Connectivity

ACCESSORIES

IEC 62443-4-2 CERTIFIED

NetMan 208C
CARD - ETHERNET - SNMP

The NetMan 208C network card allows the UPS to be managed directly over a 1Gbps LAN using the main network communication protocols (TCP/IP, HTTPS, and SNMP). It offers a high level of protection against cyber threats thanks to new encryption, integrity and authentication mechanisms, suitable for today's secure connectivity requirements. It is the ideal solution for integrating UPS devices into Ethernet networks via Modbus/TCP and BACnet/IP protocols. It has been developed to integrate UPS systems into medium and large networks, ensuring a high level of reliability in secure communication between the UPS and associated management systems. It supports features such as LDAP and Active Directory user authentication and integrates with VMware ESXi and vCenter for VM and Host shutdown. Compatible with PowerShiel[3] and PowerNetGuard.

FEATURES
- 32 bit dual core Arm Cortex processor;
- Secure Boot and integrity check;
- 1 Gb Ethernet - IPv4/IPv6 network supported;
- Backup and restore configuration option between NetMan 208C family cards
- Configurable firewall
- Compatible with PowerShield[3] and PowerNetGuard;
- SNMP v1, v2 and v3 with RFC1628 for PowerNetGuard and NMS connection;
- SNMP v1, v2 and v3 with RFC3433 for the management of environmental sensors;
- HTTPS for UPS control via web browser;
- LDAP and Active Directory integration for centralised authentication mechanism support;
- SMTP for alarm notifications and UPS status updates via email;
- Modbus/TCP;
- BACNET/IP;
- Event and data notifications via e-mail, SYSLOG, and JSON
- Permits to initiate live migration of virtual machines (VM) to automatically and transparently migrate VMs during power disturbance to protected devices by UPS with migration systems such as VMware

and vMotion™. NetMan 208C can monitor and manage UPS either inside or outside the data center. Can also measure power consumption to help calculate power usage effectiveness (PUE), the standard metric utilized for gauging Data Center power efficiency.
- Maximum expandability;
- Events log and data management;
- Wake-on-LAN management for starting computers via TCP/IP network;
- Other standards: DHCP, 802.1x , DNS, RARP, NTP, ICMP;
- Management of environmental sensors (optional);
- Configurable via SSH sessions and web;
- Firmware upgradeable via web browser.
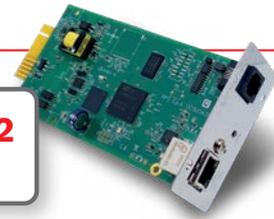
Environmental sensor
FOR NETMAN 208C

The NetMan 208C environmental sensors is able to monitor and record environmental conditions, as well as activities in protected areas and the area where the UPS is installed.
The environmental sensors allow management and control to be extended to cover the area around the UPS, monitoring the temperature and humidity and driving cooling fans or locks. Values are provided via Internet, SNMP and via

PowerShield[3] software. PowerShield[3] can be used to manage sensor operating states in order to send messages. Refer to PowerShield[3] software documentation for further information. NetMan 208C can manage up to 3 separate sensors. Environmental sensors are quick to install thanks to their small footprint and they do not require a separate external power supply. Thanks to the self-learning sensors, configuration is also rapid and intuitive.

Available sensor:
-55 +60 °C Temperature 0-100% humidity Sensor and I/O digital 0-12 Vdc In, 1 A max Out at 48 Vdc Sensor.

CONNECTIVITY EXAMPLES

Index of configurations

Connecting a UPS to other devices, sensors, computers and other specific devices, means on the one hand allowing the user to monitor UPS operating parameters and prevent critical situations and on the other hand provides the UPS with input parameters from the working environment. By processing these parameters the UPS is able to activate/ deactivate itself, communicate its status and much more.

This brief overview summarises some of the basic connectivity configurations, grouped according to the end purpose and situation surrounding each case.

