

COMUNICAÇÃO SERIAL EP3

Protocolo de Comunicação: DNP 3

Taxa de Transmissão: 1.200 a 57.600 (Auto Baud Rate)

Bits de Dados: 8

Paridade: Nenhuma

Bits de parada: 1

Endereço DNP 3	Faixa de Leitura	Bits Index	Estado	Descrição Point Name	Escrita Leitura	Escala
1	0 – 2000	-	-	Temperatura de alarme do sensor 1;	E / L	1:10
2	0 – 2000	-	-	Temperatura de alarme do sensor 2;	E / L	1:10
3	0 – 2000	-	-	Temperatura de alarme do sensor 3;	E / L	1:10
9	0 – 100	-	-	Valor de Histerese do alarme.	E / L	1:10
10	0 – 2000	-	-	Temperatura de desligamento do sensor 1;	E / L	1:10
11	0 – 2000	-	-	Temperatura de desligamento do sensor 2;	E / L	1:10
12	0 – 2000	-	-	Temperatura de desligamento do sensor 3;	E / L	1:10
18	0 – 20	-	-	Tempo de retardo para desligamento em minutos.	E / L	1:1
28	-	-		Registrador – Comandos:	-	
		2	1	Reset de Temperaturas Máximas;	L / E	-
		3	1	Reset da CPU;	L / E	-
29	0 – 2000	-	-	Temperatura medida pelo sensor 1;	L	1:10
30	0 – 2000	-	-	Temperatura medida pelo sensor 2;	L	1:10
31	0-2000	-	-	Temperatura medida pelo sensor 3;	L	1:10
37	0-2000	-	-	Temperatura Máxima atingida pelo Sensor 1;	L	1:10
38	0-2000	-	-	Temperatura Máxima atingida pelo Sensor 2;	L	1:10
39	0-2000	-	-	Temperatura Máxima atingida pelo Sensor 3;	L	1:10

CONTINUAÇÃO DE TABELA COMUNICAÇÃO SERIAL EP3

Endereço DNP 3	Faixa de Leitura	Bits Index	Estado	Descrição Point Name	Escrita Leitura	Escala
42	-	-		Registrador – Status dos Sensores:	-	
		0	0	Sensor 1 Desabilitado;	L / E	-
			1	Sensor 1 Habilitado;	L / E	-
		1	0	Sensor 2 Desabilitado;	L / E	-
			1	Sensor 2 Habilitado;	L / E	-
		2	0	Sensor 3 Desabilitado;	L / E	-
			1	Sensor 3 Habilitado;	L / E	-
45	-	-		Registrador – Status Alarme:	-	
		0	1	Alarme de temperatura alta no Sensor 1;	L	-
		1	1	Alarme de temperatura alta no Sensor 2;	L	-
		2	1	Alarme de temperatura alta no Sensor 3;	L	-
		8	1	Relé de Alarme de temperatura alta acionado;	L	-
46	-	-		Registrador – Status de Contagem para Desligamento:	-	
		0	1	Contagem para Desligamento por Temperatura Alta do Sensor 1;	L	-
		1	1	Contagem para Desligamento por Temperatura Alta do Sensor 2;	L	-
		2	1	Contagem para Desligamento por Temperatura Alta do Sensor 3;	L	-
		8	1	Contagem de tempo para Desligamento acionado;	L	
47	-	-		Registrador – Status dos Desligamentos:	-	
		0	1	Desligamento por temperatura alta Sensor 1	L	-
		1	1	Desligamento por temperatura alta Sensor 2	L	-
		2	1	Desligamento por temperatura alta Sensor 3	L	-
		8	1	Desligamento por Temperatura Alta acionado;	L	-

CONTINUAÇÃO DE TABELA COMUNICAÇÃO SERIAL EP3

Endereço DNP 3	Faixa de Leitura	Bits Index	Estado	Descrição Point Name	Escrita Leitura	Escala
49	-	-		Registrador – Status de Falha:	L	-
		0	1	Falha de Leitura no Sensor 1;	L	-
		1	1	Falha de Leitura no Sensor 2;	L	-
		2	1	Falha de Leitura no Sensor 3;	L	-
		8	1	Falha de Sensor acionada;	L	-
50	1-254	-	-	Endereço de Rede Serial	L	-
56	0 – 2	-		Registrador - Modo de Apresentação do display:	-	
		-	0	Display fixo na temperatura mais alta;	L / E	-
		-	1	Define o display no modo SCAN;	L / E	-
		-	2	Define o display no modo Manual;	L / E	-
57	0 - 7	-		Registrador – Lógica de acionamento dos relés:	L / E	-
		0	0	Lógica do relé 1 normal;	L / E	-
			1	Lógica do relé 1 inversa;	L / E	-
		1	0	Lógica do relé 2 normal;	L / E	-
			1	Lógica do relé 2 inversa;	L / E	-
		2	0	Lógica do relé 3 normal;	L / E	-
			1	Lógica do relé 3 inversa;	L / E	-
60	1-31	-	-	Dia de Calibração;	L	-
61	1-12	-	-	Mês de Calibração;	L	-
62	2017-2099	-	-	Ano de Calibração;	L	-
63	0-65535	-	-	Número de Série do Equipamento – LSB;	L	-
64	0-255	-	-	Número de Série do Equipamento – MSB;	L	-

