



## DNP3 Device Profile Document - Slave

<h1 style="margin: 0;">DNP V3.0</h1> <p style="margin: 0;">DEVICE PROFILE DOCUMENT</p>	
<p>Vendor Name: <b>Vizimax, Inc.</b></p>	
<p>Device Name: <b>RightWON CPU/RightWON Engine</b></p>	
<p>Highest DNP Level Supported:</p> <p style="margin-left: 40px;">For Requests: <b>Level 3</b></p> <p style="margin-left: 40px;">For Responses: <b>Level 3</b></p>	<p>Device Function:</p> <p style="margin-left: 40px;"><input type="checkbox"/> Master</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> <b>Slave</b></p>
<p>Notable objects, functions, and/or qualifiers supported in addition to the Highest DNP Levels Supported (the complete list is described in the attached table) :</p> <p>For static (non-change-event) object requests, request qualifier codes 07 and 08 (limited quantity), and 17 and 28 (index) are supported. Static object requests sent with qualifiers 07, or 08, will be responded with qualifiers 00 or 01.</p> <p><b>16-bit, 32-bit and Floating Point Analog Change Events with Time may be requested.</b></p> <p><b>Floating Point Analog Output Status and Output Block Objects 40 and 41 are supported.</b></p> <p><b>Octet String and String Event Objects 110 and 111 are supported.</b></p> <p><b>Device Attribute Object 0 is supported.</b></p> <p><b>Output Event Objects 11 and 42 are supported.</b></p>	
<p>Maximum Data Link Frame Size (octets):</p> <p style="margin-left: 40px;">Transmitted: <b>292</b></p> <p style="margin-left: 40px;">Received <b>292</b></p>	<p>Maximum Application Fragment Size (octets):</p> <p style="margin-left: 40px;">Transmitted: <b>2048</b></p> <p style="margin-left: 40px;">Received <b>2048</b></p>
<p>Maximum Data Link Re-tries:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> <b>None</b></p> <p style="margin-left: 40px;"><input type="checkbox"/> Fixed</p> <p style="margin-left: 40px;"><input type="checkbox"/> Configurable from 0 to 65535</p>	<p>Maximum Application Layer Re-tries:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> <b>None</b></p> <p style="margin-left: 40px;"><input type="checkbox"/> Configurable</p>

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Requires Data Link Layer Confirmation:

- Never**
- Always
- Sometimes
- Configurable as: Never, Only for multi-frame messages, or Always

Requires Application Layer Confirmation:

- Never
- Always
- When reporting Event Data (Slave devices only)**
- When sending multi-fragment responses (Slave devices only)**
- Sometimes
- Configurable as: "Only when reporting event data", or "When reporting event data or multi-fragment messages."

Timeouts while waiting for:

- |                          |   |  |                                   |   |
|--------------------------|---|--|-----------------------------------|---|
| Data Link Confirm:       | <input type="checkbox"/> None                   | <input type="checkbox"/> Fixed at ____ | <input type="checkbox"/> Variable | <input checked="" type="checkbox"/> <b>Configurable</b> |
| Complete Appl. Fragment: | <input checked="" type="checkbox"/> <b>None</b> | <input type="checkbox"/> Fixed at ____ | <input type="checkbox"/> Variable | <input type="checkbox"/> Configurable                   |
| Application Confirm:     | <input type="checkbox"/> None                   | <input type="checkbox"/> Fixed at ____ | <input type="checkbox"/> Variable | <input checked="" type="checkbox"/> <b>Configurable</b> |
| Complete Appl. Response: | <input checked="" type="checkbox"/> <b>None</b> | <input type="checkbox"/> Fixed at ____ | <input type="checkbox"/> Variable | <input type="checkbox"/> Configurable                   |

Others:

- Select/Operate Arm Timeout, configurable**
- Need Time Interval, configurable**
- Application File Timeout, configurable**
- Unsolicited Notification Delay, configurable**
- Unsolicited Response Retry Delay, configurable**
- Unsolicited Offline Interval, configurable**

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### Sends/Executes Control Operations:

