

Application Note

SunSpec Data Blocks and the AXS Port

Introduction

The OutBack AXS Port provides communication with other OutBack devices. The device uses Ethernet access implemented by the Modbus Transmission Control Protocol. The SunSpec protocol enables sending and receiving of remote commands, control settings, and status information.

SunSpec Blocks

The AXS Port uses the SunSpec protocol to assemble blocks of data on each connected product. The SunSpec client software can read or write to each field in a data block on the AXS Port. The fields are used for remote commands, control settings, or status information on the OutBack product.

A user with SunSpec client software can use the following tables to interpret these blocks. Samples of the SunSpec client software are available at www.outbackpower.com. For more information on the SunSpec protocol, go to www.sunspec.org.

Columns

- **DID:** A unique identifier for a device type within the system.
- **Start** and **End:** The register addresses for the beginning and end of each field, offset from the beginning of the block.
- **Size:** The number of registers occupied by each field.
- **R/W:** Indicates this field's permissions.
- **Field name:** The name and function of each field.
- **Type:** Explains how the field's data is formatted.
- **Units:** The units of measure for each field, if applicable.
- **Scale Factor:** Indicates scaling a measurement value.
- **Contents:** Classification of field data (or a fixed value, where applicable).
- **Description:** Describes the field data.

SunSpec Block Structure

The first block is the Common Block, which supplies vendor and model information for the device.

The second (and subsequent) blocks will be device-specific, such as a block for charge controllers.

NOTE: OutBack charge controllers have a separate block for status fields and a separate block for command and control fields.

The final End Block formally marks the end of the block structure.

Device-Specific Blocks

The following blocks describe the devices currently supported by OutBack Power.

NOTE: The OutBack FXR inverter is configured using the Radian configuration block (Table 11) and the single-phase Radian status block (Table 12).

NOTE: These blocks may be subject to change without notice and should be used as examples only. For current information, go to www.outbackpower.com.

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NOTE: The “OutBack” block is for the AXS Port itself, with network settings and other configuration parameters.

Table 1 OutBack Block

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
64110	1	1	1	R	OutBack_DID	uint16	N/A	N/A	64110	Uniquely identifies this as a SunSpec Outback Interface
64110	2	2	1	R	OutBack_Length	uint16	Registers	N/A	420	Length of block in 16-bit registers
64110	3	3	1	R	OutBack_Major_Firmware_Number	uint16	N/A	N/A	Read Only	OutBack Major firmware revision
64110	4	4	1	R	OutBack_Mid_Firmware_Number	uint16	N/A	N/A	Read Only	OutBack Mid firmware revision
64110	5	6	1	R	OutBack_Minor_Firmware_Number	uint16	N/A	N/A	Read Only	OutBack Minor firmware revision
64110	6	6	1	R	OutBack_Encryption_Key	uint16	N/A	N/A	Read Only	Encryption key for current session (0 = Encryption not enabled)
64110	7	13	7	R	OutBack_MAC_Address	string (14)	N/A	N/A	Read Only	Ethernet MAC address
64110	14	21	8	W	OutBack_Write_Password	string (16)	N/A	N/A	Write Only	Password required to write to any register
64110	22	22	1	R/W	OutBack_Enable_DHCP	uint16	Enumerated	N/A	Programmable	0 = DHCP Disabled, use configured network parameter; 1 = DHCP Enabled
64110	23	24	2	R/W	OutBack_TCP/IP_Address	uint32	Address	N/A	Programmable	TCP/IP Address xxx.xxx.xxx.xxx
64110	25	26	2	R/W	OutBack_TCP/IP_Gateway_MSW	uint32	Address	N/A	Programmable	TCP/IP Gateway xxx.xxx.xxx.xxx
64110	27	28	2	R/W	OutBack_TCP/IP_Netmask_MSW	uint32	Address	N/A	Programmable	TCP/IP Netmask xxx.xxx.xxx.xxx
64110	29	30	2	R/W	OutBack_TCP/IP_DNS_1_MSW	uint32	Address	N/A	Programmable	TCP/IP DNS 1 xxx.xxx.xxx.xxx
64110	31	32	2	R/W	OutBack_TCP/IP_DNS_2_MSW	uint32	Address	N/A	Programmable	TCP/IP DNS 2 xxx.xxx.xxx.xxx
64110	33	33	1	R/W	OutBack_Modbus_Port	uint16	N/A	N/A	Programmable	Outback MODBUS IP port, default 502
64110	34	53	20	R/W	OutBack_SMTP_Server_Name	string (40)	N/A	N/A	Programmable	Email server name
64110	54	69	16	R/W	OutBack_SMTP_Account_Name	string (32)	N/A	N/A	Programmable	Email account name
64110	70	70	1	R/W	OutBack_SMTP_SSL_Enable	uint16	Enumerated	N/A	Programmable	0 = SSL Disabled; 1 = SSL Enabled (not implemented)
64110	71	78	8	W	OutBack_SMTP_Email_Password	string (16)	N/A	N/A	Write Only	Email account password
64110	79	98	20	R/W	OutBack_SMTP_Email_User_Name	string (40)	N/A	N/A	Programmable	Email account User Name
64110	99	99	1	R/W	OutBack_Status_Email_Interval	uint16	N/A	N/A	Programmable	0 = Status Email Disabled, 1-23 Status Email every n hours
64110	100	100	1	R/W	OutBack_Status_Email_Status_Time	uint16	N/A	N/A	Programmable	Hour of first status email of the day
64110	101	125	25	R/W	OutBack_Status_Email_Subject_Line	string (50)	N/A	N/A	Programmable	Status Email Subject Line
64110	126	145	20	R/W	OutBack_Status_Email_To_Address_1	string (40)	N/A	N/A	Programmable	Status Email to Address 1
64110	146	165	20	R/W	OutBack_Status_Email_To_Address_2	string (40)	N/A	N/A	Programmable	Status Email to Address 2
64110	166	166	1	R/W	OutBack_Alarm_Email_Enable	uint16	Enumerated	N/A	Programmable	0 = Disabled; 1 = Enabled
64110	167	191	25	R/W	OutBack_Alarm_Email_Subject_Line	string (50)	N/A	N/A	Programmable	Status Alarm_Subject Line
64110	192	211	20	R/W	OutBack_Alarm_Email_To_Address_1	string (40)	N/A	N/A	Programmable	Status Alarm to Address 1
64110	212	231	20	R/W	OutBack_Alarm_Email_To_Address_2	string (40)	N/A	N/A	Programmable	Status Alarm to Address 2
64110	232	239	8	W	OutBack_FTP_Password	string (16)	N/A	N/A	Write Only	FTP password
64110	240	247	8	W	OutBack_Telnet_Password	string (16)	N/A	N/A	Write Only	Telnet password (not implemented)
64110	248	248	1	R/W	OutBack_SD_Card_Data_Log_Write_Interval	uint16	N/A	N/A	Programmable	0 = SD-Card Data Logging disabled, 1-60 seconds
64110	249	249	1	R/W	OutBack_SD_Card_Data_Log_Retain_Days	uint16	N/A	N/A	Programmable	0 = Log until SD-Card is full then erase oldest, 1-731 Number of days to retain data logs
64110	250	250	1	R/W	OutBack_SD_Card_Data_Logging_Mode	uint16	Enumerated	N/A	Programmable	0 = Disabled; 1 = Excel Format; 2 = Compact Format
64110	251	270	20	R/W	OutBack_Time_Server_Name	string (40)	N/A	N/A	Programmable	Timeserver domain name
64110	271	271	1	R/W	OutBack_Enable_Time_Server	uint16	Enumerated	N/A	Programmable	0 = Time Server Disabled, use configured time parameters; 1 = Time Server Enabled
64110	272	272	1	R/W	OutBack_Set_Time_Zone	int16	Hours	N/A	Programmable	Time Zone -12-11
64110	273	273	1	R/W	OutBack_Enable_Float_Coordination	uint16	N/A	N/A	Programmable	0=Disabled, 1=Enabled
64110	274	274	1	R/W	OutBack_Enable_FNDC_Charge_Termination	uint16	N/A	N/A	Programmable	0=Disabled, 1=Enabled
64110	275	275	1	R/W	OutBack_Enable_FNDC_Grid_Tie_Control	uint16	N/A	N/A	Programmable	0=Disabled, 1=Enabled
64110	276	276	1	R	OutBack_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64110	277	277	1	R	OutBack_Hour_SF	int16	N/A	N/A	-1	Hours Scale Factor
64110	278	278	1	R/W	OutBack_AGS_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	279	279	1	R/W	OutBack_AGS_Port	uint16	N/A	N/A	Programmable	AGS device port number 0-10
64110	280	280	1	R/W	OutBack_AGS_Port_Type	uint16	Enumerated	N/A	Programmable	0=Radian AUX Relay, 1=Radian AUX Output

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Table 1 OutBack Block

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
64110	281	281	1	R/W	OutBack_AGS_Generator_Type	uint16	Enumerated	N/A	Programmable	0=AC Gen, 1=DC Gen, 2=No Gen
64110	282	282	1	R/W	OutBack_AGS_DC_Gen_Absorb_Voltage	uint16	Volts	OutBack_Voltage_SF	Programmable	DC Generator Absorb Voltage
64110	283	283	1	R/W	OutBack_AGS_DC_Gen_Absorb_Time	uint16	Hour	OutBack_Hour_SF	Programmable	DC Generator Absorb Time
64110	284	284	1	R/W	OutBack_AGS_Fault_Time	uint16	Minutes	N/A	Programmable	AGS Generator fault time delay
64110	285	285	1	R/W	OutBack_AGS_Gen_Cool_Down_Time	uint16	Minutes	N/A	Programmable	AGS Generator Cool Down Time
64110	286	286	1	R/W	OutBack_AGS_Gen_Warm_Up_Time	uint16	Minutes	N/A	Programmable	AGS Generator Warm Up Time
64110	287	287	1	R/W	OutBack_AGS_Generator_Exercise_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	288	288	1	R/W	OutBack_AGS_Exercise_Start_Hour	uint16	Hour	N/A	Programmable	Exercise Start Hour 0-23
64110	289	289	1	R/W	OutBack_AGS_Exercise_Start_Minute	uint16	Minutes	N/A	Programmable	Exercise Start Minute 0-59
64110	290	290	1	R/W	OutBack_AGS_Exercise_Day	uint16	Enumerated	N/A	Programmable	0=Sun, 1=Mon, 2=Tue, 3=Wed, 4=Thr, 5=Fri, 6=Sat
64110	291	291	1	R/W	OutBack_AGS_Exercise_Period	uint16	Minutes	N/A	Programmable	Exercise Period 1-240 minutes
64110	292	292	1	R/W	OutBack_AGS_Exercise_Interval	uint16	Weeks	N/A	Programmable	Exercise interval 1-8 Weeks
64110	293	293	1	R/W	OutBack_AGS_Sell_Mode	uint16	Enumerated	N/A	Programmable	Sell During Generator Exercise Period, 0=Selling Enabled, 1=Selling Disabled
64110	294	294	1	R/W	OutBack_AGS_2_Min_Start_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	295	295	1	R/W	OutBack_AGS_2_Min_Start_Voltage	uint16	Volts	OutBack_Voltage_SF	Programmable	Two Minute AGS Start Voltage
64110	296	296	1	R/W	OutBack_AGS_2_Hour_Start_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	297	297	1	R/W	OutBack_AGS_2_Hour_Start_Voltage	uint16	Volts	OutBack_Voltage_SF	Programmable	Two Hour AGS Start Voltage
64110	298	298	1	R/W	OutBack_AGS_24_Hour_Start_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	299	299	1	R/W	OutBack_AGS_24_Hour_Start_Voltage	uint16	Volts	OutBack_Voltage_SF	Programmable	Twenty Four Hour AGS Start Voltage
64110	300	300	1	R/W	OutBack_AGS_Load_Start_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	301	301	1	R/W	OutBack_AGS_Load_Start_kW	uint16	kWatts	N/A	Programmable	Load Start kWatts
64110	302	302	1	R/W	OutBack_AGS_Load_Start_Delay	uint16	Minutes	N/A	Programmable	Load Start Delay
64110	303	303	1	R/W	OutBack_AGS_Load_Stop_kW	uint16	kWatts	N/A	Programmable	Load Stop kWatts
64110	304	304	1	R/W	OutBack_AGS_Load_Stop_Delay	uint16	Minutes	N/A	Programmable	Load Stop Delay
64110	305	305	1	R/W	OutBack_AGS_SOC_Start_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	306	306	1	R/W	OutBack_AGS_SOC_Start_Percentage	uint16	Percent	N/A	Programmable	AGS SOC Start Percentage
64110	307	307	1	R/W	OutBack_AGS_SOC_Stop_Percentage	uint16	Percent	N/A	Programmable	AGS SOC Stop Percentage
64110	308	308	1	R/W	OutBack_AGS_Enable_Full_Charge_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	309	309	1	R/W	OutBack_AGS_Full_Charge_Interval	uint16	Days	N/A	Programmable	AGS SOC Full Charge Interval
64110	310	310	1	R/W	OutBack_AGS_Must_Run_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	311	311	1	R/W	OutBack_AGS_Must_Run_Weekday_Start_Hour	uint16	Hour	N/A	Programmable	AGS Must Run Weekday Start Hour 0-23
64110	312	312	1	R/W	OutBack_AGS_Must_Run_Weekday_Start_Minute	uint16	Minute	N/A	Programmable	AGS Must Run Weekday Start Minute 0-59
64110	313	313	1	R/W	OutBack_AGS_Must_Run_Weekday_Stop_Hour	uint16	Hour	N/A	Programmable	AGS Must Run Weekday Stop Hour 0-23
64110	314	314	1	R/W	OutBack_AGS_Must_Run_Weekday_Stop_Minute	uint16	Minute	N/A	Programmable	AGS Must Run Weekday Stop Minute 0-59
64110	315	315	1	R/W	OutBack_AGS_Must_Run_Weekend_Start_Hour	uint16	Hour	N/A	Programmable	AGS Must Run Weekend Start Hour 0-23
64110	316	316	1	R/W	OutBack_AGS_Must_Run_Weekend_Start_Minute	uint16	Minute	N/A	Programmable	AGS Must Run Weekend Start Minute 0-59
64110	317	317	1	R/W	OutBack_AGS_Must_Run_Weekend_Stop_Hour	uint16	Hour	N/A	Programmable	AGS Must Run Weekend Stop Hour 0-23
64110	318	318	1	R/W	OutBack_AGS_Must_Run_Weekend_Stop_Minute	uint16	Minute	N/A	Programmable	AGS Must Run Weekend Stop Minute 0-59
64110	319	319	1	R/W	OutBack_AGS_Quiet_Time_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	320	320	1	R/W	OutBack_AGS_Quiet_Time_Weekday_Start_Hour	uint16	Hour	N/A	Programmable	AGS Quiet Time Weekday Start Hour 0-23
64110	321	321	1	R/W	OutBack_AGS_Quiet_Time_Weekday_Start_Minute	uint16	Minute	N/A	Programmable	AGS Quiet Time Weekday Start Minute 0-59

