

Astrid
ENERGY ENTERPRISES

UNINTERRUPTIBLE POWER SUPPLIES

*... customer satisfaction
is our strength ...*



...discover a new universe ...



ASTRID ENERGY ENTERPRISES was established in 1996 as the result of four founders who have been working successfully for many years in the UPS field. Our company has a specific aim to develop products with characteristics that are customised to the specific need of the final user.



Products and Pre-sales support carried out by specialists

ASTRID ENERGY ENTERPRISES products are distributed world-wide by professional personnel that specialize in understanding the needs of the overall electrical installation in order to offer the best solution to our customers. The products are of the most advanced power electronics technology and range from 5 KVA to 650 KVA (parallel redundancy upto 6 units). They are designed, developed and manufactured at the headquarters in Castel S. Niccolò (AR) Tuscany. These products provide exceptional protection for power supplies systems in the following fields: Hospitals, Finance, Industry, Transport and Telecom.

In addition to our range of Standard UPS's our company designs, develops and manufactures customized equipment (rectifiers, inverters, UPS's) according to the customer's specification. These products are commonly used in Power Plants, Petrochemical Plants, Gas and Oil pipelines, Railways, Subways, Offshore Platforms and in Cruise Ships.

Without interruption also after sales



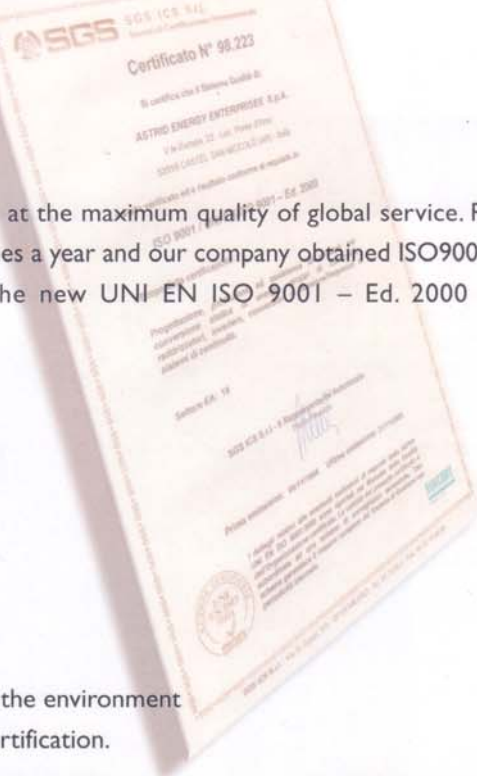
Our service teams can offer service within 24 hours. Full-maintenance service contracts and teleservice with modem and telephone lines to guarantee 24 hours UPS monitoring.

The Quality

Since the beginning our company has aimed at the maximum quality of global service. Personnel and customer trainings are held at least 2 times a year and our company obtained ISO9001 in 1998 and has been requalified according to the new UNI EN ISO 9001 – Ed. 2000 in 2001.



CE conforms to all appropriate IEC standards

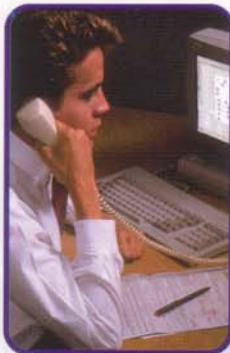


Environment protection

Our company operates under the respect of the environment requirements and is undergoing ISO14000 certification.



Customer satisfaction

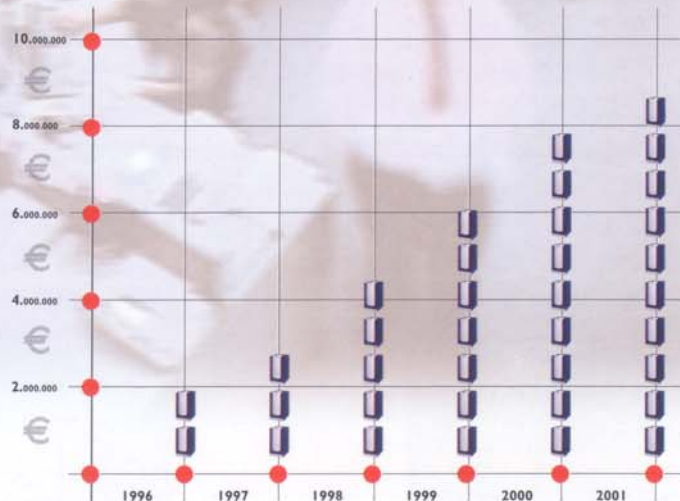


Each move that our company undertakes is a step towards customer satisfaction. The constant research of new technologies and the development of new products are always carried out in order to offer the best solution to our customers avoiding wrong and expensive choices.

