



# PDU eXpert UK Ltd.

## Innovation in Power Management.

**PDU eXpert UK Ltd** is a proven innovator of power manufacturing and power management solutions, offering the latest technologies in intelligent power with complete "all in one" **IP PDU solutions** for data centres of all sizes.

We offer an extensive range of **basic** and **intelligent PDUs**, automatic transfer switches (ATS), Racks, UPS, Fan Trays etc. giving you a complete robust and secure power solution that can be monitored and controlled to optimize efficiency and increase productivity.

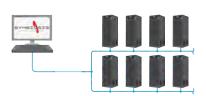
Our KWX & KWB range of **basic** and **intelligent PDUs** give the data centre managers the ability to monitor the network's power consumption at a single outlet, power strip or server rack this

combined with environmental monitoring technologies offers complete control and security.



**PDU eXpert's** Intelligent solutions provide true RMS value on each power circuit; our products can be utilised to accurately load and maximise power circuit by eliminating the power scheduling and forecasting, therefore improving Data Centre **power management**. Controlling the power consumption and the environmental surroundings in the Data Centre or Server Room can not only increase the life expectancy of the IT hardware but also prevents downtime caused by an overload of circuits.

Although we have an ever growing extensive range we also offer **bespoke power solutions**. You can talk to one of our advisors about your requirements so we can design a solution specific to your needs.





"Manage all your smart devices in one place with Symbiosis management software"

# "Quality Manufactured PDU's to British & EU Standards"

#### **Our Solutions...**

- Symbiosis Energy control software for optimizing power usage and achieving "Green IT" in small to medium data centres
- Intelligent Power Distribution with total and per outlet monitoring, switching and scheduling with WiFi capabilities
- Automatic Transfer Switches (ATS) seamlessly switch loads between primary and backup power sources
- ✓ Built in Environmental Monitoring Software to our intelligent ranges to monitor the server rack or data centres direct environment conditions and offer security solutions
- A wide range of Uninterruptible Power Supply (UPS) solutions for small office / shop environments too medium to large Data Centres
- Rack mountable basic PDUs with a range of outlet options: UK 13A, IEC C13/19 (inc. lockable and fused) Schuko, Nema, 16A & 32A Commando.
- ✓ Leads, cables and breaker boxes
- Server rack 1U and inline fan trays and panel mount fan systems
- ✓ Up to 48U server racks, wall cabinets and swing frame cabinets
- In-house designers for bespoke solutions



# PDU expert KWB - Basic PDU range

- 13A UK outlet horizontal PDUs
- 13A UK outlet vertical PDUs
- IEC C13 outlet horizontal PDUs
- IEC C13 outlet vertical PDUs
- IEC C13 Click Lock horizontal PDUs
- IEC C13 Click Lock vertical PDUs
- IEC C13 Individually Fused horizontal PDUs
- IEC C13 Individually Fused vertical PDUs
- IEC C13 Slide Lock horizontal PDUs
- IEC C13 Slide Lock vertical PDUs
- IEC C19outlet horizontal PDUs
- IEC C19 outlet vertical PDUs
- IEC C19 Click Lock horizontal PDUs
- IEC C19 Click Lock vertical PDUs



# 13A UK 19" Horizontal 1U PDUs



**KWB-PDU** - 1U 19" rack mountable 13A UK outlet power distribution units.

# 19" Horizontal range:

**KWB-PDU4H** (4x UK outlet)

**KWB-PDU5H** (5x UK outlet)

KWB-PDU6H (6x UK outlet)

KWB-PDU8H (8x UK outlet, no switch)

**Dimensions** = 440mm x 44mm x 60mm (W x H x D) **Mounting length** = 483mm (19")

**Connector options:** 













Customer note: Due to continual improvements in design or otherwise, this product may differ slightly from the illustration(s).



- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 13A operating voltage 250V AC
- ✓ Manufactured using BS1363 tee sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# 13A UK Vertical 0U PDUs



**KWB-PDU** - 0U vertical rack mountable 13A UK outlet power distribution units.

# **0U Vertical range:**

KWB-PDU4V (340mm 4x UK outlet)

KWB-PDU5V (340mm 5x UK outlet)

KWB-PDU6V (460mm 6x UK outlet)

KWB-PDU8V (580mm 8x UK outlet)

**KWB-PDU10V** (704mm 10x UK outlet)

KWB-PDU12V (825mm 12x UK outlet)

**KWB-PDU16V** (1060mm 16x UK outlet)

KWB-PDU20V (1300mm 20x UK outlet)

**Dimensions** = Length x 52mm x 40mm (W x H x D)

## **Connector options:**











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- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- Current rating 13A operating voltage 250V AC
- Manufactured using BS1363 tee sockets
- Textured black powder coated mild steel
- √ 13A UK plug as standard or a standard optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon





# IEC C13 19" Horizontal 1U PDUs



**KWB-IEC** - 1U 19" rack mountable IEC C13 outlet power distribution units.

# 19" Horizontal range:

KWB-IEC6H (6x IEC C13 outlets)

**KWB-IEC8H** (8x IEC C13 outlets)

**KWB-IEC10H** (10x IEC C13 outlets)

**KWB-IEC12H** (12x IEC C13 outlets)

**KWB-IEC16H** (16x IEC C13 outlets, no switch)

**Dimensions** = 440mm x 44mm x 60mm (W x H x D) **Mounting length** = 483mm (19")

**Connector options:** 











Customer note: Due to continual improvements in design or otherwise, this product may differ slightly from the illustration(s).



- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 10A operating voltage 250V AC
- ✓ Manufactured using IEC C13 sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# IEC C13 Vertical 0U PDUs



**KWB-IEC** - 0U vertical rack mountable IEC C13 outlet power distribution units.

# **0U vertical range:**

KWB-IEC6V (345mm 6x IEC C13 outlets)

KWB-IEC8V (345mm 8x IEC C13 outlets)

KWB-IEC10V (377mm 10x IEC C13 outlets)

KWB-IEC12V (420mm 12x IEC C13 outlets)

KWB-IEC16V (530mm 16x IEC C13 outlets)

KWB-IEC20V (630mm 20x IEC C13 outlets)

KWB-IEC24V (730mm 24x IEC C13 outlets)

**Dimensions** = Length x 52mm x 40mm (L x W x H)

# **Connector options:**











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- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 10A operating voltage 250V AC
- ✓ Manufactured using IEC C13 sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# Lockable IEC C13 19" 1U PDUs



**KWB-IEC** - 1U 19" rack mountable IEC C13 click lock outlet power distribution units.

# 19" Horizontal range:

KWB-IEC4H CLICK (4x IEC C13 Click lock outlets)
KWB-IEC6H CLICK (6x IEC C13 Click lock outlets)
KWB-IEC8H CLICK (8x IEC C13 Click lock outlets)
KWB-IEC10H (10x IEC C13 Click lock outlets, no switch)

**Dimensions** = 440mm x 44mm x 60mm (W x H x D) **Mounting length** = 483mm (19")

**Connector options:** 











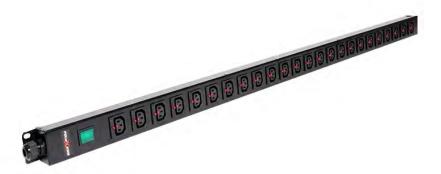
Customer note: Due to continual improvements in design or otherwise, this product may differ slightly from the illustration(s).

# MADE IN BRITAIN

- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 10A operating voltage 250V AC
- ✓ Manufactured using IEC C13 lockable sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# Lockable IEC C13 0U PDUs



**KWB-IEC** Click - 0U vertical click lock IEC C13 outlet power distribution units.

# **0U vertical range:**

KWB-IEC6VCLICK (345mm 6x Lockable IEC C13 outlets)
KWB-IEC8VCLICK (345mm 8x Lockable IEC C13 outlets)
KWB-IEC8VCLICK (345mm 10x Lockable IEC C13 outlets)
KWB-IEC8VCLICK (345mm 12x Lockable IEC C13 outlets)
KWB-IEC8VCLICK (345mm 24x Lockable IEC C13 outlets)

**Dimensions** = Length x 52mm x 40mm (L x W x H)

**Connector options:** 











Customer note: Due to continual improvements in design or otherwise, this product may differ slightly from the illustration(s).



- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 10A operating voltage 250V AC
- ✓ Manufactured using IEC C13 lockable sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# Fused IEC C13 19" 1U PDUs



KWB-IEC - 1U 19" rack mountable fused IEC C13 outlet power distribution units.

# 19" Horizontal range:

**KWB-IEC6HINDFS** (6x IEC C13 fused outlets) **KWB-IEC8HINDFS** (8x IEC C13 fused outlets) **KWB-IEC10HINDFS** (10x IEC C13 fused outlets)

**Dimensions** = 440mm x 44mm x 60mm (W x H x D) Mounting length = 483mm (19")

**Connector options:** 













Customer note: Due to continual improvements in design or otherwise, this product may differ slightly from the illustration(s).



- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- Current rating 10A operating voltage 250V AC
- Manufactured using IEC C13 fused sockets
- Textured black powder coated mild steel
- √ 13A UK plug as standard or a standard optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# Fused IEC C13 0U PDUs



**KWB-IEC** - 0U vertical fused IEC C13 outlet power distribution units.

# **0U vertical range:**

**KWB-IEC8VINDFS** (453mm 8x fused IEC C13 outlets) **KWB-IEC10VINDFS** (540mm 10x fused IEC C13 outlets) **KWB-IEC12VINDFS** (630mm 12x fused IEC C13 outlets) **KWB-IEC16VINDFS** (775mm 16x fused IEC C13 outlets)

**KWB-IEC20VINDFS** (945mm 20x fused IEC C13 outlets) **KWB-IEC24VINDFS** (1009mm 20x fused IEC C13 outlets)

**Dimensions** = Length x 52mm x 40mm (L x W x H)

**Connector options:** 











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# MADE IN BRITAIN

- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 10A operating voltage 250V AC
- ✓ Manufactured using IEC C13 fused sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# Slide Lock IEC C13 1U 19" PDUs



**KWB-SL** - 1U 19" rack mountable IEC C13 slide lock outlet power distribution units.

# 19" Horizontal range:

**KWB-6C3SL** (6x IEC C13 slidelock outlets) **KWB-8C3SL** (8x IEC C13 slidelock outlets) **KWB-10C3SL** (10x IEC C13 slidelock outlets)

**Dimensions** = 440mm x 44mm x 60mm (W x H x D) **Mounting length** = 483mm (19")

# **Connector options:**





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- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 10A operating voltage 250V AC
- ✓ Manufactured using IEC C13
  Slide Lock sockets
- ✓ Textured black powder coated Aluminium
- ✓ Optional IEC C14 or IEC C20 connector
- ✓ 3M 3 core H05VV-F 1.5mm lead











