

Technical Description

Wireless Automation

Power Supply

WPU100



Power and productivity
for a better world™



Power Supply

WPU100

Technical description

Please note the following

Target group

This description is intended for the use of trained specialists in electrical installation and control and automation engineering, who are familiar with the applicable national standards.

Safety requirements

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

Liability

The documentation has been prepared with care. The products described are, however, constantly under development. For that reason the documentation is not in every case checked for consistency with performance data, standards or other characteristics, and does not represent an assurance of characteristics in the sense of § 459, Para. 2 of the German Civil Code. In the event that it contains technical or editorial errors, we retain the right to make alterations at any time and without warning.

No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

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Power Supply

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WPU100: Output current 4 ... 24 A, adjustable in 13 steps

Purpose and short description

The power supply WPU100 provides the current for the generation of an electromagnetic field of 120 kHz with the help of the connected primary loops WPC100. This magnetic field supplies the devices using Wireless-POWER technology with auxiliary energy for communication and sensor heads (e. g. communication module WSIX, sensor pad WSP).

The installation in pairs generates a two-dimensional, rotating, electromagnetic field. For larger modular setups more than two WPU100-24M may be used (see manual "*Planning, Installation and Commissioning Guidelines*").



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Power Supply

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Technical data

Type	WPU100-24M
Amount of power supplies in one cell	1-6 (modular expandable)
Distance to neighboring wireless power cell	0.3 m
Output frequency	120 kHz
Output voltage	up to 700 V at a connected primary loop (at max. loop size and max. current only)
Output current	4 ... 24 A, adjustable in 13 steps
Permissible inductance at the output	11 ... 54 µH (both primary loops incl. supply line)
Operating elements	1 green LED for "system ready" 2 red LEDs for error indication
Operating elements	1 DIL switch for output current selection 1 DIL switch for phase selection (0° / 90°) .. and for operating mode selection (master / slave)
Start-up time	15 s (typ.)
Electrical connections	4 terminals for the electrical connection of 1 or 2 primary loops (short circuit unused terminal pair) 1 terminal set for synchronization input 1 terminal set for synchronization output 1 terminal set for supply voltage 1 terminal set for malfunction signal output (isolated make contact B300R300)
Synchronization	Automatic synchronization with a second power supply for generating a two-dimensional rotating electromagnetic field (Master/Slave via a synchronization cable)
Supply voltage	120 ... 230 V AC (+10 % -15 %), 50 ... 60 Hz (±5%)
Supply voltage rating (feed-in)	120 V AC / 5.0 A (Fuse 8 A) 230 V AC / 2.6 A (Fuse 4 A)
Typical power consumption (P)	Depends on metall close to the connected primary loops (especially steel). Estimated value for production machines with a volume V [m³] surrounded by loops and rotating field: $P = 50 \text{ W} + 5 \dots 10 \text{ W/m}^3 \times V$
Internal fuse (5 x 20 mm)	6.3 A Fast (1500 A switch-off capability!)
Operating temperature	0 ... +45 °C
Storage temperature	-25 ... +70 °C
Degree of protection acc. to IEC 60529	IP 65
Mounting	4 M8 assembly holes for screw mounting (on back side, additional brackets enclosed)
Dimensions (width x height x depth)	404 mm x 313 mm x 173 mm
Colour	dark gray
Weight	17.5 kg
Suitable synchronization cable	Unshielded twisted pair cable, with wire-end ferrules
Suitable primary loop conductors	Exclusive use of the ready-made primary loop conductors from the product range




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Approvals and authorizations

Approvals

 VDE Deutschland	 UL USA	 CSA Canada
■	■	■

■ = Approval available; rating plates carry the test symbol, if sign obligation exists.
□ = Approval submitted

Ordering data

Type	Designation	Ordering number	EAN number
WPU100-24M	Power supply for wireless position sensors, modular	1SAF960200R0001	4013614388552

