## **UPS Datasheet**







#### **FEATURES**









GINEER USB ALLATION CONNECTIVITY

HOT SWAP

#### HIGHLIGHTS

- High frequency, double conversion online technology
- · Ultimate Scalability and Expandability
- 19" Cabinets available in full and half height format
- Modular design capable of housing either 5 or 10 quantity power modules.
- Power modules available in 10 and 20kVA ratings.
- · Configurable N+N modular redundancy
- · Parallel up to 4 cabinets together.

- Wide input voltage range
- · Short circuit and overload protection
- · Automatic fan speed control with load variation
- Emergency Power Off facility
- Smart RS232 and USB comms with monitoring software
- · Optional relay or SNMP communications card
- Large Touchscreen LCD Interface

# The Dale E600 UPS range is a modular UPS system suitable for Datacenters and other high density computer and IT Critical load applications.

The E600 UPS allows your power requirements to grow along with the demands of the business without the need to oversize the UPS at day one - reducing the initial cost of investment and reducing the total cost of ownership.

As your power demands increase, the E600 can expand its power capability to maintain the highest levels of power protection and availability.

The newly-designed inverter is one of the best energy conversion systems on the market, with up to unity output power factor and 95% operating efficiency in ON LINE Mode.

#### **HIGH PERFORMANCE**

- The advanced technology within the E600 UPS systems allows for the use full rated power even with unity power factor loads (kVA=kW) without any power derating even when operating at temperatures up to 40 °C
- Low input harmonic pollution with near unity input power factor and an extremely wide input voltage operating range (208-470Vac) requiring only minimum upstream power source rating and subesquent reduced investment costs.

#### **HIGH QUALITY OUTPUT VOLTAGE**

- Even with non-linear loads (IT loads with a crest factor of up to 3:1);
- High short circuit current on bypass;
- Filtered, stabilised and reliable voltage (ON LINE double conversion technology (VFI compliant with EN62040-3) with filters for the suppression of atmospheric disturbances;
- Power factor correction: UPS input power factor close to 1 and sinusoidal current uptake.

#### **SOFTWARE**

**UPS MONITORING SUITE** 

#### **COMMUNICATION ACCESSORIES**

E-SNMP/4 - SNMP card for network monitoring of UPS

 $\ensuremath{\mathsf{E-RELAY/2}}$  - Volt-free card for status monitoring of UPS

#### **SCALABILITY**

The E600 range offers a comprehensive, easy to integrate, power protection solution for any critical IT applications, The end user can easiy increase power or redundancy levels by addiding additional power modules.

Two different cabinet sizes are available to build the system, which can accomodate either 10kVA, 20kVA, 40kVA or 50kVA Modules.

The available UPS power and redundancy can expand vertically from:

- 10 to 50kVA in one single power cabinet (E633100/20 with E63310H PM)
- 10 to 100kVA in one single power cabinet (E633200/20 with E63310H PM)
- 20 to 100kVA in one single power cabinet (E633100/20 with E63320U PM)
- 20 to 200kVA in one single power cabinet (E633200/20 with E63320U PM)

Further Expandable with up to 4 cabinets connected in parallel.



MODULES		
OVERVIEW		
Capacity (kVA)		
Capacity (kW)		
Power Factor		
WEIGHTS AND DIMENSIONS		
Net Weight (kg)		
Dimensions (H x W x D) mm		
Heat Loss (kW per Module)		

E63310H	E63320H	E63320U		
10kVA	20kVA	20kVA		
9kW	18kW	20kW		
0.9	0.9	1.0		
26kg	31kg	31kg		
131 (3U) x 443 x 580				
0.78kW	0.95kW	0.94kW		

