EPC ENERGY AND POWER CONVERSION SYSTEMS

EPC was established by executives who have long years of experience in the Power Electronics field and growing rapidly, with the development and manufacturing EPC is ranking among the top players of the industry.

EPC energy has become the first choice of many customers by its customized, client based solutions. EPC Energy produces fastest and the best solutions as well as the most appropriate products for the needs of its customers and business partners.

**ALPHA** in telecommunication power supplies and Solar On-Grid Inverters, **ABB** in UPS’s, **ENERSYS**, **EXIDE**, **ROCKET** in batteries and TDK-Lamda in SMPS are some of our important business partners.

Founder and the personnel of the EPC Energy will continue to do the **BEST**, both today and in the future, by progressing the knowledge and experience they have gained until today.
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### Commercial Solutions

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Research and Development

While technology is developing rapidly in today’s world, our company is placing a great importance on R&D. In order to compete and making difference therefore 10 percent of our own sources is being utilized on R&D. Our constant goal is to become a worldwide Power Electronic Company.

High Quality Consciousness

High Quality is the most essential principle of our company so that we choose our providers very delicately, as a consequence we adopt, choosing companies which have significant quality consciousness and provides products with Local and International certificates, as a principle.

All of our products are being %100 tested and getting through from a strict quality control process. Our company has ISO 9001 and ISO 14001 quality certificates.
After Sale Support

Technical Support is being provided for all products, which is manufactured or marketed by EPC, for 24 hours and 365 days. Our slogan is 24/7 uninterrupted support.

Export

Most of the products we manufacture is being exported to countries such as: Jordan, Iraq, Turkmenistan, Tunisia, Nigeria, Mexico, Brazil, Chili, Singapore, Georgia, Germany, Denmark, Netherlands and others…
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<td>TURKCELL</td>
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<tr>
<td>UŁUSOY ELECTRIC</td>
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<tr>
<td>UNIMEX</td>
<td>Denmark</td>
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Rectifiers

SD Series 1 phase

GENERAL SPECIFICATIONS

- 1 phase input (model dependent)
- Internal isolation transformer at input
- Full controlled conventional rectifier
- Smart control and high reliability with DSP (Digital Signal Processor)
- Float charge, equalizing charge and boost charge modes
- Automatic and manual charge modes
- Low output voltage ripple and high reliability
- 2x16 character LCD display, showing measurements, status and alarm messages
- Soft start
- Programmable current limitation
- Operation as voltage source or current source
- Calibration of measurements from front panel
- Language selection from front panel (English / German / Turkish / Dutch / Portuguese)
- DC Low / High, Line Failure, Over Temperature, Short Circuit protections
- Ability to program all operation parameters (password protected)
- Programable alarm relay contact outputs (4 standart, up to 16 relays as option)
- Possibility of monitor and control over RS232-RS485.
- Modbus communication.
- Log records with date and time stamp up the 200 events.
- 24 V / 48 V / 110 V / 220 V output options

OPTIONS

- Active parallel (current sharing) operation up to 4 devices
- Ability to monitor batteries and battery low alarm, even when the AC input fails
- Battery temperature compensation
- Easy observation via analog gauges (Input / Output / Battery Voltages / Currents)
- Battery test with adjustable voltage and duration
- Transducers for input / output voltage(s) / current(s) (4-20mA and 0-10V)
- 12 pulse option to limit input current distortion.
- Internal cabinet light / anticondensation heater.
- Earth leakage monitoring
- Power Factor measurement
- Input Power / kVA / kW measurement
### TECHNICAL SPECIFICATIONS

#### MODEL 1 PHASE INPUT

<table>
<thead>
<tr>
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<th>110VAC / 127VAC / 208VAC / 220VAC / 230VAC / 240VAC</th>
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<td>Transformer</td>
<td>Galvanically isolated</td>
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<td>THD</td>
<td>&lt;45-50% standard</td>
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<tr>
<td>Input Protection</td>
<td>Thermic Magnetic Overcurrent protection MCB, Overvoltage protection</td>
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<td>0 -100% of Nominal Output Current</td>
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<tr>
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<tr>
<td>Float Voltage(V/C)</td>
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<td>Nominal Output Current</td>
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<td>Max Output Current</td>
<td>110 % of nominal output current</td>
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<td>Filtering</td>
<td>LC Filter</td>
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#### GENERAL PROPERTIES

| Boost Timer          | 0-600 hours adjustable |
| Cooling              | Fan Forced Cooling(Standard), Natural Cooling(Optional) |
| Isolation Voltage    | 1500 or 3000VAC input/chassis and output/chassis |
| Efficiency at full load | >80% |
| Protection level     | IP20(Standard) to IP54(Optional), (consult to EPC for IP54 to IP65) |
| Cable Entry          | Front Bottom |
| Access to Batteries  | Batteries and rectifier in the same cabinet with front access(Optional) |
| Circuit Breakers     | Thermic-magnetic circuit breakers for input, Battery and Load (up to 100A) |
| Reset Button         | Used for re-operation in case of failure of the system. |
| Measurements         | Load Voltage/Current; Battery Voltage/Current; Utility Voltage; Line Voltage; Frequency; Power Factor |

#### ENVIRONMENT

| Acoustic Noise       | 45 - 55 dB (according to Power Rating) |
| Storage Temperature  | (-20 °C) – (+70 °C) |
| Operating Temperature| (-5°C) - (+50°C) |
| Relative Humidity    | 0 - 95% Non-condensing |
| Max Installation Height | 1000m (-1% Power for every 100m after 1000m) Max. 4000m |
| Color                | RAL7035, RAL7032 (Standard), others (Optional) |

#### COMMUNICATION & PARALLELING

| Communication | RS232(Standard), Dry Contacts (Standard), RS485(Optional), TCP(Optional), SNMP(Optional), GSM(Optional) |
| Parallel            | Parallel Redundant (No need for extra kit for paralleling) |

#### STANDARDS

| Standards | IEC62040-1, IEC62040-2, ISO9001, ISO14001 |

**NOTE:** All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
Rectifiers

SD Series 3 phase

GENERAL SPECIFICATIONS

- 3 phase input (model dependent)
- Internal isolation transformer at input
- Full controlled conventional rectifier
- Smart control and high reliability with DSP (Digital Signal Processor)
- Float charge, equalizing charge and boost charge modes
- Automatic and manual charge modes
- Low output voltage ripple and high reliability
- 2x16 character LCD display, showing measurements, status and alarm messages
- Soft start
- Led displays for easy observation of Rectifier status.
- Audible alarm.
- Programmable current limitation.
- Operation as voltage source or current source.
- Calibration of measurements from front panel.
- Language selection from front panel.
  (English / German / Turkish / Dutch / Portuguese)
- DC Low / High, Line Failure, Over Temperature, Short Circuit protections
- Ability to program all operation parameters
  (password protected)
- Programable alarm relay contact outputs
  (4 standart, up to 16 relays as option)
- Possibility of monitor and control over RS232-RS485.
- Modbus communication.
- Log records with date and time stamp up to the 200 events.
- 24 V / 48 V / 110 V / 220 V output options

OPTIONS

- Active parallel (current sharing) operation up to 4 devices.
- Ability to monitor batteries and battery low alarm,
  even when the AC input fails.
- Battery temperature compensation.
- Easy observation via analog gauges (Input / Output / Battery Voltages / Currents).
- Battery test with adjustable voltage and duration.
- Transducers for input / output voltage(s) / current(s)
  (4-20mA and 0-10V).
- 12 pulse option to limit input current distortion.
- Internal cabinet light / cabinet anticondensation heater.
- Earth leakage monitoring.
- Power Factor measurement
- Input Power / kVA / kW measurement
- Touch Screen
# TECHNICAL SPECIFICATIONS

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<tr>
<td>Nominal Voltage</td>
<td>3<em>190VAC / 3</em>220VAC / 3<em>360VAC / 3</em>380VAC / 3<em>400VAC / 3</em>415VAC (Phase to Phase)</td>
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<tr>
<td>Nominal frequency</td>
<td>50 or 60 Hz</td>
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<tr>
<td>Transformer</td>
<td>Galvanically isolated</td>
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<tr>
<td>ITD</td>
<td>&lt;30-35% standard, &lt;10% on 12pulse (Optional)</td>
</tr>
<tr>
<td>Input Protection</td>
<td>Thermic Magnetic Overcurrent protection MCB, Overvoltage protection</td>
</tr>
</tbody>
</table>

| **OUTPUT** | |
| Floating Output Voltage | 12 VDC / 24 VDC / 48 VDC / 110 VDC / 125VDC / 220 VDC |
| Output Voltage Adjustment | 70% to 130% of Nominal Output Voltage |
| Output Current Adjustment | 0-100% of Nominal Output Current |
| Battery Charger Current | 0-100% of Nominal Output Current |
| Boost Charger Voltage | 100% to 120% of Floating Output Current |
| Boost Voltage(VAC) | 2.4 Lead Acid Battery 1.50 NiCd Battery |
| Float Voltage(VAC) | 2.24 Lead Acid Battery 1.40 NiCd Battery |
| Nominal Output Current | 0 to 10000A (According to request) |
| Max Output Current | 110% of nominal output current |
| Filtering | LC Filter |

| **GENERAL PROPERTIES** | |
| Bost Timer | 0-99.9 hours adjustable |
| Cooling | Fan Forced Cooling (Standard), Natural Cooling (Optional) |
| Isolation Voltage | 1500 or 3000VAC input/chassis and output/chassis |
| Efficiency at full load | 85% to 93% (According to Capacity) |
| Protection level | IP20(Standard) to IP54(Optional), (consult to EPC for IP54 to IP65) |
| Cable Entry | Front Bottom |
| Access to Batteries | Batteries and rectifier in the same cabinet with front access (optional) |
| Circuit Breakers | Thermic-magnetic circuit breakers for input, Battery and Load (up to 100A) |
| Reset Button | Used for re-operation in case of failure of the system. |

