.8	–	
		–	0	Turn Off Regulation Set by the Hour and Calendar;	Reg.Set.8	W / R	–
		–	1	Turn On Regulation Set by the Hour and Calendar;	Reg.Set.8	W / R	–
245	1 a 10	–		Operations Numbers of Intermediate Position 1;		W / R	1:1
246	1 a 10	–		Operations Numbers of Intermediate Position 2;		W / R	1:1
247	1 a 10	–		Operations Numbers of Intermediate Position 3;		W / R	1:1
248	1 a 10	–		Operations Numbers of Intermediate Position 4;		W / R	1:1
249	1 a 10	–		Operations Numbers of Intermediate Position 5;		W / R	1:1
250	10 a 99	–		Undervoltage Block Percentage;		W / R	1:1
251	0 to 250	–		Undervoltage Hysteresis Percentage;		W / R	1:10

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
252	0 to 1200	–		Undervoltage time delay blockage;	W / R	1:1
253	101 a 199	–		Overvoltage blockage percentage;	W / R	1:1
254	0 to 250	–		Overvoltage blockage hysteresis;	W / R	1:10
255	0 to 1200	–		Delay time for overvoltage blocking;	W / R	1:1
256	101 a 199	–		Over Current blockage percentage;	W / R	1:1
257	0 to 250	–		Over Current Hysteresis;	W / R	1:10
258	0 to 1200	–		Undervoltage time delay blockage;	W / R	1:1
–	–	–		Register – Phase Reading of Electrical Current;	–	
16	–	0	0	Phase Current Reading A Disable;	W / R	–
			1	Phase Current Reading A Enabled;	W / R	–
17		1	0	Phase Current Reading B Disabled;	W / R	–
			1	Phase Current Reading B Enabled;	W / R	–
18		2	0	Phase Current Reading C Disabled;	W / R	–
			1	Phase Current Reading C Enabled;	W / R	–
–	–	–		Register – Phase Reading of Electrical Current;	W / R	–
32	–	0	0	Current Reading Phase A Disabled;	–	
			1	Current Reading Phase A Enabled;	W / R	–
33		1	0	Current Reading Phase B Disabled;	W / R	–
			1	Current Reading Phase B Enabled;	W / R	–
34		2	0	Current Reading Phase C Disabled;	W / R	–
			1	Current Reading Phase C Enabled;	W / R	–
262	1 a 9999	–		Rated Winding Current 1;	W / R	1:1000
263	1 a 9999	–		Rated Winding Current 2;	W / R	1:1000
264	1 a 9999	–		Rated Winding Current 3;	W / R	1:1000
265	1 a 9999	–		PT Ratio Phase A;	W / R	1:1

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
266	1 a 9999	–		PT Ratio Phase B;	W / R	1:1
267	1 a 9999	–		PT Ratio Phase C;	W / R	1:1
268	1 a 9999	–		Winding 1 CT Ratio;	W / R	1:1
269	1 a 9999	–		Winding 2 CT Ratio;	W / R	1:1
270	1 a 9999	–		Winding 3 CT Ratio;	W / R	1:1
–	–	–		Register – Squared Current Sum Alarm;	–	
275	0.01 a 99999.99	–	–	Squared Current Sum Alarm – LSB;	W / R	1:1000
276		–	–	Squared Current Sum Alarm – MSB;	W / R	
277	0 a 5	–		Register – Reference basis for maintenance warning – Electrical Current;	W / R	–
		–	0	Reference basis for maintenance warning – Daily;	W / R	–
		–	1	Reference basis for maintenance warning – Weekly;	W / R	–
		–	2	Reference basis for maintenance warning – Monthly;	W / R	–
		–	3	Reference basis for maintenance warning – Quarterly;	W / R	–
		–	4	Reference basis for maintenance warning – Semesterly;	W / R	–
		–	5	Reference basis for maintenance warning – Annual;	W / R	–
278	1 – 9999	–		Number of days to notice;	W / R	1:1
279	0 to 1	–		Register – Calculation basis for maintenance;	W / R	–
		–	0	Calculation over last operations;	W / R	–
		–	1	Total Calculation over TAP Changer last operations;	W / R	–
280	40 to 1000	–		Resistive Step;	W / R	1:10
281	0 to 1	–		Register – Initial Crown Step:	–	
		–	0	Starts from Zero Ohm;	W / R	–
		–	1	Starts from Resistive Step;	W / R	–
282	50 to 151	–		Initial Position of Potentiometric Crown;	W / R	– 100
283	50 to 151	–		Neutral Position of Potentiometric Crown;	W / R	– 100

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
284	50 to 151	–		Final Position of Potentiometric Crown;	W / R	–100
285	0 to 1	–		Register – Potentionetric Crown Indication Mode;		
		–	0	Numeric Mode;	W / R	–
		–	1	Alphanumeric Mode;	W / R	–
286	1 to 100	–		Commutation Time (Seconds);	–	1:1
–	–	–		Register – TAP Changer blockage	–	
48		0	0	Undervoltage Blocking Disabled;	W / R	–
			1	Undervoltage Blocking Enabled;	W / R	–
49		1	0	Overvoltage Blockage Disabled;	W / R	–
			1	Overvoltage Blockage Enabled;	W / R	–
50		2	0	Over current Blockage Disabled;	W / R	–
			1	Over Current Blockage Enabled;	W / R	–
51		5	0	Reverse Current Blockage Disable;	W / R	–
			1	Reverse Current Blockage Enabled;	W / R	–
52		6	0	Commutation Failure Blockage Disabled;	W / R	–
			1	Commutation Failure Blockage Enabled;	W / R	–
288	0 a 5	–		Register – Reference basis for maintenance warning – Commutation;	–	
		–	0	Reference basis for maintenance warning – Daily;	W / R	–
		–	1	Reference basis for maintenance warning – Weekly;	W / R	–
		–	2	Reference basis for maintenance warning – Monthly;	W / R	–
		–	3	Reference basis for maintenance warning – Quarterly;	W / R	–
		–	4	Reference basis for maintenance warning – Semesterly;	W / R	–
		–	5	Reference basis for maintenance warning – Anual;	W / R	–
289	1 – 9999	–		Time numbers for TAP Changer Operation Numbers;	W / R	1:1
–				Register – Commutations Numbers for TAP Changer Maintenance	–	

