MEGGiTT
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extreme environments

RPS6U

Rack power supply unit

FEATURES

- From the Vibro-Meter® product line
- Power supply unit for VM600 system rack (6U)
- High performance
- Wide input voltage range
- Over-voltage protection
- Continuous short-circuit proof
- Minimal derating within the operating temperature range
- 6U height
- Compact design
- Fully VME compatible
- Conforms to EC standards for EMC
- Up to two RPS6U rack power supply units can be installed in a VM600 system rack (ABE04x)

**Rack power supply unit (RPS6U)
for a VM600 system rack (ABE04x)**

DESCRIPTION

The RPS6U rack power supply units are designed for use in the VM600 series of machinery protection systems and condition and performance monitoring systems, from Meggitt Sensing Systems' Vibro-Meter product line.

The RPS6U is installed in the front of a VM600 system rack (ABE04x) with a standard height of 6U and connects directly to the rack backplane via two connectors. The power supply provides +5 V_{DC} and ±12 V_{DC} power to all cards in the rack via the rack backplane.

One or two RPS6U power supplies can be installed in a VM600 system rack. A rack can have two RPS6U units installed for different reasons: to supply power to a rack with many cards installed, non-redundantly, or to supply power to a rack with fewer cards installed, redundantly. Typically, the cutoff point is when nine rack slots or fewer are used.

DESCRIPTION *(continued)*

When a VM600 system rack is operating with two RPS6U units for power supply redundancy, if one RPS6U fails, the other will provide 100% of the power requirement and the rack will continue to operate, thereby increasing the availability of the machinery monitoring system.

Various versions of the RPS6U exist, allowing a rack to be powered from external AC or DC mains supplies with a range of supply voltages.

A power supply check relay, available at the rear of a VM600 rack, indicates that the power supplies are operating normally. Refer to the *ABE040 and ABE042 VM600 system rack* and *ABE056 VM600 slimline rack* data sheets for additional information on power supply check relays.

In applications where the VM600 rack is powered by an AC mains supply, an auxiliary sensor power supply (ASPS) can also be included in the rack. The ASPS provides +24 V_{DC} outputs which can be used by external hardware such as front-end transducers, signal conditioners and galvanic separation units.

For specific applications, contact your nearest Meggitt Sensing Systems representative.

SPECIFICATIONS

Power supply

Input

Input voltage range (V_i nom.)	: See **Ordering information on page 12**
Mains frequency variations	: See **Ordering information on page 12**
Efficiency	: See **Ordering information on page 12**

Output

Nominal output (V_o nom. / I_o max.)

• *DC output 1*	: +5 V_{DC} / +35 A
• *DC output 2*	: +12 V_{DC} / +6 A
• *DC output 3*	: −12 V_{DC} / −2 A
Stability of output voltage U_o under full load conditions	: ≤ ±0.2%
Ripple (bandwidth 20 MHz)	: ≤ 50 mVpp
Output current limitation	: 35 A (electronic current limiter)
Output overvoltage protection	: 5.9 to 6.7 V (factory set)
Power derating	: 1%/°C from 60 to 70°C

Power

Rated power	: 300 W
Rated supply voltage	: See **Ordering information on page 12**

Environmental

According to IEC 60068-2 recommendations

Operating temperature range	: −25 to +65°C (−13 to +149°F)
Storage temperature range	: −40 to +85°C (−40 to +185°F)
Humidity	: ≤ 95% non-condensing
Vibration	: 10 to 2000 Hz, 5 g, 2 h in each direction
Shock	: 100 g, 6 ms, half-sine pulse

SPECIFICATIONS *(continued)*

Physical

Dimensions : 6 U / 12 HP (TE) x 187 mm
Weight (approx.) : 2.1 kg (4.63 lb)

Safety

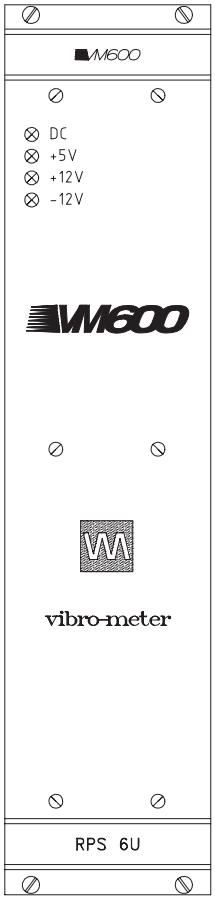
Applicable safety standards : UL 1950, CSA 22.2#234, IEC 950, EN 60950
Marking : See **Ordering information on page 12**
LR111641
Level 3

TOLERANCE TO MICRO-INTERRUPTIONS IN THE SUPPLY INPUT

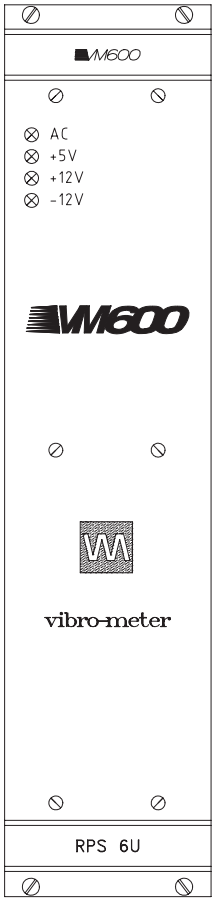
The table below shows the maximum permissible duration of a power cut which will not cause MPC4 cards to be reset. This value depends on the number of MPC4 cards and RPS6U units installed in the VM600 rack.

	Number of RPS6U power supplies in VM600 system rack	
Number of MPC4 cards in VM600 system rack	1 unit	2 units
2 cards	190 ms	250 ms
12 cards	10 ms	20 ms

