Powerplus Series 6 Fieldbus Data Exchange Map

Updated: 5/28/2015

Process READ Data (Data Read from Power Supply / Target -> Originator)

Web Idx (Note 7)	Application Data Instance #	Parameter	Bit Assignments	Units	Max Value	Min Value	Default Value	Modbus Register # (Anybus-CC)	Modbus Register # (Network Port)	Notes
1	1	Device Status			65535	0	READ ONLY	30001	30001	See bit enumeration
			Bit 0 - Heartbeat Toggle				READ ONLY			Toggles every 1 second
			Bit 1 - Spare				READ ONLY			
			Bit 2 - Device = SCR DSP				READ ONLY			Determines Power Supply Type
			Bit 3 - Device = PowerPlus				READ ONLY			Determines Power Supply Type
			Bit 4 - Reserved				READ ONLY			
			Bit 5 - Reserved				READ ONLY			
			Bit 6 - Reserved				READ ONLY			
			Bit 7 - Reserved				READ ONLY			
			Bit 8 - Fieldbus Control Status				READ ONLY			1 = Fieldbus Write enabled, 0 = Fieldbus Write disabled
			Bit 9 - Net Port Control Status				READ ONLY			1 = Net Port Write enabled, 0 = Net Port Write disabled
			Bit 10 - Reserved				READ ONLY			
			Bit 11 - Reserved				READ ONLY			
			Bit 12 - Reserved				READ ONLY			
			Bit 13 - Reserved				READ ONLY			
			Bit 14 - Reserved				READ ONLY			
			Bit 15 - Reserved				READ ONLY			
2	2	Dutycycle x100		% x100	10000	0	READ ONLY	30002	30002	
3	3	Line Voltage		VAC	720	0	READ ONLY	30003	30003	
4	4	Line Current x10		AAC x10	7500	0	READ ONLY	30004	30004	
5	5	KVDC		KVDC	200	0	READ ONLY	30005	30005	
6	6	Output Current		mADC	5000	0	READ ONLY	30006	30006	
7	7	KVDC Peak		KVDC	200	0	READ ONLY	30007	30007	
8	8	Output Voltage Product			9,999	0	READ ONLY	30008	30008	
9	9	Output Power x10		KW x10	9999	0	READ ONLY	30009	30009	
10	10	Spark Rate		SPM	999	0	READ ONLY	30010	30010	
11	11	Arc Rate		APM	99	0	READ ONLY	30011	30011	
12	12	Operating Status			65,535	0	READ ONLY	30012	30012	
			Bit 0 - I.E. Mode				READ ONLY			0 = Off, 1 = On
			Bit 1 - Manual Mode				READ ONLY			0 = Off, 1 = On
			Bit 2 - Autotune Mode				READ ONLY			0 = Off, 1 = On
			Bit 3 - Reserved				READ ONLY			Always = 0
			Bit 4 - Local / Remote				READ ONLY			0 = Local, 1 = Remote
			Bit 5 - Contactor Status				READ ONLY			0 = Off, 1 = On
			Bit 6 - Back Corona Mode				READ ONLY			0 = Off, 1 = On
			Bit 7 - Reserved				READ ONLY			Always = 0
			Bit 8 - SPARE BIT				READ ONLY			Always = 0
			Bit 9 - Fan Fault Limit				READ ONLY			0 = Off, 1 = On
			Bit 10 - SPARE BIT				READ ONLY			Always = 0
			Bit 11 - Reserved				READ ONLY			Always = 0
			Bit 12 - SPARE BIT				READ ONLY			Always = 0
			Bit 13 - Power Control Active				READ ONLY			0 = Off, 1 = On
			Bit 14 - Temperature Limit				READ ONLY			0 = Off, 1 = On
			Bit 15 - Reserved				READ ONLY			Always = 0
13	13	Discrete Logic			65,535	0	READ ONLY	30013	30013	
			Bit 0 - Hammer 1 Output				READ ONLY			0 = Off, 1 = On
			Bit 1 - Hammer 2 Output				READ ONLY			0 = Off, 1 = On
			Bit 2 - Hammer 3 Output				READ ONLY			0 = Off, 1 = On
			Bit 3 - Reserved				READ ONLY			Always = 0
			Bit 4 - Hammer 4 Output				READ ONLY			0 = Off, 1 = On
			Bit 5 - Hammer 1 Feedback				READ ONLY			0=120 VAC present, 1 = 0 VAC present
			Bit 6 - Hammer 2 Feedback				READ ONLY			0=120 VAC present, 1 = 0 VAC present
			Bit 7 - Reserved				READ ONLY			Always = 0