| **ENVIRONMENTAL** | |
| Acoustic Noise | 45 - 65 dB (according to Power Rating) |
| Storage Temperature | (-20 °C) – (+70 °C) |
| Operating Temperature | (-5°C) - (+50°C) |
| Relative Humidity | 0 - 95% Non-condensing |
| Max Installation Height | 1000m (-1% Power for every 100m after 1000m) Max. 4000m |
| Color | RAL7035, RAL7032 (Standard), others (Optional) |

| **COMMUNICATION & PARALLELING** | |
| Communication | RS232(Standard), Dry Contacts (Standard), RS485(Optional), TCP(Optional), SNMP(Optional), GSM(Optional) |
| Paralleling | Parallel Redundant (No need for extra kit for paralleling) |

| **STANDARDS** |
| Standards | IEC62040-1, IEC62040-2, ISO9001, ISO14001 |

NOTE: All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
INVERTA Series

GENERAL SPECIFICATIONS
- Input and output breakers
- 1kVA to 600kVA power options
- Output isolation transformer
- 50Hz/60Hz/83 1/3Hz/400Hz output
- 50Hz/60Hz adjustable frequency
- By-Pass input correction interruptable
- interruptable by-pass option
- Compatible with inrush current devices
- Short circuit protection
- Parallel working and scaling (optional)
- 2x16 LCD display to monitor the output, input voltage and current
- Line voltage low/high, output voltage low/high, over temperature, and IGBT/Mosfet fault and alarms

- Through RS232 or RS485(optional) Modbus Communication
- Advanced PC control and monitoring program.
- Monitoring and controlling of all operational parameters by the LCD Display
- Automatic or Manual Start
- Language selection on LCD display
- Log records up to 200 events
- Controlling with an external input
- Perfect dynamic answer
- Soft Start
- LED’s on the front panel
- Standing or rack type cabinet
- Voltage & Current Transducers

TECHNICAL SPECIFICATIONS

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<td>3kVA to 600kVA</td>
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<td>Frequency (Hz)</td>
<td>50Hz/60Hz/83 1/3Hz/400Hz</td>
<td>50Hz/60Hz/83 1/3Hz/400Hz</td>
<td>50Hz/60Hz/83 1/3Hz/400Hz</td>
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</table>

| OUTPUT | | | |
|--------| | | |
| Voltage (V) | 110VAC, 127VAC, 220VAC, 230VAC, 240VAC | 3*220VAC to 3*600VAC | |
| Power (kVA) | 1kVA to 10kVA | 1kVA to 200kVA | 3kVA to 600kVA |
| Power (kW) | 750W to 7.5kW | 750W to 150W | 2250W to 450kW |
| Frequency (Hz) | 50Hz/60Hz/83 1/3Hz/400Hz | 50Hz/60Hz/83 1/3Hz/400Hz | 50Hz/60Hz/83 1/3Hz/400Hz |
| Power Factor | 0.8 to 1 | 0.8 to 1 | 0.8 to 1 |
| Crest Factor | 3:1 | 3:1 | 3:1 |
| THDi | < 3% | < 3% | < 3% |
| Efficiency | > 85% | > 87% | > 90% |

SYSTEM PROPERTIES
- Design Life: 20 years
- Protection Class: IP20(Standard) to IP54(Optional), consult to EPC for IP54 to IP65
- Storage Temperature: (-20 °C) - (+70 °C)
- Operating Temperature: (-5°C) - (+50°C)
- Cooling: Fan Forced Cooling(Standard), Natural Cooling(Optional)
- Altitude: 1000m (-1% Power for every 100m after 1000m) Max. 4000m
- Relative Humidity: 0 - 95% Non-condensing
- Noise (1m away): <55db <65dB
- Color: RAL7035, RAL7032 (Standard), others (Optional)
- Cable Entry: Front Bottom (Top entry optional), Back/Front (Rack Type)

STANDARDS
- Standards: IEC60146, IEC62040-1, IEC62040-2, ISO9001, ISO14001

NOTE: All above technical specifications subject to change without notice. All specifications are just simple guidelines. Refer to the EPC for special applications.

All trade names mentioned above are registered trademarks of their respective owners.
STS Series 1 phase

**GENERAL SPECIFICATIONS**
- Smart control and high reliability with DSP (Digital Signal Processor)
- Thyristor controlled switching (fully static)
- Automatic and manual transfer modes
- 2x16 character LCD display, showing measurements, status and alarm messages, led test
- Graphic touchscreen user interface module (HMI) Option
- Led displays for easy observation of static transfer switch status. Audible alarm.
- Internal maintenance bypass switch
- Internal, redundant and monitored power supplies
- Calibration of measurements from front panel
- Language selection from front panel (English / German / Turkish / Dutch / Portuguese)
- Input Low / High, Output Low / High, Over Temperature, Short Circuit protections
- Ability to program all operation parameters (password protected).
- Common alarm relay output.
- Possibility of monitor and control over RS232-RS485.
- Modbus (RTU) communication.
- Log records with date and time stamp up the 200 events.
- Thyristor failure detection.
- Natural cooling up to a power level.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>MODELS</th>
<th>STS 1016</th>
<th>STS 1032</th>
<th>STS 1050</th>
<th>STS 1063</th>
<th>STS 1100</th>
<th>STS 1150</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER (A)</td>
<td>16</td>
<td>32</td>
<td>50</td>
<td>63</td>
<td>100</td>
<td>150</td>
</tr>
</tbody>
</table>

**INPUT**
- Input Voltage: 110VAC / 127VAC / 208VAC / 220VAC / 230VAC / 240VAC
- Nominal frequency: 50 or 60 Hz

**OUTPUT**
- Output Voltage: 110VAC / 127VAC / 208VAC / 220VAC / 230VAC / 240VAC
- Efficiency: > 98%
- Transfer Time: < 5ms @ 50 Hz, < 4.1ms @ 60 Hz

**SYSTEM PROPERTIES**
- Weight (kg): 12 kg 16 kg 20 kg
- Dimensions: 19 inch rack cabinet, Height: 2U, Depth: 400mm
- Operation Temperature: (-5°C) - (50°C)
- Storage Temperature: (-20°C) - (70°C)
- Overload Capability: 150 % for 1 minutes, 250% 20ms
- Acceptable Source Voltage Distortion: 10 % Maximum
- Max Altitude: 2000m
- Communication: Modbus Communication over RS232 Serial Port
- Dry Contact: 1 Dry contact output dedicated for common alarm, 4 Dry Contacts (Optional)
- Colour: RAL7035, RAL7032 (Standard), others (Optional)
- Protection Level: IP20

**ALARMS AND COMMUNICATION**
- Error Notice: Overload, Over Temperature, Fuse Failure, Maintenance Switch active.
- Maintenance Switch: On cabinet
- Communication: RS232(Standard), Dry Contact(Standard), RS485(Optional)
- Time - Date: Log Records up to 200 logs with Real Time Clock Calender
- Led Indicators: (Source1 Good, Source2 Good, Source1 On, Source2 On, Output OK, Common Alarm, Source1 Maint, Source2 Maint, Synchronisation Bad)
- Power Supplies: Redundant Internal Power Supplies
- Alarm: Audible Alarm
- Current Function: Load High Current Inhibit Function, which inhibits emergency transfer in case of very high currents like short circuits

**STANDARDS**
- Applicable Standards: IEC62310-1, IEC62310-2, IEC62310-3, ISO9001, ISO14001

NOTE: All specifications subject to change without notice. Consult EPC's Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
STS Series 3 phase

**GENERAL SPECIFICATIONS**
- Smart control and high reliability with DSP (Digital Signal Processor)
- Thyristor controlled switching (fully static)
- Automatic and manual transfer modes
- 2x16 character LCD display, showing measurements, status and alarm messages, led test
- Graphic touchscreen user interface module (HMI) Option
- Led displays for easy observation of static transfer switch status
- Audible alarm.
- Low malfunction risk with 4 parallel redundant power supplies
- Internal maintenance bypass switch
- Internal, redundant and monitored power supplies
- Calibration of measurements from front panel
- Language selection from front panel (English / German / Turkish / Dutch / Portuguese)
- Input Low / High, Output Low / High, Over Temperature, Short Circuit protections
- Ability to program all operation parameters (password protected)
- Common alarm relay output
- Possibility of monitor and control over RS232-RS485.
- Modbus (RTU) communication.
- Log records with date and time stamp up the 200 events.
- Thyristor failure detection
- Natural cooling up to a power level

**OPTIONS**
- 4 programmable alarm relay contact outputs.
- Easy observation via analog gauges (input / output voltages / currents).
- Transducers for input / output voltage(s) / current(s) (4-20mA and 0-10V).
- Internal cabinet light / anticondensation heater.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>MODELS</th>
<th>STS 3050</th>
<th>STS 3100</th>
<th>STS 3150</th>
<th>STS 3200</th>
<th>STS 3300</th>
<th>STS 3400</th>
<th>STS 3500</th>
<th>STS 3600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current (A)</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>300</td>
<td>400</td>
<td>500</td>
<td>600</td>
</tr>
</tbody>
</table>

