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

Easy Integration

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

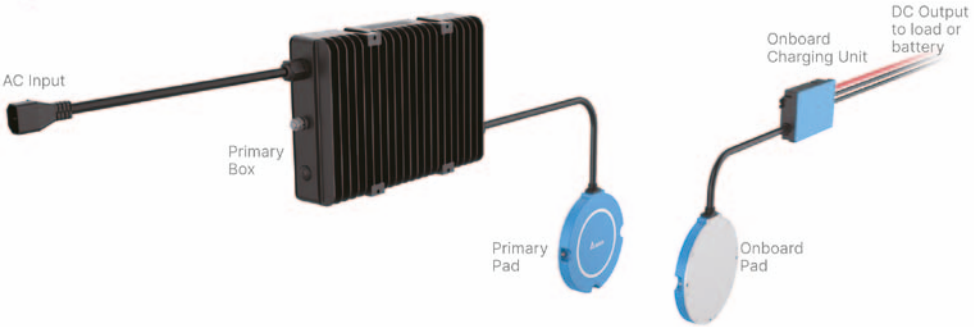
Versatile Charging

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

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

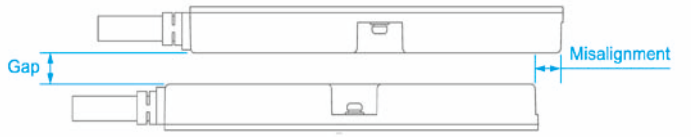
Specification

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)	
DC Output			
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		$_{c}MET_{US}$	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