WRITE Binary Outputs	<input checked="" type="checkbox"/> <b>Never</b>	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
SELECT/OPERATE	<input type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input checked="" type="checkbox"/> <b>Configurable</b>
DIRECT OPERATE	<input type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input checked="" type="checkbox"/> <b>Configurable</b>
DIRECT OPERATE – NO ACK	<input type="checkbox"/> Never	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input checked="" type="checkbox"/> <b>Configurable</b>
Count > 1	<input checked="" type="checkbox"/> <b>Never</b>	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Pulse On	<input type="checkbox"/> Never	<input checked="" type="checkbox"/> <b>Always</b>	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Pulse Off	<input type="checkbox"/> Never	<input checked="" type="checkbox"/> <b>Always</b>	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Latch On	<input type="checkbox"/> Never	<input checked="" type="checkbox"/> <b>Always</b>	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Latch Off	<input type="checkbox"/> Never	<input checked="" type="checkbox"/> <b>Always</b>	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Queue	<input checked="" type="checkbox"/> <b>Never</b>	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable
Clear Queue	<input checked="" type="checkbox"/> <b>Never</b>	<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Configurable

Control Operation can be handled by the automation engine. The automation engine then decide which control are accepted. If the automation engine do not handles the controls, all type of controls are accepted.

Reports Binary Input Change Events when no specific variation requested:

- Never
- Only time-tagged
- Only non-time-tagged
- Configurable to send one or the other**

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**

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<p>Sends Unsolicited Responses:</p> <p><input type="checkbox"/> Never</p> <p><input checked="" type="checkbox"/> <b>Configurable</b></p> <p><input type="checkbox"/> Only certain objects</p> <p><input type="checkbox"/> Sometimes (attach explanation)</p> <p><input checked="" type="checkbox"/> <b>ENABLE/DISABLE UNSOLICITED Function codes supported</b></p>	<p>Sends Static Data in Unsolicited Responses:</p> <p><input checked="" type="checkbox"/> <b>Never</b></p> <p><input type="checkbox"/> When Device Restarts</p> <p><input type="checkbox"/> When Status Flags Change</p> <p>No other options are permitted.</p>																					
<p>Default Counter Object/Variation:</p> <p><input type="checkbox"/> No Counters Reported</p> <p><input checked="" type="checkbox"/> <b>Configurable</b></p> <p><input type="checkbox"/> Default Object</p> <p><input type="checkbox"/> Default Variation:</p> <p><input checked="" type="checkbox"/> <b>Point-by-point configurable</b></p>	<p>Counters Roll Over at:</p> <p><input type="checkbox"/> No Counters Reported</p> <p><input type="checkbox"/> Configurable (attach explanation)</p> <p><input type="checkbox"/> 16 Bits</p> <p><input checked="" type="checkbox"/> <b>32 Bits</b></p> <p><input type="checkbox"/> Other Value: _____</p> <p><input type="checkbox"/> Point-by-point list attached</p>																					
<p>Sends Multi-Fragment Responses:</p> <p><input checked="" type="checkbox"/> <b>Yes</b></p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Configurable</p>																						
<p>Sequential File Transfer Support:</p> <table> <tr> <td>Append File Mode</td> <td><input type="checkbox"/> Yes</td> <td><input checked="" type="checkbox"/> <b>No</b></td> </tr> <tr> <td>Custom Status Code Strings</td> <td><input type="checkbox"/> Yes</td> <td><input checked="" type="checkbox"/> <b>No</b></td> </tr> <tr> <td>Permissions Field</td> <td><input type="checkbox"/> Yes</td> <td><input checked="" type="checkbox"/> <b>No</b></td> </tr> <tr> <td>File Events Assigned to Class</td> <td><input type="checkbox"/> Yes</td> <td><input checked="" type="checkbox"/> <b>No</b></td> </tr> <tr> <td>File Events Send Immediately</td> <td><input type="checkbox"/> Yes</td> <td><input checked="" type="checkbox"/> <b>No</b></td> </tr> <tr> <td>Multiple Blocks in a Fragment</td> <td><input type="checkbox"/> Yes</td> <td><input checked="" type="checkbox"/> <b>No</b></td> </tr> <tr> <td>Max Number of Files Open</td> <td colspan="2">0</td> </tr> </table>		Append File Mode	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> <b>No</b>	Custom Status Code Strings	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> <b>No</b>	Permissions Field	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> <b>No</b>	File Events Assigned to Class	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> <b>No</b>	File Events Send Immediately	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> <b>No</b>	Multiple Blocks in a Fragment	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> <b>No</b>	Max Number of Files Open	0	
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Max Number of Files Open	0																					



