REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
x1	Draft	1/16/2024	W.Ralston
A	CDR	3/28/2024	W. Ralston
B	Control Update	5/10/2024	W. Ralston
C	FDR Release	7/9/2024	W. Ralston
D	Added MB_SELECT_RB	8/8/2024	W. Ralston

Summary

This document includes data models that are of Approved, Test, and Draft status.
Before using any of these models, please check the release status of the model in question.

Modbus Offset:
The first offset address starts at 0 and represents the offset communicated over Modbus

PLC Address:
The "PLC" Address is presented as 5-digit decimal numbers, beginning
with a “3”, representing "Input registers", or a “4” representing "Holding Registers"
All PLC Addresses start at address 1; example: 30001 and 40001.

Scaling Factor (SF):
Scaling factor of **K** means that the **effective value** is equal to the **value read (or written)** on the modbus multiplied by 10 raised to the power **K**.

Field Type	Applicable Point	Modbus Offset	PLC Address	Size (words)	Name	Label	Nominal Value	Type	Units / Scaling	R/W	Low Limit	High Limit	Description	REV
BOOL		0	000000		BESS_START_REQ_R	BESS - START REQUEST (REMOTE)	0	Bool		RW	REQ OFF	REQ ON	Start BESS Operation	B
BOOL		1	000001		BESS_STOP_REQ_R	BESS - STOP REQUEST (REMOTE)	0	Bool		RW	REQ OFF	REQ ON	Stop BESS Operation	B
BOOL		2	000002		BESS_RESET_REQ_R	BESS - RESET REQUEST (REMOTE)	0	Bool		RW	REQ OFF	REQ ON	Reset BESS Faults/Alarms	B
BOOL		3	000003		BESS_ESTOP_REQ_R	BESS - ESTOP REQUEST (REMOTE)	0	Bool		RW	REQ OFF	ESTOP	Estop BESS Operation	B
BOOL		4	000004		BESS_GRID_RECONNECT	BESS - RECONNECT to Grid	1	Bool		RW	0	1	Island Reconnect Status 0: Islanding Breaker Open 1: Islanding Breaker Closed (Transition inverter to Following)	B
BOOL		5	000005		Reserved/Pad			Bool						
BOOL		6	000006		Reserved/Pad			Bool						
BOOL		7	000007		Reserved/Pad			Bool						
BOOL		8	000008		Reserved/Pad			Bool						
BOOL		9	000009		Reserved/Pad			Bool						
BOOL		10	000010		Reserved/Pad			Bool						
Fixed Block		0	40001	1	CUST_WATCHDOG	Customer Comms Watchdog	0->60	INT16	Sec	RW	0	60	Seconds counter for BESS to monitoring BMC comms. BMC should re-send the BESS_WATCHDOG read value (below)	
Fixed Block		1	40002	1	BESS_FUNCTION_R	BESS FUNCTION SELECT (REMOTE)	2	UINT16	#	RW	0	3	BESS FUNCTION Select 0: *OFF* *1: Enable Batteries Only (Disable Inverter)* 2: *Enable Batteries + Inverter* 3: {Future}	
Fixed Block		2	40003	1	BESS_P_REQ_R	Requested real power (Remote Mode)		INT16	kW * 10	RW	-10,000	10,000	Inverter Following Mode - P (Real) power command	
Fixed Block		3	40004	1	BESS_Q_REQ_R	Requested reactive power (Remote Mode)		INT16	Kvar * 10	RW	-1,000	1,000	Inverter Following Mode - Q (Reactive) power command	
Fixed Block		4	40005	1	BESS_V_REQ_R	Requested AC Voltage (Remote Mode)	4500	UINT16	Volts * 10	RW	4220	5280	Inverter Forming Mode - Vref command	
Fixed Block		5	40006	1	BESS_F_REQ_R	Requested Frequency (Remote Mode)	6000	UINT16	Hz * 100	RW	5500	6500	Inverter Forming Mode - Fref command	
Fixed Block		6	40007	1	GRID_RECONNECT_DELAY	Grid Reconnection Time Delay	0	UINT16	Sec	RW	0	600	Delay in seconds between Reconnect conditions met and Close Breaker Command being sent (Not Required if SEL751 manages reconnect)	B
Fixed Block		7	40008	1	MB_SELECT	Select Modbus Map/Port that is controlling the BESS	0	UINT16	#	RW*	0	1	Controls Modbus Map that is Controlling BESS 0: Port 1025 (*:Main Control Port, Read And Write Access) 1: Port 1026 (*:Secondary Control Port, Read Only, Not Writtable)	C
