

TSI NOVA Pack T2S ETH 48/230

Triple port inverter platform without single point of failure



Fig.1: TSI-NOVA Pack 20



Fig.2 : TSI NOVA Pack 60

Parallelable, rack-mounted inverter systems provide a pure AC sine wave output at 220/230Vac, 50 or 60Hz, with a THD <3% for any kind of load. Utilizing 48Vdc input, these high density systems range from 1500VA to 4500VA and are mountable in either a standard 19" or ETSI cabinets.

The TSI sets the standard for True Redundant Systems:

- Hot Swappable means of disconnect
- Distributed Static Transfer Switch (STS) function – removes system **Single Point of Failure**
- Parallelable for redundancy and increased reliability
- Automatic load sharing when paralleled
- System sound handling of internal or load generated short circuits

Unlike traditional inverters, the TSI features an AC-AC conversion that double filters and isolates the AC input. When operated in this "**Enhanced Power Conversion**" (EPC) mode, your overall efficiency is increased to 93% without compromise to the quality and stability of the output wave form. Unlike hard transfers between energy input sources the TSI "soft-switching" method is disturbance free. The TSI delivers pure power to your critical load despite usual disturbances such as harmonics, surges, glitches, voltage fluctuations, etc.. Pure sinusoidal output current delivered even with non-linear load conditions.

Pure sine wave at the output and ideal power factor at the input without drawing any energy from your DC supply source

Your future power demands are likely to be unknown and unpredictable. You get TOTAL MODULARITY with the TSI since there is no need to size a single static switch for the future power demand of the system. With the TSI you can configure your system as you gradually increase its capacity in line with your increasing load demands. No need to oversize or overspend on your initial purchase.

Compact in size, these inverters enable you to deliver maximum power in limited space. Its massive power density provides up to 2250VA in a 1U package or 4500VA in a 2U. This package includes the space savings of built-in STS function, DC and AC output MCB. External distribution panel including DCIn, ACIn and ACout with MBP (Manual By Pass) also available in option. All NOVA packs are compatible with all TSI monitoring equipment (CANDIS, SNMP,...).



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TSI NOVA Pack T2S ETH 48/230 *Technical features*

Version 07

GENERAL

EMC (immunity)	EN 61000-4-3-6
EMC (emission)	CISPR 11 & 22 (Class A) EN 55011 & 55022 (Class A)
Safety	EN60950
Cooling	Forced
MTBF Module	> 200 000 hrs
MTBF shelf	> 1 000 000 hrs
Efficiency (MAX)	On Line 90%
	Enhanced Power Conversion 93%
Dielectric strength DC/AC (@ 0.6mA)	2830Vdc
Coated version Humidity-Damp-Heat	IEC-60068-2-30
Coated version High and Low T°test	IEC-60068-2-1 -25°C +55°C
Coated version vibration resonance	IEC60068-2-6
RoHS	Compliant
Connection I/O	AC output breaker 10A or 20A
Protected against inversion of polarity	
Self adaptive to wide operating conditions and comprehensive table of troubleshooting codes	

AC OUTPUT POWER

Nominal Output power (**)	n x 750 VA
Output power (resistive load) (**)	n x 525W
Short time overload capacity	135% on 15 sec Full power rating from
Load power factor	0 inductive to 0 capacitive
Internal temperature management and cut off	

DC INPUT SPECIFICATIONS

Nominal voltage (DC)	48 V
Voltage range (DC)	40 - 60 V
Nominal current (at 40Vdc) (**)	n x 15 A
Maximum input current (for 5 sec.) (**)	n x 17 A
Voltage ripple	< 2mV
Input voltage boundaries user selectable	

AC INPUT SPECIFICATIONS

Nominal voltage (AC)	220V/230V 1P
Voltage range (AC)	150 – 264 V
Conformity range	Adjustable
Power Factor	>99%
Frequency range (selectable)	50 - 60 Hz
Synchronization range	47 – 53 Hz / 57 – 63 Hz

