توان پویش

شرکت طراحی و مهندسی فناوری‌های نو

TAVAN POOYESH Engineering Co.

- منابع تغذیه اضطراری (UPS) — UPS
- باتری شارژر، اینورتر — INVERTER CHARGER
- باتری های صنعتی — BATTERY
- سیگنالینگ ریلی — Converter
- مبدل‌های خاص و GPU

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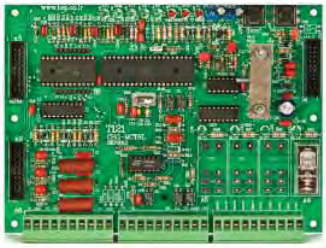
TÜV TUVNord Inc. ISO 9001:2008 Certified Quality Management System

Services

Modern power supplies require modern technical service and support. Our customers know that they can count on TAVAN POOYESH specialists to deliver the right service and support rapidly and efficiently.



Available Services

- Spare Parts
- Battery Replacement
- Training Remote Monitoring
- Power Quality Services
- Service Contracts (Global Service Coverage)
- Corrective Maintenance
- Design & Build - Turnkey Solutions
- Product Services
- Refurbishment
- Consulting
- Load Bank & Capacity Testing
- Installation & Commissioning
- Facility & Equipment Management
- Battery Monitoring

CHARGER & RECTIFIER

A comprehensive range of industrial rectifiers and battery chargers is available from 500 W to 20KW in one phase input topologies, and up to 500 KW in three phase input topologies and other ranges can be supplied upon request of customer.

RATING									
AC Input Type	Single Phase				Three Phase				
Output DC Voltage (V)	24	48	110	220	24	48	110	220	480
Maximum Rating (A)	150	100	80	60	10000	10000	10000	10000	10000

TECHNICAL SPECIFICATIONS :

INPUT	
Nominal AC Voltage (V)	1 x 230 or 3 x 400
Input Voltage Tolerance	+15% / -10%
Input Frequency (Hz)	50 or 60 or 400
Input Frequency Tolerance	± 5%
OUTPUT	
Nominal DC Voltage (V)	24 up to 480
Available Ratings (A)	See Above
Voltage Stability	< 1%
Voltage Ripple	< 1%
Charge Current Limitation	Up to 20% of C5
Charge Current Adjustability	20% to 200% of Preset Value
Efficiency	90% to 94% (Depending on Type)
Power Factor	0.8
Charging Modes	Floating , Boost and Initial
Boost and Initial Time	Up to 16 Hours (Adjustable)
GENERAL DATA	
Operating Temperature (°C)	-10 to +40
Storage Temperature (°C)	-20 to +70
Relative Humidity	< 95%
Operating Altitude (m)	Below 1000 (Without De-Rating) / Above 1000 (With 0.03% Per Meter De-Rating Factor)
Cooling	Forced Air Ventilation
Mechanical Protection	2
Audible Noise (dB)	< 60
Lock	Steel Locked Door With Door Handle
Frame Color	Grey RAL 7032 or 7035
Dimensions	Varying According to Ratings and Options
Isolation	Galvanic Transformer
Protection	Input and Output Over and Under Voltage, Output Current limit, Over Load , Over Temperature, Earth Fault, Short Circuit
STANDARDS	
Compliance	IEC 950, 439, 146, 529, 726, 62040 -1, -2, -3
OPTIONS	
Rectifier	12-Pulse Rectifier (for 3 Phase Input), Input Harmonic Filters, Ripple Filters, Dropping Diodes, Meters, Potential Free Alarm Contacts, RS485 Interface, Touch Screen HMI
Battery	Battery Protection Box, Battery Cabinet and Rack , Low-Voltage Disconnect Contactor, Battery Room Ventilation Control
Topology	Parallel Redundant System , DC/DC Output Regulator, DC Distribution Board
Mechanical	Up to IP 54, Top Cable Entry, Other Frame Color, Anti-Seismic Design

Flexibility for Customized Solutions

Tavan Pooyesh power supplies are fully adaptable to changes in electrical load. A full range of additional options is available to provide tailored industrial solutions:

- Distribution Board
- Design power supply according to the customer single line diagram (SLD)
- Up to IP54 External Protection
- Redundant Ventilation
- Remote Monitoring with MOD BUS or SNMP
- Military Specialized Configurations
- Extreme Operating Temperatures from -20°C to +70°C