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Table 1 OutBack Block

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
64110	322	322	1	R/W	OutBack_AGS_Quiet_Time_Weekday_Stop_Hour	uint16	Hour	N/A	Programmable	AGS Quiet Time Weekday Stop Hour 0-23
64110	323	323	1	R/W	OutBack_AGS_Quiet_Time_Weekday_Stop_Minute	uint16	Minute	N/A	Programmable	AGS Quiet Time Weekday Stop Minute 0-59
64110	324	324	1	R/W	OutBack_AGS_Quiet_Time_Weekend_Start_Hour	uint16	Hour	N/A	Programmable	AGS Quiet Time Weekend Start Hour 0-23
64110	325	325	1	R/W	OutBack_AGS_Quiet_Time_Weekend_Start_Minute	uint16	Minute	N/A	Programmable	AGS Quiet Time Weekend Start Minute 0-59
64110	326	326	1	R/W	OutBack_AGS_Quiet_Time_Weekend_Stop_Hour	uint16	Hour	N/A	Programmable	AGS Quiet Time Weekend Stop Hour 0-23
64110	327	327	1	R/W	OutBack_AGS_Quiet_Time_Weekend_Stop_Minute	uint16	Minute	N/A	Programmable	AGS Quiet Time Weekend Stop Minute 0-59
64110	328	329	2	R/W	OutBack_AGS_Total_Generator_Run_Time	uint32	Hours	N/A	Programmable	AGS Generator Total Run Time in Seconds
64110	330	330	1	R/W	OutBack_HBX_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Voltage Only, 2=SOC Only, 3=Both
64110	331	331	1	R/W	OutBack_HBX_Grid_Connect_Voltage	uint16	Volts	OutBack_Voltage_SF	Programmable	HBX Grid Connect Voltage
64110	332	332	1	R/W	OutBack_HBX_Grid_Connect_Delay	uint16	Hours	OutBack_Hour_SF	Programmable	HBX Grid Connect Delay
64110	333	333	1	R/W	OutBack_HBX_Grid_Disconnect_Voltage	uint16	Volts	OutBack_Voltage_SF	Programmable	HBX Grid Disconnect Voltage
64110	334	334	1	R/W	OutBack_HBX_Grid_Disconnect_Delay	uint16	Hours	OutBack_Hour_SF	Programmable	HBX Grid Disconnect Delay
64110	335	335	1	R/W	OutBack_HBX_Grid_Connect_SOC	uint16	Percent	N/A	Programmable	HBX Grid Connect SOC Percentage
64110	336	336	1	R/W	OutBack_HBX_Grid_Disconnect_SOC	uint16	Percent	N/A	Programmable	HBX Grid Disconnect SOC Percentage
64110	337	337	1	R/W	OutBack_Grid_Use_Interval_1_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	338	338	1	R/W	OutBack_Grid_Use_Interval_1_Weekday_Start_Hour	uint16	Hour	N/A	Programmable	Grid Use Interval 1 Weekday Start Hour 0-23
64110	339	339	1	R/W	OutBack_Grid_Use_Interval_1_Weekday_Start_Minute	uint16	Hour	N/A	Programmable	Grid Use Interval 1 Weekday Start Minute 0-59
64110	340	340	1	R/W	OutBack_Grid_Use_Interval_1_Weekday_Stop_Hour	uint16	Hour	N/A	Programmable	Grid Use Interval 1 Weekday Stop Hour 0-23
64110	341	341	1	R/W	OutBack_Grid_Use_Interval_1_Weekday_Stop_Minute	uint16	Hour	N/A	Programmable	Grid Use Interval 1 Weekday Stop Minute 0-59
64110	342	342	1	R/W	OutBack_Grid_Use_Interval_1_Weekend_Start_Hour	uint16	Hour	N/A	Programmable	Grid Use Interval 1 Weekend Start Hour 0-23
64110	343	343	1	R/W	OutBack_Grid_Use_Interval_1_Weekend_Start_Minute	uint16	Hour	N/A	Programmable	Grid Use Interval 1 Weekend Start Minute 0-59
64110	344	344	1	R/W	OutBack_Grid_Use_Interval_1_Weekend_Stop_Hour	uint16	Hour	N/A	Programmable	Grid Use Interval 1 Weekend Stop Hour 0-23
64110	345	345	1	R/W	OutBack_Grid_Use_Interval_1_Weekend_Stop_Minute	uint16	Hour	N/A	Programmable	Grid Use Interval 1 Weekend Stop Minute 0-59
64110	346	346	1	R/W	OutBack_Grid_Use_Interval_2_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	347	347	1	R/W	OutBack_Grid_Use_Interval_2_Weekday_Start_Hour	uint16	Hour	N/A	Programmable	Grid Use Interval 2 Weekday Start Hour 0-23
64110	348	348	1	R/W	OutBack_Grid_Use_Interval_2_Weekday_Start_Minute	uint16	Hour	N/A	Programmable	Grid Use Interval 2 Weekday Start Minute 0-59
64110	349	349	1	R/W	OutBack_Grid_Use_Interval_2_Weekday_Stop_Hour	uint16	Hour	N/A	Programmable	Grid Use Interval 2 Weekday Stop Hour 0-23
64110	350	350	1	R/W	OutBack_Grid_Use_Interval_2_Weekday_Stop_Minute	uint16	Hour	N/A	Programmable	Grid Use Interval 2 Weekday Stop Minute 0-59
64110	351	351	1	R/W	OutBack_Grid_Use_Interval_3_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	352	352	1	R/W	OutBack_Grid_Use_Interval_3_Weekday_Start_Hour	uint16	Hour	N/A	Programmable	Grid Use Interval 3 Weekday Start Hour 0-23
64110	353	353	1	R/W	OutBack_Grid_Use_Interval_3_Weekday_Start_Minute	uint16	Hour	N/A	Programmable	Grid Use Interval 3 Weekday Start Minute 0-59
64110	354	354	1	R/W	OutBack_Grid_Use_Interval_3_Weekday_Stop_Hour	uint16	Hour	N/A	Programmable	Grid Use Interval 3 Weekday Stop Hour 0-23
64110	355	355	1	R/W	OutBack_Grid_Use_Interval_3_Weekday_Stop_Minute	uint16	Hour	N/A	Programmable	Grid Use Interval 3 Weekday Stop Minute 0-59
64110	356	356	1	R/W	OutBack_Load_Grid_Transfer_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	357	357	1	R/W	OutBack_Load_Grid_Transfer_Threshold	uint16	kWatts	OutBack_Voltage_SF	Programmable	Load Grid Transfer Threshold kW
64110	358	358	1	R/W	OutBack_Load_Grid_Transfer_Connect_Delay	uint16	Seconds	N/A	Programmable	Load Grid Transfer Connect Delay Seconds
64110	359	359	1	R/W	OutBack_Load_Grid_Transfer_Disconnect_Delay	uint16	Seconds	N/A	Programmable	Load Grid Transfer Disconnect Delay Seconds

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Table 1 OutBack Block

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
64110	360	360	1	R/W	OutBack_Load_Grid_Transfer_Connect_Battery_Voltage	uint16	Volts	OutBack_Voltage_SF	Programmable	Load Grid Transfer Low Battery Connect Voltage
64110	361	361	1	R/W	OutBack_Load_Grid_Transfer_Re_Connect_Battery_Voltage	uint16	Volts	OutBack_Voltage_SF	Programmable	Load Grid Transfer Low Battery Re-Connect Voltage
64110	362	362	1	R/W	OutBack_Global_Charger_Control_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	363	363	1	R/W	OutBack_Global_Charger_Control_Output_Limit	uint16	Amps	N/A	Programmable	Global Charger Output Limit Amps
64110	364	364	1	R/W	OutBack_Radian_AC_Coupled_Control_Mode	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	365	365	1	R/W	OutBack_Radian_AC_Coupled_AUX_Port	uint16	Port	N/A	Programmable	Radian Inverter Port Number for AUX Control 0-10
64110	366	367	2	W	OutBack_URL_Update_Lock	uint32	key	N/A	Write Only	Unlock Key
64110	368	387	20	R/W	OutBack_Web_Reporting_Base_URL	string (40)	N/A	N/A	Programmable	WEB Reporting Base URL
64110	388	388	1	R/W	OutBack_WEB_User_Logged_In_Status	uint16	Enumerated	N/A	Programmable	0=WEB User NOT logged in, 1=WEB user logged in
64110	389	389	1	R	OutBack_HUB_Type	uint16	Enumerated	N/A	Read Only	0=Legacy HUB, 4= HUB4, 10=HUB10.3, 11=HUB3PH
64110	390	390	1	R	OutBack_HUB_Major_Firmware_Number	uint16	N/A	N/A	Read Only	HUB Major firmware revision
64110	391	391	1	R	OutBack_HUB_Mid_Firmware_Number	uint16	N/A	N/A	Read Only	HUB Mid firmware revision
64110	392	392	1	R	OutBack_HUB_Minor_Firmware_Number	uint16	N/A	N/A	Read Only	HUB Minor firmware revision
64110	393	393	1	R/W	OutBack_Year	uint16	N/A	N/A	Programmable	Clock year (4 digit)
64110	394	394	1	R/W	OutBack_Month	uint16	N/A	N/A	Programmable	Clock Month (1 - 12)
64110	395	395	1	R/W	OutBack_Day	uint16	N/A	N/A	Programmable	Clock Day (1 - 31)
64110	396	396	1	R/W	OutBack_Hour	uint16	N/A	N/A	Programmable	Clock Hour (0 - 23)
64110	397	397	1	R/W	OutBack_Minute	uint16	N/A	N/A	Programmable	Clock Minute (0 - 59)
64110	398	398	1	R/W	OutBack_Second	uint16	N/A	N/A	Programmable	Clock Second (0 - 59)
64110	399	399	1	R	OutBack_Temp_Batt	int16	Degrees C	N/A	Measured	Battery temp in degrees C
64110	400	400	1	R	OutBack_Temp_Ambient	int16	Degrees C	N/A	Measured	Ambient temp from temp sensor connected to device, in degrees C
64110	401	401	1	R	OutBack_Temp_SF	uint16	N/A	N/A	0	Temperature Scale Factor
64110	402	402	1	R	OutBack_Error	uint16	Bitfield	N/A	Read Only	Bit field for errors. See Outback_Error Table
64110	403	403	1	R	OutBack_Status	uint16	Bitfield	N/A	Read Only	Bit field for status. See Outback_Status Table
64110	404	404	1	R/W	OutBack_Update_Device_Firmware_Port	uint16	Bitfield	N/A	Programmable	Device Firmware update See Device_FW_Update
64110	405	405	1	R	OutBack_Gateway_Type	uint16	Enumerated	N/A	Read Only	1=AXS Port, 2= MATE3
64110	406	406	1	R	OutBack_System_Voltage	uint16	Volts	N/A	Read Only	12, 24, 26, 48 or 60 VDC
64110	407	407	1	R	OutBack_Measured_System_Voltage	uint16	Volts	OutBack_Voltage_SF	Read Only	Current system battery voltage computed by gateway
64110	408	408	1	R/W	OutBack_AGS_AC_Reconnect_Delay	uint16	Minute	N/A	Programmable	AGS AC Reconnect Delay
64110	409	409	1	R/W	OutBack_Multi_Phase_Coordination	uint16	Enumerated	N/A	Programmable	0=Disabled, 1=Enabled
64110	410	410	1	R/W	OutBack_Sched_1_AC_Mode	int16	Enumerated	N/A	Programmable	Scheduled Input Mode: -1=Disable, 0=Generator, 1=Support, 2=Grid Tied, 3=UPS, 4=Backup, 5=Mini Grid, 6=Grid Zero
64110	411	411	1	R/W	OutBack_Sched_1_AC_Mode_Hour	uint16	Hour	N/A	Programmable	Start Hour for AC Input Mode schedule 1
64110	412	412	1	R/W	OutBack_Sched_1_AC_Mode_Minute	uint16	Minute	N/A	Programmable	Start Minute for AC Input Mode schedule 1
64110	413	413	1	R/W	OutBack_Sched_2_AC_Mode	int16	Enumerated	N/A	Programmable	Scheduled Input Mode: -1=Disable, 0=Generator, 1=Support, 2=Grid Tied, 3=UPS, 4=Backup, 5=Mini Grid, 6=Grid Zero
64110	414	414	1	R/W	OutBack_Sched_2_AC_Mode_Hour	uint16	Hour	N/A	Programmable	Start Hour for AC Input Mode schedule 2
64110	415	415	1	R/W	OutBack_Sched_2_AC_Mode_Minute	uint16	Minute	N/A	Programmable	Start Minute for AC Input Mode schedule 2
64110	416	416	1	R/W	OutBack_Sched_3_AC_Mode	int16	Enumerated	N/A	Programmable	Scheduled Input Mode: -1=Disable, 0=Generator, 1=Support, 2=Grid Tied, 3=UPS, 4=Backup, 5=Mini Grid, 6=Grid Zero
64110	417	417	1	R/W	OutBack_Sched_3_AC_Mode_Hour	uint16	Hour	N/A	Programmable	Start Hour for AC Input Mode schedule 3
64110	418	418	1	R/W	OutBack_Sched_3_AC_Mode_Minute	uint16	Minute	N/A	Programmable	Start Minute for AC Input Mode schedule 3
64110	419	419	1	R/W	OutBack_Auto_reboot	uint16	Enumerated	N/A	Programmable	OPTICS auto reboot every 24 hours 0=Disable, 1=24, 2=20, 3=16, 4=12, 5=8, 6=4 (hours)
64110	420	420	1	R/W	OutBack_Spare_Reg_2	uint16	N/A	N/A	Programmable	Spare Register 2
64110	421	421	1	R/W	OutBack_Spare_Reg_3	uint16	N/A	N/A	Programmable	Spare Register 3
64110	422	422	1	R/W	OutBack_Spare_Reg_4	uint16	N/A	N/A	Programmable	Spare Register 4

Application Note

Table 2 OutBack_Error_Table

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
—	—	—	—	—	—	—	—	—	0x0001	High limit last write
—	—	—	—	—	—	—	—	—	0x0002	Low limit last write
—	—	—	—	—	—	—	—	—	0x0004	Last write invalid
—	—	—	—	—	—	—	—	—	0x0008	DHCP failed
—	—	—	—	—	—	—	—	—	0x0010	DNS resolve failure
—	—	—	—	—	—	—	—	—	0x0020	SMTP authorization failed
—	—	—	—	—	—	—	—	—	0x0040	SMTP send failed
—	—	—	—	—	—	—	—	—	0x0080	FTP Error
—	—	—	—	—	—	—	—	—	0x0100	SD-Card Error
—	—	—	—	—	—	—	—	—	0x0200	SNTP failure
—	—	—	—	—	—	—	—	—	0x0400	Write while locked
—	—	—	—	—	—	—	—	—	0x0800	Device firmware updating not supported
—	—	—	—	—	—	—	—	—	0x1000	Device firmware update file not found
—	—	—	—	—	—	—	—	—	0x2000	Device firmware update file invalid
—	—	—	—	—	—	—	—	—	0x4000	Device firmware update failure

Table 3 OutBack_Status_Table

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
—	—	—	—	—	—	—	—	—	0x0001	Firmware update complete

Table 4 Device_FW_Update Register

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
—	—	—	—	—	—	—	—	—	0xPPXX	XX = device port number to update: 0-10
—	—	—	—	—	—	—	—	—	0xPPXX	PP = FW Update percent complete 0-100%

Table 5 Charge Controller Block

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
64111	1	1	1	R	CC_DID	uint16	N/A	N/A	64111	Uniquely identifies this as a SunSpec Basic Charge Controller
64111	2	2	1	R	CC_Length	uint16	Registers	N/A	26	Length of block in 16-bit registers
64111	3	3	1	R	CC_Port_number	uint16	N/A	N/A	0-10	Port number on Outback network
64111	4	4	1	R	CC_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64111	5	5	1	R	CC_Current_SF	int16	N/A	N/A	-1	DC Current Scale Factor
64111	6	6	1	R	CC_Power_SF	int16	N/A	N/A	0	DC Power Scale Factor
64111	7	7	1	R	CC_AH_SF	int16	N/A	N/A	0	DC Amp Hours Scale Factor
64111	8	8	1	R	CC_KWH_SF	int16	N/A	N/A	-1	DC kWh Scale Factor
64111	9	9	1	R	CC_Batt_Voltage	uint16	Volts	CC_Voltage_SF	Measured	Battery Voltage
64111	10	10	1	R	CC_Array_Voltage	uint16	Volts	CC_Voltage_SF	Measured	DC Source Voltage
64111	11	11	1	R	CC_Batt_Current	uint16	Amps	CC_Current_SF	Measured	Battery Current
64111	12	12	1	R	CC_Array_Current	uint16	Amps	CC_Power_SF	Measured	DC Source Current
64111	13	13	1	R	CC_Charger_State	uint16	Enumerated	N/A	N/A	0 = Silent; 1 = Float; 2 = Bulk; 3 = Absorb; 4 = EQ
64111	14	14	1	R	CC_Watts	uint16	Watts	CC_Power_SF	Measured	CC Wattage Output
64111	15	15	1	R	CC_Todays_Min_Battery_Volts	uint16	Volts	CC_Voltage_SF	Measured	Minimum Voltage for battery today
64111	16	16	1	R	CC_Todays_Max_Battery_Volts	uint16	Volts	CC_Voltage_SF	Measured	Maximum Voltage for battery today
64111	17	17	1	R	CC_VOC	uint16	Volts	CC_Voltage_SF	Measured	Last Open Circuit Voltage (array)
64111	18	18	1	R	CC_Todays_Peak_VOC	uint16	Volts	N/A	Measured	Highest VOC today
64111	19	19	1	R	CC_Todays_kWH	uint16	KWH	CC_KWH_SF	Measured	Daily accumulated Kwatt hours output
64111	20	20	1	R	CC_Todays_AH	uint16	AH	CC_AH_SF	Measured	Daily accumulated amp hours output
64111	21	21	1	R	CC_Lifetime_kWH_Hours	uint16	KWH	N/A	Measured	Lifetime Total Kwatt Hours
64111	22	22	1	R	CC_Lifetime_kAmp_Hours	uint16	Amps	CC_KWH_SF	Measured	Lifetime Total K-Amp Hours
64111	23	23	1	R	CC_Lifetime_Max_Watts	uint16	Watts	CC_Power_SF	Measured	Lifetime Maximum Wattage
64111	24	24	1	R	CC_Lifetime_Max_Battery_Volts	uint16	Volts	CC_Voltage_SF	Measured	Lifetime Maximum Battery Voltage
64111	25	25	1	R	CC_Lifetime_Max_VOC	uint16	Volts	CC_Voltage_SF	Measured	Lifetime Maximum VOC
64111	26	26	1	R	CC_Temp_SF	uint16	N/A	N/A	0	FM80 Extreme Temperature scale factor
64111	27	27	1	R	CC_Temp_Output_FETs	int16	Degrees C	CC_Power_SF	Measured	FM80 Extreme Output FET Temperature
64111	28	28	1	R	CC_Temp_Enclosure	int16	Degrees C	CC_Power_SF	Measured	FM80 Extreme Enclosure Temperature