RPS6U POWER SUPPLY FRONT PANELS



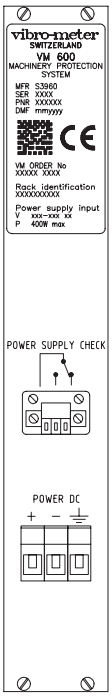
DC input version

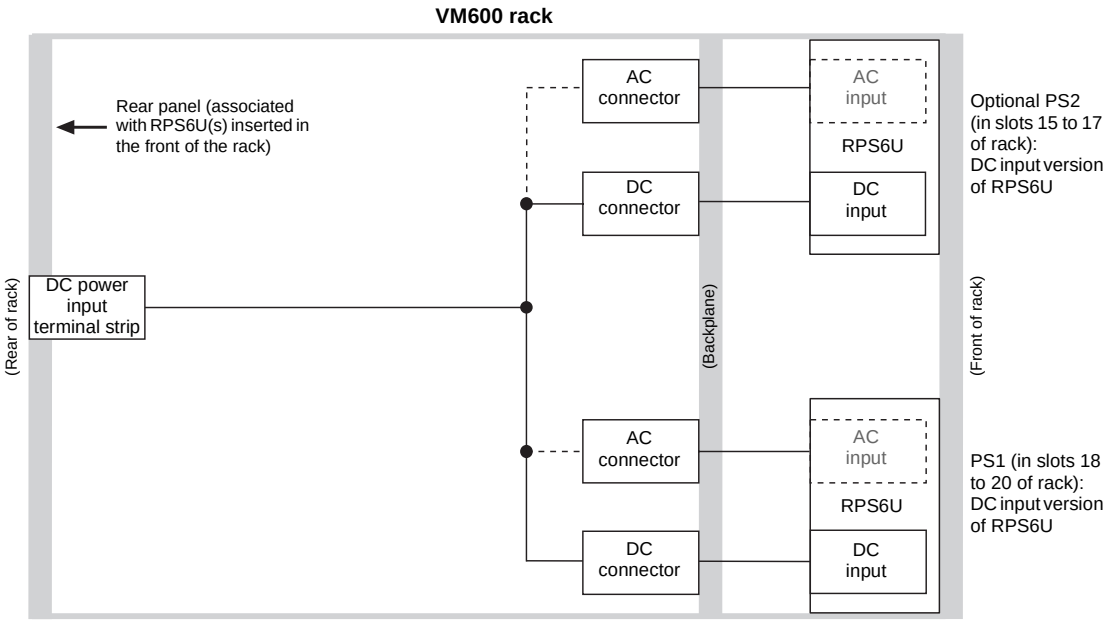


AC input version

ASSOCIATED REAR PANELS

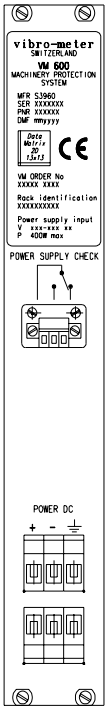
(a) Standard DC version (ordering number: 200-582-920-NHh)

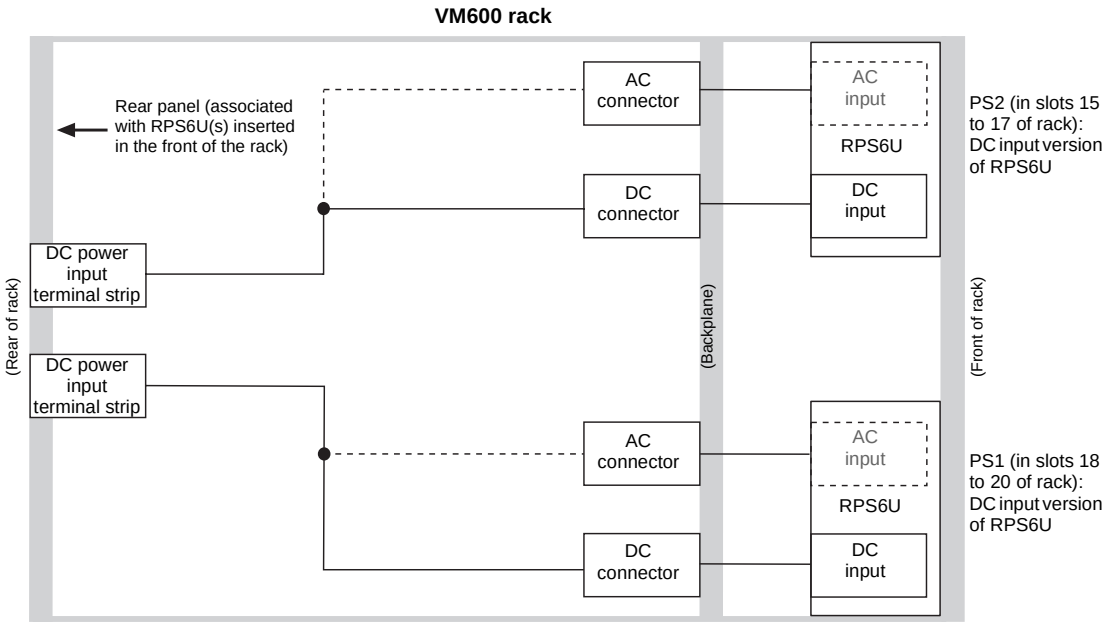




The wiring assembly for the rear panel includes the additional cabling (- - - -) only when both RPS6U power supplies (PS1 and PS2) are AC input versions.

(b) DC version (ordering number: 200-582-993-NHh)

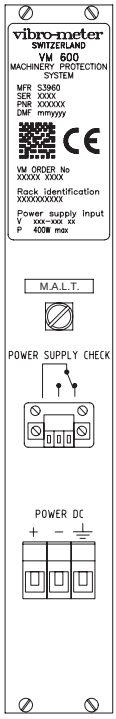


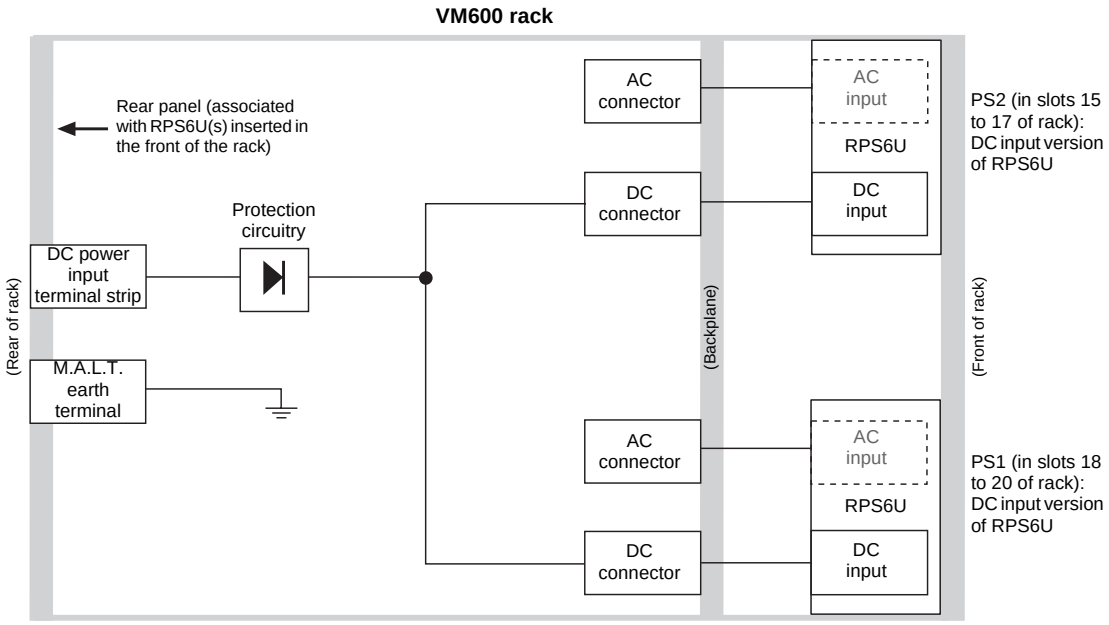


This version has two screw terminal strips for the DC power inputs, and individual inputs on each RPS6U.
The wiring assembly for the rear panel includes the additional cabling (- - - -) only when at least the first RPS6U power supply (PS1) is an AC input version.