Capacity (kVA)         20-100kVA         20-200kVA           Moximum number of Power Modules         5         10           Topology         True Online Medular UPS           INNUT         True Online Medular UPS           Namibar of phases         3P * N * E           Nominal voltage         380 / 400 / 415 Vic           Voltage Range         200 - 478 Vic           Power factor         0.99           Output         3P * N * E           Number of Phases         3P * N * E           Power factor         0.91.0 module dependent           Nominal voltage (V)         380 / 400 / 415 Vix ± 1%           Prequency Range         50 - 60 Nz ± 0.0 Mz           Frequency Range         50 - 60 Nz ± 0.0 Mz           Efficiency         up to 93%           Overload Capacity         410% for 80 Minutes, 111-125% for 10 Minutes, 125-150% for 1 Minute > 150% Switch to hypass           Crest Ratio         3:1           Short Circuix Protection         384 / 408 / 422 / 456 / 480 VIX           BATTERIES         384 / 400 / 422 / 456 / 480 VIX           BATTERIES         40 Per Module           Rectarge time         Depends on External Capacity           ENISONMENT         40 Per Module           English Relative Humidity	MODEL	E633100/20	E633200/20	
Maximum number of Power Modules         5         10           Topology         True Online Modular LUPS           INPUT         True Online Modular LUPS           Nominal Voltage         3P + N + E           Nominal Voltage Range         208 - 478 Vac           Frequency Range         40 Mz - 70 Mz (Auto-Detect)           Power Factor         -0.99           OUTPUT         True Control           Nominal Voltage (V)         3P + N + E           Power factor         9 J 1.0 module dependent           Nominal Voltage (V)         380 / 400 / 415 Vac ± 196           Frequency Range         59 DH N ± 0.1 Mz           THD (Unear Load)         < 9 DH N ± 0.1 Mz           Efficiency         10 DH N ± 0.1 Mz           Voerload Capacity         410% for 60 Minutes, 111-125% for 10 Minutes, 125-150% for 11 Minute >150% Switch to bypass           Crest Factor         9 10 Minutes, 112-150% for 10 Minutes, 125-150% for 1 Minute >150% Switch to bypass           Crest Factor         9 10 Minutes, 112-150% for 10 Minutes, 125-150% for 1 Minute >150% Switch to bypass           Crest Factor         9 10 Minutes, 112-150% for 10 Minutes, 125-150% for 1 Minute >150% Switch to bypass           Crest Factor         9 10 Minutes, 112-150% for 10 Minutes, 125-150% for 1 Minutes, 150% Switch to bypass           Crest Factor         9 10 Minute	OVERVIEW			
Topology         True Online Moduler LPS           INPUT           Number of phases         3P + N + E           Mominal voltage         380 / 400 / 415 Vac           Voltage Range         208 - 478 Vac           Froquency Range         40th 2-70Hz (Auto-Detect)           Power Factor         -8.99           OUTOUT	Capacity (kVA)	20-100kVA	20-200kVA	
Nominal voltage	Maximum number of Power Modules	5	10	
Number of phases         3P + N - E           Nominal voltage         380 / 400 / 415 Vac           Voltage Range         20B - 478 Vac           Frequency Range         40Hz - 70Hz (Auto-Detect)           Power Factor         >0.99           OUTPUT           Number of Phases         3P + N - E           Power factor         0.9 / 1.0 module dependent           Nominal voltage (V)         380 / 400 / 415 Vac 1 16           Frequency Range         5 - 60 Hz ± 0.1Hz           THD (Linear Load)         42%           Efficiency         up to 95%           Owerload Capacity         410% for 60 Minutes, 111-125% for 10 Minutes, 225-150% for 1 Minute > 150% Switch to bypass           Crest Factor         3:1           Short Circuit Protection         yes           Waveform         Pure Sinewave           BATTERIES         384 / 408 / 432 / 436 / 480 VDC           Battery Quantity         3 2 / 34 / 36 / 38 / 40           Charge Current         GA Per Module           Recharge time         Depends on External Capacity           ENVIRONMENT         4 / 400 / 43 / 36 / 38 / 40           Temperature         0 ° C - +40 ° C           Reclative Humidity         -95%           Rostrage Temperature	Topology	True Online	Modular UPS	