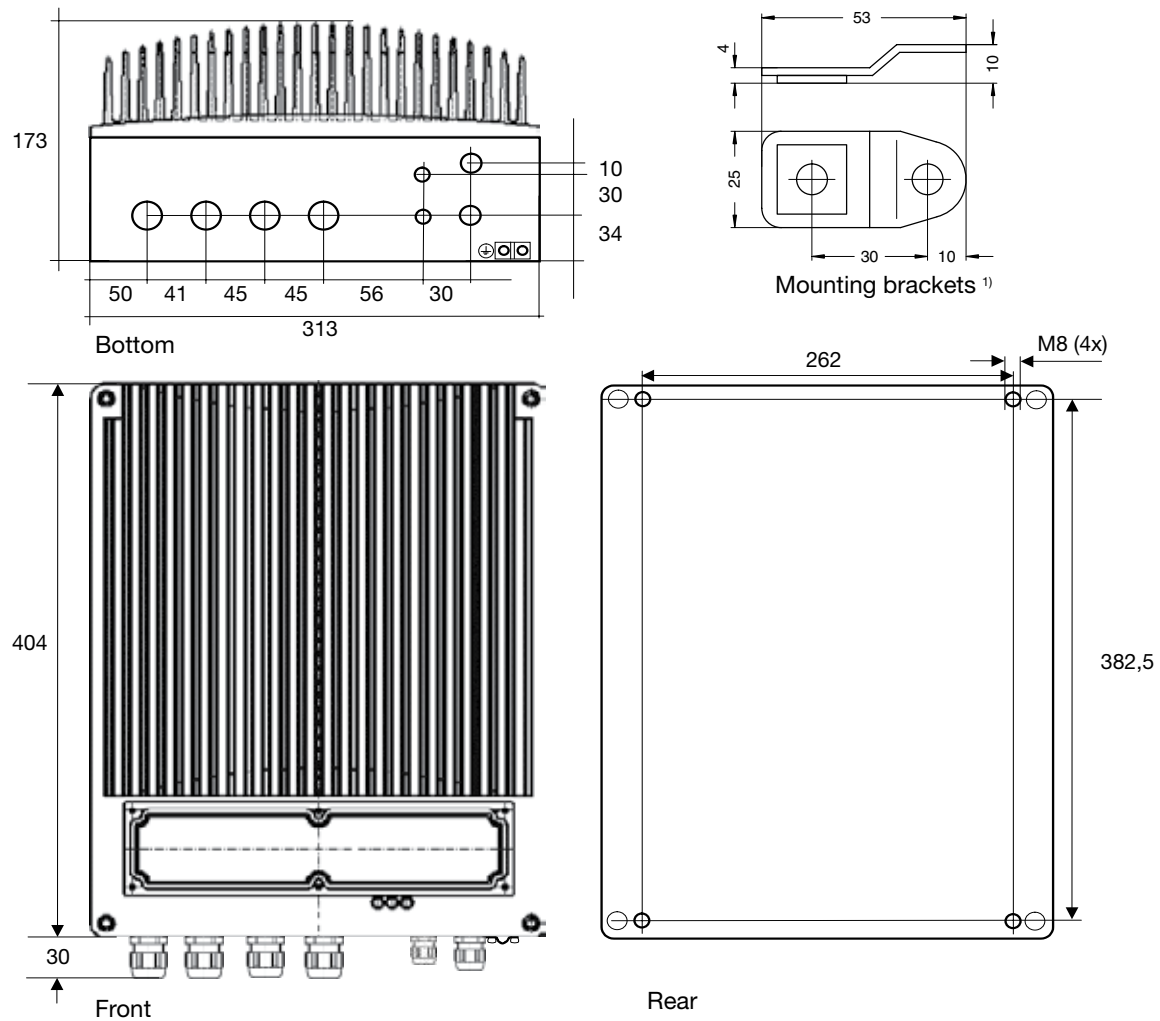
Modification compared to previous versions

Type	Ordering number	Characteristics/modification compared to previous versions
WPU100-24	1SAF900200R0001	Max. 2 power supplies in one cell, distance to neighboring wireless power cell min. 2 x loop size.
WPU100-24M	1SAF960200R0001	Max. 6 power supplies in one cell, distance to neighboring wireless power cell min. 0.3 m.

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Mechanical dimensions



All dimensiones in mm

Fig. 2: WPU100 Mechanical dimensiones



Leave free space for convection cooling of 20 cm above supplies.

¹⁾ Mounting brackets e. g. Rittal KL1590 (included in delivery)

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