SunSpec Data Blocks and the AXS Port

Table 6 Charge Controller Configuration Block

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
64112	1	1	1	R	CCconfig_DID	uint16	N/A	N/A	64112	Vendor Extension for OutBack FM Series Charge Controllers
64112	2	2	1	R	CCconfig_Length	uint16	Registers	N/A	88	Length of block in 16-bit registers
64112	3	3	1	R	CCconfig_Port_number	uint16	N/A	N/A	0-10	Port number on Outback network
64112	4	4	1	R	CCconfig_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64112	5	5	1	R	CCconfig_Current_SF	int16	N/A	N/A	-1	DC Current Scale Factor
64112	6	6	1	R	CCconfig_Hours_SF	int16	N/A	N/A	-1	Time in Hours Scale Factor
64112	7	7	1	R	CCconfig_Power_SF	int16	N/A	N/A	0	Power Scale Factor
64112	8	8	1	R	CCconfig_AH_SF	int16	N/A	N/A	0	Amp Hours Scale Factor
64112	9	9	1	R	CCconfig_KWH_SF	int16	N/A	N/A	-1	DC kWh Scale Factor
64112	10	10	1	R	CCconfig_Faults	uint16	Bitfield	N/A	N/A	CC Error Flags: 0x0080=High VOC, 0x0040=Over Temp, 0x0020=Shorted Battery Temp Sensor, 0x0010=Fault Input Active
64112	11	11	1	R/W	CCconfig_Absorb_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	Absorb Voltage Target
64112	12	12	1	R/W	CCconfig_Absorb_Time_Hours	uint16	Hours	CCconfig_Hours_SF	Programmable	Absorb Time Hours
64112	13	13	1	R/W	CCconfig_Absorb_End_Amps	uint16	Amps	N/A	Programmable	Amperage to end Absorbing
64112	14	14	1	R/W	CCconfig_Rebulk_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	Voltage to re-initiate Bulk charge
64112	15	15	1	R/W	CCconfig_Float_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	Float Voltage Target
64112	16	16	1	R/W	CCconfig_Bulk_Current	uint16	Amps	CCconfig_Current_SF	Programmable	Max Output Current Limit
64112	17	17	1	R/W	CCconfig_EQ_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	Target Voltage for Equalize
64112	18	18	1	R/W	CCconfig_EQ_Time_Hours	uint16	Hours	N/A	Programmable	EQ Time Hours
64112	19	19	1	R/W	CCconfig_Auto_EQ_Days	uint16	Days	N/A	Programmable	Auto EQ Interval Days
64112	20	20	1	R/W	CCconfig_MPPT_Mode	uint16	Enumerated	N/A	Programmable	0 = Auto; 1 = U-Pick
64112	21	21	1	R/W	CCconfig_Sweep_Width	uint16	Enumerated	N/A	Programmable	0 = Full; 1 = Half
64112	22	22	1	R/W	CCconfig_Sweep_Max_Percentage	uint16	Enumerated	N/A	Programmable	0 = 80; 1 = 85; 2 = 90; 3 = 99
64112	23	23	1	R/W	CCconfig_U_Pick_PWM_Duty_Cycle	uint16	Percentage	CCconfig_Voltage_SF	Programmable	Park Duty Cycle (%) (40% - 90%)
64112	24	24	1	R/W	CCconfig_Grid_Tie_Mode	uint16	Enumerated	N/A	Programmable	0 = Grid Tie Mode disabled; 1 = Grid Tie Mode enabled
64112	25	25	1	R/W	CCconfig_Temp_Comp_Mode	uint16	Enumerated	N/A	Programmable	0 = Wide; 1 = User Limited
64112	26	26	1	R/W	CCconfig_Temp_Comp_Lower_Limit_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	RTS compensation lower voltage limit
64112	27	27	1	R/W	CCconfig_Temp_Comp_Upper_Limit_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	RTS compensation upper voltage limit
64112	28	28	1	R/W	CCconfig_Temp_Comp_Slope	uint16	Milli Volts	N/A	Programmable	RTS temp compensation Slope 2-6 mV per Degree C
64112	29	29	1	R/W	CCconfig_Auto_Restart_Mode	uint16	Enumerated	N/A	Programmable	0 = Off; 1 = Restart every 90 minutes; 2 = Restart every 90 minutes if absorb charging or float charging
64112	30	30	1	R/W	CCconfig_Wakeup_VOC	uint16	Volts	CCconfig_Voltage_SF	Programmable	VOC change which causes Wakeup occurs
64112	31	31	1	R/W	CCconfig_Snooze_Mode_Amps	uint16	Amps	CCconfig_Voltage_SF	Programmable	Snooze Mode Amps
64112	32	32	1	R/W	CCconfig_Wakeup_Interval	uint16	Mins	N/A	Programmable	How often to check for Wakeup condition
64112	33	33	1	R/W	CCconfig_AUX_Mode	uint16	Enumerated	N/A	Programmable	0 = Float; 1 = Diversion: Relay; 2 = Diversion: Solid St; 3 = Low Batt Disconnect; 4 = Remote; 5 = Vent Fan; 6 = PV Trigger; 7 = Error Output; 8 = Night Light
64112	34	34	1	R/W	CCconfig_AUX_Control	uint16	Enumerated	N/A	Programmable	0 = Off; 1 = Auto; 2 = On
64112	35	35	1	R	CCconfig_AUX_State	uint16	Enumerated	N/A	Read Only	0 = Disabled; 1 = Enabled
64112	36	36	1	R/W	CCconfig_AUX_Polarity	uint16	Enumerated	N/A	Programmable	0 = Low; 1 = High
64112	37	37	1	R/W	CCconfig_AUX_Low_Batt_Disconnect	uint16	Volts	CCconfig_Voltage_SF	Programmable	Low Battery Disconnect Voltage
64112	38	38	1	R/W	CCconfig_AUX_Low_Batt_Reconnect	uint16	Volts	CCconfig_Voltage_SF	Programmable	Low Battery Reconnect Volts
64112	39	39	1	R/W	CCconfig_AUX_Low_Batt_Disconnect_Delay	uint16	Secs	N/A	Programmable	Low Battery Disconnect Delay (secs)
64112	40	40	1	R/W	CCconfig_AUX_Vent_Fan_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	Vent Fan Voltage
64112	41	41	1	R/W	CCconfig_AUX_PV_Limit_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	Voltage at which PV disconnect occurs
64112	42	42	1	R/W	CCconfig_AUX_PV_Limit_Hold_Time	uint16	Secs	CCconfig_Hours_SF	Programmable	AUX PV Trigger Hold Time
64112	43	43	1	R/W	CCconfig_AUX_Night_Light_Thres_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	Voltage Threshold for AUX Night Light

Application Note

Table 6 Charge Controller Configuration Block

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
64112	44	44	1	R/W	CCconfig_Night_Light_ON_Hours	uint16	Hours	N/A	Programmable	Night Light ON Time
64112	45	45	1	R/W	CCconfig_Night_Light_ON_Hyst_Time	uint16	Mins	N/A	Programmable	Night Light ON Hyst Time
64112	46	46	1	R/W	CCconfig_Night_Light_OFF_Hyst_Time	uint16	Mins	N/A	Programmable	Night Light OFF Hyst Time
64112	47	47	1	R/W	CCconfig_AUX_Error_Battery_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	Battery voltage at which Aux Error occurs
64112	48	48	1	R/W	CCconfig_AUX_Divert_Hold_Time	uint16	Seconds	CCconfig_Hours_SF	Programmable	AUX Diver Hold Time
64112	49	49	1	R/W	CCconfig_AUX_Divert_Delay_Time	uint16	Secs	N/A	Programmable	AUX Divert Delay
64112	50	50	1	R/W	CCconfig_AUX_Divert_Relative_Volts	int16	Volts	CCconfig_Voltage_SF	Programmable	AUX Divert Relative Volts
64112	51	51	1	R/W	CCconfig_AUX_Divert_Hyst_Volts	uint16	Volts	CCconfig_Voltage_SF	Programmable	AUX Divert Hyst Volts
64112	52	52	1	R	CCconfig_Major_Firmware_Number	uint16	N/A	N/A	Read Only	Charge Controller Major firmware revision
64112	53	53	1	R	CCconfig_Mid_Firmware_Number	uint16	N/A	N/A	Read Only	Charge Controller Mid firmware revision
64112	54	54	1	R	CCconfig_Minor_Firmware_Number	uint16	N/A	N/A	Read Only	Charge Controller Minor firmware revision
64112	55	55	1	R/W	CCconfig_Set_Data_Log_Day_Offset	uint16	Days	N/A	Programmable	Day offset 0-128, 0 =Today, 1 = -1 day ...
64112	56	56	1	R	CCconfig_Get_Current_Data_Log_Day_Offset	uint16	Days	N/A	Read Only	Current Data Log Day Offset
64112	57	57	1	R	CCconfig_Data_Log_Daily_AH	uint16	AH	CCconfig_AH_SF	Read Only	Data Log AH
64112	58	58	1	R	CCconfig_Data_Log_Daily_kWH	uint16	KWH	CCconfig_KWH_SF	Read Only	Data Log kWH
64112	59	59	1	R	CCconfig_Data_Log_Daily_Max_Output_Amps	uint16	Amps	CCconfig_Voltage_SF	Read Only	Data Log maximum Output Amps
64112	60	60	1	R	CCconfig_Data_Log_Daily_Max_Output_Watts	uint16	Watts	CCconfig_Power_SF	Read Only	Data Log maximum Output Wattage
64112	61	61	1	R	CCconfig_Data_Log_Daily_Absorb_Time	uint16	Mins	N/A	Read Only	Data Log Absorb Time Minutes
64112	62	62	1	R	CCconfig_Data_Log_Daily_Float_Time	uint16	Mins	N/A	Read Only	Data Log Float Time Minutes
64112	63	63	1	R	CCconfig_Data_Log_Daily_Min_Batt_Volts	uint16	Volts	CCconfig_Voltage_SF	Read Only	Data Log minimum daily battery voltage
64112	64	64	1	R	CCconfig_Data_Log_Daily_Max_Batt_Volts	uint16	Volts	CCconfig_Voltage_SF	Read Only	Data Log maximum daily battery voltage
64112	65	65	1	R	CCconfig_Data_Log_Daily_Max_Input_Volts	uint16	Volts	N/A	Read Only	Data Log maximum daily input voltage
64112	66	66	1	R	CCconfig_Clear_Data_Log_Read	uint16	N/A	N/A	Read Only	Read value needed to clear data log
64112	67	67	1	W	CCconfig_Clear_Data_Log_Write_Complement	uint16	N/A	N/A	Write Only	Write value's complement to clear data log
64112	68	68	1	R	CCconfig_Stats_Maximum_Reset_Read	uint16	N/A	N/A	Read Only	Read value needed to clear Stats Maximums
64112	69	69	1	W	CCconfig_Stats_Maximum_Write_Complement	uint16	N/A	N/A	Write Only	Write value's complement to clear Stats Maximums
64112	70	70	1	R	CCconfig_Stats_Totals_Reset_Read	uint16	N/A	N/A	Read Only	Read value needed to clear Stats Totals
64112	71	71	1	W	CCconfig_Stats_Totals_Write_Complement	uint16	N/A	N/A	Write Only	Write value's complement to clear Stats Totals
64112	72	72	1	R/W	CCconfig_Battery_Voltage_Calibrate_Offset	int16	DC Volts	CCconfig_Voltage_SF	Programmable	Battery voltage calibration offset
64112	73	81	9	R	CCconfig_Serial_Number	string (18)	N/A	N/A	Read Only	Device serial number
64112	82	90	9	R	CCconfig_Model_Number	string (18)	N/A	N/A	Read Only	Device model

SunSpec Data Blocks and the AXS Port

Table 7 Split Phase Radian Inverter Real Time Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64115	1	1	1	R	GS_Split_DID	uint16	N/A	N/A	64115	Vendor Extension for OutBack Radian Series Split Phase Inverter Status Block
64115	2	2	1	R	GS_Split_Length	uint16	Registers	N/A	58	Length of block in 16-bit registers
64115	3	3	1	R	GS_Split_Port_number	uint16	N/A	N/A	0-10	Port number on Outback network
64115	4	4	1	R	GS_Split_DC_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64115	5	5	1	R	GS_Split_AC_Current_SF	int16	N/A	N/A	0	AC Current Scale Factor
64115	6	6	1	R	GS_Split_AC_Voltage_SF	int16	N/A	N/A	0	AC Voltage Scale Factor
64115	7	7	1	R	GS_Split_AC_Frequency_SF	int16	N/A	N/A	-1	AC Frequency Scale Factor
64115	8	8	1	R	GS_Split_L1_Inverter_Output_Current	int16	Amps	GS_Split_AC_Current_SF	Measured	L1 inverter output current
64115	9	9	1	R	GS_Split_L1_Inverter_Charge_Current	int16	Amps	GS_Split_AC_Current_SF	Measured	L1 inverter charger current
64115	10	10	1	R	GS_Split_L1_Inverter_Buy_Current	int16	Amps	GS_Split_AC_Current_SF	Measured	L1 inverter buy current
64115	11	11	1	R	GS_Split_L1_Inverter_Sell_Current	int16	Amps	GS_Split_AC_Current_SF	Measured	L1 inverter sell current
64115	12	12	1	R	GS_Split_L1_Grid_Input_AC_Voltage	int16	Volts AC	GS_Split_AC_Voltage_SF	Measured	L1 Grid Input AC Voltage
64115	13	13	1	R	GS_Split_L1_Gen_Input_AC_Voltage	int16	Volts AC	GS_Split_AC_Voltage_SF	Measured	L1 Gen Input AC Voltage
64115	14	14	1	R	GS_Split_L1_Output_AC_Voltage	int16	Volts AC	GS_Split_AC_Voltage_SF	Measured	L1 Output AC Voltage
64115	15	15	1	R	GS_Split_L2_Inverter_Output_Current	int16	Amps	GS_Split_AC_Current_SF	Measured	L2 inverter output current
64115	16	16	1	R	GS_Split_L2_Inverter_Charge_Current	int16	Amps	GS_Split_AC_Current_SF	Measured	L2 inverter charger current
64115	17	17	1	R	GS_Split_L2_Inverter_Buy_Current	int16	Amps	GS_Split_AC_Current_SF	Measured	L2 inverter buy current
64115	18	18	1	R	GS_Split_L2_Inverter_Sell_Current	int16	Amps	GS_Split_AC_Current_SF	Measured	L2 inverter sell current
64115	19	19	1	R	GS_Split_L2_Grid_Input_AC_Voltage	int16	Volts AC	GS_Split_AC_Voltage_SF	Measured	L2 Grid Input AC Voltage
64115	20	20	1	R	GS_Split_L2_Gen_Input_AC_Voltage	int16	Volts AC	GS_Split_AC_Voltage_SF	Measured	L2 Gen Input AC Voltage
64115	21	21	1	R	GS_Split_L2_Output_AC_Voltage	int16	Volts AC	GS_Split_AC_Voltage_SF	Measured	L2 Output AC Voltage
64115	22	22	1	R	GS_Split_Inverter_Operating_mode	int16	Enumerated	N/A	Read Only	0=Off, 1=Searching, 2=Inverting, 3=Charging, 4=Silent, 5=Float, 6=EQ, 7=Charger Off, 8=Support, 9=Selling, 10=Pass through, 14=Offsetting
64115	23	23	1	R	GS_Split_Error_Flags	int16	Bitfield	N/A	N/A	Bit field for errors. See GS_Error table
64115	24	24	1	R	GS_Split_Warning_Flags	int16	Bitfield	N/A	N/A	Bit field for warnings See GS_Warning table
64115	25	25	1	R	GS_Split_Battery_Voltage	int16	Volts DC	GS_Split_DC_Voltage_SF	Measured	Battery Voltage
64115	26	26	1	R	GS_Split_Temp_Compensated_Target_Voltage	int16	Volts DC	GS_Split_DC_Voltage_SF	Read Only	Temperature compensated target battery voltage
64115	27	27	1	R	GS_Split_AUX_Output_State	int16	Enumerated	N/A	N/A	0 = Disabled; 1 = Enabled
64115	28	28	1	R	GS_Split_AUX_Relay_Output_State	int16	Enumerated	N/A	N/A	0 = Disabled; 1 = Enabled
64115	29	29	1	R	GS_Split_L_Module_Transformer_Temperature	int16	Degrees C	N/A	Measured	Left module transformer temp in degrees C
64115	30	30	1	R	GS_Split_L_Module_Capacitor_Temperature	int16	Degrees C	N/A	Measured	Left module capacitor temp in degrees C
64115	31	31	1	R	GS_Split_L_Module_FET_Temperature	int16	Degrees C	N/A	Measured	Left module FET temp in degrees C
64115	32	32	1	R	GS_Split_R_Module_Transformer_Temperature	int16	Degrees C	N/A	Measured	Right module transformer temp in degrees C
64115	33	33	1	R	GS_Split_R_Module_Capacitor_Temperature	int16	Degrees C	N/A	Measured	Right module capacitor temp in degrees C
64115	34	34	1	R	GS_Split_R_Module_FET_Temperature	int16	Degrees C	N/A	Measured	Right module FET temp in degrees C
64115	35	35	1	R	GS_Split_Battery_Temperature	int16	Degrees C	N/A	Measured	Battery temp in degrees C
64115	36	36	1	R	GS_Split_AC_Input_Selection	int16	Enumerated	N/A	Read Only	0=Grid, 1=Gen
64115	37	37	1	R	GS_Split_AC_Input_Frequency	int16	Hz	GS_Split_AC_Frequency_SF	Measured	Selected AC Input frequency HZ
64115	38	38	1	R	GS_Split_AC_Input_Voltage	int16	Volts AC	GS_Split_AC_Voltage_SF	Measured	Selected Input AC Voltage
64115	39	39	1	R	GS_Split_AC_Input_State	int16	Enumerated	N/A	N/A	1=AC Use, 0=AC_Drop
64115	40	40	1	R	GS_Split_Minimum_AC_Input_Voltage	int16	Volts AC	GS_Split_AC_Voltage_SF	Read Only	Minimum Input AC Voltage (Write to clear stored value)
64115	41	41	1	R	GS_Split_Maximum_AC_Input_Voltage	int16	Volts AC	GS_Split_AC_Voltage_SF	Read Only	Maximum Input AC Voltage (Write to clear stored value)
64115	42	42	1	R	GS_Split_Sell_Status	int16	Bitfield	N/A	N/A	Bit field for sell status (See GS_Sell_Status table)