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
290	0 to 16x10 ^{6}	–	–	Less Significative Value – TAP Changer Maintenance;	W / R	1:1
291		–	–	Most Significative Value – TAP Changer Maintenance;	W / R	1:1
292	1	–		Register – TAP Changer Raise Voltage Command;	–	
		–	1	Execute TAP Changer Raise Command;	W	–
293	1	–		Register – TAP Changer Raise Voltage Command;	–	
		–	1	Execute TAP Changer Raise Voltage Command;	W	–
294	0 to 1			Register – Sucessive Command type to TAP Changer.	–	
		–	0	TAP Changer Blockage;	W / R	–
		–	1	Return Previous Position and TAP Changer blockage;	W / R	–
300	0 a 3	–		Register – Parallelism Type;	W / R	–
		–	0	Parallelism Follower type mode (Slave);	W / R	–
		–	1	Parallelism Master type mode (Master);	W / R	–
		–	2	Parallelism in individual mode;	W / R	–
		–	3	Parallelism mode off;	W / R	–
301	0 a 0xFFFF	–		Equipment number on three–phase network;	W / R	1:1
302	0 a 0xFFFF	–		Equipment number on Transformer Bank;	W / R	1:1
303	0 to 255	–		Equipment address on Parallelism Network;	W / R	1:1
304	0 to 1	–	–	Register – Parallel Network Topology;	–	–
		–	0	Parallel Network Topology mode off;	–	–
		–	1	Parallel Network Topology mode on;	–	–
305	0 a 0xFFFF	–	–	Register – Equipment Status 1 to 16 in Parallel Network;	W / R	1:1
306	0 a 0xFFFF	–	–	Register – Equipment Status 17 to 31 in Parallel Network;	W / R	1:1
310	0 to 255	–	–	OLED Display Contrast;	W / R	1:1
311	0 to 1	–		Register – Display Write Mode;		–
		–	0	Black Display and White Write;	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
311	0 to 1	–	1	White Display and Black Write;	W / R	–
312	0 to 1	–		Register – Stand Alone de Regulação;	–	
		–	0	Stand Alone – Disabled;	W / R	–
		–	1	Stand Alone – Enabled;	W / R	–
313	0 to 1	–		Register – Communication Protocol;	–	
		–	0	Enables Communication Protocol DNP 3;	R	–
		–	1	Enables Communication Protocol – MODBUS ADDRESS;	R	–
314	0 to 254	–		Serial Communication Network Equipment Address;	R	1:1
315	0 a 6	–		Register – Serial Communication Speed (BaudRate);	–	
		–	0	Automatically Detects Communication Speed;	R	–
		–	1	Sets the communication speed at 2.400 bps;	R	–
		–	2	Sets the communication speed at 4.800 bps;	R	–
		–	3	Sets the communication speed at 9.600 bps;	R	–
		–	4	Sets the communication speed at 19.200 bps;	R	–
		–	5	Sets the communication speed at 38.400 bps;	R	–
		–	6	Sets the communication speed at 57.600bps;	R	–
316	0 to 2	–		Register – Communication Parity;	–	
		–	0	No Parity;	R	–
		–	1	Even Parity;	R	–
		–	2	Odd Parity;	R	–
317	0 to 1	–		Register – Write Protection;	W / R	–
		–	0	Disables Write Protection via RS485;	W / R	–
		–	1	Enables Write Protection via RS485;	W / R	–
319	0 to 180	–		Data Log Acquisition Time – Minutes;	W / R	1:1
320	0 a 59	–		Seconds;	R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
321	0 a 59	–		Minutes;	W / R	1:1
322	0 to 23	–		Hours;	W / R	1:1
323	1 a 7	–		Week day; 1 = Monday;	R	1:1
324	1 a 31	–		Month Day;	W / R	1:1
325	1 a 12	–		Month;	W / R	1:1
326	2016 a 2099	–		Year;	W / R	1:1
327	0 a 8	–		Register – Digital Input Type;	–	
		–	0	Digital Input Without Function;	W / R	–
		–	1	Digital input by Command;	W / R	–
		–	2	Digital Input by Regulation Set;	W / R	–
		–	3	Digital Input by regulation operation mode;	W / R	–
		–	8	Parallel Mode Digital Input;	W / R	–
328	0 to 9999	–		Password Reminder;	–	
330	0 a 4	–		Register – Analog Output Type;	–	
		–	0	0 to 1 mA Analog Output;	W / R	–
		–	1	0 to 5 mA Analog Output;	W / R	–
		–	2	0 to 10 mA Analog Output;	W / R	–
		–	3	0 to 20 mA Analog Output;	W / R	–
		–	4	4 to 20 mA Analog Output;	W / R	–
331	0 to 22	–		Register – Analog Output Mirroring 1;	–	
		–	0	Analog Ouput 1 Disabled;	W / R	–
		–	2	Electrical Current Phase A – Secondary;	W / R	–
		–	3	Electrical Current Phase B – Secundário	W / R	–
		–	4	Electrical Current Phase C – Secondary;	W / R	–
		–	5	Voltage on Phase A – Secondary;	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
331	0 to 22	–	6	Voltage on Phase B – Secondary;	W / R	–
		–	7	Voltage on Phase C – Secondary;	W / R	–
		–	8	Power Factor Phase A.	W / R	–
		–	9	Power Factor Phase B;	W / R	–
		–	10	Power Factor Phase C;	W / R	–
		–	11	Active Power Phase A;	W / R	–
		–	12	Active Power Phase B;	W / R	–
		–	13	Active Power Phase C;	W / R	–
		–	14	Reactive Power Phase A;	W / R	–
		–	15	Reactive Power Phase B;	W / R	–
		–	16	Reactive Power Phase C;	W / R	–
		–	17	Apparent Power A;	W / R	–
		–	18	Apparent Power B;	W / R	–
		–	19	Apparent Power C;	W / R	–
		–	20	Voltage Variation of Phase A – Secondary;	W / R	–
		–	21	Voltage Variation of Phase B – Secondary;	W / R	–
		–	22	Voltage Variation of Phase C – Secondary;	W / R	–
332	0 to 22	–		Register – Analog Output Mirroring 2: (Same as Analog Output 1)	W / R	–
333	0 to 22	–		Register – Analog Output Mirroring 3: (Same as Analog Output 1)	W / R	–
334	0 to 22	–		Register – Analog Output Mirroring 4: (Same as Analog Output 1)	W / R	–
335	0 to 22	–		Register – Analog Output Mirroring 5: (Same as Analog Output 1)	W / R	–
336	0 to 23	–		TAP Changer Execution Hours – Partial;	W / R	1:1
337	0 to 365	–		TAP Changer Execution Days – Partial;	W / R	1:1
338	0 to 9999	–		TAP Changer Execution Years – Partial;	W / R	1:1
340	0.0 to 10.0	–		Electrical Current Phase A – Secondary [A]; Min Range Analog Output	W / R	1:10

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name		Writing Reading	Scale
341	0.0 to 10.0	–		Electrical Current Phase B – Secondary [A];	Min Range Analog Output	W / R	1:10
342	0.0 to 10.0	–		Electrical Current Phase C – Secondary [A];	Min Range Analog Output	W / R	1:10
343	0.0 to 280.0	–		Voltage on Phase A – Secondary [V];	Min Range Analog Output	W / R	1:10
344	0.0 to 280.0	–		Voltage on Phase B – Secondary [V];	Min Range Analog Output	W / R	1:10
345	0.0 to 280.0	–		Voltage on Phase C – Secondary [V];	Min Range Analog Output	W / R	1:10
346	0.0 to 999.9	–		Active Power Phase A [W];	Min Range Analog Output	W / R	1:10
347	0.0 to 999.9	–		Active Power Phase B [W];	Min Range Analog Output	W / R	1:10
348	0.0 to 999.9	–		Active Power Phase C [W];	Min Range Analog Output	W / R	1:10
349	0.0 to 999.9	–		Reactive Power A [Var];	Min Range Analog Output	W / R	1:10
350	0.0 to 999.9	–		Reactive Power B [Var];	Min Range Analog Output	W / R	1:10
351	0.0 to 999.9	–		Reactive Power C [Var];	Min Range Analog Output	W / R	1:10
352	0.0 to 999.9	–		Apparent Power Phase A [VA];	Min Range Analog Output	W / R	1:10
353	0.0 to 999.9	–		Apparent Power Phase B [VA];	Min Range Analog Output	W / R	1:10
354	0.0 to 999.9	–		Apparent Power Phase C [VA];	Min Range Analog Output	W / R	1:10
356	0 to 23	–		TAP Changer Execution Hours – Total;		W / R	1:1
357	0 to 365	–		TAP Changer Execution Days – Total;		W / R	1:1
358	0 to 9999	–		TAP Changer Execution Years – Total;		W / R	1:1
359	0.0 to 10.0	–		Electrical Current Phase A – Secondary [A];	Max Range Analog Output	W / R	1:10
360	0.0 to 10.0	–		Electrical Current Phase B – Secondary [A];	Max Range Analog Output	W / R	1:10
361	0.0 to 10.0	–		Electrical Current Phase C – Secondary [A];	Max Range Analog Output	W / R	1:10
362	0.0 to 280.0	–		Voltage on Phase A – Secundário {V};	Max Range Analog Output	W / R	1:10
363	0.0 to 280.0	–		Voltage on Phase B – Secundário {V};	Max Range Analog Output	W / R	1:10
364	0.0 to 280.0	–		Voltage on Phase C – Secundário {V};	Max Range Analog Output	W / R	1:10
365	0.0 to 999.9	–		Active Power Phase A [W};	Max Range Analog Output	W / R	1:10
366	0.0 to 999.9	–		Active Power Phase B [W};	Max Range Analog Output	W / R	1:10

