

# DNP 3.0 device profile for AQ 200

Revision:	4.0
Date:	October 2018
Changes:	- Added Counter support
Checked By:	

Vendor name: Arcteq Relays Ltd.	
Device name: AQ 200 series	
Highest DNP Level supported: for requests: DNP-L2 for response: DNP-L2	Device function: <input type="checkbox"/> master <input checked="" type="checkbox"/> slave
Notable objects, functions, and/or qualifiers supported in addition to the Highest DNP Levels Supported (the complete list is described in the attached table): Analog Inputs reported only in single-precision float-point (g30v5) , Double-bit Binary Input types supported (g3, g4), CROB (g12): multiple object command not supported, slave address 0-254	
Maximum Data Link Frame Size (octets): Transmitted: 292 (maximum) Received: 292 (maximum)	Maximum Application Fragment Size (octets): Transmitted: 2048 (maximum) Received: 2048 (maximum)
Maximum Data Link Re-tries: <input type="checkbox"/> None <input type="checkbox"/> Fixed at 3 <input checked="" type="checkbox"/> Configurable	Maximum Application Layer Re-tries: <input checked="" type="checkbox"/> None <input type="checkbox"/> Fixed at <input type="checkbox"/> Configurable
Requires Data Link Layer Confirmation: <input type="checkbox"/> Never <input type="checkbox"/> Always <input type="checkbox"/> Sometimes If 'Sometimes', when? <input checked="" type="checkbox"/> Configurable If 'Configurable', how? by configuration software AQtivate 200	
Requires Application Layer Confirmation: <input type="checkbox"/> Never <input type="checkbox"/> Always (not recommended) <input checked="" type="checkbox"/> When reporting Event Data (Slave devices only) <input checked="" type="checkbox"/> When sending multi-fragment responses (Slave devices only) <input type="checkbox"/> Sometimes If 'Sometimes', when? <input type="checkbox"/> Configurable If 'Configurable', how?	
Timeouts while waiting for: Data Link Confirm <input type="checkbox"/> None <input type="checkbox"/> Fixed at _____ <input type="checkbox"/> Variable <input checked="" 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	
Sends/Executes Control Operations: WRITE Binary Outputs <input checked="" type="checkbox"/> Never <input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Configurable SELECT/OPERATE <input type="checkbox"/> Never <input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Configurable DIRECT OPERATE <input type="checkbox"/> Never <input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Configurable DIRECT OPERATE - NO ACK <input type="checkbox"/> Never <input checked="" type="checkbox"/> Always <input 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 type="checkbox"/> Never <input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Configurable Pulse Off <input type="checkbox"/> Never <input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Configurable Latch On <input type="checkbox"/> Never <input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Configurable Latch Off <input type="checkbox"/> Never <input checked="" 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 Note: all other parameters are ignored.	
Reports Binary Input Change Events when no specific variation requested: <input type="checkbox"/> Never <input type="checkbox"/> Only time-tagged <input type="checkbox"/> Only non-time-tagged <input checked="" type="checkbox"/> Configurable to send both, one or the other. Default variation configurable with Aqtivate 200.	Reports time-tagged Binary Input Change Events when no specific variation requested: <input type="checkbox"/> Never <input type="checkbox"/> Binary Input Change With Time <input type="checkbox"/> Binary Input Change With Relative Time <input checked="" type="checkbox"/> Configurable (attach explanation) Default variation configurable with Aqtivate 200.
Sends Unsolicited Responses: <input checked="" type="checkbox"/> Never <input type="checkbox"/> Configurable <input type="checkbox"/> Only certain objects <input type="checkbox"/> Sometimes	Sends Static Data in Unsolicited Responses: <input checked="" type="checkbox"/> Never <input type="checkbox"/> When Device Restarts <input type="checkbox"/> When Status Flags Change
Default Counter Object/Variation: Default Object: 20 Default Variation: 01	Counters Roll Over at: 32 Bits
Sends Multi Fragment Responses: No	

