



ALPHA  
OUTBACK  
ENERGY

# TSI BRAVO ST 5000 - 110/230



TELECOM



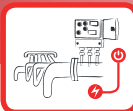
DATA COM



MASS TRANSIT



OIL & GAS



POWER UTILITIES



## STANDALONE INVERTER SYSTEM

POWER 5000 VA  
INPUT 110 Vdc and 230 Vac  
OUTPUT 230 Vac

### DESCRIPTION

The TSI Bravo ST solution secures **AC loads** at **230 Vac** from a **110 Vdc** infrastructure.

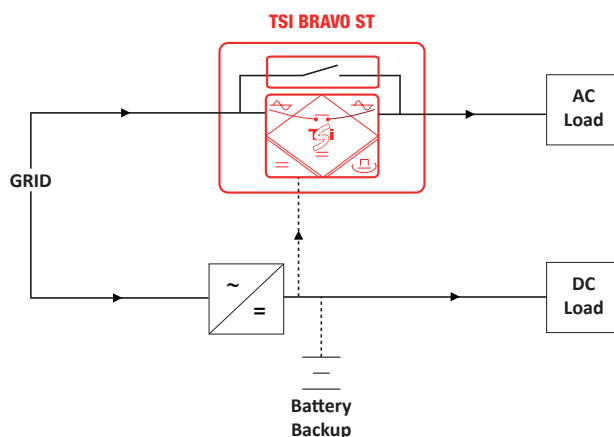
Additional **AC input** is used under normal conditions to achieve an overall **conversion efficiency** of 96%. In the event of a grid failure, it **automatically switches** to the DC to secure the loads.

In addition to this, this solution includes a **bypass** that feeds AC loads directly from the grid if there is a problem in the system.

The modules included are hot swappable for **ease** of **maintenance** and **extensibility** (from 2.5 to 5kVA).

### APPLICATIONS

All business critical applications and all types of AC loads. The solution is design for highest AC output availability. Both inverter modules and by-pass are hot-swappable which ensures low Mean Time to Repair (MTTR), reduction in service costs.



### MAIN FEATURES

- » Extra AC input for increased efficiency
- » Integrated bypass
- » Compact solution (2U high)
- » Modularity (from 2.5 to 5 kVA)

Illustrations are non-binding and may include customized fittings.

*Leading AC Backup Technology*





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# TSI BRAVO ST

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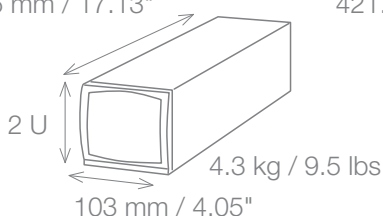
GENERAL	
Part number	S32P75E0202S
EMC (immunity)	EN 61000-4-2 / EN 61000-4-3 / EN61000-4-4 / EN 61000-4-5 / EN 61000-4-6 / EN 61000-4-8
EMC (emission) (class)	EN 55022 (B)
Safety	IEC 60950 / EN62040-1 / EN62040-2
Cooling / Isolation	Forced / Doubled
MTBF	240 000 hrs (MIL-217-F)
Efficiency (Typical): Enhanced power conversion / on line	96% / 91%
Dielectric strength DC/AC	4300 Vdc
RoHS 6	Compliant
Vibration	GR63 office vibration 0 to 100 hz-0.1 g / transport vibration 5-100 Hz 0.5 g 100 to 500 hz-1.5 g / Drop test
Operating conditions	Designed for installation in an IP20 or IP21 environment. When installed in a dusty or corrosive environment, appropriate measures (air filtering, ...) must be taken.
Altitude above sea without de-rating	< 1500 m / derating > 1500 m – 0.8 % per 100 m
Ambient / storage temperature / relative humidity	-20 to 50 ° C / -40 to 70 ° C / 95 %, non-condensing
Material (casing)	Coated steel-ALU ZINC
AC OUTPUT POWER	
Nominal Output power (VA)	5000
Nominal Output power (W)	4000
Short time overload capacity	150 % (15 seconds) 110 % permanent within T° range
Admissible load power factor	Full power rating from 0 inductive to 0 capacitive
Internal temperature management and switch off	Above 50°C ambient T° derating up to 65°C. Automatic restart with hysteresis +/- 5°C
DC INPUT SPECIFICATIONS	
Nominal voltage (DC)	110 V
Voltage range (DC)	90 - 160 V
Nominal current at nominal DC voltage and max power W	20.2 A (at 110 Vdc and 2000 W output), 41 A (at 110 Vdc and 4000 W output)
Maximum input current (for 15 second) / voltage ripple	29 A / < 200 mV rms
Input voltage boundaries	User selectable with T2S interface min and max value
AC INPUT SPECIFICATIONS	
Nominal voltage (AC)	220 Vac / 230 Vac / 240 Vac
Voltage range (AC)	150-265 V
Brownout	150 to 185 V linear derating 150 VA/120 W per 10 Vac for 2500 VA model and 300 VA/240 W for 5000 VA model
AC input range min and max value	Adjustable between 150 Vac and 265 Vac (fixed hysteresis 10 Vac)
AC input power factor (EPC operation mode)	> 99%
Frequency range (selectable) / synchronization range	50 – 60 Hz / range 47 – 53 Hz / 57 – 63 Hz
AC OUTPUT SPECIFICATIONS	
Nominal voltage (AC)	230 V / 220V / 240 Vac adjustable (default 230 Vac - 50 Hz)
Frequency / frequency accuracy	50 - 60 Hz / 0.03 %
Total harmonic distortion (resistive load)	< 1.5 %
Load impact recovery time	0.4 ms
Turn on delay	20 s to 40 s depending on the number of module installed
Nominal current. Protected against reverse current	10.9 A
Crest factor at nominal power	3 : 1
With short circuit management and protection	
Short circuit clear up capacity	10 x I <sub>n</sub> for 20 msec - Available while Mains is available at AC input port With magnitude control and management
Short circuit current after clear up capacity	2.1 I <sub>n</sub> during 15 s and 1.5 I <sub>n</sub> after 15 s
IN TRANSFER PERFORMANCE	
Max. voltage interruption AC to DC module - Module to bypass	0 ms between DC to AC and AC to DC / <10 ms between BRAVO mode and automatic bypass
SIGNALING & SUPERVISION	
Display	Synoptic LED
Alarms output / supervision	Dry contacts on shelf / Standard USB port and MODBUS on T2S, optional : Candis Display / Candis TCP-IP
Remote on / off	on rear terminal of the shelf via T2S

TSI BRAVO ST 5000 - 110/230 - Datasheet v1.0 Specifications can change without notice. New data will be updated on our Web site: [www.cet-power.com](http://www.cet-power.com) or [www.alpha-outback-energy.com](http://www.alpha-outback-energy.com) The present equipment is protected by several international patents, trademarks and copyrights.

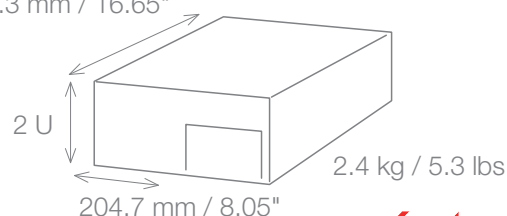
515 mm / 20.28"



435 mm / 17.13"



421.3 mm / 16.65"



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Leading AC Backup Technology





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# TSI BRAVO ST



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