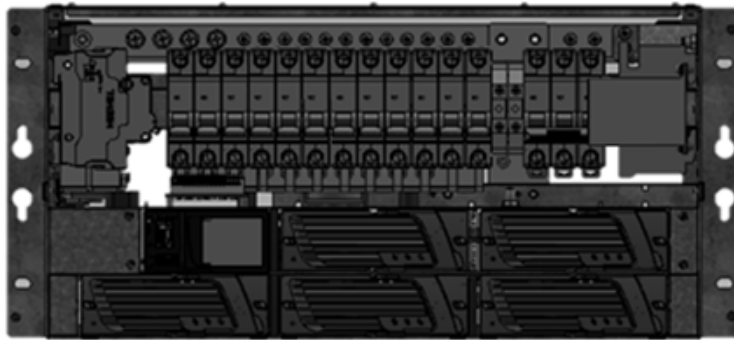


ESAA250-HAA Series

DC Power System



ESAA250-HAA Series is the power system playing the leader role in Telecom industry and Data center application with 250A of the power for 48V system. It is modular, expandable and can be easily installed in 19-inch enclosure, also with high cost-performance ratio and gorgeous efficiency all rolled into one, that is, your one of a kind energy core.

To maintain all aspects of the power performance, working perfectly at extremely high efficiency up to 96.4% and keeping low consumption, not to mention the ultra-leading power ESAA250-HAA series the extraordinary green design and the savior of reducing CO₂.

Relying on the advanced real time monitoring mechanism and comprehensive battery management, ensuring prevention before problems and lengthening the battery life can reach each component's full potential in a compact 5U shelf and generate savings in OPEX.

Key Features

- Perfect Integration with Delta Outdoor Enclosure
- Compact Design 5U System
- Leading Efficiency 96.4%

Applications

- 3G / 4G / 5G
- Fixed Line
- Datacom



ESAA250-HAA Series



INPUT

Voltage (nominal)	Three phase; V_{L-L} : 380V _{AC} ; V_{L-N} : 220V _{AC} ; 5W (L1, L2, L3, N, PE)
Voltage (range)	V_{L-L} : 380/400/415 (±20%); V_{L-N} : 220/230/240 (±20%)
Frequency	45 - 65Hz
Connections	AC Breaker 3 x 1P 40A with AC SPD (type II)

OUTPUT

Voltage (nominal)	-48V _{DC}
Voltage (default)	-54V _{DC}
Voltage (adjustable range)	-43 to -58V _{DC} (Compatible with most lithium battery)
Maximum Power @ nominal Input	15kW (48V / 250A)
Power Distributions	PL: 50Ax2, 32Ax1, 16Ax3 NPL: 50Ax4, 32Ax1, 16Ax1 Battery: 100A x3
LVDS	LVBD: 250A x1 (LVD disconnect / closing voltage is user adjustable - 40Vdc ~ 58Vdc) LVLD: 250A x1 (LVD disconnect / closing voltage is user adjustable - 40Vdc ~ 58Vdc)

CONTROL AND MONITORING

Operating Voltage	18 – 60V _{DC}
Input Power	Typical 5W, Maximum 15W
Security Access	Password Protected Levels
User Interface	Color LCD display; touch panel; WLAN (option)
Remote Access	Ethernet (SNMP optional)
Digital Input / Alarm Output	DI x3 / Dry Contact x6 (Mapping of alarms to dry-contact is user-programmable)
Event Logs	10,000
Basic Alarms	AC Mains Fail; Rectifier Module Fail; AC/DC SPD Fail; Voltage Abnormal (High); Breaker Trip; Temperature Abnormal; LVD Trip; Uneven Load Sharing (User programmable names for extended alarms)
Alarm Level	Urgent / Non Urgent
Rectifier Management	Soft Start; Current Limit Control; Rectifier Information; Optional: Redundancy Check; Remote On/Off (Settable System Boot Delay Time, System Reset)
Battery Management	Temp Compensation; Charge Current Limit; Capacity Setting; Monitoring: Volt/Curr/Temp; Boost Charge; Float/Equalized Charge; Optional: Battery Test (auto/manual); Lifetime Prediction; Battery Stolen Alarm

MECHANICAL

Dimensions (W x H x D)	480.6 x 222.1 x 341.4mm (18.92 x 8.74 x 13.44in)
Weight	approx. 26kg (57.32lb) (without rectifier)

ENVIRONMENTAL

Operating Temperature	-40 to +65 °C (-40 to +149 °F)
Storage Temperature	-40 to +70 °C (-40 to +158 °F)
Altitude	0 to +4000m
Related Humidity	0 – 95 % RH non-condensing
Acoustic Noise	≤ 60dBA @ 1M

STANDARDS

Safety	Delta Standard (IEC62368-1)
EMC	CE, TUV/UL (rectifier)
Environment	RoHS

ORDERING INFORMATION

ESAA250-HAA Series	15kW Front Access DC Power System
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* All specifications are subject to change without prior notice.



