Smartpack2 Controller

Navigation and Menu Tree

System Status

This section is read-only access. Scroll through the menus and interrogate or edit the system information about AC mains, generator, rectifiers, solar chargers, DC-DC converters, system load, battery and voltage information, inputs and outputs, and control system components information.

System Configuration

Note: This section is password-protected and should only be used by System Administrators.

Use this section to interrogate the system, and to make changes or reprogram the system factory default parameters. Administrators can program basic system parameters, network configuration, system voltages, system calibrations, generator configuration, rectifier's configuration, solar chargers configuration, DC-DC converters configuration, battery configuration, battery test and battery boost configuration, symmetry configuration.

Alarm Configuration

Note: This section is password-protected and should only be used by System Administrators.

Use this section to configure the system LVD devices and system alarm tables, to create/delete and to enable/disable alarms and alarm groups, enable/disable inputs and outputs of the system, program alarms alarm levels and alarm severity levels for AC mains alarm, generator alarm, rectifiers alarm, solar chargers alarm, DC-DC converters alarm, load alarm, battery alarm, inputs/outputs alarm, and control system alarm.

System Commands

Note: This section is password-protected and should only be used by System Administrators.

Use this section to execute commands to start and stop specific functions of the power system. Such commands include (but are not limited to): reset alarms, start/stop battery test, start/stop battery boost, reset the system configuration, relay test.

Note: testing relays may activate the system LVD devices.

Upload/ Download

Note: This section is password-protected and should only be used by System Administrators.

The Smartpack2 controller features a SD card slot. This section of the controller allows you to download Information and data from the controller and store it on the onboard SD card. From the SD card, configuration profiles and software upgrade can be uploaded to the control system, to the Smartpack2 controller, the Smartpack2 basic controller, Smartpack2 basic industrial controller, and CAN nodes.

Logs and Reports

This section is read-only access. Use this section to access information about active alarms, system events, voltage information, load information, battery information, and battery test results. The system hardware and software inventory can be displayed on this section.

Statistics

This section is read-only access. It displays daily and monthly energy statistics for the highest, lowest and average values.

Commissioning

This section is read-only access. It displays general information and guided steps to commissioning the power system.

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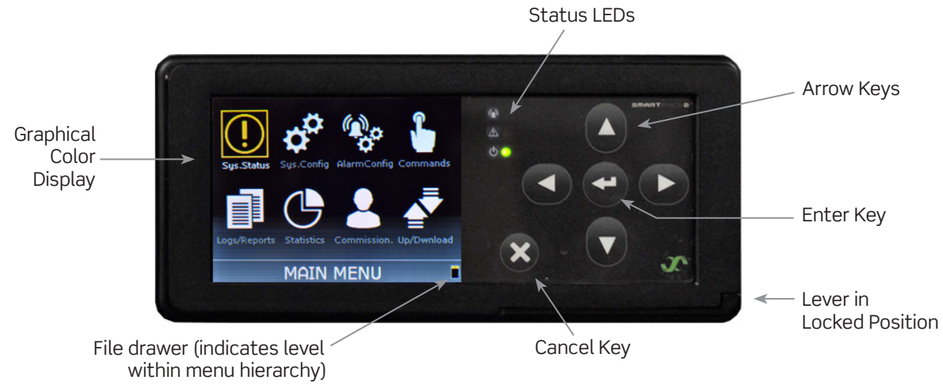
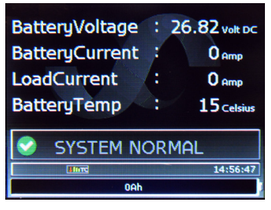
Navigation and Menu Tree
Smartpack2 Controller



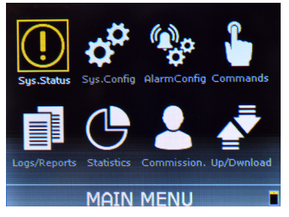
Navigation Keys

↵	**Enter Key**	To change from Status mode to Menu mode and to select options, enter values	◀ ▶	**Left or Right Key**	To navigate one page up or down and to highlight options
✕	**Cancel Key**	To navigate to previous level, view alarms, and cancel options and values	▲ ▼	**Up or Down Key**	To navigate up or down, highlight options and increase or decrease value.

