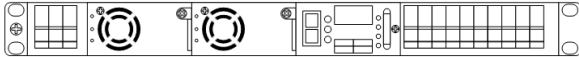


Quick Installation Guide MS700876



Safety Notes

Read Instructions!

Before working with this unit, read these instructions carefully and completely. Make sure that you have understood all the information!

Disconnect System from Supply Network

Before any installation, maintenance or modification work:
Disconnect your system from the supply network.
Ensure that it cannot be reconnected inadvertently!

Before Start of Operation Ensure Appropriate Installation

WARNING

Improper installation / operation impairs safety and result in operational difficulties or complete failure of the unit.

The power supply MS700876 is designed for use with other equipment or enclosure which restricts access to authorized competent personnel only. The unit covers/chassis are designed to protect only skilled personnel from hazards and must not be made user accessible.

The unit must be installed and put into service appropriately by qualified personnel only. Compliance with the relevant regulations must be ensured. Before operation is begun the following conditions must be ensured, in particular:

- Connection to main power supply in compliance with VDE0100 and EN50178
- With stranded wires: all strands must be secured in the terminal blocks (potential danger of short circuit)
- Unit and power supply cables must be properly fused; if necessary a manually controlled disconnecting element must be used to disengage from mains supply.
- The non-fused earth conductor must be connected to the EARTH terminal (protection class 1).
- All output lines must be rated for the power supply output current and must be connected with the correct polarity.
- Sufficient air cooling must be ensured.

In operation: No modifications!

IMPORTANT

As long as the unit is in operation: do not modify the installation! The same applies also to the secondary side. Risk of electric arcs and electric shock (fatal)! **Only connect and disconnect when the power is off!**

Convection Cooling

Do not cover any ventilation holes!
Leave sufficient space around the unit for cooling!

WARNING | High Voltage! Stored Energy!

The unit contains unprotected conductors carrying a lethal high voltage, and components storing substantial amounts of energy. Improper handling may result

in an electric shock or serious burn!

- The unit must not be opened except by appropriately trained personnel only!
- Do not introduce any objects into the unit!
- Keep away from fire and water!

Installation

Mounting

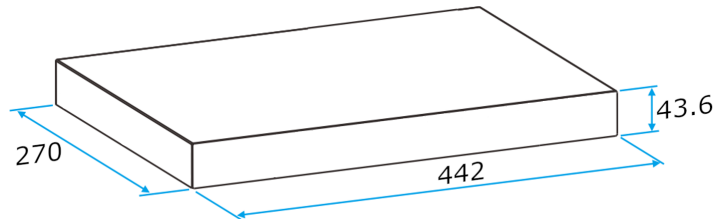


Figure 1. Power Supply Unit - Dimensions

Permissible mounting position: keep free ventilation holes, leave space for cooling! Recommended to have at least 50 mm free space at all sides for ventilation / cooling.

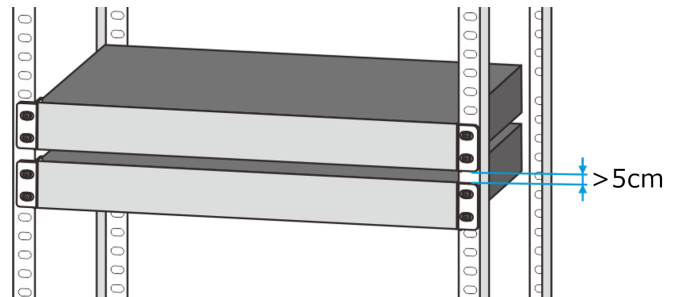


Figure 2. Power Supply Unit - Ventilation

Please read the following instructions to ensure proper installation:

IMPORTANT

Make sure the power supply is **Off**

- Prepare the 19" rack for the installation of the power supply.
- Locate and unscrew the small cover screws positioned on the sides of the main unit box of the power supply.

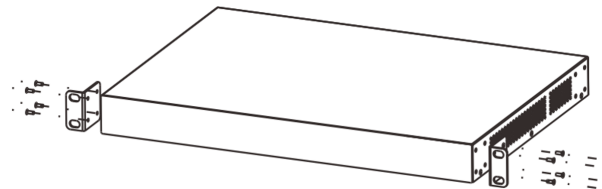


Figure 3. Power Supply Unit - Fixing Screws

- Align the screws located on the side of the main unit box with the grooves on the rack-plate.
- Gently push the main unit box into the grooves, ensuring careful alignment.
- Once positioned correctly, evenly tighten the screws on the sides of the main unit box to firmly secure it to the rack-plate.

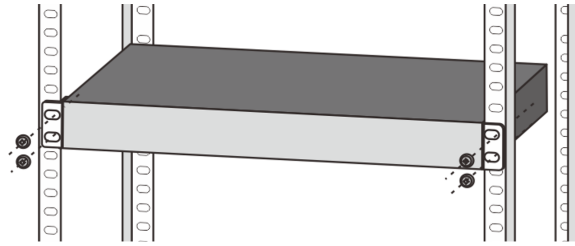


Figure 4. Power Supply Unit - Fixing on Rack

- Unscrew the fixing screws located on the top right corner of the rectifier and monitor modules.
- Insert the monitoring and the rectifier modules into the corresponding slots:
 - Both the monitor module and rectifier module panels come equipped with handles.
 - During insertion into the main unit box, firmly grip the handle of the module with one hand.
 - Support the components with the other hand.
 - Slowly push the modules into the corresponding slots.
 - Ensure the connection terminals on the rear panel of the modules align with the sockets on the main unit box for proper insertion.
 - Tighten the fixing screws on the rectifier and monitor modules.
- Conduct a slight shake test to verify whether the power supply is securely fastened in place.
- Switch the power supply **on** and verify normal operation of the unit with the assistance of the LED tables shown in the [Front Elements](#).