# Slide lock IEC C13 0U PDUs

**KWB-SL** - Rack mountable slide lock IEC C13 Vertical power distribution unit.

# 0U vertical range:

KWB-20C3SL - 1425mm (20x Slide Lock IEC C13 outlets) KWB-24C3SL - 1657mm (24x Slide Lock IEC C13 outlets) KWB-20C3SL - 1540mm (30x Slide Lock IEC C13 outlets)

**Dimensions** = Length  $\times$  50mm  $\times$  55mm (W  $\times$  H  $\times$  D)

# Connector options:













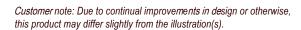
"Quality manufactured PDUs to British & EU standards"

- ✓ Manufactured to BS5733, with UL, CSA & VDE approved components
- Earth bonded for total safety, compliant with RoHS certification
   WEEE standards
- ✓ 24 X IEC C13 Slide Lock Sockets
- Current rating 10A operating voltage 250V AC.
- Textured black powder coated Aluminium
- ✓ Standard Hardwired with 3 core
  H055V-F 3-meter lead to a
  selection of connectors.
- ✓ LSZH leads available











# IEC C19 19" Horizontal 1U PDUs



**KWB-IEC C19** - 1U 19" rack mountable IEC C19 outlet power distribution units.

# 19" Horizontal range:

**KWB-IEC4HC19** (4x IEC C19 outlets)

KWB-IEC6 HC19 (6x IEC C19 outlets)

KWB-IEC8 HC19 (8x IEC C19 outlets)

KWB-IEC10 HC19 (10x IEC C19 outlets, no switch)

**Dimensions** = 440mm x 44mm x 60mm (W x H x D) **Mounting length** = 483mm (19")

**Connector options:** 











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#### MADE IN BRITAIN

- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 16A operating voltage 250V AC
- ✓ Manufactured using IEC C19 sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# IEC C19 Vertical 0U PDUs



**KWB-IEC C19** - 0U rack mountable IEC C19 outlet power distribution units.

# **0U vertical range:**

KWB-IEC4VC19 (405mm, 4x IEC C19 outlets)

KWB-IEC6VC19 (405mm, 6x IEC C19 outlets)

KWB-IEC8VC19 (495mm, 8x IEC C19 outlets)

KWB-IEC10VC19 (585mm, 10x IEC C19 outlets)

KWB-IEC12VC19 (675mm, 12x IEC C19 outlets)

**Dimensions** = Length x 52mm x 40mm (L x W x H)

**Connector options:** 











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- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 16A operating voltage 250V AC
- ✓ Manufactured using IEC C19 sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# Lockable IEC C19 19" 1U PDUs



**KWB-IEC C19** - 1U 19" rack mountable lockable IEC C19 outlet power distribution units .

# 19" Horizontal range:

KWB-IEC4HC19CLICK (4x IEC C19 click lock outlets)
KWB-IEC6HC19CLICK (6x IEC C19 click lock outlets)
KWB-IEC8HC19CLICK (8x IEC C19 click lock outlets)
KWB-IEC10HC19CLICK (10x IEC C19 click lock outlets, no switch)

**Dimensions** = 440mm x 44mm x 60mm (W x H x D) **Mounting length** = 483mm (19")

**Connector options:** 











Customer note: Due to continual improvements in design or otherwise, this product may differ slightly from the illustration(s).



- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 16A operating voltage 250V AC
- ✓ Manufactured using lockable IEC C19 sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# Lockable IEC C19 Vertical 0U PDUs



KWB-IEC C19 - 0U rack mountable Lockable IEC C19 outlet power distribution units.

# **0U vertical range:**

KWB-IEC6VC19CLICK (405mm, 4 x IEC C19 click lock outlets) KWB-IEC8VC19CLICK (495mm, 6 x IEC C19 click lock outlets) **KWB-IEC10VC19CLICK**(585mm, 8 x IEC C19 click lock outlets) KWB-IEC12VC19CLICK (675mm, 10x IEC C19 click lock outlets)

**Dimensions** = Length x 52mm x 40mm (L x W x H)

**Connector options:** 













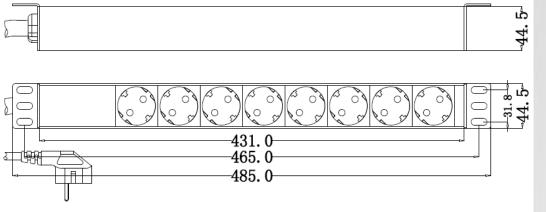
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- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- Current rating 16A operating voltage 250V AC
- Manufactured using lockable IEC C19 sockets
- Textured black powder coated mild steel
- 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon



# **Schuko Horizontal PDUs**



**KWB-PDU** 1U, 19" rack mountable, 1.5U horizontal Schuko outlet power distribution units

# 19" Horizontal range:

KWB-PDU4HSCH (4x Schuko outlet)

KWB-PDU6HSCH (6x Schuko outlet)

KWB-PDU8HSCH (8x Schuko outlet)

**Dimensions** =  $440 \text{mm} \times 66 \text{mm} \times 60 \text{mm} \text{ (W x H x D)}$ 

Mounting length = 483mm (19")

# "Quality Manufactured PDU's to British & EU Standards"

- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 16A operating voltage 250V AC
- ✓ Manufactured using Schuko sockets
- Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon

Connector options:

this product may differ slightly from the illustration(s).