We constantly strive to improve our services, from the pre-sales support for correct product choice to the delivery and start-up of the products.

Our company was founded with the intent of satisfying our customers and we still have a lot of space for improvement. Our enthusiasm and engagement have made our company grow quickly and we intend to continue our work in order to reach total quality.

Company growth



Customers that have trusted us

Banking

Monte dei Paschi Siena
Royal Bank of Scotland
Banca Credito Cooperativo di Stia
Bank Istituto S. Paolo di Torino
Raffaelsenbank Wien
Banca Credito Cooperativo di Cecina
Unicredito Milano
Banca Popolare di Crotone
Banca di Agrileasing
Banca Steinhauslin



Hospitals

Azienda Ospedaliera di Bergamo
Policlinico di Roma
Azienda Ospedaliera di Biella
Azienda Ospedaliera di Legnano
Casa di Cura Città di Bra
Casa di cura Poggio del Sole - Arezzo
Casa di cura Villa del Sole - Salerno
Hesperia Hospital - Modena
Koelliker Hospital - Torino
Ospedale di Bibbiena - Arezzo
Ospedale di Monza
Presidio Sanitario Gradenigo - Torino
Ospedale di Crotone
Ospedale di Cosenza
Ospedale di Mantova
Ospedale Niguarda Milano



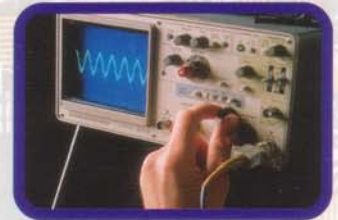
Transportation

Malpensa 2000
Beijing-Hongkong Railway
MTN Messaggerie trasporti
Sirian Railways
Aeroporto di Sigonella
Aeroporto Fabbri Viterbo
Beirut International Airport
Aeronautica Militare
A.N.A.S.
Autostrade SpA



Industry

Fiat Auto
Fiat Iveco
Fiat Engineering
Agip Spa
Siemens
ABB
Ansaldo Impianti
Ansaldo Sistemi Industriali
Ansaldo Montaggi
Saipem
Snam Progetti
Eleca
Sasp Offshore Engineering
Samsung Industries
Carlo Gavazzi
Alenia
Cable & Wireless
Beghelli
CNR Milano
Dassault Electronic
Alcatel
Smith International
Europa Metalli
Semikron
Cables Pirelli SA
SGS Thomson
Coseco
BMZ (Zlobin – Bielorussia)
Pirelli (Steel cord)
Fulgor
Artemide
ERS BV
Rossetti Marino
Nuova Vamatex
Rossi Motoriduttori
Siemens
Edison
Renco S.p.a.
G.E. USA



Telecommunications

Shaanxi Aerospace Great Wall (Beijing)
King Fahd Satellite Telecommunication City Jeddah
Qatar Public Telephone Company Doha
ITN Television New London
ORF Austria
Rai Italia
Etisalat UAE
Tim Italia
Tim Spagna