- **Point to point connections;**
- **Multipoint connection;**
- **Connection for UPS in parallel setup;**
- **Connection with several systems in parallel setup and STS;**
- **Field bus connections;**
- **Bus connections over Ethernet;**
- **Field bus connections;**
- **Serial bus connections.**

POINT TO POINT CONNECTIONS

Controlling the UPS from 1 workstation

|	
1	UPS connected to load
2	Local computer with PowerShield[3] version FREE
▬	USB or RS232
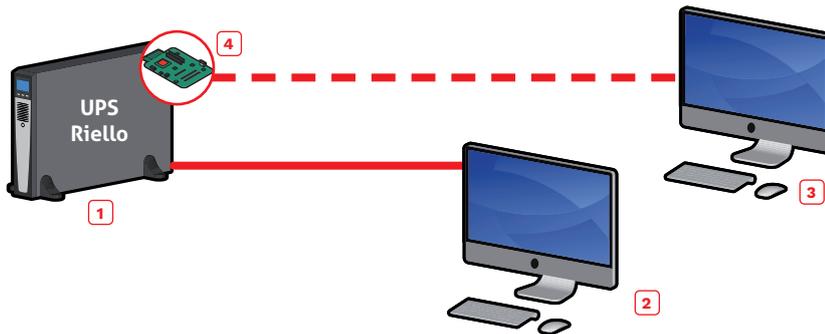
Controlling the UPS from different workstations

1	UPS connected to load
2	Local computer with PowerShield[3] version FREE
3	Local computer with PowerShield[3] software version FULL
4	MultiCom 372 board
▬ ▬	RS232
▬	USB or RS232
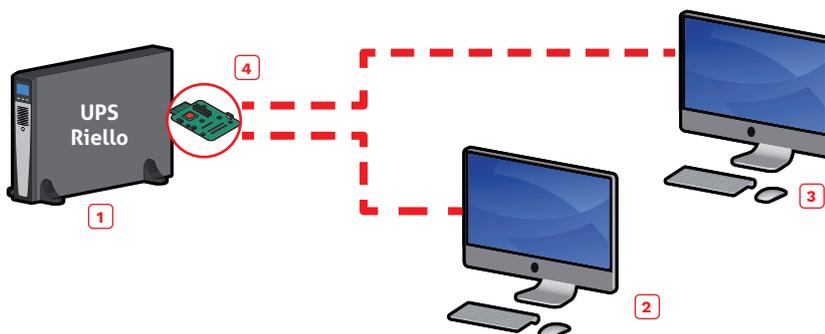
UPS control from several workstations, using 2 serial ports

|	
1	UPS connected to load
2	Local computer with PowerShield[3] version FREE
3	Local computer with PowerShield[3] version FREE
4	MultiCom 352 board
▬ ▬	RS232