Fixed Block		8	40009	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		9	40010	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		10	40011	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		11	40012	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		12	40013	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		13	40014	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		14	40015	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		15	40016	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		16	40017	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		17	40018	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		18	40019	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		19	40020	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		20	40021	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		21	40022	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		22	40023	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		23	40024	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		24	40025	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		25	40026	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		26	40027	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		47	40048	1	INV_AC_VLT_PHA	Inverter AC Phase A Voltage	2770	UINT16	Volts * 10	R	0	6,900	Inverter measured AC Phase A Voltage	C
Fixed Block		48	40049	1	INV_AC_VLT_PHB	Inverter AC Phase B Voltage	2770	UINT16	Volts * 10	R	0	6,900	Inverter measured AC Phase B Voltage	C
Fixed Block		49	40050	1	INV_AC_VLT_PHC	Inverter AC Phase C Voltage	2770	UINT16	Volts * 10	R	0	6,900	Inverter measured AC Phase C Voltage	C

H14 Customer Data Point Schedule
REXE1022A-H14-001 (REV D)
8/8/2024

Field Type	Applicable Point	Modbus Offset	PLC Address	Size (words)	Name	Label	Nominal Value	Type	Units / Scaling	R/W	Low Limit	High Limit	Description	REV
Fixed Block		50	40051	1	INV_REAL_PWR	Inverter Real Power		INT16	kW * 10	R	-2,810	2,810	Inverter measured Power (Real)	
Fixed Block		51	40052	1	INV_REAC_PWR	Inverter Reactive Power		INT16	kVar * 10	R	-2,810	2,810	Inverter measured Power (Reactive)	
Fixed Block		52	40053	1	INV_VAC	Inverter AC RMS Voltage		UINT16	Volts * 10	R	0	6,900	Inverter measured AC RMS Volts at output terminals	
Fixed Block		53	40054	1	INV_FREQ	Inverter Frequency		UINT16	Hz * 100	R	0	6,500	Inverter measured Frequency at output terminals	
Fixed Block		54	40055	1	INV_AC_AMP_PHA	Inverter AC Phase A Current		UINT16	Amps * 10	R	0	3,500	Inverter measured AC Phase A Current	
Fixed Block		55	40056	1	INV_AC_AMP_PHB	Inverter AC Phase B Current		UINT16	Amps * 10	R	0	3,500	Inverter measured AC Phase B Current	
Fixed Block		56	40057	1	INV_AC_AMP_PHC	Inverter AC Phase C Current		UINT16	Amps * 10	R	0	3,500	Inverter measured AC Phase C Current	
Fixed Block		57	40058	2	INV_FLT_FLGS	Inverter Fault Flags		UINT32	(Bitmap)	R			This bit word contains system status indicators.	
Fixed Block		59	40060	2	INV_WRN_FLGS	Inverter Warning Flags		UINT32	(Bitmap)	R			This bit word contains system status indicators.	
Fixed Block		61	40062	1	INV_OPER_STATE	Inverter Operating State		UINT16	N/A		R	M	Inverter Vendor Operating State (EPC) 0-POR (Power On Reset) 1-Ready 2-Following 3-Fault 4-Forming 5-Reconnect Delay 6-Reserved - 06 7-Area EPS Loss 8-Charging DC 9-Ride Through 10-Momentary Cessation 11-Transitioning 12-Inhibited 13-Reserved - 13 14-Reserved - 14 15-Reserved - 15	
Fixed Block		62	40063	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		63	40064	1	BAT_KWH	Battery Bank Energy Reserve (based SOC)		UINT16	kWh	R	0	2,750	Bank Energy Reserve Calc (= SOC * 110kWh * Rack Count)	
Fixed Block		64	40065	1	BAT_SOC	Battery Bank State of Charge (SOC)		UINT16	SOC% * 10	R	0	1,000	Bank state of charge	
Fixed Block		65	40066	1	BAT_VDC	Connected DC Bus Voltage	12000	UINT16	VDC * 10	R	0	15,000	DC Bus Voltage	
Fixed Block		66	40067	1	BAT_RACKS_ONLINE_CNT	Strings (Racks) Connected Count		UINT16	#	R	R	M	Number of racks that are in-service.	