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
367	0.0 to 999.9	–		Active Power Phase B [W}; Max Range Analog Output	W / R	1:10
368	0.0 to 999.9	–		Active Power Phase C [W}; Max Range Analog Output	W / R	1:10
369	0.0 to 999.9	–		Reactive Power Phase [A]; Max Range Analog Output	W / R	1:10
370	0.0 to 999.9	–		Reactive Power Phase [B] Max Range Analog Output	W / R	1:10
371	0.0 to 999.9	–		Reactive Power Phase [C]; Max Range Analog Output	W / R	1:10
372	0.0 to 999.9	–		Apparent Power Phase A [VA]; Max Range Analog Output	W / R	1:10
373	0.0 to 999.9	–		Apparent Power Phase B [VA]; Max Range Analog Output	W / R	1:10
374	0.0 to 999.9	–		Apparent Power Phase C [VA]; Max Range Analog Output	W / R	1:10
379	0 to 1	–		Register – Display of quantities on Display Line OLED;	–	
		–	0	Display on Fix Mode;	W / R	–
		–	1	Display on Scan mode;	W / R	–
380	0 to 50	–		Register – Quantity Presentation on Display Line 1;	W / R	–
381	0 to 50	–		Register – Quantity Presentation on Display Line 2;	W / R	–
382	0 to 50	–		Register – Quantity Presentation on Display Line 3;	W / R	–
383	0 to 50	–		Register – Quantity Presentation on Display Line 4;	W / R	–
384	0 to 50	–		Register – Quantity Presentation on Display Line 5;	W / R	–
385	0 to 255			Register – Enable/Disable Quantity on display, Line 1;	W / R	–
		0	1	Enable Presentation on Line 1 – TAP Position Indication;	W / R	–
		1	1	Enable Presentation on Line 1 – Secondary Voltage Phase A;	W / R	–
		2	1	Enable Presentation on Line 1 – Primary Voltage on Phase A;	W / R	–
		.3	1	Enable Presentation on Line 1 – Secondary Voltage on Phase B;	W / R	–
		4	1	Enable Presentation on Line 1 – Primary Voltage on Phase B;	W / R	–
		5	1	Enable Presentation on Line 1 – Secondary Voltage on Phase C	W / R	–
		6	1	Enable Presentation on Line 1 – Primary Voltage on Phase C;	W / R	–
		7	1	Enable Presentation on Line 1 – Primary Apparent Power on Phase A;	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
386	0 to 255	–		Register – Enable/Disable Quantity on display – Line 1;	–	
		0	1	Enable Presentation on Line 1 – Current on Primary Phase A;	W / R	–
		1	1	Enable Presentation on Line 1 – Current on Secondary Phase B;	W / R	–
		2	1	Enable Presentation on Line 1 – Current on Primary Phase B;	W / R	–
		3	1	Enable Presentation on Line 1 – Current on Secondary C;	W / R	–
		4	1	Enable Presentation on Line 1 – Current on Secondary C;	W / R	–
		5	1	Enable Presentation on Line 1 – Apparent Power on Primary Phase A;	W / R	–
		6	1	Enable Presentation on Line 1 – Apparent Power on Secondary A;	W / R	–
		7	1	Enable Presentation on Line 1 – Apparent Power on Primary Phase B;	W / R	–
387	0 to 255	–		Register – Enable/Disable Quantity on display – Line 1;	–	
		0	1	Enable Presentation on Line 1 – Apparent Power on Secondary Phase B;	W / R	–
		1	1	Enable Presentation on Line 1 – Apparent Power on Primary Phase C;	W / R	–
		2	1	Enable Presentation on Line 1 – Apparent Power on Secondary Phase A;	W / R	–
		3	1	Enable Presentation on Line 1 – Active Power on Primary Phase A;	W / R	–
		4	1	Enable Presentation on Line 1 – Active Power on Secondary Phase A;	W / R	–
		5	1	Enable Presentation on Line 1 – Active Power on Primary Phase B;	W / R	–
		6	1	Enable Presentation on Line 1 – Active Power on Secondary Phase B;	W / R	–
		7	1	Enable Presentation on Line 1 – Active Power on Primary Phase C;	W / R	–
388	0 to 255	–		Register – Enable/Disable Quantity on display – Line 1;	–	
		0	1	Enable Presentation on Line 1 – Active Power on Secondary Phase C;	W / R	–
		1	1	Enable Presentation on Line 1 – Reactive Power on Primary Phase A;	W / R	–
		2	1	Enable Presentation on Line 1 – Reactive Power on Primary Phase B;	W / R	–
		3	1	Enable Presentation on Line 1 – Reactive Power on Secondary Phase B;	W / R	–
		4	1	Enable Presentation on Line 1 – Reactive Power on Primary Phase C;	W / R	–
		5	1	Enable Presentation on Line 1 – Reactive Power on Secondary Phase C;	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
388	0 to 255	6	1	Enable Presentation on Line 1 – Active Power on Secondary Phase B;	W / R	–
		7	1	Enable Presentation on Line 1 – Active Power on Primary Phase C;	W / R	–
389	0 to 255	–		Register – Enable/Disable Quantity on display – Line 1;	–	
		0	1	Enable Presentation on Line 1 – Power Factor Phase B;	W / R	–
		1	1	Enable Presentation on Line 1 – Power Factor Phase C;	W / R	–
		2	1	Enable Presentation on Line 1 – Compensated Voltage Phase A;	W / R	–
		3	1	Enable Presentation on Line 1 – Compensated Voltage Phase B;	W / R	–
		4	1	Enable Presentation on Line 1 – Compensated Voltage Phase C;	W / R	–
		5	1	Enable Presentation on Line 1 – Voltage Deviation Phase A;	W / R	–
		6	1	Enable Presentation on Line 1 – Voltage Deviation Phase B;	W / R	–
		7	1	Enable Presentation on Line 1 – Voltage Deviation Phase C;	W / R	–
390	0 to 255	–		Register – Enable/Disable Quantity on display – Line 1;	–	
		0	1	Enable Presentation on Line 1 – Compensated Voltage Deviation Phase A;	W / R	–
		1	1	Enable Presentation on Line 1 – Compensated Voltage Deviation Phase B;	W / R	–
		2	1	Enable Presentation on Line 1 – Compensated Voltage Deviation Phase C;	W / R	–
		3	1	Enable Presentation on Line 1 – Load Percentage Phase A;	W / R	–
		4	1	Enable Presentation on Line 1 – Load Percentage Phase B;	W / R	–
		5	1	Enable Presentation on Line 1 – Load Percentage Phase C;	W / R	–
		6	1	Enable Presentation on Line 1 – Reference Voltage;	W / R	–
		7	1	Enable Presentation on Line 1 – Line Frequency;	W / R	–
430	–	–		Register – Relay Actuation Function;	R	–
		–	1	Relay with Function Command;	–	
431	0 or 1	–		Register – Relay 1 Drive Logic;	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing/Reading	Scale
432	0 to 1	–		Register – Relay Drive Type;	–	
		–	0	Pulse;	R	–
		–	1	Constant;	R	–
433	0 to 5000	–		Relay Activation Time – miliseconds;	R	1:1
434	–	–		Register – Relay 1 Drive by Command;	R	
		–	1	Raise Voltage Command;	R	–
440	–	–		Relay with Function Command;	R	
		–	1	Register – Relay Actuation Type	R	–
441	0 or 1	–		Register – Relay Actuation Type	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–
442	0 or 1	–		Register – Relay Actuation Type;	–	
		–	0	Register – Relay Actuation Type;	R	–
		–	1	Pulse;	R	–
443	0 to 5000	–		Relay Actuation Time 2 – Miliseconds;	R	–
444	–	–		Register – Relay Actuation by Command;	–	
		0	1	Lower Voltage Command;	R	–
450		–		Register – Relay Actuation Function 3;	–	
		–	0	Relay without function;	R	–
		–	1	Relay with Function Command;	R	–
		–	2	Relay with Alarm Function;	R	–
		–	3	Relay with Failure Function;	R	–
451	0 or 1			Register – Relay Actuation Type 3;	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–
452	0 or 1	–		Register – Relay Actuation Type 3;	–	
		–	0	Pulse;	R	
		–	1	Constant;	R	
453	0 to 5000	–		Relay Actuation Time 3 – Miliseconds;	–	

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits/Index	State	Description / Point Name	Writing/Reading	Scale
–	0 – 1	–		Register – Relay 3 Actuation by Command:	–	
96		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
97		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–	0 – 63	–		Register – Acionamento do Relé 3 por Alarmes;	–	
96		0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–
97		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
98		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–
99		3	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
100		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
101		5	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
–	0 – 31	–		Register – Acionamento do Relé 3 por Falha;	W / R	–
96		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
98		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
99		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
100		3	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
101		4	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
460	0 a 3	–		Register – Relay Actuation Function 4;	–	
		–	0	Relay without Function;	W / R	–
		–	1	Relay with Function Command;	W / R	–
		–	2	Relay with Alarm Function;	W / R	–
		–	3	Relay with Failure Function;	W / R	–
461	0 or 1	–		Register – Relay 4 Actuation Logic;	–	
		–	0	Normal Logic;	W / R	–
		–	1	Inverse Logic;	W / R	–
462	0 to 2	–		Register – Relay Actuation Type 4;	–	
		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
463	0 to 5000	–		Relay 4 Actuation Time – miliseconds;	–	
–	0 a 63	–		Register – Relay 4 actuation by Alarm;	–	
112		0	0	Undervoltage OFF:	W / R	–
			1	Undervoltage ON;	W / R	–
113		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
114		2	0	Overcurrent OFF	W / R	–
			1	Overcurrent ON;	W / R	–
115		3	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
116		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
–	0 to 1	–		Register – Relay 4 Actuation by Command;	–	
112		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
113		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–	0 to 31	–		Register – Relay 4 Actuation by Failure;	–	
112		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
113		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
114		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
115		3	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
116		4	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–
470	0 – 3	–		Register – Relay Actuation Function 5;	–	
		–	0	Relay without Function;	R	–
		–	1	Relay with Function Command;	R	–
		–	2	Relay with Alarm Function;	R	–
		–	3	Relay with Failure Function;	R	–
471	0 to 1	–		Register – Relay 5 Actuation Logic;	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
472	0 to 1	–		Register – Relay 4 Actuation by Command.	–	
		–	0	Pulse;	R	–
		–	1	Constant;	R	–
473	0 to 5000	–		Relay 5 Actuation Time – Miliseconds;	R	1:1
–	0 to 2	–		Register – Relay 5 Actuation by Command;	W / R	–
128		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
129		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–	0 – 63	–		Register – Relay 5 Actuation by Alarm;		
128		0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–
129		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
130		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–
131		3	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
132		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
133		5	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
–	0 – 31	–		Register – Relay 5 Actuation by Failure;	–	
128		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
129	0 to 31	1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
130		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
131		3	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
132		4	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–
480	0 – 3	–		Register – Relay Actuation Function 6;	–	
		–	0	Relay without Function;	R	–
		–	1	Relay with Function Command;	R	–
		–	2	Relay with Alarm Function;	R	–
		–	3	Relay with Failure Function;	R	–
481	0 to 1	–		Register – Relay 6 Actuation Logic;	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–
482	0 – 2	–		Register – Relay 6 Actuation Type ;	–	
			0	Pulse;	R	–
			1	Constant;	R	–
483	0 to 500	–		Relay 6 Actuation Time– miliseconds;	R	1:1