DISTRIBUTED CONNECTION (MULTIPOINT)
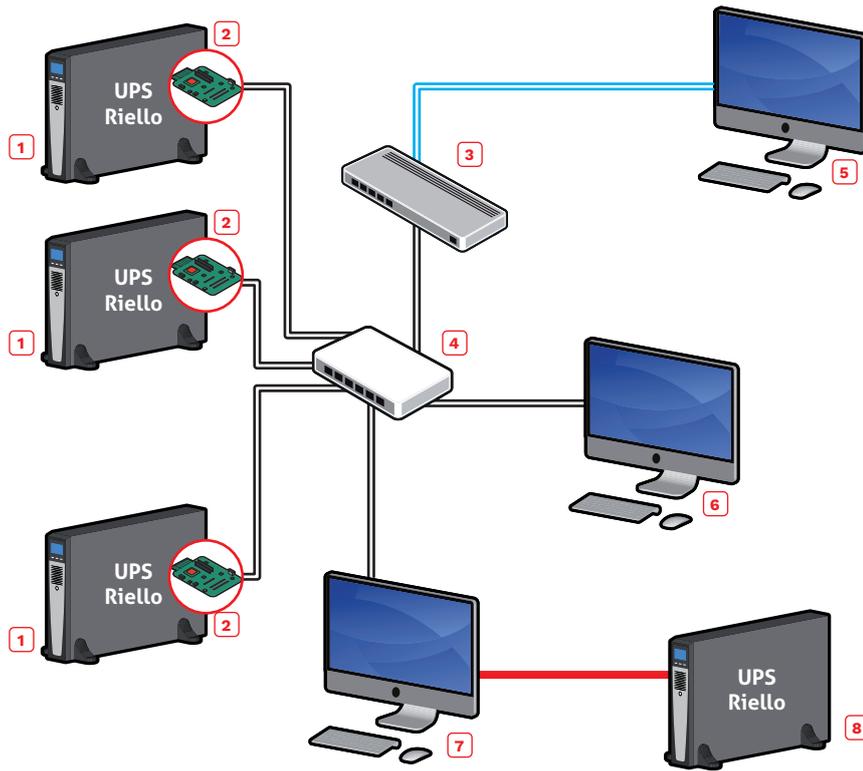
Connection with more than 1 UPS. The FULL version of PowerShield[3] software is required as well as a NetMan 208C communication board on each UPS.

1	UPS connected to load
2	NetMan 208C board
3	Firewall
4	Switch
5	Remote computer connected via web
6	Local computer
7	Local computer that controls the UPS (8) via USB or RS232 and UPS (1) via LAN and Ethernet
8	UPS connected to load
▬	USB or RS232
═	Ethernet
═	World Wide Web