Nominal voltage         380 / 400 / 415 Vac           Voltage Range         208 - 478 Vac           Frequency Range         40Hz - 70Hz (Auto-Detect)           Power Factor         > 0.99           OUTPUT         Control           Number of Phases         3P * N * E           Power factor         0.9 / 1.0 module dependent           Nominal voltage (V)         380 / 400 / 415 Vac ± 1%           Frequency Range         50 - 60 Hz ± 0.1Hz           THD (Linear Load)         -2%           THD (Invaria Load)         -4%           Owerload Capacity         410% for 60 Minutes, 111-125% for 10 Minutes, 125-150% for 1 Minute > 150% Switch to Bypass           Crest Factor         3:1           Short Circuit Protection         Yes           Waveform         Pure Sinewave           Batteries         Pure Sinewave           Batteries         32.1 436 / 38 / 40           DE Voltage         384 / 408 / 432 / 456 / 480 VDC           Battery Quantity         2.7 34 / 36 / 38 / 40           Charge Current         6A Per Module           Recharge time         Depends on External Capacity           ENVIRONMENT         Company           Temperature         0 **C * +40 **C           Noise Level         373dB </td <td>INPUT</td> <td></td> <td></td>	INPUT			
Voltage Range         208 - 478 Vac           Frequency Range         40Hz - 70Hz (Auto-Detect)           Power Factor         >0.99           OUTPUT         ****  ***Output Detect Phases         3P + N + E           Power Factor         0.97 1.0 module dependent           Nominal Voltage (V)         380 / 400 / 415 Vac ± 1%           Frequency Range         50 - 60 Hz ± 0.1Hz           THD (Inher Load)         <2%	Number of phases	3P +	N + E	
Frequency Range         40Hz - 70Hz (Auto-Detect)           Power Factor         >0.99           OUTPUT         SP + N + E           Number of Phases         3P + N + E           Power factor         0.9 / 1.0 module dependent           Nominal voltage (V)         380 / 400 / 415 Vac ± 1%           Frequency Range         50 - 60 Hz ± 0.1Hz           THD (Linear Load)         <2%           Efficiency         up to 95%           Owerload Capacity         <110% for 60 Minutes, 111-125% for 10 Minutes, 125-150% for 1 Minute > 150% Switch to bypass           Crest Factor         3:1           Short Circuit Protection         Yes           Waveform         Pure Sinewave           BATTERIES         Pure Sinewave           BATTERIES         DC Voltage         384 / 408 / 432 / 456 / 480 VDC           Battery Quantity         32 / 34 / 36 / 38 / 40         Charge Current         6A Per Module           Charge time         Depends on External Capacity         Depends on External Capacity           Evil Nombers         Temperature         0 °C - 40 °C         Rectained           Relative Humidity         0 -95%         Charge Temperature         1 Common Temperature         2 S °C - 455 °C         Charge Temperature         2 S °C - 455 °C         Charge Temperature	Nominal voltage	380 / 400	0 / 415 Vac	