OUR PRODUCTS

STARLET

STARLET E3I

STARLET E33

PLANET E 20-32

HALLEY E 20-60

HALLEY E 80-125

SATURN E 160-300

SATURN E 400-650

CUSTOM

ON LINE SYSTEM DOUBLE CONVERSION
OUTPUT ISOLATING TRANSFORMER
INPUT-OUTPUT INSULATION (OPERATING FROM INVERTER)
MANUAL BY-PASS
LOW HARMONIC DISTORTION REJECTED INTO THE MAINS
AUTOMATIC BATTERY TEST
IGBT TECHNOLOGY FOR HIGH FREQUENCY COMMUTATION
HIGH CREST FACTOR
CAPABILITY OF SUPPLYING DISTORTED LOADS, CONTAINING OUTPUT VOLTAGE DISTORTION
RS 232 - RS 485 SERIAL INTERFACES
HIGH INSTANTANEOUS OVERLOAD CAPABILITY
HIGH MTBF (>150.000h)
LOW MTTR (<0,5h)
HIGH EFFICIENCY STARTING AT 25% LOAD
EASY INSTALLATION AND MAINTENANCE; TOTAL ACCESSIBILITY FROM THE FRONT
REDUCED DIMENSIONS
EASY TO USE AND MANAGE, WITH PILOTTED START-UP AND FRIENDLY DIAGNOSTIC
SNMP
CONTROL SOFTWARE FOR WINDOWS®



STARLET

5 - 7,5 - 10 KVA 3/1

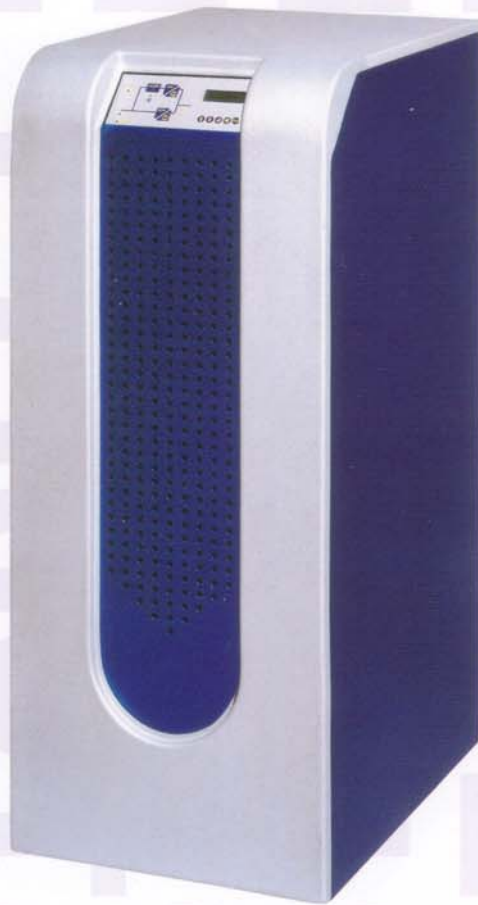


Technical data

| UPS (power - KVA) | 5 | 7,5 | 10 |
|--|--|------|------|
| Nominal input voltage - Vac | 220 + 240 ± 10% (adjustable) | | |
| Nominal output voltage - Vac | 220 + 240 (adjustable) | | |
| Nominal output power (cos φ 0,7) - KVA | 5 | 7,5 | 10 |
| Nominal output power (cos φ 1) - KW | 3,5 | 5,5 | 7 |
| Output frequency - Hz | 50 + 60 (adjustable) | | |
| Efficiency (AC-AC) - % (active stand-by operation) | > 98 | > 98 | > 98 |
| Efficiency (AC-AC) - % (Online double conversion) | > 90 | > 92 | > 92 |
| UPS ambient temperature - C° | 0 + 40 | | |
| Audible noise level (acc. EN50091) | < 50 dB | | |
| Immunity (EMI) | According to "EN 50091-2" (CE Label) | | |
| Battery test | programmable | | |
| Inverter bridge | IGBT (high frequency commutation) | | |
| Overload capability | 125% for 10' - 150% for 1' - 200% for 0,1" | | |
| Output harmonic distortion | < 2 % | | |
| Crest factor (non linear load 75%) | 3 : 1 | | |
| Dimension LxPxH - mm | 460x650x870 | | |
| Back-up time - min | 15 | 10 | 7 |