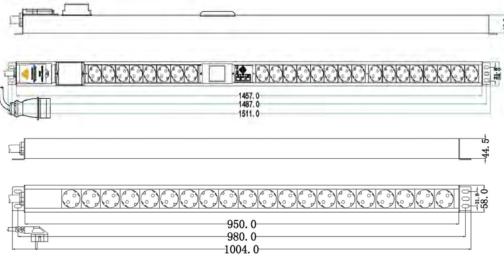


Customer note: Due to continual improvements in design or otherwise,





# **Schuko Vertical PDUs**



**KWB-PDU** 0U, 19" rack mountable, vertical Schuko outlet power distribution units

# 19" Horizontal range:

KWB-PDU12VSCH (12x Schuko outlets) KWB-PDU20VSCH (20x Schuko outlets) KWB-PDU24VSCH (24x Schuko outlets)

**Dimentions 12-way:** 1110mm x 52mm x 40mm (L x W x D)

**Dimentions 20-way:** 1274mm x 52mm x 40mm (L x W x D)

# "Quality Manufactured PDU's to British & EU Standards"

- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 16A operating voltage 250V AC
- Manufactured using Schuko sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or optional LS0H cable
- ✓ Standard 2 pole rocker switch or optional neon

Connector options:













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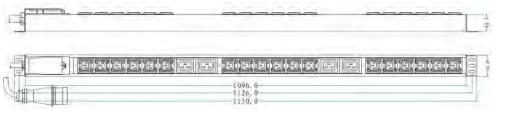


# **Rack Mountable Combo Vertical PDUs**

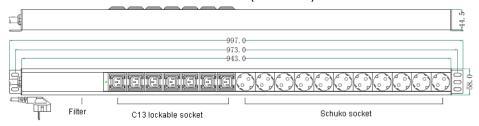
**1. KWB-IEC24V4XC19X20XC13** - 24-way slimline, IEC C13 to IEC C13 outlet PDU **Dimentions:** 775 mm x 52 mm x 40 mm (L x W x D)



2. KWB-3PH24V4XC19X20XC13 - 3 Phase 24-port, 20x lockable IEC C13 & 4 x IEC Dimensions: 1150 mm x 58 mm x 44.5 mm (L x W x D)



**3. KWB-PDU20VSCH** - 24way slimline, vertical IEC C13 to vertical IEC C13 outlet PDU **Dimensions:** 997 mm x 58 mm x 44.5 mm (L x W x D)



## Connector options:











Customer note: Due to continual improvements in design or otherwise, this product may differ slightly from the illustration(s).

#### MADE IN BRITAIN

- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Currentrating 20A operating voltage 250V AC
- Manufactured using IEC C13 & IEC C19 sockets
- ✓ Textured black powder coated mild steel
- √ 13A UK plug as standard or optional Schuko, Nema, C14, C20, 16A or 32A Commando connectors available
- ✓ Standard triple core cable or LS0H cable
- Standard 2 pole rocker switch or optional neon











# PDU expert KWX -Intelligent PDU range

- 16A UK outlet horizontal PDUs
- 32A UK outlet horizontal PDU
- IEC C13 outlet horizontal PDUs
- IEC C13 outlet vertical PDUs
- IEC C13 Click Lock horizontal PDUs
- IEC C13 Click Lock vertical PDUs
- IEC C13 Individually Fused horizontal
- •PDUs IEC C13 Individually Fused vertical PDUs
- IEC C13 Slide Lock horizontal PDUs
- IEC C13 Slide Lock vertical PDUs
- IEC C19outlet horizontal PDUs
- IEC C19 outlet vertical PDUs
- IEC C19 Click Lock horizontal PDUs
- IEC C19 Click Lock vertical PDUs



# **KWX Network series**

## Intelligent remote monitoring PDUs

The KWX series offers a range of power monitoring and switching capabilities combined with built in local environmental monitoring software, providing real time power consumption of the total current load and voltage of the PDU and individual outlets (dependent on version), which is accessible via the user friendly PDU experts PDU management interface.





PDU experts intelligent KWX-PDU management software enables the administrator to give designated users predetermined control over whole PDUs or even single outlets over a range of PDUs. Users have the ability to monitor and control directly through the PDUs network module on site, or remotely using our embedded multi-threading inner core "Real time operating systems" (RTOS) software.

The management software is accessible within the data centers secure hardwired network supporting various TCIP/IP protocols, including HTTP, HTTPS, SSL, SNMP versions 1,2 & 3, TELNET, SSH, SMTP and NTP.

KWX Network intelligent PDUs are available in a range of vertical and 19" horizontal rack mounting options, with a variety of outlets including slide lock IEC C13 as standard, IEC C19, UK BS1363, NEMA (5-15), SCHUKO (EEC 7/4). Input/load connectors options include single phase 16A / 32A and 3 Phase IP44 Commandos.

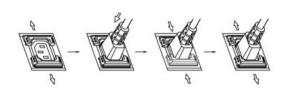
N1 – PDU total power monitoring – Provides real time power consumption (current / voltage), total power (kW) used, apparent power and power factor.

N2 – Individual port power monitoring – Provides real time PDU power consumption & the current on individual ports, total power (kW) used, apparent power and power factor.

N3 – PDU monitoring & individual port switching – Provides real time power consumption, total power (kW) used, apparent power and power factor. Each individual port/outlet is also switchable (ON / OFF)

N4 – PDU and per port power monitoring and switching – Complete power monitoring and switching (ON / OFF) of the PDU and each individual port, total power (kW) used, apparent power and power factor.