Application Note

Table 7 Split Phase Radian Inverter Real Time Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64115	43	43	1	R	GS_Split_kWh_SF	int16	N/A	N/A	-1	AC kWh scale factor
64115	44	44	1	R	GS_Split_AC1_L1_Buy_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily AC1 Buy L1 kWh
64115	45	45	1	R	GS_Split_AC2_L1_Buy_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily AC2 Buy L1 kWh
64115	46	46	1	R	GS_Split_AC1_L1_Sell_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily AC1 Sell L1 kWh
64115	47	47	1	R	GS_Split_AC2_L1_Sell_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily AC2 Sell L1 kWh
64115	48	48	1	R	GS_Split_L1_Output_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily Output L1 kWh
64115	49	49	1	R	GS_Split_AC1_L2_Buy_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily AC1 Buy L2 kWh
64115	50	50	1	R	GS_Split_AC2_L2_Buy_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily AC1 Sell L2 kWh
64115	51	51	1	R	GS_Split_AC1_L2_Sell_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily AC1 Sell L2 kWh
64115	52	52	1	R	GS_Split_AC2_L2_Sell_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily AC2 Sell L2 kWh
64115	53	53	1	R	GS_Split_L2_Output_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily Output L2 kWh
64115	54	54	1	R	GS_Split_Charger_kWh	uint16	kWh	GS_Split_kWh_SF	Measured	Daily Charger kWh
64115	55	55	1	R	GS_Split_Output_kW	uint16	kW	GS_Split_kWh_SF	Measured	Output kW
64115	56	56	1	R	GS_Split_Buy_kW	uint16	kW	GS_Split_kWh_SF	Measured	Buy kW
64115	57	57	1	R	GS_Split_Sell_kW	uint16	kW	GS_Split_kWh_SF	Measured	Sell kW
64115	58	58	1	R	GS_Split_Charge_kW	uint16	kW	GS_Split_kWh_SF	Measured	Charge kW
64115	59	59	1	R	GS_Split_Load_kW	uint16	kW	GS_Split_kWh_SF	Measured	Load kW
64115	60	60	1	R	GS_Split_AC_Couple_kW	uint16	kW	GS_Split_kWh_SF	Measured	AC Coupled kW

Table 8 GS_Error_Table

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
---	---	---	---	---	---	---	---	---	0x0001	Low AC output voltage
---	---	---	---	---	---	---	---	---	0x0002	Stacking error
---	---	---	---	---	---	---	---	---	0x0004	Over temperature error
---	---	---	---	---	---	---	---	---	0x0008	Low battery voltage
---	---	---	---	---	---	---	---	---	0x0010	Phase loss
---	---	---	---	---	---	---	---	---	0x0020	High battery voltage
---	---	---	---	---	---	---	---	---	0x0040	AC output shorted
---	---	---	---	---	---	---	---	---	0x0080	AC backfeed

Table 9 GS_Warning_Table

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
---	---	---	---	---	---	---	---	---	0x0001	AC input frequency too high
---	---	---	---	---	---	---	---	---	0x0002	AC input frequency too low
---	---	---	---	---	---	---	---	---	0x0004	AC input voltage too low
---	---	---	---	---	---	---	---	---	0x0008	AC input voltage too high
---	---	---	---	---	---	---	---	---	0x0010	AC input current exceeds max
---	---	---	---	---	---	---	---	---	0x0020	Temperature sensor bad
---	---	---	---	---	---	---	---	---	0x0040	Communications error
---	---	---	---	---	---	---	---	---	0x0080	Cooling fan fault

Table 10 GS_Sell_Status_Table

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
---	---	---	---	---	---	---	---	---	0x0001	AC input frequency too high
---	---	---	---	---	---	---	---	---	0x0002	AC input frequency too low
---	---	---	---	---	---	---	---	---	0x0004	AC input voltage too low
---	---	---	---	---	---	---	---	---	0x0008	AC input voltage too high
---	---	---	---	---	---	---	---	---	0x0010	Awaiting sell delay
---	---	---	---	---	---	---	---	---	0x0020	Sell disabled
---	---	---	---	---	---	---	---	---	0x0040	Battery voltage less than target

SunSpec Data Blocks and the AXS Port

Table 11 Radian Inverter Configuration Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64116	1	1	1	R	GSconfig_DID	uint16	N/A	N/A	64116	Vendor Extension for OutBack Radian Series Split Phase Inverter Configuration Block
64116	2	2	1	R	GSconfig_Length	uint16	Registers	N/A	86	Length of block in 16-bit registers
64116	3	3	1	R	GSconfig_Port_number	uint16	N/A	N/A	0-10	Port number on Outback network
64116	4	4	1	R	GSconfig_DC_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64116	5	5	1	R	GSconfig_AC_Current_SF	int16	N/A	N/A	-1	AC Current Scale Factor
64116	6	6	1	R	GSconfig_AC_Voltage_SF	int16	N/A	N/A	0	AC Voltage Scale Factor
64116	7	7	1	R	GSconfig_Time_SF	int16	N/A	N/A	-1	Time Scale Factor
64116	8	8	1	R	GSconfig_Major_Firmware_Number	uint16	N/A	N/A	Read Only	Inverter Major firmware revision
64116	9	9	1	R	GSconfig_Mid_Firmware_Number	uint16	N/A	N/A	Read Only	Inverter Mid firmware revision
64116	10	10	1	R	GSconfig_Minor_Firmware_Number	uint16	N/A	N/A	Read Only	Inverter Minor firmware revision
64116	11	11	1	R/W	GSconfig_Absorb_Volts	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	Absorb Voltage Target
64116	12	12	1	R/W	GSconfig_Absorb_Time_Hours	uint16	Hours	GSconfig_Time_SF	Programmable	Absorb Time Hours
64116	13	13	1	R/W	GSconfig_Float_Volts	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	Float Voltage Target
64116	14	14	1	R/W	GSconfig_Float_Time_Hours	uint16	Hours	GSconfig_Time_SF	Programmable	Float Time Hours
64116	15	15	1	R/W	GSconfig_ReFloat_Volts	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	ReFloat Voltage Target
64116	16	16	1	R/W	GSconfig_EQ_Volts	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	EQ Voltage Target
64116	17	17	1	R/W	GSconfig_EQ_Time_Hours	uint16	Hours	GSconfig_Time_SF	Programmable	EQ Time Hours
64116	18	18	1	R/W	GSconfig_Search_Sensitivity	uint16	N/A	N/A	Programmable	Search sensitivity
64116	19	19	1	R/W	GSconfig_Search_Pulse_Length	uint16	Cycles	N/A	Programmable	Search pulse length
64116	20	20	1	R/W	GSconfig_Search_Pulse_Spacing	uint16	Cycles	N/A	Programmable	Search pulse spacing
64116	21	21	1	R/W	GSconfig_AC_Input_Select_Priority	uint16	Enumerated	N/A	Programmable	0=Grid, 1=Gen
64116	22	22	1	R/W	GSconfig_Grid_AC_Input_Current_Limit	uint16	Amps	GSconfig_AC_Current_SF	Programmable	Grid AC input current limit
64116	23	23	1	R/W	GSconfig_Gen_AC_Input_Current_Limit	uint16	Amps	GSconfig_AC_Current_SF	Programmable	Gen AC input current limit
64116	24	24	1	R/W	GSconfig_Charger_AC_Input_Current_Limit	uint16	Amps	GSconfig_AC_Current_SF	Programmable	Charger AC input current limit
64116	25	25	1	R/W	GSconfig_Charger_Operating_Mode	uint16	Enumerated	N/A	Programmable	0=All Inverter Charging Disabled, 1=Bulk and Float Charging Enabled
64116	26	26	1	R/W	GSconfig_AC_Coupled	uint16	Enumerated	N/A	Programmable	0=No, 1=Yes (not implemented)
64116	27	27	1	R/W	GSconfig_Grid_Input_Mode	uint16	Enumerated	N/A	Programmable	Grid Input Mode: 0=Generator, 1=Support, 2=Grid Tied, 3=UPS, 4=Backup, 5=Mini Grid, 6=Grid Zero
64116	28	28	1	R/W	GSconfig_Grid_Lower_Input_Voltage_Limit	uint16	Volts AC	GSconfig_AC_Voltage_SF	Programmable	Grid Input AC voltage lower limit
64116	29	29	1	R/W	GSconfig_Grid_Upper_Input_Voltage_Limit	uint16	Volts AC	GSconfig_AC_Voltage_SF	Programmable	Grid Input AC voltage upper limit
64116	30	30	1	R/W	GSconfig_Grid_Transfer_Delay	uint16	msecs	N/A	Programmable	Grid Input AC transfer delay
64116	31	31	1	R/W	GSconfig_Grid_Connect_Delay	uint16	Minutes	GSconfig_Time_SF	Programmable	Grid Input AC connect delay
64116	32	32	1	R/W	GSconfig_Gen_Input_Mode	uint16	Enumerated	N/A	Programmable	Grid Input Mode: 0=Generator, 1=Support, 2=Grid Tied, 3=UPS, 4=Backup, 5=Mini Grid, 6=Grid Zero
64116	33	33	1	R/W	GSconfig_Gen_Lower_Input_Voltage_Limit	uint16	Volts AC	GSconfig_AC_Voltage_SF	Programmable	Gen Input AC voltage lower limit
64116	34	34	1	R/W	GSconfig_Gen_Upper_Input_Voltage_Limit	uint16	Volts AC	GSconfig_AC_Voltage_SF	Programmable	Gen Input AC voltage upper limit
64116	35	35	1	R/W	GSconfig_Gen_Transfer_Delay	uint16	msecs	N/A	Programmable	Gen Input AC transfer delay
64116	36	36	1	R/W	GSconfig_Gen_Connect_Delay	uint16	Minutes	GSconfig_Time_SF	Programmable	Gen Input AC connect delay
64116	37	37	1	R/W	GSconfig_AC_Output_Voltage	uint16	Volts AC	GSconfig_AC_Voltage_SF	Programmable	AC output Voltage
64116	38	38	1	R/W	GSconfig_Low_Battery_Cut_Out_Voltage	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	Low Battery Voltage Cut Out
64116	39	39	1	R/W	GSconfig_Low_Battery_Cut_In_Voltage	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	Low Battery Voltage Cut In
64116	40	40	1	R/W	GSconfig_AUX_Mode	uint16	Enumerated	N/A	Programmable	1=Load Shed, 2=Gen Alert, 3=Fault, 4=Vent Fan, 5=Cool Fan, 6=DC Divert, 7=Grid Limit/IEEE, 8=AC Source Status, 9=AC Divert
64116	41	41	1	R/W	GSconfig_AUX_Control	uint16	Enumerated	N/A	Programmable	0 = Off; 1 = Auto; 2 = On

