HCS rack Power Distribution Units (rPDUs) Intelligent Power Solutions for Data Centers SPIM, SPOM, SPOS, SPOX User's Guide V1



Powering the Future of Data Centers



Table of Content

Preface	3
About this Manual	3
Copyright Information	3
Safety Instructions	3
Safety Notices	4
Introduction	5
Features	5
Package Contents	6
Hardware Components	7
Status LCD	7
Getting Started	8
Connecting the earth ground wire	8
Rack Mounting	8
Hotswap replaceable IEX GIGA Controller	9
Making Connections	.10
Connecting Input Power	.13
Connecting Output Devices	.11
Connecting EMD31	.12
Dip-Switch for adress setting	.12
Daisy Chain setting	.13
Connecting the Power Share adaptor and cable	.14
Connecting to a LAN/WAN	.20
Using LCM operational buttons	.21
(RCM) Residual Current Monitoring	.23
(SPD) Surge Protection Monitoring Option	.24



Table of Content

Using the Web Interface	25
Summary Overview-System Overview	25
Summary Overview-Alarm List	26
Summary Overview-Network Connection	26
Outlet Sequential Startup	27
Power Management-Inlet Configuration	27
Power Management-Outlet Control	28
Power Management-Outlet Grouping	29
Power Management-Outlet Schedule	29
Power Management-Environment Monitoring	30
Settings-General Setting	31
Settings-TCP/IP	31
Settings-Accesible IP settings	32
Setting-Network Acces Protection	32
Settings-Network Service	33
Setting up the LDAP step by step	34
Setting up the TACACS+ step by step	36
Settings-Radius User	38
Settings-SNMP Setting	38
Setting-Email Settings	39
Setting-User Settings	39
Log and Notification-System Log	40
Log and Notification-Event Log	40
Log and Notification-Inlet History Log	40
Log and Notification-Outlet History Log	41
Log and Notification-Environment History Log	41
ADVANCED – SYSLOG Setting	42
ADVANCED – Maintenance	42
ADVANCED – Import / Export	42
ADVANCED – Links Setting	43
Dual Ethernet Mode	44
ADVANCED – Wifi or 3G/4G dongle setting	48
ADVANCED – Inlet & Outlet upgrade	49
ADVANCED – EMD31 upgrade	49



Preface

About this Manual

Congratulations on purchasing a HCS PDU. This user manual provides detailed descriptions of the hardware components and how to use the product. Read this manual carefully and follow the instructions before installing.

Copyright Information

No part of this manual, including the products and software described in it, may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, except documentation kept by the purchasers for backup purposes, without the express written permission of the manufacturer. Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe. All trademarks are the property of their respective owners.

Safety Instructions

Follow these safety instructions to avoid injury to yourself and damage to the HCS PDU.

• To reduce the risk of fire or electric shock, install the unit in a temperature-controlled indoor area free of conductive contaminants. Do not place the unit near liquids or in an excessively humid environment.

- Do not allow liquids or foreign objects to enter the unit.
- The unit does not contain any user-serviceable parts.
- Do not open the unit.

• Servicing, maintenance, and repair for this equipment must be performed by qualified service personnel. Remove rings, watches and other jewelry before servicing the unit.

• Before maintenance, repair or shipment, the unit must be completely switched off and unplugged and all connections must be removed.

• Before plugging in the power cord of the device, make sure that the power source rating matches the power rated indicated on the product labels.

• Use a harmonized and certified power cord when connecting any device to the outlets.

• The digital output can only connect switches, indicators, or other output devices that are normally open or normally closed.



Preface

Safety Notices



Caution:

This unit has been provided with a real time clock circuit. There is a danger of explosion if the battery is incorrectly replaced. Replace only with a 3V Lithium cell (CR1220) or equivalent type. Discard used batteries according to the manufacturer's instructions.



Caution:

Rack-Mounted Equipment – The unit is intended to be rack- mounted, the Installation Instructions shall contain wording to address the following concerns when the unit is mounted in a rack system.

"The equipment is to be installed in an environment with maximum ambient temperature must not exceed 60°C." "The openings on the enclosure are for air convection hence protected the equipment from overheating. DO NOT COVER THE OPENINGS."

"Lay this equipment on a reliable surface when installing. A drop or fall could cause injury."

"The equipment shall be installed according to specification as nameplate. Make sure the voltage of the power source when connecing the equipment to the power outlet. The current of load and output power of loads should not be over the specification."

"This equipment must be connected to the reliable earth before using."



Introduction

The HCS PDU, is an intelligent power strip designed to power monitor the input and circuit breaker consumption and auto email history report to supervisor for power bill charge. At the same time, provides the useful ability of managing power for any combination of network equipment connected to it. Users can control the power on/off for any device connected to the PDU remotely, using a console or Ethernet connections.

It's also equipped with a console port for connecting upto 8 EMD31 (Environmental Monitoring Device) in cascade for sensing temperature and humidity along with two alarms that can be activated when either of the sensors shows unusual values.

Features

• To calculate the power consumption on hourly basis, and have an accumulation of daily

- Provide detail data-logging for statistical analysis and diagnostic then auto email daily history report
- Daisy-chaining can cascade up 16 power strips
- Sequential power-up on the outlets / Allows users to configure the sequence in which power is turned on or off for each outlet
- Intelligently turn on/off devices based on event occurrence or planned schedule
- Event notification by pop-up/Sending Trap or E-Mail for events notification
- Upto 42 power outlets that can be turned on or off in multiple ways, with easy monitoring of current consumption
- Set over-current watchdog for each outlet (Threshold settings for overcurrent warnings and alerts)
- Versatile sensors supported through EMD31 (Environmental Monitoring Device) inputs, 8 sensors can be deployed in cascade
- Comprehensive power management and flexible configuration through web browser, NMS, SNMP V1,2,3
- Support Secure Socket Layer V3 and Secure Shell V2 protocols
- Administrator and multiple users with password protection for doublelayer security
- Address-specific IP security masks to prevent unauthorized access
- User-friendly interface to display input and output statuss
- Upgrade utility for easy firmware upgrade
- Models available in 220-250V, 380-415V, 120-208V and 208V



Introduction

Package Contents

Make sure the HCS PDU package has the following items. If any of the items are missing or damaged, contact your nearest service center or vendor.

- 1. HCS PDU
- 2. Mounting Brackets (x2)
- 3. Button Mount (x2)
- 4. Mounting Brackets (x2)
- 5. Screws (x6)
- 6. Power share special patch cord
- 7. Quick Install Guide





Introduction

Hardware Components

The following sections provide descriptions about the front panel components and how to use them.

	Component	Description
1.	Inlet	Power lead to be connected to the Data Centre power source
2.	Breaker	Prevent excessive current flow to protect the system
3.	OLED Display	Display input Power Data
4.	Mounting Options	Different choice of mounting options

OLED Display

The front panel of the HCS PDU has a colored OLED screen that provides information about the PDU power status.





Connecting the earth ground wire



Rack Mounting

The PDU can be installed in most standard racks. After attaching the ears to each side of the device, position the device in the rack and align the holes in the ears (mounting brackets) with the hole in the rack.





Hotswap replaceable IEX GIGA Controller

The GIGA IEX PDUs provides an easy replacement of its controller. If the controller is failing, just simply send the controller back to HCS for repair or replacement.

How to replace a controller:

1- PDU is not required to be powered off.

Loosen the screws at two sides of the IEX GIGA controller, and lift it up.

2- Disconnect the PDU's controller cable from the controller.

3- Get a new IEX GIGA controller and install it back into the PDU in the reverse order.



Note: the limit torque to fix the controller is 0.8N.m-1.0N.m



Making Connections

The HCS PDU is a versatile product that can be connected to several different types of input and output devices. This makes it a useful tool for connecting devices to it and to monitor the power through its user interface.

IEXv.5 PDU is manufactured with the most advanced hot-swap, field replaceable SNMP IP controller. It is built with dual Gigabit Ethernet ports, an OLED full colour screen, cascading multi-sensor ports, enhanced security, sophisticated alarming and power monitoring across the whole power chain





The following procedure describes the basic steps needed to set up the PDU: 1. To set up the hardware, connect power to the power inlet and output devices to the power outlets. Connect devices with normally open or normally close conditions to the digital output ports, and an EMD31 to the console port.