SERIAL COMMUNICATION

DNP3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
–	0 a 63	–		Register – Relay 6 Actuation time by Command;	–	
144		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
145		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–		–		Register – Relay 6 Actuation by Alarm;	W / R	–
144		0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–
145		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
146		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–
147		3	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
148		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
149		5	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–
–	0 – 31	–		Register – Relay 6 Actuation by Failure;	–	
144		0	0	Register – Relay 6 Actuation by Failure;	W / R	–
			1	Compensation Limit OFF;	W / R	–
145		1	0	Compensation Limit ON;	W / R	–
			1	Reverse Current OFF;	W / R	–
146		2	0	Reverse Current ON;	W / R	–
			1	TAP Changer Failure OFF;	W / R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
147	0 – 31	3	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
148		4	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–
490	0 a 3	–		Register – Relay 7 Actuation Function;	–	
		–	0	Relay without Function;	W / R	–
		–	1	Relay with Function Command;	W / R	–
		–	2	Relay with Alarm Function;	W / R	–
		–	3	Relay with Failure Function;	W / R	–
491	–	–		Register – Relay 7 Actuation Logic	–	
		–	0	Normal Logic;	R	–
		–	1	Reverse Logic;	R	–
492	0 to 1	–		Register – Relay Actuation Type 7;	–	
		–	0	Normal;	W / R	–
		–	1	Inverse;	W / R	–
493	0 to 5000	–		Relay 7 Actuation Time – miliseconds;	R	1:1
–	0 – 2	–		Register – Relay 7 Actuation by Command;	–	
160		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
161		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–	0 – 63	–		Register – Relay 7 Actuation by Alarm;	–	
162		0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–
163		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
164		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
165	0 – 63	3	0	Compensation Limit OFF	W / R	–
			1	Compensation Limit ON	W / R	–
166		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
167		5	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
–	0 – 31	–		Register – Relay 7 actuation by Failure;	–	
160		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
161		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
162		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
163		3	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
164		4	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–
500	0 – 3	–		Register – Relay Actuation Function;	–	
		–	0	Relay without Function;	R	–
		–	1	Relay with Function Command;	R	–
		–	2	Relay with Alarm Function;	R	–
		–	3	Relay with Failure Function;	R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
501	0 to 1	–		Register – Relay 8 Actuation Logic;	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–
502	0 to 1	–		Register – Relay 8 Actuation by Command;	–	
		–	0	Pulse;	R	–
		–	1	Constant;	R	–
503	0 to 5000	–		Relay 8 Actuation Time – Miliseconds;	R	1:1
–	0 – 2	–		Register – Relay 8 Actuation by Command	–	
176		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
178		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–	0 – 63	–		Register – Relay 8 Actuation by Alarm;	–	
176		0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–
177		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
178		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–
179		3	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
180		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
181		5	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
–	0 to 31	–		Register – Relay 8 Actuation by Failure;	–	
176		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
177		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
178		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
179		3	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
180		4	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–
510	0 – 3	–		Register – Relay Actuation Function 9;	–	
		–	0	Relay without Function;	R	–
		–	1	Relay with Function Command;	R	–
		–	2	Relay with Alarm Function;	R	–
		–	3	Relay with Failure Function;	R	–
511	0 to 1	–		Register – Relay 9 Actuation Logic;	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–
512	0 to 1	–		Register – Relay 9 Actuation by Command;	–	
		–	0	Pulse;	R	–
		–	1	Constant;	R	–
513	0 to 5000	–		Relay 9 Actuation Time – Miliseconds;	R	1:1

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
–	0 – 2	–		Register – Relay 9 Actuation by Command;	–	
192		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
193		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–	0 – 63	–		Register – Relay 9 Actuation by Alarm;	–	
192		0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–
193		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
194		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–
195		3	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
196		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
197		5	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
–	0 to 31	–		Register – Relay 9 Actuation by Failure;	–	
192		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
193		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
194		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
195	0 to 31	3	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
196		4	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–
520	0 – 3	–		Register – Relay Actuation Function 10;	–	
		–	0	Relay without Function;	R	–
		–	1	Relay with Function Command;	R	–
		–	2	Relay with Alarm Function;	R	–
		–	3	Relay with Failure Function;	R	–
521	0 to 1	–		Register – Relay 10 Actuation Logic;	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–
522	0 to 1	–		Register – Relay 10 Actuation by Command;	–	
		–	0	Pulse;	R	–
		–	1	Constant;	R	–
523	0 to 5000	–		Relay 10 Actuation Time – Miliseconds;	R	1:1
–	0 – 2	–		Register – Relay 10 Actuation by Command;	–	
208		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
209		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–	0 – 3	–		Register – Relay 10 Actuation by Alarm;	–	
208		0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
209	0 – 3	1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
210		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–
211		3	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
212		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
213		5	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
–	0 to 31	–		Register – Relay 10 Actuation by Failure;	–	
208		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
209		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
210		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
211		3	0	TAP Changer Maintenance OFF;		
			1	TAP Changer Maintenance ON;		
212		4	0	Regulation Failure OFF;		
			1	Regulation Failure ON;		
530	0 – 3	–		Register – Relay Actuation Function 11;	–	
		–	0	Relay without Function;	R	–
		–	1	Relay with Function Command;	R	–
		–	2	Relay with Alarm Function;	R	–
		–	3	Relay with Failure Function;	R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
531	0 to 1	–		Register – Relay 11 Actuation logic;	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–
532	0 to 1	–		Register – Relay 11 Actuation by Command;	–	
		–	0	Pulse;	R	–
		–	1	Constant;	R	–
533	0 to 5000	–		Tempo de Acionamento do Relé 11 – milissegundos;	R	1:1
–	0 – 2	–		Register – Relay 10 Actuation by Command;	–	
224		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
225		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–	0 – 63	–		Register – Relay 11 Actuation by Alarm;	–	
224		0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–
225		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
226		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–
227		3	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
228		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
229		5	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
–	0 – 31	–		Register – Relay 11 Actuation by Failure;	–	
224		0	0	Compensation Limit OFF;	W / R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
224	0 – 31		1	Compensation Limit ON;	W / R	–
226		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
227		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
228		3	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
229		4	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
540	0 – 3	–		Register – Relay Actuation Function 12;	–	
		–	0	Relay without Function;	W / R	–
		–	1	Relay with Function Command;	W / R	–
		–	2	Relay with Alarm Function;	W / R	–
		–	3	Relay with Failure Function;	W / R	–
541	0 or 1	–		Register – Relay 12 Actuation Logic;	–	
		–	0	Normal Logic;	W / R	–
		–	1	Inverse Logic;	W / R	–
542	0 to 1	–		Register – Relay 12 Actuation by Command;	–	
		–	0	Pulse;	W / R	–
		–	1	Constant;	W / R	–
543	0 to 5000	–		Relay 12 Actuation Time – Miliseconds;	W / R	1:1
–	0 – 2	–		Register – Relay 10 Actuation by Command;	–	
240		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
241		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
242	0 – 63	–	–	Register – Relay 12 Actuation by Alarm;	–	

