

Rack power supply unit

FEATURES

- Power supply unit for VM 600 series racks
- Fully VME compatible
- High performance
- Wide input voltage range
- Over-voltage protection
- Continuous short-circuit-proof
- Minimal derating within the temperature range
- Compact design
- Height 6U
- Supports redundancy
- Conforms to EC standards for EMC



DESCRIPTION

The RPS 6U rack power supply units are designed for use in Vibro-Meter's VM 600 series of machinery protection systems and condition and performance monitoring systems.

The RPS 6U is installed in the front of the ABE 04X rack and connects directly to the rack backplane via two connectors. The unit provides power (+5 V and ± 12 V) for all cards in the rack.

The rack may be powered by a single RPS 6U unit. Optionally, a second unit may be installed to provide redundancy.

Various versions of the RPS 6U exist, enabling the rack to be powered from an AC or a DC supply and allowing various supply voltages to be used.

SPECIFICATIONS

POWER

Supply

| | |
|----------------------|---------------------------------------|
| Rated power | : 300 W |
| Rated supply voltage | : See ordering information on page 10 |

Output

Nominal output (U_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 | : $\leq \pm 0.2\%$ |
| Ripple (bandwidth 20 MHz) | : ≤ 50 mVpp |
| Output current limitation | : 35 A (built-in electronic current limitation) |
| Output overvoltage protection | : 5.9 to 6.7 V (factory set) |
| Power derating | : 1% / °C from 60°C to 70°C |

Input

| | |
|----------------------------------|---------------------------------------|
| Input voltage range (U_i nom) | : See ordering information on page 10 |
| Mains frequency variations | : See ordering information on page 10 |
| Efficiency | : See ordering information on page 10 |

ENVIRONMENTAL

| | |
|-----------------------------|---|
| Operating temperature range | : -25°C to +65°C (-13°F to +149°F) |
| Storage temperature range | : -40°C to +85°C (-40°F to +185°F) |
| Humidity (IEC 68-2-3) | : $\leq 95\%$ non-condensing |
| Vibration (IEC 68-2-6) | : 10 to 2000 Hz, 5 g, 2 h in each direction |
| Shock (IEC 68-2-27) | : 100 g, 6 ms, half-sine pulse |

PHYSICAL

| | |
|------------|----------------------|
| Dimensions | : 6U / 12TE x 187 mm |
| Weight | : 2.1 kg approx. |

SAFETY

| | |
|-----------------------------|--|
| Applicable safety standards | : UL 1950, CSA 22.2#234, IEC 950, EN 60950 |
| Marking | : See ordering information on page 10 |

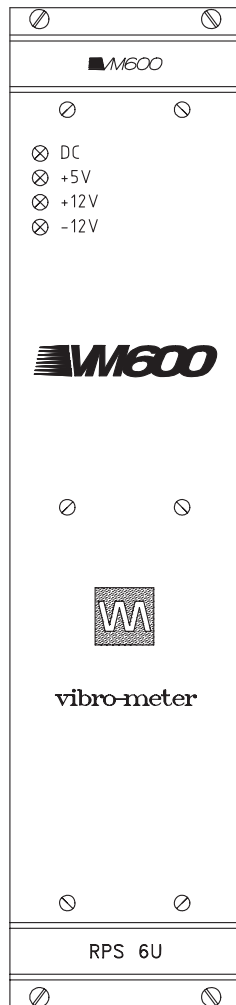


TOLERANCE TO MICRO-CUTS IN POWER SUPPLY

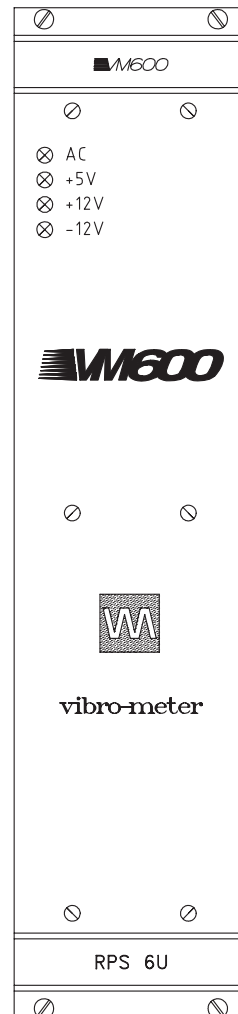
The table below shows the maximum permissible duration of a power cut which will not cause the MPC 4 cards to be reset. This value depends on the number of MPC 4 cards and RPS 6U units installed in the VM 600 rack.

| Number of MPC 4 cards in rack | Number of RPS 6U units in VM 600 rack | |
|-------------------------------|---------------------------------------|---------|
| | 1 unit | 2 units |
| 2 cards | 190 ms | 250 ms |
| 12 cards | 10 ms | 20 ms |