2. To configure the Power Strip, users can use the console or LAN port. Connect the device to a console and a LAN to enable its configuration through the console or browser menu.

3. After connecting to a console, use a console application such as HyperTerminal to access the console menu. Select the TCP/IP under the Network Management to set up the IP address and select the General Setting submenu under the System Management to set up the system date/time. This IP address will be used while accessing the web interface to configure the HCS PDU parameters.

4. After connecting to LAN, open a browser from a PC in the network and use the IP address specified through the console menu to open the web interface for system configuration.

The following sections provide instructions about how to make various connections.

Connecting Output Devices

The Power strips can have a different number of outlets for connecting devices such as workstations, servers, and printers. Connect the power connectors of the devices to each of the power outlets.



The HCS PDUs are available in the following sockets: 220V/16A: IEC C13/C19 combo 220V/10A IEC C13, IEC C13 (Lock), AS/NZS 3112 220V/16A SEV T13, SEV T23, CEE7, IEC C19, IEC C19 (lock), SEV T23 220V/13A: UK BS1363 220V/15A: AS/NZS 3112 120V/15A: NEMA 5-15P 120V/20A: NEMA5-20P



www.hescs.com

Connecting EMD31

An Environmental Monitoring Device (EMD31) that is connected to sensors for detecting temperature, humidity, and two digital inputs can be connected to the HCS PDU with the console port. The EMD31 can also be connected to alarms or indicators and controlled through the web browser. Up to 8 EMD31 can be connected in cascade to monitor the temperature and humidity in different parts of the racks.

1. Connect the EMD31 to the console port as shown:

After connecting the EMD31, open a web browser from a PC and enable environmental sensors on the web user interface, then the temperature and humidity status is automatically displayed on the System Overview page.

Monitors the status of two user-provide contact devices to protect your critical equipments.

Two additional digital input sensor devices can be connected to the EMD31 and monitored.

- * Addition sensor devices include:
- Motion detector
- Smoke detector
- Vibration detector
- Water Leak detector

- Universal (any device

with normally-open or closed)





Dip-Switch for adress setting



Din	Eurotion	120 Ω	120 Ω
PIII	Function	enable	disable
6	$120 \ \Omega$ enable	On	Off

Pin 6 function define

Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	MODBUS Adress	
ON	OFF	OFF	OFF	OFF	1	ON 1 2 3 4 5 6
OFF	ON	OFF	OFF	OFF	2	ON 1 2 3 4 5 6
ON	ON	OFF	OFF	OFF	3	ON 1 2 3 4 5 6
OFF	OFF	ON	OFF	OFF	4	ON 1 2 3 4 5 6
ON	OFF	ON	OFF	OFF	5	ON 1 2 3 4 5 6
OFF	ON	ON	OFF	OFF	6	ON 1 2 3 4 5 6
ON	ON	ON	OFF	OFF	7	ON 1 2 3 4 5 6
OFF	OFF	OFF	ON	OFF	8	ON 1 2 3 4 5 6



Digital input sensors are connected to the dry of the EMD31, enable them as picture below. You can name them to know in case of a event from which sensor comes from.

EMD Address	1	
Application FW Version	01.00.0005	
Location Name	Lab Room	Disable
Alarm-1	DoorLock	✓ Normal Open
Alarm-2	Smoke	Normal Close

Daisy Chain setting

Step 1: To set up the Daisy chain, connect a RJ45 patch cord from Cascading port OUT)Master PDU to Cascading port IN (Slave PDU) a maximum of 15 Slave PDUs are permitted.





Connecting the Power Share adaptor and cable.



USE ON ONE OF THE ENDS THE ORANGE RJ45 ADAPTOR SUPPLIED ON THE PDU PACKING, A STANDARD TIA/EIA568 PATCH CORD IS NEEDED TO CONNECT BOTH PDUS

Step 1: To set up the PDU, connect the Power Share adaptor (orange color) in the Power Share port of one of the PDUS (PDU A) then a standard patch cord from this to PDU B.



Step 2: After connect the patch cable, open a web browser from a PC, then the status of the power share is automatically displayed on the **System Overview** webpage. If PDU A is master PDU then the status of power share will display **Active/Main Power** on the **System Overview** webpage.

	Overview	_			
Firmware Version PDU Type	HCS_v0.50a3 XNSPOX60-1216A1P-VBK				
2741		_		_	
				_	
		Input Status			
POU					
Phase Voltage(V)	Active Power(W) Apparent Power(W	() Circuit Breaker 1(A)	Circuit Breaker 2(A)	Total Current(A)	Status
11 117.3	12.8 19.7	dan te	Las Las	das a	Critical



Step 3: When PDU A has utility power fail, the status of power share will display **Active/Backup Power** on the **System Overview** webpage.

	Overview	_			
Firmware Version	HCS_v0.50a3	к			
100 tipe	ANS/0400121041F*VD				
900				_	
		Inout Status			
POU					
Phase Voltage(V)	Active Power(W) Apparent Powe	r(WA) Grouit Breaker 1(A)	Circuit Breaker 2(A)	Total Current(A)	Statu
11 117.3	12.8 19.7	10 m	ta ta		Critica

Step 4: At the same, the information of inlet phase load management will not display on the Inlet **Configuration** of the **Power Management** webpage.

. (S)	Summary Overview	Power Management	Setting Log	Advanced	External Links	8. admin	
Inlet (Configuration						
100	1000			_			-
			Phase Load N	fanagement			
	PDU						
			Configu	ration			
	PDU						
	Control	Over Load Alarm(W)					
	Warning	3520					
		Over Current Alarm (A)	t Over	Total Current Uarm (A)	Over Voltage Alarm (V)	Under Power Factor Alarm (%)	
	Critical 1	5.50	32.00	63.00	250.0	30.0 80.0	
	Warning	26.00	16.00	52.00	100.0	40.0 90.0	24

Step 5: Another, there are some outlets information will not display on the **Outlet Control** of **Power Management** webpage.

. (S)	Summary Overview	Power Management	Setting	Log	Advanced	External Links	admin.	E- Lagout	Language
Outle	t Control								
- 6	201		_	_	_				
				PDL					
	PDU								



Step 6: The related alarm will be occurred on the **Alarm List** of **Summary Overview** webpage. The alarm will be "PDU (PDU:1) power off".

		Alarm List
Number of Active	Alarms : 4	
Alarm ID	Alarm Time	Alarm Description
56	22/02/2022 11:09:14	Inlet (PDU:1) phase1 pf branch2 was lower than warning set point
57	22/02/2022 11:09:14	Inlet (PDU:1) phase1 pf branch2 was lower than critical set point
3	22/02/2022 13:45:26	(PDU:1) EMD1(EMD-1) temperature was higher than high warning set point
62	24/02/2022 10:22:17	PDU (PDU:1) power off

Step 7: The related log and trap will be recorded on the **Log** of **Event Log** webpage and NMS. The log and trap will be "warning: Inlet (PDU:1) Active/Main Power change to Active/Backup Power ".

			Event Log
From:	24/02/2022	То:	24/02/2022
Device:	All	 Event Leve 	l: Information V
		Apply Clear	АП
Show 10 T	entries per pa	ge	
Date&Time	2	Event Level 🔽	Event Description
24/02/202	2 10:22:18	Information	Inlet (PDU:1) phase1 voltage had returned from warning to normal
24/02/2023	2 10:22:17	Warning	Inlet (PDU:1) Active/Main Power change to Active/Backup Power
24/02/2023	2 09:57:29	Warning	Inlet (PDU:1) phase1 voltage was higher than warning set point
24/02/2023	2 09:57:28	Information	Inlet (PDU:1) Active/Backup Power change to Active/Main Power

pduInletPowerS	ShareMainLose		172.31.34.249	2022-03-01 16	56:42	
**						
Source:	172.31.34.249	Timestamp:	3703 hours 53 minu	tes 34.67 seconds	SNMP Version:	2
Trap OID:	pduInletPowerSh	areMainLose			Community:	public
Variable Bindi	ngs:					
Name:	.1.3.6.1.2.1.1.3.0	N				
Value:	[TimeTicks] 370	3 hours 53 minutes	34.67 seconds (133340	1467)		
Name:	snmpTrapOID					
Value:	[OID] pduInletPo	owerShareMainLos	e			
Name:	pduTraps					
Value:	[OctetString] Inle	et (PDU:1) Active/N	Main Power change to A	ctive/Backup Power		
Description:	Warning:Active M	fain Power change	to Active/Backup Powe	f:		



Step 8: When PDU A has utility power restore, the status of power share will display **Active/Main Power** on the **System Overview** webpage.