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
243	0 – 63	0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–
244		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
245		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–
246		3	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
247		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
248		5	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
–	0 to 31	–		Register – Relay 12 Actuation by Failulre;	–	
240		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
241		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
242		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
243		3	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
244		4	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
550	0 – 3	–		Register – Relay Actuation Function 13;	–	
		–	0	Relay without Function;	R	–
		–	1	Relay with Function Command;	R	–
		–	2	Relay with Alarm Function;	R	–
		–	3	Relay with Failure Function;	R	–
551	0 to 1	–		Register – Relay 13 Actuation Logic;	–	
		–	0	Normal Logic;	R	–
		–	1	Inverse Logic;	R	–
552	0 or 1	–		Register – Relay 13 Actuation by Command;	–	
		–	0	Pulse;	R	–
		–	1	Constant;	R	–
553	0 to 5000	–		Relay 13 Actuation Time – Miliseconds;	R	1:1
–	0 – 2	–		Register – Relay 13 Actuation by Command;	–	
256		0	0	Lower Voltage OFF;	W / R	–
			1	Lower Voltage ON;	W / R	–
257		1	0	Raise Voltage OFF;	W / R	–
			1	Raise Voltage ON;	W / R	–
–	0 – 63	–		Register – Relay 13 Actuation by Alarm;	–	
256		0	0	Undervoltage OFF;	W / R	–
			1	Undervoltage ON;	W / R	–
257		1	0	Overvoltage OFF;	W / R	–
			1	Overvoltage ON;	W / R	–
258		2	0	Overcurrent OFF;	W / R	–
			1	Overcurrent ON;	W / R	–
259		3	0	Compensation Limit OFF;	W / R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
259	0 – 63	3	1	Compensation Limit ON;	W / R	–
260		4	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
261		5	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
–	0 to 31	–		Register – Relay 13 Actuation by Failure;	–	
256		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
257		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
258		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
259		3	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
260		4	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–
560	0 – 3	–		Register – Relay Actuation Function 14;	–	
		–	3	Failures;	R	–
561	0 or 1	–		Register – Relay 14 Actuation Logic;	–	
		–	0	Normal Logic;	W / R	–
		–	1	Inverse Logic;	W / R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
–	0 to 31	–		Register – Relay 14 Actuation by Failure;	–	
272		0	0	Compensation Limit OFF;	W / R	–
			1	Compensation Limit ON;	W / R	–
273		1	0	Reverse Current OFF;	W / R	–
			1	Reverse Current ON;	W / R	–
274		2	0	TAP Changer Failure OFF;	W / R	–
			1	TAP Changer Failure ON;	W / R	–
275		3	0	TAP Changer Maintenance OFF;	W / R	–
			1	TAP Changer Maintenance ON;	W / R	–
276		4	0	Regulation Failure OFF;	W / R	–
			1	Regulation Failure ON;	W / R	–
570	–	–		Register – Status and Command of Equipment 1 to Parallelism:		
		–	0	Equipment on Follower Mode;	W / R	–
		–	2	Equipment on individual Mode;	W / R	–
		–	4	Min TAP Reset;	W	–
		–	5	Max TAP Reset;	W	–
		–	6	Raise TAP Command address 1;	W	–
		–	7	Lower TAP Command address 1;	W	–
		–	8	Failure/Synchronization on address 1;	W	–
		–	9	Equipament 1 Reset;	W	–
571	50 – 150	–		Current TAP Position on Address 1;	R	–100
572	50 – 150	–		Minimum TAP Position on Address 1;	R	–100
573	50 – 150	–		Maximum TAP Position on Address 1	R	–100

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
574	—	–		Register – Relay 14 actuation by Failure;	–	
		0	1	Crown Failure;	R	–
		1	1	TAP Changer Raise Failure;	R	–
		2	1	TAP Changer lower Failure;	R	–
		3	1	Synchronization Failure;	R	–
		4	1	Parallelism Communication Failure;	R	–
		5	1	TAP Changer Min TAP Failure;	R	–
		6	1	TAP Changer Max TAP Failure;	R	–
575	0 – 9	–	–	Register – Status and Command of Equipment 2 to Parallelism;	As Addr. 570	
576	50 – 150	–	–	Current TAP Position on Address 2;	R	–100
577	50 – 150	–	–	Minimum TAP Position on Address 2;	R	–100
578	50 – 150	–	–	Maximum TAP Position on Address 2;	R	–100
579	–	–	–	Register – Address Failure 2;	As Addr. 574	
580	0 – 9	–	–	Register – Status and Command of Equipment 3 to Parallelism;	As Addr. 570	
581	50 – 150	–	–	Current TAP Position on Address 3;	R	–100
582	50 – 150	–	–	Minimum TAP Position on Address 3;	R	–100
583	50 – 150	–	–	Maximum TAP Position on Address 3;	r	–100
584	–	–	–	Register – Address Failure 3;	As Addr. 574	
585	0 – 9	–	–	Register – Status and Command of Equipment 4 to Parallelism;	As Addr. 570	
586	50 – 150	–	–	Current TAP Position on Address 4;	R	– 100
587	50 – 150	–	–	Minimum TAP Position on Address 4.	R	– 100
588	50 – 150	–	–	Maximum TAP Position on Address 4;	R	– 100
589	–	–	–	Register – Address Failure 4;	As Addr. 574	
590	0 – 9	–	–	Register – Status and Command of Equipment 5 to Parallelism;	As Addr. 570	
591	50 – 150	–	–	Current TAP Position on Address 5;	R	–100

SERIAL COMMUNICATION

Endereço MODBUS	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
592	0 – 9	–	–	Minimum TAP Position on Address 5;	R	–100
593	50 – 150	–	–	Maximum TAP Position on Address 5;	R	–100
594	–	–	–	Register – Address Failure 5;		
595	0 – 9	–	–	Register – Status and Command of Equipment 6 to Parallelism;	As Addr. 570	
596	50 – 150	–	–	Current TAP Position on Address 6;	R	– 100
597	50 – 150	–	–	Minimum TAP Position on Address 6;	R	– 100
598	50 – 150	–		Maximum TAP Position on Address 6;	R	– 100
599	–	–	–	Register – Address Failure 6;		
600	0 – 9	–	–	Register – Status and Command of Equipment 7 to Parallelism;	As Addr. 570	
601	50 – 150	–	–	Current TAP Position on Address	R	– 100
602	50 – 150	–	–	Minimum TAP Position on Address 7;	R	– 100
603	50 – 150	–	–	Maximum TAP Position on Address 7;	R	– 100
604	–	–	–	Register – Address Failure 7;		
605	0 – 9	–	–	Register – Status and Command of Equipment 8 to Parallelism;	As Addr. 570	
606	50 – 150	–	–	Current TAP Position on Address	R	– 100
607	50 – 150	–	–	Minimum TAP Position on Address 8;	R	– 100
608	50 – 150	–	–	Maximum TAP Position on Address 8;	R	– 100
609	–	–	–	Register – Address Failure 8;		
610	0 – 9	–	–	Register – Status and Command of Equipment 9 to Parallelism;	As Addr. 570	
611	50 – 150	–	–	Current TAP Position on Address	R	– 100
612	50 – 150	–	–	Minimum TAP Position on Address 9;	R	– 100
613	50 – 150	–	–	Maximum TAP Position on Address 9;	R	– 100
614	–	–	–	Register – Address Failure 9;	–	
615	0 – 9	–	–	Register – Status and Command of Equipment 10 to Parallelism;	As Addr. 570	
616	50 – 150	0 – 9	–	Current TAP Position on Address 10;	R	– 100

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
617	50 – 150	–	–	Minimum TAP Position on Address 10;	R	– 100
618	50 – 150	–	–	Maximum TAP Position on Address 10;	R	– 100
619	–	–	–	Register – Address Failure 11;	–	
620	0 – 9	–	–	Registrador – Status e Comando no Equipamento 11 no Paralelismo;	As Addr. 570	
621	50 – 150	–	–	Register – Status and Command of Equipment 11 to Parallelism;	R	– 100
622	50 – 150	–	–	Current TAP Position on Address 11;	R	– 100
623	50 – 150	–	–	Minimum TAP Position on Address 11;	R	– 100
624	–	–	–	Register – Address Failure 12;	As Addr. 574	
625	0 – 9	–	–	Register – Status and Command of Equipment 12 to Parallelism;	As Addr. 570	
626	50 – 150	–	–	Current TAP Position on Address 12;	R	– 100
627	50 – 150	–	–	Minimum TAP Position on Address 12;	R	– 100
628	50 – 150	–	–	Maximum TAP Position on Address 12;	R	– 100
629	–	–	–	Register – Address Failure 13;	As Addr. 574	
630	0 – 9	–	–	Register – Status and Command of Equipment 13 to Parallelism;	As Addr. 570	
631	50 – 150	–	–	Current TAP Position on Address 13;	R	– 100
632	50 – 150	–	–	Minimum TAP Position on Address 13;	R	– 100
633	50 – 150	–	–	Maximum TAP Position on Address 13;	R	– 100
634	–	–	–	Register – Address Failure 14;	As Addr. 574	
635	0 – 9	–	–	Register – Status and Command of Equipment 14 to Parallelism;	As Addr. 570	
636	50 – 150	–	–	Current TAP Position on Address 14;	R	– 100
637	50 – 150	–	–	Minimum TAP Position on Address 14;	R	– 100
638	50 – 150	–	–	Maximum TAP Position on Address 14;	R	– 100
639	–			Register – Address Failure 14;	As Addr. 574	
640	0 – 9			Register – Status and Command of Equipment 15 to Parallelism;	As Addr. 570	
641	50 – 150			Current TAP Position on Address 15;	R	– 100

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
642	50 – 150	–	–	Minimum TAP Position on Address 15;	R	– 100
643	50 – 150	–	–	Maximum TAP Position on Address 15;	R	– 100
644	–	–	–	Register – Address Failure 15;	As Addr. 574	
645	0 – 9	–	–	Register – Status and Command of Equipment 16 to Parallelism;	As Addr. 570	
646	50 – 150	–	–	Current TAP Position on Address 16;	R	– 100
647	50 – 150	–	–	Minimum TAP Position on Address 16;	R	– 100
648	50 – 150	–	–	Maximum TAP Position on Address 16;	R	– 100
649	–	–	–	Register – Address Failure 16;	As Addr. 574	
650	0 – 9	–	–	Register – Status and Command of Equipment 17 to Parallelism;	As Addr. 570	
651	50 – 150	–	–	Current TAP Position on Address 17;	R	– 100
652	50 – 150	–	–	Minimum TAP Position on Address 17;	R	– 100
653	50 – 150	–	–	Maximum TAP Position on Address 17;	R	– 100
654	–	–	–	Register – Address Failure 17;	As Addr. 574	
655	0 – 9	–	–	Register – Status and Command of Equipment 18 to Parallelism;	As Addr. 570	
656	50 – 150	–	–	Current TAP Position on Address 18;	R	– 100
657	50 – 150	–	–	Minimum TAP Position on Address 18;	R	– 100
658	50 – 150	–	–	Maximum TAP Position on Address 18;	R	– 100
659	–	–	–	Register – Address Failure 18;	As Addr. 574	
660	0 – 9	–	–	Register – Status and Command of Equipment 19 to Parallelism;	As Addr. 570	
661	50 – 150	–	–	Current TAP Position on Address 19;	R	– 100
662	50 – 150	–	–	Minimum TAP Position on Address 19;	R	– 100
663	50 – 150	–	–	Minimum TAP Position on Address 19;	R	– 100
664	–	–	–	Register – Address Failure 19;	As Addr. 574	
665	0 – 9	–	–	Register – Status and Command of Equipment 20 to Parallelism;	As Addr. 570	
666	50 – 150	–	–	Current TAP Position on Address 20;	R	– 100