RPS 6U POWER SUPPLY FRONT PANELS



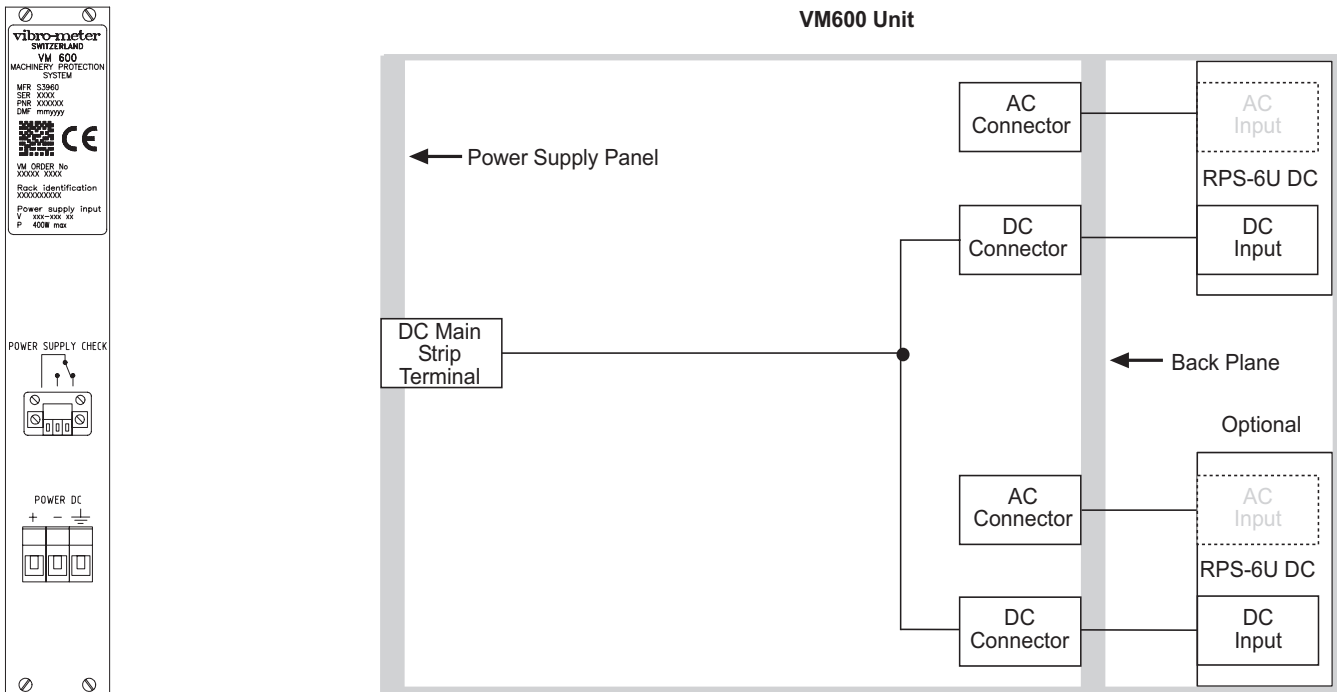
Version for
DC mains supply



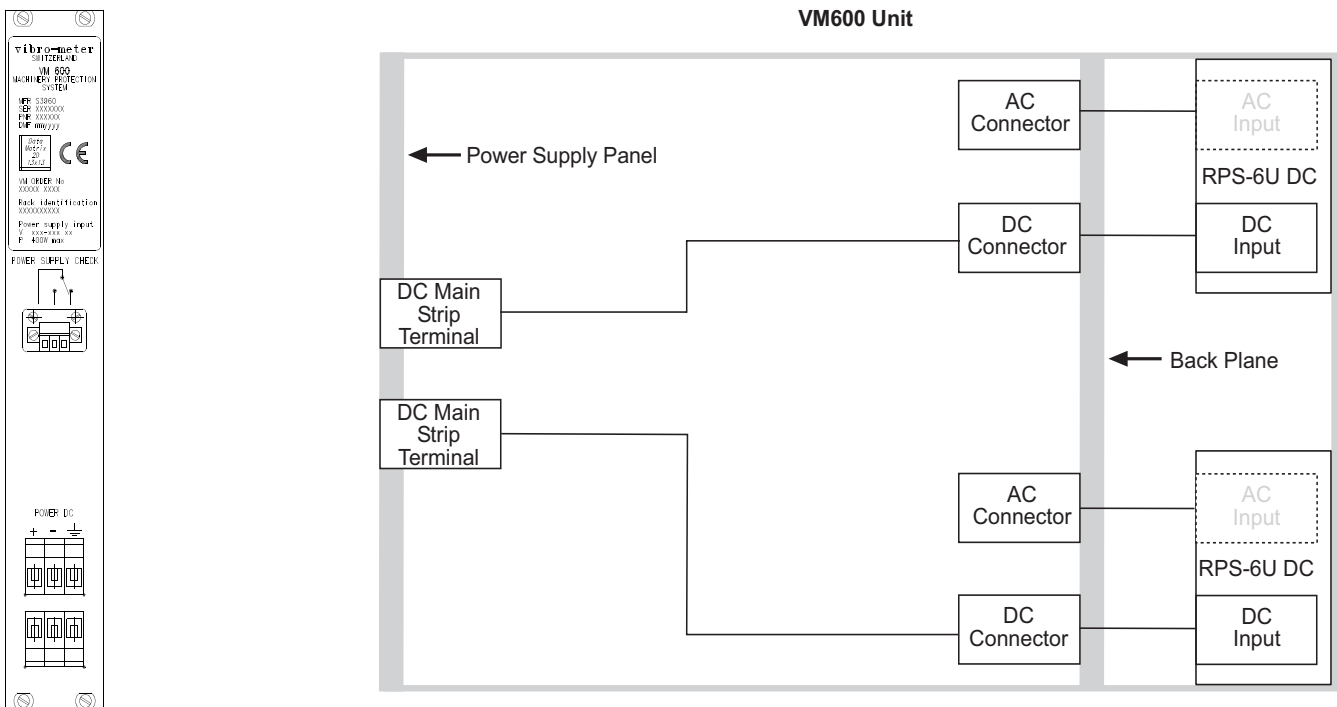
Version for
AC mains supply

ASSOCIATED REAR PANELS

(a) Standard DC version (ordering number: 200-582-920-01h)