Applications

Tavan Pooyesh equipments deliver a clean and stable power supply to critical industrial applications such as:

- Equipments in Power Generation Plants
- Electrical Process in Oil Platforms and Refineries.
- Telecommunication Systems.
- Railway Signaling Systems
- Monitoring and Control Systems as Well as Automation Systems (DCS)

INVERTER & CONVERTER

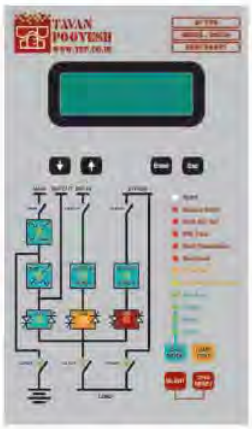
A Comprehensive range of industrial inverters (Converters) Converts a DC input voltage (An AC input Voltage) into a perfect sinusoidal output voltage to provide power supply to AC loads. This range is available from 2 to 60 KVA in single phase output topologies, and up to 200 KVA in three phase output topologies.

RATING							
AC Output Type	Single Phase			Three Phase			
Input DC Voltage (V)	48	110	220	48	110	220	480
Maximum Rating (KVA)	2 to 10	2 to 30	2 to 60	5 to 20	5 to 60	5 to 100	10 to 200

TECHNICAL CHARACTERISTICS:

INPUT		
Voltage / Tolerance	VDC For Inverter: 48,110,220,312,480/ ±15% VAC For Converter: 1×110, 1×230, 3×190, 3×380/±15%	
OUTPUT		
AC Voltage (V) / Frequency (Hz)	1 x 230 or 1 x 110 / 50, 60	3 x 400 or 3 x 190 / 50, 60, 400
Available Ratings (KVA)	See Above	
Frequency Response	1 Hz / sec	
Frequency Stability	With Own Oscillator : ± 0.05% With Mains Synchronization : ± 3%	
Total Harmonic Distortion (THD)	With 100% Linear Load : 3% With 100% Non-Linear Load : 5%	
Static Regulation	±1% (Load and Line Regulation)	
Overload Capacity	120% (10 min) / 150% (1 min) 175% (5s)	120% (15 min) / 150% (1 min) 200% (5s)
Load Power Factor	0.7 Lagging to 0.9 Leading	
Load Crest Factor	Up to 3 : 1	
GENERAL DATA		
Operating Temperature (◦C)	-10 to +40	
Storage Temperature (◦C)	-20 to +70	
Relative Humidity	< 95%	
Operating Altitude (m)	Below 1000 (Without De-Rating) Above 1000 (With 0.03% Per Meter De -Rating Factor)	
Cooling	Forced Air Ventilation	
Mechanical Protection	IP42	
Audible Noise (dB)	< 60	
Lock	Steel Locked Door With Door Handle	
Frame Color	Grey RAL 7032 or 7035	
Dimensions	Varying According to Ratings and Options	
Isolation	Galvanic Transformer	
Protection	Input and Output Over and Under Voltage, Over Load , Over Temperature, Earth Fault, Short Circuit, Semi-Conductor Anti Saturation, DC Reverse Polarity	
STANDARDS		
Compliance	IEC 950, 439, 146, 529, 726 - EMC (62040 -2) , ANSI/IEEE Std 446	
OPTIONS		
Inverter	Bypass Transformer, Bypass Stabilizer, AC Distribution Board	
Remote Access and Monitoring	Meters, Potential Free Alarm Contacts, RS485 Interface, Touch Screen HMI	
Topology	Active Hot Redundant System, Parallel Redundant System, Passive Hot Redundant System	
Mechanical	Up to IP54, Top Cable Entry, Other Frame Color, Anti-Seismic Design	

UPS (Uninterruptible Power Supply)



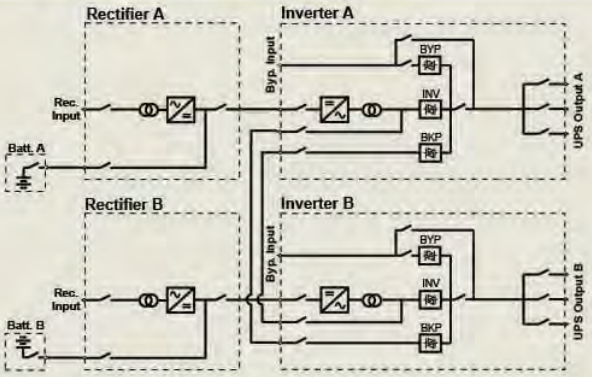
Human-Machine Interface (HMI) and Mimic Panel

An extensive human interface ensures that all the important parameters are accessible from the front panel. A large 20 characters by 4 lines LCD unit displays all the relative information to the user. Push button keyboard is used with different LEDs (Green, Yellow and Red) indicating the equipment state.
A mimic panel shows a general outline of the electrical connections and help user to monitor system status by a glance.