DNP V3.00

DEVICE PROFILE DOCUMENT

Vendor Name: ELECTRON DO BRASIL

Device Name: Relé de Proteção Térmica EP3

Highest DNP Level Supported:

For Requests: 1

For Responses: 1

Device Function:

Master ☐ Slave ☒

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

Supports class data requests only and SBO and direct operate analog commands. Answers are analog group objects variations 4, for static data (in class 0 requests), and variation 2, for event data (events are reported in class 1, 2 or 3 request)

Maximum Data Link Frame Size
(octets):

Transmitted 292
Received (must be 292)

Maximum Application Fragment Size
(octets):

Transmitted 1024
Received 249

Maximum Data Link Retries:

- ☒ None
☐ Fixed at _____
☐ Configurable, range ____ to ____

Maximum Application Layer Retries:

- ☒ None
☐ Configurable, range ____ to ____

Requires Application Layer Confirmation:

- ☐ Never
☐ Always
☒ Sometimes if “sometimes”, when? Sending analog events
☐ Configurable if “configurable”, how? _____

Requires Application Layer Confirmation:

- ☐ Never
☐ Always (not recommended)
☒ When reporting Event Data (Slave device only)
☐ When sending multi-fragment responses (Slave devices only)
☐ Sometimes if “sometimes”, when? _____
☐ Configurable if “configurable”, how? _____

Timeouts while waiting for:

Data Link Confirm	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Fixed at _____	<input type="checkbox"/> Variable	<input type="checkbox"/> Configurable
Complete Appl. Fragment	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Fixed at _____	<input type="checkbox"/> Variable	<input type="checkbox"/> Configurable
Application Confirm	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Fixed at _____	<input type="checkbox"/> Variable	<input type="checkbox"/> Configurable
Complete Appl. Response	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Fixed at _____	<input type="checkbox"/> Variable	<input type="checkbox"/> 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	<input type="checkbox"/> Never	<input type="checkbox"/> Always	<input checked="" type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
DIRECT OPERATE	<input type="checkbox"/> Never	<input type="checkbox"/> Always	<input checked="" type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
DIRECT OPERATE – NO ACK	<input type="checkbox"/> Never	<input type="checkbox"/> Always	<input checked="" type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Count > 1	<input checked="" type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Pulse On	<input checked="" type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Pulse Off	<input checked="" type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Latch On	<input checked="" type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Latch Off	<input checked="" type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Queue	<input checked="" type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Clear Queue	<input checked="" type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable

Attach explanation if “Sometimes” or “Configurable” was checked for any operation.

Accepts analog commands only, in SBO or direct operate mode

FILL OUT THE FOLLOWING ITEM FOR MASTER DEVICER ONLY

Expects Binary Input Change Events:

- ☐ Either time-tagged or non-time-tagged for a single event
- ☐ Both time-tagged and non-time-tagged for a single event
- ☐ Configurable (attach explanation)

FILL OUT THE FOLLOWING ITEMS FOR SLAVE DEVICES ONLY

Reports Binary Input Change Events
When no specific variation requested:

- ☒ Never
- ☐ Only time-tagged
- ☐ Only non-time-tagged
- ☐ Configurable to send both, one or the other (attach explanation)

Reports time-tagged Binary
Input Change Events when no
Specific variation requested:

- ☒ Never
- ☐ Binary Input Change With Time
- ☐ Binary Input Change With Relative Time
- ☐ Configurable (attach explanation)

Sends Unsolicited Responses:

- ☒ Never
- ☐ Configurable (attach explanation)
- ☐ Only certain objects
Sometimes (attach explanation)
- ☐ ENABLE/DISABLE UNSOLICITED
Function codes supported

Sends Static Data 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 list attached

Sends Mult-Fragment Responses: ☐ Yes ☒ No

OBJECT			REQUEST (slave must parse)		RESPONSE (master must parse)	
Obj	Var	Description	Func Codes (dec)	Qual Codes (hex)	Func Codes	Qual Codes (hex)
30	4	16 Bit Analog Input without Flag			129	00
32	0	Analog Change Event – All Variations				
32	1	32 Bit Analog Change Event without Time				
32	2	16 Bit Analog Change Event without Time			129	17
41	1	32 Bit Analog Output Block	3,4,5,6	17, 28	129	Echo of request
41	2	16 Bit Analog Output Block	3,4,5,6	17, 28	129	Echo of request
50	1	Time and Date	2	07 quantity = 1		
60	0	Not Defined				
60	1	Class 0 Date	1	06		
60	2	Class 1 Date	1	06,07,08		
60	3	Class 2 Date	1	06,07,08		
60	4	Class 3 Date	1	06,07,08		
70	1	File Identifier				
80	1	Internal Indications	2	00 index = 7		