Fixed Block		67	40068	2	BAT_RACKS_ONLINE_1	List 1 of Racks connected to DC Bus		UINT32	(Bitmap)	R	R	M	List of Battery Racks (1-32) that are in-service.	
Fixed Block		69	40070	2	BAT_RACKS_ONLINE_2	List 2 of Racks connected to DC Bus		UINT32	(Bitmap)	R	R	M	List of Battery Racks (33-64) that are in-service.	
Fixed Block		71	40072	1	BAT_DPL	Battery Discharge power limit (based on DCL)		INT16	kW	R	R	M	Instantaneous dischargeable battery power limit.	
Fixed Block		72	40073	1	BAT_CPL	Battery Charge power limit (based on CCL)		INT16	kW	R	R	M	Instantaneous chargeable battery power limit.	
Fixed Block		73	40074	1	BAT_FAULT1	Battery Fault Flags	0	UINT16	(Bitmap)	R	R	M	This bit word contains battery system status indicators.	
Fixed Block		74	40075	1	BAT_FAULT2	Battery Fault Flags	0	UINT16	(Bitmap)	R	R	M	This bit word contains battery system status indicators.	
Fixed Block		75	40076	1	BESS_STATE	BESS System Operating State		UINT16	N/A	R	0	6	BESS System Operating State 0 - FAULTED State 1 - STOPPED State 2 - STARTING State 3 - STOPPING State 4 - BATTERY ON 5 - RUNNING in FORMING State 6 - RUNNING in FOLLOWING State	
Fixed Block		76	40077	1	BESS_STS_WORD	Status Bit Word		UINT16	Bitmap	R			See below for bit definitions	C
Fixed Block		77	40078	1	BESS_ALM_WORD_1	System Alarm Bit Word 1	0	UINT16	Bitmap	R			See below for bit definitions	C
Fixed Block		78	40079	1	BESS_ALM_WORD_2	System Alarm Bit Word 2	0	UINT16	Bitmap	R			See below for bit definitions	C
Fixed Block		79	40080	1	BESS_ESTOP_WORD	E-STOP Status Bit Word	65535	UINT16	Bitmap	R			See below for bit definitions	
Fixed Block		80	40081	1	BESS_AUX_LOAD	120/208 power usage of system		INT16	Watts / 10	R	0	4,000	Instantaneous AUX power usage.	
Fixed Block		81	40082	1	BESS_RT01_TOP	Enclosure Temperature - Supply Air		INT16	Deg F	R	0	1,200	PLC Temperature Sensor	
Fixed Block		82	40083	1	BESS_RT02_BOT	Enclosure Temperature - Return Air		INT16	Deg F	R	0	1,200	PLC Temperature Sensor	
Fixed Block		83	40084	1	(Reserved Spare)								(Reserved Spare)	C
Fixed Block		84	40085	1	BESS_GRID_STATE	BESS System Grid State		UINT16	#	R	0	2	BESS Grid Connection State 0: Synching/Countdown 1: On Grid 2: Off Grid	
Fixed Block		85	40086	1	GRID_RECONNECT_TIME	Grid Reconnection Countdown Time		UINT16	Seconds	R	0	600	Reconnection Delay Timer Status	
Fixed Block		86	40087	1	MB_SELECT_RB	Readback of MB_SELECT	0	UINT16	#	R	0	1	Readback value of Modbus Map that is Controlling BESS 0: Port 1025 1: Port 1026	D
Fixed Block		87	40088	1	BESS_RH01	Relative Humidity - Return Air		INT16	RH%	R	0	100	PLC Relative Humidity Sensor	
Fixed Block		88	40089	1	(Reserved Spare)								(Reserved Spare)	
Fixed Block		89	40090	1	BESS_WATCHDOG	BESS Comms Watchdog		INT16	Seconds	R	0	60	Seconds counter for BMC to monitoring comms	

Field Type	Applicable Point	Modbus Offset	PLC Address	Size (words)	Name	Label	Nominal Value	Type	Units / Scaling	R/W	Low Limit	High Limit	Description	REV