AC OUTPUT SPECIFICATIONS

Nominal voltage (AC)	220Vac/230Vac (Single or dual phase selectable at order)
Voltage range (AC) (adjustable)	200 to 240 Vac
Voltage accuracy	2 %
Frequency	50 – 60 Hz
Frequency accuracy	0.03 %
Total harmonic distortion (resistive load)	<2 %
Load impact recovery time	0.4 ms
Turn on delay	30 s
Nominal current (**)	n x3,3 A
Protected against reverse current	
Crest factor at nominal power	2.5
With short circuit management and protection	
Short circuit clear up capacity	9 x I _n for 20msec
Available while Mains is available at AC input port	
With magnitude control and management	

TRANSFER PERFORMANCE

Total transient voltage duration (max)	0 s
Max Voltage interruption	0 s

ENVIRONMENT

Altitude above sea	<1500m
Ambient temperature	n x 750VA -25 to 55 °C
coated version (**)	Derating up to 65°C
Storage temperature	-40 to 70 °C
Relative humidity	95%

SIGNALING & SUPERVISION

Display	Synoptic LED
Alarms output	Dry contacts on shelf
Supervision	T2S ETH (Modbus RS485 or SNMP V1) Included

WEIGHT & DIMENSIONS

Width	19 inches rack
Depth	14.5-inch – 364 mm
Height	Maximum 2U
Weight	Shelf: 5 Kg Module : 3 Kg
Material (casing)	Coated steel

(*) Operation within lower voltage networks leads to derating of power performances

(**) "n" stands for Number of Modules in parallel

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The NOVA Pack with T2S ETH exists in 7 configuration listed below:

Model	Part number	AC in / DC in	Max output Power	Number of Unit installed	Free slot	Dimensions
TSI NOVA Pack 10	S31E73E0103S	230Vac / 48V	2250VA	1x750VA (1500VA)	2x750VA	44,5x364x483 mm
TSI NOVA Pack 20	S31E73E0203S	230Vac / 48V	2250VA	2x750VA (1500VA)	1x750VA	44,5x364x483 mm
TSI NOVA Pack 25	S31E73E0206S	230Vac / 48V	4500VA	2x750VA (1500VA)	4x750VA	89x364x483 mm
TSI NOVA Pack 30	S31E73E0303S	230Vac / 48V	2250VA	3x750VA (2250VA)	NA	44,5x364x483 mm
TSI NOVA Pack 35	S31E73E0306S	230Vac / 48V	2250VA	3x750VA (2250VA)	3x750VA	89x364x483 mm
TSI NOVA Pack 40	S31E73E0406S	230Vac / 48V	3000VA	4x750AV (3000VA)	2x750VA	89x364x483 mm
TSI NOVA Pack 50	S31E73E0506S	230Vac / 48V	3750VA	5x750VA (3750VA)	1x750VA	89x364x483 mm
TSI NOVA Pack 60	S31E73E0606S	230Vac / 48V	4500VA	6x750VA (4500VA)	NA	89x364x483 mm

	T1S + T2S	Module	Dummy Module or TSI Module	Dummy Module or TSI Module	General MCB	Present		Future		Maximum	MCB	
						Output power (VA)		Expandability		Possible	Output	
						Module	Rack	Nr module	VA	VA	A	
NOVA	Pack 10	19"				1U	750	750	2	750	2250	10
NOVA	Pack 20	19"				1U	750	1500	1	750	2250	10
NOVA	Pack 25	19"				2U	750	1500	4	3000	4500	20
NOVA	Pack 30	19"				1U	750	2250	0	0	2250	10
NOVA	Pack 35	19"				2U	750	2250	3	2250	4500	20
NOVA	Pack 40	19"				2U	750	3000	2	1500	4500	20
NOVA	Pack 50	19"				2U	750	3750	1	750	4500	20
NOVA	Pack 60	19"				2U	750	4500	0	0	4500	20

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