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: **Opto 22**

Device Name: **SNAP-DNP-ASDS**

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):

16-bit, 32-bit and Floating Point Analog Change Events with Time may be requested.
Floating Point Analog Output Status and Output Block Objects 40 and 41 are supported.

Maximum Data Link Frame Size (octets):	Maximum Application Fragment Size (octets):
Transmitted **292**	Transmitted **Configurable up to 2048**
Received **292**	Received **2048**

Maximum Data Link Re-tries:	Maximum Application Layer Re-tries:
☐ None	☑ **None**
☐ Fixed at _____	☐ Configurable, range ____ to _____
☑ **Configurable**, range **0** to **65535**	(Fixed is not permitted)

Requires Data Link Layer Confirmation:

☐ Never
☐ Always
☐ Sometimes   If 'Sometimes', when? _____
☑ **Configurable**   **Never, Only for multi-frame messages, or Always.**

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 as: "Only when reporting event data", or "When reporting event data or multi-fragment messages."**

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 **Transmission Delay, configurable**
 Select/Operate Arm Timeout, configurable
 Need Time Interval, [SPM3]configurable
 Unsolicited Notification Delay, [SPM4]configurable
 Unsolicited Response Retry Delay, [SPM5]configurable
 Unsolicited Offline Interval, [SPM6]configurable
 Binary Change Event Scan Period, [SPM7]configurable
 Analog Change Event Scan Period, [SPM8]configurable

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

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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 (attach explanation)

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 ☐ Only time-tagged ☐ Only non-time-tagged ☑ **Configurable to send both, one or the other**	☐ Never ☐ Binary Input Change With Time ☐ Binary Input Change With Relative Time ☑ **Configurable**
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 list attached

Sends Multi-Fragment Responses: ☑ **Yes** ☐ No

Table 2.3-1 Level 2 Implementation (DNP-L2)

Obj	Var	Description	Func Codes (dec)	Qual Codes (hex)	Func Codes	Qual Codes (hex)
		OBJECT	**REQUEST** (slave must parse)		**RESPONSE** (master must parse)	
1	0	**Binary Input - All Variations**	1	06		
1	1	**Binary Input**			129, 130	00, 01
1	2	**Binary Input with Status**			129, 130	00, 01
2	0	**Binary Input Change - All Variations**	1	06,07,08		
2	1	**Binary Input Change without Time**	1	06,07,08	129, 130	17, 28
2	2	**Binary Input Change with Time**	1	06,07,08	129, 130	17, 28
2	3	**Binary Input Change with Relative Time**	1	06,07,08	129, 130	17, 28
10	0	**Binary Output - All Variations**	1	06		
10	1	**Binary Output**				
10	2	**Binary Output Status**			129, 130	00, 01
12	0	**Control Block - All Variations**				
12	1	**Control Relay Output Block**	3, 4, 5, 6	17, 28	129	echo of request
30	0	**Analog Input - All Variations**	1	06		
30	1	**32-Bit Analog Input**			129, 130	00, 01
30	2	**16-Bit Analog Input**			129, 130	00, 01
30	3	**32-Bit Analog Input without Flag**			129, 130	00, 01
30	4	**16-Bit Analog Input without Flag**			129, 130	00, 01
32	0	**Analog Change Event - All Variations**	1	06,07,08		
32	1	**32-Bit Analog Change Event without Time**			129,130	17,28
32	2	**16-Bit Analog Change Event without Time**			129,130	17,28
32	3	**32-Bit Analog Change Event with Time**				
32	4	**16-Bit Analog Change 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, 130	00, 01
41	0	**Analog Output Block - All Variations**				
41	1	**32-Bit Analog Output Block**				
41	2	**16-Bit Analog Output Block**	3, 4, 5, 6	17, 28	129	echo of request

OBJECT			REQUEST (slave must parse)		RESPONSE (master must parse)	
Obj	Var	Description	Func Codes (dec)	Qual Codes (hex)	Func Codes	Qual Codes (hex)
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**			129, 130	07, quantity=1
51	2	**Unsynchronized Time and Date CTO**			129, 130	07, quantity=1
52	0	**Time Delay - All Variations**				
52	1	**Time Delay Coarse**			129	07, quantity=1
52	2	**Time Delay Fine**			129	07, quantity=1
60	0					
60	1	**Class 0 Data**	1	06		
60	2	**Class 1 Data**	1	06,07,08		
60	3	**Class 2 Data**	1	06,07,08		
60	4	**Class 3 Data**	1	06,07,08		
80	1	**Internal Indications**	2	00 index=7		