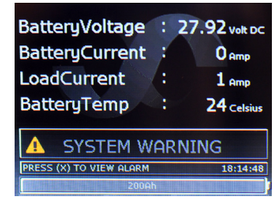
Menu Navigation



Press ▲ ▼ ↵ keys to go to the MAIN menu.



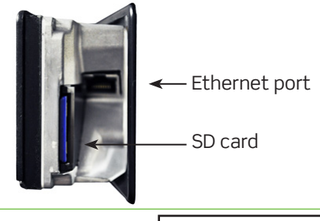
Press ↵ key to go inside a menu.



Press ✕ key to view Alarms.
(ALARM only appears when an alarm is active.)

Accesssing the SD Card and Ethernet Port

Open the controller by sliding the lever from right to left.



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Delta Part No. 5017157400

SYSTEM STATUS

Mains	[Select Group]
	No Of Phases
	Mains Low
	Mains Volt 1
	Mains Volt 2
	Mains Volt 3
Generator	Generator Fail
	Generator Activation
	Discharge Value
	Mains Not Present
	Charge Time
	Fuel Remaining
Rectifiers	[Select Group]
	No Of Modules
	Rect Current
	Rect Error
	Rect Low Mains
	Rect Comm Err
	Rect Capacity
	Curr Share Err
	Rectifier Temp
Solar	No Of Solar Chargers
	Solar Current
	Solar Charger Error
	Solar Comm Error
	Solar Symmetry Error
	Solar Charger Temp
DcDc	No Of DcDc Convs
	DcDc Current
	DcDc Error
	DcDc Comm Error
	DcDc Capacity
	DcDc Temp
Load	No Of Load Groups
	Load Current
	Status Fuse
	Status LVLD
Battery	Battery Voltage
	Battery Current
	Battery Temp
	Battery Life Time
	LVBD
	Fuse
	Battery Quality
	Bad Test Results
	Battery Tot Cap
	Battery Rem Cap
	Battery Used Cap
	Battery Time Left
	Delta String Curr
	Ah Charged
	Ah Discharged
Inputs	ProgInput 1.1
User-defined names	Prog Input 1.2
	Prog Input 1.3
	Prog Input 81.1
	Prog Input 81.2
	Prog Input 81.3
	Prog Input 81.4
	Prog Input 81.5
	Prog Input 81.6
Outputs	Major alarm
User-defined names	Minor alarm
	Mains alarm
	Fuse alarm
	Battery high
	Battery low
	Rectifier alarm
	Alarm Group 08 ...17
	Output Blocked
	LVBD
	LVLD1
	LVLD2
CtrlSystem	No Of Ctrl Unit(s)
	Ctrl Unit Error
	CU Err Batt Monitor
	CU Err IO-Unit
	Ambient Temp
	Batt-Ambient Temp
	User Suspended
	Temperature1.1
	Temperature1.2
	Temperature1.3
	Earth Fault 1
Outdoor	Outdoor hardware ↕

SYSTEM CONFIG

PowerSystem	GeneralSystemConfig	ReferenceVoltage
		Number Of Battery Cells
		Batt Capacity Scale - Ah/Percent?
		Temp Scale-Celsius/Fahrenheit?
		Syst Polarity - Positive/Negative?
		Curr Resolution - Amp/DeciAmp?
		Generator Func - Std/Advanced?
		Critical Criteria
		Language
		Year
		Month
		Day
		Hour
		Minute
		Agent IPv4 Address
		Network Subnet Mask
		Default Gateway
		Change Service PassWd
		Display timeout - (0 = Off)
		Keylock timeout - (0 = Off)
		Agent IPv6 Address
	System Voltages	Reference Voltage
		Boost Voltage
		Battery Test End Voltage
		Rectifier Standby Voltage
		Battery Disconnect Voltage
		Battery Reconnect Voltage
		Rectifier OVS Limit
		Rectifier Emergency Voltage
	TaskScheduler	Sel.Task(up/dwn) [01 – 10]
	SystemCalibration	Voltage-HiPoint Cal Value [V]
		Voltage-HiPoint A/D Value
		Voltage-LoPoint Cal Value [V]
		Voltage-LoPoint A/D value
		Current-HiPoint Cal Value[A]
		Current-HiPoint A/D Value
		Current-LoPoint Cal Value[A]
		Current-LoPoint A/D Value
		Current-HiPoint Cal Value[A]
		Current-HiPoint A/D Value
		Current-LoPoint Cal Value[A]
		Current-LoPoint A/D Value
Mains	[SelectGroup Up/Dwn]	NumberOfPhases
		Suppr.MainsMonitoring-Ena/Disa?
Generator	Generator - Enable/Disable?	
	Long Charge Time [h]	
	Stop Delay [min]	
	Mains Fail Delay [min]	
	Enable Boost During Charge	