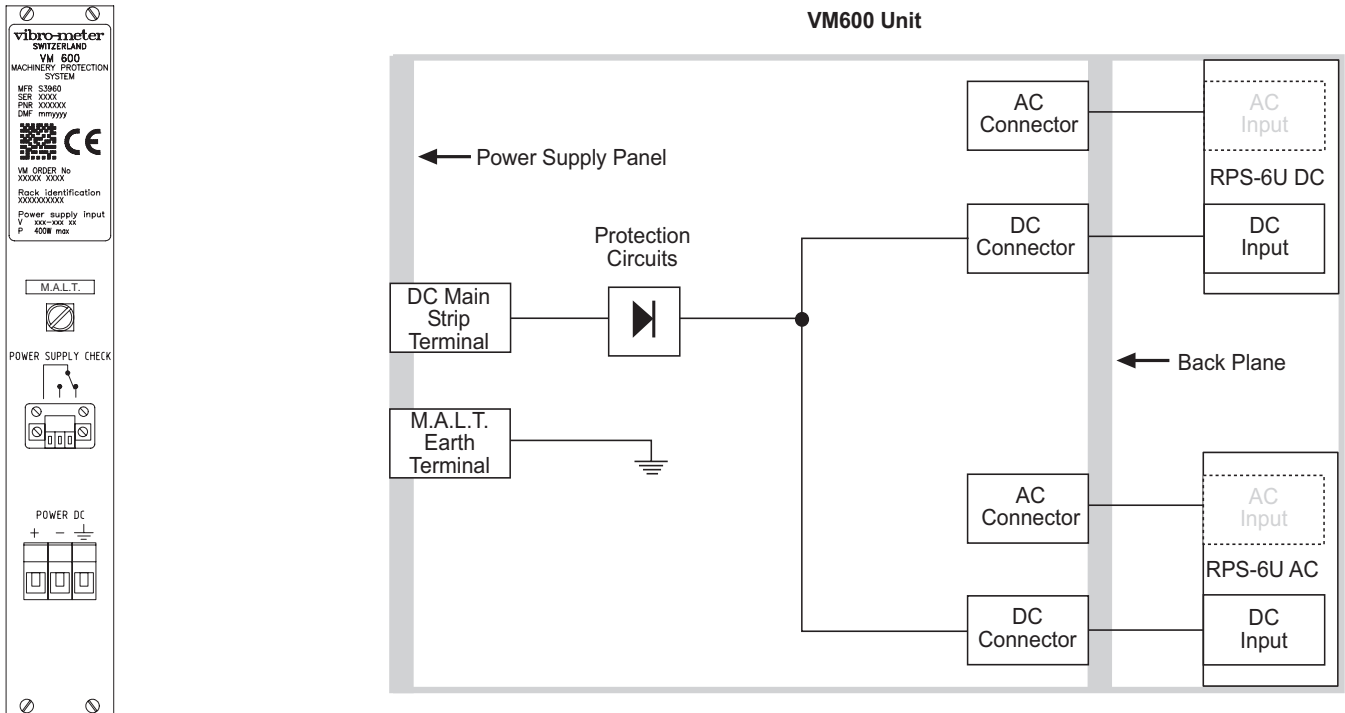
(b) DC version (ordering number: 200-582-993-01h)



This version has two DC screw strip terminal inputs, and individual inputs on each RPS.

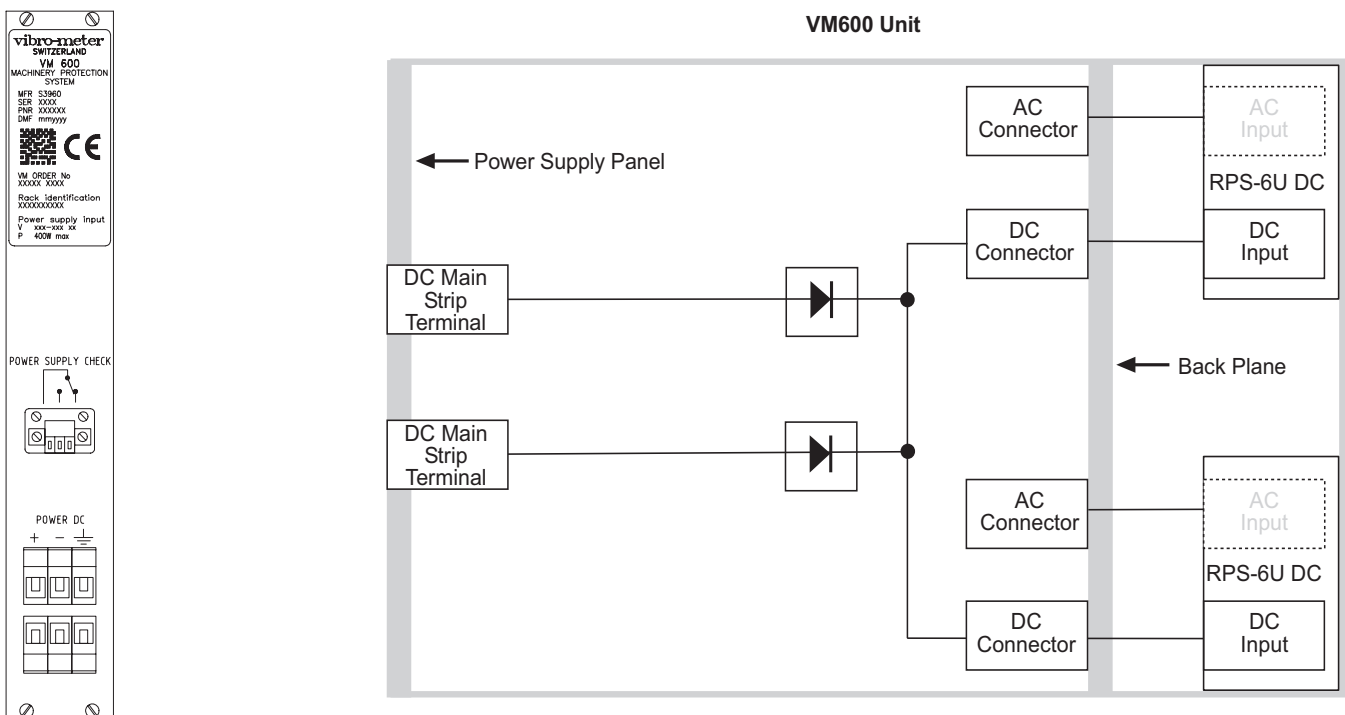
ASSOCIATED REAR PANELS (Continued)