STARLET E31

7,5 - 10 - 15 KVA 3/1

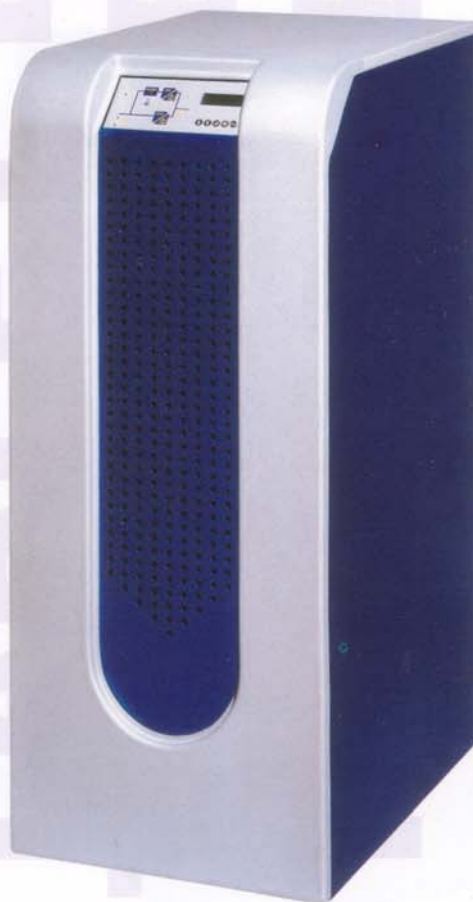


Technical data

| UPS (power - KVA) | 7,5 | 10 | 15 |
|--|--|------|------|
| Nominal input voltage - Vac | 380 ÷ 415 ± 15% (adjustable) | | |
| Nominal output voltage - Vac | 220 ÷ 240 (adjustable) | | |
| Nominal output power (cos φ 0,7) - KVA | 7,5 | 10 | 15 |
| Nominal output power (cos φ 1) - KW | 5,25 | 7 | 10,5 |
| Output frequency - Hz | 50 ÷ 60 (adjustable) | | |
| Efficiency (AC-AC) - % (active stand-by operation) | > 98 | > 98 | > 98 |
| Efficiency (AC-AC) - % (Online double conversion) | > 90 | > 91 | > 91 |
| UPS ambient temperature - C° | 0 ÷ 40 | | |
| Audible noise level (acc. EN50091) | < 52 dB | | |
| Immunity (EMI) | According to "EN 50091-2" (CE Label) | | |
| Battery test | Automatic every month | | |
| Inverter bridge | IGBT (high frequency commutation) | | |
| Overload capability | 125% for 10' - 150% for 1' - 200% for 0,1" | | |
| Output harmonic distortion | < 2 % | | |
| Crest factor (non linear load 75%) | 3 : 1 | | |
| Dimensions LxPxH - mm | 455x640x1090 | | |
| Back-up time - min | 22 | 18 | 10 |

STARLET E33

10 - 15 KVA 3/3



Technical data

| UPS (power - KVA) | 10 | 15 |
|--|--|------|
| Nominal input voltage - Vac | 380 + 415 ± 15% (adjustable) | |
| Nominal output voltage - Vac | 380 + 415 (adjustable) | |
| Nominal output power (cosphi 0,7) - KVA | 10 | 15 |
| Nominal output power (cosphi 1) - KW | 7 | 10,5 |
| Output frequency - Hz | 50 + 60 (adjustable) | |
| Efficiency (AC-AC) - % (active stand-by operation) | > 98 | > 98 |
| Efficiency (AC-AC) - % (Online double conversion) | > 91 | > 91 |
| UPS ambient temperature - C° | 0 + 40 | |
| Audible noise level (acc. EN50091) | < 55 dB | |
| Immunity (EMI) | According to "EN 50091-2" (CE Label) | |
| Battery test | Automatic every month | |
| Inverter bridge | IGBT (high frequency commutation) | |
| Overload capability | 125% for 10' - 150% for 1' - 200% for 0,1" | |
| Output harmonic distortion | < 2% | |
| Crest factor (non linear load 75%) | 3 : 1 | |
| Dimensions LxPxH - mm | 455x640x1090 | |
| Back-up time - min | 18 | 10 |