Delta Controller

Delta Controller is an intelligent controller for Telecom Power Solution. As a brain of all aspects of power chain with elegant battery management suitable for various types of batteries, ensuring with prevention before problems to enable cost reduction could not be even easier.

With comprehensive functionality, besides locally accessing the configuration and supervision unit, remote monitoring and alarming via web browser is also acceptable. With the powerful data-gathering function played as an IOT platform, improving site efficiency and ensuring the power always on-air is our promise, our insistence.



Delta Controller

INPUT

GOACAS-01-ZL

Voltage (default)	-54V _{DC}
Voltage (adjustable range)	-18 to -60V _{DC}
Current	0.8A _{DC} (Max.)

MECHANICAL

Dimensions (W x H x D)	83.4 x 42.0 x 203.1mm (3.3 x 1.6 x 7.9in)
Weight	0.6kg (1.32lb)

STANDARDS

Safety	EN / IEC 60950, class I ; UL 60950; CAN / CSA-C22.2
EMC	EN 55022, class B
Cooling	Natural air flow
Operating Temperature	-40 to +70 °C (-40 to +158 °F)
Relative Humidity	95%, non-condensing

FEATURES

Number of Rectifiers	Up to 128
Number of Relay Output	6
Remote Monitoring	<ul style="list-style-type: none"> - Web browser, REST, SNMP, Syslog, MODBUS, customer specific protocols via Ethernet , RS232, RS485 or modem - Remote alarming dry contacts / SNMP traps / SMS; dial-out together with modem

FUNCTIONS

System	<ul style="list-style-type: none"> - Site expansions using additional CANbus modules and additional I/O's and measurements - LVD closing point adjustable from 42Vdc onwards
Battery	Temperature compensated float charge, boost and equalize charge
Rectifier	<ul style="list-style-type: none"> - Efficiency mode with advanced rectifier cycling - Individual rectifier information and control

USER INTERFACE

Local User Interface	Color display; LCD display (adjustable brightness & contrast); touch panel; WLAN (option)
WEB	Web UI with configurable access rights, login control and user profiles
Display Accuracy	< ± 0.5% (Local & Remote)
Languages	English, Traditional Chinese (option), Japanese (option)

ORDERING INFORMATION

Delta Controller	TPS1020028A
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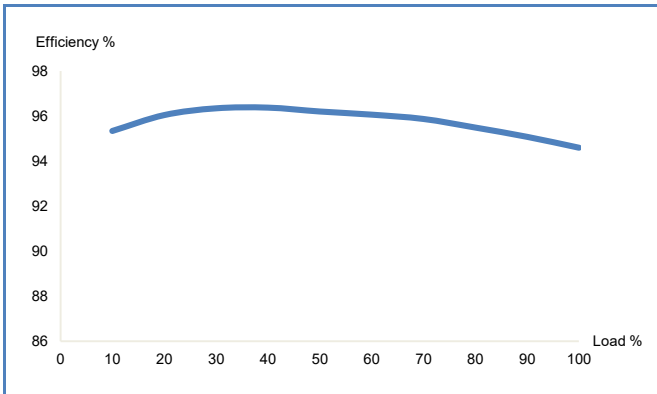
DPR 3000W EnergE

Delta's DSP technology leading telecom rectifier DPR 3000B EnergE provides the industrial leading efficiency of 96.4%. The single phase, hot-swappable fan cooled rectifier provides the 36.5W/in³ outstanding power density. Integrated with the high efficiency rectifier DPR 3000B EnergE, Delta power solution provides an energy saving solution for network base stations, wireless applications, fixed line applications and data communications.