(c) DC version with earth terminal (ordering number: 200-582-922-01h)



This version has a standard DC screw terminal strip and a special earth terminal (marked M.A.L.T.).

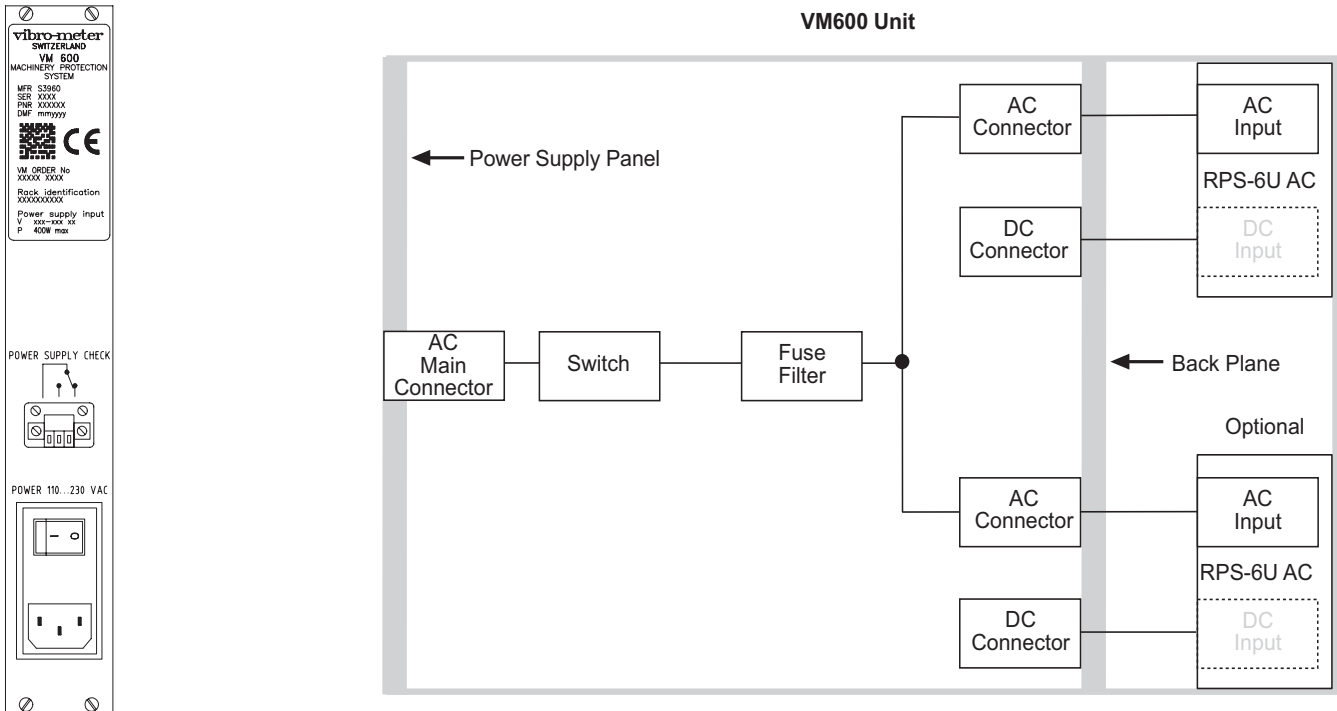
(d) Special DC version (ordering number: 200-582-990-01h)