**Implementation Table**

OBJECT			REQUEST		RESPONSE	
Group Number	Variation Number	Description	Function Codes (dec)	Qualifier Codes (hex)	Function Codes (dec)	Qualifier Codes (hex)
1	0	Binary Input—Any Variation	1	0,1,6,7,8		
1	1	Binary Input—Packed format	1	0,1,6,7,8	129	0,1
1	2	Binary Input—With flags	1	0,1,6,7,8	129	0,1
2	0	Binary Input Event—Any Variation	1	6,7,8		
2	1	Binary Input Event—Without time	1	6,7,8	129	17,28
2	2	Binary Input Event—With absolute time	1	6,7,8	129	17,28
2	3	Binary Input Event—With relative time				
3	0	Double-bit Binary Input—Any Variation	1	0,1,6,7,8		
3	1	Double-bit Binary Input—Packed format	1	0,1,6,7,8	129	0,1
3	2	Double-bit Binary Input—With flags	1	0,1,6,7,8	129	0,1
4	0	Double-bit Binary Input Event—Any Variation	1	6,7,8		
4	1	Double-bit Binary Input Event—Without time	1	6,7,8	129	17,28
4	2	Double-bit Binary Input Event—With absolute time	1	6,7,8	129	17,28
4	3	Double-bit Binary Input Event—With relative time				
10	0	Binary Output—Any Variation				
10	2	Binary Output—Output status with flags				
12	1	Binary Command (CROB)	3,4,5,6	17,28	129	echo of request
20	0	Counter—Any Variation	1	0,1,6,7,8		
20	1	Counter—32-bit with flag	1	0,1,6,7,8	129	0,1
20	2	Counter—16-bit with flag	1	0,1,6,7,8	129	0,1
20	5	Counter—32-bit without flag	1	0,1,6,7,8	129	0,1
20	6	Counter—16-bit without flag	1	0,1,6,7,8	129	0,1
22	0	Counter Event—Any Variation	1	6,7,8		
22	1	Counter Event—32-bit with flag	1	6,7,8	129	17,28
22	2	Counter Event—16-bit with flag	1	6,7,8	129	17,28
30	0	Analog Input—Any Variation	1	0,1,6,7,8		
30	1	Analog Input—32-bit with flag	1	0,1,6,7,8	129	0,1
30	2	Analog Input—16-bit with flag	1	0,1,6,7,8	129	0,1
30	3	Analog Input—32-bit without flag	1	0,1,6,7,8	129	0,1
30	4	Analog Input—16-bit without flag	1	0,1,6,7,8	129	0,1
30	5	Analog Input—Single-precision float-point with flag	1	0,1,6,7,8	129	0,1
32	0	Analog Input Event—Any Variation	1	6,7,8		
32	1	Analog Input Event—32-bit without time	1	6,7,8	129	17,28
32	2	Analog Input Event—16-bit without time	1	6,7,8	129	17,28
32	3	Analog Input Event—32-bit with time	1	6,7,8	129	17,28
32	4	Analog Input Event—16-bit with time	1	6,7,8	129	17,28
32	5	Analog Input Event—Single-precision float-point with flag	1	6,7,8	129	17,28
32	7	Analog Input Event—Single-precision float-point with time	1	6,7,8	129	17,28
40	0	Analog Output Status—Any Variation				
40	2	Analog Output Status—16-bit with flag				
41	2	Analog Output—16-bit (AOB)				
50	1	Time and Date—Absolute time	2	7 (lim. qty=1)		
60	1	Class Objects—Class 0 data	1	6		

60	2	Class Objects—Class 1 data	1	6,7,8		
60	3	Class Objects—Class 2 data	1	6,7,8		
60	4	Class Objects—Class 3 data	1	6,7,8		
80	1	Internal Indications—Packed format	2	0 (ix=7)		
		No Group (Cold Restart)	13			
		No Group (Warm Restart)	14			
		No Group (Delay measurement)	23			