INVERTERS

The ELIT inverter, INV 220 series, are outcome of a long experience both in UPS and in converters field. All of our equipments distinguish themselves by the employment of advanced technological components, excellent reliability and easy maintenance.

The simplicity of working is the main feature of all of our products.
These apparatus are studied to be employed in:

- Automation
- Petrochemical and industrial plants
- Telecommunication
- Railway field
- Civil and military aviation
- Civil and military nautical

PRINCIPLES OF WORKING

The IGBT ELIT inverter, INV 220 series, transforms the continuous voltage into an alternating sinusoidal stabilized voltage. The PWM modulation technique used reduces the harmonic content of the output and limits voltage deviations under step load conditions.

FEATURES

The main components that composed the inverter ELIT INV 220 are:

- Input filter
- IGBT conversion unit (Inverter)
- Output filter
- Output insulation transformer
- Static switch as option
- Manual by-pass as option
- Insulation transformer for emergency line as option
- Parallel kit feature as option

INVERTER ELIT INV 220 COMPOSITION

a) IGBT Greatz bridge type with PWM regulation
b) Output current limitation
c) Output voltage detector min – max
d) Heat sink temperature detector
e) DC link voltage detector min - max
f) Short circuit running

STATIC BYPASS SWITCH (AS OPTION)

The bypass static commutator transfers the load from the inverter to mains upon failure or overload.
The transfer occurs automatically without break.
Characteristics

a) Min – max mains voltage monitor
b) Quartz mains frequency monitor
c) Mains – inverter transfer manual or automatic and vice versa
d) Transfer inhibition mains – inverter after 5-6 attempts
e) Heat sink temperature detector

If any condition out of inverter characteristics occurs, the static bypass switches the load to the emergency line and the inverter is disconnected. When the normal conditions are restored, the inverter will be connected

CONTROL PANEL

The control panel is divided in three parts:
- LCD display (PMD)
- LED indicators
- Keyboard.

INTERFACES

The apparatus are provided with a dry contact to remote the following signaling:
- inverter alarm
- inverter running
- ON/OFF remote control as option

Additional interface modules for measurements transmission as option:
- RS485 interface
- RS232interface
- Profibus interface
- Lonworks interface
- Output pulses
- Analogical output
- Alarms

MONITORING CONTROL SYSTEM (as option)

The Monitoring Control System manages communication from and to remote devices, distributed in two ways:

- Physical connections
- Wireless connections

These two kinds of connections can be combined at any way, to use in the better way the available infrastructures for the application (telephone cable, ADSL/HDSL connections, optic fiber cable, GSM/GPRS modem, UMTS modem, HSPDA modem).

The System can use dedicated lines by cable, optic fiber or it can use a point of access through LAN network or internet in remote plant allowing the management with automatic calling or through request of the control device.

The Workstation logs on Central System through LAN or Internet network allowing the complete compatibility of the System.
The Monitoring Control System has a Client platform, designed for mobile phones, with Java platform. It allows to access directly with the phone to all data of the Server and to perform all maintenance actions in remote.

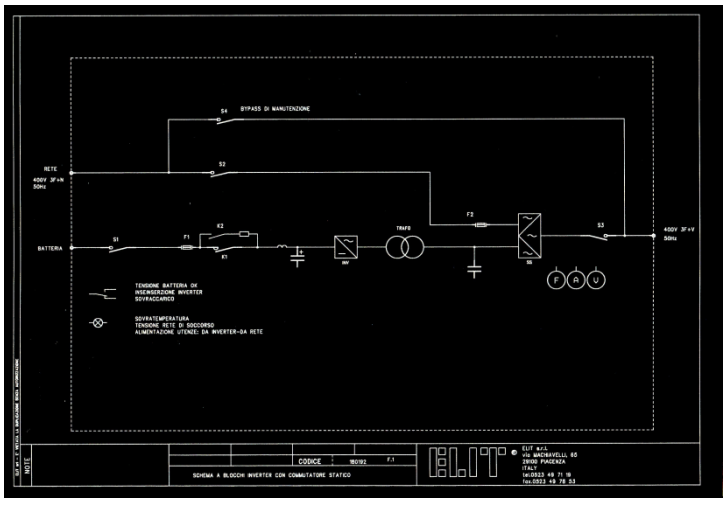
The Central System controls every access with login procedure, classifying them in different levels according the operative level that you desire to give at each user.