**INPUT**
- Nominal Voltage-Sources: 3*190VAC / 3*220VAC / 3*360VAC / 3*380VAC / 3*400VAC / 3*415VAC (Phase to Phase)
- Switched Input Phases: 3(3-pole)(Standard), 3+N(4-pole)(Optional)
- Nominal Frequency: 50 - 60 Hz
- Input FrequencyRange: ±20 % ( adjustable)
- Distribution Compatibility: IT, TT, TNS, TNC

**OUTPUT**
- Output Voltage: 3*190VAC / 3*220VAC / 3*360VAC / 3*380VAC / 3*400VAC / 3*415VAC (Phase to Phase)
- Transfer Type: “Break Before Make” (no overlapping sources)
- Transfer time for source failure: 5.0ms @ 50Hz, 4.1ms @ 60Hz with Synchronized Sources; 10 msec with Unsynchronized Sources
- Efficiency at full load (%): > 99 %

**ENVIRONMENTAL**
- Noise level @ 1m (dB): 55 | 65
- Storage temperature: (-20 °C) – (+70 °C)
- Ambient temperature: (-5°C) - (+50°C)
- Relative humidity: 0 - 95% Non-condensing
- Max installation height: 1000m at rated power (-1% power for every 100m above 1000m)-Max 4000m
- Colour: RAL7035, RAL7032 (Standard), others (Optional)
- Protection level: IP20(Standard) to IP54(Optiona), (consult to EPC for IP54 to IP65)

**ALARMS AND COMMUNICATION**
- Communication: RS232(Standard), Dry Contact(Standard), RS485(Optiona)
- Time- Date: Log Records up to 200 logs with Real Time Clock Calender
- Led Indicators: (Source1 Good, Source2 Good, Source1 On, Source2 On, Output OK, Common Alarm, Source1 Maint, Source2 Maint, Synchronization Bad)
- Power Supplies: Redundant Internal Power Supplies
- Alarm: Audible Alarm
- Current Function: Load High Current Inhibit Function, which inhibits emergency transfer in case of very high currents like short circuits
- Communication: RS232(Standard), Dry Contacts (Standard), RS485(Optiona), TCP(Optiona), SNMP(Optiona), GSM(Optiona)

**STANDARDS**
- Applicable Standards: IEC62310-1, IEC62310-2, IEC62310-3, ISO9001, ISO14001

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# Uninterruptible Power Supplies

## GC Series

### GENERAL SPECIFICATIONS
- DC or AC, or DC and AC inputs
- 3-phase sine wave output.
- Input and output 50Hz, 60Hz, 831/3Hz, 400Hz frequency optional.
- Input/Output Galvanic Isolation Transformer
- Bypass Galvanic Isolation Transformer
- On Non-lineer loads (computer and switching power supplies) excellent performance
- Intelligent Power Module or IGBT technology full reliability.
- DSP (Digital Signal Processor) control.
- Space-vector control technology.
- Low output distortion factor.
- High efficiency.
- Audible alarm.
- User friendly control panel.
- With an LCD display (2x16 / 4x20 all parameters can be programmed and monitored by touchscreen panel (option))
- Programmable dry contact outputs and Modbus communication.
- Pulse with modulation technology (PWM)
- All parameters can be adjusted on Display
- Input and output low and high voltage protection, over temperature protection abilities
- Remote control interface, central control, PC or modem connection
- International and local certificated
- 1 years warranty
- Automatically start and fault recovery
- Input/output power and power factor measurement

### TECHNICAL SPECIFICATIONS

#### POWER (KVA)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage (VAC)</td>
<td>Single Phase Input: 110VAC / 127VAC / 208VAC / 220VAC / 230VAC / 240VAC&lt;br&gt;Three Phase Input: 3<em>190VAC / 3</em>220VAC / 3<em>360VAC / 3</em>380VAC / 3<em>400VAC / 3</em>415VAC (Phased to Phase)</td>
</tr>
<tr>
<td>Input Voltage Tolerance</td>
<td>+15% / -10%</td>
</tr>
<tr>
<td>Maximum Input Voltage</td>
<td>± 20%</td>
</tr>
<tr>
<td>Nominal Frequency</td>
<td>50Hz - 60Hz</td>
</tr>
<tr>
<td>Frequency Tolerance</td>
<td>± 10%</td>
</tr>
<tr>
<td>Rectifier Topology</td>
<td>6 or 12 pulse Thyristor Controlled</td>
</tr>
<tr>
<td>Isolation Transformer</td>
<td>Standard (except 400Vdc Rectifiers)</td>
</tr>
</tbody>
</table>

#### OUTPUT

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>Single Phase Output: 110VAC / 127VAC / 208VAC / 220VAC / 230VAC / 240VAC&lt;br&gt;Three Phase Output: 3<em>190VAC / 3</em>220VAC / 3<em>360VAC / 3</em>380VAC / 3<em>400VAC / 3</em>415VAC (Phase to Phase)</td>
</tr>
<tr>
<td>Power (kVA)</td>
<td>0 to 400kVA</td>
</tr>
<tr>
<td>Voltage Stability</td>
<td>± 1%</td>
</tr>
<tr>
<td>Rectification Time</td>
<td>Max.25ms. After Boost Charge</td>
</tr>
<tr>
<td>Frequency</td>
<td>50Hz - 1000Hz (on-demand)</td>
</tr>
<tr>
<td>Frequency Tolerance</td>
<td>+ 2% (asychronized) adjustable, 0.01 (free run)</td>
</tr>
<tr>
<td>Efficiency (Operation from DC)</td>
<td>85% to 92%</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>&lt; 3% @ lineer load, &lt; 5% @ non-lineer load</td>
</tr>
<tr>
<td>Power Factor</td>
<td>0.8</td>
</tr>
<tr>
<td>Crest Factor</td>
<td>3 : 1</td>
</tr>
<tr>
<td>Overload</td>
<td>100% - 125% @ load 10mins. / 125% - 150% @ load 1 min. / &gt;150% load: by-pass</td>
</tr>
<tr>
<td>Short-Circuit Protection</td>
<td>Electronic Short Circuit Protection</td>
</tr>
<tr>
<td>Technology</td>
<td>Space Vector Control</td>
</tr>
</tbody>
</table>

#### DIGITAL DISPLAYS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD Display</td>
<td>Output Voltage / Output Current / Input Voltage / DC Bus Voltage / Inverter Frequency / Load Percentage / Load is/isn’t powering up</td>
</tr>
<tr>
<td>Alarm Notifications (LCD)</td>
<td>Overload / NoLow Input / IGBT Fault / Over Temperature</td>
</tr>
<tr>
<td>Led Display</td>
<td>Input OK / Operation / Common Alarm</td>
</tr>
<tr>
<td>Communication</td>
<td>RS232(Standard), Dry Contacts (Standard), RS485(Optional), TCP(Optional), SNMP(Optional), GSM(Optional)</td>
</tr>
</tbody>
</table>

#### SYSTEM PROPERTIES

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Design Life</td>
<td>20 years</td>
</tr>
<tr>
<td>Protection Class</td>
<td>IP20(Standard) to IP54(Optional), (consult to EPC for IP54 to IP65)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>(-20°C) to (+70°C)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>(-10°C) to (+50°C)</td>
</tr>
<tr>
<td>Cooling</td>
<td>Fan Forced Cooling(Standard), Natural Cooling(Optional)</td>
</tr>
<tr>
<td>Altitude</td>
<td>000m (-1% Power for every 100m after 1000m) Max. 4000m</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0 - 95% (Non-condensing)</td>
</tr>
<tr>
<td>Noise (1m away)</td>
<td>&lt;55db (Single Phase), &lt;65dB (Three Phase)</td>
</tr>
<tr>
<td>Color</td>
<td>RAL7035, RAL7032 (Standard), others (Optional)</td>
</tr>
<tr>
<td>Cable Entry</td>
<td>Front Bottom (Top entry optional)</td>
</tr>
</tbody>
</table>

#### STANDARDS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards</td>
<td>50091-1, 50091-2, ISO9001, ISO14001</td>
</tr>
</tbody>
</table>

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Integrated Solutions

GENERAL SPECIFICATIONS

► These systems are produced in variety options. For example, parallelly working rectifiers, inverters, STS and battery group mounted in same cabin.
► SMPS, Hi-rect and rectifier systems which includes the battery group.
► Parallelly working rectifiers with battery group.
► Parallelly working inverters, rectifiers and static by-pass systems with battery working.
► Systems which has Battery group, rectifiers, inverters and distribution fuses.