Feature		Function	N1	N2	N3	N4
Monitor functions	LED Display	Total & individual port current load	V	V	V	V
		Overload flashing LED alarm	V	V	V	V
		PDU IP address, version number	V	V	V	V
	Management software / Hyper terminal	Total current load	V	V	V	V
		Monitors current load per port	×	V	X	V
		Input voltage	V	V	V	V
		Configure low/high voltage limits	V	V	V	V
		Configure low/high current limits	V	V	V	V
		Sensor(s) state (optional)	V	V	V	V
Control	PC Control	Power ON/OFF individual ports	×	X	V	V
		Power ON/OFF PDU	×	X	V	V
		Intelligent setup memory on restart	×	×	V	~
Access methods		RS485 port	V	V	V	V
Daisy chain connections		Serial connection	V	V	V	V
		Radial connection	V	V	V	V



#### Lockable IEC C13 outlets

All KWX PDUs come with lockable IEC C13 outlets as standard.



# **KWX-series Horizontal Intelligent PDU**

Product code	Input / output		
KWX-N16A8C3-H	16A 8x IEC C13		
KWX-N16A10C3-H	16A 10x IEC C13		
KWX-N16A8x2-H	16A 8x IEC C13 / 2x IEC C19		
KWX-N32A8C3-H	32A 8x IEC C13		
KWX-N32A10C3-H	32A 10x IEC C13		
KWX-N32A8x2-H	32A 8x IEC C13 / 2x IEC C19		

1U horizontally mounted 19" standard units come with a range of outlet options with 16A and 32A inputs in N1, N2, N3 & N4 versions.



PDU experts KWX-Network series is the latest generation of Intelligent power distribution units designed and manufactured to meet the demands of today's data center and telecommunications equipment.





















# "The most innovative PDU on the market"

### Key Features

- Adjustable sequential powering (on/off)
- Total current monitoring
- Total voltage input & output monitoring
- Total kWh used
- · Power factor recognition
- Up to 55°C Hot aisle operating capacity
- SMS, SNMP & Email
- Built in environmental monitoring as standard:

Temperature & humidity alarm sensor Water logging alarm sensor Rack door tamper sensor Infrared sensor Smoke detector

- Automated alarm notifications
- Up to 8 plug and play sensors
- · Lockable IEC C13 sockets as standard
- Blade server ready
- Intelligent outlet type and recognition
- 24v & 48v DC, Single phase 120v & 240v & 3 phase 400v
- Effortless user friendly PDU management interface
- Control up to 3 KWX slaves from a master KWX PDU
- 8x lockable IEC C13 sockets
- 1x IEC C20 connector



















# **KWX-series Vertical Intelligent PDU**

Product code	Input / output		
KWX-N16A16C3-V	16A 16x IEC C13		
KWX-N16A20C3-V	16A 20x IEC C13		
KWX-N16A24C3-V	16A 24x IEC C13		
KWX-N16A20x4-V	16A 20x IEC C13 / 4x IEC C19		
KWX-N32A16C3-V	32A 16x IEC C13		
KWX-N32A20C3-V	32A 20x IEC C13		
KWX-N32A24C3-V	32A 24x IEC C13		
KWX-N32A20x4-V	32A 20x IEC C13 / 4x IEC C19		



OU Vertically mounted standard units come with a range of outlet options with 16A and 32A inputs in N1, N2, N3 & N4 versions.

PDU experts KWX-Network series is the latest generation of Intelligent power distribution units designed and manufactured to meet the demands of today's data center and telecommunications equipment.





















# "The most innovative PDU on the market"

#### Key Features

- Adjustable sequential powering
- Hot swappable network card
- · Total current monitoring
- Total voltage input & output monitoring
- Total kWh used
- Power factor recognition
- Up to 55°C Hot aisle operating capacity
- SMS, SNMP v1,v2,v3 & Email, Modbus
- · Built in environmental monitoring as standard:
- Temperature & humidity alarm sensor
- · Water logging alarm sensor
- · Rack door tamper sensor
- Infrared sensor
- Smoke detector
- · Airflow sensor
- · Automated alarm notifications
- Up to 8 plug and play sensors
- · Lockable IEC C13 sockets as standard · Blade server ready
- Intelligent outlet type and recognition
- 24v & 48v DC, Single phase 120v & 240v & 3 phase 400v
- · Effortless user friendly PDU managmement interface
- Control up to 3 KWX slaves from a master KWX PDU
- 16x lockable IEC C13 sockets
- 1x IP44 16A Commando connector



















# **KWX-ATS** series

# **Intelligent Automatic Transfer Switches**

In the event where the primary power source becomes unavailable, the KWX ATS will flawlessly source power from the secondary source without interrupting sensitive equipment, the switching occurs in just 8ms safely between the two input sources regardless of their phase.





PDU experts intelligent KWX-ATS management software enables the administrator to give designated users predetermined control over whole ATS units or even single outlets over a range of ATS units. Users have the ability to monitor and control directly through the ATS units network module on site, or remotely using our embedded multithreading inner core "Real time operating systems" (RTOS) software.

The management software is accessible within the data centres secure hardwired network, supporting various TCIP/IP protocols, including HTTP, HTTPS, SSL, SNMP versions 1,2 & 3, TELNET, SSH, SMTP and NTP from any network PC or laptop.

KWX Automatic Transfer Switches are available in a range 19" horizontal rack mounted options, with a variety of outlets including slide lock IEC C13 as standard, IEC C19, UK BS1363, NEMA (5-15), SCHUKO (EEC 7/4). Input/load connectors options include single phase 16A / 32A and 3 Phase IP44 Commandos.