IMPORTANT | Ensure the power supply unit is **grounded** before powering **On**.

Unmounting

- Switch the power supply **off**.
 - Make sure the rectifier fan stops revolving.
- Remove the monitoring and the rectifier modules into the corresponding slots:
 - Unscrew the fixing screws located on the top right corner of the rectifier and monitor modules.
 - Slowly pull the modules out.
- Hold the main unit box carefully and unscrew the screws on the sides of the main unit box that is firmly secured on to the rack-plate.
- Gently unmount and remove.

Front Elements

Rectifier Module

LED

Colour	Normal	Abnormal
Green (Running)	On	Off
Yellow (Protection)	Off	On
Red (Fault)	Off	On

NOTE | For a more detailed description on each of the LEDs on each module, check the MS700876 manual.

Other

- Fixing screw
- Fan

Monitor Module

LED

Color	Normal	Abnormal
Green (Running)	Blinking	Always on or always off
Yellow (Alarm)	Off	On
Red (Fault)	Off	On

NOTE | For a more detailed description on each of the LEDs on each module, check the MS700876 manual.

Connector

- 1x RJ45 interface
- 1x RS485 interface
- 4x 6P Connector

LCD

- Shows basic system information, when the battery is connected or the rectifier module is activated.
- Is used to select between the available menu options to write customizable parameters and settings, and to read all available parameters and settings.

LCD Operation Keys

- **UP**: Starts upward scrolling within menus, allows parameter adjustments by increasing values, and aids in navigating through various settings.
- **OK**: Allows for quick transitions between menus of the same level or equal tiers, speeding menu navigation and selection processes.
- **DOWN**: Allows for downward scrolling in menus, parameter adjustments by decreasing values, and aids in navigating through various settings.
- **CANCEL**: Provides a quick exit path by canceling current actions and returning users to the previous menu level, hence improving user experience and workflow efficiency.

Other

- Fixing screw

Connection / Internal Fuse

Connection

- Data for permitted loads, cable-cross sections and stripping:
 - 230 VAC input line:
 - 4 mm² three-core wire
 - AWG 11
 - Withstand voltage > 500 V
 - Output load line:
 - 6 mm² two-core wire
 - AWG 9
 - Withstand voltage > 300 V
 - 10 mm Isolation Stripping Length
- Use only commercial cables designed for the indi-

cated voltage and current values.

- With flexible cables: make sure that all stranded cables are secured in the terminal.
- Ensure proper polarity at output terminals!

Grounding

Do not operate without PE connection! To comply with EMC and safety standards (CE mark, EN 60950-1), the unit must only be operated if the PE terminal is connected to the non-fused earth connector.

Internal Fuse

Internally, 50A car type fuse is available per channel. The internal fuse serves to protect the unit and must not be replaced by the user. In case of an internal defect, the unit must be returned to the manufacturer for safety reasons.

IMPORTANT | External 16A fuses are recommended!

Technical Data

All specifications are typical at nominal line, full load and 25° C; unless otherwise specified.

General Specification

Operational Temperature	-25°C ... +55°C
Storage Temperature	-40°C ... +80°C
Derating	2 % / °C from 55°C...65°C
Relative Humidity	10..90 %, non-condensing
Cooling	• Forced air cooling: Forward and rear air outlet • Fan at front pane: Temperature control and speed regulation function
Efficiency	• ≥ 95 %, at 220 VAC • ≥ 92 %, at 110 VAC
Enclosure Material	Metal
Dimensions (W x D x H) (mm)	482.6 x 270 x 43.6
Weight	• ≤ 8 Kg, with modules • ≤ 4 Kg, without modules
IP Rating	IP21
Power Factor Correction	0.98 according to EN61000-3-2
Fuse Rating	15A internal fuse / rectifier module, non recoverable

Input Specification

Rated Input Voltage	110 VAC / 220 VAC
AC Input Voltage Range	90..280 VAC
DC Input Voltage Range	42..58 V
Frequency	45..65 Hz
Rated Input Current	10 A
Inrush Current	3A

Output Specification

Rated Voltage	54 V
Rated Current	30 A
Rated Power	1600 W
Voltage Adjustment Range	42..58 V
Line Regulation	1 %
Load Regulation	1 %
Ripple	200 mV
Hold-up Time	10 ms
Turn On Time	3-10 s
Voltage Rise Time	< 500 ms
Voltage Fall Time	n/a
Overvoltage Protection	• 59..60 V • 58.5..61.5 V (rectifier)
Rated Overload Protection	110%, 33 A / module, recovers automatically after fault condition is removed
Current Limit	110% can be configured in monitor module in 1A steps; (without monitor module up to 30A)

Standards

Low Voltage Directive	EN IEC 62368-1:2020+A11:2020
EMC	EN 55032:2015+A1:2020 EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013+A2:2021 EN 55035:2017+A11:2020

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Document ID: QIG-EN-MS700876-19inch-1U-DC-Power-Supply_v1.0

Date of Issue: 2025-04-25