Firmware Version HCS_y0.50a3 PDU Type XNSPCX60-1216A1P-VBK	_
PDU Type XNSP0X60-1216A1P-V8K	
100	
100	
	_
Input Status	
POU	
Phase Voltage(V) Active Power(W) Apparent Power(WA) Circuit Breaker 1(A) Circuit Breaker 2(A) Total Current(A)	Statu
L1 117.3 12.8 19.7	Critica
0.08 0.08 0.14	
L1 117.3 12.8 19.7	Critic

Step 9: The related log and trap will be recorded on the **Log** of **Event Log** webpage and NMS. The log and trap will be "Information: Inlet (PDU:1) Active/Backup Power change to Active/Main Power".

			Event L	og					
From:	24/02/2022	To:	24/02/2022						
Device:	All	• Event Leve	Information						
		Apply Clear.	All						
Show 10 V	entries per pag	ie.							
Date&Time		Event Level 🔽	Event Description						
24/02/2022	10:30:47	Warning	Inlet (PDU:1) phase1 voltage was hi	gher than warning set point					
24/02/2022	10:30:46	Information	Inlet (PDU:1) Active/Backup Power	change to Active/Main Power					
24/02/2022	10:22:18	Information	Inlet (PDU:1) phase1 voltage had returned from warning to norma						
24/02/2022	10:22:17	Warning	Inlet (PDU:1) Active/Main Power ch	ange to Active/Backup Power					
24/02/2022	09:57:29	Warning	Inlet (PDU:1) phase1 voltage was hi	gher than warning set point					
pduinletPowerS	hareManKesotre		1/2.31.34.248 2022-02-24	09:57:27					
Source:	172.31.34.248	Timestamp:	4571 hours 17 minutes 58.48 second	s SNMP Version: 2					
Trap OID:	pduInletPower	ShareMainResotre		Community: publi					
Variable Bindin	gs:								
Name:	.1.3.6.1.2.1.1.3	.0							
Value:	[TuneTicks] 42	571 hours 17 minutes	58.48 seconds (1645667848)						
Name:	snmpTrapOID								
Value:	[OID] pduInlet	PowerShareMainResc	tre						
Name:	pduTraps								
Value:	[OctetString] In	nlet (PDU1) Active/B	ackup Power change to Active Main Pow	/er					
Description:	Informational:A	ctive Backup Power	change to Active Main Power.						



Step 10: When user remove power sharing cable, the status of power share will display **Inactive** on the **System Overview** webpage.



Step 11: The related alarm will be occurred on the **Alarm List** of **Summary Overview** webpage. The alarm will be "PDU Power Share disconnected".

		Alarm List
Number of Active	Alarms : 4	
Alarm ID	Alarm Time	Alarm Description
56	22/02/2022 11:09:14	Inlet (PDU:1) phase1 pf branch2 was lower than warning set point
57	22/02/2022 11:09:14	Inlet (PDU:1) phase1 pf branch2 was lower than critical set point
37	24/02/2022 10:30:48	Inlet (PDU:1) phase1 voltage was higher than warning set point
63	24/02/2022 10:55:45	PDU (PDU:1) Power Share disconnected



Step 12: The related log and trap will be recorded on the **Log** of **Event Log** webpage and NMS. The log and trap will be "Warning: Inlet (PDU:1) Active/Main Power change to Inactive".

							Event	Log
From:	24/02/2022		To:		24/02/2022			
Device:	All	Ŧ	Event Lev	el:	Information	Ŧ		
		Apply	Clea	All				
Show 10 v	entries per pa	age						
Date&Time	Date&Time 🔽 Event Level 💟				Description			
24/02/202	2 10:55:45	W	arning	Inlet	(PDU:1) Active	/Main	Power d	hange to Inactive
24/02/202	2 10:55:34	Info	rmation	(PDU	:1) EMD1(EMD	-1) ter	mperatur	e had returned from high warning to normal

pduInletPow	verShareBackupLose	172.31.34.248	2022-02-24 10:30:45
Source:	172.31.34.248 Timestamp: 4571 hours 18 mi seconds	nutes 18.46 SNMP V	7ersion: 3 (EngineID: 0x80001F8880213
Trap OID:	pduInletPowerShareBackupLose	User:	test1234
Variable Bi	indings:		
Name:	.1.3.6.1.2.1.1.3.0	_	
Value:	[TimeTicks] 4571 hours 18 minutes 18.46 sec	conds (1645669846)	
Name:	snmpTrapOID		
Value:	[OID] pduInletPowerShareBackupLose		
Name:	pduTraps		
Value:	[OctetString] Inlet (PDU:1) Active/Backup Po	wer change to Active/N	Iain Power
Description	: Warning Active/Main Power change to Inactiv	e	



Connecting to a LAN/WAN

The PDU has two 10/100/1000 RJ-45 network ports that enables to monitor and manage the power outlets over the network. The PDU has a graphic user interface that allows users to control the device through a web browser. Connect the device to a free port on the router using an Ethernet cable as shown. Users can control the device from PC, laptop, mobile phone, or PDA which is connected to the router network.







Using LCM operational buttons:

The following sections describe the LCM functional operation of the PDU.

The PDU has four buttons to launch particular applications and display the on-screen.

lcon	Button	Description
	Down	Press the Down button to navigate through the menu options.
	Up	Press the Up button to navigate through the menu options.
	Set	Press the Set button to access the menu options and confirm user selection.
ESC	ESC	Press the ESC button to cancel any configuration or leave to up menu.

There are two kinds of LCM operation screen for the single and three phase as shown following. User can configure the Screen Direction, of this PDU from the buttons. Regarding to turn on/off outlet, if this PDU has support network function, user can set the whole outlet configuration from **Outlet Control** webpage. The **Outlet Control** page displays.







(RCM) Residual Current Monitoring Option:

When PDUs use the residual current device and detect a Residual current, the OLED scree keep flashing and display the "WARNING" signal as shown.



Users can set the related setting of residual current from the Inlet Configuration webpage as shown.

1. Alarm there holds a setting range for 3mA to 50mA, There holds default setting is 20mA, when residual current greater than or equal to threshold value, an alarm is triggered.

2. When DC residual current is greater than or equal to 5mA, an alarm is triggered.

3. When AC residual current is greater than or equal to 20mA, an alarm is triggered.

4. When the alarm threshold value setting is less than or equal to 5mA, If DC residual current or AC residual are active, an alarm is triggered.