ASSOCIATED REAR PANELS *(continued)*

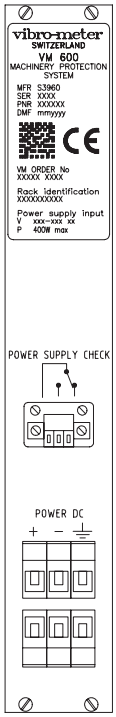
(c) DC version with earth terminal (ordering number: 200-582-922-NHh)

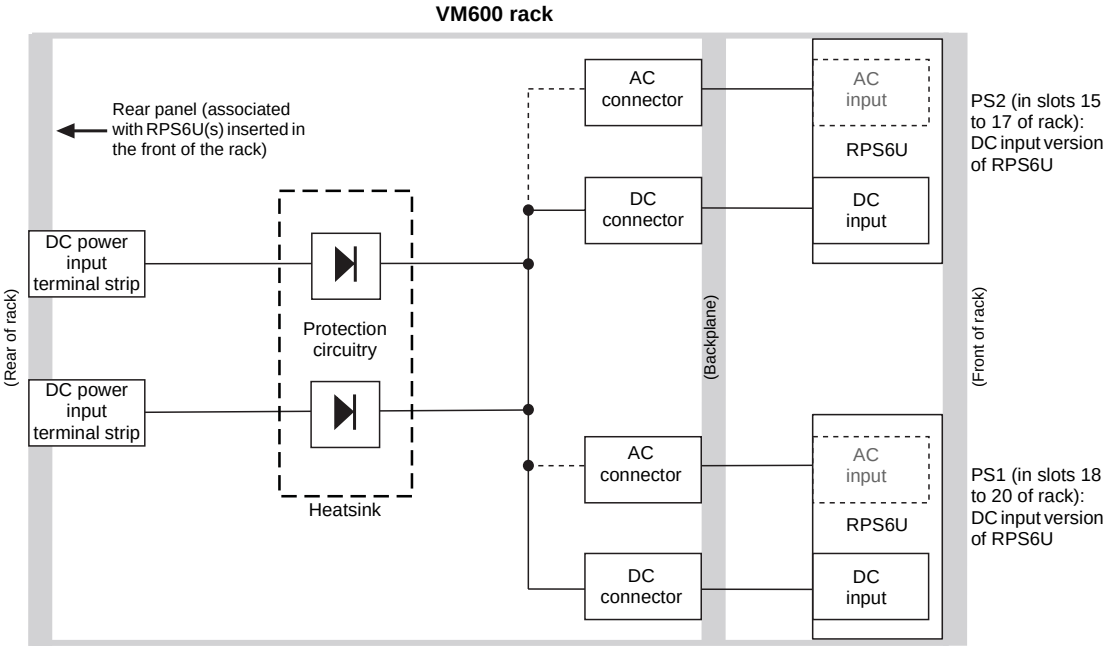




This version has a screw terminal strip for the DC power input and a special earth terminal (identified as M.A.L.T.).

(d) Special DC version (ordering number: 200-582-990-NHh)

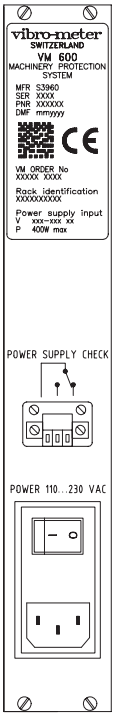


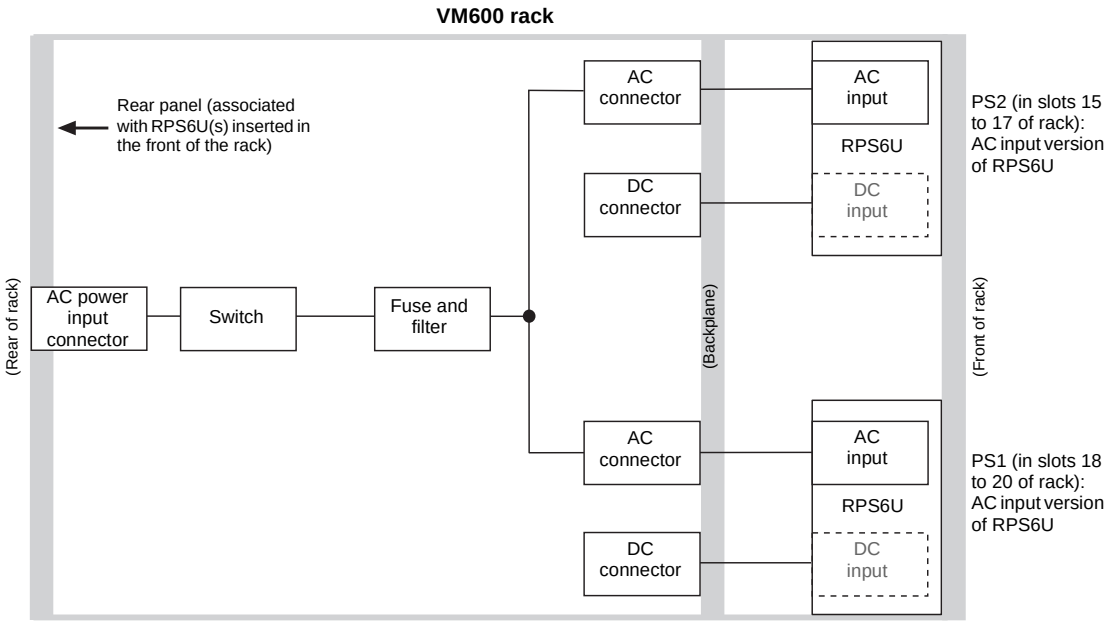


This version has two screw terminal strips for the DC power inputs, intended for the connection of two independent DC mains supplies. Both inputs (terminal strips) are wired to the same point on the rack backplane through protection diodes, which allows the rack to continue operating if one of the external DC mains supplies becomes defective.
The wiring assembly for the rear panel includes the additional cabling (- - - -) only when both RPS6U power supplies (PS1 and PS2) are AC input versions.