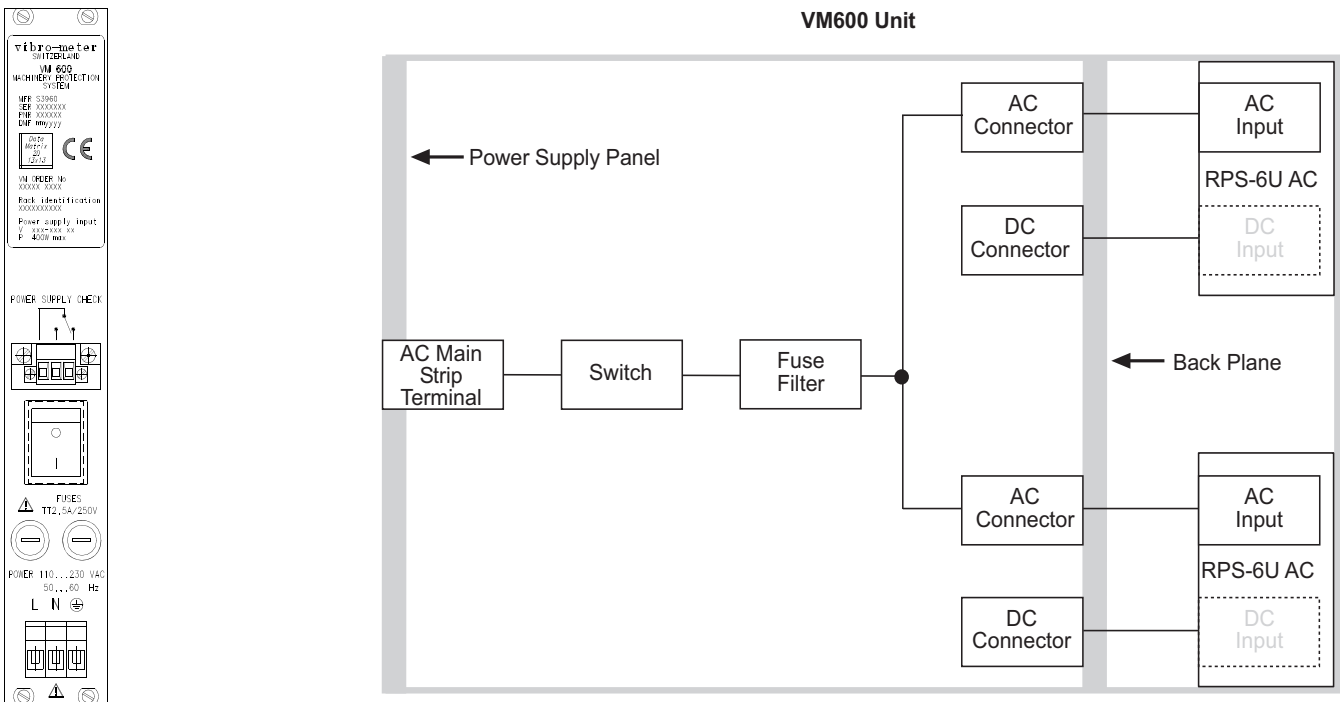
This version has two DC screw terminal strips, intended for the connection of two independent DC mains supplies. Both strips are wired to the same points on the rack backplane. This allows the rack to continue operating even if one of the DC mains supplies is defective.

ASSOCIATED REAR PANELS (Continued)

(e) Standard AC version (ordering number: 200-582-910-02h)



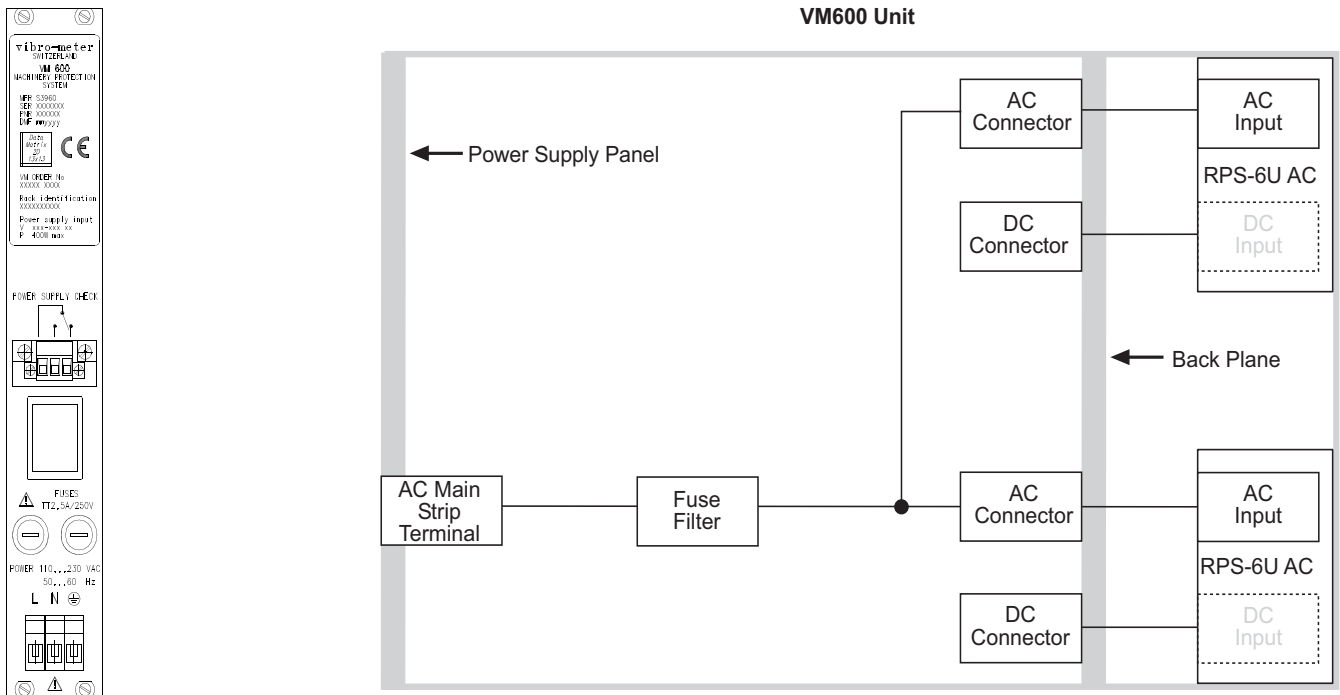
(f) AC version (ordering number: 200-582-911-02h)



This version has a screw terminal strip and mains switch.