Generator cont.	Primary AI Group (OutpToActivate)	
	Sec AI Grp (OutpToActivate)	
	Cpty Crtl Start/Stop-Ena/Dis?	
	Start Gen On Disch Limit [%]	
	Stop Gen On Charge Limit [%]	
	Surr Lim Ctrl Stop/Ena/Dis?	
	Gen Stop Current Limit [A]	
	Voltage Contr Start-Ena/Dis?	
	Start Generator on Voltage[V]	
	Stop GenOn time limit[h]	
	Cap/time Ctrl Start/StopEna/Dis?	
	StartGenOnDischargeLimit[%]	
	Stop Gen On Time Limit [h]	
	Daily Generator Start Ena/Dis?	
	Sunday - Start [h]	
	Sunday - Stop [h]	
	Sunday -AI Group to Activate	
	Monday - Start [h]	
	Monday - Stop [h]	
	Monday -AI Group to Activate	
	Tuesday - Start [h]	
	Tuesday - Stop [h]	
	Tuesday - AI Group to Activate	
	Wednesday - Start [h]	
	Wednesday - Stop [h]	
	Wednesday - AI Group to Activate	
	Thursday - Start [h]	
	Thursday - Stop [h]	
	Thursday - AIGroup to Activate	
	Friday - Start [h]	
	Friday - Stop [h]	
	Friday - AI Group to Activate	
	Saturday - Start [h]	
	Saturday - Stop [h]	
	Saturday -AI Group to Activate	
	Monthly Start Time [h]	
	Monthly Start Day (1. start)	
	Monthly Start Day (2. start)	
	Monthly AI Grp To Activate	
Rectifiers	[SelectGroup up/dwn]	
	No Of Groups	
	Suppr Err d Mains Fail - Y/N?	
	Walk In Time - Short/Long?	
	Module - BattPowered or Not?	
	OVS Limit [V/Cell]	
	Current Limit enable On/Off?	
	Current Limit value [A]	
	Emergency Volt value [V]	
	Gen dep Start Up Delay On/Off?	

Rectifiers cont.	Generator Start Up Delay [min]	
	Efficiency Management?	
	EffMgrRedundancyMode-On/Off	
	EffMgr Off Delay [min]	
	Eff Mgr Shuffl Time [hour(s)]	
Solar	No Of Solar Charger(s)	
	Suppr SolErr dMains Fail - Y/N?	
	OVS Limit [V/cell]	
DcDc	No Of DcDc Converters	
	Reference Voltage	
	OVS Limit [V/Cell]	
	Current Limit enable – On/Off?	
	Current Limit value [A]	
Load	No Of Load Groups	
	No Of LVLDs	
Battery	Battery Config	No Of Battery Banks
		No Of Battery Strings
		Capacity Per String [Ah]
		Temp Compensation On/Off?
		Reference Voltage [V/Cell]
		Reference Temperature [C]
		Temperature Slope [mV/C/Cell]
		Min Compensation Volt [V/Cell]
		Max Compensation Volt [V/Cell]
		BattCurrentLimit - On/Off?
		Current Limit Value [A] (MainsFeed)
		Current Limit Value [A] (GenFeed)
	Battery Test Configuration	Normal/Simplified BattTest?
		EndVoltageSimpleTest [V/Cell]
		MaxTestDuration Enable/Disable?
		MaxTestDuration [min]
		MaxDischargeStop Enable/Disable?
		MaxDischargeStop [Ah]
		GuardTime - Enable/Disable?
		GuardTime [hours]
		AlarmGrp to Activate duringTest
		IntervalTest Enable/Disable?
		NextInterval StartYear
		NextInterval StarMonth
		NextInterval StartDay
		NextInterval StartHour
		NextInterval StartMinute
		IntervalPeriod [days]
		AutoTest Enable/Disable?
		DiscontinuanceTest Enable/Disable?
		Repeat Frequency [days]
		Max duration [minutes]
	BatteryBoost Configuration	Boost Voltage [V/Cell]
		Stop Boost Curr Thres Ena/Disa?