## DNP3 Implementation Table

OBJECT			REQUEST (Library will parse)		RESPONSE (Library will respond with)	
Object Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
0	1-253	Device Attribute Specific	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 1)
			2 (write)	00, 01 (start-stop)		
0	254	Device Attribute - Non-Specific All Attributes Request	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 1)
0	255	Device Attribute – List of Attribute Variations	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 1)
1	0	Binary Input – Any Variation	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)		
1	1	Binary Input	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
1	2	Binary Input with Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
2	0	Binary Input Change – Any Variation	1 (read)	06 (no range, or all) 07, 08 (limited qty)		
2	1	Binary Input Change without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
2	2	Binary Input Change with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
2	3	Binary Input Change with Relative Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
3	0	Double Bit Input – Any Variation	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)		
3	1	Double Bit Input	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 1)
3	2	Double Bit Input with Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 1)
4	0	Double Bit Input Change – Any Variation	1 (read)	06 (no range, or all) 07, 08 (limited qty)		

OBJECT			REQUEST (Library will parse)		RESPONSE (Library will respond with)	
Object Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
4	1	Double Bit Input Change without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
4	2	Double Bit Input Change with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
4	3	Double Bit Input Change with Relative Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
10	0	Binary Output – Any Variation	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)		
10	1	Binary Output	1 (read)  1 (write)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)  00, 01 (start-stop)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 1)
10	2	Binary Output Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
11	0	Binary Output Change – Any Variation	1 (read)	06 (no range, or all) 07, 08 (limited qty)		
11	1	Binary Output Change without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
11	2	Binary Output Change with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
12	0	Control Relay Output Block	22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)		
12	1	Control Relay Output Block	3 (select) 4 (operate) 5 (direct op) 6 (dir. op, noack)	17, 28 (index)	129 (response)	echo of request
12	2	Pattern Control Block	3 (select) 4 (operate) 5 (direct op) 6 (dir. op, noack)	7 (limited quantity)	129 (response)	echo of request
20	0	Binary Counter – Any Variation	1 (read) 22 (assign class)  7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)  00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty)		
20	1	32-Bit Binary Counter (with Flag)	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
20	2	16-Bit Binary Counter (with Flag)	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)

OBJECT			REQUEST (Library will parse)		RESPONSE (Library will respond with)	
Object Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
20	5	32-Bit Binary Counter without Flag	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
20	6	16-Bit Binary Counter without Flag	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
21	0	Frozen Counter – Any Variation	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)		
21	1	32-Bit Frozen Counter (with Flag)	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
21	2	16-Bit Frozen Counter (with Flag)	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
21	5	32-Bit Frozen Counter with Time Of Freeze	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 1)
21	6	16-Bit Frozen Counter with Time Of Freeze	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 1)
21	9	32-Bit Frozen Counter without Flag	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
21	10	16-Bit Frozen Counter without Flag	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
22	0	Counter Change Event – Any Variation	1 (read)	06 (no range, or all) 07, 08 (limited qty)		
22	1	32-Bit Counter Change Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
22	2	16-Bit Counter Change Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
22	5	32-Bit Counter Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
22	6	16-Bit Counter Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
23	0	Frozen Counter Event (Variation 0 is used to request default variation)	1 (read)	06 (no range, or all) 07, 08 (limited qty)		
23	1	32-Bit Frozen Counter Event	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17,28 (index)
23	2	16-Bit Frozen Counter Event	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17,28 (index)
23	5	32-Bit Frozen Counter Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)

OBJECT			REQUEST (Library will parse)		RESPONSE (Library will respond with)	
Object Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
23	6	16-Bit Frozen Counter Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
30	0	Analog Input - Any Variation	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)		
30	1	32-Bit Analog Input	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
30	2	16-Bit Analog Input	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
30	3	32-Bit Analog Input without Flag	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
30	4	16-Bit Analog Input without Flag	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
30	5	short floating point	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
32	0	Analog Change Event – Any Variation	1 (read)	06 (no range, or all) 07, 08 (limited qty)		
32	1	32-Bit Analog Change Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
32	2	16-Bit Analog Change Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
32	3	32-Bit Analog Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
32	4	16-Bit Analog Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
32	5	short floating point Analog Change Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
32	7	short floating point Analog Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
			2 (write)	00, 01 (start-stop) 07, 08 (limited qty) 17, 27, 28 (index)		
40	0	Analog Output Status	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)		
40	1	32-Bit Analog Output Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
40	2	16-Bit Analog Output Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)