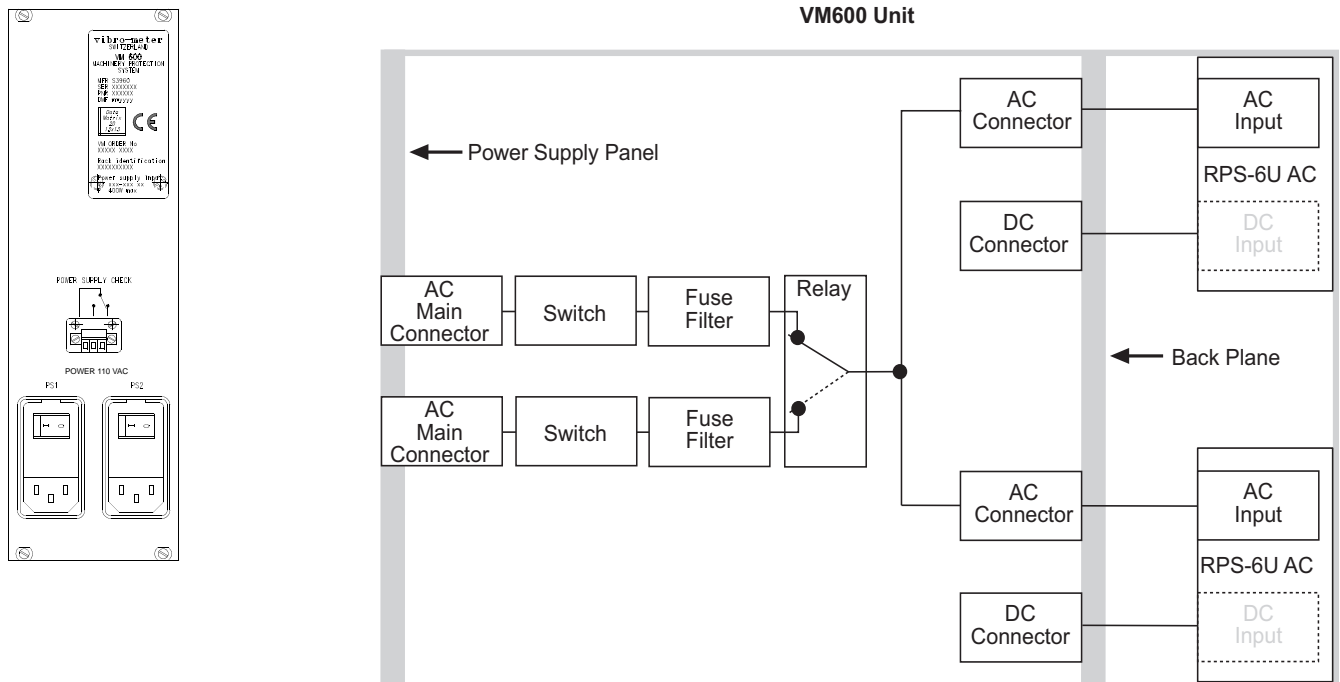
ASSOCIATED REAR PANELS (Continued)

(g) AC version (ordering number: 200-582-912-02h)



This version has a screw terminal strip, but no mains switch.

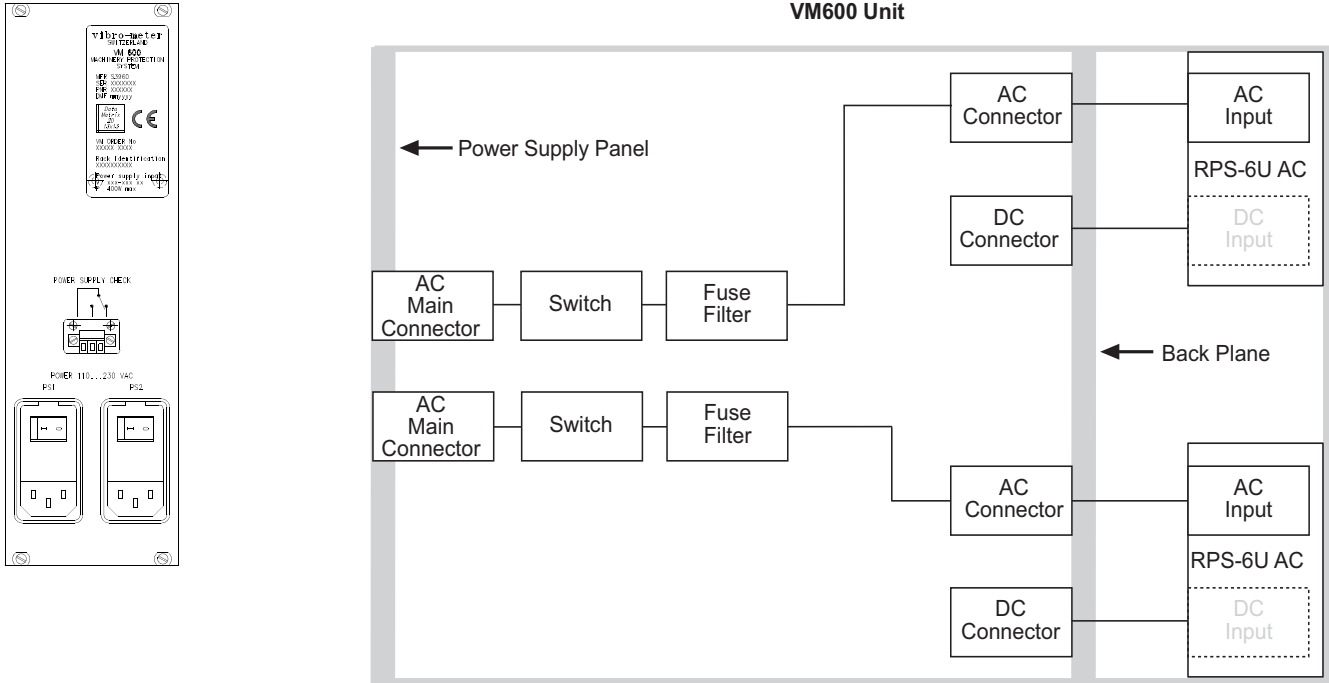
(h) AC version (ordering number: 200-582-962-01h)