			Bit 8 - Hammer 3 Feedback				READ ONLY			0=120 VAC present, 1 = 0 VAC present
			Bit 9 - Hammer 4 Feedback				READ ONLY			0=120 VAC present, 1 = 0 VAC present
			Bit 10 - SPARE BIT				READ ONLY			Always = 0
			Bit 11 - Reserved				READ ONLY			Always = 0
			Bit 12 - Reduced Voltage				READ ONLY			0 = Off, 1 = On
			Bit 13 - Remote On				READ ONLY			0=120 VAC present, 1 = 0 VAC present
			Bit 14 - Remote Enable				READ ONLY			0=120 VAC present, 1 = 0 VAC present
			Bit 15 - Reserved				READ ONLY			Always = 0
14	14	Limit Status			65,535	0	READ ONLY	30014	30014	
			Bit 0 - Current Limit				READ ONLY			0 = FALSE, 1 = TRUE
			Bit 1 - Voltage Limit				READ ONLY			
			Bit 2 - Full dutycycle				READ ONLY			
			Bit 3 - Reserved				READ ONLY			Always = 0
			Bit 4 - Back Corona Hold				READ ONLY			
			Bit 5 - V/I Curve in Operation				READ ONLY			
			Bit 6 - Hammer 1 Feedback Alarm				READ ONLY			
			Bit 7 - Reserved				READ ONLY			Always = 0
			Bit 8 - Hammer 2 Feedback Alarm				READ ONLY			
			Bit 9 - Hammer 3 Feedback Alarm				READ ONLY			
			Bit 10 - Hammer 4 Feedback Alarm				READ ONLY			
			Bit 11 - Reserved				READ ONLY			Always = 0
			Bit 12 - Spark Occurred				READ ONLY			
			Bit 13 - Arc Occurred				READ ONLY			
			Bit 14 - BC Check in Progress				READ ONLY			
			Bit 15 - Reserved				READ ONLY			Always = 0
15	15	Alarm Status			65,535	0	READ ONLY	30015	30015	
			Bit 0 - Line Over-Current				READ ONLY			0 = FALSE, 1 = TRUE
			Bit 1 - Sec Over-Current				READ ONLY			
			Bit 2 -SPARE BIT				READ ONLY			
			Bit 3 - Reserved				READ ONLY			Always = 0
			Bit 4 - Open Circuit				READ ONLY			
			Bit 5 - Under- Voltage				READ ONLY			
			Bit 6 - Over-Voltage				READ ONLY			
			Bit 7 - Reserved				READ ONLY			Always = 0
			Bit 8 - Over-Temperature				READ ONLY			
			Bit 9 - SPARE BIT				READ ONLY			
			Bit 10 -Aux. Alarm 1				READ ONLY			
			Bit 11 - Reserved				READ ONLY			Always = 0
			Bit 12 - Aux. Alarm 2				READ ONLY			
			Bit 13 - Aux. Alarm 3				READ ONLY			
			Bit 14 - Aux. Alarm 4				READ ONLY			
			Bit 15 - Reserved				READ ONLY			Always = 0
16	16	Alarm Status 2			65,535	0	READ ONLY	30016	30016	
			Bit 0 - Line VAC abnormal				READ ONLY			0 = FALSE, 1 = TRUE
			Bit 1 - Low Bus Voltage				READ ONLY			
			Bit 2 - Low Liquid level				READ ONLY			
			Bit 3 - Reserved				READ ONLY			Always = 0
			Bit 4 - Door Open				READ ONLY			
			Bit 5 - Fan Contactor fault				READ ONLY			
			Bit 6 - Step Contactor Fault				READ ONLY			
			Bit 7 - Reserved				READ ONLY			Always = 0
			Bit 8 - Main Contactor Fault				READ ONLY			
			Bit 9 - Fan Current Fault				READ ONLY			
			Bit 10 - HV Tank Fault				READ ONLY			
			Bit 11 - Reserved				READ ONLY			Always = 0
			Bit 12 - Low Battery				READ ONLY			
			Bit 13 - I Res Unbalanced				READ ONLY			
			Bit 14 - HS Temp Unbalanced				READ ONLY			
			Bit 15 - Reserved				READ ONLY			Always = 0
17	17	Bus Voltage		VDC	800	0	READ ONLY	30017	30017	
18	18	Bus Resonant Current		AAC	1000	0	READ ONLY	30018	30018	
19	19	Fan Current x10		AAC x10	20	0	READ ONLY	30019	30019	
20	20	HeatSink Temp.		°C	99	0	READ ONLY	30020	30020	