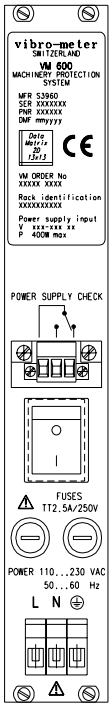
ASSOCIATED REAR PANELS *(continued)*

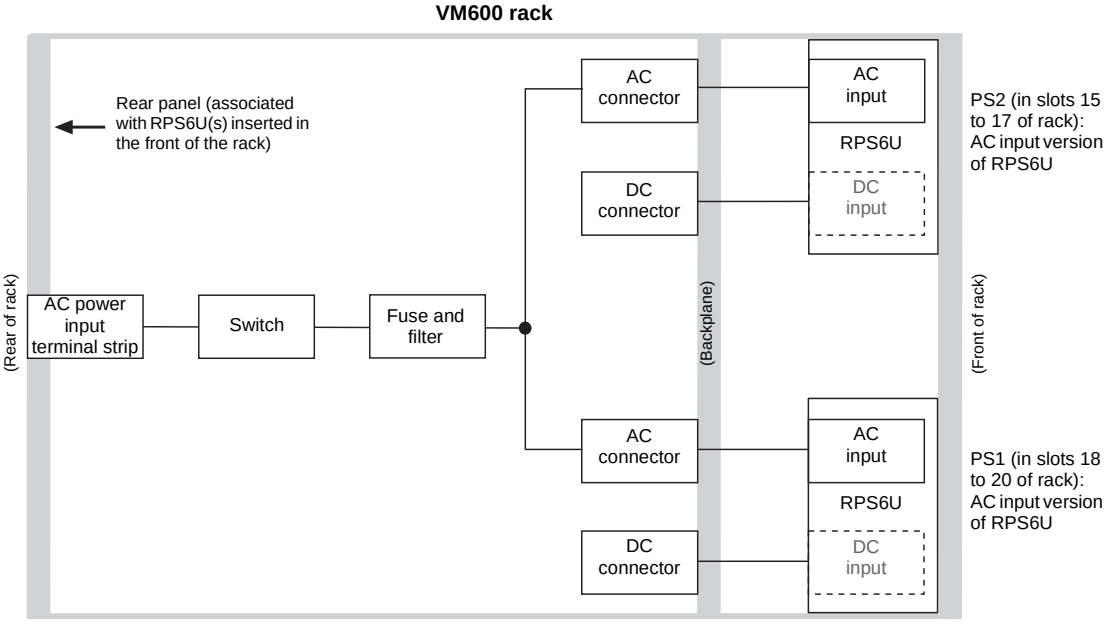
(e) Standard AC version (ordering number: 200-582-910-NHh)





(f) AC version (ordering number: 200-582-911-NHh)

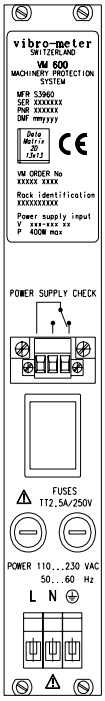


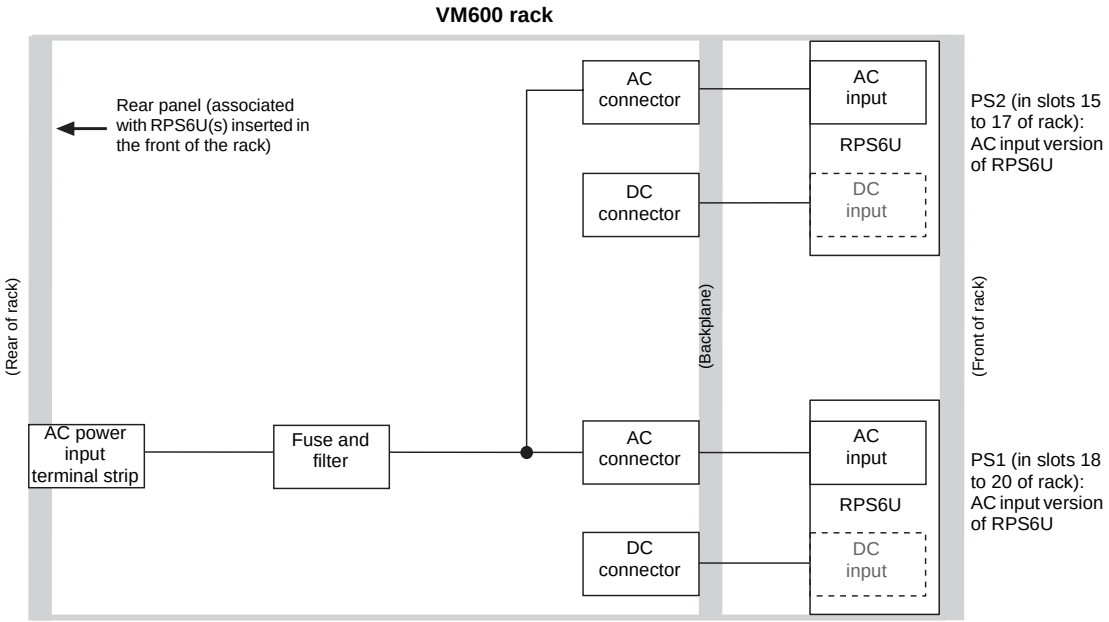


This version has a screw terminal strip for the AC power input and a mains switch.