CUSTOM VERSION

We realize custom apparatus according to customer's technical data employing the standard series sets and therefore with experimented feature.

Fix or variable input voltage
Fix or variable output voltage
Cabinet protection degree for outdoor use
Extended working temperature from -40°C to 50°C
Parallel configuration kit
Parallel cabinet with system switches
Voltage accuracy calibration with potentiometer
Frequency accuracy calibration with potentiometer
Distribution cabinet
Drop line compensator
Mobile version
Under bridge configuration

BLOCK DIAGRAM



Model	INV220 5	INV220 10	INV220 15	INV220 20	INV220 25	INV220 30	INV220 45	INV220 60
Rated power kVA/kW	5 / 4	10 / 8	15 / 12	20 / 16	25 /20	30 /24	45 / 36	60 / 48

INPUT	
Nominal voltage	220Vdc
Voltage tolerance	180 ÷ 300Vdc
Emergency line as option	400V 3Ph o 230V 1Ph, 50/60Hz (120, 208, 230, 440, 480 e 575V as option)

OUTPUT	
Voltage	400V 3Ph+N or 230V 1Ph (120, 208, 230, 440, 480 and 575V as option)
Frequency	50 or 60Hz ± 0.1%
Static stability	± 1%
Dynamic stability	± 8%
Crest factor	1.414 ±3%
Working	Continuously
Waveform	Sinusoidal
Overload	125% for 10 minutes, 150% for 1 minute
Transfer time	20 msec.
THD distortion	< 3%
Efficiency	> 90%

MISCELLANEOUS								
Operating temperature	-25 ÷ +50°C							
Relative humidity	0 from 95% without condensing							
Altitude	1000m without derating							
Protection degree	IP20 (IP31, IP41 and IP54 on request)							
Cooling	Forced air (natural as option)							
Dimensions (mm)	400x600x1200				600x800x1200		800x600x1500	
Weight (kgs)	100	120	130	150	220	270	320	450

STANDARDS	
Safety	IEC/EN 62040-1-1, IEC/EN 60950-1
EMC	IEC/EN 62040-2, IEC/EN61000-3-2, IEC/EN61000-6-2,
Performance	EN 62040-3

Model	INV220 80	INV220 100	INV220 120	INV220 160	INV220 180	INV220 200	INV220 250	INV220 300
Rated power kVA/kW	80 / 64	100 / 80	120 /96	160 /120	180 / 144	200 /160	250 / 200	300 / 240

INPUT	
Nominal voltage	220Vdc
Voltage tolerance	180 ÷ 300Vdc
Emergency line as option	400V 3Ph o 230V 1Ph, 50/60Hz (120, 208, 230, 440, 480 e 575V as option)

OUTPUT	
Voltage	400V 3Ph+N or 230V 1Ph (120, 208, 230, 440, 480 and 575V as option)
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MISCELLANEOUS								
Operating temperature	-25 ÷ +50°C							
Relative humidity	0 from 95% without condensing							
Altitude	1000m without derating							
Protection degree	IP20 (IP31, IP41 and IP54 on request)							
Cooling	Forced air (natural as option)							
Dimensions (mm)	800x800x1800		1300x1000x1800				1500x1000x1800	
Weight (kgs)	600	750	900	1100	1300	1400	1800	2000

STANDARDS	
Safety	IEC/EN 62040-1-1, IEC/EN 60950-1
EMC	IEC/EN 62040-2, IEC/EN61000-3-2, IEC/EN61000-6-2,
Performance	EN 62040-3