

MS-PDU User Manual



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MS-PDU User Manual

1. MS-PDU Summary:

On the trend of future power distribution management technology development, combining the technology requirement of the modern data center application environment, adopting key technology with fully independent intellectual property, the product is designed in combination of network communication, power distribution and network management.

2. Main functions

2.1 Monitor: total load current, on/off status of each outlet, temperature and humidity

2.2 Control: Switch on/off each outlet, set the delay of outlets sequential switching

2.3 Keep the former state of outlets after reset.

2.4 Self-defined alarm: set the threshold of total load current, temperature and humidity.

2.5 System default alarm: when threshold of total load current is exceeded; when threshold of temperature and humidity is exceeded.

2.6 Alarm methods: buzzer alarm; red words alerts on web interface; Email alarm; SNMP trap alarm.

2.7 User management: user name and password configurable.

2.8 Access method: Web based, access via IE; SNMP (v1); Serial access via command line control.

3. Application

3.1 MS-PDU is applicable to server racks, network racks.

3.2 Outlet types and numbers are customized according to specific requirement.

3.3 MS-PDU is applicable to 110VAC/32A(16A), 220VAC/32A(16A).



4. Product structure diagram

MS-PDU 1: Vertical Series



- 1. Mounting brackets
- 2. Wire terminal connection box
- 3. LED display
- 4. NET: Ethernet port
- 5. SER: serial port RS232
- 6. T/H: temperature & humidity sensor port
- 7. RUN: operation state indicator
- 8. STATUS: alarm indicator
- 9. RESET: reset button
- 10. BUTTON: selection button
- 11: outlets indicators
- 12: C14 plug locker
- 13: outlets/sockets
- 14: Mounting brackets



MS-PDU 2: Horizontal Series



- 1. Mounting brackets
- 2. LED display
- 3. RUN indicator
- 4. STATUS: alarm indicator
- 5. Button: selection button
- 6. NET port
- 7. SER: serial port RS232
- 8. T/H: temperature and humidity sensor port
- 9. RESET: reset button
- 10. Outlets
- 11. Mounting brackets
- 12. Overload protection
- 13. Power input



5. Mounting method

Horizontal or Vertical installation.

6. Software instruction

6.1 Software summary

MS-PDU is widely applied to the data centers of industries like network communication, telecom, electric power, finance, insurance, aerospace, transportation, information processing, education, medical, E-government etc.

6.2 Access methods

MS-PDU can be accessed via Web (support Internet Explorer, Google Chrome, Firefox), SNMP v1 and serial.

6.2.1 Web access

How to access the Web?

- 1. Connect one MS-PDU to the PC directly with the patch cable provided.
- 2. Check the IP of the PC, make sure it's in the same network segment of the IP of MS-PDU (The factory default IP is 192.168.1.161).

For example: change the IP of the PC to be 192.168.1.X (X can be 0 to 255 except 161)

3. Input the IP of the MS-PDU into the web browser and enter, the login window will pop up. The default User name is **niveo** and Password is **niveo**. Main interface as below.

ESSIONAL		MS-PI	OU User Manu	al		
MS-PDV ×						X
← → C 🗋 192. 168. 1. 163/hom	ie.html				 公	=
MS-PD	U				Version:1.32	
Device Manager	Item	Output Name	Output State	Output Current(A)	Output Control	
Davice State	1	Output1	ON		On Off	
Device State	2	Output2	ON		On Off	
Threshold Settings	3	Output3	ON		On Off	
Device Settings	4	Output4	ON		On Off	
	5	Output5	ON		On Off	
Service Settings	6	Output6	ON		On Off	
Liner Settinge	7	Output7	ON		On Off	
Oser Settings	8	Output8	ON		On Off	
Network						
SNMP		Input Voltage(V)	Input Cur	rent (A)	All Outputs Control	
E mail Alarm Sattings		202	0		On Off	
E-mail Alarm Settings		Temperature	State (%)	Humi di ty	State (°C)	
Restart		Temperature Sensor1		Humidity Sensor	L	

Main interface includes 3 parts: company logo & product name, Device Manager and Server Settings.

Device Manager has 3 sub menus, see below.



Device State: click it to the main interface displaying the on/off state of outlets and the state of temperature and humidity.

Threshold Settings: to set the threshold of load ampere, temperature and humidity. See below.