Useable Areas

► Airports
► Energy distribution systems
► Telecommunication systems
► Oil production platforms
► Gas distribution stations

Production Range

► According to the customer requirement
**FC Series**

**GENERAL SPECIFICATIONS**
- 3 Phase full sinus output waveform.
- 50 Hz, 60Hz, 83 1/3 Hz, 400 Hz output frequency.
- Internal isolation transformer at output.
- Ability to drive nonlinear loads.
- Reliable IPM (Intelligent Power Module) technology IGBT.
- DSP (Digital Signal Processor) control.
- Space Vector Control technology.
- 2x16 / 4x20 Character LCD display for monitoring all adjustments
- Audible alarm.
- Programmable dry contact outputs and Modbus communication
- Adjustable switching frequency.
- Advanced pc program for PC connection.
- Ability to set up / adjust all operational parameters through front panel and PC communication.
- Input, Output over voltage, over current, short circuit, over temperature protections.
- Ability of control via external digital input or communication.
- Programmable automatic restart.
- Ability of cold start and battery operation.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>INPUT</th>
<th>3<em>190VAC / 3</em>220VAC / 3<em>360VAC / 3</em>380VAC / 3<em>400VAC / 3</em>415VAC (Phase to Phase)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage (V)</td>
<td>3<em>190VAC / 3</em>220VAC / 3<em>360VAC / 3</em>380VAC / 3<em>400VAC / 3</em>415VAC (Phase to Phase)</td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>50Hz / 60Hz Automatic Selectable ± 10 %</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>± 10%</td>
</tr>
<tr>
<td>Rectifier Topology</td>
<td>6 pulse, 12 pulse full bridge rectifier or IGBT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OUTPUT</th>
<th>3 - 400kVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kVA)</td>
<td>3 - 400kVA</td>
</tr>
<tr>
<td>Power (kW)</td>
<td>8kW - 320kW</td>
</tr>
<tr>
<td>Voltage (V)</td>
<td>Single Phase Output 110VAC / 127VAC / 208VAC / 220VAC / 230VAC / 240VAC</td>
</tr>
<tr>
<td>Three Phase Output 3<em>190VAC / 3</em>220VAC / 3<em>360VAC / 3</em>380VAC / 3<em>400VAC / 3</em>415VAC (Phase to Phase)</td>
<td></td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>50Hz / 60Hz / 83 1/3Hz / 400Hz ± 1%</td>
</tr>
<tr>
<td>Power Factor</td>
<td>0.8</td>
</tr>
<tr>
<td>Crest Factor</td>
<td>3 : 1</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>&lt; 3 % with linear load</td>
</tr>
<tr>
<td>Efficiency</td>
<td>&gt; 88 - 93%</td>
</tr>
<tr>
<td>Communication</td>
<td>RS232(Standard), Dry Contacts (Standard), RS485(Optional), TCP(Optional), SNMP(Optional), GSM(Optional)</td>
</tr>
</tbody>
</table>

**ALARMS AND DISPLAYS**

<table>
<thead>
<tr>
<th>Measurements</th>
<th>Output Voltage (3 Phase) / Output Current (3 Phase) / DC Bus Voltage / DC Bus Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protections &amp; Alarm</td>
<td>Output Low / High</td>
</tr>
<tr>
<td>Warning messages</td>
<td>DC Bus Low / High / Too Low</td>
</tr>
<tr>
<td></td>
<td>Overload / Overcurrent</td>
</tr>
<tr>
<td></td>
<td>Over Temperature</td>
</tr>
<tr>
<td></td>
<td>Short Circuit / IGBT Overcurrent</td>
</tr>
<tr>
<td></td>
<td>Memory / DSP Error</td>
</tr>
<tr>
<td>Led Indicators</td>
<td>Input OK</td>
</tr>
<tr>
<td></td>
<td>Operation</td>
</tr>
<tr>
<td></td>
<td>Common Alarm</td>
</tr>
</tbody>
</table>

**SYSTEM PROPERTIES**

| System Design Life | 20 years |
| Protection Class | IP20(Standard) to IP54(Optional), (consult to EPC for IP54 to IP65) |
| Storage Temperature | (-20°C) to (+70°C) |
| Operating Temperature | (-10°C) to (+50°C) |
| Cooling | Fan Forced Cooling(Standard), Natural Cooling(Optional) |
| Altitude | 1000m (-1% Power for every 100m after 1000m) Max. 4000m |
| Relative Humidity | 0 - 95% (Non-condensing) |
| Noise (1m away) | <55db (Single Phase), <65dB (Three Phase) |
| Color | RAL7035, RAL7032 (Standard), others (Optional) |
| Cable Entry | Front Bottom (Top entry optional) |

**STANDARDS**

| Standards | IEC62040-1, IEC62040-2, ISO 9001, ISO 14001 |

**NOTE:** All above technical specifications subject to change without notice. All specifications are just simple guidelines. Refer to the EPC for special applications. All trade names mentioned above are registered trademarks of their respective owners.
Static Voltage Stabilizer

**tCON Series 1 phase**

### GENERAL SPECIFICATIONS
- Single Phase, 3kVA - 50kVA
- Three Phase, 10kVA - 2000kVA
- DSP (Digital Signal Processor, 16-bit) with intelligent control and high reliability
- Normal and wide bandwidth
- Static (thyristor) switching due to the quick response and regulation time (500V/s)
- Up to 25 levels of voltage regulation
- Network / Regulator selection switch
- Static and manual bypass
- High efficiency
- Optional built-in output isolation transformer
- Measurement, 2x16 character LCD display that can show their status and alarm messages
- Electronic and electromechanical protections thermal-magnetic protection and extinguishing the input voltage (which suppresses sudden voltage pulse)
- Output safety contactors
- LED indicators can easily monitor the status of the regulator Audible alarm.
- Ability to program all study variables (password protected)
- The possibility to calibrate the measurements from the front panel
- Language selection from the front panel (English, German, Turkish, Dutch, Portuguese, Spanish, Arabic)
- Automatic self-test mode
- Up to 200 dates and times for event recording
- Permanent 1 general alarm for relay contact output
- Easy maintenance
- Making the network performance analysis
- Programmable alarm relay output
- RS232 ability to monitor Modbus communications,
- 1 year Warranty
- 10-year spare parts guarantee and extensive service support

### OPTIONS
- Programmable alarm relay output (up to 16).
- SNMP and RS485
- Input / Output Voltage / Current Transducers. (4-20mA and 0-10V simultaneously)
- Easy monitoring with Analog meters
- Touch graphic LCD display (Russian and Arabic support)
- Interior cabinet light, cabinet heater, dust filter etc.
- Internal input and output isolation transformer

### USAGE AREAS
- CNC Laser Machine
- Uninterruptible Power Supplies
- Medical Devices
- Telecommunications Equipment
- Automation Equipment
- Woodworking Machinery
- Injection Molding Machines
- TV Transmitters
- Textile Machinery
- Design and construction Machinery
- Marine Equipment
- Photo Printers
- Lifts
- Access Control Systems
- Dental Equipment
- Burglar Alarm Systems
- Jewelry Devices
- Technical Devices
- Air-conditioning systems
- Motorized Shutters
- Computer Systems
- Lighting Units
- Boilers
- Packaging Machinery
- Heating and Cooling Systems
- Fire Safety Systems
- Personnel Attendance Control System
- Electrical Appliances
- Motor Machinery
- Telephone Exchange
- Radio Transmitters
- Laser Devices
## TECHNICAL SPECIFICATIONS

### PHASE

<table>
<thead>
<tr>
<th></th>
<th>SINGLE PHASE</th>
<th>THREE PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kVA)</td>
<td>1kVA - 200kVA</td>
<td>10kVA - 2000kVA</td>
</tr>
</tbody>
</table>

### INPUT

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Single Phase</th>
<th>Three Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>220/230/240 VAC Single Phase + Neutral</td>
<td>3<em>380/3</em>400/3*415 VAC Three Phase + Neutral</td>
</tr>
<tr>
<td>Input Voltage Tolerance</td>
<td>176 VAC - 276 VAC (154 - 276 VAC Optional)</td>
<td>3<em>300 VAC - 3</em>475 VAC (265 - 475 VAC Optional)</td>
</tr>
<tr>
<td>Input Frequency</td>
<td>50 - 60 Hz ± 5%</td>
<td></td>
</tr>
</tbody>
</table>

### OUTPUT

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Single Phase</th>
<th>Three Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Voltage</td>
<td>220/230/240 VAC Single Phase + Neutral</td>
<td>3<em>380/3</em>400/3*415 VAC Three Phase + Neutral</td>
</tr>
<tr>
<td>Output Voltage Tolerance</td>
<td>±3% ( ±2% Optional)</td>
<td></td>
</tr>
<tr>
<td>Over Load</td>
<td>115% @ load 10mins; 125% @ load 1mins; 150% @ load 10 Sec; &gt;150% @ load Output Off</td>
<td></td>
</tr>
<tr>
<td>Output Frequency</td>
<td>50-60 Hz, ± % 5</td>
<td></td>
</tr>
<tr>
<td>Power Factor</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>0.92%</td>
<td></td>
</tr>
<tr>
<td>Over Load</td>
<td>0.94%</td>
<td></td>
</tr>
<tr>
<td>Output Connection</td>
<td>Suitable terminal With 4x16 Character LCD Display</td>
<td></td>
</tr>
<tr>
<td>Measurements</td>
<td>Input Power; Input Voltage; Output Voltage; Output Load; Output Frequency</td>
<td></td>
</tr>
<tr>
<td>Alarms</td>
<td>Overload; Over Temperature; Input Fault; Output Fault etc.</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>RS232(Standard), Dry Contacts (Standard), RS485(Optional), TCP(Optional), SNMP(Optional), GSM(Optional)</td>
<td></td>
</tr>
</tbody>
</table>

### PROTECTION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Single Phase</th>
<th>Three Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Voltage Protection</td>
<td>When output voltage out of adjusted tolerance values, Output off with contactor</td>
<td></td>
</tr>
<tr>
<td>Current Protection</td>
<td>Thermic Magnetic Breakers</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>Maintenance Bypass Line (15kVA and above)</td>
<td></td>
</tr>
<tr>
<td>Options</td>
<td>In any phase failure turns off the device</td>
<td></td>
</tr>
<tr>
<td>RFI / Harmonic Filter</td>
<td>Protects from input surges and drops</td>
<td></td>
</tr>
<tr>
<td>Harmonic Filter</td>
<td>RFI / HARMONIC filter decreases high frequency noise and harmonic</td>
<td></td>
</tr>
<tr>
<td>Isolation Transformer</td>
<td>Input and output Isolation Transformer for special usage</td>
<td></td>
</tr>
</tbody>
</table>