Battery, cont.	BatteryBoost Config., cont.	Stop Boost CurrThreshold [A]
		Alarm Grp to Activate during Boost
		Manual Boost Max Duration [min]
		Interval Boost Enable/Disable?
		Next Interval Start Year
		Next Interval Star Month
		Next Interval Start Day
		Next Interval Start Hour
		Next Interval Start Minute
		Interval Period [days]
		Interval Boost Max Duration [min]
		Auto Boost - Enable/Disable?
		Auto Boost Max Duration [min]
		Auto Boost Charge Factor [%]
		Auto Boost Discharge Thresh [Ah]
		Auto Boost Voltage Thresh Ena/Disa?
		Autoboost Voltage Threshold [V]
	Symmetry Configuration	Symm Measurement Ena/Disa?
		Symmetry Voltage range [V]
		Symm ModeContinuous/Dischrg?
		Symmetry Discharge Delay [min]
	BatteryLifeTime Config	Temperature Range [01-10] Ena/Disa?
		Temperature Limit [C]
		Temperature Weight
		Hours within Temp Range
	CtrlSystem	CtrUnit: [1-10] (up/dn)
		SmartNode: [1-10] (up/dn)
	OutDoor	[System dependent] ↕

LOGS / REPORTS

Active Alarm(s)	Show all active alarms ↕	
Event Log	Show all events ↕	
Data Log	Battery Voltage	Show all events ↕
	Battery Current	Show all events ↕
	Load Current	Show all events ↕
	Total Rect Current	Show all events ↕
	Mains Volt 1	Show all events ↕
	Mains Volt 2	Show all events ↕
	Mains Volt 3	Show all events ↕
	Power	Show all events ↕
	Battery Temp	Show all events ↕
	Battery Rem Cap	Show all events ↕
BatteryTest Log	Show test results	
Inventory Report	Company	
	Site	
	Model	
	Install Date	
	Serial Number	
	Service Date	
	Responsible	
	Message 1	
	Message 2	
	SP2 Master1 info	
	SW Info	
	HW Info	
	SP2 Basic 1 Info	
	SW Info	
	HW Info	
	Battery Mon 1 Info	
	SW Info	
	HW Info	
	I/O Unit 1 Info	
	SW Info	
	HW Info	
	[Any other hardware] ↕	

STATISTICS

LoadCurrent	Daily Highest	Show all events ↕
	Daily Lowest	Show all events ↕
	Highest Hour Average	Show all events ↕
	Month Highest Peak	Show all events ↕
	Month Highest Average	Show all events ↕
BatteryCurrent	Daily Highest	Show all events ↕
	Daily Lowest	Show all events ↕
	Highest Hour Average	Show all events ↕
	Month Highest Peak	Show all events ↕
	Month Highest Average	Show all events ↕
BatteryVoltage	Daily Highest	Show all events ↕
	Daily Lowest	Show all events ↕
	Highest Hour Average	Show all events ↕
	Month Highest Peak	Show all events ↕
	Month Highest Average	Show all events ↕
BatteryTemp	DailyHighest	Show all events ↕
	DailyLowest	Show all events ↕
	HighestHour Average	Show all events ↕
	Month Highest Peak	Show all events ↕
	Month Highest Average	Show all events ↕
RectifierCurrent	Daily Highest	Show all events ↕
	Daily Lowest	Show all events ↕
	Highest Hour Average	Show all events ↕
	Month Highest Peak	Show all events ↕
	Month Highest Average	Show all events ↕
SystemValues(Peak/Avg)	Battery Voltage	
	Battery Current	
	Battery Temp	
	Load Current	
	Tot Rect Current	
	Mains Volt 1	
	Mains Volt 2	
	Mains Volt 3	