							Bit							
bitfield16	BESS_STS_WORD				BAT_ONLINE	Battery Racks - All Online	0							
bitfield16	BESS_STS_WORD				BAT_PARTIAL_MODE	Battery Racks - Partial Mode	1							
bitfield16	BESS_STS_WORD				INV_RUN	Inverter Running	2							
bitfield16	BESS_STS_WORD				BESS_MODE_LOCAL	LOCAL Mode Active	3							
bitfield16	BESS_STS_WORD				BESS_DOOR_OPEN	Cabinet Door Ajar	4							
bitfield16	BESS_STS_WORD				BESS_START_READY	BESS - Ready to Start	5							
bitfield16	BESS_STS_WORD					False (0)	6							
bitfield16	BESS_STS_WORD					False (0)	7							
bitfield16	BESS_STS_WORD					False (0)	8							
bitfield16	BESS_STS_WORD					False (0)	9							
bitfield16	BESS_STS_WORD					False (0)	10							
bitfield16	BESS_STS_WORD					False (0)	11							
bitfield16	BESS_STS_WORD					False (0)	12							
bitfield16	BESS_STS_WORD					False (0)	13							
bitfield16	BESS_STS_WORD					False (0)	14							
bitfield16	BESS_STS_WORD					False (0)	15							
							Bit							
bitfield16	BESS_ALM_WORD1				HVAC_ALARM	HVAC Alarm	0							
bitfield16	BESS_ALM_WORD1				TEMP_HIGH_ALARM	High Temp Alarm	1							
bitfield16	BESS_ALM_WORD1				TEMP_LOW_ALARM	Low Temp Alarm	2							
bitfield16	BESS_ALM_WORD1				HUMID_ALARM	Humidity Alarm	3							
bitfield16	BESS_ALM_WORD1				ENVIR_SENSOR_ALARM	General Analog Sensor Signal Quality Alarm	4							
bitfield16	BESS_ALM_WORD1				FAS_TROUBLE	Fire Alarm System (FAS) Trouble	5							
bitfield16	BESS_ALM_WORD1					False (0)	6							
bitfield16	BESS_ALM_WORD1				BAT_ALARM	Battery System (KPMC) Alarm	7							
bitfield16	BESS_ALM_WORD1				BAT_WARNING	Battery System (KPMC) Warning	8							
bitfield16	BESS_ALM_WORD1				BAT_COMMS_ALM	Battery System (KPMC) Comms Alarm	9							
bitfield16	BESS_ALM_WORD1				INV_COMMS_ALM	Inverter Comms Alarm	10							
bitfield16	BESS_ALM_WORD1				HVAC_COMMS_ALM	HVAC Comms Alarm	11							
bitfield16	BESS_ALM_WORD1				IMD_COMMS_ALM	IMD Comms Alarm	12							
bitfield16	BESS_ALM_WORD1				PLC_COMMS_ALM	PLC Comms Alarm	13							
bitfield16	BESS_ALM_WORD1				PM01_COMMS_ALM	PM01 Comms Alarm	14							
bitfield16	BESS_ALM_WORD1				HMI_COMMS_ALM	HMI Comms Alarm	15							
							Bit							
bitfield16	BESS_ALM_WORD2				UPS10_FLT	UPS10 Fault	0							
bitfield16	BESS_ALM_WORD2				PS21_FLT	Power Supply 21 Fault	1							
bitfield16	BESS_ALM_WORD2				PS22_FLT	Power Supply 22 Fault	2							
bitfield16	BESS_ALM_WORD2				PS35_FLT	Power Supply 35 Fault	3							
bitfield16	BESS_ALM_WORD2				PS40_FLT	Power Supply 40 Fault	4							
bitfield16	BESS_ALM_WORD2					False (0)	5							
bitfield16	BESS_ALM_WORD2					False (0)	6							
bitfield16	BESS_ALM_WORD2					False (0)	7							
bitfield16	BESS_ALM_WORD2					False (0)	8							
bitfield16	BESS_ALM_WORD2					False (0)	9							
bitfield16	BESS_ALM_WORD2					False (0)	10							
bitfield16	BESS_ALM_WORD2				BAT_STARTUP_TIMEOUT	BAT_STARTUP_TIMEOUT Alarm	11							