Application Note

Table 11 Radian Inverter Configuration Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64116	42	42	1	R/W	GSconfig_AUX_ON_Battery_Voltage	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	AUX ON battery voltage
64116	43	43	1	R/W	GSconfig_AUX_ON_Delay_Time	uint16	Minutes	GSconfig_Time_SF	Programmable	AUX ON Delay
64116	44	44	1	R/W	GSconfig_AUX_OFF_Battery_Voltage	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	AUX OFF battery voltage
64116	45	45	1	R/W	GSconfig_AUX_OFF_Delay_Time	uint16	Minutes	GSconfig_Time_SF	Programmable	AUX OFF Delay
64116	46	46	1	R/W	GSconfig_AUX_Relay_Mode	uint16	Enumerated	N/A	Programmable	1=Load Shed, 2=Gen Alert, 3=Fault, 4=Vent Fan, 5=Cool Fan, 6=DC Divert, 7=Grid Limit/IEEE, 8=AC Source Status, 9=AC Divert
64116	47	47	1	R/W	GSconfig_AUX_Relay_Control	uint16	Enumerated	N/A	Programmable	0 = Off; 1 = On; 2 = Auto
64116	48	48	1	R/W	GSconfig_AUX_Relay_ON_Battery_Voltage	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	AUX Relay ON battery voltage
64116	49	49	1	R/W	GSconfig_AUX_Relay_ON_Delay_Time	uint16	Minutes	GSconfig_Time_SF	Programmable	AUX Relay ON Delay
64116	50	50	1	R/W	GSconfig_AUX_Relay_OFF_Battery_Voltage	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	AUX Relay OFF battery voltage
64116	51	51	1	R/W	GSconfig_AUX_Relay_OFF_Delay_Time	uint16	Minutes	GSconfig_Time_SF	Programmable	AUX Relay OFF Delay
64116	52	52	1	R	GSconfig_Stacking_Mode	uint16	Enumerated	N/A	Read Only	10=Master, 12=Slave, 17=B Phase Master, 18=C Phase Master
64116	53	53	1	R/W	GSconfig_Master_Power_Save_Level	uint16	N/A	N/A	Programmable	Master inverter power save level
64116	54	54	1	R/W	GSconfig_Slave_Power_Save_Level	uint16	N/A	N/A	Programmable	Slave inverter power save level
64116	55	55	1	R/W	GSconfig_Sell_Volts	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	Sell Voltage Target
64116	56	56	1	R/W	GSconfig_Grid_Tie_Window	uint16	Enumerated	N/A	Programmable	0=IEEE, 1=User (GS8048 Only)
64116	57	57	1	R/W	GSconfig_Grid_Tie_Enable	uint16	Enumerated	N/A	Programmable	1=Yes, 0=No
64116	58	58	1	R/W	GSconfig_Grid_AC_Input_Voltage_Calibrate_Factor	int16	Volts AC	N/A	Programmable	Grid AC input voltage calibration factor
64116	59	59	1	R/W	GSconfig_Gen_AC_Input_Voltage_Calibrate_Factor	int16	Volts AC	N/A	Programmable	Gen AC input voltage calibration factor
64116	60	59	1	R/W	GSconfig_AC_Output_Voltage_Calibrate_Factor	int16	Volts AC	N/A	Programmable	AC output voltage calibration factor
64116	61	60	1	R/W	GSconfig_Battery_Voltage_Calibrate_Factor	int16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	Battery voltage calibration factor
64116	62	61	1	R/W	GSconfig_ReBulk_Volts	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	ReBulk Voltage Target
64116	63	62	1	R/W	GSconfig_Mini_Grid_LBX_Volts	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	Mini Grid LBX reconnect to Grid Battery Voltage
64116	64	63	1	R/W	GSconfig_Mini_Grid_LBX_Delay	uint16	Hours	N/A	Programmable	Mini Grid LBX reconnect to Grid Delay Time
64116	65	64	1	R/W	GSconfig_Grid_Zero_DoD_Volts	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	Grid Zero DoD Voltage
64116	66	65	1	R/W	GSconfig_Grid_Zero_DoD_Max_Offset_AC_Amps	uint16	Amps	GSconfig_AC_Current_SF	Programmable	Grid Zero Maximum Offset AC Amps
64116	67	75	9	R/W	GSconfig_Serial_Number	string (18)	N/A	N/A	Read Only	Device serial number
64116	76	84	9	R	GSconfig_Model_Number	string (18)	N/A	N/A	Read Only	Device model
64116	85	85	1	R/W	GSconfig_Module_Control	uint16	Enumerated	N/A	Programmable	Module Control: 0 = Auto, 1 = Left, 2 = Right, 3 = Both
64116	86	86	1	R/W	GSconfig_Model_Select	uint16	Enumerated	N/A	Programmable	Model Select: 0 = Dual Module, 1 = Single Module
64116	87	87	1	R/W	GSconfig_Low_Battery_Cut_Out_Delay	uint16	Seconds	GSconfig_DC_Voltage_SF	Programmable	Seconds delay before inverter shutdown upon low battery voltage
64116	88	88	1	R/W	GSconfig_High_Battery_Cut_Out_Voltage	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	High Battery Voltage Cut Out
64116	89	89	1	R/W	GSconfig_High_Battery_Cut_In_Voltage	uint16	DC Volts	GSconfig_DC_Voltage_SF	Programmable	High Battery Voltage Cut In
64116	90	90	1	R/W	GSconfig_High_Battery_Cut_Out_Delay	uint16	Seconds	GSconfig_DC_Voltage_SF	Programmable	Seconds delay before inverter shutdown upon high battery voltage

SunSpec Data Blocks and the AXS Port

Table 12 Single Phase Radian Inverter Real Time Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64117	1	1	1	R	GS_Single_DID	uint16	N/A	N/A	64117	Vendor Extension for OutBack Radian Series Split Phase Inverter Status Block
64117	2	2	1	R	GS_Single_Length	uint16	Registers	N/A	46	Length of block in 16-bit registers
64117	3	3	1	R	GS_Single_Port_number	uint16	N/A	N/A	0-10	Port number on Outback network
64117	4	4	1	R	GS_Single_DC_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64117	5	5	1	R	GS_Single_AC_Current_SF	int16	N/A	N/A	0	AC Current Scale Factor
64117	6	6	1	R	GS_Single_AC_Voltage_SF	int16	N/A	N/A	0	AC Voltage Scale Factor
64117	7	7	1	R	GS_Single_AC_Frequency_SF	int16	N/A	N/A	-1	AC Frequency Scale Factor
64117	8	8	1	R	GS_Single_Inverter_Output_Current	uint16	Amps	GS_Single_AC_Current_SF	Measured	Inverter output current
64117	9	9	1	R	GS_Single_Inverter_Charge_Current	uint16	Amps	GS_Single_AC_Current_SF	Measured	Inverter charger current
64117	10	10	1	R	GS_Single_Inverter_Buy_Current	uint16	Amps	GS_Single_AC_Current_SF	Measured	Inverter buy current
64117	11	11	1	R	GS_Single_Inverter_Sell_Current	uint16	Amps	GS_Single_AC_Current_SF	Measured	Inverter sell current
64117	12	12	1	R	GS_Single_Grid_Input_AC_Voltage	uint16	Volts AC	GS_Single_AC_Voltage_SF	Measured	Grid Input AC Voltage
64117	13	13	1	R	GS_Single_Gen_Input_AC_Voltage	uint16	Volts AC	GS_Single_AC_Voltage_SF	Measured	Gen Input AC Voltage
64117	14	14	1	R	GS_Single_Output_AC_Voltage	uint16	Volts AC	GS_Single_AC_Voltage_SF	Measured	Output AC Voltage
64117	15	15	1	R	GS_Single_Inverter_Operating_mode	uint16	Enumerated	N/A	Read Only	0=Off, 1=Searching, 2=Inverting, 3=Charging, 4=Silent, 5=Float, 6=EQ, 7=Charger Off, 8=Support, 9=Selling, 10=Pass through, 14=Offsetting
64117	16	16	1	R	GS_Single_Error_Flags	uint16	Bitfield	N/A	Read Only	Bit field for errors (See GS_Error Table)
64117	17	17	1	R	GS_Single_Warning_Flags	uint16	Bitfield	N/A	Read Only	Bit field for warnings (See GS_Warning Table)
64117	18	18	1	R	GS_Single_Battery_Voltage	uint16	Volts DC	GS_Single_DC_Voltage_SF	Measured	Battery Voltage
64117	19	19	1	R	GS_Single_Temp_Compensated_Target_Voltage	uint16	Volts DC	GS_Single_DC_Voltage_SF	Read Only	Temperature compensated target battery voltage
64117	20	20	1	R	GS_Single_AUX_Output_State	uint16	Enumerated	N/A	Read Only	0 = Disabled; 1 = Enabled
64117	21	21	1	R	GS_Single_AUX_Relay_Output_State	uint16	Enumerated	N/A	Read Only	0 = Disabled; 1 = Enabled
64117	22	22	1	R	GS_Single_L_Module_Transformer_Temperature	int16	Degrees C	N/A	Measured	Left module transformer temp in degrees C
64117	23	23	1	R	GS_Single_L_Module_Capacitor_Temperature	int16	Degrees C	N/A	Measured	Left module capacitor temp in degrees C
64117	24	24	1	R	GS_Single_L_Module_FET_Temperature	int16	Degrees C	N/A	Measured	Left module FET temp in degrees C
64117	25	25	1	R	GS_Single_R_Module_Transformer_Temperature	int16	Degrees C	N/A	Measured	Right module transformer temp in degrees C
64117	26	26	1	R	GS_Single_R_Module_Capacitor_Temperature	int16	Degrees C	N/A	Measured	Right module capacitor temp in degrees C
64117	27	27	1	R	GS_Single_R_Module_FET_Temperature	int16	Degrees C	N/A	Measured	Right module FET temp in degrees C
64117	28	28	1	R	GS_Single_Battery_Temperature	int16	Degrees C	N/A	Measured	Battery temp in degrees C
64117	29	29	1	R	GS_Single_AC_Input_Selection	uint16	Enumerated	N/A	Read Only	0=Grid, 1=Gen
64117	30	30	1	R	GS_Single_AC_Input_Frequency	uint16	Hz	GS_Single_AC_Frequency_SF	Measured	Selected AC Input frequency HZ
64117	31	31	1	R	GS_Single_AC_Input_Voltage	uint16	Volts AC	GS_Single_AC_Voltage_SF	Measured	Selected Input AC Voltage
64117	32	32	1	R	GS_Single_AC_Input_State	uint16	Enumerated	N/A	N/A	1=AC Use, 0=AC_Drop
64117	33	33	1	R	GS_Single_Minimum_AC_Input_Voltage	uint16	Volts AC	GS_Single_AC_Voltage_SF	Read Only	Minimum Input AC Voltage (Write to clear value)
64117	34	34	1	R	GS_Single_Maximum_AC_Input_Voltage	uint16	Volts AC	GS_Single_AC_Voltage_SF	Read Only	Maximum Input AC Voltage (Write to clear value)
64117	35	35	1	R	GS_Single_Sell_Status	uint16	Bitfield	N/A	N/A	Bit field for sell status (See GS_Sell_Status Table)
64117	36	36	1	R	GS_Single_kWh_SF	int16	N/A	N/A	-1	AC kWh scale factor
64117	37	37	1	R	GS_Single_AC1_Buy_kWh	uint16	kWh	GS_Single_kWh_SF	Measured	Daily AC1 Buy kWh
64117	38	38	1	R	GS_Single_AC2_Buy_kWh	uint16	kWh	GS_Single_kWh_SF	Measured	Daily AC2 Buy kWh
64117	39	39	1	R	GS_Single_AC1_Sell_kWh	uint16	kWh	GS_Single_kWh_SF	Measured	Daily AC1 Sell kWh
64117	40	40	1	R	GS_Single_AC2_Sell_kWh	uint16	kWh	GS_Single_kWh_SF	Measured	Daily AC2 Sell kWh
64117	41	41	1	R	GS_Single_Output_kWh	uint16	kWh	GS_Single_kWh_SF	Measured	Daily Output kWh
64117	42	42	1	R	GS_Single_Charger_kWh	uint16	kWh	GS_Single_kWh_SF	Measured	Daily Charger kWh

Application Note

Table 12 Single Phase Radian Inverter Real Time Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64117	43	43	1	R	GS_Single_Output_kW	uint16	kW	GS_Single_kWh_SF	Measured	Output kW
64117	44	44	1	R	GS_Single_Buy_kW	uint16	kW	GS_Single_kWh_SF	Measured	Buy kW
64117	45	45	1	R	GS_Single_Sell_kW	uint16	kW	GS_Single_kWh_SF	Measured	Sell kW
64117	46	46	1	R	GS_Single_Charge_kW	uint16	kW	GS_Single_kWh_SF	Measured	Charger kW
64117	47	47	1	R	GS_Single_Load_kW	uint16	kW	GS_Single_kWh_SF	Measured	Load kW
64117	48	48	1	R	GS_Single_AC_Couple_kW	uint16	kW	GS_Single_kWh_SF	Measured	AC Coupled kW

Table 13 FX Inverter Real Time Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64113	1	1	1	R	FX_DID	uint16	N/A	N/A	64113	Vendor Extension for OutBack FX Series Inverter Status Block
64113	2	2	1	R	FX_Length	uint16	Registers	N/A	32	Length of block in 16-bit registers
64113	3	3	1	R	FX_Port_number	uint16	N/A	N/A	0-10	Port number on Outback network
64113	4	4	1	R	FX_DC_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64113	5	5	1	R	FX_AC_Current_SF	int16	N/A	N/A	0	AC Current Scale Factor
64113	6	6	1	R	FX_AC_Voltage_SF	int16	N/A	N/A	0	AC Voltage Scale Factor
64113	7	7	1	R	FX_AC_Frequency_SF	int16	N/A	N/A	-1	AC Frequency Scale Factor
64113	8	8	1	R	FX_Inverter_Output_Current	uint16	Amps	FX_AC_Current_SF	Measured	Inverter output current
64113	9	9	1	R	FX_Inverter_Charge_Current	uint16	Amps	FX_AC_Current_SF	Measured	Inverter charger current
64113	10	10	1	R	FX_Inverter_Buy_Current	uint16	Amps	FX_AC_Current_SF	Measured	Inverter buy current
64113	11	11	1	R	FX_Inverter_Sell_Current	uint16	Amps	FX_AC_Current_SF	Measured	Inverter sell current
64113	12	12	1	R	FX_Output_AC_Voltage	uint16	Volts AC	FX_AC_Voltage_SF	Measured	Output AC Voltage
64113	13	13	1	R	FX_Inverter_Operating_Mode	uint16	Enumerated	N/A	Read Only	0=Off, 1=Searching, 2=Inverting, 3=Charging, 4=Silent, 5=Float, 6=EQ, 7=Charger Off, 8=Support, 9=Selling, 10=Pass through, 14=Offsetting
64113	14	14	1	R	FX_Error_Flags	uint16	Bitfield	N/A	Read Only	Bit field for errors (see FX_Error Table)
64113	15	15	1	R	FX_Warning_Flags	uint16	Bitfield	N/A	Read Only	Bit field for warnings (see FX_Warning Table)
64113	16	16	1	R	FX_Battery_Voltage	uint16	Volts DC	FX_DC_Voltage_SF	Measured	Battery Voltage
64113	17	17	1	R	FX_Temp_Compensated_Target_Voltage	uint16	Volts DC	FX_DC_Voltage_SF	Read Only	Temperature compensated target battery voltage
64113	18	18	1	R	FX_AUX_Output_State	uint16	Enumerated	N/A	Read Only	0 = Disabled; 1 = Enabled
64113	19	19	1	R	FX_Transformer_Temperature	int16	Degrees C	N/A	Measured	Transformer temp in degrees C
64113	20	20	1	R	FX_Capacitor_Temperature	int16	Degrees C	N/A	Measured	Capacitor temp in degrees C
64113	21	21	1	R	FX_FET_Temperature	int16	Degrees C	N/A	Measured	FET temp in degrees C
64113	22	22	1	R	FX_AC_Input_Frequency	uint16	Hz	FX_AC_Frequency_SF	Measured	Selected AC Input frequency HZ
64113	23	23	1	R	FX_AC_Input_Voltage	uint16	Volts AC	FX_AC_Voltage_SF	Measured	Selected Input AC Voltage
64113	24	24	1	R	FX_AC_Input_State	uint16	Enumerated	N/A	N/A	1=AC Use, 0=AC Drop
64113	25	25	1	R	FX_Minimum_AC_Input_Voltage	uint16	Volts AC	FX_AC_Voltage_SF	Read Only	Minimum Input AC Voltage (Write to clear value)
64113	26	26	1	R	FX_Maximum_AC_Input_Voltage	uint16	Volts AC	FX_AC_Voltage_SF	Read Only	Maximum Input AC Voltage (Write to clear value)
64113	27	27	1	R	FX_Sell_Status	uint16	Bitfield	N/A	N/A	Bit field for sell status (see FX_Sell_Status Table)
64113	28	28	1	R	FX_kWh_SF	int16	N/A	N/A	-1	AC kWh scale factor
64113	29	29	1	R	FX_Buy_kWh	uint16	kWh	FX_kWh_SF	Measured	Daily Buy kWh
64113	30	30	1	R	FX_Sell_kWh	uint16	kWh	FX_kWh_SF	Measured	Daily Sell kWh
64113	31	31	1	R	FX_Output_kWh	uint16	kWh	FX_kWh_SF	Measured	Daily Output kWh
64113	32	32	1	R	FX_Charger_kWh	uint16	kWh	FX_kWh_SF	Measured	Daily Output kWh
64113	33	33	1	R	FX_Output_kW	uint16	kWh	FX_kWh_SF	Measured	Output kW
64113	34	34	1	R	FX_Buy_kW	uint16	kWh	FX_kWh_SF	Measured	Buy kW
64113	35	35	1	R	FX_Sell_kW	uint16	kWh	FX_kWh_SF	Measured	Sell kW
64113	36	36	1	R	FX_Charge_kW	uint16	kWh	FX_kWh_SF	Measured	Charger kW
64113	37	37	1	R	FX_Load_kW	uint16	kWh	FX_kWh_SF	Measured	Load kW
64113	38	38	1	R	FX_AC_Couple_kW	uint16	kWh	FX_kWh_SF	Measured	AC Coupled kW

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Table 14 FX_Error_Table

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
—	—	—	—	—	—	—	—	—	0x0001	Low AC output voltage
—	—	—	—	—	—	—	—	—	0x0002	Stacking error
—	—	—	—	—	—	—	—	—	0x0004	Over temperature error
—	—	—	—	—	—	—	—	—	0x0008	Low battery voltage
—	—	—	—	—	—	—	—	—	0x0010	Phase loss
—	—	—	—	—	—	—	—	—	0x0020	High battery voltage
—	—	—	—	—	—	—	—	—	0x0040	AC output shorted
—	—	—	—	—	—	—	—	—	0x0080	AC backfeed