ASSOCIATED REAR PANELS *(continued)*

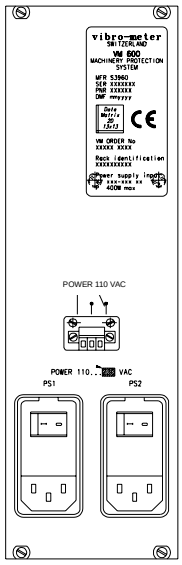
(g) AC version (ordering number: 200-582-912-NHh)

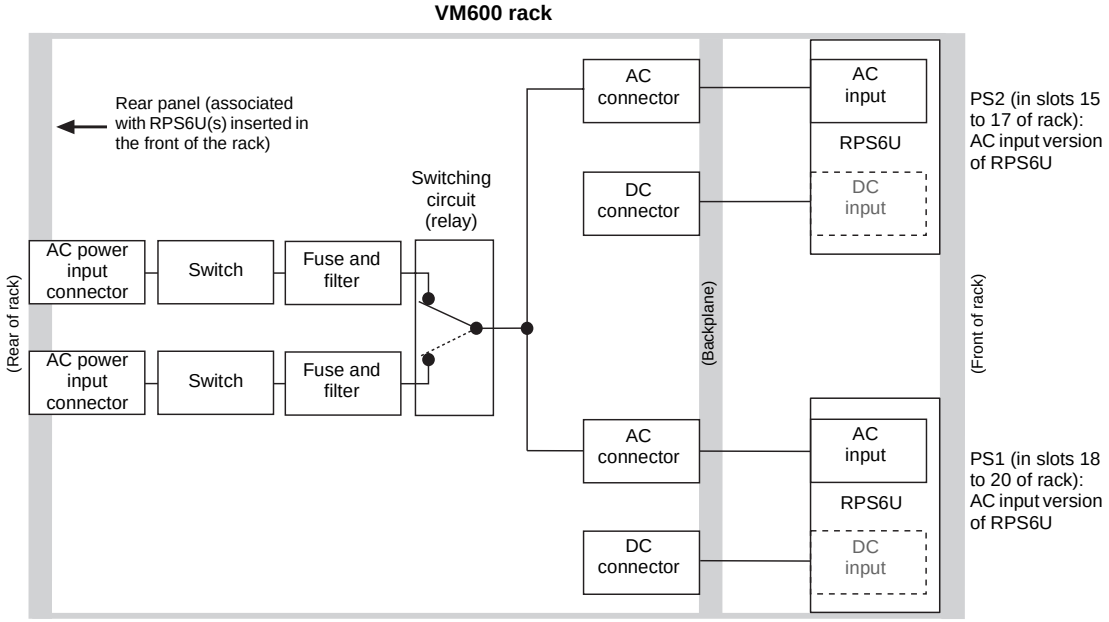




This version has a screw terminal strip for the AC power input, but no mains switch.

(h) AC version (ordering number: 200-582-962-NHh)

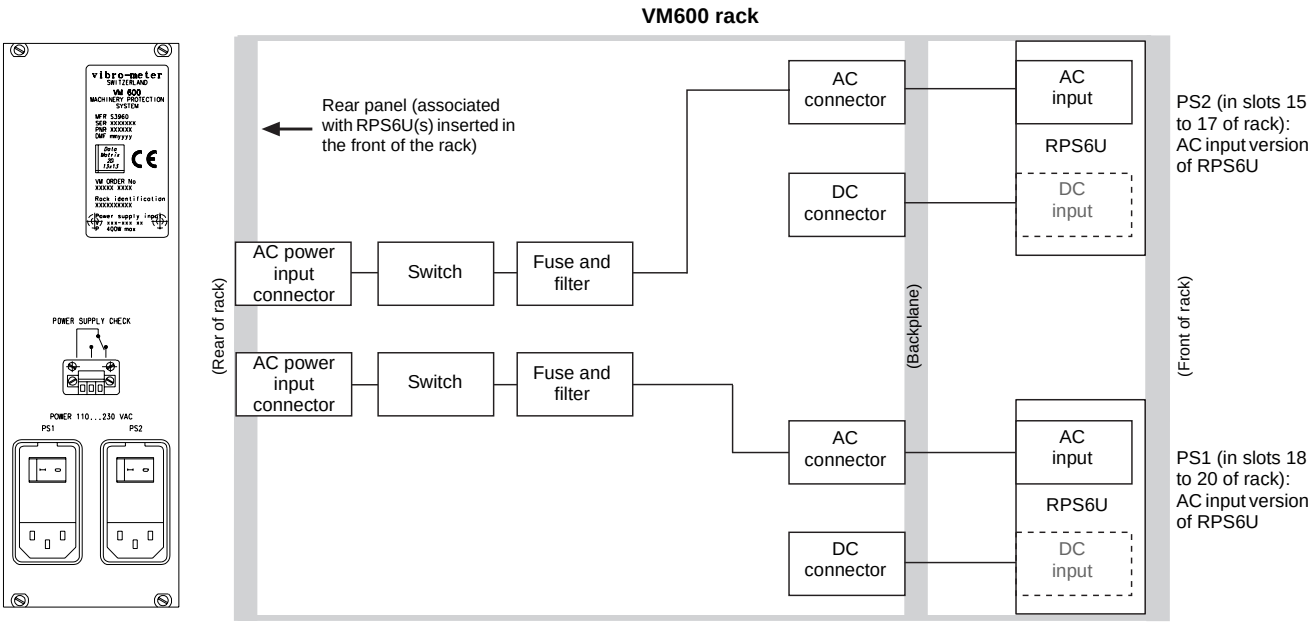




This version has two AC sockets, intended for the connection of two independent AC mains supplies operating at 120 V_{AC}. Both sockets are independently wired to a switching circuit on the rack backplane. The rack is normally powered by the PS1 AC mains supply. If this supply becomes defective, the switching circuit allows operation to continue automatically with the PS2 AC mains supply.