bitfield16	BESS_ALM_WORD2				INV_STARTUP_TIMEOUT	INV_STARTUP_TIMEOUT Alarm	12							
bitfield16	BESS_ALM_WORD2				FORM_SOC_SHUTDOWN	FORM_SOC_SHUTDOWN Alarm	13							
bitfield16	BESS_ALM_WORD2				FORM_SOC_High_ALM	FORM_SOC_High Alarm	14							
bitfield16	BESS_ALM_WORD2				FORM_SOC_Low_ALM	FORM_SOC_Low Alarm	15							
							Bit							
bitfield16	BESS_ESTOP_WORD				INV_ESTOP_CKT_ALM	Inverter E-Stop by Safety Circuit OK	0							
bitfield16	BESS_ESTOP_WORD				DCA_SPD03_ALM	DCA Surge Protector (SPD03) Alarm OK	1							
bitfield16	BESS_ESTOP_WORD				FIRE_ALM	Fire Alarm System (FAS) Alarm OK	2							
bitfield16	BESS_ESTOP_WORD				ESTOP_PB_ALM	E-Stop from Pushbutton OK	3							
bitfield16	BESS_ESTOP_WORD				CUST_ESTOP	Customer E-Stop (CR05) OK	4							
bitfield16	BESS_ESTOP_WORD				CUST_ESTOP_MB	Customer E-Stop (Modbus) OK	5							
bitfield16	BESS_ESTOP_WORD				DCA_DCT01_OPEN	DCA Disconnect (DCT01) Closed	6							
bitfield16	BESS_ESTOP_WORD					True (1)	7							
bitfield16	BESS_ESTOP_WORD				IMD01_ALM	Insulation Monitor (IMD01) Alarm OK	8							
bitfield16	BESS_ESTOP_WORD				HMI_ESTOP	E-Stop from HMI OK	9							
bitfield16	BESS_ESTOP_WORD				INV_FAULT	Any Inverter Fault OK	10							
bitfield16	BESS_ESTOP_WORD				BAT_FAULT	Any Battery Fault OK	11							

Field Type	Applicable Point	Modbus Offset	PLC Address	Size (words)	Name	Label	Nominal Value	Type	Units / Scaling	R/W	Low Limit	High Limit	Description	REV
bitfield16	BESS_ESTOP_WORD					True (1)	12							
bitfield16	BESS_ESTOP_WORD					True (1)	13							
bitfield16	BESS_ESTOP_WORD					True (1)	14							
bitfield16	BESS_ESTOP_WORD					True (1)	15							

Field Type	Applicable Point	Modbus Offset	PLC Address	Size (words)	Name	Label	Nominal Value	Type	Units / Scaling	R/W	Low Limit	High Limit	Description	REV
							Bit							
bitfield16	BAT_FAULT1					Communication Error	0							
bitfield16	BAT_FAULT1					Over Temperature Alarm	1							
bitfield16	BAT_FAULT1					Over Temperature Warning	2							
bitfield16	BAT_FAULT1					Under Temperature Alarm	3							
bitfield16	BAT_FAULT1					Under Temperature Warning	4							
bitfield16	BAT_FAULT1					Over Charge Current Alarm	5							
bitfield16	BAT_FAULT1					Over Charge Current Warning	6							
bitfield16	BAT_FAULT1					Over Discharge Current Alarm	7							
bitfield16	BAT_FAULT1					Over Discharge Current Warning	8							
bitfield16	BAT_FAULT1					Over Voltage Alarm	9							
bitfield16	BAT_FAULT1					Over Voltage Warning	10							
bitfield16	BAT_FAULT1					Under Voltage Alarm	11							
bitfield16	BAT_FAULT1					Under Voltage Warning	12							
bitfield16	BAT_FAULT1					Under State of Charge Min Alarm	13							
bitfield16	BAT_FAULT1					Under State of Charge Min Warning	14							
bitfield16	BAT_FAULT1					Over State of Charge Max Alarm	15							
							Bit							
bitfield16	BAT_FAULT2					Over State of Charge Max Warning	0							