5. When the alarm threshold value setting is less than or equal to 20mA, If AC residual current is active, an alarm is triggered and DC residual current will be ignored.

	ew 🖸	Power Mana	igement	Setting Log	Advanced E	External Links		admin	Logoor
onfiguration									
PDU								14	
				at the set of the set					-
PDU				Phase Lo.	iu managemen				
	A. ANAJ	Maxmal							
iase 1 Energy	0.000 kWl	h(from 01/0	1/1970 02:00:	20)					
Phase	Current Total(CB1)	(A) /CB2)	Voltage(V)	Frequency (Hz) Power Fact (CB1/CB2	tor Power(W/VA) 2) Active/Apparent	Reactive Power (var)		
1	0.02(0.00/	(0.02)	223.5	49.91	1.00/1.00	0 4.4/4.4	0.0	Normal	
sidual Current (mA	(Critical							
	onfiguration rou	onfiguration root POU Aver 4.4W see 1 Energy 0.000 ISW Phase Current 1 0.02(0.00 solubla Current (mA)	onfiguration root root ADU	onfiguration poul poul poul poul poul poul poul poul	Image: constraint of the second sec	Proce Phase Load Management PDU Phase Load Management PDU Phase Load Management Nver 4.4W Normal sase 1 Energy 0.000 KV/h (from 03/03/1970 02:00:00) Phase Phase Corrent(A) Total(CB)(CD2) Voltage(V) Frequency (Hz) Power Fac (CE1/CB2) 1 0.02(0.000,002) 223.5 49.91 1.00/1.0 solubul Current (mA) Critical Critical	Proce Phase Load Management PDU Phase Load Management PDU Phase Load Management PDU Content (n) Phase Load Management Phase Load Management Phase Load Management (Phase Phase Ph	Proce Phase Load Management Phase Current[A] Total(CB1/CB2) VoltageVV Progency (Hz) Prower [Actor / Power (W/A) Reactive Power (var) 1 0.000/0.02) 223.5 49.91 1.00/1.00 4.4(4.4 0.0 adual Current (mA) — critical	Prod Image: contribution of figuration Prod Image: contribution of figuration



(SPD) Surge Protection Monitoring Option:

When PDUs use the replaceable surge protection and detect an Overvoltage, the OLED screen keep flashing and display the "WARNING" signal as shown, also an alarm will be displayed on the graphic user interface.



Surge characteristics: Single phase

Туре		BT PCM20 TT1+1 275 RM-1
ArtNo.		870 114
Nominal a.c. voltage	U _N	230V~
Rated voltage (max, contnuous voltage)	U,	275V~(L-N); 255V~(N-PE)
Nominal discharge current (8/20)	I,	10kA (L-N); 20kA (N-PE)
Max, discharge current (8/20)	l _{max}	20kA (L-N); 40kA (N-PE)
Voltage protection level at In	U,	≤ 1.0kV (L-N); ≤ 1.25kV (N-PE)
Voltage protection level at 3kA	U _P	≤ 0.8kV (L-N)
Response time	t,	≤ 25ns (L-N); ≤ 100ns (N-PE)
Max. back up fuse		125A gL/gG
Operating temperature range	T,	-40°C+80°C
Cross- section area (L/N)		1.5mm ² ~ 10mm ² solid / flexible
Cross-section area (PE)		6.0mm ² ~ 25mm ² solid / flexible
Mounting on		35mm DIN rail
Enclosure material		Light grey thermoplastic, UL94-V0
Dimension		1 mod
Test standards		IEC 61643-11; EN 64643-11
Certification		CE(LVD, EMC)
Type of remote signalling contact		Switching contact
Switching capacity	U _y /I _N	AC:250V/0.5A DC:250V/0.1A,125V/0.2A,75V/0.5A
Cross-sectional area for remote signalling contact		Max. 1.5mm ² solid / flexible

Three phase

Туре		BT PCM20 TT3+1 275 RM-1
ArtNo.		870 154
Nominal a.c. voltage	U _N	230V~
Rated voltage (max, contnuous voltage)	U,	275V~(L-N); 255V~(N-PE)
Nominal discharge current (8/20)	I,	10kA (L-N); 20kA (N-PE)
Max, discharge current (8/20)	I _{max}	20kA (L-N); 40kA (N-PE)
Voltage protection level at In	U,	≤ 1.0kV (L-N); ≤ 1.25kV (N-PE)
Voltage protection level at 3kA	U _P	≤ 0.8kV (L-N)
Response time	t _A	≤ 25ns (L-N); ≤ 100ns (N-PE)
Max. back up fuse		125A gL/gG
Operating temperature range	Τ,	-40°C+80°C
Cross- section area (L/N)		1.5mm ² ~ 10mm ² solid / flexible
Cross-section area (PE)		6.0mm ² ~ 25mm ² solid / flexible
Mounting on		35mm DIN rail
Enclosure material		Light grey thermoplastic, UL94-V0
Dimension		2 mod
Test standards		IEC 61643-11; EN 64643-11
Certification		CE(LVD, EMC)
Type of remote signalling contact		Switching contact
Switching capacity	U _N /I _N	AC:250V/0.5A DC:250V/0.1A,125V/0.2A,75V/0.5A
Cross-sectional area for remote signalling contact		Max. 1.5mm² solid / flexible



The HCS PDU provides a graphic user interface that can be viewed from a web browser such as Internet Explorer. This enables users to access and control the device outlets and subsequently, its output devices remotely from users' desktop, laptop, PDA, or even users' mobile phones. This section provides instructions about how to use the web interface to configure and control the PDU remotely.

Summary Overview-System Overview

Start a web browser such as Internet Explorer from the host PC or laptop and enter the IP address of the Power Strip in the address bar. For details about setting the IP address of the system. You will be prompted to enter a Username and Password. Click Go and the main status page of the HCS PDU web interface is displayed.

The default settings are: DHCP: Enabled IP Address: 192.168.1.250 Subnet Mask: 255.255.255.0 Gateway: 192.168.1.10 Username: admin Password: admin

PDU Type	rsion	HCS_v0.5	0a3 0-1216A1P-VBK				
Martin (10)	SLAVE 1	PDU SLAVI	E 2 PDU SLAVE	3 PDU SLAVE 4 PDU	SLAVE 5 PDU SLAVE	6 PDU SLAVE 7 PDU	н
				Input Status			
Master PDU	I						
Phase	Voltage(V)	Active Power (W)	Apparent Power (VA)	Circuit Breaker 1 (A)	Circuit Breaker 2 (A)	Total Current (A)	Status
11	113.7	0	0	0 3.50 in	6.00 IF	° 9.50 ³²	Normal
12	114.7	0	0	0 8.50 IN	6.00	0 8.50 12	Warning
12	114.7	0	0	0 3.50 M	6.00 ¹⁴	0 9.50 ¹²	Warning Critical

The main page shows a graphic representation of the Power Strip outlets and inputs status as described below:

• The panel shows the various menus and submenus. Click any menu to display the menu options, expand the menu items, and modify the menu options as required.

• The right panel shows the current status of the Power strip.



Summary Overview-Alarm List

The "Alarm List" page shows the list of Alarms, which were set by the user. HCS PDU will follow the rules of an alarm to send out notification to the user.

Sum	mary Overview	Power Management	Settings	Log	Advanced	External Links		8	•
Alarm List									
				Alarm Li	st				1
Number of A	active Alarms : 0								
Alarm ID		Alarm Time			Alarm Description				
XXX.XX		XXXX/XXX/	xxxx/xxx/xxx			XXXXXXXX			

Summary Overview-Network Connection

The Network Connection page shows a list of user's connections.

6	Summary Overview	Power Management	Settings Lo	og Advanced	External Links	8	•
Net	twork Connect						
			Netw	ork Connect			i -
т	Total TCP Connection : 1						
	Source Host Address	Connection I	уре	Usernam	•	n in the second s	
	172.31.1.91	HTTP		admin			
	172.31.1.91	HTTP		admin			



Outlet Sequential Startup

To prevent in rush currents the HCS PDU use a time delay sequence between each outlet, this happens once PDU is POWER ON for first time as well as in case of accidental or equipment maintenance POWER OFF. By default the PDU turns ON all the outlets that were ON before POWER OFF. As a second option in case is required you can choose to turn all the outlet OFF once POWER ON again.