### SYSTEM PROPERTIES

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Single Phase</th>
<th>Three Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Design Life</td>
<td>20 years</td>
<td></td>
</tr>
<tr>
<td>Protection Class</td>
<td>IP20(Standard) to IP54(Optional), (consult to EPC for IP54 to IP65)</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>(-20°C) to (+70°C)</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>(-10°C) to (+50°C)</td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Fan Forced Cooling(Standard), Natural Cooling(Optional)</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>1000m (-1% Power for every 100m after 1000m) Max. 4000m</td>
<td></td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0 - 95% (Non-condensing)</td>
<td></td>
</tr>
<tr>
<td>Noise (1m away)</td>
<td>&lt;45 - 55 dB (depends on capacity)</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>RAL7035, RAL7032 (Standard), others (Optional)</td>
<td></td>
</tr>
<tr>
<td>Cable Entry</td>
<td>Front Bottom (Top entry optional)</td>
<td></td>
</tr>
</tbody>
</table>

### STANDARDS

| Standards                        | ISO9001, ISO14001 |

NOTE: All above technical specifications subject to change without notice. All specifications are just simple guidelines. Refer to the EPC for special applications. All trade names mentioned above are registered trademarks of their respective owners.
OVR Series

GENERAL SPECIFICATIONS
- High efficiency, High reliability
- Modular construction for easy customization
- Continuous voltage regulation and uninterrupted transfer.
- Separate management of each phase.
- Voltage regulation on Network fluctuations and unbalanced loads
- Monitoring and managing of output current and settings.
- External maintenance by-pass
- Short circuit and over load protection
- Ability to work with non-linear loads
- Easy, front panel Access for Service / Installation
- Noise Attenuation
- Guarantee of 10 years spare parts availability.
- Reliable technical support

OPTIONS
- Offer more features and functionality
- Wide input voltage range
- Advanced LCD panel providing detailed information
- Microprocessor controlled
- Optional RS232 Communication for remote monitoring and control

AREAS OF OPERATION
- Hospitals, Buildings and Constructions, Manufacturing Companies, Bureaus and supply of devices in need of stabilized voltage.

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODELS</th>
<th>SINGLE PHASE</th>
<th>THREE PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INPUT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Voltage</td>
<td>220VAC - 230VAC - 240VAC Single Phase + Neutral</td>
<td>3<em>380VAC - 3</em>400VAC - 3*415 Three Phase + Neutral</td>
</tr>
<tr>
<td>Input Voltage Tolerance</td>
<td>160VAC - 245VAC</td>
<td>3<em>277VAC - 3</em>424VAC</td>
</tr>
<tr>
<td>Input Frequency</td>
<td>30 - 70 Hz</td>
<td></td>
</tr>
<tr>
<td><strong>OUTPUT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Voltage</td>
<td>220VAC - 230VAC - 240VAC</td>
<td>3<em>380VAC - 3</em>400VAC - 3*415</td>
</tr>
<tr>
<td>Output Voltage Tolerance</td>
<td>5%, 3%, and 2%(Adjustable)</td>
<td></td>
</tr>
<tr>
<td>Over Load</td>
<td>115% @ load 10mins; 130% @ load 1mins; 151% @ load 1 Sec; &gt;150% @ load 1 sec then Output Off</td>
<td></td>
</tr>
<tr>
<td>Output Frequency</td>
<td>50Hz - 60Hz ± 5%</td>
<td></td>
</tr>
<tr>
<td>Regulation Speed</td>
<td>80 V/s</td>
<td></td>
</tr>
<tr>
<td>Power Factor</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td><strong>PROTECTION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Voltage Protection</td>
<td>When output voltage out of adjusted tolerance values, Output off with contactor</td>
<td></td>
</tr>
<tr>
<td>Current Protection</td>
<td>Thermic Magnetic Breakers</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>Maintenance Bypass Line (15kVA and above)</td>
<td></td>
</tr>
<tr>
<td><strong>OPTIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase Protection</td>
<td>In any phase failure turns off the device</td>
<td></td>
</tr>
<tr>
<td>RFI / Harmonic Filter</td>
<td>Protects from input surges and drops</td>
<td></td>
</tr>
<tr>
<td>Harmonic Filter</td>
<td>RFI / HARMONIC filter decreases high frequency noise and harmonic</td>
<td></td>
</tr>
<tr>
<td><strong>GENERAL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection Class</td>
<td>IP20(Standard) to IP54(Optional), (consult to EPC for IP54 to IP65)</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>(-10°C) to (+60°C)</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>(-0°C) to (+50°C)</td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Fan Forced Cooling(Standard), Natural Cooling(Optional)</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>1000m (-1% Power for every 1000m after 1000m) Max. 4000m</td>
<td></td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0 - 90% (Non-condensing)</td>
<td></td>
</tr>
<tr>
<td>Noise (1m away)</td>
<td>&lt;45 - 50 dB (depends on capacity)</td>
<td>&lt;45 - 65 dB (depends on capacity)</td>
</tr>
<tr>
<td>Color</td>
<td>RAL7035, RAL7032 (Standard), others (Optional)</td>
<td></td>
</tr>
<tr>
<td>Cable Entry</td>
<td>Front Bottom (Top entry optional)</td>
<td></td>
</tr>
<tr>
<td><strong>STANDARDS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standards</td>
<td>ISO9001, ISO14001</td>
<td></td>
</tr>
</tbody>
</table>

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# Rectifier / Uninterruptible, DC Energy

## BR Series

### GENERAL SPECIFICATIONS
- Ergonomic design for easy mounting
- Dry-type maintenance-free battery
- Constant voltage charging and Working Principle
- Microprocessor control with controlled battery test button
- Wide input voltage tolerance UPS, DC Power

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODELS</th>
<th>BR 24 V</th>
<th>BR 110 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT</td>
<td>SINGLE PHASE</td>
<td></td>
</tr>
<tr>
<td>Input Voltage Range</td>
<td>90-265 VAC</td>
<td>176-265 VAC</td>
</tr>
<tr>
<td>Input Frequency</td>
<td>50 Hz</td>
<td></td>
</tr>
<tr>
<td>Input Protection</td>
<td>2 A Fuse</td>
<td></td>
</tr>
<tr>
<td>Power Factor</td>
<td>&gt;0.80</td>
<td></td>
</tr>
<tr>
<td>OUTPUT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Voltage</td>
<td>24VDC</td>
<td>110VDC</td>
</tr>
<tr>
<td>Rated Output Current</td>
<td>7A</td>
<td></td>
</tr>
<tr>
<td>Maximum Output Current</td>
<td>300% Inominal</td>
<td></td>
</tr>
<tr>
<td>Output Protection</td>
<td>Electronic short-circuit protection and 10 A Fuses</td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Fan Forced(Standard), Natural Cooling(Optional)</td>
<td></td>
</tr>
<tr>
<td>GENERAL SPECIFICATIONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>&gt;85%</td>
<td>&gt;87%</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0- 50°C</td>
<td></td>
</tr>
<tr>
<td>Relative humidity</td>
<td>Up to 95%</td>
<td></td>
</tr>
<tr>
<td>Input / Output Connections</td>
<td>Connector</td>
<td></td>
</tr>
<tr>
<td>Cabinet Protection Class</td>
<td>IP 20</td>
<td></td>
</tr>
<tr>
<td>STANDARDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMC</td>
<td>EN61204-3</td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td>EN60335-1</td>
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</tr>
</tbody>
</table>

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# HI-RECT Series

**Rectifier / Battery Charger**

## TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>INPUT</th>
<th>SINGLE PHASE</th>
<th>THREE PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>220VAC / 230VAC / 240VAC</td>
<td>3<em>380VAC / 3</em>400VAC / 3*415VAC</td>
</tr>
<tr>
<td>Voltage Tolerance</td>
<td>± 15%</td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>50 - 60 Hz.</td>
<td></td>
</tr>
<tr>
<td>Frequency Tolerance</td>
<td>±10%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OUTPUT</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>24VDC / 48VDC / 110VDC / 220VDC</td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>100 to 12100W</td>
<td></td>
</tr>
<tr>
<td>Current Limiting</td>
<td>0 - 102% (Adjustable)</td>
<td></td>
</tr>
<tr>
<td>Ripple</td>
<td>&lt;0.5%</td>
<td></td>
</tr>
<tr>
<td>Voltage Regulation</td>
<td>±0.5% at float charge, ±1% at boost charge</td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>&gt;85%</td>
<td>&gt;92%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protections</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thermic Magnetic Breaker (Input/Output)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Short circuit, Over voltage/current protection, Automatic restart</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2000 V Input-Chasis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>500 V Output - Chasis (For PS with output voltage &lt;50 V)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1000 V Output - Chasis (For PS with output voltage &gt;50 V)</td>
<td></td>
</tr>
</tbody>
</table>

| Battery Charge Voltage | Automatic charge, boost charge: 2.4 V / Cell | Float Charge: 2.25 V / Cell |
| Boost Charge Time | 0 to 99 hours (adjustable) |
| Displays | Automatic charge, Float charge, Boost charge, Common alarm |

| Alarms | Common relay contact output for AC input low, DC output low and overheat |

| Protection Class | IP20(Standard) to IP54(Optional), (consult to EPC for IP54 to IP65) |
| Storage Temperature | (-10°C) to (+60°C) |
| Operating Temperature | (-0°C) to (+50°C) |
| Cooling | Fan Forced Cooling(Standard), Natural Cooling(Optional) |
| Altitude | 1000m (-1% Power for every 100m after 1000m) Max. 4000m |
| Relative Humidity | 0 - 95% (Non-condensing) |
| Noise (1m away) | <45 - 50 dB (depends on capacity) |
| Color | RAL7035, RAL7032 (Standard), others (Optional) |
| Cable Entry | Front Bottom (Top entry optional) |
| Battery Charge Characteristics | VDE, DIN 41773 |
| Dimensions | 19", 21" or Wall Mount Cabinet, 5U |

