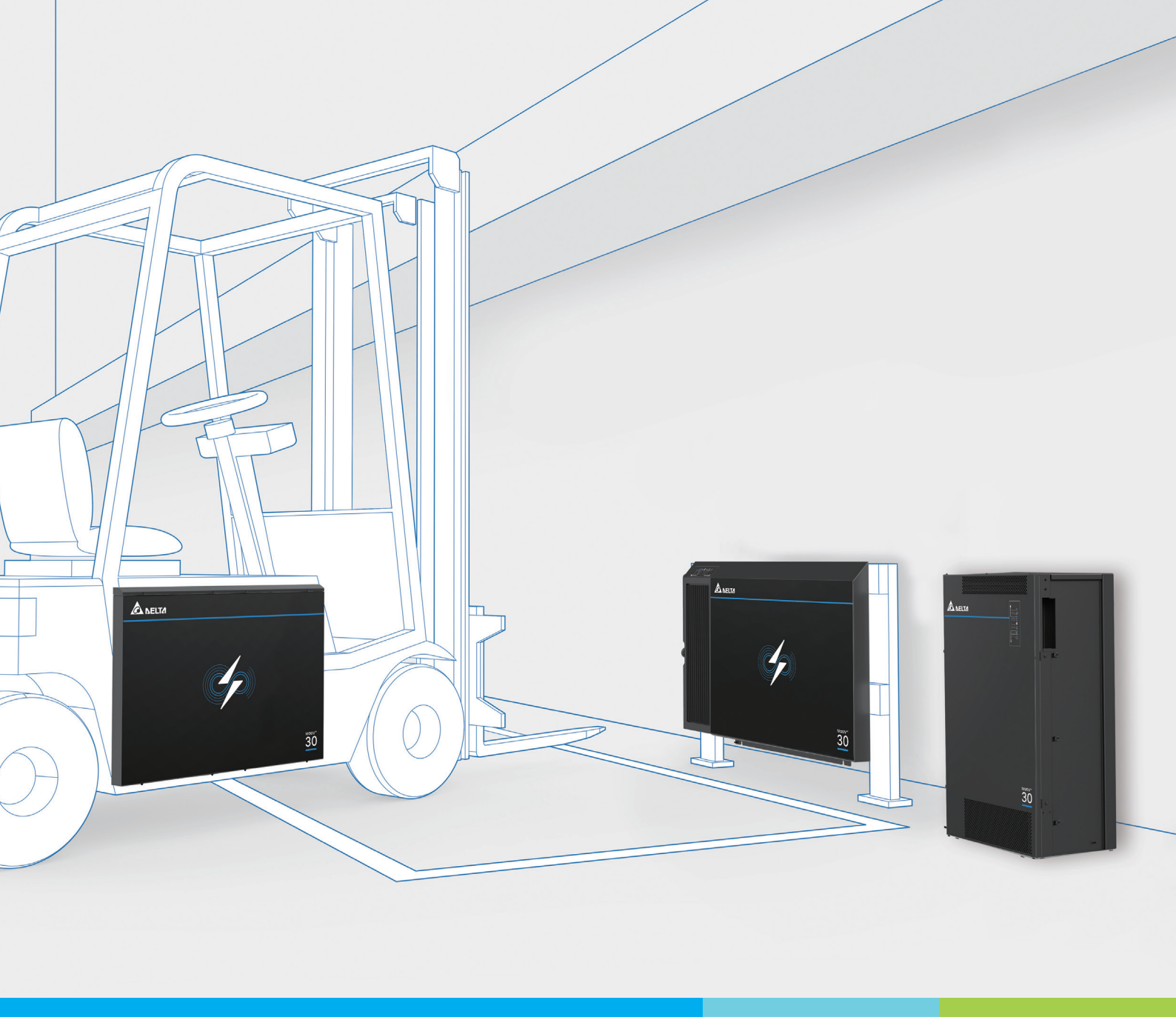


30 kW Wireless Charging System

MOOV air 30

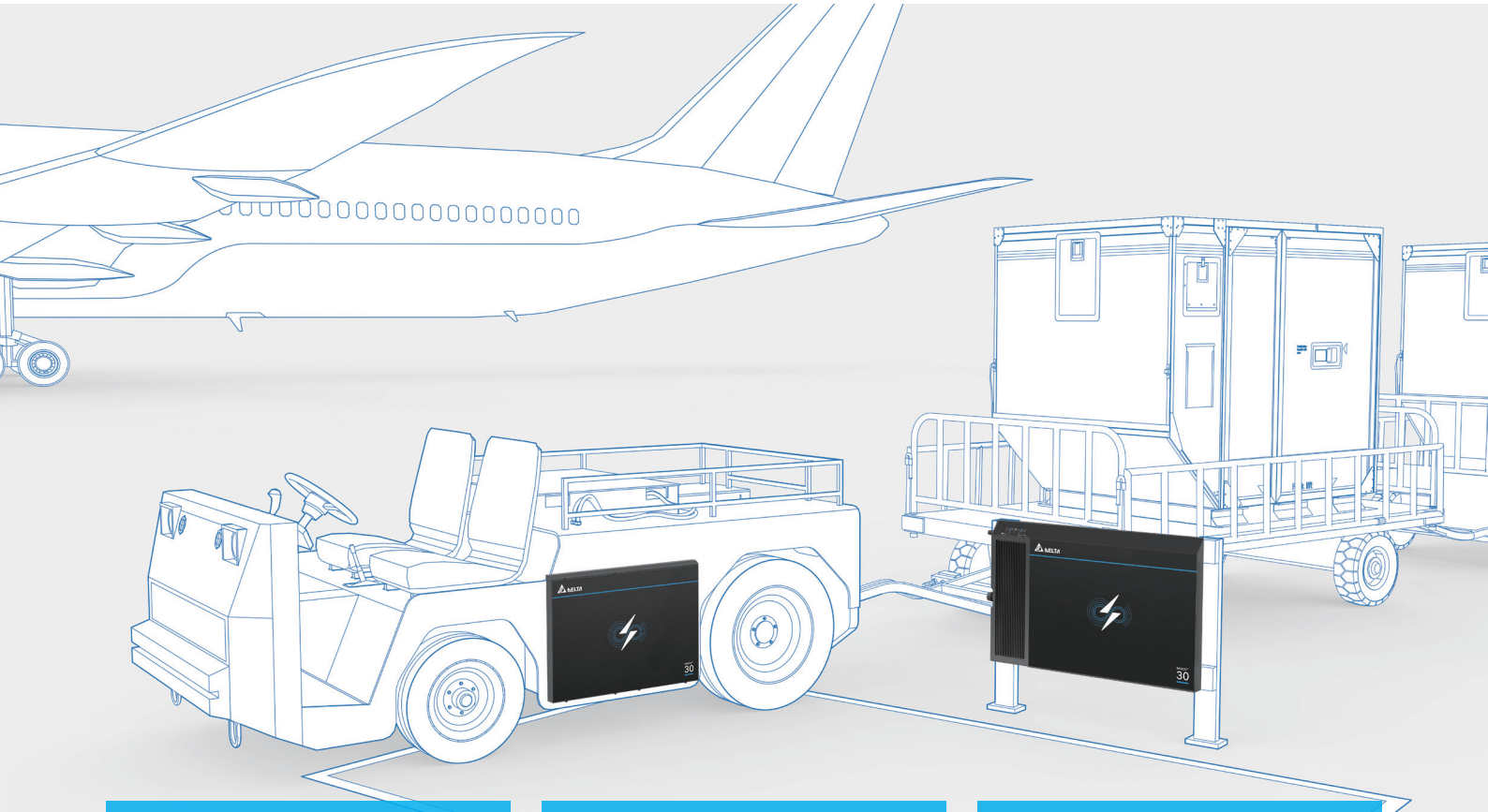
Highly efficiency wireless charging for industrial electric vehicles providing up to 300 A. Ideal for fast and opportunity charging.

- No part wear
- Fully automated charging
- Charges lithium batteries fast and frequently

Wireless Power Transfer | Forklift | Industrial

DELTA

MOOV^{air}30 Wireless Charging System



Versatile Charging

- Multiple vehicles can share one base
- Unmanned 24/7 operation
- Can be used in a wide range of harsh and polluted environments.

Easy Integration

- Automatic charging
- Power transfer over a 150 mm (6") gap
- Ethernet for integrating to a warehouse management system
- CAN bus for connecting vehicle systems

Wireless Power Transfer

- Efficiency meets or exceeds traditional wired chargers
- No connector wear
- No maintenance downtime to replace worn connectors
- Safe operation. Meets all industrial standards for wireless power transfer

Product Overview

Primary Box (WPB)

Primary Pad (WPP)

Secondary Unit (WSU)

Specifications

Product Line		MOOV^{air}30
AC Input		
AC Input Rated Voltage		380 to 480 V_{AC} 3PH
AC Input Voltage Range		342 to 528 V_{AC} 3PH
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		
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
Battery Type		Lithium Ion
Output Protection		Over voltage, over current, short circuit, reverse connection
Parallel Operation		Pending