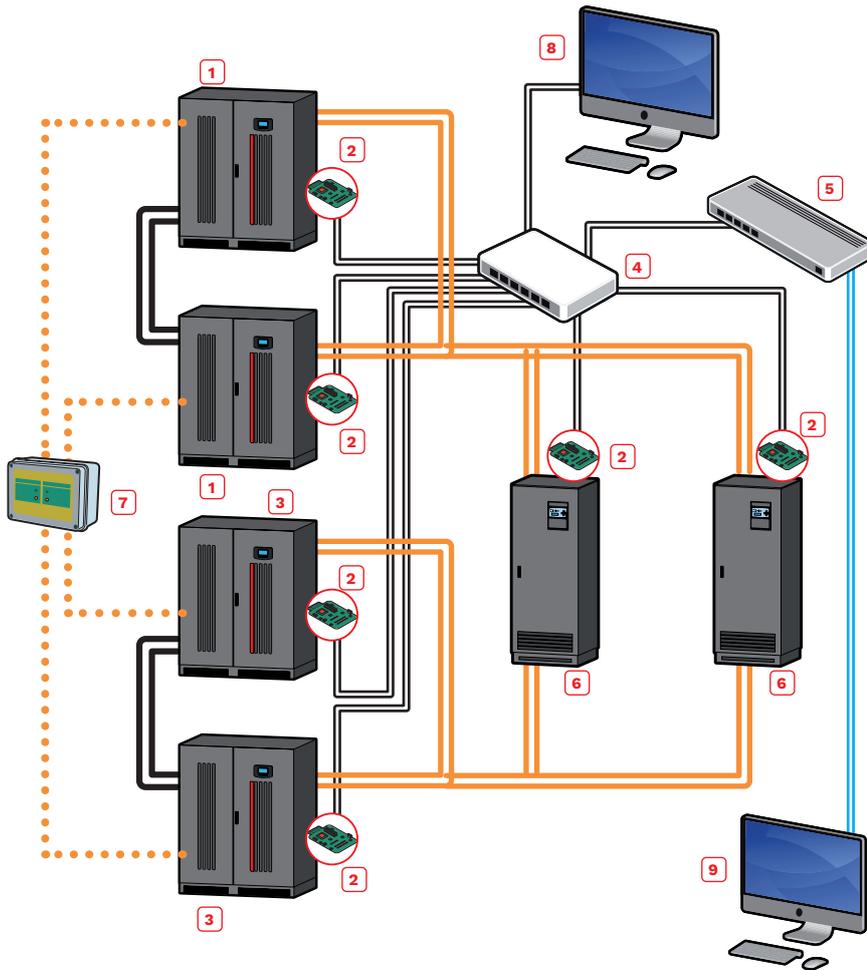# CONNECTION FOR UPS IN PARALLEL SETUP
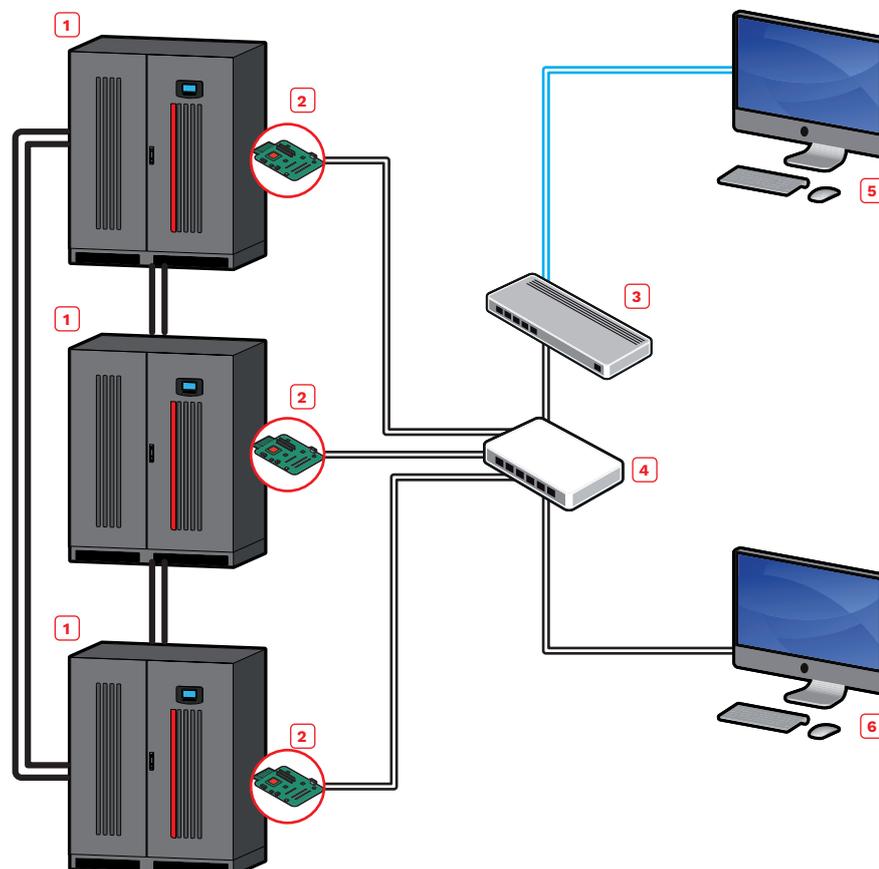
The FULL version of PowerShield[3] software should be used for managing setups with several UPS installed in parallel and each UPS must have a NetMan 208C board installed.

|	
1	UPS in parallel setup connected to the load
2	NetMan 208C board
3	Firewall
4	Switch
5	Remote computer connected via web
6	Local computer
═	Ethernet
═	World Wide Web
▬	Parallel setup bus

CONNECTION WITH SEVERAL SYSTEMS IN PARALLEL AND STS

The FULL version of PowerShield[3] software should be used for managing setups with several UPS installed in parallel and each UPS must have a NetMan 208C board installed.

