



ALPHA
OUTBACK
ENERGY



TSI BRAVO 48/230 (NO AC IN)



TELECOM



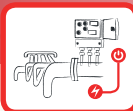
DATA COM



MASS TRANSIT



OIL & GAS



POWER UTILITIES



MODULAR INVERTER MODULE

POWER 2.5 kVA
INPUT 48 Vdc
OUTPUT 230 Vac



DESCRIPTION

TSI Bravo is a modular inverter that converts a **48 Vdc** power source into a pure **230 Vac** sine wave. By using at least three modules, we can offer solutions for **three-phase** infrastructures (3x400Vac + N). The module achieves an **efficiency** of 91% with a double conversion.

Invest step-by-step in your power infrastructure with a modularity from 2.5 kVA to up to 80 kVA. The hot swap feature makes maintenance easier.

The low DC ripple voltage **avoids** any **disturbance** on **DC loads** and **batteries**.

This product also exists in another version with an additional AC input to increase significantly the overall conversion efficiency in normal conditions.

APPLICATIONS

All business critical applications and all types of AC loads. The design is modular and scalable with hot-swappable inverter modules which ensures low Mean Time to Repair (MTTR), reduction in service costs and meets the changing needs for future expansion.

MAIN FEATURES

- » Highly reliable (thousands in the field)
- » Up to 80 kVA
- » Easy maintenance (hot swap)
- » No disturbances on DC loads & batteries

Illustrations are non-binding and may include customized fittings.

Leading AC Backup Technology





ALPHA
OUTBACK
ENERGY

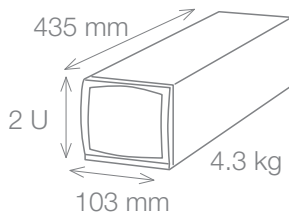
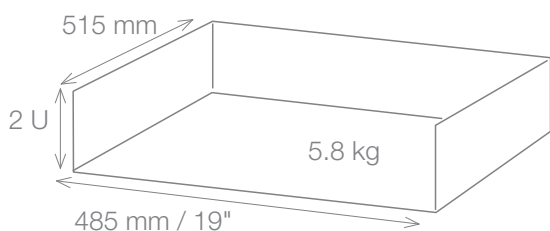


TSI BRAVO

TSI Bravo - 48 / 230 - No AC in

GENERAL	
Part number	T321730211
EMC (immunity)	EN 61000-4-2 / EN 61000-4-3 / EN 61000-4-4 / EN 61000-4-5 / EN 61000-4-6 / EN 61000-4-8
EMC (emission) (class)	EN 55022 (B)
Safety	EN62040-1
Cooling / Isolation	Forced / Doubled
MTBF	240 000 hrs (MIL-217-F)
Efficiency	91%
Dielectric strength DC/AC	4300 Vdc
True Redundant Systems – compliant	3 disconnection levels on AC out and DC in power ports 4 disconnection levels on AC in port
RoHS	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 humid 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) / (W)	2500 / 2000
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	Yes
DC INPUT SPECIFICATIONS	
Nominal voltage (DC)	48 V
Voltage range (DC)	40 - 60 V
Nominal current	46 A (at 48 Vdc and 2000 W output)
Maximum input current (for 15 second) / voltage ripple	84 A / < 2 mV Psopho
Input voltage boundaries	User selectable with T2S interface
AC OUTPUT SPECIFICATIONS	
Nominal voltage (AC)	220/230/240 V
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 _n 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 _n during 15 s and 1.5 I _n after 15 s
IN TRANSFER PERFORMANCE	
Max. voltage interruption / total transient voltage duration (max)	0 s / 0 s
SIGNALLING & 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 - 48/230 - No AC in - Datasheet v1.0 Specifications can change without notice. New data will be updated on our Web site: www.cet-power.com or www.alpha-outback-energy.com. The present equipment is protected by several international patents, trademarks and copyrights.



Illustrations are non-binding and may include customized fittings.

Leading AC Backup Technology





ALPHA
OUTBACK
ENERGY



TSI BRAVO



ALPHA
OUTBACK
ENERGY

Worldwide Corporate Offices

Headquarter Germany

Hansastraße 8
D-91126 Schwabach
Tel: +49 9122 79889 0
Fax: +49 9122 79889 21
Mail: info@alpha-outback-energy.com

Eastern Europe

ee@alpha-outback-energy.com

Middle East

me@alpha-outback-energy.com

France and Benelux

fbnl@alpha-outback-energy.com

Spain

spain@alpha-outback-energy.com

Russia

russia@alpha-outback-energy.com

Africa

africa@alpha-outback-energy.com

Alpha and Outback Energy GmbH reserves the right to make changes to the products and information contained in this document without notice. Copyright © 2020 Alpha and Outback Energy GmbH. All Rights reserved.

For more information please visit www.alpha-outback-energy.com