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MS-PI	DU					Version:1.32
Device Manager	Item	Output Name	State (A)	Min(A)	Max (A)	Save
Davias State	1	Output1	0			Save
Device State	2	Output2	0			Save
Threshold Settings	3	Output3	0			Save
Device Settings	4	Output4	0			Save
	5	Output5	0			Save
Service Settings	6	Output6	0			Save
Licer Settings	7	Output7	0			Save
Oser Settings	8	Output8	0			Save
Network						
SNMP	Name	State	Min (A)	25	ax (A)	Save
E-mail Alarm Settings						
-	Item	Output Name	Stat	te Min	Max	Save
Restart	1	Temperature Senso	1 0	0	99	Save

Device Settings: see below

MS-P	<u>2DU</u>		Version:1.32
Device Manager	Device Settings		
Device State	Device Name:	pdu	
Threshold Settings	Output power on delay:	1s	
Device Settings	Output power off delay:	1s	
Service Settings	Save		
User Settings			
Network			
SNMP			
E-mail Alarm Settings			
Destort			

Device Name: set the name of PDU (name length 1-16 digits)



Output power on delay: set the interval of outlets sequential switching on (1-255s).

Output power off delay: set the interval of outlets sequential switching off (1-255s).

Web server port: fill in the port and save (1-65535).

Service Settings: see below

Service Settings
User Settings
Network
SNMP
E-mail Alarm Settings
Restart

User Settings: set or modify the user name and password (Max. 16 digits)

	<u>PDU</u>		version:1.32
Device Manager	User Settings		
Device State	User Name:	clever	
Threshold Settings	Password:	•••••	
Device Settings	Confirm Password:		
Service Settings	Save		
User Settings			
Network			
SNMP			
E-mail Alarm Settings			
Restart			

Network: System IP: 192.168.1.163 (factory default IP) Subnet Mask: 255.255.255.0 Default Gateway: 192.168.1.1



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DNS: default as 202.96.128.86. Please fill in the right DNS in order to make the email alert. Note: a restart of the software is necessary after a modification of the network settings.

C 192. 168. 1. 163/	home.html		
MS-F	<u>PDU</u>		Version:1.32
Device Manager	Network Setting:		
Device State	System IP:	192. 168. 1. 163	
Threshold Settings	Subnet Mask:	255.255.255.0	
Device Settings	Default Gateway:	192.168.1.1	
	DNS :	202.96.128.86	
Service Settings	Save		
User Settings			
Network			
SNMP			
E-mail Alarm Settings			
Restart			

SNMP: see below (support SNMP v1)

MS-F	PDU		Version 1.3
			veraion, r.o.
Device Manager	SNMP		
Device State	get community:	public	
Threshold Settings	set community:	private	
Device Settings	trap1 ip:	0.0.0.0	
	trap2 ip:	0.0.0.0	
Service Settings	Save		
User Settings			
Network			
SNMP			
E-mail Alarm Settings			
Restart			

The default get community is "public" and set community is "private". User can modify according to the specific application.

Fill in the trap address of SNMP management platform, trap alarm will be sent automatically. There are 2 Trap addresses.



Note: a software restart is necessary after a setting of SNMP.

Email Alarm Settings: see below

🖻 MS-PDV 🛛 🗙 📃	5		
	home.html		کی ا
Device Manager	SMTP Settings		
Device State	SMTP Account:		
Threshold Settings	Password:		
Device Settings	SMTP Server: Port:	25	
Service Settings	Sender e-mail address:		
User Settings	Testing	Save	
Network			
SNMP			
E-mail Alarm Settings			
Restart			
L			

Set the SMTP including SMTP account, password, SMTP server and port and save.

Click Testing and fill in the testing email address. If the test email is received, the setting is successful.

Restart: see below

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← → C 🗋 192.168.1.163/home.	.html		☆ =
MS-PDL	J		Version:1.32
Device Manager	System Settings		
Device State	Select Activity:	Restart	
Threshold Settings	Save	Restart Restore To Default Settings	
Device Settings			
Service Settings			
User Settings			
Network			
SNMP			
E-mail Alarm Settings			
Restart			
	1		

Select Activity: to restart the software or restore to factory default settings.

Note: 1. Click RESET button, product will restart.