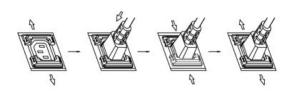
N1 – ATS total power monitoring – Provides real time power consumption (current / voltage), total power (kW) used, apparent power and power factor.

N2 – Individual port power monitoring – Provides real time ATS power consumption & the current on individual ports, total power (kW) used, apparent power and power factor.

N3 – ATS monitoring & individual port switching – Provides real time power consumption, total power (kW) used, apparent power and power factor. Each individual port/outlet is also switchable (ON / OFF)

N4 – ATS and per port power monitoring and switching – Complete power monitoring and switching (ON / OFF) of the ATS and each individual port, total power (kW) used, apparent power and power factor.

Feature		Function	N1	N2	N3	N4
Monitor functions	LED Display	Total & individual port current load	V	V	V	V
		Overload flashing LED alarm	V	V	V	V
		ATS IP address, version number	V	V	V	V
	Management software / Hyper terminal	Total current load	V	V	V	V
		Monitors current load per port	×	V	X	V
		Input voltage	V	V	V	V
		Configure low/high voltage limits	V	V	V	V
		Configure low/high Current limits	V	V	V	V
		Sensor(s) state (optional)	V	V	V	1
10.51	PC Control	Power ON/OFF individual ports	×	×	V	V
trol		Power ON/OFF ATS	×	×	V	V
Control		Set Primary Power source	V	V	V	V
		Intelligent setup memory on restart	×	X	1	V
Access methods		RS 485 port	V	V	V	~
Daisy chain connections		Serial connection	V	V	V	V
		Radial connection	V	V	V	V



#### Slide locking IEC C13 outlets

All KWX-ATS units come with lockable IEC C13 outlets as standard.



# **KWX-ATS** series



## KWX-ATS range:

KWX-ATS16A1H(1-4) - 8 port IEC C13

KWX-ATS16A2C19-H(1-4) - 2 port IEC C19

KWX-ATS16A8C3-H(1-4) - 8 port IEC C13

KWX-ATS16A8x2-H(1-4) - 10 port (8 x IEC C13, 2 x C19)

KWX-ATS32A1H(1-4) - single port (32A 2 + E)

KWX-ATS32AC19-H(1-4) - 2 port IEC C19

KWX-ATS32A8C3-H(1-4) - 2 port IEC C13

KWX-ATS32A8x2-H(1-4) - 8 port IEC C 13

IEC C13 are equipped with slide locks

H = Horizontal mounting into 19" racks

(1-4): N 1 = metered; N 2 = metered & per outlet monitoring

N 3 = metered & per outlet switching; N4 = switched and

metered per outlet. (More details on page 25)

PDU experts KWX Automatic Transfer Switches (ATS) seamlessly switch loads between primary and backup power sources, this combined with real time power monitoring and built in environmental monitoring makes it one of the most advanced transfer switches on the market.



































#### Key Features

- Total current monitoring
- Total voltage input & output monitoring 8 millisecond Switch over
- Total kWh used
- Power factor recognition
- Up to 55°C Hot aisle operating capacity SMS, SNMP & Email
- · Built in environmental monitoring as standard:
  - o Temperature & humidity alarm sensor
  - o Water logging alarm sensor
  - o Rack door tamper sensor
  - o Infrared sensor
  - o Smoke detector
- Automated alarm notifications
- Up to 8 plug and play sensors
- Lockable IEC C13 sockets as standard
- Blade server ready
- Intelligent outlet type recognition
- 24v & 48v DC, Single phase 120v & 240v & 3 phase 400v
- Effortless user friendly PDU management interface
- Control up to 3 KWX-ATS slaves from a master KWX-ATS
- 2 x IP44 16A Commando inputs
- 8x IEC C13 (slide lock) outputs







# PDUeX BH30L-RM HF Online Rack Mounted UPS (3kVA)



# **System Introduction**

**PDUeX-BH3KVA-RM** (Rack Mount) is a double conversion 1/1, 3/1 Phase pure online UPS with DSP control. It has been designed for mainstream double conversion system with N+1 or N+X parallel redundancy feature, and manufactured with advanced SMT international standard, which provide outstanding stability and reliability.



# "Quality manufactured UPS to British and EU standards"

#### System Features

#### High Performance Index

- ✓ Latest HF switching power supply rectifier and PFC Technology. Input Power Factor 0.99, THDI≤3.5%
- ✓ Wide Input Range from 160~300Vac on full load (100% Load, If Load is below 50%, it can be reached even equal or lower than 115Vac). On 3 Phase Model Input range is from 304 ~ 478 Vac.
- ✓ Latest IGBT technology to achieve high overall efficiency up to 90%. Compatible with 220/230/240V and 50/60 Hz grid supply systems
- ✓ Powerful overload ability with output short circuit protection technology: 1-3 KVA: 120% overloads for 1 minute. 150% for 60ms transfer to bypass and alarm. 6-10KVA: 105-130% overload for 10 minutes, >130% overload for 60ms.
- Systems have parallel redundancy feature to increase the system reliability level.
- ✓ Can be connected with all kinds of generators to save
- ✓ Intelligent temperature compensator and low wave charger can extend battery lifetime.
- ✓ Intuitive dual LCD and LED display panels, which comprehensively and intuitively reflect the state of power system statuses, parameters, and other information. Users can modify and operate based on individual needs on these friendly displays.
- 19" inch Rack Mount structure design. It can be compatible with standard communication cabinet to greatly save data room spaces.