<table>
<thead>
<tr>
<th>STANDARDS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ANSI-NEMA PE 5; IEC62040-1; IEC62040-2; ISO9001; ISO14001</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
### GENERAL SPECIFICATIONS
- **Input & Output fully isolated**
- **With USB output port**
- **High Surge:** High surge current capability starts difficult loads such as TVS, camps, motors and other inductive loads.
- **Soft Start:** Smooth start-up of the appliances
- **Pure Sine Wave Output Waveform:** Clean Power for sensitive loads.
- **AC Output identical to,** and in some cases better than the power supplied by your utility.
- **Cooling Fan:** Control by load or temperature (Optional)
- **Low Total Harmonic Distortion:** <3%
- **Remote Control** (Optional)

### TECHNICAL SPECIFICATIONS

#### MODELS
<table>
<thead>
<tr>
<th>MODELS</th>
<th>HI400</th>
<th>HI500</th>
<th>HI1000</th>
<th>HI2000</th>
<th>HI3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (WATT)</td>
<td>400 W</td>
<td>500 W</td>
<td>1000 W</td>
<td>2000W</td>
<td>3000W</td>
</tr>
</tbody>
</table>

#### INPUT
- **DC Voltage:** 12VDC, 24VDC, 48VDC
- **Voltage Range:** 10.5 - 15VDC, 21 - 30VDC, 42 - 60VDC
- **Efficiency:** > 87%, > 90%, > 90%
- **Fuse:** Standard Type
- **DC Cable (60cm):** Cable section depends on power

#### OUTPUT
- **AC Voltage:** 220VAC / 230VAC / 240VAC
- **Surge Power:** 2x of Power for few seconds
- **USB:** Optional 5V - 500mA
- **Frequency:** 50 / 60 ± 3Hz
- **Wavelength:** Pure Sine Wave (THD 3%)
- **AC Regulation:** ± 5% Hz
- **Standard Receptacles:** A, B, C, D, E, F, G, H, I (GFC (Optional))
- **Led Indicator:** Green for Power ON, Red for failure or protection status indication

#### PROTECTION
- **Battery Low Alarm:** 11 ± 0.5 VDC, 22 ± 1 VDC, 44 ± 2 VDC
- **Battery Low Shutdown:** 10.5 ± 0.5 VDC, 21 ± 1 VDC, 42 ± 2 VDC
- **Over Load:** Shutoff
- **Over Voltage:** 14.8 ± 0.5 VDC, 29.6 ± 1 VDC, 58.4 ± 2 VDC
- **Over Temperature:** Shut down output voltage, recovery automatically after temperature goes down
- **Short Circuit:** Shut down output voltage, repower on to recover
- **Battery Reverse Polarity:** By fuse open
- **Soft Start:** Yes (5 ~ 10s)
- **Grounding Protection:** Yes

#### ENVIRONMENT
- **Reset Voltage after LVS:** 11,8 ~ 12,8 VDC, 23,6 ~ 25,6 VDC, 47,2 ~ 51,2 VDC
- **Operating Temperature:** 0 - 40°C
- **Relative Humidity:** 20% - 90% non-dondensing

#### SAFETY & EMC
- **Storage Temperature & Humidity:** -30°C ~ 70°C / 10 - 95%
- **Safety Standards:** UL458 (only for GFCI receptacle)
- **Isolation Resistance:** (P - O/P) : 1000 Ohms / 500VDC
- **Semiconduction & Radiation Compliance:** to EN55022 Class A
- **EMI Immunity Compliance:** to EN61000-3-2, 3
- **LV:** Compliance to EN60950-1: 2006 + A11: 2009
- **E-Mark Compliance:** to E972/245/EEC, 95/54/EC

#### OTHERS
- **Remote Control:** Switch with 5m wire (Optional)
- **Dimension:** 460*230*108mm
- **Packing:** 7Kg, 2pcs / 19.5Kgs / Ctn(46*31.5*38.5cm)
- **Cooling Fan:** Control by load / temperature (Optional)
- **Application:** Home and Office Appliances, Power tools and portable equipments, Vehicle and solar power systems... etc.

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### INV Series Inverter

**GENERAL SPECIFICATIONS**
- CPU control technology
- SPWM technology with pure sine wave
- Powerful load capability and high compatibility
- Advanced reverse noise technology
- Settable to AC model and DC model
- Fault protection
- Interface: RS485, Dry contact

### TECHNICAL SPECIFICATIONS

#### DC INPUT
- **Input Voltage (Vdc)**: See the chart below
- **Input Current (A)**: See the chart below
- **Input Range of Voltage (Vdc)**: See the chart below

#### AC BYPASS
- **Bypass Volt (Vac)**: 260V - 180V (+10V)
- **Input Current (A)**: 4, 6, 10, 15, 20, 25, 30
- **Transfer Time (ms)**: 0 ms

#### AC OUTPUT
- **Rated Capacity (VA)**: 500, 1000, 2000, 3000, 4000, 5000, 6000
- **Rated Power (W)**: 400, 800, 1600, 2100, 2800, 3500, 4200
- **Voltage and Frequency**: 110 V / 50 Hz, 220Vac / 50Hz, 600 - 230V 50 / 60 Hz
- **Voltage Precision (V)**: ± 1.5%
- **Frequency Precision (V)**: ± 0.1%, ±60Hz ±0.1%
- **Output wave**: Pure Sine Wave
- **Wave Distortion (THD) (Resistant Load)**: ≤ 3 % (Linear Load)
- **Dynamic Reaction Time (Load 0 <---> 100%)**: 8 % (load 0 <---> 100%)
- **Power Factor (PF)**: 0.8 / 0.7
- **Overload**: 120%, 30s
- **Inversion Efficiency (80% Resistant Load)**: ≥ 70 - 85
- **Transfer Time (ms)**: ≤ 5 ms

#### ENVIRONMENT
- **Isolation (IN/OUT)**: 1500 Vac, 1min
- **Noise (dB)**: ≤ 40 dB
- **Temperature**: -20°C to +50°C
- **Humidity**: 0 ~ 90%, Non-condensing
- **Sea Level (m)**: ≤ 2000

#### SHOW
- **LCD Input and Output Voltage, Frequency, Output Current, Temperature**
- **Inverter Status**: Power Normal, Inverter Normal, Battery Voltage, Output Overload

#### MECHANICAL
- **Protection Function**: Input Low / High Voltage, Output Overload / Shortage, Reversed Input Connecting Protection

#### NOTE: All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications.

All names used above are registered trademarks of their respective owners.

<table>
<thead>
<tr>
<th>Rated Input Voltage (VDC)</th>
<th>12 V</th>
<th>24 V</th>
<th>48 V</th>
<th>110 V</th>
<th>220 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Input Voltage</td>
<td>10 - 16</td>
<td>20 - 32</td>
<td>40 - 60</td>
<td>90 - 160</td>
<td>180 - 300</td>
</tr>
<tr>
<td>Dimension (W<em>H</em>D)</td>
<td>500 VA</td>
<td>500 VA</td>
<td>500 VA</td>
<td>500 VA</td>
<td>500 VA</td>
</tr>
<tr>
<td></td>
<td>48</td>
<td>23</td>
<td>12</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>Rated Input Current (A)</td>
<td>1 KVA</td>
<td>2 KVA</td>
<td>2.5 KVA</td>
<td>3 KVA</td>
<td>4 KVA</td>
</tr>
<tr>
<td></td>
<td>92</td>
<td>88</td>
<td>115</td>
<td>70</td>
<td>91</td>
</tr>
</tbody>
</table>

---

www.epcas.com.tr
SLI Series Tower Online UPS

1-3 KVA  (220V/230V/240V)
0.8-2 KVA (110V/120V/127V)

GENERAL SPECIFICATIONS
SLI11 series is online double-conversion UPS with full DSP control technology. With high input and output power factor, self-adjusting output frequency, smart battery management system and network management, SLI11 is a perfect choice for computers, telecommunication equipments and other sensitive devices.

APPLICATION
► IDC (Internet Data Center)
► Networks and Servers
► Control and Communication Systems
► Offices (Computer etc.)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SI1101S</th>
<th>SI1101L</th>
<th>SI1102S</th>
<th>SI1102L</th>
<th>SI1103S</th>
<th>SI1103L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>1kVA / 900W</td>
<td>2kVA / 1,8kW</td>
<td>3kVA / 2,7kW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>Single Phase in, Single Phase out</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Voltage Range</td>
<td>110VAC - 288VAC</td>
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<td></td>
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<tr>
<td>Input PF</td>
<td>≥0.97</td>
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</tr>
<tr>
<td>Input Frequency</td>
<td>40 Hz – 70 Hz</td>
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<td></td>
<td></td>
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<tr>
<td>Output PF</td>
<td>0.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Voltage</td>
<td>220V / 230V / 240V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Regulation</td>
<td>± 1 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THDu</td>
<td>≤2% THD, Linear Load</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>≤5.5% THD, Non-Linear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery</td>
<td>12VDC / 7Ah External</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>3</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Max-Charging Current</td>
<td>1A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>36VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>87%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise (1 meter away)</td>
<td>&lt;43dB@&lt;70% Load</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overload Capability (Inverter mode)</td>
<td>105%–130%: to bypass after 1 min; 150%: to bypass after 30sec</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overload Capability (Battery mode)</td>
<td>105%–130%:shutdown after 10Sec; 150%: shutdown after 5sec</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crest Ratio</td>
<td>3:1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>LED+LCD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Options</td>
<td>Surge Protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface</td>
<td>Standard: RS232</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optional: SNMP, USB, Dry Contacts, Parallel Kit, ECO Kit, Surge Protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W<em>D</em>H (mm)</td>
<td>145<em>363</em>222</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Package Weight (kg)</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

NOTE: All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
SLI-SLIX Series Tower Online

6-20kVA (220V/230V/240V)
4-12kVA (110V/120V/127V)

GENERAL SPECIFICATIONS
SLI-SLIX series is online double-conversion UPS with full DSP control technology. With high input and output power factor, self adjusting output frequency, smart battery management system and network management, SLI11 is a perfect choice for computers, telecommunication equipments and other sensitive devices.

