NWL S-CPU Network Data Exchange Map - Rev. 0.6

Date: 10/26/2016

Web Idx #	Parameter	Bit Assignments	Data Type	Data Instance #	Min Value	Max Value	Default Value	Modbus Register # (Anybus-CC and Net Port)	Modbus Register # (Net Port only)	PROFIBUS DP/V1 Acyclic - Slot #	PROFIBUS DP/V1 Acyclic - Index	Notes
Process READ Data (Data Read from NWL Controller)												
1	Controller Status		UINT16	1				30001		0	0	
		Bit 15 - POR Mode MSB										0=Off, 1=Local, 2=Remote
		Bit 14 - POR Mode LSB										
		Bit 13 - Spare										
		Bit 12 - Spare										
		Bit 11 - Spare										
		Bit 10 - Spare										
		Bit 9 - Opacity/Boiler Load Timeout										When opacity/boiler load is fed via Fieldbus (f/w 5.00)
		Bit 8 - Auto Program Select Enabled										
		Bit 7 - Program Restart Mode Enabled										
		Bit 6 - Local Remote Input State										
		Bit 5 - Remote Program On Input State										
		Bit 4 - POR Program On										
		Bit 3 - S-RAP Comm Error(s)										
		Bit 2 - S-RAP Alarm(s)										
		Bit 1 - Program On										
		Bit 0 - 1 Sec Heartbeat toggle										
2	Active Operating Program		UINT16	2	0	5		30002		0	1	
3	Remote Software Select		UINT16	3	0	2		30003		0	2	0=Disable, 1=Discrete, 2=Network
4	Active Rapper 1		UINT16	4	0	1024		30004		0	3	0=No activity, 1…1024=Device Number
5	Active Rapper 2		UINT16	5	0	1024		30005		0	4	0=No activity, 1…1024=Device Number
6	Active Rapper 3		UINT16	6	0	1024		30006		0	5	0=No activity, 1…1024=Device Number
7	Active Rapper 4		UINT16	7	0	1024		30007		0	6	0=No activity, 1…1024=Device Number
8	Active Rapper 5		UINT16	8	0	1024		30008		0	7	0=No activity, 1…1024=Device Number
9	Active Rapper 6		UINT16	9	0	1024		30009		0	8	0=No activity, 1…1024=Device Number
10	Average Opacity		UINT16	10	0	999		30010		0	9	
11	Average Boiler Load		UINT16	11	0	9999		30011		0	10	
12	SRAP1-SRAP16 Alarms		UINT16	12				30012		0	11	
		Bit 15 - SRAP16 Alarmed										
		…										
		Bit 0 - SRAP1 Alarmed										
13	SRAP17-SRAP32 Alarms		UINT16	13				30013		0	12	
14	SRAP33-SRAP48 Alarms		UINT16	14				30014		0	13	
15	SRAP49-SRAP64 Alarms		UINT16	15				30015		0	14	
16	SRAP1-SRAP16 Comm Failures		UINT16	16				30016		0	15	
		Bit 15 - SRAP16 Comm Fail										
		…										
		Bit 0 - SRAP1 Comm Fail										
17	SRAP17-SRAP32 Comm Failures		UINT16	17				30017		0	16	
18	SRAP33-SRAP48 Comm Failures		UINT16	18				30018		0	17	
19	SRAP49-SRAP64 Comm Failures		UINT16	19				30019		0	18	