bitfield16	BAT_FAULT2					Voltage Imbalance Warning	1							
bitfield16	BAT_FAULT2					Temperature Imbalance Alarm	2							
bitfield16	BAT_FAULT2					Temperature Imbalance Warning	3							
bitfield16	BAT_FAULT2					Contactor Error	4							
bitfield16	BAT_FAULT2					Fan Error	5							
bitfield16	BAT_FAULT2					Ground Fault Error	6							
bitfield16	BAT_FAULT2					Open Door Error	7							
bitfield16	BAT_FAULT2					Current Imbalance Warning	8							
bitfield16	BAT_FAULT2					Other Battery Alarm	9							
bitfield16	BAT_FAULT2					Other Battery Warning	10							
bitfield16	BAT_FAULT2					Reserved	11							
bitfield16	BAT_FAULT2					Configuation Alarm	12							
bitfield16	BAT_FAULT2					Configuation Warning	13							
bitfield16	BAT_FAULT2					Under State of Charge Min Warning	14							
bitfield16	BAT_FAULT2					Over State of Charge Max Alarm	15							

Field Type	Applicable Point	Modbus Offset	PLC Address	Size (words)	Name	Label	Nominal Value	Type	Units / Scaling	R/W	Low Limit	High Limit	Description	REV
							Bit							
bitfield16	BAT_RACKS_ONLINE_1					Rack 1 Connected	0							
bitfield16	BAT_RACKS_ONLINE_1					Rack 2 Connected	1							
bitfield16	BAT_RACKS_ONLINE_1					Rack 3 Connected	2							
bitfield16	BAT_RACKS_ONLINE_1					Rack 4 Connected	3							
bitfield16	BAT_RACKS_ONLINE_1					Rack 5 Connected	4							
bitfield16	BAT_RACKS_ONLINE_1					Rack 6 Connected	5							
bitfield16	BAT_RACKS_ONLINE_1					Rack 7 Connected	6							
bitfield16	BAT_RACKS_ONLINE_1					Rack 8 Connected	7							
bitfield16	BAT_RACKS_ONLINE_1					Rack 9 Connected	8							
bitfield16	BAT_RACKS_ONLINE_1					Rack 10 Connected	9							
bitfield16	BAT_RACKS_ONLINE_1					Rack 11 Connected	10							
bitfield16	BAT_RACKS_ONLINE_1					Rack 12 Connected	11							
bitfield16	BAT_RACKS_ONLINE_1					Rack 13 Connected	12							
bitfield16	BAT_RACKS_ONLINE_1					Rack 14 Connected	13							
bitfield16	BAT_RACKS_ONLINE_1					Rack 15 Connected	14							
bitfield16	BAT_RACKS_ONLINE_1					Rack 16 Connected	15							
bitfield16	BAT_RACKS_ONLINE_1					Rack 17 Connected	16							
bitfield16	BAT_RACKS_ONLINE_1					Rack 18 Connected	17							
bitfield16	BAT_RACKS_ONLINE_1					Rack 19 Connected	18							
bitfield16	BAT_RACKS_ONLINE_1					Rack 20 Connected	19							
bitfield16	BAT_RACKS_ONLINE_1					Rack 21 Connected	20							
bitfield16	BAT_RACKS_ONLINE_1					Rack 22 Connected	21							
bitfield16	BAT_RACKS_ONLINE_1					Rack 23 Connected	22							
bitfield16	BAT_RACKS_ONLINE_1					Rack 24 Connected	23							
bitfield16	BAT_RACKS_ONLINE_1					Rack 25 Connected	24							
bitfield16	BAT_RACKS_ONLINE_1					Rack 26 Connected	25							
bitfield16	BAT_RACKS_ONLINE_1					Rack 27 Connected	26							
bitfield16	BAT_RACKS_ONLINE_1					Rack 28 Connected	27							
bitfield16	BAT_RACKS_ONLINE_1					Rack 29 Connected	28							