Power Management-Inlet Configuration

This page lets the user configure Inlet load. You can set the condition of "Critical" and "Warning". (The value of "Critical" must be larger than "Warning"). When Inlet Power is over the condition you set, the light of status will become the corresponding colour.(Red means "Critical", Yellow means "Warning" and Green means "Normal") And you will receive the notification mail if you have set it in Email Notification.

	ummary Overview	Power Management	Settings Log	Advanced	External Links		2
			Phase Load	Management			
PDU A	1						
Pha	se Current(A) Total(CB1/CB2)	Voltage(V)	Frequency (Hz)	Power Factor(%)	Power(W/VA) Active/Apparent	Reactive Power (var)	Status
1	0.00(0.00/0.00)	112.7	59.92	0.0	0.00	0.0	Normal
2	0.00(0.00/0.00)	113.4	59.90	0.0	0.00	0.0	Warning
3	0.00(0.00/0.00)	113.0	59.90	0.0	0.00	0.0	Critical
			Config	uration			
P	DU A		Config	uration Ov CB1	er Current Narm (A) C82	Over Total Current Alarm (A)	Over Voltage Alarm (V)
P	DU A Over Load Alarm(kv	v) Load Balan <u>ce Ala</u>	Config	uration Ov Cat 1 16	er Current Varm (A) 16	Over Total Current Alarm (A) 32	Over Voltage Alarm (V) 250
P	DU A Over Load Alarm(kv al 5.8	v) Load Balance Alar 100	Config rm(%) Critical	Uration Ov 68 1 16 2 16	er Current Varm (A) 16 16	Over Total Current Alarm (A) 32 32	Over Voltage Alarm (V) 250 250
P Critic	DU A Over Load Alarm[kv al 5.8	v) Load Balance Ala 100 50	Config rm(%) Critical	Uration OV A Cos 1 16 2 16 3 16	ver Current Varm (A) 16 16 16	Over Total Current Alarm (A) 32 32 32	Over Voltage Alarm (V) 250 250 250
P Critic Warr	Over Load Alarm[vo al 5.8 ing 4.6	v) Load Balance Alar 100 50	Config m(%) Critical	Cox Cox Cox Cox Cox Cox Cox Cox	er Current Jarm (A) 16 16 16	Over Total Current Alarm (A) 32 32 32	Over Voltage Alarm (V) 250 250 250
P Critic Warr	Over Load Alarm(kv al 5.8 ing 4.6	v) Load Balance Alar 100 50	Config m(%) Critical	uration	er Current Marm (A) 16 16 16 16	Over Total Current Alarm (A) 32 32 32 32	Over Voltage Alarm (V) 250 250 250
P Critic Warr	Over Load Alarm(v al 5.8 ing 4.6	v) Load Balance Alar 100 50	m(%) Critical Warning	uration 00 / 00 / 00 / 00 / 00 / 00 / 00 / 00	er Current Varm (A) 00 16 16 16 16 16 16	Over Total Current Alarm (A) 32 32 32 32 32 32 32	Over Voltage Alarm (V) 250 250 250 250 250 250



Power Management-Outlet Control

This page let user trigger action by drop-down list. After you select an action and click "Apply", server will accord to the instruction to complete the task remotely.

Click "See Details" to open the page as shown:

In this page, you can set "How many seconds delay" when Power ON/OFF Delay action are triggered.

You can also set the seconds of "Reboot Duration".



After set, you can click "Apply" to apply to this Outlet or click "Apply to All Outlet" to make this setting apply to all Outlets.

Manage - Address Pro-		
Name Master PD		ĸ
State ON		
Status Normal		
Power On Delay	Immediated Power	On
	O Wait 1 Second	ls (1-7200)
Power Off Delay	O Immediated Power	Off
	• Wait 7200 Second	ls (1-7200)
Reboot Duration	5 Seconds (5-60)	
Current (A)	0.00	
Power (W/VA)	Active 0.00	
Active/Apparent	Apparent 0.00	
Voltage (V)	112.3	
Energy (KW/h)	0 kWh (from 07/08/2	020 11:19:19)
T		
° 12	30	• 1k 54
Curren	t (A)	Power (W)
0	ver Current Alarm (A)	Over Power Alarm (W)
Critical	16.0	2500
Warning	13.0	2000

Take Outlet4 for example (Set Power ON/ OFF Delay=3 seconds /Reboot Duration=10 seconds), when you select Action "Off Delay" and click Apply. Outlet4 will power off after 3 seconds.

If you select Action " Power Cycle Immediate" and click Apply, Outlet4 will reboot and this procedure will cost 10 seconds.

If you select Action "Power Cycle Delay" and click Apply, Outlet4 will reboot and this procedure will cost 16 seconds. (Include 3 seconds for "Power ON Delay", 3 seconds for "Power Off Delay" and 10 seconds for "Reboot Duration").



Power Management-Outlet Grouping

This page shows the group list and let user enable Outlet Group. User can add/delete/modify the group list. The group list is up to 8 groups. Take Group_1 for example, I have set Outlet_1 of PDU_A, Outlet_3 of PDU_B and Outlet_4 of PDU_C into Group_1. When I set action to Outlet_3 of PDU_B and apply, Action will apply to all PDUs of Group1.

Summa	ry Overview Power M	anagement Settings	Log A	Advanced	External Links		2	€
Outlet Groupin	6							
		Outle	t Group Config	guration			-	1
						• •	٢	
Grp#	Name	Outlets						
1	XXX	XXXXX						
2								
3								
Purpose and be	nefits of outlet groups.	arbanal tark manuar						
The extists use	the delay periods of the lowest-pur	bered outlet in the group.						

Power Management-Outlet Schedule

Oultet Schedule function allows to Schedule an action to the desired outlet or group of outlets daily, weekly or one time action.

S	Summary Overview	Power Management	Setting Log	Advanced	External Links	2 admin	[→ Logout	Langua
Sche	dule							
			Schedule Out	et Action			_	
						• e	(i)	
	Index N	lame Status	a di	nterval	Action	Outlets		

Click "+" and the menu with action options and outlets will appear, then choose your desired action, date and time.

Schedule				\dd				
	Schedule	Outlet Action						
	One Ti	me Action	O Daily Ad	ction	O Weekly	/ Action		• • \$
Index Name							Outlets	
-	Schedule	A One Time A	ction					
	Enal	bled						
	Name							
	Action	On Immediate						
	Time	01/04/2023	at	(HH:	MM)		i in the second s	
	PDU					N		
	#	Outlet	#	Outlet		Outlet		
	01	outlet 01	2	outlet 02	3	outlet 03		
		outlet 04		outlet 05		outlet 06		



Power Management-Environment Monitoring

This page shows the status of EMD31 and lets users set the alarm configuration. You can set the "Alarm Condition" of "Critical" and "Warning". (The value of "Critical" must be larger than "Warning") It will follow the Email Notification rule you set to send out mails.





HCS PDU supports 8 EMD sensors in cascade each one with 2 digital inputs to set 2 alarms for each EMD 31 sensor. There are 3 options(Normal Open/Normal Close/Disable) of the EMD sensor. If you set "Normal Open", the EMD sensor will become "Warning"(Yellow light) when closed.



www.hescs.com

Setting – General Setting

This page let users setup the system administration and date and time.

IS	Summary Overview P	ower Management	Setting	Log Adv	anced	External Links	Login Lang
Gene	ral Setting						
			System	Administrat	ion		
S	ystem Name	HCS					
S	ystem Contact	help@hescs.cor	n				
S	ystem Location						
L	og Interval	60					
W	leb Refresh Interval (3 ~ 60)	15					
W	eb Timeout Enabled						
W	leb Timeout Interval (Sec)	300					
			Dat	te and Time			
D	ate and Time	14/04/2023 12:51:0	03				
т	me Zone	[GMT +01:00] Brus	sels, Copenhage	n, Madrid, Pari	s		
D	ate Format	dd/mm/yyyy					
	Manual Setting						

Setting – TCP/IP

This page allow users to enable/Disable DCHP under IPv4 or enable IPv6.

. (S)	Summary Overview	Power Management	Setting	Log	Advanced	External	Links	2 Dogin Langue
тср	/ IP							
		IPv4 Setting					IPv6 Setting	
	Enabled DHCP				Enabled	i IPv6		
1	P address	192.168.124.2			Configurat	on	DHCPv6	
	Subnet Mask	255.255.255.0			IP address			
	Gateway Address	192.168.1.1			Prefix Leng	yth		
1	Primary DNS Server	192.168.1.1			Router Add	iress	::/0	
1	Secondary DNS Server	255.255.255.0			Primary DI	S Server		
					Secondary	DNS Serve	r	



Setting – Accesible IP Setting

This page allow users to enable accessible IP lists.

. S	Summary Overview	Power Management	Setting Log	Advanced	External Links	Login La
Acc	essible IP Setting					
			Accessible I	P Setting		
	Enable the Accessible	IP list				
	Index	IP Address		Address Prefix L	ength Action	

Setting – Network Acces Protection

This page lets the user set their network protection and upload SSL certificates.