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	Process WRITE Data (Data Written to NWL Controller)											
20	**Watchdog Toggle**	**Added in firmware 5.00**	UINT16	97	0	65535	0	40625	40001	0	96	Value must change periodically to prevent opacity/boliler load from timing out, when Source is set to Fieldbus.
21	**Opacity Input**		UINT16	98	0	999	0	40626	40002	0	97	These values are used when Opacity/Boiler Load Source is set to Fieldbus.
22	**Boiler Load Input**		UINT16	99	0	9999	0	40627	40003	0	98	
23	Operating/POR Program: On/Off		UINT16	100	0	1	0	40628	40004	0	99	0=Off, 1=On
24	Active Operating Program		UINT16	101	1	5	1	40629	40005	0	100	
25	POR Mode		UINT16	102	0	2	0	40630	40006	0	101	0=Off, 1=Local, 2=Remote
	Application Data Instances (ADIs) Accessible via Acyclic Messaging Only											
26	Software Version ID		UINT16	103	0	9999	R/O	40631	40007	0	102	
27	Program Restart Mode		UINT16	104	0	1	0	40632	40008	0	103	0=Continue, 1=Restart
28	Alarm Relay Logic		UINT16	105	0	1	0	40633	40009	0	104	0=Normally Open, 1=Normally Closed
29	# of Alarms Before Activating Relay		UINT16	106	1	99	1	40634	40010	0	105	
30	Boiler Load Full Scale		UINT16	107	0	9999	1000	40635	40011	0	106	
31	System Clock Set - Month		UINT16	108	1	12	1	40636	40012	0	107	System clock is updated when "Seconds" registers is written.
32	System Clock Set - Day		UINT16	109	1	31	1	40637	40013	0	108	
33	System Clock Set - Year		UINT16	110	0	99	13	40638	40014	0	109	
34	System Clock Set - Hour		UINT16	111	0	23	0	40639	40015	0	110	
35	System Clock Set - Min		UINT16	112	0	59	0	40640	40016	0	111	
36	System Clock Set - Sec		UINT16	113	0	59	0	40641	40017	0	112	
37	Auto-Program Select On/Off Switch		UINT16	114	0	1	0	40642	40018	0	113	0=Auto-Program Select disabled
38	Auto-Program by Load - Step 1 Min Load		UINT16	115	0	9999	0	40643	40019	0	114	
39	Auto-Program by Load - Step 1 Max Load		UINT16	116	0	9999	0	40644	40020	0	115	
40	Auto-Program by Load - Step 1 Program #		UINT16	117	0	5	0	40645	40021	0	116	
41	Auto-Program by Load - Step 2 Min Load		UINT16	118	0	9999	0	40646	40022	0	117	
42	Auto-Program by Load - Step 2 Max Load		UINT16	119	0	9999	0	40647	40023	0	118	
43	Auto-Program by Load - Step 2 Program #		UINT16	120	0	5	0	40648	40024	0	119	
44	Auto-Program by Load - Step 3 Min Load		UINT16	121	0	9999	0	40649	40025	0	120	
45	Auto-Program by Load - Step 3 Max Load		UINT16	122	0	9999	0	40650	40026	0	121	
46	Auto-Program by Load - Step 3 Program #		UINT16	123	0	5	0	40651	40027	0	122	
47	Auto-Program by Time - Step 1 Min Time Hours		UINT16	124	0	23	0	40652	40028	0	123	
48	Auto-Program by Time - Step 1 Min Time Minutes		UINT16	125	0	59	0	40653	40029	0	124	
49	Auto-Program by Time - Step 1 Min Time Seconds		UINT16	126	0	59	0	40654	40030	0	125	