SERIAL COMMUNICATION,

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
667	50 – 150	–	–	Minimum TAP Position on Address 20;	R	– 100
668	50 – 150	–	–	Maximum TAP Position on Address 20;	R	– 100
669	–	–	–	Register – Address Failure 20;	As Addr. 574	
670	0 – 9	–	–	Register – Status and Command of Equipment 21 to Parallelism;	As Addr. 570	
671	50 – 150	–	–	Current TAP Position on Address 21;	R	– 100
672	50 – 150	–	–	Minimum TAP Position on Address 21;	R	– 100
673	50 – 150	–	–	Maximum TAP Position on Address 21;	R	– 100
674	–	–	–	Register – Address Failure 21;	As Addr. 574	
675	0 – 9	–	–	Register – Status and Command of Equipment 22 to Parallelism;	As Addr. 570	
676	50 – 150	–	–	Current TAP Position on Address 22;	R	– 100
677	50 – 150	–	–	Minimum TAP Position on Address 22;	R	– 100
678	50 – 150	–	–	Maximum TAP Position on Address 22;	R	– 100
679	–	–	–	Register – Address Failure 22;	As Addr. 574	
680	0 – 9	–	–	Register – Status and Command of Equipment 23 to Parallelism;	As Addr. 570	
681	50 – 150	–	–	Current TAP Position on Address 23;	R	– 100
682	50 – 150	–	–	Minimum TAP Position on Address 23;	R	– 100
683	50 – 150	–	–	Maximum TAP Position on Address 23;	R	– 100
684	–	–	–	Register – Address Failure 23;	As Addr. 574	
685	0 – 9	–	–	Register – Status and Command of Equipment 24 to Parallelism;	As Addr. 570	
686	50 – 150	–	–	Current TAP Position on Address 24;	R	– 100
687	50 – 150	–	–	Minimum TAP Position on Address 24;	R	– 100
688	50 – 150	–	–	Maximum TAP Position on Address 24;	R	– 100
689	–	–	–	Register – Address Failure 24;		
690	0 – 9	–	–	Register – Status and Command of Equipment 25 to Parallelism;	As Addr. 570	
691	50 – 150	–	–	Current TAP Position on Address 25;	R	– 100

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
692	50 – 150	–	–	Minimum TAP Position on Address 25;	R	– 100
693	50 – 150	–	–	Maximum TAP Position on Address 25;	R	– 100
694	–	–	–	Register – Failure on Address 25;	As Addr. 574	
695	0 – 9	–	–	Register – Status and Command of Equipment 26 to Parallelism;	As Addr. 570	
696	50 – 150	–	–	Current TAP Position on Address 26;	R	– 100
697	50 – 150	–	–	Minimum TAP Position on Address 26;	R	– 100
698	50 – 150	–	–	Maximum TAP Position on Address 26;	R	– 100
699	–	–	–	Register – Failure on Address 26;	As Addr..574	
700	0 – 9	–	–	Register – Status and Command of Equipment 27 to Parallelism;	As Addr. 570	
701	50 – 150	–	–	Current TAP Position on Address 27;	R	– 100
702	50 – 150	–	–	Minimum TAP Position on Address 27;	R	– 100
703	50 – 150	–	–	Maximum TAP Position on Address 27;	R	– 100
704	–	–	–	Register – Failure on Address 27;	As Addr..574	
705	0 – 9	–	–	Register – Status and Command of Equipment 28 to Parallelism;	As Addr. 570	
706	50 – 150	–	–	Current TAP Position on Address 28;	R	– 100
707	50 – 150	–	–	Minimum TAP Position on Address 28;	R	– 100
708	50 – 150	–	–	Maximum TAP Position on Address 28;	R	– 100
709	–	–	–	Register – Failure on Address 28;	–	
710	0 – 9	–	–	Register – Status and Command of Equipment 29 to Parallelism;	As Addr. 570	
711	50 – 150	–	–	Current TAP Position on Address 29;	R	– 100
712	50 – 150	–	–	Minimum TAP Position on Address 29;	R	– 100
713	50 – 150	–	–	Maximum TAP Position on Address 29;	R	– 100
714	–	–	–	Register – Failure on Address 29;	As Addr..574	
715	0 – 9	–	–	Register – Status and Command of Equipment 30 to Parallelism;	As Addr. 570	
716	50 – 150	–	–	Current TAP Position on Address 30;	R	– 100

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
717	50 – 150	–	–	Minimum TAP Position on Address 30;	R	– 100
718	50 – 150	–	–	Maximum TAP Position on Address 30;	R	– 100
719	50 – 150	–	–	Register – Failure on Address 30;	As Addr..574	
720	–	–	–	Register – Status and Command of Equipment 31 to Parallelism;	As Addr. 570	
721	0 – 9	–	–	Current TAP Position on Address 31;	R	– 100
722	50 – 150	–	–	Minimum TAP Position on Address 31;	R	– 100
723	50 – 150	–	–	Maximum TAP Position on Address 31;	R	– 100
724	50 – 150	–	–	Register – Failure on Address 31;	–	
740	0 to 999.9	–	–	Voltage Reading on Primary da Phase A;	R	1:100
741	0 to 280	–	–	Voltage Reading on Secondary da Phase A;	R	1:100
742	0 to 999.9	–	–	Voltage Reading on Primary da Phase B;	R	1:100
743	0 to 280	–	–	Voltage Reading on Secondary da Phase B;	R	1:100
744	0 to 999.9	–	–	Voltage Reading on Primary da Phase C;	R	1:100
745	0 to 280	–	–	Voltage Reading on Secondary da Phase C;	R	1:100
746	0 to 999.9	–	–	Electrical Current Reading on Primary da Phase A;	R	1:100
747	0 to 280	–	–	Electrical Current Reading on Secondary da Phase A;	R	1:100
748	0 to 999.9	–	–	Electrical Current Reading on Primary da Phase B;	R	1:100
749	0 to 280	–	–	Electrical Current Reading on Secondary da Phase B;	R	1:100
750	0 to 999.9	–	–	Electrical Current Reading on Primary da Phase C;	R	1:100
751	0 to 10	–	–	Electrical Current Reading on Secondary da Phase C;	R	1:100
752	0 to 999.9	–	–	Apparent Power on Primary da Phase A;	R	1:100
753	0 to 999.9	–	–	Apparent Power on Secondary da Phase A;	R	1:100
754	0 to 999.9	–	–	Apparent Power on Primary da Phase B;	R	1:100
755	0 to 999.9	–	–	Apparent Power on Secondary da Phase B;	R	1:100
756	0 to 999.9	–	–	Apparent Power on Primary da Phase C;	R	1:100

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
757	0 to 999.9	–	–	Apparent Power on Secondary da Phase C;	R	1:100
758	0 to 999.9	–	–	Active Power on Primary da Phase A;	R	1:100
759	0 to 999.9	–	–	Active Power on Secondary da Phase A;	R	1:100
760	0 to 999.9	–	–	Active Power on Primary da Phase B;	R	1:100
761	0 to 999.9	–	–	Active Power on Secondary da Phase b;	R	1:100
762	0 to 999.9	–	–	Active Power on Primary da Phase C;	R	1:100
763	0 to 999.9	–	–	Active Power on Secondary da Phase C;	R	1:100
764	0 to 999.9	–	–	Reactive Power on Primary da Phase A;	R	1:100
765	0 to 999.9	–	–	Reactive Power on Secondary da Phase A;	R	1:100
766	0 to 999.9	–	–	Reactive Power on Primary da Phase B;	R	1:100
767	0 to 999.9	–	–	Reactive Power on Secondary da Phase B;	R	1:100
768	0 to 999.9	–	–	Reactive Power on Primary da Phase C;	R	1:100
769	0 to 999.9	–	–	Reactive Power on Secondary da Phase C;	R	1:100
770	–1 a 1	–	–	Power Factor na Phase A;	R	–1:2000
771	–1 a 1	–	–	Power Factor na Phase B;	R	–1:2000
772	–1 a 1	–	–	Power Factor na Phase C;	R	–1:2000
773	–1 a 1	–	–	Network Frequency Oscilation (Hz);	R	1:100
774	–	–		Register – Signal Value of actual voltage deviation on Phase A;	–	
		0	0	Actual Phase A positive Voltage Deviation;	R	–
		0	1	Actual Phase A negative Voltage Deviation;	R	–
775	–	–	–	Actual Phase Voltage Deviation A;	R	1:10
776	–	–		Register – Voltage Value Deviation Signal Calculated on Phase A;	–	
		0	0	Voltage Deviation Calculated on Phase A positive;	R	–
			1	Voltage Deviation Calculated on Phase B negative;	R	–
777	–	–	–	Voltage Deviation Calculated on Phase A;	R	1:10