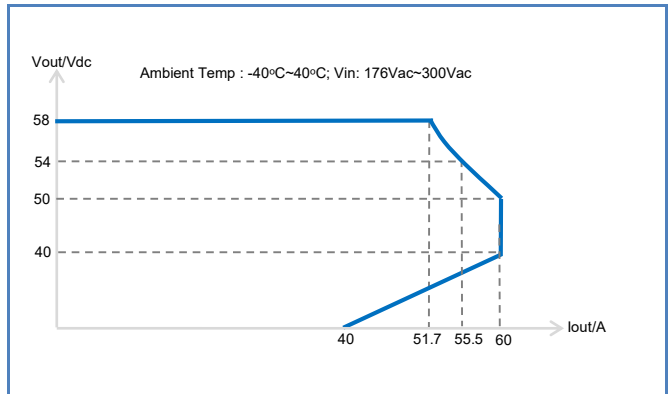


DPR 3000W EnergE

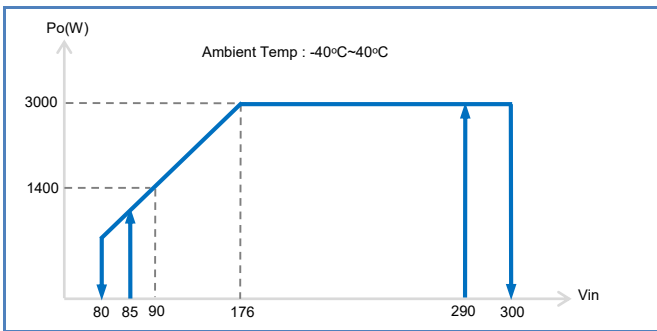
Efficiency Curve



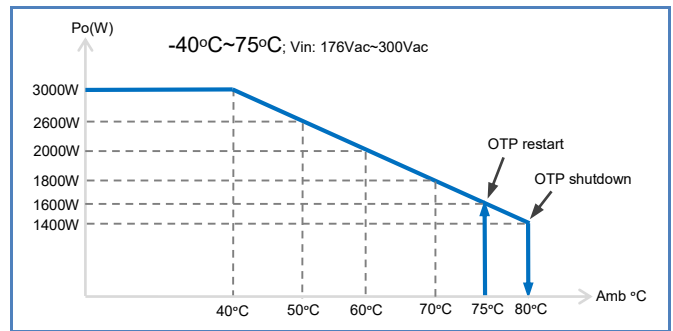
Output Characteristic



Input Characteristic



Temperature Characteristic



DPR 3000W EnergE



GOAEAS-07-ZL

INPUT

Voltage (nominal)	230V _{AC}
Voltage (range)	85 - 300V _{AC} ; De-rating ≤ 176V _{AC}
Voltage (Out-of-range)	300 - 350V _{AC} (Operate short period of time)
Maximum Input Current	18.3A at 176V _{AC} /50Hz Full Load (3KW)
Frequency	45 - 66Hz
Power Factor	> 0.99
Total Harmonic Distortion	< 5% (50% ~ 100% load)
Lightning Protection	EN 61000-4-5

OUTPUT

Voltage (default)	-54.0V _{DC}
Voltage (adjustable range)	-43 to -58V _{DC}
High Voltage Protection	45 ~ 59.5V _{DC} (High Voltage Disconnect - Support 2 Levels)
Transient Time	≤ 5 sec
Maximum Output Current	60A (Internal Output Fuse - Protect Against Reverse Polarity)
Maximum Power @ nominal Input	3000W
Power Density	36.5W/in ³ or 2.23W/cm ³
Peak Efficiency	96.4%
Load Regulation (Output Oscillation)	≤ ± 250mV (≤ 0.5% - Rated load)
Ripple (<100Hz)	< 20mV _{rms}
Peak-to-peak Noise	< 250mV _{pp}
Psophometric Noise	< 2mV _{rms}
Broadband Noise	< 20mV _{rms}
Current Sharing	≤ ± 5%
Lightning Protection	EN 61000-4-5

USER INTERFACE

Alarm and Signaling	CANbus to System Controller		
Indications	OK	Green	Normal Operation
	NL	Yellow	Output current < 5%
	COM	Green	Communication Status

MECHANICAL

Dimensions (W x H x D)	125.5 x 41.0 x 272.9mm (4.94 x 1.61 x 10.74in)
Weight	1.8kg (3.96lb)

ENVIRONMENTAL

Operating Temperature	-40 to +75 °C (-40 to +167 °F) ; De-rating above 45°C (+113 °F)
Storage Temperature	-40 to +80 °C (-40 to +176 °F)
Altitude	0 to +4000m
Related Humidity	0 – 95 % RH non-condensing
Acoustic Noise	≤ 55dBA

STANDARDS

Safety	Passes TUV, CE, UL cUL, S-mark certifications; Catch the CB certificate; Complies with IEC/EN/UL60950-1
EMC	EN 55022 AC Class B & DC output Class A EN 300 386
Environment	RoHS
MTBF	300k hours @ 25 °C (+77 °F)

ORDERING INFORMATION

DPR3000W Rectifier	3000W Single Phase Rectifier
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