This version has two AC main connectors, operating at 110 V_{AC}

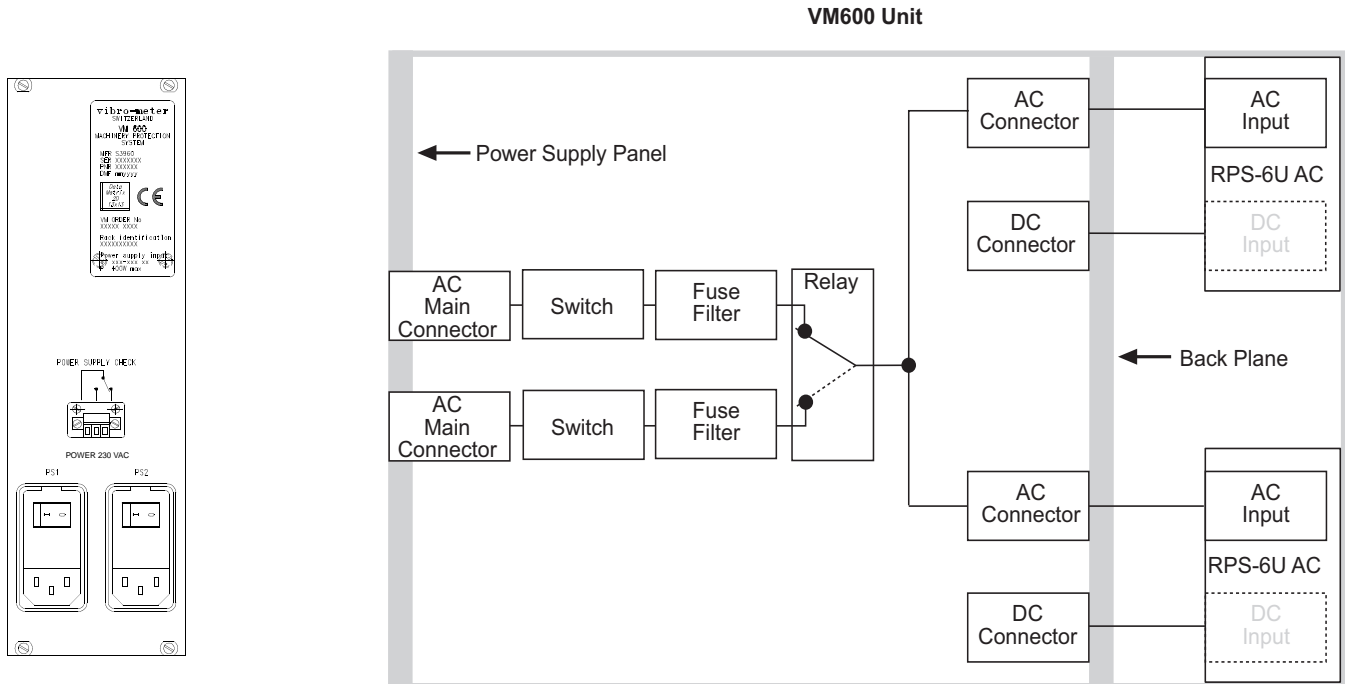
ASSOCIATED REAR PANELS (Continued)

(i) AC version (ordering number: 200-582-963-01h)



This version has two AC main connectors and individual outputs to each RPS.