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
778	–	–		Register – Voltage Value Deviation Signal Calculated on Phase B;	–	
		0	0	Actual Phase Voltage Deviation B positive;	R	–
			1	Actual Phase Voltage Deviation B negative;	R	–
779	–	–	–	Actual Phase Voltage Deviation B;	R	–
780	–	–		Registrador – Valor do sinal de Desvio de Tensão Calculada na Fase B;	–	
		0	0	Register – Voltage Value Deviation Signal Calculated on Phase B;	R	–
			1	Negative Phase A Calculated Voltage Deviation	R	–
781	–	–	–	Compensated Voltage Deviation on Phase B;	R	1:10
782	–	–		Register – Real Voltage Deviation Signal Calculated on Phase C;	–	
		0	0	Actual Phase Voltage Deviation C positive;	R	–
			1	Actual Phase Voltage Deviation C negative;	R	–
783	–	–	–	Actual Phase Voltage Deviation C;	R	1:10
784	–	–		Register – Voltage Value Deviation Signal Calculated on Phase C;	–	
		0	0	Voltage Deviation Calculated on Phase C positive;	R	–
			1	Voltage Deviation Calculated on Phase C negative;	R	–
785	–	–	–	Voltage Deviation Calculated on Phase C;	R	1:10
786	0 to 280	–	–	Compensated Voltage Phase A;	R	1:10
787	0 to 280	–	–	Compensated Voltage Phase B;	R	1:10
788	0 to 280	–	–	Compensated Voltage Phase C;	R	1:10
789	0 to 9999	–	–	Winding Load Percentage on Phase A;	R	1:10
790	0 to 9999	–	–	Winding Load Percentage on Phase B;	R	1:10
791	0 to 9999	–	–	Winding Load Percentage on Phase C;	R	1:10
792	0 to 280	–	–	Regulation Voltage Selected;	R	1:10
793	1 to 8	–	–	Regulation Set Selected;	R	1:1
795	50 – 150	–	–	Current TAP Position;	R	–100

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
796	50 – 150	–	–	Min TAP Position;	R	–100
797	50 – 150	–	–	Max TAP Position;	R	–100
798	–	–	–	Min and Max TAP Reset Commands;	–	
–	–	–	–	Register –Total Commutation Numbers Performed by the TAP Changer:	–	
799	0 to 16x10 ^{6}	–	–	Commutation Number performed by the TAP Changer – LSB;	W / R	1:1
800		–	–	Total Commutation Numbers Performed by the TAP Changer– MSB;		
–	–	–	–	Reset Commands – Commutation Numbers Performed after TAP Changer Maintenance;	–	
801	0 to 16x10 ^{6}	–	–	Total Commutations Number performed by the TAP Changer – LSB	W / R	1:100
802		–	–	Total Commutations Number performed by the TAP Changer – MSB;		
–	–	–	–	Register – Squared Current Sum since its last Maintenance:	–	
803	–	–	–	Squared Current Sum since its last Maintenance – MSB;	W / R	1:100
804	–	–	–	Squared Current Sum since its last Maintenance – LSB;		
–	–	–	–	Register – Total Squared Current Sum:	–	
805	0.00 to 99999.99	–	–	Total Squared Current Sum – LSB;	W / R	1:100
806				Total Squared Current Sum – MSB;	W / R–	
–	–	–	–	Register – Daily Average of TAP Changer Operations.	–	
807	0 to 999999	–	–	Daily Average of TAP Changer Operations – LSB;	W / R	1:1
808		–	–	Daily Average of TAP Changer Operations – MSB;	W / R	
–	–	–	–	Register – Weekly Average of TAP Changer Operations.	–	
809	0 to 999999	–	–	Weekly Average of TAP Changer Operations – LSB;	W / R	1:1
810		–	–	Weekly Average of TAP Changer Operations – MSB;	W / R	
–	–	–	–	Register – Monthly Average of TAP Changer Operations –;	–	
811	0 to 99999	–	–	Monthly Average of TAP Changer Operations – LSB;	W / R	1:1
812		–	–	Monthly Average of TAP Changer Operations – MSB;	W / R	

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
–	–	–	–	Register – Quarterly Average of TAP Changer Operations:	–	
813	0 to 99999	–	–	Quarterly Average of TAP Changer Operations – LSB;	W / R	1:1
814		–	–	Quarterly Average of TAP Changer Operations – MSB;	W / R	
–	–	–	–	Register – Semesterly Average of TAP Changer Operations.	–	–
815	0 to 99999			Semesterly Average of TAP Changer Operations – LSB;	W / R	1:1
816				Semesterly Average of TAP Changer Operations – MSB;	W / R	
–	–	–		Register – Annual Average of TAP Changer Operations:	–	–
817	0.00 to 99999.9	–		Annual Average of TAP Changer Operations – LSB;	W / R	1:1
818		–		Annual Average of TAP Changer Operations – MSB;	W / R	
–	–	–		Register – Daily Average of Electrical Current Sum:	–	–
819	0.00 to 99999.9	–		Daily Average of Electrical Current Sum – LSB;	W / R	1:10
820		–		Daily Average of Electrical Current Sum – MSB;	W / R	
–	–	–		Register – Weekly Average of Squared Current Sum:	–	
821	0.00 to 99999.9	–		Weekly Average of Squared Current Sum – LSB;	W / R	1:10
822		–		Weekly Average of Squared Current Sum – MSB.	W / R	
	–	–		Register – Monthly Average of Squared Current Sum;	–	
823	0.00 to 99999.9	–		Monthly Average of Squared Current Sum – LSB;	W / R	1:10
824				Monthly Average of Squared Current Sum – MSB;	W / R	
–	–	–		Register – Quarterly Average of Squared Current Sum;	–	–
825	0.00 to 99999.9	–		Quarterly Average of Squared Current Sum – LSB;	W / R	1:10
826				Quarterly Average of Squared Current Sum – MSB;	W / R	
–	–	–		Register – Semesterly Average of Squared Current Sum:	–	
827	0.00 to 99999.9	–		Semesterly Average of Squared Current Sum – LSB;	R	1:10
828				Semesterly Average of Squared Current Sum – MSB;	R	
–	–	–		Register – Annual Average of Squared Current Sum;	–	

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
829	0.00 to 99999.9	–	–	Annual Average of Squared Current Sum – LSB;	R	1:10
830		–	–	Annual Average of Squared Current Sum – MSB;	R	
831	0 – 59	–	–	TAP Changer Partial Hour Meter – Minutes;	W / R	1:1
832	0 – 23	–	–	TAP Changer Partial Hour Meter – Hours;	W / R	1:1
833	0 – 365	–	–	TAP Changer Partial Hour Meter – Days;	W / R	1:1
834	–	–	–	TAP Changer Partial Hour Meter – Years;	W / R	1:1
835	0 – 59 –	–	–	TAP Changer Total Hour Meter – Minutes;	W / R	1:1
836	0 – 23	–	–	TAP Changer Total Hour Meter – Hours;	W / R	1:1
837	0 – 365	–	–	TAP Changer Total Hour Meter – Days;	W / R	1:1
838	0 – 365	–	–	TAP Changer Total Hour Meter – Years;	W / R	1:1
–	–	–	–	Register – First Maintenance Historic – Commutations Number;	–	
839	0 to 99999	–	–	First Maintenance Historic – Commutations Number– LSB;	R	1:1
840		–	–	First Maintenance Historic – Commutations Number– MSB;	R	1:1
–	–	–	–	Register – Second Maintenance Historic – Commutations Number;	–	
841	0 to 99999	–	–	Second Maintenance Historic – Commutations Number– LSB;	R	1:1
842		–	–	Second Maintenance Historic – Commutations Number– MSB;	R	1:11
–	–	–	–	Register – Third Maintenance Historic – Commutations Number;	–	
843	0 to 99999	–	–	Third Maintenance Historic – Commutations Number– LSB;	R	1:1
844		–	–	Third Maintenance Historic – Commutations Number– MSB;	R	1:1
–	–	–	–	Register – Fourth Maintenance Historic – Commutations Number;	–	
845	0 to 99999	–	–	Fourth Maintenance Historic – Commutations Number– LSB;	R	1:1
846		–	–	Fourth Maintenance Historic – Commutations Number– MSB;	R	1:1
–	–	–	–	Register – Fifth Maintenance Historic – Commutations Number;	–	
847	0 to 99999	–	–	Fifth Maintenance Historic – Commutations Number– LSB;	R	1:1
848		–	–	Fifth Maintenance Historic – Commutations Number– MSB;	R	1:1