ALARM CONFIG

Mains	[Select Group]	**Load**	Load Current		Batt MonTemp 1		Major alarm
	Mains Low 1		Load Fuse 1		Batt Mon Fuse 1		Minor alarm
	Mains Volt 1.1	**Battery**	Battery Voltage		Batt Mon Curr 1		Mains alarm
	Mains Volt 1.2		Battery Current		Batt Mon Sym1.1		Fuse alarm
	Mains Volt 1.3		Battery Temp		Batt Mon Sym1.2		Battery high
Generator	Generator Fail		Battery Life Time		Batt Mon Sym1.3		Battery low
	Fuel Remaining 1		LVBD		Batt Mon Sym1.4		Rectifier alarm
Rectifiers	[Select Group]		Fuse	**Inputs**	Prog Input 1.1		AlarmGroup 08...17
	Rect Current Grp 1		Battery Quality		Prog Input 1.2		Outp Blocked
	Rect Error Grp 1		Bad Test Results		Prog Input 1.3		LVBD
	Rect Low Mains Grp 1		Battery Tot Cap		Prog Input 81.1		LVLD1
	Rect Capacity		Battery Rem Cap		Prog Input 81.2		LVLD2
	RectComm Err Grp 1		Battery Time Left		Prog Input 81.3		[Other Groups]
	Curr Share Err Grp1		Delta String Curr		Prog Input 81.4	**CtrlSystem**	Ctrl Unit Error
	Rect Temp Grp 1		Battery Used Cap		Prog Input 81.5		Temperature 1.1
Solar	Solar Current		Ah Charged		Prog Input 81.6		Temperature 1.2
	Solar Charger Err		Ah Discharged	**Outputs**	Major alarm		Temperature 1.3
	Solar Comm Err		Battery Volt bank 1		Minor alarm		Earth Fault 1
	Solar Symmetry Err		Battery Fuses 1		Mains alarm		CU Err. Batt Monitor
	Solar Charger Temp		Battery Temp1.1		Fuse alarm		CU Err. IO-Unit
DcDc	DcDc Current		Battery Temp1.2		Battery high	**Outdoor**	Outdoor alarms ↕
	DcDc Error		Battery Temp1.3		Battery low		
	DcDc CommError		Batt Curr bank 1		Rectifier alarm		
	DcDc Capacity		Symm Volt 1.1		Alarm Groups 08 to 17		
	DcDc Temp		Symm Volt 1.2		Outp Blocked		

COMMANDS

System Commands	Reset Manual Alarm(s)
	Reset Number of Module(s)
	Delete Event Log
	Set Default + xml-file(s) Configurations
	LED Test
	Block Outputs - On
	Block Outputs - Off
	Reboot System
	Set Default Calibration
Battery Commands	Start Battery Test
	Stop Battery Test
	Start Battery Boost
	Stop Battery Boost
	Start Battery Equalize
	Stop Battery Equalize
	Reset Battery Lifetime Monitor
Output Test	Output Relay # 1
	Output Relay # 2
	Output Relay # 3
	Output Relay # 4
	Output Relay # 5
	Output Relay # 6

UP / DOWNLOAD

Software Upgrade	SP2 Master 11	
	SP2 Basic 1	
	BatteryMon 1	
	I/O Unit 1	
	Other Units ↕	
Save Event Log		
Save Data Log		
Save Energy Log		
Save/Load Config	Save Config to File	SP2 Master 11
		SP2 Basic 1
		BatteryMon 1
		I/O Unit 1
		Other Units ↕
	Load Config from File	SP2 Master 11
		SP2 Basic 1
		BatteryMon 1
		I/O Unit 1
		Other Units ↕

COMMISSIONING

This section is read-only access. It displays general information and guided steps to commissioning the power system.

This document reflects software version 2.5 of the Smartpack2 Controller and is subject to change without notice.