PLANET E

20 - 25 - 32 KVA 3/1



* Up to 6 units in parallel redundant configuration

Technical data

| UPS (power - KVA) | 20 | 25 | 32 |
|--|--|-----|------|
| Nominal input voltage - Vac | 380 ÷ 415 ± 10% (adjustable) | | |
| Nominal output voltage - Vac | 220 ÷ 240 (adjustable) | | |
| Nominal output power (cos φ 0,8) - KVA | 20 | 25 | 32 |
| Nominal output power (cos φ 1) - KW | 16 | 20 | 25,6 |
| Output frequency - Hz | 50÷60 (adjustable) | | |
| Efficiency (AC÷AC) - % | >92 | >92 | >92 |
| UPS ambient temperature - C° | 0 ÷ 40 | | |
| Audible noise level (acc. EN50091) | < 55 dB | | |
| Immunity (EMI) | According to "EN 50091-2" (CE Label) | | |
| Battery test | Automatic every month | | |
| Inverter bridge | IGBT (high frequency commutation) | | |
| Overload capability | 125% for 10' - 150% for 1' - 200% for 0,1" | | |
| Output harmonic distortion | < 2 % | | |
| Crest factor (non linear load 75%) | 3 : 1 | | |
| Dimensions LxPxH - mm | 690x856x1340 | | |
| Back-up time - min | 13 | 10 | 3 |

HALLEY E

20 - 60 KVA 3/3

* Up to 6 units in parallel redundant configuration



Technical data

| UPS (power - KVA) | 20 | 25 | 32 | 40 | 60 |
|---|--|------|------|------|------|
| Nominal input voltage - Vac | 380 + 415 ± 10% (adjustable) | | | | |
| Nominal output voltage - Vac | 380 + 415 (adjustable) | | | | |
| Nominal output power (cos φ 0,8) - KVA | 20 | 25 | 32 | 40 | 60 |
| Nominal output power (cos φ 1) - KW | 16 | 20 | 20,5 | 32 | 48 |
| Output frequency - Hz | 50 + 60 (adjustable) | | | | |
| Efficiency (AC+AC) - % | > 92 | | | | |
| UPS ambient temperature - C° | 0 + 40 | | | | |
| Audible noise level (acc. EN50091) - Db | < 55 | < 55 | < 55 | < 59 | < 59 |
| Immunity (EMI) | According to "EN 50091-2" (CE Label) | | | | |
| Battery test | Automatic every month | | | | |
| Inverter bridge | IGBT (high frequency commutation) | | | | |
| Overload capability | 125% for 10' - 150% for 1' - 200% for 0,1" | | | | |
| Output harmonic distortion | < 2% | | | | |
| Crest factor (non linear load 75%) | 3 : 1 | | | | |
| Dimensions LxPxH - mm | 690x865x1340 | | | | |
| Back-up time - min20 | 13 | 10 | 6 | - | - |

HALLEY E

80 - 100 - 125 KVA 3/3



* Up to 6 units in parallel redundant configuration

Technical data

| UPS (power - KVA) | 80 | 100 | 125 |
|--|--|------|------|
| Nominal input voltage - Vac | 380 + 415 ± 10% (adjustable) | | |
| Nominal output voltage - Vac | 380 + 415 (adjustable) | | |
| Nominal output power (cos φ 0,8) - KVA | 80 | 100 | 125 |
| Nominal output power (cos φ 1) - KW | 64 | 80 | 100 |
| Output frequency - Hz | 50 + 60 (adjustable) | | |
| Efficiency (AC+AC) - % | > 92 | > 92 | > 92 |
| UPS ambient temperature - C° | 0 + 40 | | |
| Audible noise level (acc. EN50091) | < 59 dB | | |
| Immunity (EMI) | According to "EN 50091-2" (CE Label) | | |
| Battery test | Automatic every month | | |
| Inverter bridge | IGBT (high frequency commutation) | | |
| Overload capability | 125% for 10' - 150% for 1' - 200% for 0,1" | | |
| Output harmonic distortion | < 2% | | |
| Crest factor (non linear load 75%) | 3 : 1 | | |
| Dimensions LxPxH - mm | 815x790x1620 | | |
| Back-up time - min | - | | |