		Network A	Access Protection	
Enable I	Network Access Protection	- 14 shares 14 series		
SSH				
In 1 min	, after unsuccessful attempts for	5 times * , block t	the IP for 5 min *	
SNMP	3			
In 1 min	, after unsuccessful attempts for	5 times * , block t	he IP for 5 min *	
HTTP(S)			
In 1 min	, after unsuccessful attempts for	5 times * , block t	he IP for 5 min *	
			Apply	
		SSL Se	cure Certificate	
		331.30	core certificate	



Setting – Network Service

This page allows you to setup your network settings: SSH, MODBUS TCP/IP, SSL, LDAP, PING, RADUIS and TACACS+.

Summary Overview	Power Management	ttling Log Advanced External Links	admin La
twork Service			
		Network Service	
SSH		ModBus/TCP	
Allow SSH Connectio	n	Enabled ModBus/TCP	
Port Number	22	Port Number 502	
SSL		LDAP Setting	
Enabled Secure Conr	nection(SSL)	Enabled LDAP	
Port Number	443	Host	
Force Secure Connect	ction(SSL) Only	Port Number 389	
Force Sign In		TLS Connection	
		Base DN	
Ping			
Allow Ping Echo		TACACS+ Setting	
		Enabled TACACS+	
RADIUS Setting		Host	
Enabled RADIUS		Port Number 49	
Server IP Address		Secret Kev	



The section provides information about setting up the LDAP step by step.

Step 1: To set up the PDU, please configure the related LDAP parameters on the **Setting** of **Network Service** webpage as shown screen. For example, to enable LDAP, enter Host IP and Port Number...etc.

LDAP Setting		
Enabled LDAP		
Host	172.31.35.186	
Port Number	389	
TLS Connection		
Base DN	dc=qetest,dc=com	

Step 2: Please press " (+)" icon to add LDAP user then configure the related LDAP parameters on the **Setting** of **User Setting** webpage as shown screen. For example, set LDAP Username, select Privilege to "Outlet Manager" and select the related outlets.

		Mod	lify		
C	lsername		ldapuser001		
P	rivilege		Outlet Manager	r	v
-					155
U					100
U. #	Outlet	#	Outlet	Ħ	Outlet
U # V 1	Outlet outlet 01	[#] □ 2	Outlet outlet 02	#	Outlet outlet 03
U # ☑ 1 ☑ 4	Outlet outlet 01 outlet 04	# 2 5	Outlet outlet 02 outlet 05	#	Outlet outlet 03 outlet 06



Step 3: After configured LDAP parameter, please logout and close web browser. To enter LDAP username and password then login web browser.



Step 4: To check the login LDAP username on the **Network Connect** of **Summary Overview** webpage as shown screen.

	Network Connect	
Total TCP Connection : 1		
Source Host Address		
172.31.34.222	нттр	Idapuser001

Step 5: The LDAP user can control the related outlets on the **Outlet Control** of Power Management webpage.

let Control							
_							
PDU.							
				PDU			
PDU							
			Power (W/VA) Active/Apparent				
1	outlet 01	0.00	0.0/0.0	Detail	No Action 🔻	OFF	Normal
2	outlet 02	0.00	0.0/0.0		No Action Y	ON	Normal
3	outlet 03	0.00	0.0/0.0		No Action . *	OFF	Normal
- 4	outlet 04	0.00	0.0/0.0	Detail	No Action *	OFF	Normal
5	outlet 05	0.00	0.0/0.0		No Action *	ON	Normal
6	outlet 06	0.00	0.0/0.0		No Section *	ON	Normal
	Outlet 07	0.00	0.0/0.0	Detail	No Action ¥	OFF	Normal
7							



The section provides information about setting up the TACACS+ step by step.

Step 1: To set up the PDU, please configure the related TACACS+ parameters on the **Setting** of **Network Service** webpage as shown screen. For example, to enable TACACS+, enter Host IP and Port Number...etc.

TACACS+ Setting		
Enabled TACACS+		
Host	172.31.35.184	
Port Number	49	
Secret Key	******	
Timeout(Sec)	5	
Retry Count	3	
Authentication Mode	ASCII 🔻	

Step 2: Please press " \oplus " icon to add TACACS+ user then configure the related TACACS+ parameters on the **Setting** of **User Setting** webpage as shown screen. For example, set TACACS+ Username, select Privilege to "Outlet Manager" and select the related outlets.

		Ad	d		
U	sername	(tacuser001		
P	rivilege		Outlet Manager	ŗ	v
					N
518					
DU					
#	Outlet	#	Outlet	#	Outlet
# 1	Outlet outlet 01	#	Outlet outlet 02	#	Outlet outlet 03
# 	Outlet outlet 01 outlet 04	# 2 5	Outlet outlet 02 outlet 05	# 3 6	Outlet outlet 03 outlet 06



Step 3: After configured TACACS+ parameter, please logout and close web browser. To enter TACACS+ username and password then login web browser.

X (iummary Overview	Power Management	Setting	Log Advance	id External Links		angen .
System C	verview						
		Overview					
Firmwa	e Version	HCS_v0.50a3					
PDU Typ	ie	XNSPOX60-1216	A1P	User Login			
100	_		2	tacuser001			
		_		••••••		_	
				-			
PDU							
Phase	Voltage(V)	Active Power(W) Appan	ent Power(VA)	Circuit Breaker 3(A)	Circuit Breaker 2(A)	Total Current(A)	Status
u	115.9	13.0	19.8		in .	1.31 m	Critical
R	wei Share	Inactive					

Step 4: To check the login TACACS+ username on the **Network Connect** of **Summary Overview** webpage as shown screen.

	Network Connect	
Total TCP Connection : 1		
Source Host Address	Connection Type	
172.31.34.222	HTTP	tacuser001

Step 5: The TACACS+ user can control the related outlets on the **Outlet Control** of **Power Management** webpage.

let Control							
						_	
190	-					_	100
			-	200			
PDU							
			Power (W/VA) Active/Apparent				
1	outlet 01	0.00	0.0/0.0	1000000	No Actual *	ON	Normal
2	Outlet 02	0.00	0.0/0.0	Detail	No Action	ON	Normal
3	outlet 03	0.00	0.0/0.0		No Action *	OFF	Normal
4	outlet 04	0.00	0.0/0.0		No Action. *	ON	Normal
5	outlet 05	0.00	0.0/0.0	Detail	No Action	ON	Normal
	outlet 05	0.00	0.0/0.0		No Action *	ON	Normal
6							



Setting - Radius User

This page lets power admin to Add/Delete/Modify Radius users. You have to Enable RADIUS and set ready in the Network Service. Then you can add a Radius User and set outlet control for this user. The Grouping & Schedule function also supports radius users.

ADIUS Setting		
Enabled RADIUS		
Server IP Address		
Secret Key		
Port Number	1812	
Timeout Interval	1	Seconds
Retry Times	3	

NOTE: If there are 2 users with the same name both existed in Local User & Radius User, Local user will become a priority in HCS PDU.

Setting – SNMP Setting

This page shows you all possible SNMP settings.

	Summary Overview	Power Management	Setting Log	Advanced Exte	nal Links	admin Logout
SNM	P Setting					
			SNMP Se	etting		
	Enable SNMP Service					
1	Port Number	161				
			Apply			
			V1/V2c SNN	IP Agent		
(Community Read					
(Community Write					
			Apply			
			SNMP v3 US	SM Table		
	User Name	Auth-Protocol Password	Auth-Protocol	Priv-Protocol Passwo	rd Priv-Protocol	Security Level
			MD5 *		DES V	noAuthNoPriv▼
			Apply			



Setting – Email Settings

This page lets the user set Email notification settings. Click "+" to set a new setting. Input "Receiver Address", select "Email Type"/"Event Level" and "Description", then click "Apply" to save settings. You can send a test mail to confirm the setting is correct or not through clicking "Send Test". After setting well, you will get a notification email when the event has been triggered.