#### Safe and Reliable

- ME Series adapts DSP technology to control UPS all kinds of power function processes (including Parallel function) in order to increase system reliability.
- LA Series adapts sensitive peak current protection circuit design to protect the system from damages due to short-circuit, cold load impacts.
- 90% of system components are from international famous brands. All devices has been aged and fully tested for at least 24 hours before leaving the factory.

#### Rich Optional Accessories

ME Series can use SNMP Network Adapter, RS485/Dry Contact, USB port, and EPO function to build up a remote control and monitoring system.









# PDUeX-JY UPS Series

JY Series LF/Transformer Based Online UPS (1 - 40KVA)





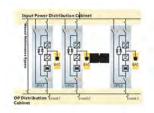




# **System Introduction**

PDUeX-JY UPS Series is a small medium capacity true double conversion online UPS with DSP control. It has 1/1 3/1 phase structures and 1+1 parallel

redundant function. Isolated transformer and the international advanced SMD design, which has outstanding stability and high reliability.



Isolated transformer effectively suppresses and isolates utility surge voltage and impacts to load devices, which greatly protects load device with good synchronisation with UPS systems.



# "Quality manufactured UPS to British and EU standards"

## System Features:

#### High performance

- Advanced SCR Rectifier and IGBT Inverter Technology. Online Single Phase Input/Output double conversion structure to adapt 220V and 50/60 Hz Mains Grid Supply Systems.
- ✓ Wide Input Range from 160 Vac to 300 Vac and 50/60Hz ± 5%. High Adaptive Capacity to Mains Grid Supply System and Different kind of Loads. High Overload Ability -- surge current protection technology can carry the sudden impact due to 0% to 100% load immediately without transfer to bypass.
- ✓ Overall Efficiency 85%. 98% under ECO Mode.
- ✓ Full-Digitized Non-master slave parallel redundancy technology. Parallel upto 8 units.
- ✓ Friendly and Intuitive User Interface. Large Dotmatrix LCD+LED Screen with multi-functional
- keyboard to check system parameters, such as fault histories, operational statuses,
- ✓ self-diagnosis periodically discharge settings, etc.

#### Safe and Reliable

- PDUeX-JY control to operate all power conversion sessions during the operations, which has higher system reliability than traditional UPS systems.
- ✓ Output Isolated Transformer Built-in. It can reduce impacts and interferences from Load Harmonic Wave Current and N-Wire Voltage.
- 90% of system components are from international brands. All devices has been aged and fully tested for at least 24 hours before leaving the factory.

#### Compatible applications / loads

✓ PDUeX-JY series is designed for small and medium important equipment systems, such as small and medium commercial network equipment, small data center, important medical equipment, manufacturing process control system and communication equipment.









# **PDUeX-OURRIYAH Series**

(Cloud Server UPS Monitoring)







## **System Introduction:**

OURRIYAH Series is a mobile monitoring and managing system designed for all kinds of UPS systems. It eliminates the barrier of brand, model, UPS structure by using easily RS-232 Port with Plug&Play feature, User can also using the software on the mobile devices to monitor and control the UPS. It can also save a large portion of history data to help user make analysis on the UPS per formance.



# "Quality UPS technology provider to British and EU standards"

#### System information

- ✓ User can check and control UPS status at any time on their mobile devices;
- ✓ Communication method: WIFI/ GPRS/ TCP Port Compatibility: S-232/RS-485/RJ-45
- ✓ High Compatibility with Major Communication Protocols: MODBUS/PMBUS/SNMP, etc.; IP, TCP, UDP, ARP, ICMP, DNS, DHCP
- Lith-ion Battery has been integrated internally for self-power supply upto 3 hours after AC power loss.

User can monitor the OURRIYAH box on any mobile devices, such as laptop, Cellphone, Tablet, PCs, etc. Dual APP client: By using 2 different clients, user can separate the platform between end-user and service provider. Under 1 platform, service provider can monitor upto 500 different UPS with different installation sites.









# **KWF-6HRM**





Intake & Exhaust mounting options



Reverse view

**KWF-6HRM** - Rack mountable 1U horizontal 6 way "Quiet" DC axial Fan system

**Dimensions** =  $440 \text{mm} \times 44 \text{mm} \times 170 \text{mm} (W \times H \times D)$ 

Mounting length = 483mm (19")



- Suitable for air intake or exhaust cooling (specify when ordering)
  Individual fan specs
- Airflow = 22 cubic meters p/h
- Speed = 11700 rpm
- Sound pressure level = 43 dB(a)

# "Quality Manufactured Fan Trays to British & EU Standards"

- ✓ Manufactured to BS5733 with UL, CSA & VDE approved components
- ✓ Earth bonded for total safety, compliant with RoHS certification & WEEE standards
- ✓ Current rating 10A operating voltage 250V AC
- √ 6x ebmplast 12V DC axial fans
- ✓ Step down transformer
- Textured black powder coated mild steel
- 1x C14 Fused inlet, 3 meter moulded C13 to UK 13A lead as standard.

#### Order code:

KWF-6HRM-IN (air intake) KWF-6HRM-EX (exhaust)







Customer note: Due to continual improvements in design or otherwise, this product may differ slightly from the illustration(s).









Professional energy analysis and control solution for the smart rack.

Cost-efficient, simple, distributed and modular.

# Symbiosis: Professional energy management is now available for all data centres!

With **Symbiosis**, professional energy management becomes available to small and medium-sized data centres for the first time – cost-efficient, simple, flexible, distributed and modular.