Power Factor         >0.099           OUTPUT         Common of Phases         3P + N + E           Power factor         0.9 / 1.0 module dependent           Nominal voltage (V)         38D / 400 / 415 Vac ± 1%           Frequency Range         50 - 60 Hz ± 0.1 Hz           THD (Linear Load)         <2%           Efficiency         up to 95%           Overload Capacity         <110% for 60 Minutes, 111-125% for 10 Minutes, 125-159% for 1 Minute > 150% Switch to bypass           Crest Factor         3:1           Short Circuit Protection         Yes           Waveform         Pure Sinewave           BATTERIES         BATTERIES           DC Voltage         384 / 408 / 432 / 456 / 480 VDC           Battery Quantity         32 / 34 / 36 / 38 / 40           Charge Current         6A Per Module           Recharge time         Depends on External Capacity           ENVIRONMENT         Depends on External Capacity           Enterprature         0 °C - 440 °C           Relative Humidity         0 - 95%           Altitude         4 500 m           Storage Temperature         7 3 dB           COMMUNICATION         Expendence         7 25 °C + 55 °C           Standard         Expendence         5 - 5NMP/4 (Opti	Voltage Range	208 -	478 Vac	
OUTPUT         Number of Phases         3P + N + E           Power factor         0.9 / 1.0 module dependent           Nominal voltage (V)         380 / 400 / 415 Vac ± 1%           Frequency Range         50 - 60 Hz ± 0.1Hz           THD (Under Load)         <2%           THD (Non-Linear Load)         <5%           Efficiency         up to 95%           Overload Capacity         <110% for 60 Minutes, 111-125% for 10 Minutes, 125-150% for 1 Minute >150% Switch to bypass           Crest Factor         3:1           Short Circuit Protection         Yes           Waveform         Pure Sinewave           BATTERIES         384 / 408 / 432 / 456 / 480 VDC           Battery Quantity         32 / 34 / 36 / 38 / 40           Charge Current         6A Per Module           Recharge time         Depends on External Capacity           ENVIRONMENT         Temperature         0 °C - +40 °C           Relative Humidity         0 - 95%           Altitude         41500m           Storage Temperature         7.25 °C - +55 °C           Noise Level         7.3dB           COMMUNICATION         R\$232 / R\$485           SSMMP Card         E-SMMP4 (Optional)           VFC Card         E-RELAW/2 (Optional)	Frequency Range	40Hz - 70Hz	(Auto-Detect)	
Number of Phases         3P + N + E           Power factor         0.9 / 1.0 module dependent           Nominal voltage (V)         380 / 400 / 415 Vac ± 1%           Frequency Range         50 - 60 Hz ± 0.1Hz           THD (Indear Load)         < 2%           THD (Non-Linear Load)         < 5%           Overload Capacity         4110% for 60 Minutes, 111-125% for 10 Minutes, 125-150% for 1 Minute > 150% Switch to bypass           Crest Factor         3.1           Short Circuit Protection         Yes           Waveform         Pure Sinewave           BATTERIES         Pure Sinewave           DC Voltage         384 / 408 / 432 / 456 / 480 VDC           Battery Quantity         32 / 34 / 36 / 38 / 40           Charge Current         6A Per Module           Recharge time         Depends on External Capacity           ENVIRONMENT         Pure Sinewave           Environment         Pure Sinewave           Environment         Depends on External Capacity           Environment         Pure Sinewave           Environment         Pure Sinewave           Environment         Pure Sinewave           Environment         Pure Module           Recharge time         Pure Sinewave           Environment	Power Factor	>(	0.99	
Power factor         0.9 / 1.0 module dependent           Nominal voltage (V)         380 / 400 / 415 Vac ± 1%           Frequency Range         50 - 60 Hz ± 0.1Hz           THD (Linear Load)         <2%	OUTPUT			
Nominal voltage (V)         380 / 400 / 415 Vac ± 1%           Frequency Range         50 - 60 Hz ± 0.1Hz           THD (Linear Load)         <2%	Number of Phases	3P + N + E		
Frequency Range         50 - 60 Hz ± 0.1Hz           THD (Linear Load)         <2%	Power factor	0.9 / 1.0 module dependent		
THD (Linear Load)         <2%	Nominal voltage (V)	380 / 400 / 415 Vac ± 1%		
THD (Non-Linear Load)         < 5%	Frequency Range	50 - 60 Hz ± 0.1Hz		