		Configu	ure SMTP Server		
SMTP Server					
Port Number	25				
Sender Email Address					
Prefix					
Enable SMTP Authentica	tion				
UserName					
Password					
			Apply		

Setting – User Settings

This page shows the user list and admin that can add/delete/modify it. The list can be upto 8 users. There are 4 kinds of privileges for the user account, the definition is as below:

Privilege	Definition
Power Admin	Users can manage all functions.
Admin	Admin users cannot manage [User Management], [Outlet Grouping], [FW Upgrade & Inlet/Outlet Upgrade], [Reset Default] function, and the others can still manage.
Supervision	Supervision users only manage [Power Monitoring] beside [Outlet Grouping], [Inlet/outlet upgrade] function.
User	Cannot manage any function. Read only.

Also you can add or delete users under Radius, LDAP, TACACS+ and create new passwords for each user



Log and Notification-System Log

This page shows the system log.

6	Summary	y Overview I	Power Management	Setting	Log	Advanced	External Links	8 admin	Logout	Language
Syst	tem Log									
					System I	Log				
			From: 14/04/20	23		To:	14/04/2023			
				Apply		Clear All				
Sh	10 *	entries per page	2						₽	
	Date&Time		Event Description							
	14/04/2023	14:45:54	Local User Outlet Sett	ing had cha	inged via HTT	P/HTTPs by 192	.168.124.40			
1	14/04/2023	14:45:54	Local User Outlet Sett	ing had cha	inged via HTT	P/HTTPs by 192	.168.124.40			
:	14/04/2023	14:45:54	Local User Outlet Sett	ing had cha	inged via HTT	P/HTTPs by 192	.168.124.40			

Log and Notification-Event Log

This page shows the warnings and alarms history log.

.	Summary (Overview	Power Manag	ement	Setting	Log	Advanced	External Links		admin	Logout Langue
Ever	at Log										
						Event L	og				
			From: Device:	14/04/20	23		To: Event Level	14/04/2023			
				All	Apply		Clear All	Information	•		
Sh	ow 10 * 6	entries per j	bage			-	0				₽
4	Date&Time 🔽	1	Event Level 💟	Event De	scription						
1	14/04/2023 14	1:52:59	Information	Inlet pha	se3 voltag	e was higher t	han warning set	point			
1	14/04/2023 14	1:52:58	Information	Inlet pha	se3 voltage	e had returned	from warning to	normal			

Log and Notification-Inlet History Log

This page shows the inlet history log. You can set the log interval in General Setting under the System Management. You can download the logs in .csv file or graphics.

Summary Overvie	w Power Mana	gement S	etting 🚺	og A	dvanced	External Li	inks		2 admin	Logout
Iniet History Log										
			Inlet	History L	og					
	From:	14/04/2023	3		To:	14/04/	2023			
	Device:	AB	*							
Show 10 * entries	per page		Apply		Cisar All				K	Ð
Date&Time 🔽	Device Name	Pwr.W	Pwr Max.W	Ph1 LA	Ph2 I.A	Ph3 I.A	Ph1 I Max.A	Ph2 I Max.A F	Ph3 I Max A E	ine
14/04/2023 14:56:09	HCS	0	0	0	0	0	0	0	0	
14/04/2023 14:55:07	HCS	0	0	0	0	0	0	0	0	



Log and Notification-Outlet History Log

This page shows the inlet history log. You can set the log interval in General Setting under the System Management. You can download the logs in .csv file or graphics.

Summary Overvie	w Power Manag	ement Setting	Log	Advance	d External Li	nks		admin	Logout L
Outlet History Log									
			Outlet Hist	ory Log					
	From: Device:	14/04/2023 All		To: Outlet:	14/04/3 All	2023			
Show 10 * entries p	er page	A	rely	Clear All	•			R	€
Date&Time	Device Name 💟	Outlet Name	Pwr.W	Pwr Max.W	Energy.kWh	LA	PF	Fre.Hz	
14/04/2023 14:57:11	HCS	outlet 01	0	0	0	0	1	49.9	
14/04/2023 14:57:11	HCS	outlet 02	0	0	0	0	1	49.9	

Log and Notification-Environment History Log

This page shows the environment history log. You can set the log interval in General Setting under System Management. You can download the logs in .csv file or graphics.

	erview Power Ma	nagement Setting	Log Advanced	External Links	admin	[→ ⊕ Logout Langua
Environment Log						
						-
			Environment Log			
	From: Device:	14/04/2023 All •	To: EMD:	14/04/2023 All		
		Ap	Dig Clear All			
Show 10 * ent	ries per page	Ap	Clear All		×	D
Show 10 ▼ ent	tries per page Devic	Ce Name 💟	ely Clear All	Temp.C	⊬ Hum.%RH	D
Show 10 ▼ ent Date&Time ▼ 14/04/2023 14:58	tries per page Devic 3:13	ce Name 💟 HCS	ely Clear All EMD Name EMD1	Temp.C 24.3	⊬ Hum.%RH 65.6	D
Show 10 ▼ ent Date&Time ▼ 14/04/2023 14:56 14/04/2023 14:57	tries per page Devic 3:13 7:11	Ce Name T	EMD Name EMD1 EMD1	Temp.C 24.3 24.3	₩ Hum.%RH 65.6 65.6	D
Show 10 ▼ ent Date&Time ▼ 14/04/2023 14:58 14/04/2023 14:57 14/04/2023 14:56	tries per page Devic 3:13 7:11 3:09	CCE Name V HCS HCS HCS	EMD Name EMD1 EMD1 EMD1 EMD1	Temp.C 24.3 24.3 24.3 24.3	Hum.%RH 65.6 65.6 65.7	Ŀ



ADVANCED – SYSLOG Setting

You can receive system and History logs to your server enabling them and indicating the server port.

Summary Overview Power Management Se	atting Log Advanced External Links admin Logout L) anguage
Suslag Catiling		
Systog Setting		
System/Event Log	History Log	
Enabled System/Event Log	Enabled History Log	
Server IP	Server IP	
Server Port 514	Server Port 514	
Apply	Apply	

ADVANCED – Maintenance

Keep the PDU up to date installing always latest firmware versions available on HCS website, reset to default or reboot the system in case of not porper function. You can also suspend all the schedules just enabling on the web page.

s s	iummary Overview	Power Management	Setting	Log	Advanced	External	l Links	admin	[→ Logout	Language
Mainten	nance									
	Reset	To Default w/o IP					Firmware Update			
If yu The The cha The	ou click 'Apply', system w e entire system configural e IP address, Subnot Mas anged: e password will be set to ' Are you su	III be reset to defaults immed ion will be overwritten. K. Galeway, and DNS Server admin'. re you want to proceed?	liately. r will not be		Curren	t Version: are File:	HCS_v0.50a3			
		Reboot				S	Suspend All Schedule			
	Are you sure yo	u want to reboot the sys	stem?		🗹 En	able	Apply			
		Rebot								

ADVANCED – Import / Export

Easy copy PDU configuration with the export and import files in JSON format.

CS	Summary Overview	Power Management	Setting	Log	Advanced	External Links	admin	[→ Logout	. Language
	Import / Export								
	Impo	ort Configuration			11	Export Configuration	ņ		9
	Open a configuration JSON	file and click the button belo configuration.	ow to restore	the	Click this b	utton to download the system configu	uration in JSON format		



ADVANCED – Links Setting

Use External Links Setup to view and change up to 4 URL links displayed in External Links.

Screen Text: This field defines the URL name displayed in External Links. The maximum size is 31 characters. Available values are alphabetic characters note 1 and numerals. The default value is NULL (empty).

Link Address: This field defines the URL address for external link. The maximum size is 63 characters. Available values are alphabetic characters note 1, symbols and numerals. The default value is NULL (empty).

Status: This field decides whether the external link is available. Available values are "Hide" and "Show". The default value is "Hide" and Screen Text does not display in External Links.