1	UPS arranged in parallel connected to an STS channel
2	NetMan 208C board
3	UPS arranged in parallel connected to an STS channel
4	Switch
5	Firewall
6	STS connected to load
7	UGS
8	Local computer with PowerShield[3] software version FULL
9	Remote computer connected via web, running PowerShield[3] software version FULL

```
•••• UGS management of parallel setup
──── Ethernet
──── World Wide Web
──── Parallel setup bus
──── Power connection
```
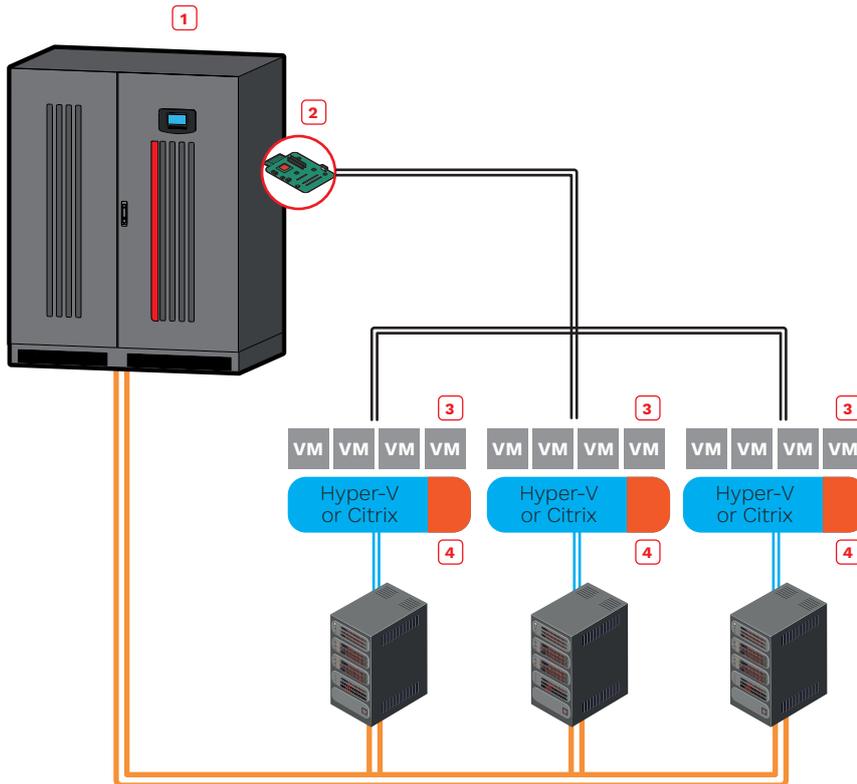
FIELD BUS CONNECTION OVER ETHERNET
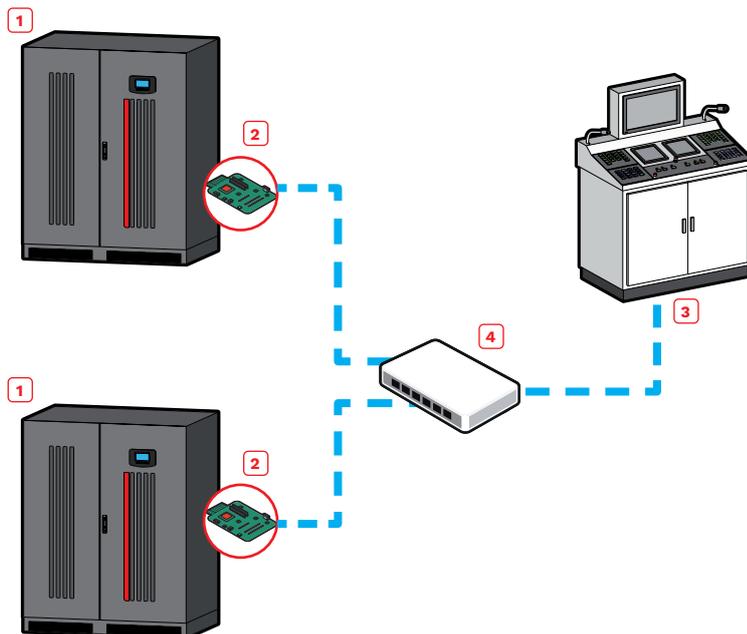
For UPS management in industrial or civil environments requiring Modbus protocol communication over Ethernet.