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50	Auto-Program by Time - Step 1 Max Time Hours		UINT16	127	0	23	0	40655	40031	0	126	
51	Auto-Program by Time - Step 1 Max Time Minutes		UINT16	128	0	59	0	40656	40032	0	127	
52	Auto-Program by Time - Step 1 Max Time Seconds		UINT16	129	0	59	0	40657	40033	0	128	
53	Auto-Program by Time - Step 1 Program #		UINT16	130	0	5	0	40658	40034	0	129	
54	Auto-Program by Time - Step 2 Min Time Hours		UINT16	131	0	23	0	40659	40035	0	130	
55	Auto-Program by Time - Step 2 Min Time Minutes		UINT16	132	0	59	0	40660	40036	0	131	
56	Auto-Program by Time - Step 2 Min Time Seconds		UINT16	133	0	59	0	40661	40037	0	132	
57	Auto-Program by Time - Step 2 Max Time Hours		UINT16	134	0	23	0	40662	40038	0	133	
58	Auto-Program by Time - Step 2 Max Time Minutes		UINT16	135	0	59	0	40663	40039	0	134	
59	Auto-Program by Time - Step 2 Max Time Seconds		UINT16	136	0	59	0	40664	40040	0	135	
60	Auto-Program by Time - Step 2 Program #		UINT16	137	0	5	0	40665	40041	0	136	
61	Auto-Program by Time - Step 3 Min Time Hours		UINT16	138	0	23	0	40666	40042	0	137	
62	Auto-Program by Time - Step 3 Min Time Minutes		UINT16	139	0	59	0	40667	40043	0	138	
63	Auto-Program by Time - Step 3 Min Time Seconds		UINT16	140	0	59	0	40668	40044	0	139	
64	Auto-Program by Time - Step 3 Max Time Hours		UINT16	141	0	23	0	40669	40045	0	140	
65	Auto-Program by Time - Step 3 Max Time Minutes		UINT16	142	0	59	0	40670	40046	0	141	
66	Auto-Program by Time - Step 3 Max Time Seconds		UINT16	143	0	59	0	40671	40047	0	142	
67	Auto-Program by Time - Step 3 Program #		UINT16	144	0	5	0	40672	40048	0	143	
68	Auto-Program Default Program		UINT16	145	0	5	0	40673	40049	0	144	
69	Global Anti-Coincidence Time Set		UINT16	146	0	99	0	40674	40050	0	145	Sets all programs' ACG timers to sent value
70	Anti-Coincidence Time for Program 1		UINT16	147	0	99	0	40675	40051	0	146	
71	Anti-Coincidence Time for Program 2		UINT16	148	0	99	0	40676	40052	0	147	
72	Anti-Coincidence Time for Program 3		UINT16	149	0	99	0	40677	40053	0	148	
73	Anti-Coincidence Time for Program 4		UINT16	150	0	99	0	40678	40054	0	149	
74	Anti-Coincidence Time for Program 5		UINT16	151	0	99	0	40679	40055	0	150	
75	Clear Output Alarms		UINT16	152	1	9999	0	40680	40056	0	151	Write output number to this register to clear alarms (e.g., write 5 to clear output 5 alarms). **Write 9999 to clear all active alarms.**

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76	Output Status: Devices 1-4		UINT16	153	0	65535	R/O	40681	40057	0	152	Each output status is represented by 4 bits in these registers, as follows: 0=Output Disabled 1=Output OK (no errors) 2=Undercurrent 3=Overcurrent 4=Half-wave 5=Suspect UC 6=Suspect OC 7=Suspect Half-wave
		Bits 15...12 - Output 4 Status										
		Bits 11…8 - Output 3 Status										
		Bits 7…4 - Output 2 Status										
		Bits 3…0 - Output 1 Status										
77	Output Status: Devices 5-8		UINT16	154	0	65535	R/O	40682	40058	0	153	
78	Output Status: Devices 9-12		UINT16	155	0	65535	R/O	40683	40059	0	154	
					…							
177	Output Status: Devices 405-408		UINT16	254	0	65535	R/O	40782	40158	0	253	
178	Output Status: Devices 409-412		UINT16	255	0	65535	R/O	40783	40159	0	254	
179	Output Status: Devices 413-416		UINT16	256	0	65535	R/O	40784	40160	1	0	
180	Output Status: Devices 417-420		UINT16	257	0	65535	R/O	40785	40161	1	1	
					…							
331	Output Status: Devices 1020-1024		UINT16	408	0	65535	R/O	40936	40312	1	152	

Notes:

1. For Ethernet/IP Class
   Device Application Object = A2 (hex) for explicit data exchange
   Instance attribute for all values is 5
   CIP class 1 connection parameters:
   INPUT Connection Point (Target -> Originator) = 100, Data Size = 38 bytes
   OUTPUT Connection Point (Originator -> Target) = 150, Data Size = 12 bytes
   Configuration connection instance = 1, Size = 0
   Default IP address is 192.168.1.10. Set IP address using NWL GRC setup screen.
2. Before writing to any register, make sure writes from fieldbus are enabled. Refer to user manual for details on "Remote Enable" setting and "Local/Remote" discrete input.
3. PROFIBUS notes:
   On PROFIBUS master side, map ADIs to process data exactly in the order they are listed in this document; otherwise network connection establishment will fail.
4. Web Index of an ADI only applies to Anybus-CC adapters with a Web interface (Ethernet/IP, Modbus-TCP, Profinet, etc.) This index will be displayed in a Web browser. Web interface is enabled by default, but may be disabled by user.