Efficiency up to 95% Overload Capacity <110% for 60 Minutes, 111-125% for 10 Minutes, 125-150% for 1 Minute >150% Switch to bypass Crest Factor 3:1 Short Circuit Protection Yes Waveform Pure Sinewave  BATTERIES  DC Voltage 384 / 408 / 432 / 456 / 480 VDC Battery Quantity 32 / 34 / 36 / 38 / 40 Charge Current 6A Per Module Recharge time Depends on External Capacity  ENVIRONMENT  Temperature 0°C - +40°C Relative Hunidity 0-95% Altitude 1500m Storage Temperature 73dB COMMUNICATION Standard R5232 / R5485 SAMP Card E-SNMP/4 (Optional) VFC Card E-RELAY/2 (Optional) DISPLAY LCD Display Yes LED Indication Yes	THD (Linear Load)	<2%		
Overload Capacity         <110% for 60 Minutes, 111-125% for 10 Minutes, 125-150% for 1 Minute >150% Switch to bypass           Crest Factor         3:1           Short Circuit Protection         Yes           Waveform         Pure Sinewave           BATTERIES         Pure Sinewave           DC Voltage         384 / 408 / 432 / 456 / 480 VDC           Battery Quantity         32 / 34 / 36 / 38 / 40           Charge Current         6A Per Module           Recharge time         Depends on External Capacity           ENVIRONMENT         Temperature           Relative Humidity         0-95%           Altitude         <1500m	THD (Non-Linear Load)	<5%		
Crest Factor         3:1           Short Circuit Protection         Yes           Waveform         Pure Sinewave           BATTERIES         DC Voltage         384 / 408 / 432 / 456 / 480 VDC           Battery Quantity         32 / 34 / 36 / 38 / 40           Charge Current         6A Per Module           Recharge time         Depends on External Capacity           ENVIRONMENT         Temperature         0 °C - +40 °C           Relative Humidity         0-95%           Altitude         41500m           Storage Temperature         -25 °C - +55 °C           Noise Level         <73dB	Efficiency	up to 95%		
Short Circuit Protection  Waveform  Pure Sinewave  BATTERIES  DC Voltage  BATTERIES  DC Voltage  Battery Quantity  Charge Current  Recharge time  Depends on External Capacity  ENVIRONMENT  Temperature  Relative Humidity  O "C - +40 "C  Relative Humidity  O "S%  Altitude  Storage Temperature  Torage Temperature  Noise Level  COMMUNICATION  Standard  SNMP Card  FES232 / RS485  FES232 / RS48	Overload Capacity	<110% for 60 Minutes, 111-125% for 10 Minutes, 125-150% for 1 Minute >150% Switch to bypass		
Waveform         Pure Sinewave           BATTERIES         Pure Sinewave           DC Voltage         384 / 408 / 432 / 456 / 480 VDC           Battery Quantity         32 / 34 / 36 / 38 / 40           Charge Current         6A Per Module           Recharge time         Depends on External Capacity           ENVIRONMENT         Temperature           Relative Humidity         0 °C - +40 °C           Relative Humidity         0-95%           Altitude         <1500m           Storage Temperature         -25 °C - +55 °C           Noise Level         <73dB           COMMUNICATION         Standard         RS232 / RS485           SNMP Card         E-SNMP/4 (Optional)           VFC Card         E-SREAY/2 (Optional)           DISPLAY         Yes           LED Display         Yes	Crest Factor	3:1		
BATTERIES  DC Voltage 384 / 408 / 432 / 456 / 480 VDC  Battery Quantity 32 / 34 / 36 / 38 / 40  Charge Current 6A Per Module  Recharge time Depends on External Capacity  ENVIRONMENT  Temperature 0°C - +40°C  Relative Humidity 0-95%  Altitude <1500m  Storage Temperature -25°C - +55°C  Noise Level <73dB  COMMUNICATION  Standard RS232 / RS485  SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	Short Circuit Protection	Yes		
DC Voltage 384 / 408 / 432 / 456 / 480 VDC  Battery Quantity 32 / 34 / 36 / 38 / 40  Charge Current 6A Per Module  Recharge time Depends on External Capacity  ENVIRONMENT  Temperature 0°C - +40°C  Relative Humidity 0-95%  Altitude 1500m  Storage Temperature -25°C - +55°C  Noise Level <73dB  COMMUNICATION  Standard RS232 / RS485  SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	Waveform	Pure Sinewave		