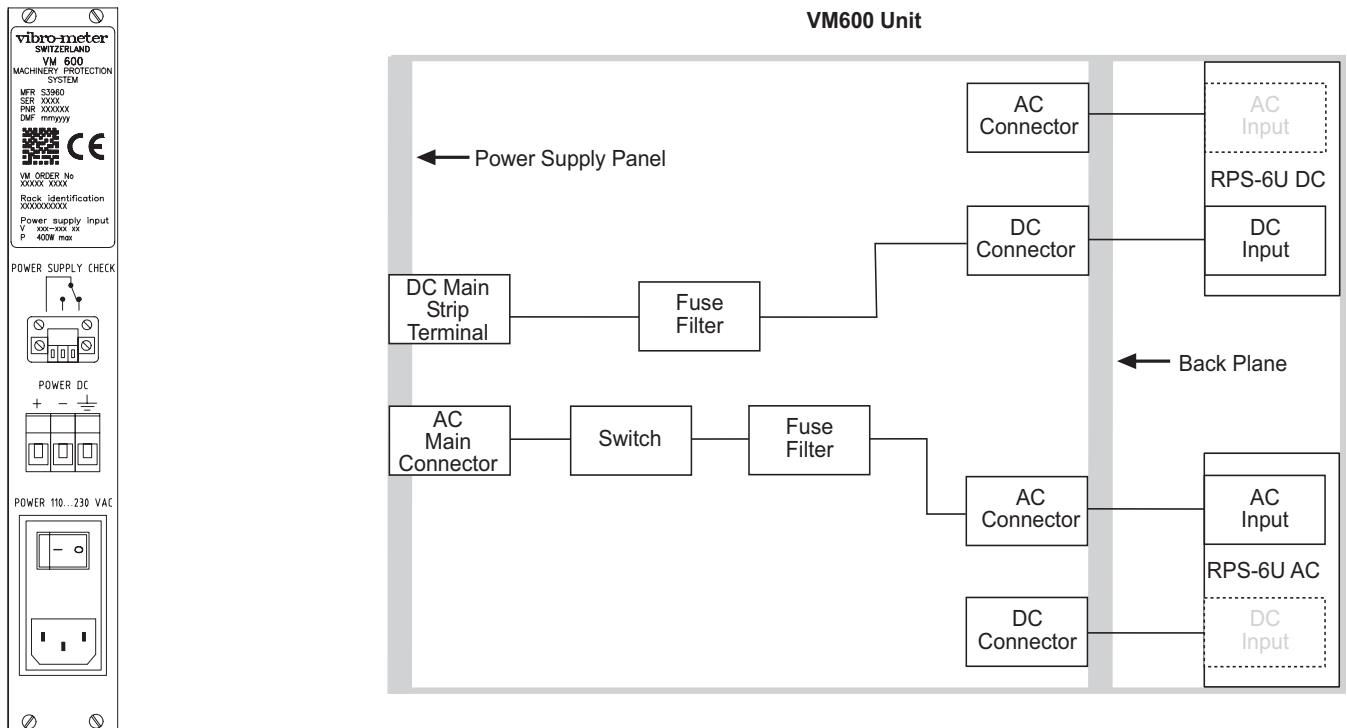
(j) Special AC version (ordering number: 200-582-960-03h)



This version has two AC sockets, intended for the connection of two independent AC mains supplies. Both sockets are independently wired to a switching circuit on the rack back plane. The rack is normally powered by the PS1 AC mains supply. If this supply is defective, the switching circuit allows operation to continue with the PS2 AC mains supply.

ASSOCIATED REAR PANELS (Continued)

(k) Special AC and DC version (ordering number: 200-582-970-01h)



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 back plane's AC and DC inputs, respectively. This allows the rack to continue operating even if one of the mains supplies is defective.

ORDERING INFORMATION


Rack power supply units

To order please specify the designation, type and ordering number:

Designation: Rack power supply unit

Type: see table below

Ordering number: see table below

| Power supply | DC versions | | | | AC version |
|---|---|--|-----------------------------|---------------------------|---|
| Type | RPS 6U 24 DC | RPS 6U 48 DC | RPS 6U 72 DC | RPS 6U 110 DC | RPS 6U 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} | 110 / 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% |
| Marking | According to CE low voltage directive |  LR111641 Level 3 | | | |

(1): "h" represents the hardware version. "h" increments for minor modifications that have no effect on interchangeability.

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

ORDERING INFORMATION (continued)

Rear panels

To order please specify the designation, type and ordering number from the table below (also refer to drawings on page 4 - 9, references (a) to (k)). All rear panels come fully equipped with cables.

| Drawing | Type | Designation | Ordering number |
|---------|--|---|-----------------|
| (a) | Rear panel for DC rack power supply units | 24 V _{DC} , 48 V _{DC} , 72 V _{DC} and 110 V _{DC} | 200-582-920-01h |
| (b) | Rear panel for DC rack power supply units | 24 V _{DC} , 48 V _{DC} , 72 V _{DC} and 110 V _{DC} ; with two DC inputs for independent mains supplies (individual I/P per RPS) | 200-582-993-01h |
| (c) | Rear panel for DC rack power supply units | 24 V _{DC} , 48 V _{DC} , 72 V _{DC} and 110 V _{DC} ; with special earth terminal (marked M.A.L.T.) | 200-582-922-01h |
| (d) | Rear panel for DC rack power supply units | 24 V _{DC} , 48 V _{DC} , 72 V _{DC} and 110 V _{DC} ; with two DC inputs for independent mains supplies | 200-582-990-01h |
| (e) | Rear panel for AC rack power supply units | 110 / 230 V _{AC} | 200-582-910-02h |
| (f) | Rear panel for AC rack power supply units | 110 / 230 V _{AC} ; with screw terminal strip and mains switch | 200-582-911-02h |
| (g) | Rear panel for AC rack power supply units | 110 / 230 V _{AC} ; with screw terminal strip | 200-582-912-02h |
| (h) | Rear panel for AC rack power supply units | 115 V _{AC} ; with two AC inputs for independent mains supplies | 200-582-962-01h |
| (i) | Rear panel for AC rack power supply units | 110 / 230 V _{AC} ; with two AC inputs for independent mains supplies (individual I/P per RPS) | 200-582-963-01h |
| (j) | Rear panel for AC rack power supply units | 110 / 230 V _{AC} ; with two AC inputs for independent mains supplies, fully equipped with switching circuit | 200-582-960-03h |
| (k) | Rear panel for rack with an AC and a DC rack power supply unit | 110 / 230 V _{AC} and 24 V _{DC} , 48 V _{DC} , 72 V _{DC} and 110 V _{DC} respectively; with an AC and a DC input for independent mains supplies | 200-582-970-01h |



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