bitfield16	BAT_RACKS_ONLINE_1					Rack 30 Connected	29							
bitfield16	BAT_RACKS_ONLINE_1					Rack 31 Connected	30							
bitfield16	BAT_RACKS_ONLINE_1					Rack 32 Connected	31							
							Bit							
bitfield16	BAT_RACKS_ONLINE_2					Rack 33 Connected	0							
bitfield16	BAT_RACKS_ONLINE_2					Rack 34 Connected	1							
bitfield16	BAT_RACKS_ONLINE_2					Rack 35 Connected	2							
bitfield16	BAT_RACKS_ONLINE_2					Rack 36 Connected	3							
bitfield16	BAT_RACKS_ONLINE_2					Rack 37 Connected	4							
bitfield16	BAT_RACKS_ONLINE_2					Rack 38 Connected	5							
bitfield16	BAT_RACKS_ONLINE_2					Rack 39 Connected	6							
bitfield16	BAT_RACKS_ONLINE_2					Rack 40 Connected	7							
bitfield16	BAT_RACKS_ONLINE_2					Rack 41 Connected	8							
bitfield16	BAT_RACKS_ONLINE_2					Rack 42 Connected	9							
bitfield16	BAT_RACKS_ONLINE_2					Rack 43 Connected	10							
bitfield16	BAT_RACKS_ONLINE_2					Rack 44 Connected	11							
bitfield16	BAT_RACKS_ONLINE_2					Rack 45 Connected	12							
bitfield16	BAT_RACKS_ONLINE_2					Rack 46 Connected	13							
bitfield16	BAT_RACKS_ONLINE_2					Rack 47 Connected	14							
bitfield16	BAT_RACKS_ONLINE_2					Rack 48 Connected	15							
bitfield16	BAT_RACKS_ONLINE_2					Rack 49 Connected	16							
bitfield16	BAT_RACKS_ONLINE_2					Rack 50 Connected	17							
bitfield16	BAT_RACKS_ONLINE_2					Rack 51 Connected	18							
bitfield16	BAT_RACKS_ONLINE_2					Rack 52 Connected	19							
bitfield16	BAT_RACKS_ONLINE_2					Rack 53 Connected	20							
bitfield16	BAT_RACKS_ONLINE_2					Rack 54 Connected	21							
bitfield16	BAT_RACKS_ONLINE_2					Rack 55 Connected	22							
bitfield16	BAT_RACKS_ONLINE_2					Rack 56 Connected	23							
bitfield16	BAT_RACKS_ONLINE_2					Rack 57 Connected	24							
bitfield16	BAT_RACKS_ONLINE_2					Rack 58 Connected	25							
bitfield16	BAT_RACKS_ONLINE_2					Rack 59 Connected	26							
bitfield16	BAT_RACKS_ONLINE_2					Rack 60 Connected	27							
bitfield16	BAT_RACKS_ONLINE_2					Rack 61 Connected	28							
bitfield16	BAT_RACKS_ONLINE_2					Rack 62 Connected	29							
bitfield16	BAT_RACKS_ONLINE_2					Rack 63 Connected	30							
bitfield16	BAT_RACKS_ONLINE_2					Rack 64 Connected	31							

Field Type	Applicable Point	Modbus Offset	PLC Address	Size (words)	Name	Label	Nominal Value	Type	Units / Scaling	R/W	Low Limit	High Limit	Description	REV
							Bit							
bitfield32	INV_FLT_FLGS					E-Stop shutdown	0							
bitfield32	INV_FLT_FLGS					AC Overcurrent	1							
bitfield32	INV_FLT_FLGS					DC Overcurrent	2							
bitfield32	INV_FLT_FLGS					DC Overvoltage	3							
bitfield32	INV_FLT_FLGS					Device Overtemp	4							
bitfield32	INV_FLT_FLGS					Inverter Overtemp	5							
bitfield32	INV_FLT_FLGS					Invalid command message	6							
bitfield32	INV_FLT_FLGS					DC Undervoltage	7							
bitfield32	INV_FLT_FLGS					AC Overvoltage	8							
bitfield32	INV_FLT_FLGS					Illegal transition	9							
