SERIAL COMMUNICATION - MNO

Protocolo: **DNP3.0 LEVEL 1;**
Transmission Rate: 2,400 to 57,600 bps;
Data Bits: **8;**
Stop Bits: **1;**
Parity: **None** / **Even** / **Odd**;
Tipo de Variável: Binary Inputs, Object 1, Variation 2.

Binary Inputs (1) Index	Status	Description
0	0	Disables Shutdown function by low level
	1	Enables the Shutdown function by low level;
1	0	Disables the Shutdown function by high level;
	1	Enables the High Level Shutdown function;
8	0	Relay 1 activation logic – Normal;
	1	Relay 1 activation logic – Inverse;
9	0	Relay 2 activation logic – Normal;
	1	Relay 2 activation logic – Inverse;
10	0	Relay 3 activation logic – Normal;
	1	Relay 3 activation logic – Inverse;
11	0	Relay 4 activation logic – Normal;
	1	Relay 4 activation logic – Inverse;

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Binary Inputs (1) Index	Status	Description
32	1	Minimum Level Alarm;
33	1	Maximum Level Alarm;
34	1	Alarm triggered;
35	1	In Counting for Shutdown - Minimum Level;
36	1	Counting for Shutdown - Maximum Level;
37	1	Dismissal by Minimum Level;
38	1	Dismissal by Maximum Level;
39	1	Shutdown triggered;
40	1	Sensor Reading Failure;

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Variable Type: **Binary Outputs, Object 10, Variation 2**.

Binary Outputs (10) Index	Status	Description
0	0	Disables Shutdown function by low level
	1	Enables the Shutdown function by low level;
1	0	Disables the Shutdown function by high level;
	1	Enables the High Level Shutdown function;
3	1	Minimum Level Reset reached;
4	1	Maximum Level Reset reached;
5	1	Restarts equipment;
8	0	Relay 1 activation logic – Normal;
	1	Relay 1 activation logic – Inverse;
9	0	Relay 2 activation logic – Normal;
	1	Relay 2 activation logic – Inverse;
10	0	Relay 3 activation logic – Normal;
	1	Relay 3 activation logic – Inverse;
11	0	Relay 4 activation logic – Normal;
	1	Relay 4 activation logic – Inverse;

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Tipo de Variável: **Analog Inputs, Object 30, Variation 4**.

Analog Inputs (30) **Address**	**Reading range**	**Description**	**Scale**
1	0.1 – 100.0	High Level Alarm;	-1000:10
2	0.1 – 100.0	Low Level Alarm;	-1000:10
3	0.1 – 100.0	Dismissal by High Level;	-1000:10
4	0.1 – 100.0	Low Level Dismissal;	-1000:10
5	0.1 – 30.0	Alarm Shutdown Hysteresis;	1:10
6	0 - 20	Shutdown Delay Time	1:1
8	0 - 4	Register – Analog Output Range:	
		0 - Analog output from 0 to 1 mA;	-
		1- Analog output from 0 to 5 mA;	-
		2 - Analog output from 0 to 10 mA;	-
		3 - Analog output from 0 to 20 mA;	-
		4 - Analog output from 4 to 20 mA;	-
10	0.0 – 999.9	Initial Buoy Resistance;	-1000:10
11	0.0 – 999.9	Buoy's Final Resistance;	-1000:10
13	-10.0 - 10.0	Of7 Sensor reading "Level";	-1000:10
14	0 - 1	Recorder – Type of Signal Reading;	-
		0 – Resistive Reading;	-
		1 – Reading 4 to 20 mA;	-
15	-10.0 - 10.0	Buoy Level;	-1000:10
16	-50.0 – 250.0	Maximum Level Reached	-1000:10
17	-50.0 – 250.0	Minimum Level Reached	-1000:10
21	0 - 1	Registrar – RS485 Write Protection Status:	-
		Written by RS485 – Enabled;	-

		Written by RS485 – disabled;	-

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Analog Inputs (30) Address	Reading range	Description	Scale
22	0 - 6	Recorder – Serial Communication Speed.	-
		0 - Automatically Detects Serial Communication Speed;	-
		1 - Fixed speed at 2,400 bps;	-
		2 - Fixed speed at 4,800 bps;	-
		3 - Fixed speed at 9,600 bps;	-
		4 - Fixed speed at 19,200 bps;	-
		5 - Fixed speed at 38,400 bps;	-
		6 - Fixed speed at 57,600 bps;	-
23	0 – 2	Registrar – Communication Parity.	
		0 - No Parity;	-
		1 - Parity Parity;	-
		2 - Impar Birth;	-
24	0 - 1	Registrar – Communication Protocol.	-
		0 - DNP 3 L1;	-
		1 - Modbus RTU;	-
25	1 - 254	Serial Network Address;	-
27	-1.00 - 1.00	Correction of Current Output deviation;	-1000:100
30	1 - 31	Calibration Day;	-
31	1 - 12	Calibration Month	-
32	0 - 99	Year of Calibration;	-
35	0x0 - 0xFFFFFFFFF	Equipment Serial Number – 32 to 47 bits;	-
36		Number of Equipment Series – 16 to 31 bits;	-
37		Number of Equipment Serial – 0 to 15 bits;	-
38	0 – 9999	Password Reminder	1:1

Variable Type: **Analog Outputs, Object 40, Variation 4**.

Analog Outputs (40) **Address**	**Reading range**	**Description**	**Scale**
1	0.1 – 100.0	High Level Alarm;	-1000:10
2	0.1 – 100.0	Low Level Alarm;	-1000:10
3	0.1 – 100.0	Dismissal by High Level;	-1000:10
4	0.1 – 100.0	Low Level Dismissal;	-1000:10
5	0.1 – 30.0	Alarm Shutdown Hysteresis;	1:10
6	0 - 20	Shutdown Delay Time	1:1
8	0 - 4	Register – Analog Output Range:	-
		0 - Analog output from 0 to 1 mA;	-
		1- Analog output from 0 to 5 mA;	-
		2 - Analog output from 0 to 10 mA;	-
		3 - Analog output from 0 to 20 mA;	-
		4 - Analog output from 4 to 20 mA;	-
10	0.0 – 999.9	Initial Buoy Resistance;	-1000:10
11	0.0 – 999.9	Buoy's Final Resistance;	-1000:10
13	-10.0 - 10.0	Of7 Sensor reading "Level";	-1000:10
14	0 - 1	Recorder – Type of Signal Reading;	-
		0 – Resistive Reading;	-
		1 – Reading 4 to 20 mA;	-