

NEW PRODUCT



1 kW Wireless Charging System

- Highly efficient contactless charging for industrial applications including electric vehicles
- No part wear
- Fully automated charging
- Low weight on vehicle

Versatile Charging

Charge any battery type
Each Primary Unit charges 24 V and 48 V
CAN bus control or profile charging
Reliable and silent operation

Easy Integration

Compact onboard charging unit
Intelligent communications
Power transfer over a 20 mm gap

Contactless Power Transfer

Efficiency meets traditional wired chargers
Safe & unmanned 24/7 operation
No connector wear
No maintenance downtime

System Overview



1 kW Wireless Charging System M ∞ V^{air}

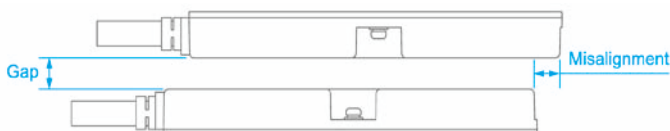
Specification

AC Input		
AC Input Rated Voltage	100 to 240 VAC 1PH	
AC Input Voltage Range	85 to 265 VAC	
AC Input Frequency	50 / 60 Hz (47 to 63 Hz)	
Maximum AC Input Current	12 A	
Power Factor (100% Load)	> 0.95	
Peak Efficiency (100% Load)	92% (24 V version), 93% (48 V version)	
AC Input		
DC Output Nominal Voltage	24 VDC	48 VDC
DC Output Voltage Range	12 to 30 V _{DC}	24 to 60 V _{DC}
Maximum Charge Current	41.7 A	20.8 A
Maximum Output Power	1000 W	
Battery Type	Lithium Ion, Lead Acid (AGM / GEL)	
Output Protection	Over voltage, over current, short circuit, reverse connection	
Parallel Operation	Up to 4 chargers for a maximum of 4 kW	
Environmental Conditions		
Operating Temperature	-20 °C to +50 °C (-4 °F to + 122 °F)	
Storage Temperature	-40 °C to +85 °C (-40 °F to + 185 °F)	
Relative Humidity	0% to 95%, non-condensing	
Maximum Operating Altitude	3000 m (9842 ft)	
Shock / Vibration	25 g / 5 g	
Ingress Protection ¹	Primary Box	IP65
	Pads	IP65
	Onboard Charging Unit	IP40
Mechanical Design		
Pad Air Gap Range	0 mm to 20 mm (0.8 in)	
Maximum Misalignment	20 mm (0.8 in)	
Dimensions (H x W x D)	Primary Box	192 x 280 x 60 mm (7.6 x 11.0 x 2.4 in)
	Primary Pad and Onboard Pad	Ø 160 x 19 mm (6.3 x 0.7 in)
	Onboard Charging Unit	168 x 82 x 28 mm (6.6 x 3.2 x 1.1 in)
Cable Length (Primary Box)	AC Input	960 mm (37.8 in)
	Primary Pad	1120 mm (44.1 in) typical
Cable Length (Onboard Electronics)	DC Output	500 mm (19.7 in)
	Signals	100 mm (1.97 in)
	Onboard Pad	380 mm (15 in)
Weight	Primary Box and Pad	5.4 kg (11.9 lb)
	Onboard Charging Unit and Pad	1.5 kg (3.3 lb)
Cooling	Primary Box	Natural convection
	Onboard Charging Unit	Contact
Status LEDs	Primary box	
Approvals and Compliance		
	USA / Canada	Europe
Safety marks	cMET _{us}	CE
Safety	UL 60950-1 / UL 62368-1 CAN/CSA C22.2 no. 60950-1 / no. 62368-1	EN 60950-1, EN 62368-1
EMC	FCC 15B, 18B, ICES-003, RSS-216, Class A ¹	ETSI EN 301 489-1, ETSI EN 301 489-17, EN 55011, EN 61000-6-4, EN 61000-6-2, Class A ¹
RF	FCC Part 15.247, FCC Part 15.209, RSS-247	ETSI EN 300 328
EMF	EN 62311, IEEE C95.3	

Notes: SPE reserves the right to modify without prior notice. 1) Class B available on request

Physical Positioning

Misalignment is the distance the pads are offset laterally and air gap is the distance between the pad faces as shown below.



At the charger system's nominal output voltage, the full 1,000 W can be delivered in all combinations of gap and misalignment up to 20 mm. However, when the output voltage is above nominal value the gap and misalignment does have an impact on the amount of power that can be delivered, with the worst case being at the charger system's maximum working voltage, and is shown in the following table:

Air-gap	Max. misalignment for 1000 W
0 - 6 mm	20 mm
8 mm	18 mm
10 mm	17 mm
12 mm	16 mm
14 mm	15 mm
16 mm	10 mm
18 - 20 mm	5 mm