1	UPS connected to load
2	NetMan 208C board
3	SCADA management system
4	Switch

```
──── Modbus / TCP over Ethernet
```

POWERSHIELD³ ON VIRTUALISED SYSTEMS: MICROSOFT HYPER-V; CITRIX

1 UPS

2 NetMan 208C

3 Virtualised system

3 VM VM VM VM
Hyper-V or Citrix
4

3 VM VM VM VM
Hyper-V or Citrix
4

3 VM VM VM VM
Hyper-V or Citrix
4

PowerShield³ software should be used for managing setup with UPS, a specific script to shut down the virtualised system must be used, UPS must have a NetMan 208C board installed.

1	UPS
2	NetMan 208C
3	Virtualised system
4	PowerShield³
▬▬	Ethernet
▬▬	Power connection

NETMAN 208C ON VIRTUALISED SYSTEMS: WMWARE ESXI

1 UPS

2 NetMan 208C

3

VMware vCenter Server

Manage

VM VM VM VM
VMware ESXi

VM VM VM VM
VMware ESXi

VM VM VM VM
VMware ESXi
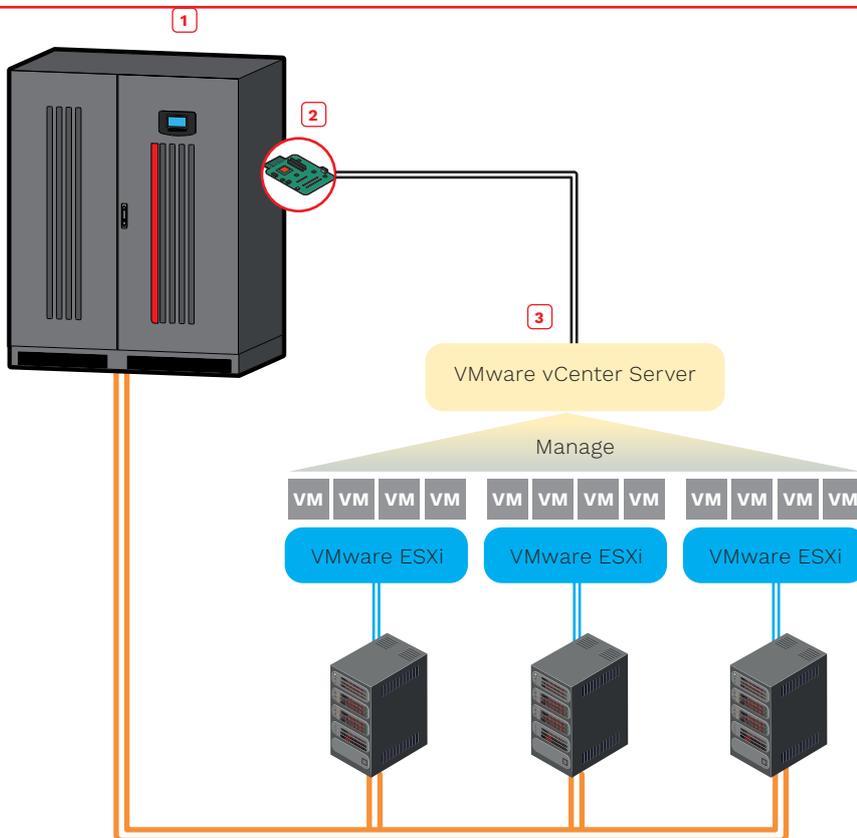
NetMan 208C should be used for managing Esxi hosts and vCenter servers, enabling you to manage your virtual network to perform shutdown or live migrations of active virtual machines as well as shutdown of physical hosts with delay and priority.

1	UPS
2	NetMan 208C
3	Virtualised system
▬▬	Ethernet
▬▬	Power connection