Table 15 FX_Warning_Table

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
—	—	—	—	—	—	—	—	—	0x0001	AC input frequency too high
—	—	—	—	—	—	—	—	—	0x0002	AC input frequency too low
—	—	—	—	—	—	—	—	—	0x0004	AC input voltage too low
—	—	—	—	—	—	—	—	—	0x0008	AC input voltage too high
—	—	—	—	—	—	—	—	—	0x0010	AC input current exceeds max
—	—	—	—	—	—	—	—	—	0x0020	Temperature sensor bad
—	—	—	—	—	—	—	—	—	0x0040	Communications error
—	—	—	—	—	—	—	—	—	0x0080	Cooling fan fault

Table 16 FX_Sell_Status Table

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
—	—	—	—	—	—	—	—	—	0x0001	AC input frequency too high
—	—	—	—	—	—	—	—	—	0x0002	AC input frequency too low
—	—	—	—	—	—	—	—	—	0x0004	AC input voltage too low
—	—	—	—	—	—	—	—	—	0x0008	AC input voltage too high
—	—	—	—	—	—	—	—	—	0x0010	Awaiting sell delay
—	—	—	—	—	—	—	—	—	0x0020	Sell disabled
—	—	—	—	—	—	—	—	—	0x0040	Battery voltage less than target
—	—	—	—	—	—	—	—	—	0x0080	AC2 selected

Table 17 FX Inverter Configuration Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64114	1	1	1	R	FXconfig_DID	uint16	N/A	N/A	64114	Vendor Extension for OutBack FX Series Inverter Configuration Block
64114	2	2	1	R	FXconfig_Length	uint16	Registers	N/A	72	Length of block in 16-bit registers
64114	3	3	1	R	FXconfig_Port_Number	uint16	N/A	N/A	0-10	Port number on Outback network
64114	4	4	1	R	FXconfig_DC_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64114	5	5	1	R	FXconfig_AC_Current_SF	int16	N/A	N/A	-1	AC Current Scale Factor
64114	6	6	1	R	FXconfig_AC_Voltage_SF	int16	N/A	N/A	0	AC Voltage Scale Factor
64114	7	7	1	R	FXconfig_Time_SF	int16	N/A	N/A	-1	Time Scale Factor
64114	8	8	1	R	FXconfig_Major_Firmware_Number	uint16	N/A	N/A	Read Only	Inverter Major firmware revision
64114	9	9	1	R	FXconfig_Mid_Firmware_Number	uint16	N/A	N/A	Read Only	Inverter Mid firmware revision
64114	10	10	1	R	FXconfig_Minor_Firmware_Number	uint16	N/A	N/A	Read Only	Inverter Minor firmware revision
64114	11	11	1	R/W	FXconfig_Absorb_Volts	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Absorb Voltage Target
64114	12	12	1	R/W	FXconfig_Absorb_Time_Hours	uint16	Hours	FXconfig_Time_SF	Programmable	Absorb Time Hours
64114	13	13	1	R/W	FXconfig_Float_Volts	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Float Voltage Target
64114	14	14	1	R/W	FXconfig_Float_Time_Hours	uint16	Hours	FXconfig_Time_SF	Programmable	Float Time Hours
64114	15	15	1	R/W	FXconfig_ReFloat_Volts	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	ReFloat Voltage Target
64114	16	16	1	R/W	FXconfig_EQ_Volts	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	EQ Voltage Target
64114	17	17	1	R/W	FXconfig_EQ_Time_Hours	uint16	Hours	FXconfig_Time_SF	Programmable	EQ Time Hours
64114	18	18	1	R/W	FXconfig_Search_Sensitivity	uint16	N/A	N/A	Programmable	Search sensitivity
64114	19	19	1	R/W	FXconfig_Search_Pulse_Length	uint16	Cycles	N/A	Programmable	Search pulse length
64114	20	20	1	R/W	FXconfig_Search_Pulse_Spacing	uint16	Cycles	N/A	Programmable	Search pulse spacing
64114	21	21	1	R/W	FXconfig_AC_Input_Type	uint16	Enumerated	N/A	Programmable	0=Grid, 1=Gen, 2=Grid Zero
64114	22	22	1	R/W	Fxconfig_Input_Support	uint16	Enumerated	N/A	Programmable	1=Yes, 0=No (only valid if AC Input Type is Gen)

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Table 17 FX Inverter Configuration Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64114	23	23	1	R/W	FXconfig_Grid_AC_Input_Current_Limit	uint16	Amps	FXconfig_AC_Current_SF	Programmable	Grid AC input current limit
64114	24	24	1	R/W	FXconfig_Gen_AC_Input_Current_Limit	uint16	Amps	FXconfig_AC_Current_SF	Programmable	Gen AC input current limit
64114	25	25	1	R/W	FXconfig_Charger_AC_Input_Current_Limit	uint16	Amps	FXconfig_AC_Current_SF	Programmable	Charger AC input current limit
64114	26	26	1	R/W	FXconfig_Charger_Operating_Mode	uint16	Enumerated	N/A	Programmable	0=Charger Off, 1=Charger Auto, 2=Charger On
64114	27	27	1	R/W	FXconfig_Grid_Lower_Input_Voltage_Limit	uint16	Volts AC	FXconfig_AC_Voltage_SF	Programmable	Grid Input AC voltage lower limit
64114	28	28	1	R/W	FXconfig_Grid_Upper_Input_Voltage_Limit	uint16	Volts AC	FXconfig_AC_Voltage_SF	Programmable	Grid Input AC voltage upper limit
64114	29	29	1	R/W	FXconfig_Grid_Transfer_Delay	uint16	Minutes	N/A	Programmable	Grid Input AC connect delay
64114	30	30	1	R/W	FXconfig_Gen_Lower_Input_Voltage_Limit	uint16	Volts AC	FXconfig_AC_Voltage_SF	Programmable	Gen Input AC voltage lower limit
64114	31	31	1	R/W	FXconfig_Gen_Upper_Input_Voltage_Limit	uint16	Volts AC	FXconfig_AC_Voltage_SF	Programmable	Gen Input AC voltage upper limit
64114	32	32	1	R/W	FXconfig_Gen_Transfer_Delay	uint16	Cycles	N/A	Programmable	Gen Input AC transfer delay
64114	33	33	1	R/W	FXconfig_Gen_Connect_Delay	uint16	Minutes	FXconfig_Time_SF	Programmable	Gen Input AC connect delay
64114	34	34	1	R/W	FXconfig_AC_Output_Voltage	uint16	Volts AC	FXconfig_AC_Voltage_SF	Programmable	AC output Voltage
64114	35	35	1	R/W	FXconfig_Low_Battery_Cut_Out_Voltage	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Battery cut-out voltage
64114	36	36	1	R/W	FXconfig_Low_Battery_Cut_In_Voltage	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Battery cut-in voltage
64114	37	37	1	R/W	FXconfig_AUX_Mode	uint16	Enumerated	N/A	Programmable	0=Remote, 1=Load Shed, 2=Gen Alert, 3=Fault, 4=Vent Fan, 5=Cool Fan, 6=Divert DC, 7=Divert AC, 8=AC Drop
64114	38	38	1	R/W	FXconfig_AUX_Control	uint16	Enumerated	N/A	Programmable	0 = Off; 1 = Auto; 2 = On
64114	39	39	1	R/W	FXconfig_AUX_Load_Shed_Enable_Voltage	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Load Shed enable voltage
64114	40	40	1	R/W	FXconfig_AUX_Gen_Alert_On_Voltage	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Gen Alert On voltage
64114	41	41	1	R/W	FXconfig_AUX_Gen_Alert_On_Delay	uint16	Minutes	N/A	Programmable	Gen Alert On delay minutes
64114	42	42	1	R/W	FXconfig_AUX_Gen_Alert_Off_Voltage	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Gen Alert Off voltage
64114	43	43	1	R/W	FXconfig_AUX_Gen_Alert_Off_Delay	uint16	Minutes	N/A	Programmable	Gen Alert Off delay minutes
64114	44	44	1	R/W	FXconfig_AUX_Vent_Fan_Enable_Voltage	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Vent Fan enable voltage
64114	45	45	1	R/W	FXconfig_AUX_Vent_Fan_Off_Period	uint16	Minutes	N/A	Programmable	Van Fan Off delay minutes
64114	46	46	1	R/W	FXconfig_AUX_Divert_Enable_Voltage	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	DC Divert enable voltage
64114	47	47	1	R/W	FXconfig_AUX_Divert_Off_Delay	uint16	Minutes	N/A	Programmable	Divert Off delay minutes
64114	48	48	1	R	FXconfig_Stacking_Mode	uint16	Enumerated	N/A	Read Only	0=1-2phase Master, 1=Classic Slave, 2=OB Slave L1, 3=OB Slave L2, 4=3phase Master, 5=3phase Slave, 10=Master, 11=Classic Slave, 12=OB Slave L1, 13=OB Slave L2, 14=3phase OB Slave A, 15=3phase OB Slave B, 16=3phase OB Slave C, 17=3phase Classic B, 18=3phase Classic C, 19=Independent
64114	49	49	1	R/W	FXconfig_Master_Power_Save_Level	uint16	N/A	N/A	Programmable	Master inverter power save level
64114	50	50	1	R/W	FXconfig_Slave_Power_Save_Level	uint16	N/A	N/A	Programmable	Slave inverter power save level
64114	51	51	1	R/W	FXconfig_Sell_Volts	uint16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Sell Voltage Target
64114	52	52	1	R/W	FXconfig_Grid_Tie_Window	uint16	Enumerated	N/A	Programmable	0=IEEE, 1=User
64114	53	53	1	R/W	FXconfig_Grid_Tie_Enable	uint16	Enumerated	N/A	Programmable	1=Yes, 0=No
64114	54	54	1	R/W	FXconfig_AC_Input_Voltage_Calibrate_Factor	int16	Volts AC	N/A	Programmable	AC input voltage calibration factor
64114	55	55	1	R/W	FXconfig_AC_Output_Voltage_Calibrate_Factor	int16	Volts AC	N/A	Programmable	AC output voltage calibration factor
64114	56	56	1	R/W	FXconfig_Battery_Voltage_Calibrate_Factor	int16	DC Volts	FXconfig_DC_Voltage_SF	Programmable	Battery voltage calibration factor
64114	57	65	9	R	FXconfig_Serial_Number	string (18)	N/A	N/A	Read Only	Device serial number
64114	66	74	9	R	FXconfig_Model_Number	string (18)	N/A	N/A	Read Only	Device model

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Table 18 FLEXnet-DC Configuration Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64119	1	1	1	R	FNconfig_DID	uint16	N/A	N/A	64119	Vendor Extension for OutBack FLEXnet-DC Battery Monitor Configuration Block
64119	2	2	1	R	FNconfig_Length	uint16	Registers	N/A	52	Length of block in 16-bit registers
64119	3	3	1	R	FNconfig_Port_Number	uint16	N/A	N/A	1-10	Port number on OutBack network
64119	4	4	1	R	FNconfig_DC_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64119	5	5	1	R	FNconfig_DC_Current_SF	int16	N/A	N/A	-1	DC Current Scale Factor
64119	6	6	1	R	FNconfig_kWh_SF	int16	N/A	N/A	-2	Kilo Watt Hours Scale Factor
64119	7	7	1	R	FNconfig_Major_Firmware_Number	uint16	N/A	N/A	Read Only	FLEXnet-DC Major firmware revision
64119	8	8	1	R	FNconfig_Mid_Firmware_Number	uint16	N/A	N/A	Read Only	FLEXnet-DC Mid firmware revision
64119	9	9	1	R	FNconfig_Minor_Firmware_Number	uint16	N/A	N/A	Read Only	FLEXnet-DC Minor firmware revision
64119	10	10	1	R/W	FNconfig_Battery_Capacity	uint16	AH	N/A	Programmable	Battery AH capacity
64119	11	11	1	R/W	FNconfig_Charged_Volts	uint16	DC Volts	FNconfig_DC_Voltage_SF	Programmable	Battery Charged Voltage
64119	12	12	1	R/W	FNconfig_Charged_Time	uint16	Minutes	N/A	Programmable	Battery Charged Time Minutes
64119	13	13	1	R/W	FNconfig_Battery_Charged_Amps	uint16	Amps	FNconfig_DC_Current_SF	Programmable	Battery Charged Return Amps
64119	14	14	1	R/W	FNconfig_Charge_Factor	uint16	Percent	N/A	Programmable	Battery Charge Factor
64119	15	15	1	R/W	FNconfig_Shunt_A_Enabled	uint16	Enumerated	N/A	Programmable	0=Enabled, 1=Disabled
64119	16	16	1	R/W	FNconfig_Shunt_B_Enabled	uint16	Enumerated	N/A	Programmable	0=Enabled, 1=Disabled
64119	17	17	1	R/W	FNconfig_Shunt_C_Enabled	uint16	Enumerated	N/A	Programmable	0=Enabled, 1=Disabled
64119	18	18	1	R/W	FNconfig_Relay_Control	uint16	Enumerated	N/A	Programmable	0 = Off; 1 = Auto; 2 = On
64119	19	19	1	R/W	FNconfig_Relay_Invert_Logic	uint16	Enumerated	N/A	Programmable	0=Invert Logic,1=Normal
64119	20	20	1	R/W	FNconfig_Relay_High_Voltage	uint16	DC Volts	FNconfig_DC_Voltage_SF	Programmable	Relay high voltage enable
64119	21	21	1	R/W	FNconfig_Relay_Low_Voltage	uint16	DC Volts	FNconfig_DC_Voltage_SF	Programmable	Relay low voltage enable
64119	22	22	1	R/W	FNconfig_Relay_SOC_High	uint16	Percent	N/A	Programmable	Relay high SOC enable
64119	23	23	1	R/W	FNconfig_Relay_SOC_Low	uint16	Percent	N/A	Programmable	Relay low SOC enable
64119	24	24	1	R/W	FNconfig_Relay_High_Enable_Delay	uint16	Minutes	N/A	Programmable	Relay High Enable Delay
64119	25	25	1	R/W	FNconfig_Relay_Low_Enable_Delay	uint16	Minutes	N/A	Programmable	Relay Low Enable Delay
64119	26	26	1	R/W	FNconfig_Set_Data_Log_Day_Offset	uint16	Days	N/A	Programmable	Day offset 0-400, 0=Today, 1=-1 day ...
64119	27	27	1	R	FNconfig_Get_Current_Data_Log_Day_Offset	uint16	Days	N/A	Read Only	Current Data Log Day Offset
64119	28	28	1	R	FNconfig_Datalog_Minimum_SOC	uint16	Percent	N/A	Read Only	Datalog minimum SOC
64119	29	29	1	R	FNconfig_Datalog_Input_AH	uint16	AH	N/A	Read Only	Datalog input AH
64119	30	30	1	R	FNconfig_Datalog_Input_kWh	uint16	kWh	FNconfig_kWh_SF	Read Only	Datalog input kWh
64119	31	31	1	R	FNconfig_Datalog_Output_AH	uint16	AH	N/A	Read Only	Datalog output AH
64119	32	32	1	R	FNconfig_Datalog_Output_kWh	uint16	kWh	FNconfig_kWh_SF	Read Only	Datalog output kWh
64119	33	33	1	R	FNconfig_Datalog_NET_AH	uint16	AH	N/A	Read Only	Datalog NET AH
64119	34	34	1	R	FNconfig_Datalog_NET_kWh	uint16	kWh	FNconfig_kWh_SF	Read Only	Datalog NET kWh
64119	35	35	1	R	FNconfig_Clear_Data_Log_Read	uint16	N/A	N/A	Read Only	Read value needed to clear data log
64119	36	36	1	W	FNconfig_Clear_Data_Log_Write_Complement	uint16	N/A	N/A	Write Only	Write value's complement to clear data log
64119	37	45	9	R	FNconfig_Serial_Number	string (18)	N/A	N/A	Read Only	Device serial number
64119	46	54	9	R	FNconfig_Model_Number	string (18)	N/A	N/A	Read Only	Device model