	Summary Overview	Power Management	Setting	Log	Advanced	External Links		admin	Language
Link	s Setting								
				Exter	nal Link				
	ndex	Screen Text			Link Add	ress	Statu	s	
	1						hide	٠	
	2						hide	٣	
	3						hide	٣	
	4						hide	٣	
				-	pply				



Dual Ethernet Mode

HCS GIGA PDU allows system administrators to set up bonding interfaces with different modes. A bonding mode specifies the policy indicating how bonding slaves are used during network transmission. To achieve the maximum throughput and fault toleration, it is important to choose the proper bonding mode and the corresponding options for the setup. The current version of the bonding module supports the following bonding modes:

Mode 1 (Active Backup):

Active Backup policy establishes that only one slave in the bond is active. A different slave becomes active if, and only if, the active slave fails. The bond's MAC address is externally visible on only one port (network adapter) to avoid confusing the switch. This mode provides fault tolerance. The primary option affects the behavior of this mode.

• Use the browser to go to the GIGA PDU address and check the page for the "Dual Ethernet" in the "Advance" menu list.

• Please select **"Active Backup"** model and verify the related action as flow screen.

			Dual Ethernet
Dual Ethernet Mode	Active Backup	٣	
MII Monitoring	100		milliseconds(Range 1 - 65535)
Down Delay	0		milliseconds(Range 0 - 65535)
Up Delay	0		milliseconds(Range 0 - 65535)
Primary Ethernet	eth1	٣	
			Apply



Mode 2 (IEEE 802.3ad):

Bonding mode 2 (IEEE 802.3ad), also known as LACP (Link Aggregation Control Protocol) mode, is used for load balancing and fault tolerance. The IEEE 802.3ad specification allows the grouping of Ethernet interfaces at the physical layer to form a single link layer interface. If a bonding interface is set to this mode, it requires that all the slave devices operate at the same speed and are duplex. In this way, the network can benefit from the aggregated bandwidth of all the slaves, and if one of the slaves is down, the whole network will not be affected.

Notes: The switch should be configured to support the mode 802.3ad standard and use the LACP protocol. The 802.3ad mode only works with MII link monitor.

• Use the browser to go to the GIGA PDU address and check the page for the **"Dual Ethernet"** in the **"Advance"** menu list.

• Please select **"IEEE 802.3ad"** model and verify the related action as flow screen.

			Dual Ethernet
Dual Ethernet Mode	IEEE 802.3ad	· v	
MII Monitoring	100		milliseconds(Range 1 - 65535)
Down Delay	0		milliseconds(Range 0 - 65535)
Up Delay	0		milliseconds(Range 0 - 65535)
Primary Ethernet	eth1	٣	
			Apply



Mode 3 (Balance-ALB):

Adaptive load balancing. Includes balance-transmit load balancing plus receive-load balancing for IPv4 traffic, and does not require any special switch support. The receive-load balancing is achieved by ARP negotiation. The bonding driver intercepts the ARP replies sent by the local system on their way out and overwrites the source hardware address with the unique hardware address of one of the slaves in the bond. Thus, different peers use different hardware addresses for the server.

• Use the browser to go to the GIGA PDU address and check the page for the **"Dual Ethernet"** in the **"Advance"** menu list.

• Please select **"Balance ALB"** model and verify the related action as flow screen.

			Dual Ethernet
Dual Ethernet Mode	Balance ALB	Ŧ	
MII Monitoring	100		milliseconds(Range 1 - 65535)
Down Delay	0		milliseconds(Range 0 - 65535)
Up Delay	0		milliseconds(Range 0 - 65535)
Primary Ethernet	eth1	٧	
			Apply



Mode 4 (Bridge):

Bridging the two networks together can be quite helpful, though, if files located on one of the networks need to be accessed from the other network. If you don't have a router but have a PC with two Ethernet cards, you can connect both networks to the PC and bridge your Ethernet cards so both networks can communicate with each other.

• Use the browser to go to the GIGA PDU address and check the page for the "Dual Ethernet" in the "Advance" menu list.

• Please select "Bridge" model and verify the related action as flow screen.

			Dual Etherne
Dual Ethernet Mode	Balance ALB	۳	
MII Monitoring	100		milliseconds(Range 1 - 65535)
Down Delay	0		milliseconds(Range 0 - 65535)
Up Delay	0		milliseconds(Range 0 - 65535)
Primary Ethernet	eth1	v	

• Connect one Ethernet port to DHCP server and another to PC Ethernet port as shown below.

• After connecting, check PC system to get DHCP IP.

Network Connection Detai	ls	Х
Network Connection Details:		
Property	Value	^
Connection-specific DN		
Description	Realtek PCIe GbE Family Controller	
Physical Address	10-60-4B-71-91-CB	
DHCP Enabled	Yes	
IPv4 Address	172.31.1.50	
IPv4 Subnet Mask	255.255.0.0	
Lease Obtained	Monday, November 08, 2021 3:14:45	
Lease Expires	Wednesday, November 10, 2021 11:0	
IPv4 Default Gateway	172.31.0.1	
IPv4 DHCP Server	172.31.0.1	
IPv4 DNS Servers	10.56.110.202	
	10.35.1.203	
IPv4 WINS Server		
NetBIOS over Tcpip En	Yes	
Link-local IPv6 Address	fe80:fce8:a335:9a5a:9e1c%7	
IPv6 Default Gateway		\mathbf{v}
<	>	
		_
	Close	



ADVANCED – Wifi or 3G/4G dongle setting

Step 1: To set up the PDU, plug the Wi-Fi or 3G/4G dongle into USB-A (1 or 2) port.



Step 2: To configure the related Wi-Fi or 3G/4G parameters on the **Wi-Fi setting** of **Advanced** webpage as shown screen. For example, to enable Wi-Fi Control, enter Wi-Fi SSI: TOTOLINK_A1004... etc

.	Summary Overview	Power Mana	igement	Setting	Log	Advanc	ed	External Links	admin	[→ Logout	Language
WIF	Setting										
					WIFI C	onfigure					
	WIFI Control	Disable									
1	WIFI SSID										
1	WIFI Password										
1	WIFI Encryption	None	Ψ.								
1	WIFI Security	None	*								
						Apply					

Step 3: After configured Wi-Fi parameters, the related Wi-Fi status is automatically displayed on the **Wi-Fi or 3G/4G Status.** For example, to enable Wi-Fi Control, enter Wi-Fi SSI: TOTOLINK_A1004... etc as shown screen.

	WIFI Status	
WIFI Connect Status	Disconnection	
WIFI IP Address	0.0.0.0	
WIFI Network Mask	0.0.0.0	
WIFI Gateway	0.0.0.0	
WIFI MAC		
	Reconnect	

Step 4: Please access the dongle IP address and make sure the Wi-Fi or 3G/4G dongle is workable.



ADVANCED – Inlet & Outlet upgrade

Time to time we release improvements on the internal hardware related to metering chip upgrades or calibration, just upload the file as shown on the screen.

S	Summary Overview	Power Management	Setting	Log	Advanced	External Links	admin	[→ Logout	Language
Inlet	& Outlet Upgrade								
	Fir	rmware Update							
	Firmware File:	Apply							
				mage In	formation			_	
				mage m	normation				
Ir	nage Type				Image Version				
Ir	nlet/Outlet				v1.0.17				

ADVANCED – EMD31 upgrade

Time to time we release improvements on the environmental chip calibration, just upload the file as shown on the screen.

S	Summary Overview	Power Management	Setting	Log	Advanced	External Links	2 admin	[→ Logout	Language
EMD	Upgrade								
	Fi	rmware Update			[
	Firmer File								
	Firmware File:	Apply							
				Image Ir	formation				
	nage Version								
			EN	AD Upgra	ade Progress				





Head Office Phone	:	İkitelli Osb. Mah. 8. Cad. Boypaş Blok No: 3a Başakşehir/ İstanbul, Türkiye +90 212 438 25 75 (pbx) Fax: +90 212 438 25 74 E-mail: info@hescs.com
Ankara Office	:	Söğütözü Cad. Koç Kuleleri A Blok Kat:3 No:2/9
		Çankaya / Ankara, Türkiye
Phone	:	+90 312 909 32 59
Factory	:	Kayseri Serbest Bölgesi 8. Cadde No: 5 Kayseri, Türkiye
Phone	:	+90 352 220 01 38 Fax: +90 352 220 01 45

www.hescs.com