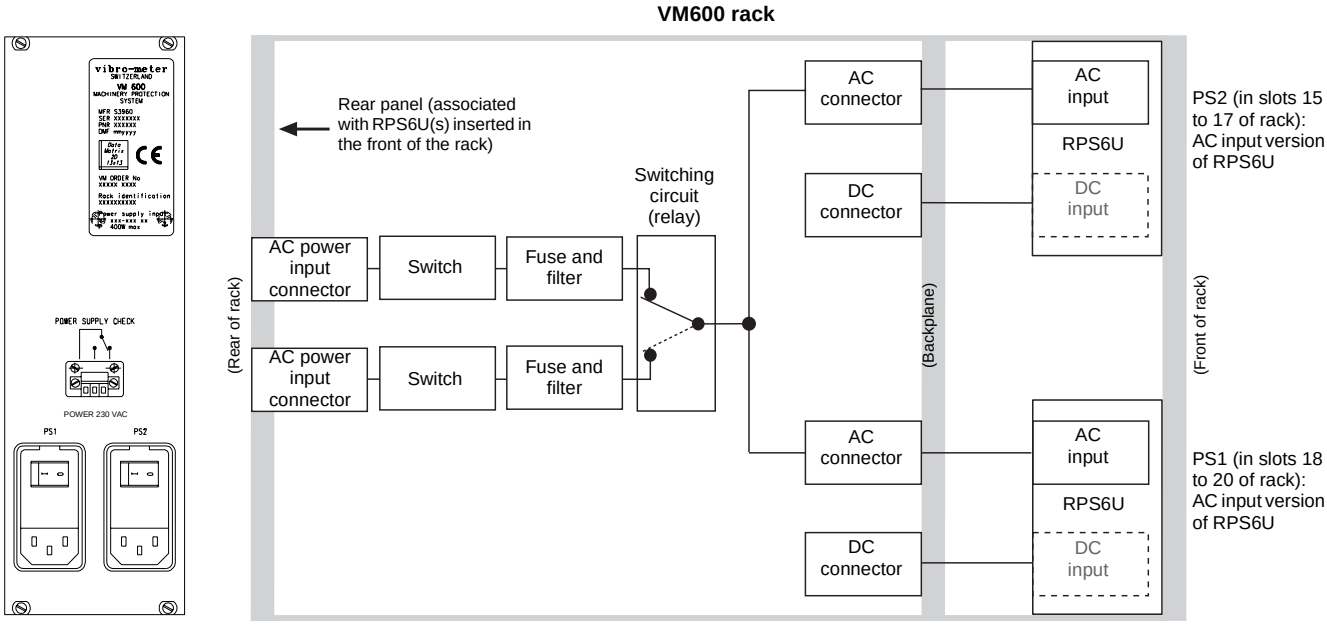
ASSOCIATED REAR PANELS *(continued)*

(i) AC version (ordering number: 200-582-963-NHh)



This version has two AC mains connectors and individual outputs to each RPS6U.

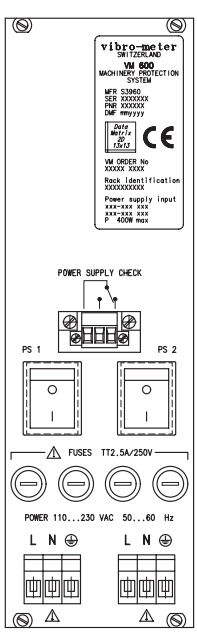
(j) AC version (ordering number: 200-582-960-NHh)

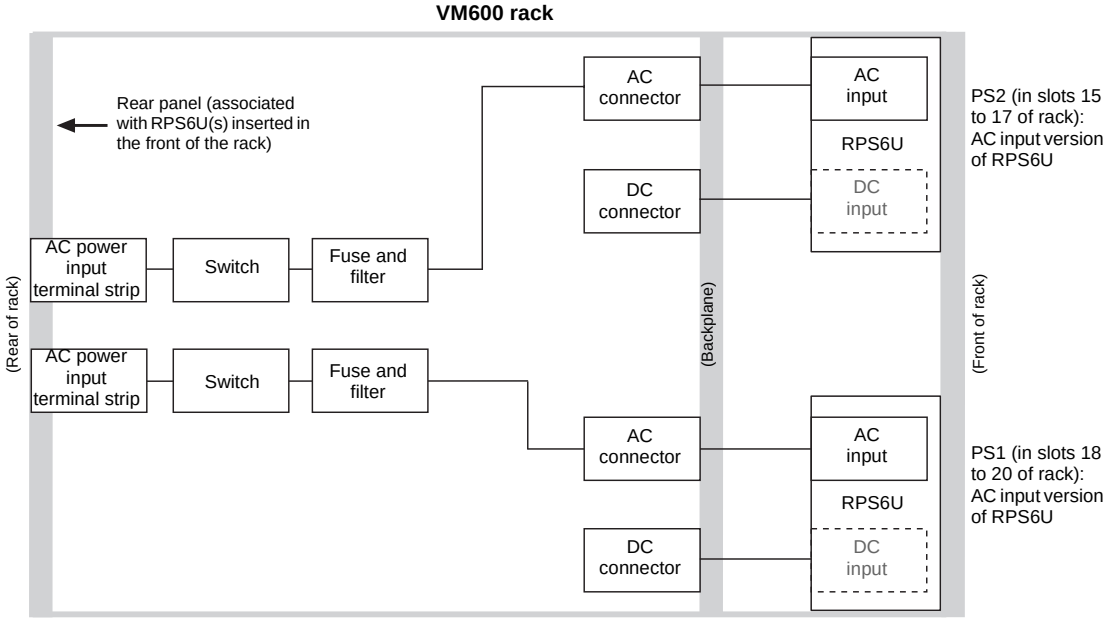


This version has two AC sockets, intended for the connection of two independent AC mains supplies operating at 230 V_{AC}. Both sockets are independently wired to a switching circuit on the rack backplane. The rack is normally powered by the PS1 AC mains supply. If this supply becomes defective, the switching circuit allows operation to continue automatically with the PS2 AC mains supply.

ASSOCIATED REAR PANELS *(continued)*

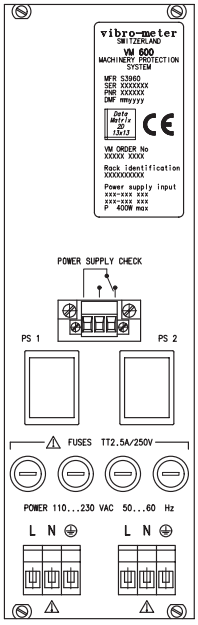
(k) Special AC version (ordering number: 200-582-915-NHh)