Standby Power [2]		< 2 W
Charge Modes	Set points from vehicle	CANopen®
Environmental Conditions		
Operating Temperature[3]	WPB	+5 °C to +40 °C (41 °F to 104 °F)
	WPP	-40 °C to +70 °C (-40 °F to 158 °F)
	WSU	-40 °C to +80 °C (-40 °F to 176 °F)
Storage Temperature		-45 °C to +70 °C (-49 °F 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
Mechanical Design		
Pad Air-gap Range		$105^{+/-5}$ to $155^{+/-5}$ mm ($4.1^{+/-0.2}$ to $6.1^{+/-0.2}$ in)
Maximum Misalignment		± 50 mm (± 2.0 in) up/down and left/right
Dimensions (L x W x H)	WPB	1020 x 550 x 400 mm (40.2 x 21.7 x 15.7 in)
	WPP	666.6 x 1025.6 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 / Comms	0.5 m (19.7 in)
Cooling	WPB	Forced air
	WPP	Convection
	WSU	Convection
Status LED's		WPB & WPP, stack light interface

Approvals and Compliance	Europe (EEA/EFTA/UK)	USA	Canada
Safety Marks	CE	$_{C}$MET$_{US}$	
Safety	EN 62368-1:2014 + A11:2017	UL 62368-1:2019 Ed.3 CSA C22.2 No.62368-1:2019 Ed.3 UL 1564 Ed.4 CSA 22.2 No. 107.2-01	
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	FCC part 15 subpart C	Pending
EMF	EN 62311	FCC Part 1.1307 KDB 447498 D01 KDB 680106 D01	Pending

1 WPB connected to AC but not charging
2 Secondary Unit connected to battery and not charging
3 Derating above 40 °C

Delta Energy Systems (Germany) GmbH
Tscheulinstrasse 21, 79331 Teningen
E-mail: IEV.sales@deltaww.com

More information **www.deltaww.com**

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