Application Note

Table 19 FLEXnet-DC Real Time Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64118	1	1	1	R	FN_DID	uint16	N/A	N/A	64118	Vendor Extension for OutBack FLEXnet DC Battery Monitor Status Block
64118	2	2	1	R	FN_Length	uint16	Registers	N/A	76	Length of block in 16-bit registers
64118	3	3	1	R	FN_Port_Number	uint16	N/A	N/A	1-10	Port number on Outback network
64118	4	4	1	R	FN_DC_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64118	5	5	1	R	FN_DC_Current_SF	int16	N/A	N/A	-1	DC Current Scale Factor
64118	6	6	1	R	FN_Time_SF	int16	N/A	N/A	-1	Time Scale Factor
64118	7	7	1	R	FN_kWh_SF	int16	N/A	N/A	-2	Kilo Watt Hours Scale Factor
64118	8	8	1	R	FN_kW_SF	int16	N/A	N/A	-2	Kilo Watt Scale Factor
64118	9	9	1	R	FN_Shunt_A_Current	int16	Amps	FN_DC_Current_SF	Read Only	Shunt A current
64118	10	10	1	R	FN_Shunt_B_Current	int16	Amps	FN_DC_Current_SF	Read Only	Shunt B current
64118	11	11	1	R	FN_Shunt_C_Current	int16	Amps	FN_DC_Current_SF	Read Only	Shunt C current
64118	12	12	1	R	FN_Battery_Voltage	uint16	Volts	FN_DC_Voltage_SF	Read Only	Battery Voltage
64118	13	13	1	R	FN_Battery_Current	int16	Amps	FN_DC_Current_SF	Read Only	Battery Current
64118	14	14	1	R	FN_Battery_Temperature	int16	Degrees C	N/A	Read Only	Battery Temperature C
64118	15	15	1	R	FN_Status_Flags	uint16	Bitfield	N/A	Read Only	See FN Status Table
64118	16	16	1	R	FN_Shunt_A_Accumulated_AH	int16	AH	N/A	Read Only	Shunt A Accumulated_AH
64118	17	17	1	R	FN_Shunt_A_Accumulated_kWh	int16	kWh	FN_kWh_SF	Read Only	Shunt A Accumulated_kWh
64118	18	18	1	R	FN_Shunt_B_Accumulated_AH	int16	AH	N/A	Read Only	Shunt B Accumulated_AH
64118	19	19	1	R	FN_Shunt_B_Accumulated_kWh	int16	kWh	FN_kWh_SF	Read Only	Shunt B Accumulated_kWh
64118	20	20	1	R	FN_Shunt_C_Accumulated_AH	int16	AH	N/A	Read Only	Shunt C Accumulated_AH
64118	21	21	1	R	FN_Shunt_C_Accumulated_kWh	int16	kWh	FN_kWh_SF	Read Only	Shunt C Accumulated_kWh
64118	22	22	1	R	FN_Input_Current	uint16	Amps	FN_DC_Current_SF	Read Only	Total_input_current
64118	23	23	1	R	FN_Output_Current	uint16	Amps	FN_DC_Current_SF	Read Only	Total_output_current
64118	24	24	1	R	FN_Input_kW	uint16	kW	FN_kW_SF	Read Only	Total_input_kWatts
64118	25	25	1	R	FN_Output_kW	uint16	kW	FN_kW_SF	Read Only	Total_output_kWatts
64118	26	26	1	R	FN_Net_kW	int16	kW	FN_kW_SF	Read Only	Total_net_kWatts
64118	27	27	1	R	FN_Days_Since_Charge_Parameters_Met	uint16	Days	FN_Time_SF	Read Only	Days Since Charge Parameters Met
64118	28	28	1	R	FN_State_Of_Charge	uint16	Percent	N/A	Read Only	Current Battery State of Charge
64118	29	29	1	R	FN_Todays_Minimum_SOC	uint16	Percent	N/A	Read Only	Todays minimum SOC
64118	30	30	1	R	FN_Todays_Maximum_SOC	uint16	Percent	N/A	Read Only	Todays maximum SOC
64118	31	31	1	R	FN_Todays_NET_Input_AH	uint16	AH	N/A	Read Only	Todays NET input AH
64118	32	32	1	R	FN_Todays_NET_Input_kWh	uint16	kWh	FN_kWh_SF	Read Only	Todays NET input kWh
64118	33	33	1	R	FN_Todays_NET_Output_AH	uint16	AH	N/A	Read Only	Todays NET output AH
64118	34	34	1	R	FN_Todays_NET_Output_kWh	uint16	kWh	FN_kWh_SF	Read Only	Todays NET output kWh
64118	35	35	1	R	FN_Todays_NET_Battery_AH	int16	AH	N/A	Read Only	Todays NET battery AH
64118	36	36	1	R	FN_Todays_NET_Battery_kWh	int16	kWh	FN_kWh_SF	Read Only	Todays NET battery kWh
64118	37	37	1	R	FN_Charge_Factor_Corrected_NET_Battery_AH	int16	AH	N/A	Read Only	Charge factor corrected NET battery AH
64118	38	38	1	R	FN_Charge_Factor_Corrected_NET_Battery_kWh	int16	kWh	FN_kWh_SF	Read Only	Charge factor corrected NET battery kWh
64118	39	39	1	R	FN_Todays_Minimum_Battery_Voltage	uint16	Volts	FN_DC_Voltage_SF	Programmable	Todays minimum battery voltage
64118	40	41	2	R	FN_Todays_Minimum_Battery_Time	uint32	Seconds	N/A	Read Only	Todays minimum battery voltage time UTC
64118	42	42	1	R	FN_Todays_Maximum_Battery_Voltage	uint16	Volts	FN_DC_Voltage_SF	Programmable	Todays maximum battery voltage
64118	43	44	2	R	FN_Todays_Maximum_Battery_Time	uint32	Seconds	N/A	Read Only	Todays maximum battery voltage time UTC
64118	45	45	1	R	FN_Cycle_Charge_Factor	uint16	Percent	N/A	Read Only	Cycle Charge Factor
64118	46	46	1	R	FN_Cycle_kWh_Charge_Efficiency	uint16	Percent	N/A	Read Only	Cycle kWh Charge Efficiency
64118	47	47	1	R	FN_Total_Days_At_100_Percent	uint16	Days	FN_Time_SF	Programmable	Total days at 100% charged
64118	48	48	1	R	FN_Lifetime_kAH_Removed	uint16	AH	N/A	Programmable	Lifetime kAH removed from battery
64118	49	49	1	R	FN_Shunt_A_Historical_Returned_To_Battery_AH	uint16	AH	N/A	Read Only	Shunt A historical returned to battery AH
64118	50	50	1	R	FN_Shunt_A_Historical_Returned_To_Battery_kWh	uint16	kWh	FN_kWh_SF	Read Only	Shunt A historical returned to battery kWh

SunSpec Data Blocks and the AXS Port

Table 19 FLEXnet-DC Real Time Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64118	51	51	1	R	FN_Shunt_A_Historical_Removed_From_Battery_AH	uint16	AH	N/A	Read Only	Shunt A historical removed from battery AH
64118	52	52	1	R	FN_Shunt_A_Historical_Removed_From_Battery_kWh	uint16	kWh	FN_kWh_SF	Read Only	Shunt A historical removed from battery kWh
64118	53	53	1	R	FN_Shunt_A_Maximum_Charge_Rate	uint16	Amps	FN_DC_Current_SF	Read Only	Shunt A historical maximum charge rate Amps
64118	54	54	1	R	FN_Shunt_A_Maximum_Charge_Rate_kW	uint16	kW	FN_kWh_SF	Read Only	Shunt A historical maximum charge rate kW
64118	55	55	1	R	FN_Shunt_A_Maximum_Discharge_Rate	int16	Amps	FN_DC_Current_SF	Read Only	Shunt A historical maximum discharge rate Amps
64118	56	56	1	R	FN_Shunt_A_Maximum_Discharge_Rate_kW	int16	kW	FN_kWh_SF	Read Only	Shunt A historical maximum discharge rate kW
64118	57	57	1	R	FN_Shunt_B_Historical_Returned_To_Battery_AH	uint16	AH	N/A	Read Only	Shunt B historical returned to battery AH
64118	58	58	1	R	FN_Shunt_B_Historical_Returned_To_Battery_kWh	uint16	kWh	FN_kWh_SF	Read Only	Shunt B historical returned to battery kWh
64118	59	59	1	R	FN_Shunt_B_Historical_Removed_From_Battery_AH	uint16	AH	N/A	Read Only	Shunt B historical removed from battery AH
64118	60	60	1	R	FN_Shunt_B_Historical_Removed_From_Battery_kWh	uint16	kWh	FN_kWh_SF	Read Only	Shunt B historical removed from battery kWh
64118	61	61	1	R	FN_Shunt_B_Maximum_Charge_Rate	uint16	Amps	FN_DC_Current_SF	Read Only	Shunt B historical maximum charge rate Amps
64118	62	62	1	R	FN_Shunt_B_Maximum_Charge_Rate_kW	uint16	kW	FN_kWh_SF	Read Only	Shunt B historical maximum charge rate kW
64118	63	63	1	R	FN_Shunt_B_Maximum_Discharge_Rate	int16	Amps	FN_DC_Current_SF	Read Only	Shunt B historical maximum discharge rate Amps
64118	64	64	1	R	FN_Shunt_B_Maximum_Discharge_Rate_kW	int16	kW	FN_kWh_SF	Read Only	Shunt B historical maximum discharge rate kW
64118	65	65	1	R	FN_Shunt_C_Historical_Returned_To_Battery_AH	uint16	AH	N/A	Read Only	Shunt C historical returned to battery AH
64118	66	66	1	R	FN_Shunt_C_Historical_Returned_To_Battery_kWh	uint16	kWh	FN_kWh_SF	Read Only	Shunt C historical returned to battery kWh
64118	67	67	1	R	FN_Shunt_C_Historical_Removed_From_Battery_AH	uint16	AH	N/A	Read Only	Shunt C historical removed from battery AH
64118	68	68	1	R	FN_Shunt_C_Historical_Removed_From_Battery_kWh	uint16	kWh	FN_kWh_SF	Read Only	Shunt C historical removed from battery kWh
64118	69	69	1	R	FN_Shunt_C_Maximum_Charge_Rate	uint16	Amps	FN_DC_Current_SF	Read Only	Shunt C historical maximum charge rate Amps
64118	70	70	1	R	FN_Shunt_C_Maximum_Charge_Rate_kW	uint16	kW	FN_kWh_SF	Read Only	Shunt C historical maximum charge rate kW
64118	71	71	1	R	FN_Shunt_C_Maximum_Discharge_Rate	int16	Amps	FN_DC_Current_SF	Read Only	Shunt C historical maximum discharge rate Amps
64118	72	72	1	R	FN_Shunt_C_Maximum_Discharge_Rate_kW	int16	kW	FN_kWh_SF	Read Only	Shunt C historical maximum discharge rate kW
64118	73	73	1	R	FN_Shunt_A_Reset_Maximum_Data	uint16	N/A	N/A	Read Only	Read value needed to reset shunt A maximum data
64118	74	74	1	W	FN_Shunt_A_Reset_Maximum_Data_Write_Complement	uint16	N/A	N/A	Write Only	Write value's complement to reset shunt A maximum data
64118	75	75	1	R	FN_Shunt_B_Reset_Maximum_Data	uint16	N/A	N/A	Read Only	Read value needed to reset shunt B maximum data
64118	76	76	1	W	FN_Shunt_B_Reset_Maximum_Data_Write_Complement	uint16	N/A	N/A	Write Only	Write value's complement to reset shunt B maximum data
64118	77	77	1	R	FN_Shunt_C_Reset_Maximum_Data	uint16	N/A	N/A	Read Only	Read value needed to reset shunt C maximum data
64118	78	78	1	W	FN_Shunt_C_Reset_Maximum_Data_Write_Complement	uint16	N/A	N/A	Write Only	Write value's complement to reset shunt C maximum data

Table 20 FN_Status Table

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
—	—	—	—	—	—	—	—	—	0x0001	AUX relay enabled
—	—	—	—	—	—	—	—	—	0x0002	Charge parameters met

Application Note

Table 21 OutBack System Control Block

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
64120	1	1	1	R	OB_DID	uint16	N/A	N/A	64120	Vendor Extension for OutBack System Control Block
64120	2	2	1	R	OB_Length	uint16	Registers	N/A	27	Length of block in 16-bit registers
64120	3	3	1	R	OB_DC_Voltage_SF	int16	N/A	N/A	-1	DC Voltage Scale Factor
64120	4	4	1	R	OB_AC_Current_SF	int16	N/A	N/A	-1	AC Current Scale Factor
64120	5	5	1	R	OB_Time_SF	int16	N/A	N/A	-1	Charge Time Scale Factor
64120	6	6	1	W	OB_Bulk_Charge_Enable_Disable	uint16	Enumerated	N/A	Programmable	1=Start Bulk, 2=Stop Bulk, 3=Start EQ Charge, 4= Stop EQ Charge
64120	7	7	1	W	OB_Inverter_AC_Drop_Use	uint16	Enumerated	N/A	Programmable	1=Use, 2=Drop
64120	8	8	1	W	OB_Set_Inverter_Mode	uint16	Enumerated	N/A	Programmable	1=Off, 2=Search, 3=On
64120	9	9	1	W	OB_Grid_Tie_Mode	uint16	Enumerated	N/A	Programmable	1=Enable, 2=Disable
64120	10	10	1	W	OB_Set_Inverter_Charger_Mode	uint16	Enumerated	N/A	Programmable	1=Off, 2=Auto, 3=On
64120	11	11	1	R	OB_Control_Status	uint16	Bitfield	N/A	N/A	Bit field for status (See OB_Control_Status Table)
64120	12	12	1	R/W	OB_Set_Sell_Voltage	uint16	Volts	OB_DC_Voltage_SF	Programmable	Global Sell Voltage
64120	13	13	1	R/W	OB_Set_Radian_Inverter_Sell_Current_Limit	uint16	Amps	OB_AC_Current_SF	Programmable	Radian Inverter Sell Current Limit
64120	14	14	1	R/W	OB_Set_Absorb_Voltage	uint16	Volts	OB_DC_Voltage_SF	Programmable	Global Absorb Voltage
64120	15	15	1	R/W	OB_Set_Absorb_Time	uint16	Hours	OB_Time_SF	Programmable	Time in tenths of hour
64120	16	16	1	R/W	OB_Set_Float_Voltage	uint16	Volts	OB_DC_Voltage_SF	Programmable	Global Float Voltage
64120	17	17	1	R/W	OB_Set_Float_Time	uint16	Hours	OB_Time_SF	Programmable	Time in tenths of hour
64120	18	18	1	R/W	OB_Set_Inverter_Charger_Current_Limit	uint16	Amps	OB_AC_Current_SF	Programmable	Inverter Charger Current Limit
64120	19	19	1	R/W	OB_Set_Inverter_AC1_Current_Limit	uint16	Amps	OB_AC_Current_SF	Programmable	Inverter AC1 input Current Limit
64120	20	20	1	R/W	OB_Set_Inverter_AC2_Current_Limit	uint16	Amps	OB_AC_Current_SF	Programmable	Inverter AC2 input Current Limit
64120	21	21	1	R/W	OB_Set_AGS_OP_Mode	uint16	Enumerated	N/A	Programmable	AGS Operating Mode: 0=Off, 1=On, 2=Auto
64120	22	22	1	R	OB_AGS_Operational_State	uint16	Enumerated	N/A	N/A	GEN_STOP=0, GEN_STARTING=1, GEN_RUNNING=2, GEN_WARMUP=3, GEN_COOLDOWN=4, GEN_AWAITING_AC=5
64120	23	23	1	R	OB_AGS_Operational_State_Timer	uint16	Seconds	N/A	Measured	Number of seconds OB_AGS_Operational_State has been in current state; if Operational State is 0 then timer=0
64120	24	25	2	R	OB_Gen_Last_Run_Start_Time_GMT	uint32	Seconds	N/A	Measured	Generator last start time in GMT seconds
64120	26	27	2	R	OB_Gen_Last_Start_Run_Duration	uint32	Seconds	N/A	Measured	Last Generator Start Run Duration Seconds
64120	28	28	1	R/W	OB_Set_AC_Output_Freq_Offline_Mode	uint16	NA	N/A	Programmable	Not implemented
64120	29	29	1	R/W	OB_Set_AC_Output_Offline_Freq	uint16	Hz	OB_DC_Voltage_SF	Programmable	Set AC Output Frequency when AC Input is disconnected: Range 60 Hz: 55.8 ... 64.9 Hz, 50 Hz: 46.5 ... 54.1 Hz