OBJECT			REQUEST (Library will parse)		RESPONSE (Library will respond with)	
Object Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
40	3	short floating point Analog Output Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index – see note 2)
41	0	Analog Output Block	22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)		
41	1	32-Bit Analog Output Block	3 (select) 4 (operate) 5 (direct op) 6 (dir. op, noack)	17, 28 (index) 27 (index)	129 (response)	echo of request
41	2	16-Bit Analog Output Block	3 (select) 4 (operate) 5 (direct op) 6 (dir. op, noack)	17, 28 (index) 27 (index)	129 (response)	echo of request
41	3	short floating point Analog Output Block	3 (select) 4 (operate) 5 (direct op) 6 (dir. op, noack)	17, 27, 28 (index)	129 (response)	echo of request
42	0	Analog Output Event – Any Variation	1 (read)	06 (no range, or all) 07, 08 (limited qty)		
42	1	32-Bit Analog Output Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
42	2	16-Bit Analog Output Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
42	3	32-Bit Analog Output Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
42	4	16-Bit Analog Output Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
42	5	short floating point Analog Output Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
42	7	short floating point Analog Output Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
50	0	Time and Date				
50	1	Time and Date	1 (read)	07, (limited qty = 1)	129 (response)	07 (limited qty = 1)
			2 (write)	07 (limited qty = 1)		
50	3	Time and Date Last Recorded Time	2 (write)	07 (limited qty)		
51	1	Time and Date CTO			129 (response) 130 (unsol. resp)	07 (limited qty) (qty = 1)
51	2	Unsynchronized Time and Date CTO			129 (response) 130 (unsol. resp)	07 (limited qty) (qty = 1)
52	1	Time Delay Coarse			129 (response)	07 (limited qty) (qty = 1)
52	2	Time Delay Fine			129 (response)	07 (limited qty) (qty = 1)
60	0	Not Defined				
60	1	Class 0 Data	1 (read)	06 (no range, or all)		

OBJECT			REQUEST (Library will parse)		RESPONSE (Library will respond with)	
Object Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
60	2	Class 1 Data	1 (read)	06 (no range, or all) 07, 08 (limited qty)		
			20 (enbl. unsol.)	06 (no range, or all)		
			21 (dab. unsol.)			
			22 (assign class)			
60	3	Class 2 Data	1 (read)	06 (no range, or all) 07, 08 (limited qty)		
			20 (enbl. unsol.)	06 (no range, or all)		
			21 (dab. unsol.)			
			22 (assign class)			
60	4	Class 3 Data	1 (read)	06 (no range, or all) 07, 08 (limited qty)		
			20 (enbl. unsol.)	06 (no range, or all)		
			21 (dab. unsol.)			
			22 (assign class)			
110	string length	Octet String Object	1 (read)	00, 01 (start-stop)	129 (response)	00, 01 (start-stop)
			22 (assign class)	06 (no range, or all) 07, 08 (limited qty) 17, 27, 28 (index)		
			2 (write)	00, 01 (start-stop) 07, 08 (limited qty) 17, 27, 28 (index)		
111	string length	Octet String Event Object	1 (read)	06 (no range, or all) 07, 08 (limited qty)	129 (response) 130 (unsol. resp)	17, 28 (index)
No Object (function code only)			13 (cold restart)			
No Object (function code only)			14 (warm restart)			
No Object (function code only)			23 (delay meas.)			
No Object (function code only)			24 (record current time)			

**Note 1:** A Default variation refers to the variation responded when variation 0 is requested and/or in class 0, 1, 2, or 3 scans. Default variations are configurable.

**Note 2:** For static (non-change-event) objects, qualifiers 17 or 28 are only responded when a request is sent with qualifiers 17 or 28, respectively. Otherwise, static object requests sent with qualifiers 00, 01, 06, 07, or 08, will be responded with qualifiers 00 or 01. (For change-event objects, qualifiers 17 or 28 are always responded.)

**Note 3:** Writes of Internal Indications are only supported for index 4 or 7 (Need Time IIN1-4 or Restart IIN1-7).