380 V to 54 V DC-DC converter systems

Using the Flatpack2 DCDC 380/48 3000 SHE module with Eltek's feature-rich Smartpack2 control and monitoring unit enables sites to benefit from utilizing 380 V_{DC} as a transmission voltage, either for a competitive alternative to traditional UPS in Data Centers, or for central power plants in Telecom site expansions.

Flatpack2 DCDC 380V 54V System

36 kW, 72 kW, 108 kW capacities inc. distribution

Doc CDT33642.003.DS3 – rev2

DESCRIPTION

CONVERTER SYSTEM

Integrating state-of-the-art, super high efficiency converter modules with Eltek's feature rich Smartpack2 monitoring and control unit, the high performance Flatpack2 DCDC 380V 54V Power System converts the 380 V_{DC} bus voltage down to a regulated 54 V_{DC} with a module efficiency of 98.2 %.

This enables the advantages of DC power systems of reliability, modularity, redundancy and higher end-to-end efficiency to be fully utilized to ensure optimal power availability in sites traditionally using AC power.

For Telecom expansion sites, greater site flexibility, and distances, can be achieved between the central power system and the load, while using substantially less cabling infrastructure.

APPLICATIONS

TELECOM

- Telecom central office expansions
- High power site upgrades

DATA CENTERS

- Conversion from 380 V_{DC} (260-400 V_{DC}) to 50-55 V_{DC}
- Colocation facilities
- UPS+VDC plant replacement

KEY FEATURES

- INPUT PROTECTION
- VERSATILITY
- SCALABILITY
- MODULAR – BUILD AS YOUR LOAD GROWS
- SUPER HIGH EFFICIENCY
- SMARTPACK2 CONTROLLER
- HOT PLUGGABLE
- 50-55 V_{DC} ADJUSTABLE OUTPUT
- PATENTED SHE TECHNOLOGY

Flatpack2 DCDC 380V 54V System

Doc: CDT33642.003.DS3 – rev2

Model	36 kW System	72 kW System	108 kW System
Part number	CDT31242.xxx	CDT32442.xxx	CDT33642.xxx
INPUT DATA			
Voltage (operating range)	260 - 400 V_{DC}		
Maximum current	147.6 A	295.2 A (2x 147.6 A)	442.8 A (3x 147.6 A)
Protection (module level)	Fuse, shutdown when V_{IN} is out of range		
Protection (cabinet level)	1x 160 A MCCB	2x 160 A MCCB	3x 160 A MCCB
OUTPUT DATA			
Voltage (default)	54.5 V_{DC}		
Voltage (adjustable range)	50 - 55 V_{DC}		
Max power, nominal input	36 kW	72 kW	108 kW
Max current, @V_{OUT} = 50 V_{DC}	720 A	1440 A	2160 A
Current sharing	±5 % of maximum current from 10 to 100 % load		
Static voltage regulation	±0.5 % from 0 – 100 % load and nominal input		
Dynamic voltage regulation	±5.0 % for 10-90 % or 90-10 % load variation, regulation time < 50 ms		
DC Outputs	Up to 2x 30 ways ≤63 A MCB Up to 2x 20 ways ≤125 A MCB		
Protection	Overvoltage shutdown; short circuit proof; high temperature; hot plug-in inrush current limiting; OR-ing FET		
Additional info	See Flatpack2 DCDC 380V 48V 3000W SHE datasheet		
CONTROL AND MONITORING			
Monitoring unit	Smartpack2		
Local Operation	Display and keys, WEB interface via standard browser		
Remote Operation	WEB interface; MODBUS; SNMP protocol and email		
Alarms	Low & high output voltage alarms (Minor and major levels), Earth fault alarm, Temperature alarm, Mains outage alarm, Load breaker tripped alarm and much more.		
Additional info	See Smartpack2 datasheet		
OTHER SPECIFICATIONS			
Peak Efficiency	98.2 %		
Isolation	4.2 kV_{DC} – input and output 2.2 kV_{DC} – input earth 0.5 kV_{DC} – output earth		
Operating temperature	-20 to +45 °C (-4 to +113 °F) possible power derating above 40 °C (104 °F)		
Storage temperature	-40 to +85 °C (-40 to +185 °F)		
Humidity	5 – 95 % RH, non-condensing		
Dimensions [WxHxD]	600 x 2000 x 600 mm (23.62 x 78.74 x 23.62”)		
DESIGN STANDARDS			
Electrical safety	IEC/EN 60950-1: 2013		
EMC	IEC/EN 61000-6-1:2007, IEC/EN 61000-6-2:2005, IEC/EN 61000-6-3:2007 + A1:2011, IEC/EN 61000-6-4:2007 + A1:2011, ETSI EN 300 386 v2.1.1: 2016		
Environment	Tested in accordance with: ETSI EN 300 019-2-1 v2.2.1: 2014 (Class 1.2); ETSI EN 300 019-2-2 v2.3.1: 2013 (Class 2.3); ETSI EN 300 132-3-1 v2.1.1; 2011/65/EU (RoHS) & 2008/98/EC (WEEE) Normal operating conditions as per IEC/EN 62040-5-3:2016 clause 4.2, other operating conditions as per clause 4.3 must be advised.		

1) Cabinet views shown without doors.

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