Table 22 OB_Control_Status Table

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
—	—	—	—	—	—	—	—	—	0x0001	Bulk Charging
—	—	—	—	—	—	—	—	—	0x0002	Float Charging
—	—	—	—	—	—	—	—	—	0x0004	Inverter AC Input Use
—	—	—	—	—	—	—	—	—	0x0008	Inverter Off
—	—	—	—	—	—	—	—	—	0x0010	Inverter Search Mode
—	—	—	—	—	—	—	—	—	0x0020	Inverter On
—	—	—	—	—	—	—	—	—	0x0040	Inverter Grid-Tie Enabled
—	—	—	—	—	—	—	—	—	0x0080	Inverter Charger Disabled
—	—	—	—	—	—	—	—	—	0x0100	Inverter Charger Auto Mode
—	—	—	—	—	—	—	—	—	0x0200	Inverter Charger Bulk and Float Mode
—	—	—	—	—	—	—	—	—	0x0400	EQ Charging

Table 23 SunSpec Common Model Block

DID	Start	End	Size	R/W	Field Name	Type	Units	Scale Factor	Contents	Description
1	1	1	1	R	C_SunSpec_DID	uint16	N/A	N/A	1	Uniquely identifies this as a SunSpec Common Model block
1	2	2	1	R	C_SunSpec_Length	uint16	Registers	N/A	65	Length of block in 16-bit registers
1	3	18	16	R	C_Manufacturer	string (32)	N/A	N/A	Read Only	—
1	19	34	16	R	C_Model	string (32)	N/A	N/A	Read Only	—
1	35	42	8	R	C_Options	string (16)	N/A	N/A	Read Only	—
1	43	50	8	R	C_Version	string (16)	N/A	N/A	Read Only	—
1	51	66	16	R	C_SerialNumber	string (32)	N/A	N/A	Read Only	—
1	67	67	1	R/W	C_DeviceAddress	uint16	N/A	N/A	Write Only	—

SunSpec Data Blocks and the AXS Port

Table 24 SunSpec Inverter — Single Phase

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
101	1	1	1	R	C_SunSpec_DID	uint16	N/A	N/A	101	Uniquely identifies this as a SunSpec Single Phase Inverter
101	2	2	1	R	C_SunSpec_Length	uint16	Registers	N/A	50	Length of model block
101	3	3	1	R	I_AC_Current	uint16	Amps	I_AC_Current_SF	Measured	AC Total Current value
101	4	4	1	R	I_AC_CurrentA	uint16	Amps	I_AC_Current_SF	Measured	AC Phase-A Current value
101	5	5	1	R	I_AC_CurrentB	uint16	Amps	I_AC_Current_SF	Measured	AC Phase-B Current value
101	6	6	1	R	I_AC_CurrentC	uint16	Amps	I_AC_Current_SF	Measured	AC Phase-C Current value
101	7	7	1	R	I_AC_Current_SF	int16	SF	N/A		AC Current Scale factor
101	8	8	1	R	I_AC_VoltageAB	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase-AB value
101	9	9	1	R	I_AC_VoltageBC	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase BC value
101	10	10	1	R	I_AC_VoltageCA	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase CA value
101	11	11	1	R	I_AC_VoltageAN	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase-A-to-neutral value
101	12	12	1	R	I_AC_VoltageBN	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase B-to-neutral value
101	13	13	1	R	I_AC_VoltageCN	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase C-to-neutral value
101	14	14	1	R	I_AC_Voltage_SF	int16	SF	N/A		AC Voltage Scale factor
101	15	15	1	R	I_AC_Power	int16	Watts	I_AC_Power_SF	Measured	AC Power value
101	16	16	1	R	I_AC_Power_SF	int16	SF	N/A		AC Power Scale factor
101	17	17	1	R	I_AC_Frequency	uint16	Hertz	I_AC_Frequency_SF	Measured	AC Frequency value
101	18	18	1	R	I_AC_Frequency_SF	int16	SF	N/A		Scale factor
101	19	19	1	R	I_AC_VA	int16	VA	I_AC_VA_SF	Measured	Apparent Power
101	20	20	1	R	I_AC_VA_SF	int16	SF	N/A		Scale factor
101	21	21	1	R	I_AC_VAR	int16	VAR	I_AC_VAR_SF	Measured	Reactive Power
101	22	22	1	R	I_AC_VAR_SF	int16	SF	N/A		Scale factor
101	23	23	1	R	I_AC_PF	int16	%	I_AC_PF_SF	Measured	Power Factor
101	24	24	1	R	I_AC_PF_SF	int16	SF	N/A		Scale factor
101	25	26	2	R	I_AC_Energy_WH	uint32	WattHours	I_AC_Energy_WH_SF	Measured	AC Lifetime Energy production
101	27	27	1	R	I_AC_Energy_WH_SF	uint16	SF	N/A	Measured	AC Lifetime Energy production scale factor
101	28	28	1	R	I_DC_Current	uint16	Amps	I_DC_Current_SF	Measured	DC Current value
101	29	29	1	R	I_DC_Current_SF	int16	SF	N/A		Scale factor
101	30	30	1	R	I_DC_Voltage	uint16	Volts	I_DC_Voltage_SF	Measured	DC Voltage value
101	31	31	1	R	I_DC_Voltage_SF	int16	SF	N/A		Scale factor
101	32	32	1	R	I_DC_Power	int16	Watts	I_DC_Power_SF	Measured	DC Power value
101	33	33	1	R	I_DC_Power_SF	int16	SF	N/A		Scale factor
101	34	34	1	R	I_Temp_Cab	int16	Degrees C	I_Temp_SF	Measured	Cabinet Temperature
101	35	35	1	R	I_Temp_Sink	int16	Degrees C	I_Temp_SF	Measured	Coolant or Heat Sink Temperature
101	36	36	1	R	I_Temp_Trans	int16	Degrees C	I_Temp_SF	Measured	Transformer Temperature
101	37	37	1	R	I_Temp_Other	int16	Degrees C	I_Temp_SF	Measured	Other Temperature
101	38	38	1	R	I_Temp_SF	int16	SF	N/A		Scale factor
101	39	39	1	R	I_Status	uint16	Enumerated	N/A	N/A	Operating State
101	40	40	1	R	I_Status_Vendor	uint16	Enumerated	N/A	N/A	Vendor Defined Operating State
101	41	42	2	R	I_Event_1	uint32	Bitfield	N/A	N/A	Event Flags (bits 0-31)
101	43	44	2	R	I_Event_2	uint32	Bitfield	N/A	N/A	Event Flags (bits 32-63) Future Use, set to 0
101	45	46	2	R	I_Event_1_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 0-31)
101	47	48	2	R	I_Event_2_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 32-63) Future Use
101	49	50	2	R	I_Event_3_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 64-95) Future Use
101	51	52	2	R	I_Event_4_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 96-127) Future Use

Application Note

Table 25 SunSpec Inverter — Split Phase

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
102	1	1	1	R	C_SunSpec_DID	uint16	N/A	N/A	102	Uniquely identifies this as a SunSpec Split Phase Inverter
102	2	2	1	R	C_SunSpec_Length	uint16	Registers	N/A	50	Length of model block
102	3	3	1	R	I_AC_Current	uint16	Amps	I_AC_Current_SF	Measured	AC Total Current value
102	4	4	1	R	I_AC_CurrentA	uint16	Amps	I_AC_Current_SF	Measured	AC Phase-A Current value
102	5	5	1	R	I_AC_CurrentB	uint16	Amps	I_AC_Current_SF	Measured	AC Phase-B Current value
102	6	6	1	R	I_AC_CurrentC	uint16	Amps	I_AC_Current_SF	Measured	AC Phase-C Current value
102	7	7	1	R	I_AC_Current_SF	int16	SF	N/A		AC Current Scale factor
102	8	8	1	R	I_AC_VoltageAB	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase-AB value
102	9	9	1	R	I_AC_VoltageBC	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase BC value
102	10	10	1	R	I_AC_VoltageCA	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase CA value
102	11	11	1	R	I_AC_VoltageAN	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase-A-to-neutral value
102	12	12	1	R	I_AC_VoltageBN	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase B-to-neutral value
102	13	13	1	R	I_AC_VoltageCN	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase C-to-neutral value
102	14	14	1	R	I_AC_Voltage_SF	int16	SF	N/A		AC Voltage Scale factor
102	15	15	1	R	I_AC_Power	int16	Watts	I_AC_Power_SF	Measured	AC Power value
102	16	16	1	R	I_AC_Power_SF	int16	SF	N/A		AC Power Scale factor
102	17	17	1	R	I_AC_Frequency	uint16	Hertz	I_AC_Frequency_SF	Measured	AC Frequency value
102	18	18	1	R	I_AC_Frequency_SF	int16	SF	N/A		Scale factor
102	19	19	1	R	I_AC_VA	int16	VA	I_AC_VA_SF	Measured	Apparent Power
102	20	20	1	R	I_AC_VA_SF	int16	SF	N/A		Scale factor
102	21	21	1	R	I_AC_VAR	int16	VAR	I_AC_VAR_SF	Measured	Reactive Power
102	22	22	1	R	I_AC_VAR_SF	int16	SF	N/A		Scale factor
102	23	23	1	R	I_AC_PF	int16	%	I_AC_PF_SF	Measured	Power Factor
102	24	24	1	R	I_AC_PF_SF	int16	SF	N/A		Scale factor
102	25	26	2	R	I_AC_Energy_WH	uint32	WattHours	I_AC_Energy_WH_SF	Measured	AC Lifetime Energy production
102	27	27	1	R	I_AC_Energy_WH_SF	uint16	SF	N/A	Measured	AC Lifetime Energy production scale factor
102	28	28	1	R	I_DC_Current	uint16	Amps	I_DC_Current_SF	Measured	DC Current value
102	29	29	1	R	I_DC_Current_SF	int16	SF	N/A		Scale factor
102	30	30	1	R	I_DC_Voltage	uint16	Volts	I_DC_Voltage_SF	Measured	DC Voltage value
102	31	31	1	R	I_DC_Voltage_SF	int16	SF	N/A		Scale factor
102	32	32	1	R	I_DC_Power	int16	Watts	I_DC_Power_SF	Measured	DC Power value
102	33	33	1	R	I_DC_Power_SF	int16	SF	N/A		Scale factor
102	34	34	1	R	I_Temp_Cab	int16	Degrees C	I_Temp_SF	Measured	Cabinet Temperature
102	35	35	1	R	I_Temp_Sink	int16	Degrees C	I_Temp_SF	Measured	Coolant or Heat Sink Temperature
102	36	36	1	R	I_Temp_Trans	int16	Degrees C	I_Temp_SF	Measured	Transformer Temperature
102	37	37	1	R	I_Temp_Other	int16	Degrees C	I_Temp_SF	Measured	Other Temperature
102	38	38	1	R	I_Temp_SF	int16	SF	N/A		Scale factor
102	39	39	1	R	I_Status	uint16	Enumerated	N/A	N/A	Operating State
102	40	40	1	R	I_Status_Vendor	uint16	Enumerated	N/A	N/A	Vendor Defined Operating State
102	41	42	2	R	I_Event_1	uint32	Bitfield	N/A	N/A	Event Flags (bits 0-31)
102	43	44	2	R	I_Event_2	uint32	Bitfield	N/A	N/A	Event Flags (bits 32-63); Future Use, set to 0
102	45	46	2	R	I_Event_1_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 0-31)
102	47	48	2	R	I_Event_2_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 32-63) Future Use
102	49	50	2	R	I_Event_3_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 64-95) Future Use
102	51	52	2	R	I_Event_4_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 96-127) Future Use

SunSpec Data Blocks and the AXS Port

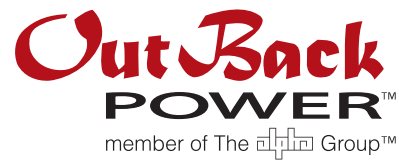
Table 26 SunSpec Inverter — Three Phase

DID	Start	End	Size	R/W	Name	Type	Units	Scale Factor	Contents	Description
103	1	1	1	R	C_SunSpec_DID	uint16	N/A	N/A	103	Uniquely identifies this as a SunSpec Three Phase Inverter
103	2	2	1	R	C_SunSpec_Length	uint16	Registers	N/A	50	Length of model block
103	3	3	1	R	I_AC_Current	uint16	Amps	I_AC_Current_SF	Measured	AC Total Current value
103	4	4	1	R	I_AC_CurrentA	uint16	Amps	I_AC_Current_SF	Measured	AC Phase-A Current value
103	5	5	1	R	I_AC_CurrentB	uint16	Amps	I_AC_Current_SF	Measured	AC Phase-B Current value
103	6	6	1	R	I_AC_CurrentC	uint16	Amps	I_AC_Current_SF	Measured	AC Phase-C Current value
103	7	7	1	R	I_AC_Current_SF	int16	SF	N/A		AC Current Scale factor
103	8	8	1	R	I_AC_VoltageAB	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase-AB value
103	9	9	1	R	I_AC_VoltageBC	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase BC value
103	10	10	1	R	I_AC_VoltageCA	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase CA value
103	11	11	1	R	I_AC_VoltageAN	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase-A-to-neutral value
103	12	12	1	R	I_AC_VoltageBN	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase B-to-neutral value
103	13	13	1	R	I_AC_VoltageCN	uint16	Volts	I_AC_Voltage_SF	Measured	AC Voltage Phase C-to-neutral value
103	14	14	1	R	I_AC_Voltage_SF	int16	SF	N/A		AC Voltage Scale factor
103	15	15	1	R	I_AC_Power	int16	Watts	I_AC_Power_SF	Measured	AC Power value
103	16	16	1	R	I_AC_Power_SF	int16	SF	N/A		AC Power Scale factor
103	17	17	1	R	I_AC_Frequency	uint16	Hertz	I_AC_Frequency_SF	Measured	AC Frequency value
103	18	18	1	R	I_AC_Frequency_SF	int16	SF	N/A		Scale factor
103	19	19	1	R	I_AC_VA	int16	VA	I_AC_VA_SF	Measured	Apparent Power
103	20	20	1	R	I_AC_VA_SF	int16	SF	N/A		Scale factor
103	21	21	1	R	I_AC_VAR	int16	VAR	I_AC_VAR_SF	Measured	Reactive Power
103	22	22	1	R	I_AC_VAR_SF	int16	SF	N/A		Scale factor
103	23	23	1	R	I_AC_PF	int16	%	I_AC_PF_SF	Measured	Power Factor
103	24	24	1	R	I_AC_PF_SF	int16	SF	N/A		Scale factor
103	25	26	2	R	I_AC_Energy_WH	uint32	WattHours	I_AC_Energy_WH_SF	Measured	AC Lifetime Energy production
103	27	27	1	R	I_AC_Energy_WH_SF	uint16	SF	N/A	Measured	AC Lifetime Energy production scale factor
103	28	28	1	R	I_DC_Current	uint16	Amps	I_DC_Current_SF	Measured	DC Current value
103	29	29	1	R	I_DC_Current_SF	int16	SF	N/A		Scale factor
103	30	30	1	R	I_DC_Voltage	uint16	Volts	I_DC_Voltage_SF	Measured	DC Voltage value
103	31	31	1	R	I_DC_Voltage_SF	int16	SF	N/A		Scale factor
103	32	32	1	R	I_DC_Power	int16	Watts	I_DC_Power_SF	Measured	DC Power value
103	33	33	1	R	I_DC_Power_SF	int16	SF	N/A		Scale factor
103	34	34	1	R	I_Temp_Cab	int16	Degrees C	I_Temp_SF	Measured	Cabinet Temperature
103	35	35	1	R	I_Temp_Sink	int16	Degrees C	I_Temp_SF	Measured	Coolant or Heat Sink Temperature
103	36	36	1	R	I_Temp_Trans	int16	Degrees C	I_Temp_SF	Measured	Transformer Temperature
103	37	37	1	R	I_Temp_Other	int16	Degrees C	I_Temp_SF	Measured	Other Temperature
103	38	38	1	R	I_Temp_SF	int16	SF	N/A		Scale factor
103	39	39	1	R	I_Status	uint16	Enumerated	N/A	N/A	Operating State
103	40	40	1	R	I_Status_Vendor	uint16	Enumerated	N/A	N/A	Vendor Defined Operating State
103	41	42	2	R	I_Event_1	uint32	Bitfield	N/A	N/A	Event Flags (bits 0-31)
103	43	44	2	R	I_Event_2	uint32	Bitfield	N/A	N/A	Event Flags (bits 32-63); Future Use, set to 0
103	45	46	2	R	I_Event_1_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 0-31)
103	47	48	2	R	I_Event_2_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 32-63) Future Use
103	49	50	2	R	I_Event_3_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 64-95) Future Use
103	51	52	2	R	I_Event_4_Vendor	uint32	Bitfield	N/A	N/A	Vendor Defined Event Flags (bits 96-127) Future Use

Application Note

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