APPLICATION
► IDC (Internet Data Center)
► Networks and Servers
► Workstations and Communication Systems
► Offices (Computer etc.)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SLI1106XS</th>
<th>SLI1106XL</th>
<th>SLI1110XS</th>
<th>SLI1110XL</th>
<th>SLI1115L</th>
<th>SLI1120L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>6kVA / 6kW</td>
<td>10kVA / 10kW</td>
<td>15kVA / 13.5kW</td>
<td>20kVA / 18kW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>Single Phase in, Single Phase out</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Voltage Range</td>
<td>110VAC - 288VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input PF</td>
<td>≥0.99</td>
<td>≥0.98</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Frequency</td>
<td>40 Hz – 70 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output PF</td>
<td>1</td>
<td>0.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Voltage</td>
<td>220V / 230V / 240V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Regulation</td>
<td>± 1 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THDu</td>
<td>≤2%THD, full linear load; ≤5%THD, non-linear load</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery</td>
<td>Model</td>
<td>12VDC / 7Ah</td>
<td>External</td>
<td>12VDC / 9Ah</td>
<td>External</td>
<td>External</td>
</tr>
<tr>
<td>Quantity</td>
<td>16 to 20 pcs.</td>
<td>16 to 24 pcs.</td>
<td>16 to 20 pcs.</td>
<td>16 to 24 pcs.</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Max-Charging Current</td>
<td>1A</td>
<td>5A</td>
<td>1A</td>
<td>5A</td>
<td>5A</td>
<td>5A</td>
</tr>
<tr>
<td>Voltage</td>
<td>192 default (Adjustable)</td>
<td>192VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>Normal Mode: max 95%; Battery Mode: max 93%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise (1 meter away)</td>
<td>&lt;52dB@&lt;60% Load</td>
<td>&lt;56dB@&lt;60% Load;</td>
<td>&lt;58dB@&lt;60% Load;</td>
<td>&lt;48dB@&lt;70% Load;</td>
<td>&lt;60dB@&gt;70% Load</td>
<td></td>
</tr>
<tr>
<td>Overload Capability (Inverter mode)</td>
<td>110%: for 10 min; 125%:for 1min; 150%:for 30 sec (shutdown the bypass after 1 min)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overload Capability (Battery mode)</td>
<td>110%: Shutdown after 1mins; 130%: Shutdown after 10s; &gt;130%: Shutdown after 200ms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crest Ratio</td>
<td>3:1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>LED+LCD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Options</td>
<td>Surge Protection, Manual Bypass</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface</td>
<td>Standard: RS232</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional: SNMP, USB, Dry Contacts, Parallel Kit, ECO Kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W<em>D</em>H (mm)</td>
<td>190<em>510</em>705</td>
<td>190<em>510</em>340</td>
<td>190<em>580</em>705</td>
<td>190<em>580</em>340</td>
<td>250<em>562</em>650</td>
<td>250<em>562</em>710</td>
</tr>
<tr>
<td>Package Weight (kg)</td>
<td>66</td>
<td>15</td>
<td>75</td>
<td>17</td>
<td>27</td>
<td>34</td>
</tr>
</tbody>
</table>

NOTE: All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
SLI31 Series Tower Online UPS

6-20kVA (220V/230V/240V)
4-12kVA (110V/120V/127V)

GENERAL SPECIFICATIONS
SLI31 series is online double-conversion UPS with full DSP controlled technology. With high input and output power factor, self-adjusting output frequency and network management SLI31 is perfect choice for computers, telecommunication equipment and other sensitive devices.

APPLICATION
- IDC (Internet Data Center)
- Networks and Servers
- Workstations and Communication Systems
- Offices (Computer etc.)

<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS (220/230/240V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Capacity</td>
</tr>
<tr>
<td>Phase</td>
</tr>
<tr>
<td>Input Voltage Range</td>
</tr>
<tr>
<td>Input PF</td>
</tr>
<tr>
<td>Input Frequency</td>
</tr>
<tr>
<td>Output PF</td>
</tr>
<tr>
<td>Output Voltage</td>
</tr>
<tr>
<td>Voltage Regulation</td>
</tr>
<tr>
<td>THDv</td>
</tr>
<tr>
<td>Battery</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Quantity</td>
</tr>
<tr>
<td>Max-Charging Current</td>
</tr>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>Efficiency</td>
</tr>
<tr>
<td>Noise (1 meter away)</td>
</tr>
<tr>
<td>Overload Capability (Inverter mode)</td>
</tr>
<tr>
<td>Overload Capability (Battery mode)</td>
</tr>
<tr>
<td>Crest Ratio</td>
</tr>
<tr>
<td>Display</td>
</tr>
<tr>
<td>Options</td>
</tr>
<tr>
<td>Interface</td>
</tr>
<tr>
<td>W<em>D</em>H (mm)</td>
</tr>
<tr>
<td>Package Weight (kg)</td>
</tr>
</tbody>
</table>

NOTE: All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
SLR Series Rack Online UPS

1-10 KVA (220V/230V/240V)
0.8-6 KVA (110V/120V/127V)

GENERAL SPECIFICATIONS
SLR series Rack is online double-conversion UPS with full DSP control technology. With 19 inch standard rack design, self adjusting output frequency, smart battery management system and network management, SLR11 series Rack is a perfect choice for computers, IT equipments and other sensitive devices.

APPLICATION
- IDC (Internet Data Center)
- Networks and Server
- Workstations and Communication Systems
- Offices (Computer etc.)

TECHNICAL SPECIFICATIONS (220/230/240V)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SLR1101S</th>
<th>SLR1101L</th>
<th>SLR1102S</th>
<th>SLR1102L</th>
<th>SLR1103S</th>
<th>SLR1103L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>1kVA / 900W</td>
<td>2kVA / 1,8kW</td>
<td>3kVA / 2,7kW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>Single Phase in, Single Phase out</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Voltage Range</td>
<td>110VAC - 288VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input PF</td>
<td>≥0.97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Frequency</td>
<td>40 Hz – 70 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output PF</td>
<td>0.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Voltage</td>
<td>220V / 230V / 240V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Regulation</td>
<td>± 1 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THDu</td>
<td>≤2% THD, Linear Load</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>≤5.5% THD, Non-Linear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery</td>
<td>Model</td>
<td>12VDC / 7Ah</td>
<td>External</td>
<td>12VDC / 7Ah</td>
<td>External</td>
<td>12VDC / 7Ah</td>
</tr>
<tr>
<td>Quantity</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Max-Charging Current</td>
<td>1A</td>
<td>5A</td>
<td>1A</td>
<td>5A</td>
<td>1A</td>
<td>5A</td>
</tr>
<tr>
<td>Voltage</td>
<td>36VDC</td>
<td>72VDC</td>
<td>96VDC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>87%</td>
<td>91%</td>
<td>90%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise (1 meter away)</td>
<td>&lt;43dB@&lt;70% Load</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>&lt;47dB@70% Load</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Overload Capability (Inverter mode)</td>
<td>105%–130%: to bypass after 1 min; 150%: to bypass after 30sec</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overload Capability (Battery mode)</td>
<td>105%–130%: shutdown after 10Sec; 150%: shutdown after 5sec</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crest Ratio</td>
<td>3:1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>LED+LCD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Options</td>
<td>Surge Protection, Rail Kit, Foot Brackets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface</td>
<td>Standard: RS232</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optional: SNMP, USB, Dry Contacts, Parallel Kit, ECO Kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W<em>D</em>H (mm)</td>
<td>145<em>353</em>222</td>
<td>190<em>374</em>336</td>
<td>190<em>426</em>336</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Package Weight (kg)</td>
<td>11,5</td>
<td>7</td>
<td>25</td>
<td>8</td>
<td>31</td>
<td>9,5</td>
</tr>
</tbody>
</table>

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SLRX Series Rack Online UPS

6-10 KVA (220V/230V/240V)
4-6 KVA (110V/120V/127V)

GENERAL SPECIFICATIONS

SLRX Series, ranging from 6kVA to 10kVA, is double conversion online rack UPS with full DSP control technology. It applies the advanced 3-level technology, achieving an efficiency rate up to 95%. With its compact design of high power density (kVA = kW) in 2U height, SLRX series make it ideal choice for computers, telecommunication equipment and other sensitive devices.