UPS System

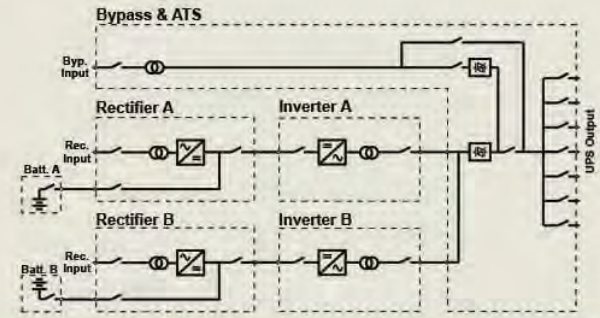
Tavan Pooyesh inverters are also available in different range of DC inputs. This configuration allows us to combine this inverters with battery chargers in order to design specific high ratings double conversion AC UPS systems (up to 200KVA). To achieve ultimate reliability, this UPS systems can be combined to each other and constitute a redundant UPS system. Tavan Pooyesh topologies for redundant UPS systems are available as below:

Topologies of Redundant UPS



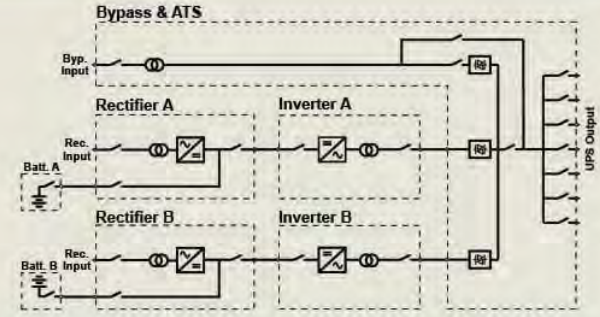
1) Active Hot Redundancy:

Total Load is broken into tow half load and supplied separately by each UPS. In case of one UPS failure the other will take 100% of the load. In normal conditions each UPS operate independently and with half load therefore instability in one UPS cannot spread to the other. In Spite of that, when total load cannot divided into half loads this solution cannot be applied.



2) Paralleled Redundancy:

Total Load is supplied by a common bus and each UPS take 50% the load all the time. In case of one UPS failure the other will take 100% of the load. In spite of this fact that high rating load (up to 200%) can be supplied in this way, instability in one UPS can be spread to the other due to common bus.



3) Passive Hot Redundancy:

Total Load is supplied by one UPS and other is stand by with no load. In case of first UPS failure the second will take 100% of the load. This topology is less expensive and more simpler but problems such as poor overload capability and aging should be take into account since one UPS operate with full load all the time.

GPU (Ground Power Unit)

A Comprehensive range of ground power unit (GPU) provides power supply to the all type of aircrafts. 3 phase 115VAC / 400 Hz or 28VDC output or combination of both are available. Either internal diesel or external utility power can be selected as primary power source.

Mobile 3Phase / 400Hz AC GPU
30KVA Upto 140KVA

Compound AC + DC GPU
(3Phase / 400Hz + 28VDC)

Portable 3Phase / 400Hz AC GPU
5KVA Upto 140KVA

Portable 28VDC GPU
600A Upto 2000A

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BATTERY

Sealed Lead Acid (VRLA)

- 2 Volts Single Cell Batteries: 60Ah Up to 3000Ah
- 6 Volts Block Batteries: 3.2Ah Up to 162Ah
- 12 Volts Block Batteries: 7Ah Up to 200Ah

Lead Acid Plante Type

2 Volts Vented Pure Lead Positive Plate Batteries: 16Ah Up to 2250Ah

Nickel Cadmium

Pocket Plate Low Rate Batteries: 8Ah Up to 1540Ah
Pocket Plate Medium Rate Batteries: 12Ah Up to 1390Ah
Pocket Plate High Rate Batteries: 9Ah Up to 930Ah
Sintered Plate Ultra High Rate Batteries: 22Ah Up to 220Ah

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