

30 kW Wireless Charging System

MOOV^{air} 30

Highly efficient wireless charging for industrial electric vehicles providing up to 300 A. Ideal for fast and opportunity charging.

- One primary unit can charge multiple vehicles with different battery voltages
- IP69 for harsh industrial environments
- Fully automated charging of all battery types with BMS
- Suitable for fast and frequent charging of Lithium-Ion batteries
- Patented wireless Pad-to-Pad Link (PPL) communication

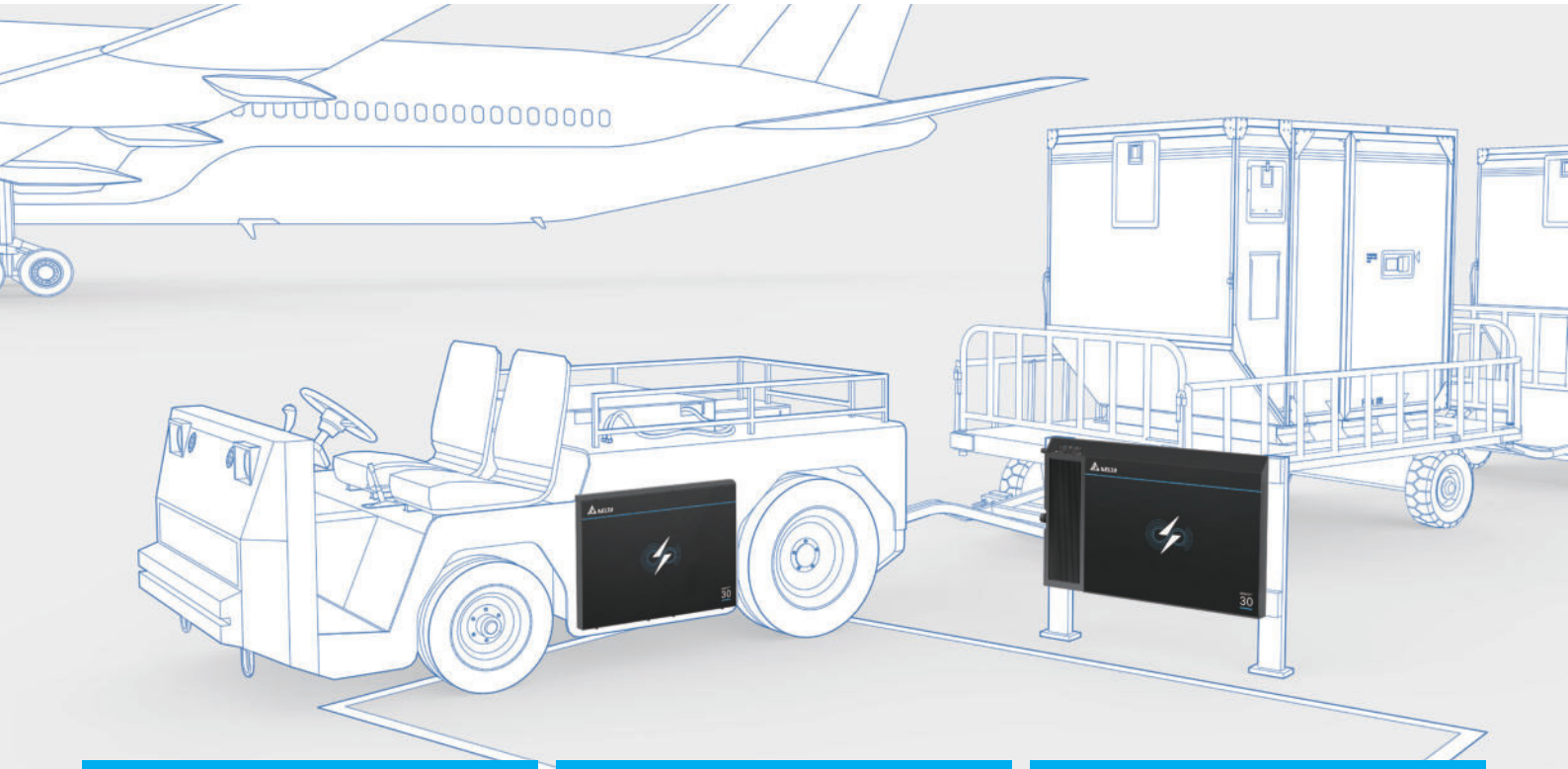
Wireless Power Transfer

Industrial

Logistics

DELTA

MOOV^{air}30 Wireless Charging System



Versatile Charging

- One primary unit can charge multiple vehicles
- Unmanned 24/7 operation
- Designed for challenging environments