Battery Quantity Charge Current 6A Per Module Recharge time Depends on External Capacity  ENVIRONMENT Temperature 0 °C - +40 °C Relative Humidity 0 -95% Altitude 11500m Storage Temperature -25 °C - +55 °C Noise Level <73dB  COMMUNICATION Standard RS232 / RS485 SNMP Card PSAND Card E-SNMP/4 (Optional) VFC Card E-RELAY/2 (Optional) DISPLAY LCD Display Yes LED Indication Yes	BATTERIES			
Charge Current 6A Per Module  Recharge time Depends on External Capacity  ENVIRONMENT  Temperature 0°C - +40°C  Relative Humidity 0-95%  Altitude <1500m  Storage Temperature -25°C - +55°C  Noise Level <73dB  COMMUNICATION  Standard RS232 / RS485  SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	DC Voltage	384 / 408 / 432 / 456 / 480 VDC		
Recharge time Depends on External Capacity  ENVIRONMENT  Temperature 0 °C - +40 °C  Relative Humidity 0-95%  Altitude <1500m  Storage Temperature -25 °C - +55 °C  Noise Level <73dB  COMMUNICATION  Standard RS232 / RS485  SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	Battery Quantity	32 / 34 / 36 / 38 / 40		
ENVIRONMENT  Temperature 0 °C - +40 °C  Relative Humidity 0-95%  Altitude <1500m  Storage Temperature -25 °C - +55 °C  Noise Level <73dB  COMMUNICATION  Standard RS232 / RS485  SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display  LED Indication Yes	Charge Current	6A Per Module		
Temperature 0°C - +40°C  Relative Humidity 0-95%  Altitude < 1500m  Storage Temperature -25°C - +55°C  Noise Level <73dB  COMMUNICATION  Standard RS232 / RS485  SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	Recharge time	Depends on External Capacity		
Relative Humidity  Altitude  Altitude  Altitude  Corage Temperature  Noise Level  COMMUNICATION  Standard  SNMP Card  FC	ENVIRONMENT			
Altitude < 1500m  Storage Temperature	Temperature	0 °C - +40 °C		
Storage Temperature  Noise Level  COMMUNICATION  Standard  SNMP Card  VFC Card  DISPLAY  LCD Display  LED Indication  -25 °C - +55 °C  <	Relative Humidity	0-95%		
Noise Level < 73dB  COMMUNICATION  Standard RS232 / RS485  SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	Altitude	<1500m		
COMMUNICATION  Standard RS232 / RS485  SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	Storage Temperature	-25 °C - +55 °C		
Standard R5232 / R5485  SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	Noise Level	<73dB		
SNMP Card E-SNMP/4 (Optional)  VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	COMMUNICATION			
VFC Card E-RELAY/2 (Optional)  DISPLAY  LCD Display Yes  LED Indication Yes	Standard	RS232 / RS485		
DISPLAY  LCD Display  Yes  LED Indication  Yes	SNMP Card	E-SNMP/4 (Optional)		
LCD Display Yes LED Indication Yes	VFC Card	E-RELAY/2 (Optional)		
LED Indication Yes	DISPLAY			
	LCD Display		Yes	
WEIGHTS AND DIMENSIONS	LED Indication	Yes		
	WEIGHTS AND DIMENSIONS			
Net Weight (kg) 152kg 290kg	Net Weight (kg)	152kg	290kg	
Dimensions (H x W x D) mm 1400 x 600 x 840 2000 x 600 x 1100	Dimensions (H x W x D) mm	1400 x 600 x 840	2000 x 600 x 1100	





### Looking for something more bespoke?

With our own purpose-built, manufacturing facility, we're a one-stop shop for our customers providing design consultancy, manufacture and ongoing maintenance for our products.

#### What we do

- An end-to-end service design, manufacture, install, commissioning and servicing
- Experts in customised UPS solutions
- In-house mechanical and electrical design capability
- Solutions for any environment, application and location
- Industry-specific solutions including WIMES specified and PADS Approved UPS
- In-house project management team to manage the development and delivery of your product for exactly when you need it.

Get in touch with our team today to discuss your requirements.

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