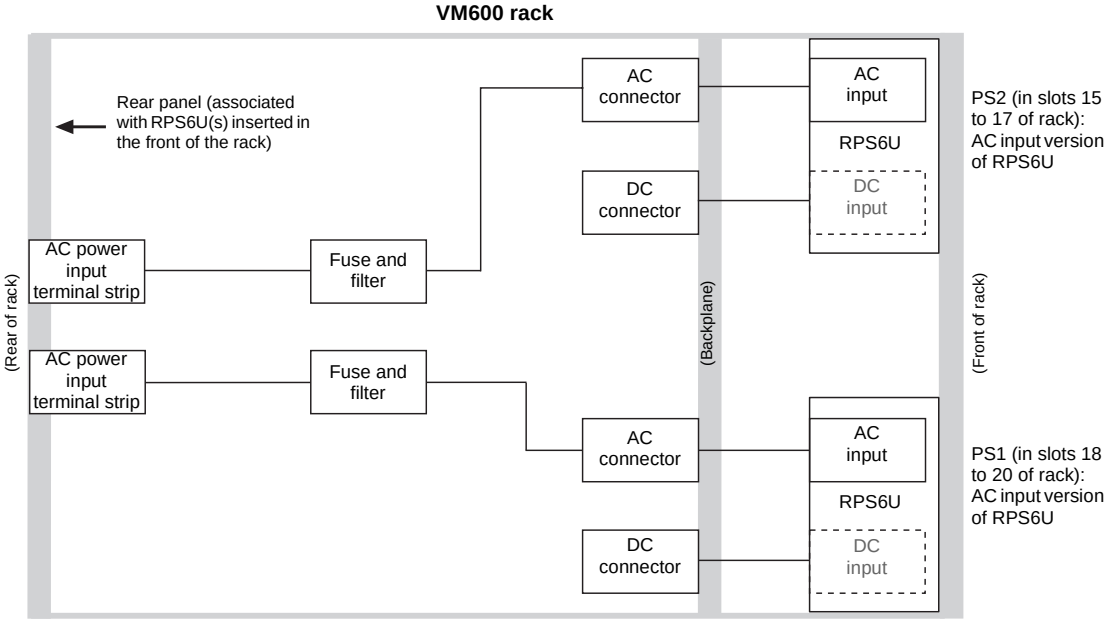




This version has two screw terminal strips for the AC power input and individual outputs to mains switches.

(l) Special AC version (ordering number: 200-582-916-NHh)

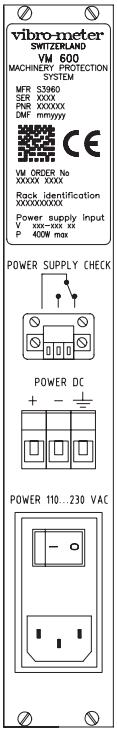


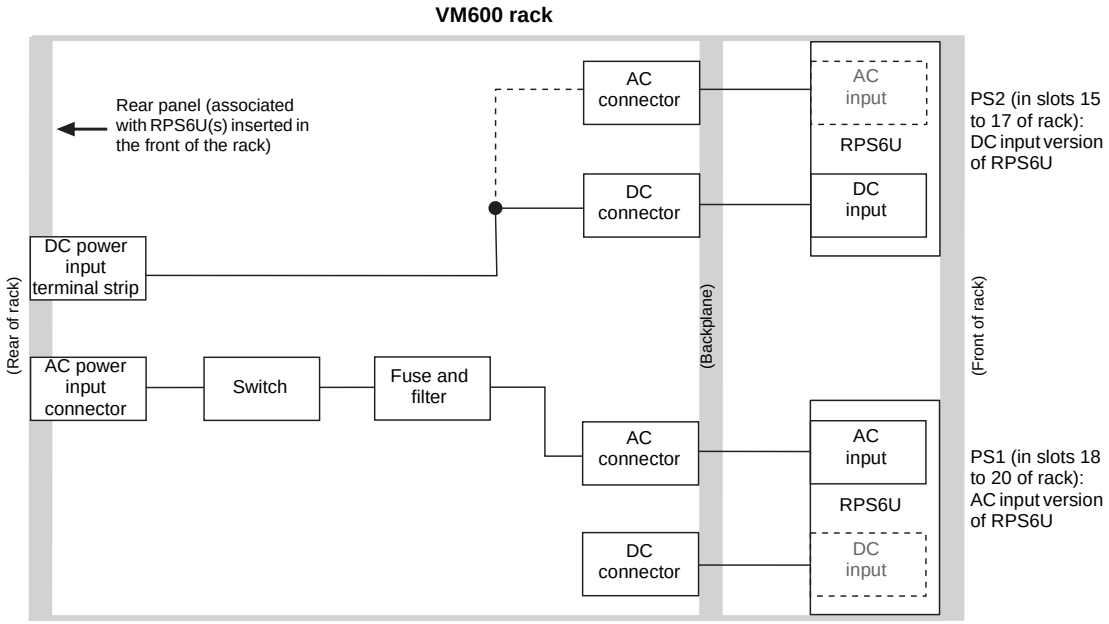


This version has two screw terminal strips for the AC power input and individual outputs, but no mains switches.

ASSOCIATED REAR PANELS *(continued)*

(m) Special AC and DC version (ordering number: 200-582-970-NHh)





This version has an AC socket and a DC screw terminal strip, intended for the connection of two independent mains supplies. These are wired separately to the backplane's AC and DC inputs, respectively. This allows the rack to continue operating if one of the mains supplies becomes defective.
The wiring assembly for the rear panel includes the additional cabling (- - - -) only when both RPS6U power supplies (PS1 and PS2) are AC input versions.

ORDERING INFORMATION

Rack power supply units

To order please specify the type, designation and ordering number

Type: RPS6U rack power supply unit.
Designation: See the table below.
Ordering number: See the table below.

Power supply	DC input versions				AC input version
Type	RPS6U 24 DC	RPS6U 48 DC	RPS6U 72 DC	RPS6U 110 DC	RPS6U AC
Ordering number (1)	200-582-200-01h	200-582-300-01h	200-582-400-01h	200-582-600-01h	200-582-500-01h
Rated supply voltage	24 V_{DC}	48 V_{DC}	72 V_{DC}	110 V_{DC}	120 / 230 V_{AC} (2)
Input voltage range (U_i nom)	18 to 32 V_{DC}	38.4 to 57.6 V_{DC}	57.6 to 100 V_{DC}	80 to 145 V_{DC}	90 to 264 V_{AC} (auto-ranging)
Mains frequency variations	Not applicable				48 to 65 Hz
Efficiency	>70%				>75%
Markings	According to CE low voltage directive				
	LR111641 Level 3				

Notes

(1) “h” represents the hardware version.
“h” increments are for minor modifications that have no effect on product interchangeability.

(2) This AC input version can also operate on a 178 to 264 V_{DC} supply.

ORDERING INFORMATION *(continued)*

Rear panels

To order please specify the type (Rear panel), designation and ordering number from the table below (see also the drawings (a) to (k) in Associated rear panels **on pages 4 to 9**)