2.Click BUTTON and RESET at the same time, will restore the factory setting.

3.Buzzing will not alarm while restarting and restoring the factory setting.

6.2.2 SNMP Access

The software supports SNMP v1. A MIB file is provided with an enterprise number.

OID table as below.

Item	OID	Description	Mode
Device Name	1.3.6.1.4.1.30966.10.2.1.1	Name of the device	Read/Write
Device Type	1.3.6.1.4.1.30966.10.2.1.2	Type of the device	Read/Write
Output Num	1.3.6.1.4.1.30966.10.2.1.3	Number of outlets	Read
Input Voltage	1.3.6.1.4.1.30966.10.2.2.1	Input voltage	Read
Input Current	1.3.6.1.4.1.30966.10.2.2.2	Input ampere	Read
Output Current1	1.3.6.1.4.1.30966.10.2.3.1	Ampere of outlet No.1	Read
Output Current2	1.3.6.1.4.1.30966.10.2.3.2	Ampere of outlet No.2	Read
Output Current3	1.3.6.1.4.1.30966.10.2.3.3	Ampere of outlet No.3	Read
Output Current4	1.3.6.1.4.1.30966.10.2.3.4	Ampere of outlet No.4	Read
Output Current5	1.3.6.1.4.1.30966.10.2.3.5	Ampere of outlet No.5	Read
Output Current6	1.3.6.1.4.1.30966.10.2.3.6	Ampere of outlet No.6	Read
Output Current7	1.3.6.1.4.1.30966.10.2.3.7	Ampere of outlet No.7	Read
Output Current8	1.3.6.1.4.1.30966.10.2.3.8	Ampere of outlet No.8	Read
Output Current9	1.3.6.1.4.1.30966.10.2.3.9	Ampere of outlet No.9	Read
Output Current10	1.3.6.1.4.1.30966.10.2.3.10	Ampere of outlet No.10	Read
Output Current11	1.3.6.1.4.1.30966.10.2.3.11	Ampere of outlet No.11	Read
Output Current12	1.3.6.1.4.1.30966.10.2.3.12	Ampere of outlet No.12	Read
Output Current13	1.3.6.1.4.1.30966.10.2.3.13	Ampere of outlet No.13	Read
Output Current14	1.3.6.1.4.1.30966.10.2.3.14	Ampere of outlet No.14	Read
Output Current15	1.3.6.1.4.1.30966.10.2.3.15	Ampere of outlet No.15	Read
Output Current16	1.3.6.1.4.1.30966.10.2.3.16	Ampere of outlet No.16	Read

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Output Current17	1.3.6.1.4.1.30966.10.2.3.17	Ampere of outlet No.17	Read
Output Current18	1.3.6.1.4.1.30966.10.2.3.18	Ampere of outlet No.18	Read
Output Current19	1.3.6.1.4.1.30966.10.2.3.19	Ampere of outlet No.19	Read
Output Current20	1.3.6.1.4.1.30966.10.2.3.20	Ampere of outlet No.20	Read
Output Current21	1.3.6.1.4.1.30966.10.2.3.21	Ampere of outlet No.21	Read
Output Current22	1.3.6.1.4.1.30966.10.2.3.22	Ampere of outlet No.22	Read
Output Current23	1.3.6.1.4.1.30966.10.2.3.23	Ampere of outlet No.23	Read
Output Current24	1.3.6.1.4.1.30966.10.2.3.24	Ampere of outlet No.24	Read
Switch1	1.3.6.1.4.1.30966.10.2.4.1	On/off state of outlet No.1	Read/Write
Switch2	1.3.6.1.4.1.30966.10.2.4.2	On/off state of outlet No.2	Read/Write
Switch3	1.3.6.1.4.1.30966.10.2.4.3	On/off state of outlet No.3	Read/Write
Switch4	1.3.6.1.4.1.30966.10.2.4.4	On/off state of outlet No.4	Read/Write
Switch5	1.3.6.1.4.1.30966.10.2.4.5	On/off state of outlet No.5	Read/Write
Switch6	1.3.6.1.4.1.30966.10.2.4.6	On/off state of outlet No.6	Read/Write
Switch7	1.3.6.1.4.1.30966.10.2.4.7	On/off state of outlet No.7	Read/Write
Switch8	1.3.6.1.4.1.30966.10.2.4.8	On/off state of outlet No.8	Read/Write
Switch9	1.3.6.1.4.1.30966.10.2.4.9	On/off state of outlet No.9	Read/Write
Switch10	1.3.6.1.4.1.30966.10.2.4.10	On/off state of outlet No.10	Read/Write
Switch11	1.3.6.1.4.1.30966.10.2.4.11	On/off state of outlet No.11	Read/Write
Switch12	1.3.6.1.4.1.30966.10.2.4.12	On/off state of outlet No.12	Read/Write
Switch13	1.3.6.1.4.1.30966.10.2.4.13	On/off state of outlet No.13	Read/Write
Switch14	1.3.6.1.4.1.30966.10.2.4.14	On/off state of outlet No.14	Read/Write
Switch15	1.3.6.1.4.1.30966.10.2.4.15	On/off state of outlet No.15	Read/Write
Switch16	1.3.6.1.4.1.30966.10.2.4.16	On/off state of outlet No.16	Read/Write
Switch17	1.3.6.1.4.1.30966.10.2.4.17	On/off state of outlet No.17	Read/Write
Switch18	1.3.6.1.4.1.30966.10.2.4.18	On/off state of outlet No.18	Read/Write
Switch19	1.3.6.1.4.1.30966.10.2.4.19	On/off state of outlet No.19	Read/Write
Switch20	1.3.6.1.4.1.30966.10.2.4.20	On/off state of outlet No.20	Read/Write
Switch21	1.3.6.1.4.1.30966.10.2.4.21	On/off state of outlet No.21	Read/Write