Easy Integration

- Automatic charging
- Ethernet for integrating to a warehouse management system
- CAN bus for connecting vehicle systems
- Patented system-internal PPL communication for faster and more stable connectivity

Wireless Power Transfer

- Efficiency meets or exceeds traditional wired chargers
- Safe operation. Meets all industrial standards for wireless power transfer
- Power transfer over up to 150 mm (5.9”) gap
- Omnidirectional misalignment tolerance

System Components



Wireless Primary Box (WPB)



Wireless Primary Pad (WPP)



Wireless Secondary Unit (WSU)

Primary Unit

Specifications

Product Line		MOOV^{air}30 Wireless Charging System
System Components		
Delta Part Numbers		
Wireless Primary Box		EOE18010815
Wireless Primary Pad		EOE18010851
Wireless Secondary Unit		EOE18010850

AC Input	Wireless Primary Box (WPB)
AC Input Rated Voltage	380 to 480 VAC 3-phase
AC Input Voltage Range	342 to 528 VAC 3-phase
AC Input Frequency	47 Hz to 63 Hz
Maximum AC Input Current	48 A
Power Factor (100% Load)	0.95
Peak Efficiency	> 95%
Standby Power [1)]	≤ 10 W

DC Output	Wireless Secondary Unit (WSU)
DC Output Nominal Voltage	100 V_{DC}
DC Output Voltage Range	72 to 120 V_{DC}
Maximum Charge Current	300 A
Maximum Output Power	30 kW
Suitable Battery Types	Lithium-Ion batteries wih Battery Storage System (BMS)
Output Protection	Over voltage, over current, short circuit, reverse connection
Parallel Operation	Available on request
Standby Power [2)]	< 2 W
Charging Control Modes	via CANopen® or Ethernet

Environmental Conditions		
Operating Temperature	WPB	+5 to +40 °C (+41 to +104 °F)
	WPP	-40 to +70 °C (-40 to +158 °F)
	WSU	-40 to +85 °C (-40 to +185 °F)
Storage Temperature		-45 °C to +70 °C (-49 to +158 °F)
Relative Humidity	WPB	5 to 85%, non-condensing
	WPP	4 to 100%
	WSU	15 to 100%
Maximum Operating Altitude		3,000 m (9,842 ft)
Ingress Protection	WPB	IP21
	WPP	IP69
	WSU	IP69

Product Line		MOOV^{air}30 Wireless Charging System
Mechanical Design		
Pad Air-gap Range		105 ±5 to 155 ±5 mm (4.1 ± 0.2 to 6.1 ± 0.2 in)
Maximum Alignment Tolerance (Misalignment)		± 50 mm (± 2.0 in) up/down and left/right
Dimensions (L x W x H)	WPB	1,020 x 550 x 400 mm (40.2 x 21.7 x 15.7 in)
	WPP	666.6 x 1,025.6 x 65.4 mm (26.2 x 40.4 x 2.6 in)
	WSU	565 x 740 x 50.3 mm (22.2 x 29.1 x 2.0 in)
Weight	WPB	105 kg (231.5 lbs)
	WPP	77 kg (169.7 lbs)
	WSU	47 kg (103.6 lbs)
Cable Lengths	WPB → WPP	5.0 m (196.8 in)
	WSU (DC Output)	2.0 m (78.7 in)
	WSU AUX / COMM	0.5 m (19.7 in)
Cooling	WPB	Forced air
	WPP	Convection
	WSU	Convection
Status LEDs		WPB & WPP, stack light interface

Approvals and Compliance	Europe (EEA/EFTA/UK)	USA	Canada (pending)
Safety Marks	CE	$_{C}$CSA$_{US}$	
Safety	EN 62368-1:2014 + A11:2017	ANSI/UL 1564 (4th Edition); CAN/CSA 22.2 No. 107.2-01 (R2021)	
EMC	EN 303 446-2 V1.2.1; EN 301 489-1 V2.2.3; EN 301 489-3 V1.6.1; EN 55011:2016 + A1:2017+A11 :2020; EN IEC 61000-6-2:2019	FCC Part 18 Subpart C	Pending
RF	EN 300 330 V2.2.1:2017	47 CFR Part 15.225 in conjunction with ANSI C63.10:2013	Pending
EMF	EN 62311:2020	47 CFR Part 1.1307; KDB 447498 D01 v06; KDB 680106 D01 v03r01	Pending

1) WPB connected AC but not charging

2) Secondary Unit connected to battery and not charging

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