21	21	I.E. On Time (Actual)		ms x 10	200	1	READ ONLY	30021	30021	
22	22	I.E. Off Time (Actual)		ms x 10	9999	10	READ ONLY	30022	30022	

Process WRITE Data (Data Written to Power Supply / Originator -> Target)

Web Idx (Note 7)	Application Data Instance #	Parameter	Bit Assignments	Units	Max Value	Min Value	Default Value	Modbus Register # (Anybus-CC)	Modbus Register # (Network Port)	Notes
23	50	Clear Alarm			1	0	0	40578 (note 4)	40001	Prior to Ver 2.11 - Remote Enable must be off to clear an alarm
24	51	HV On/Off Control			2	0	0	40579	40002	1 = HV Off, 2 = HV On
25	52	Spark Setback		%	30	1	15	40580	40003	
26	53	Quench		ms	99	4	20	40581	40004	
27	54	Current Limit		%	110	10	100	40582	40005	
28	55	Secondary Voltage Limit		%	110	10	100	40583	40006	
29	56	U.V. Trip Level		KVDC	30	0	10	40584	40007	
30	57	U.V. Trip Delay		Seconds	45	5	30	40585	40008	
31	58	Spark Rate (setpoint)		SPM	120	1	12	40586	40009	
32	59	Max. Dutycycle		%	100	50	100	40587	40010	
32	60	Max. Current Limit		%	110	30	110	40588	40011	
34	61	Mode Control			3	1	1	40589	40012	1 = SETPOINT
										2 = MANUAL
										3 = AUTOTUNE
35	62	I.E. On Time		ms x 10	200	1	1	40590	40013	
36	63	I.E. Off Time		ms x 10	9999	10	100	40591	40014	
37	64	Manual Mode Setpoint		% x100	10000	0	0	40592	40015	0 - 100 % duty x100
38	65	I.E. Mode			2	0	0	40593	40016	1= OFF, 2 = ON
39	66	BC Mode			2	0	0	40594	40017	1= OFF, 2 = ON

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:
   Configuration connection instance = 1
   Originator -> Target Connection Point = 150, Data Size = 34 bytes
   Target -> Originator Connection Point = 100, Data Size = 44 bytes
   Default IP address is 192.168.1.10. Set IP address using NWL GVC setup screen.
2. "Comm Status" must be set to Remote before writing to any register.
3. All data is unsigned int 16 bits
4. Modbus registers 40578-40594 were mapped as 40001-40017 in firmware versions 2.17 and earlier. Starting with firmware 2.18, Modbus addressing for Anybus-CC adapter will be different from Modbus via Network port.
   This change affects Anybus-CC Modbus-RTU and -TCP only.
5. Starting with firmware 2.18, it is possible to select (via GVC menu) which process WRITE variables are enabled (mapped) for cyclical data exchanges via Anybus-CC interface.
   By default, all process WRITE variables are enabled and network data exchange map is as shown in the table.
   For example, if user chooses not to map "Clear Alarm" ADI as a process WRITE variable, then the number of process WRITE variables will be reduced by one,
   and the first process WRITE variable will be "HV On/Off Control".
   User selections do not affect Modbus register addresses (Anybus-CC and Network port). For Modbus adapters (-RTU and -TCP), the entire process WRITE range is always accessible.
6. 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.
   - If user disables mapping of a process WRITE variable (see Note 5 above), it must be taken into account by PROFIBUS master before attempting to establish connection.
7. 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.

Revisions:

9/20/2011 - RAZ
   Added Modbus Reference Column revised notes
   P+ v2.13 - Changed Data Instance #1 from "Device Type" to bit enumerated "Device Status"
12/27/2012 - PM
   Changed Modbus register numbers for Process WRITE data
6/15/2013 - AMP
   Device_status bit 8 and 9 , bit 3 went to spare
   Operating status bits changed

Alarm2 status bits changed

7/2/2013 - AMP

Added some bit designations

10/1/2013 - PM

Corrected Ethernet/IP connection size

7/30/2014 - RAZ

Clarifications on Min/Max values

3/18/2015 - RAZ

Added version info to note for ADI #50

5/28/2015 - RAZ

Revised description of ADI #12 Bit 6: "Back Corona Detected" changed to "Back Corona Mode"