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Switch22	1.3.6.1.4.1.30966.10.2.4.22	On/off state of outlet No.22	Read/Write
Switch23	1.3.6.1.4.1.30966.10.2.4.23	On/off state of outlet No.23	Read/Write
Switch24	1.3.6.1.4.1.30966.10.2.4.24	On/off state of outlet No.24	Read/Write

6.2.3 Serial access

Baud rate is 9600.

There are 5 commands: OUTPUT, INPUT, SWITCH, RESET and REBOOT.

OUTPUT command: OUTPUT X

For example: send command OUTPUT 1, get output 1 current: X A.

INPUT command: INPUT X (1 is voltage, 2 is current)

For example: send command INPUT 1, get total voltage: X V

send command INPUT 2, get total current: X A

SWITCH command: SWITCH X

For example: send command SWITCH 1, get the on/off state of output 1.

RESET command: to reset to factory default configuration.

REBOOT command: to reset the PDU

7. Technical parameters

No	Item		Parameters
1	Input	Rated input voltage	110/220V~ 0/60 Hz
		Input plug	Standard: IEC60309 plug
		Cable	16A: 3×2.5mm ² , 32A: 3×6.0mm ²
		Max. load	16A, 32A
		Overload protection	Master circuit breaker 1P
2	Output	Rated output voltage	110/220VAC
		Max. load	16A, 32A
		Outlet types	Standard: IEC320 C13
			Other sockets optional
		Outlet numbers	Optional
3	Ports	NET port	1 x RJ45
		Serial port	1 x RJ45



		Temperature/humidity sensor port	1 x RJ11	
4	Display	Operation state	1 x LED	
		Error state	1 x LED	
5	Digital ammeter		Full scale: 32A/16A	
		Total ampere	Accuracy: $\pm 1 \% + 0.2$	
			Resolution: 200mA; Response: 400ms	
			Full scale: 25A	
		Individual ampere	Accuracy: ±1%+0.1	
			Resolution: 100mA; Response: 400ms	
,	Temperature		Working condition: -40°C~+100°C,	
6			Accuracy: ±1°C; Response: 4s	
6	Humidity		Accuracy: ±5 % RH	
			Response: 400ms	
7	Dimension	mension $L \times W \times H$ $X^2 \times 66.6 \times 44.4 mm$		
8	Case	Color	Black	
9		Mounting brackets	2pcs	
	Eittings	Ethernet wire	2M, blue	
	Fittings	Serial wire	2M, yellow	
		User Manual	1 x CD	
10	Optional fittingSensorTemperature &		Temperature & humidity sensor	
11		Working condition	0°C∼55°C	
	Environmen	t Relative humidity	10~90%	
		Storage	-20°C~+70°C	
12	ROHS	YES	YES	