



# TSI BRAVO

## 48/230

(NO AC IN)



## 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.

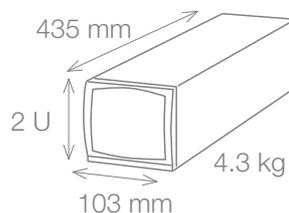
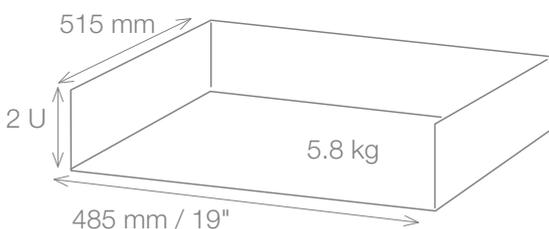
### MAIN FEATURES

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

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 <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 / 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](http://www.cet-power.com). The present equipment is protected by several international patents, trademarks and copyrights.



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