Drawing	Designation	Ordering number
(a)	One DC input with screw-terminal connector that provides a common input to the RPS6U power supplies. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F200.	200-582-920-NHh
(b)	Two DC inputs with screw-terminal connectors that provide individual inputs to the RPS6U power supplies. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F930.	200-582-993-NHh
(c)	One DC input with screw-terminal connector that provides a common input to the RPS6U power supplies. Also provides a special earth terminal (identified as M.A.L.T.). This rear panel is equivalent to Rear panel for RPS6U power supply order option code F220.	200-582-922-NHh
(d)	Two DC inputs with screw-terminal connectors that provide a common input to the RPS6U power supplies. Supports redundant external power-supply systems. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F900.	200-582-990-NHh
(e)	One AC input (120/230 V_{AC}) with mains socket and on/off switch that provides a common input to the RPS6U power supplies. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F100.	200-582-910-NHh
(f)	One AC input (120/230 V_{AC}) with screw-terminal connector, on/off switch and rear-panel fuses that provides a common input to the RPS6U power supplies. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F110.	200-582-911-NHh
(g)	One AC input (120/230 V_{AC}) with screw-terminal connector and rear-panel fuses that provides a common input to the RPS6U power supplies. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F120.	200-582-912-NHh
(h)	Two AC inputs (120 V_{AC} only) with mains sockets and on/off switches that provide a common input to the RPS6U power supplies. Supports redundant external power-supply systems. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F620.	200-582-962-NHh
(i)	Two AC inputs (120/230 V_{AC}) with mains sockets and on/off switches that provide individual inputs to the RPS6U power supplies. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F630.	200-582-963-NHh
(j)	Two AC inputs (230 V_{AC} only) with mains sockets and on/off switches that provide a common input to the RPS6U power supplies. Supports redundant external power-supply systems. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F600.	200-582-960-NHh
(k)	Two AC inputs (120/230 V_{AC}) with screw-terminal connectors, on/off switches and rear-panel fuses that provide individual inputs to the RPS6U power supplies. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F150.	200-582-915-NHh
(l)	Two AC inputs (120/230 V_{AC}) with screw-terminal connectors and rear-panel fuses that provide individual inputs to the RPS6U power supplies. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F160.	200-582-916-NHh
(m)	One AC input (120/230 V_{AC}) with mains socket and on/off switch and one DC input with screw-terminal connector that provide individual inputs to the RPS6U power supplies. This rear panel is equivalent to Rear panel for RPS6U power supply order option code F700.	200-582-970-NHh

ORDERING INFORMATION *(continued)*

Notes

All AC input rear panels are supplied with a mains power supply lead (no lead is supplied for the DC input versions). See **Mains power supply leads (power cords) on page 14**.
AC input rear panels with mains sockets have an IEC type C14 connector (IEC 60320) that mates with the plug (type C13) used by the supplied mains power supply leads.

Rear panels with one input – (a), (b), (c), (d), (e), (f) and (g) – are 2 slots wide / 8 HP (TE).
Most rear panels with two inputs – (h), (i), (j), (k) and (l) – are 4 slots wide / 16 HP (TE).
However, the rear panel with AC and DC inputs – (m) is 2 slots wide / 8 HP (TE).
(The width of 19″ rack is measured in horizontal pitch (HP) units of 5.08 mm (0.2″), also known as standard width (TE) units. For the ABE04x rack, a one slot wide (one card position) blank panel corresponds to 4 HP (TE), a two slot wide blank panel corresponds to 8 HP (TE) and a four slot wide blank panel corresponds to 16 HP (TE).)

Rear panels with two input connectors that provide a common input to the RPS6U power supplies – (d), (h) and (j) – installed in the rack can be used with a redundant external power-supply system.

For additional information on the Rear panel for RPS6U power supply order option codes (Fxxx), refer to the *ABE040 and ABE042 VM600 system rack* and *ABE056 VM600 slimline rack* data sheets.

For the Ordering number:
“NHh” represents the hardware version.
“N” is either “0” for a rear panel according to (and marked) CE low voltage directive or “2” for a rear panel according to (and marked) cCSAus.
“H” increments are for major modifications that can affect product interchangeability.
“h” increments are for minor modifications that have no effect on interchangeability.

Mains power supply leads (power cords)

To order please specify the type (Mains power supply lead), designation and ordering number from the table below

Designation	Ordering number
None – no mains cable. This rear panel is equivalent to Mains power supply lead (power cord) order option code H00.	---
No plug – flying lead with wire-end ferrules. This rear panel is equivalent to Mains power supply lead (power cord) order option code H01.	957.18.13.0020
J plug as per SEV 1011 (Switzerland). This rear panel is equivalent to Mains power supply lead (power cord) order option code HCH.	957.18.13.0021
E+F plug as per CEE7/VII (Europe, Russia, Ukraine). This rear panel is equivalent to Mains power supply lead (power cord) order option code HEU.	957.18.13.0022
G plug as per BS 1363 (UK, Hong Kong, Malaysia, Singapore). This rear panel is equivalent to Mains power supply lead (power cord) order option code HUK.	957.18.13.0023
B plug as per JIS 8303 (Japan). This rear panel is equivalent to Mains power supply lead (power cord) order option code HJP.	957.18.13.0024
B plug as per NEMA 5-15 (United States, Canada). This rear panel is equivalent to Mains power supply lead (power cord) order option code HUS.	957.18.13.0025

Notes

The mains cables (power cords) are for the AC input version of the RPS6U power supply. No cables are available for the DC input versions. Rear panels with two AC inputs for independent mains supplies (ordering numbers: 200-582-96x-NHh) require two mains cables.

For additional information on the Mains power supply lead (power cord) order option codes (Hxx), refer to the *ABE040 and ABE042 VM600 system rack* and *ABE056 VM600 slimline rack* data sheets.

RELATED PRODUCTS

ABE040 and ABE042	VM600 system rack	: Refer to corresponding data sheet
ABE056	VM600 slimline rack	: Refer to corresponding data sheet
ASPS	Auxiliary sensor power supply	: Refer to corresponding data sheet

Headquartered in the UK, Meggitt PLC is a global engineering group specializing in extreme environment components and smart sub-systems for aerospace, defence and energy markets.

Meggitt Sensing Systems is the operating division of Meggitt specializing in sensing and monitoring systems, which has operated through its antecedents since 1927 under the names of ECET, Endevco, Ferroperm Piezoceramics, Lodge Ignition, Sensorex, Vibro-Meter and Wilcoxon Research. Today, these operations are integrated under one strategic business unit called Meggitt Sensing Systems, headquartered in Switzerland and providing complete systems, using these renowned brands, from a single supply base.

The Meggitt Sensing Systems facility in Fribourg, Switzerland was formerly known as Vibro-Meter SA, but is now Meggitt SA. This site produces a wide range of vibration and dynamic pressure sensors capable of operation in extreme environments, leading-edge microwave sensors, electronics monitoring systems and innovative software for aerospace and land-based turbo-machinery.

In this publication, a dot (.) is used as the decimal separator and thousands are separated by thin spaces. Example: 12345.67890.

Sales offices

Meggitt Sensing Systems has offices in more than 30 countries. For a complete list, please visit our website.

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Head office

Meggitt SA
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

Tel: +41 26 407 11 11
Fax: +41 26 407 13 01

www.meggittsensingsystems.com
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