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
–	–	–	–	Register – First Maintenance Historic – Electrical Current Sum	–	
849	0 to 99999.9	–	–	First Maintenance Historic – Electrical Current Sum – LSB;	R	1:10
850		–	–	First Maintenance Historic – Electrical Current Sum – MSB;	R	1:10
–	–	–	–	Register – Second Maintenance Historic – Electrical Current Sum:	–	
851	0 to 99999.9	–	–	Second Maintenance Historic – Electrical Current Sum – LSB;	R	1:10
852		–	–	Second Maintenance Historic – Electrical Current Sum – MSB;	R	1:10
–	–	–	–	Register – Third Maintenance Historic – Electrical Current Sum	–	
853	0 to 99999.9	–	–	Third Maintenance Historic – Electrical Current Sum – LSB;	R	1:10
854		–	–	Third Maintenance Historic – Electrical Current Sum – MSB;	R	1:10
–				Register – Fourth Maintenance Historic – Electrical Current Sum	–	
855	0 to 99999.9	–	–	Fourth Maintenance Historic – Electrical Current Sum – LSB;	R	1:10
856		–	–	Fourth Maintenance Historic – Electrical Current Sum – MSB;	R	1:10
–	–	–	–	Register – Fourth Maintenance Historic – Electrical Current Sum	–	
857	0 to 99999.9	–	–	Fifth Maintenance Historic – Electrical Current Sum – LSB;	R	1:10
858		–	–	Fifth Maintenance Historic – Electrical Current Sum – MSB;	R	1:10
859	1 – 31	–	–	First Maintenance Historic – Days;	–	–
860	1 – 31	–	–	Second Maintenance Historic – Days;	R	1:1
861	1 – 31	–	–	Third Maintenance Historic – Days;	R	1:1
862	1 – 31	–	–	Fourth Maintenance Historic – Days;	R	1:1
863	1 – 31	–	–	Fifth Maintenance Historic – Diays;	R	1:1
864	1 – 12	–	–	First Maintenance Historic – Month;	R	1:1
865	1 – 12	–	–	Second Maintenance Historic – Month;	R	1:1
866	1 – 12	–	–	Third Maintenance Historic – Month;	R	1:1
867	1 – 12	–	–	Fourth Maintenance Historic – Month;	R	1:1
868	1 – 12	–	–	Fifth Maintenance Historic – Month;	R	1:1

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
869	0 – 9999	–	–	First Maintenance Historic – Year;	R	1:1
870	0 – 9999	–	–	Second Maintenance Historic – Year;	R	1:1
871	0 – 9999	–	–	Third Maintenance Historic – Year;	R	1:1
872	0 – 9999	–	–	Fourth Maintenance Historic – Year;	R	1:1
873	0 – 9999	–	–	Fifth Maintenance Historic – Year;	R	1:1
874	0 – 59	–	–	First Maintenance Historic – Minute;	R	1:1
875	0 – 59	–	–	Second Maintenance Historic – Minute;	R	1:1
876	0 – 59	–	–	Third Maintenance Historic – Minute;	R	1:1
877	0 – 59	–	–	Fourth Maintenance Historic – Minute;	R	1:1
878	0 – 59	–	–	Fifth Maintenance Historic – Minute;	R	1:1
879	0 – 23	–	–	First Maintenance Historic – Hour;	R	1:1
880	0 – 23	–	–	Second Maintenance Historic – Hour;	R	1:1
881	0 – 23	–	–	Third Maintenance Historic – Hour;	R	1:1
882	0 – 23	–	–	Fourth Maintenance Historic – Hour;	R	1:1
883	0 – 23	–	–	Fifth Maintenance Historic – Hour;	R	1:1
884	–					
288 a 303	–	–	–	Relay 1 Drive signaling;	R	–
304 a 319	–	–	–	Relay 2 Drive signaling;	R	–
320 a 335	–	–	–	Relay 3 Drive signaling;	R	–
336 a 351	–	–	–	Relay 4 Drive signaling;	R	–
352 a 367	–	–	–	Relay 5 Drive signaling;	R	–
368 a 383	–	–	–	Relay 6 Drive signaling;	R	–
384 a 399	–	–	–	Relay 7 Drive signaling;	R	–
400 a 415	–	–	–	Relay 8 Drive signaling;	R	–
416 a 431	–	–	–	Relay 9 Drive signaling;	R	–

SERIAL COMMUNICATION

DNP 3 L2 Address	Reading Range	Bits Index	State	Description / Point Name	Writing Reading	Scale
432 a 447	–	–	–	Relay 10 Drive signaling;	R	–
448 a 463	–	–	–	Relay 11 Drive signaling;	R	–
464 a 479	–	–	–	Relay 12 Drive signaling;	R	–
480 a 495	–	–	–	Relay 13 Drive signaling;	R	–
496 a 511	–	–	–	Relay 14 Drive signaling;	R	–
–				Register – Blocakage Condition:	–	
512	0 – 127	0	1	Undervoltage;	R	–
513		1	1	Overvoltage;	R	–
514		2	1	Overcurrent;	R	–
515		3	1	Reverse Current;	R	–
516		4	1	TAP Changer Failure;	R	–
517		5	1	Compensation Failure;	R	–
518		6	1	Regulation Failure;	R	–

SERIAL COMMUNICATION – RELAY SIGNALING

Bits Index	State	Description / Point Name	Write Read
Relay Signaling – Function Command			
0	1	Lower Voltage Command;	–
1	1	Raise Voltage Command;	–
Relay Signaling – Alarm Function			
0	1	Alarm by Undervoltage;	–
1	1	Alarm by Overvoltage;	–
2	1	Alarm by Overcurrent;	–
5	1	TAP Changer Maintenance;	–
6	1	Compensation Alarm;	–
7	1	Reverse Current Alarm;	–
Relay Signaling – Failure Function			
2	1	TAP Changer Failure;	–
6	1	TAP Changer Maintenance;	–
7	1	Max Failure Compensation;	–
8	1	Reverse Current Failure;	–
9	1	Regulation Failure;	–

SERIAL COMMUNICATION – DISPLAY QUANTITY PRESENTATION

	Display Quantity Presentation	Unit
0	Displays Current TAP Position;	–
1	Displays Phase A Secondary Voltage;	V
2	Displays Phase A Primary Voltage;	KV
3	Displays Phase B Secondary Voltage;	V
4	Displays Phase B Primary Voltage;	KV
5	Displays Phase C Secondary Voltage;	V
6	Displays Phase C Primary Voltage;	KV
7	Displays Phase A Electrical Current on Secondary;	A
8	Displays Phase A Electrical Current on Primary;	KA
9	Displays Phase B Electrical Current on Secondary;	A
10	Displays Phase B Electrical Current on Primary;	KA
11	Displays Phase C Electrical Current on Secondary;	A
12	Displays Phase C Electrical Current on Primary;	KA
13	Displays Phase A Apparent Power on Secondary;	VA
14	Displays Phase A Apparent Power on Primary;	MVA
15	Displays Phase B Apparent Power on Secondary;	VA
16	Displays Phase B Apparent Power on Primary;	MVA
17	Displays Phase C Apparent Power on Secondary;	VA
18	Displays Phase C Apparent Power on Primary;	MVA
19	Displays Phase A Active Power on Secondary;	W
20	Displays Phase A Active Power on Primary;	MW
21	Displays Phase B Active Power on Secondary;	W
22	Displays Phase B Active Power on Primary;	MW
23	Displays Phase C Active Power on Secondary;	W
24	Displays Phase C Active Power on Primary;	MW
25	Displays Phase A Reactive Power on Secondary;	Var
26	Displays Phase A Active Power on Primary;	MVar
27	Displays Phase B Reactive Power on Secondary;	Var
28	Displays Phase B Active Power on Primary;	MVar

SERIAL COMMUNICATION – DISPLAY QUANTITY PRESENTATION

Value	Display Quantity Presentation	Unit
29	Displays Phase C Reactive Power on Secondary;	Var
30	Displays Phase C Active Power on Primary;	MVar
31	Displays Phase A Power Factor;	–
32	Displays Phase B Power Factor;	–
33	Displays Phase C Power Factor;	–
34	Displays Phase A Compensated Voltage;	V
35	Displays Phase A Voltage Deviation;	%
36	Displays Phase A Compensated Voltage Deviation;	%
37	Displays Phase B Compensated Voltage;	V
38	Displays Phase B Voltage Deviation;	%
39	Displays Compensated Voltage Deviation;	%
40	Displays Phase C Compensated Voltage;	V
41	Displays Phase C Voltage Deviation;	%
42	Displays Phase C Compensated Voltage Deviation;	%
43	Displays Reference Voltage;	V
44	Displays Line Frequency;	Hz
45	Displays Phase A Load Percentage;	%
46	Displays Phase B Load Percentage;	%
47	Displays Phase C Load Percentage;	%
48	Displays Nothing;	–