## Savings, energy efficiency, sustainability: Green IT in your data centre with Symbiosis

Measuring and analysing energy usage in computer centres offers the biggest opportunity for savings and has hence become a central focus of managers and analysts. Legal changes and rising energy costs now force small and medium-sized computer centres and industrial IT installations to reconsider their energy strategies.





#### Symbiosis Overveiw

#### Intuitively optimize the energy consumption in your data centre with Symbiosis

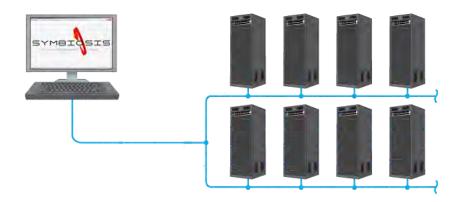
**Symbiosis** supports you in optimizing the energy consumption of your data centre in a very comprehensive way. As an innovative energy monitoring and management system, **Symbiosis** provides simple, reliable and cost-efficient collection, management and control of vital energy and environmental data of data centres. You can see all connected PDUs, cooling systems and sensors clearly structured and at a glance at any time.

## Increase the competitiveness of your data centre with Symbiosis

For the first time, **Symbiosis** enables small and medium-sized data centres to measure, and thus reduce, their energy consumption effectively and comprehensively and increase their competitiveness.

The Symbiosis installation runs (almost) automatically and identifies all your PDUs, sensors, cooling systems and other DC equipment

**Symbiosis** provides energy monitoring and control for PDUs and sensors from many different manufacturers in one place and registers everything connected to it automatically – an essential feature in the heterogenous technology landscape of data centres and no additional installation hassle for you (currently we support PDUs and sensors from Raritan, **PDU expert**, Schleifenbauer and Gude). **Symbiosis** also adapts optimally to different sensors of a data centre.



#### We offer two solutions of Symbiosis for professional use:

- An industrial-quality hardware solution
- Software solution (virtual machine) more cost-effective and can be easily integrated in every IT landscape

Symbiosis is based on Internet of Things (IoT) technologies and can therefore be used in a completely geographically flexible and modular way.





## **Symbiosis Advantages**

Smart Rack: Profit from this game changing architecture with Symbiosis

- **Symbiosis** is an innovative and distributed monitoring and control system. As such it offers you a better, more intelligent and more flexible way to collect and manage the large amounts of data provided from current energy and sensor sources, compared to older, monolithic concepts (e.g. DCIM).
- A Smart Rack is a single intelligent rack, and groups its contained servers with their PDUs, and sensors into one logical unit of management.
- This Smart Rack will provide detailed analysis data to a specific customer group, and will be connected in a standard hierarchical manner to concentrators which then provide a wider group of management and administrators with the type of data they need (e.g. history and trending over the complete data center or specific events).
- The auto-detect feature of **Symbiosis** will automatically provide IP-devices with an address on the private network, and will add the device to your management overview. (Note: only possible for supported devices with DHCP and using factory settings).
- This means that there is no need for costly in-cabinet IP or other configuration or additional Ethernet switches, turning your cabinet into a Smart Rack.
- In contrast to many DCIM platforms **Symbiosis** offers full device support: instead of only very simple SNMP GET-functions of many DCIM platforms, **Symbiosis** supports all measurement and control functions of a connected device through our specially designed device software.

## **Our Future Markets:**

Server Rooms, Data Centers and small to medium companies



Energy-intensive productive industry (Industry 4.0)

## Hence the industry grade hardware



Infrastructure energy management (B2B)

Requirements: Available in a variety of appliances including Din Rail and 19" mounted devices, low to no maintenance needed, intuitive to manage (no training required)



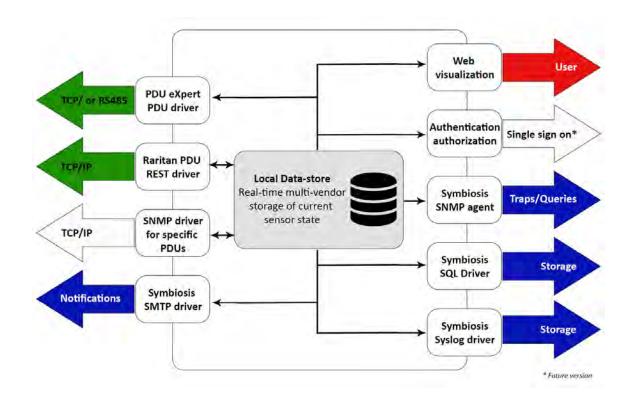
Cloud based storage / management





## Symbiosis offers you many more advantages

- The **Symbiosis** notification data is available at various priority levels. Selected priority levels can be exported into the enterprise SYSLOG, sent as E-Mails.
- **Symbiosis** also includes a SNMP agent to allow its data to be collected by a SNMP manager. This SNMP manager then collects the data from all the different devices in a common form using the Symbiosis MIB.
- **Symbiosis** is a complete solution pre-installed on an industry quality device for immediate installation. It is also available as a virtual machine or Docker container.
- The **Symbiosis** architecture is based on a price winning industry standard "KURA". KURA, which in its turn is built on the OSGi standard, provides a secure and stable environment well placed in the IoT market place.
- The **Symbiosis** distributed architecture can be extended by linking the gateways to a **Symbiosis** concentrator. The industry standard secure protocol MQTT ensures that no data is lost in these transfers.
- Remote software support can be offered to users of **Symbiosis**. The support is based on the secure OSGi protocols, which only allow remote access when specifically enabled from the individual gateway. To maintain the customers network security strategy, the **Symbiosis** gateway (when enabled) makes an outgoing call to the support services, and does not need any incoming firewall rules.





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