bitfield32	INV_FLT_FLGS					Bad EE header	10							
bitfield32	INV_FLT_FLGS					Bad EE section	11							
bitfield32	INV_FLT_FLGS					Cooling system	12							
bitfield32	INV_FLT_FLGS					AC Timed overload	13							
bitfield32	INV_FLT_FLGS					DC Timed overload	14							
bitfield32	INV_FLT_FLGS					Timed Circ Current	15							
bitfield32	INV_FLT_FLGS					Control Board Voltage	16							
bitfield32	INV_FLT_FLGS					Pwr Channel Imbalance	17							
bitfield32	INV_FLT_FLGS					Current rise	18							
bitfield32	INV_FLT_FLGS					Cooling Flow	19							
bitfield32	INV_FLT_FLGS					Thermal Overload	20							
bitfield32	INV_FLT_FLGS					Fan Circuit	21							
bitfield32	INV_FLT_FLGS					POR Timeout	22							
bitfield32	INV_FLT_FLGS					Condensation	23							
bitfield32	INV_FLT_FLGS					I2C Comms	24							
bitfield32	INV_FLT_FLGS					External Inhibit	25							
bitfield32	INV_FLT_FLGS					Ground Fault	26							
bitfield32	INV_FLT_FLGS					Fuse or TVS	27							
bitfield32	INV_FLT_FLGS					Reserved - 28	28							
bitfield32	INV_FLT_FLGS					AC Disconnect Switch	29							
bitfield32	INV_FLT_FLGS					Reserved - 30	30							
bitfield32	INV_FLT_FLGS					Reserved - 31	31							
							Bit							
bitfield32	INV_WRN_FLGS					CAN Warning	0							
bitfield32	INV_WRN_FLGS					CAN Error Passive	1							
bitfield32	INV_WRN_FLGS					Thermal Overload	2							
bitfield32	INV_WRN_FLGS					Fan Circuit	3							
bitfield32	INV_WRN_FLGS					NV Save Active	4							
bitfield32	INV_WRN_FLGS					Local Network mismatch	5							
bitfield32	INV_WRN_FLGS					Remote Network mismatch	6							
bitfield32	INV_WRN_FLGS					Condensation	7							
bitfield32	INV_WRN_FLGS					I2C	8							
bitfield32	INV_WRN_FLGS					External Inhibit	9							
bitfield32	INV_WRN_FLGS					Maintenance Required	10							
bitfield32	INV_WRN_FLGS					Ground Fault	11							
bitfield32	INV_WRN_FLGS					Fuse or TVS	12							
bitfield32	INV_WRN_FLGS					AC Disconnect	13							
bitfield32	INV_WRN_FLGS					Reserved - 14	14							
bitfield32	INV_WRN_FLGS					Reserved - 15	15							
bitfield32	INV_WRN_FLGS					Reserved - 16	16							
bitfield32	INV_WRN_FLGS					Reserved - 17	17							
bitfield32	INV_WRN_FLGS					Reserved - 18	18							
bitfield32	INV_WRN_FLGS					Reserved - 19	19							
bitfield32	INV_WRN_FLGS					Reserved - 20	20							
bitfield32	INV_WRN_FLGS					Reserved - 21	21							
bitfield32	INV_WRN_FLGS					Reserved - 22	22							
bitfield32	INV_WRN_FLGS					Reserved - 23	23							
bitfield32	INV_WRN_FLGS					Reserved - 24	24							
bitfield32	INV_WRN_FLGS					Reserved - 25	25							
bitfield32	INV_WRN_FLGS					Reserved - 26	26							
bitfield32	INV_WRN_FLGS					Reserved - 27	27							
bitfield32	INV_WRN_FLGS					Reserved - 28	28							
bitfield32	INV_WRN_FLGS					Reserved - 29	29							
bitfield32	INV_WRN_FLGS					Reserved - 30	30							
bitfield32	INV_WRN_FLGS					Reserved - 31	31							