SATURN E

160 - 300 KVA 3/3



* Up to 6 units in parallel redundant configuration

Technical data

| UPS (power - KVA) | 160 | 200 | 250 | 300 |
|--|--|-----|-----|-----|
| Nominal input voltage - Vac | 380 + 415 ± 10% (adjustable) | | | |
| Nominal output voltage - Vac | 380 + 415 (adjustable) | | | |
| Nominal output power (cos φ 0,8) - KVA | 160 | 200 | 250 | 300 |
| Nominal output power (cos φ 1) - KW | 128 | 160 | 200 | 240 |
| Output frequency - Hz | 50 + 60 ± 5Hz (adjustable) | | | |
| Efficiency (AC+AC) - % | > 92 | | | |
| UPS ambient temperature - C° | 0 + 40 | | | |
| Audible noise level (acc. EN50091) | < 59 Db | | | |
| Immunity (EMI) | According to "EN 50091-2" (CE Label) | | | |
| Battery test | Automatic every month | | | |
| Inverter bridge | IGBT (high frequency commutation) | | | |
| Overload capability | 125% for 10' - 150% for 1' - 200% for 0,1" | | | |
| Output harmonic distortion | < 2% | | | |
| Crest factor (non linear load 75%) | 3 : 1 | | | |
| Dimensions LxPxH - mm | 1590x895x1820 | | | |
| Back-up time - min | - | | | |

SATURN E

400 - 650 KVA 3/3



* Up to 6 units in parallel redundant configuration

Technical data

| UPS (power - KVA) | 400 | 500 | 650 |
|---|--|---------------|---------------|
| Nominal input voltage - Vac | 380 ÷ 415 ± 15% (adjustable) | | |
| Nominal output voltage - Vac | 380 ÷ 415 (adjustable) | | |
| Nominal output power (cos φ 0,8) - KVA | 400 | 500 | 650 |
| Nominal output power (cos φ 1) - KW | 320 | 400 | 520 |
| Output frequency - Hz | 50 ÷ 60 (adjustable) | | |
| Efficiency (AC÷AC) - % (active stand-by attivo) | > 92 | | |
| UPS ambient temperature - C° | 0 ÷ 40 | | |
| Audible noise level (acc. EN50091) | < 59 db | < 59 db | < 65 db |
| Immunity (EMI) | According to "EN 50091-2" (CE Label) | | |
| Battery test | Automatic every month | | |
| Inverter bridge | IGBT (high frequency commutation) | | |
| Overload capability | 125% for 10' - 150% for 1' - 200% for 0,1" | | |
| Output harmonic distortion | < 2 % | | |
| Crest factor (non linear load 75%) | 3 : 1 | | |
| Dimensions LxPxH - mm | 1800x905x2100 | 3500x925x2100 | 4560x925x2100 |
| Back-up time - min | - | | |

CUSTOM

Custom equipment are Rectifiers, Inverters and UPS's that are built according to the customer's specifications. This equipment is used in various kinds of Electrical Power Plants, Petrochemical Plants, Pipelines, Off-shores and in Railways and Undergrounds.



UPS 200 KVA for marine applications at Rina-LLoyd Register Standards



UPS 20 KVA for Off-Shore platforms at Rina-LLoyd Register Standards



Production line of rectifiers for galvanic plants

Rectifier for Galvanic Plants IP54 cabinet protection degree



ASTRID

can build the following:

- Rectifiers/battery chargers from 50 Adc to 1200 Adc with voltage ranges from 120 to 240 Vdc.
- Singlephase Inverters with 110Vn battery voltage and 230 Vac output (or 115 Vac) 50 or 60 Hz with power range from 3 to 100 KVA.
- Singlephase Inverters with 240Vn battery voltage and 230 Vac output (or 115 Vac) 50 or 60 Hz with power range from 3 to 200 KVA.
- Threephase Inverters with 120Vn battery voltage and 400 Vac output voltage (others on request) 50 or 60 Hz from 3 to 150 KVA
- Threephase Inverters with 240Vn battery voltage and 400 Vac output voltage (others on request) 50 or 60 Hz from 3 to 300 KVA
- Singlephase Static Switches up to 200 KVA and threephase Static Switches up to 600 KVA.
- Rectifiers for Galvanic Plants up to 10.000 Amps and up to IP54 cabinet protection degree.
- 75 Hz, 400 Hz etc. Frequency Converters with power up to 400 KVA.