APPLICATION

- IDC (Internet Data Center)
- Networks and Servers
- Workstations and Communication Systems
- Offices (Computer etc.)

| TECHNICAL SPECIFICATIONS (220/230/240V) |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|
| MODEL                       | SLR1106XS  | SLR1106XL | SLR1110XS  | SLR1110XL |
| Capacity                    | 6kVA / 6kW   | 10kVA / 10kW |                  |             |
| Phase                       | Single Phase in, Single Phase out |                  |             |             |
| Input Voltage Range         | 110VAC - 288VAC |                  |             |             |
|                             | 100% load @ >176VAC; 90% load @ >160VAC |                  |             |             |
|                             | 80% load @ >140VAC; 60% load @ >110VAC |                  |             |             |
| Input PF                    | ≥0.99          |                  |             |             |
| Input Frequency              | 40 Hz – 70 Hz |                  |             |             |
| Output PF                   | 1              |                  |             |             |
| Output Voltage              | 220V / 230V / 240V |                  |             |             |
| Voltage Regulation          | ± 1 %          |                  |             |             |
| THDu                        | ≤2%THD, full linear load; ≤5%THD, non-linear load |                  |             |             |
| Battery                     | Model          | External | 12VDC / 9Ah | 12VDC / 9Ah |                  |
|                             | 12VDC / 7Ah   | External | 12VDC / 9Ah | 12VDC / 9Ah |                  |
|                             | 16 to 20 pcs. | 16 to 20 pcs. | 16 to 20 pcs. | 16 to 24 pcs. |
|                             | 1A             | 5A       | 1A           | 5A           |
| Voltage                     | 192 default (Adjustable) | 192 default (Adjustable) | 192 default (Adjustable) | 192 default (Adjustable) |
| Efficiency                  | Normal Mode: max 95%; Battery Mode: max 93% |                  |             |             |
| Noise (1 meter away)        | <52dB @ <60% Load |                  |             |             |
|                             | <56dB@ >60% Load |                  |             |             |
| Overload Capability (Inverter mode) | 110%: for 10 min; 125%: for 1min; 150%: for 30 sec (shut down the bypass after 1 min) |                  |             |             |
| Overload Capability (Battery mode) | 110%: Shutdown after 1mins; 130%: Shutdown after 10s; >130%: Shutdown after 200ms |                  |             |             |
| Crest Ratio                 | 3:1            |                  |             |             |
| Display                     | LED+LCD        |                  |             |             |
| Options                     | Surge Protection, Manual Bypass, Rail Kit, Foot Brackets |                  |             |             |
| Interface                   | Standard: RS232 | Optional: SNMP, USB, Dry Contacts, Parallel Kit, ECO Kit |                  |             |
| W*D*H (mm)                  | 438*660*172   | 438*550*86 | 438*660*172 | 438*550*86 |
| Package Weight (kg)         | 59             | 17.5       | 67           | 20.5         |

NOTE: All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
Uninterruptible Power Supplies

PLT Series

DESCRIPTION
The new PLT UPS uses the latest DSP technology to be programmed to suit a wide variety of electrical environments without impeding its performance. With the PLT Power range, efficiency, reliability and functionality are enhanced to levels unattainable with the old analogue technology. This technology does not only create significant increase in MTBF, but the capability of DSP to accurately manipulate signals at very high speed permits all the UPS subsystems to be controlled with greatly increased precision.

GENERAL SPECIFICATIONS
- Transformerless UPS topology
- Low input current total harmonic distortion (THD)
- High input power factor
- High efficiency up to 94%
- Cold Start function
- Static and maintenance by-pass switch
- Output short circuit and overload protection
- External REPO switch input
- 192 events memory 192 events 4500 alarms
- Clock and calendar (battery supported)
- Automatic battery test, remaining battery time indicator
- Temperature compensated charge system

- 2 RS232 serial ports and 12 dry contact outputs
- 3 DSP controlled modular structure
- Optional SNMP and MODBUS adaptors
- Optional graphical and touch panel
- 2 years warranty
- 10 years spare parts support
- Manufactured according to EC Directive; EN62040
- Full digital structure
- Small footprint
- Economode operation
- Fewer electronic components
- Output current limiting
- Advanced diagnostics for the input
- Selectable input/output Voltage / Frequency range
- Split by-pass input (second input)
- Output DC leakage protection
- Separate DSP for inverter control
- Separate DSP for the PFC
- 3 level battery protection
- High charge current capacity
- Charge / discharge current indicator
- Advanced remote control features
## TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Power kVA</th>
<th>PLT 310</th>
<th>PLT 315</th>
<th>PLT 320</th>
<th>PLT 330</th>
<th>PLT 340</th>
<th>PLT 360</th>
<th>PLT 380</th>
<th>PLT 3100</th>
<th>PLT 3120</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Power factor / THDI</td>
<td>&gt; 0.98 / &lt; 5 %</td>
<td></td>
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</tr>
<tr>
<td>Voltage</td>
<td>380 - 400 VAC 3 Phase + N + E ± 20%</td>
<td>(240 / 415VAC + 15%, -25%)</td>
<td></td>
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</tr>
<tr>
<td>Frequency</td>
<td>50 Hz / 60Hz selectable ± 5%</td>
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<tr>
<td>By-pass Voltage</td>
<td>380 - 400 VAC 3 Phase , 4 Wires ± 20%</td>
<td></td>
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</tr>
<tr>
<td>By-pass Protection</td>
<td>Short circuit, Voltage tolerance, Frequency tolerance, VA transfer</td>
<td></td>
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<tr>
<td>Voltage Distortion</td>
<td>&lt; 10%</td>
<td></td>
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<tr>
<td>Protection</td>
<td>Fuses, Voltage &amp; Frequency tolerance, Input power limit, Input PFC</td>
<td></td>
<td></td>
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<tr>
<td>OUTPUT</td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Power (kW)</td>
<td>9</td>
<td>13.5</td>
<td>18</td>
<td>27</td>
<td>36</td>
<td>54</td>
<td>72</td>
<td>90</td>
<td>108</td>
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<tr>
<td>Power Factor</td>
<td>0.9</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Voltage</td>
<td>380-400 Vac 3 phase + N + E ± 1%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>50 Hz / 60Hz selectable</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency tolerance</td>
<td>Line synchronized: ± 2 % / Free running: ± 0.2% (adjustable)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Efficiency</td>
<td>up to 94%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crest Factor</td>
<td>3:1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Overload protection</td>
<td>100% - 125 % load: 10 min., 125% - 150 % load: 1 min., &gt; - 150% load: by pass (adjustable)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Other protection</td>
<td>Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>THD (at 100% linear load)</td>
<td>&lt;3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>BATTERY</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Sealed Acid - Maintenance Free</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Battery</td>
<td>2x30 (±30): 60 batteries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Float Charging Voltage</td>
<td>2 x 405 VDC</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End of Discharge Voltage</td>
<td>2 x 300 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Cabinet</td>
<td>Internal</td>
<td>External</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Battery ambient temp.</td>
<td>25 °C</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Protections</td>
<td>3 level alarms, Battery fuses, Charging current limit, Temperature compensation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic testing</td>
<td>Standard every 72 hours (adjustable)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>GENERAL</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Regulations</td>
<td>EN62040-2</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>User Interface</td>
<td>4 lines LCD panel, Mimic leds, 5 vector buttons, buzzer, optional graphical touch-panel</td>
<td></td>
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</tr>
<tr>
<td>Indicators</td>
<td>P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PE Service Time</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Advanced</td>
<td>Self diagnostics, 4 maintenance time indicators, Calibration over RS232</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Communication</td>
<td>2 x RS232 serial ports, 4 standard and 8 optional DRY contact alarm reays</td>
<td></td>
<td></td>
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<tr>
<td>Inputs</td>
<td>EPO input, Interactive battery panel input, Genset Input</td>
<td></td>
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<tr>
<td>Gensel kit</td>
<td>Standard (programmable)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Software</td>
<td>Standard T-Mon UPS Management Software (3 clients + 1 server management)</td>
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<tr>
<td>Alarm logging</td>
<td>Standard: with time &amp; date 192 events, (optional) 512 events</td>
<td></td>
<td></td>
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<tr>
<td>Protections</td>
<td>Power module over-temperature, Over current, Temperature high alarm</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Temperature range</td>
<td>0 °C - 40 °C</td>
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<td></td>
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<tr>
<td>Protection Degree</td>
<td>IP20</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humidity / Altitude</td>
<td>90% max (noncondensed) / &lt;1000 m above sea level</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Acoustic Noise</td>
<td>&lt;57 dBA</td>
<td>&lt;62 dBA</td>
<td>&lt;64 dBA</td>
<td>&lt;68 dBA</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Weight Without Battery</td>
<td>87</td>
<td>87</td>
<td>91</td>
<td>100</td>
<td>173</td>
<td>180</td>
<td>194</td>
<td>216</td>
<td>216</td>
</tr>
<tr>
<td>Dimensions (mm) (HxWxD)</td>
<td>400x815x1035</td>
<td></td>
<td></td>
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<tr>
<td>OPTIONS</td>
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<td></td>
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<tr>
<td>Input</td>
<td>110 / 208 VAC</td>
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<tr>
<td>Output</td>
<td>110 / 208 VAC</td>
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<tr>
<td>Transformer</td>
<td>Galvanic isolation transformer at the input &amp; output</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Software</td>
<td>T-mon Admin Multi UPS monitoring, T-Mon Server 50-100-200 clients, DLOG log loader</td>
<td></td>
<td></td>
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<tr>
<td>Adaptors</td>
<td>SNMP MODBUS, RS485, Remote Panel</td>
<td></td>
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<tr>
<td>Parallel Operation</td>
<td>available 1+1 / N +1 (up to 4) 2014</td>
<td></td>
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</tbody>
</table>

**NOTE:** All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
# Uninterruptible Power Supplies

## PLT Series

### 200-500 kVA Three Phase

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODELS</th>
<th>PL T 3200</th>
<th>PL T 3250</th>
<th>PL T 3300</th>
<th>PL T 3400</th>
<th>PL T 3500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kVA)</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>400</td>
<td>500</td>
</tr>
</tbody>
</table>

### INPUT

- **Voltage**: 380/400 VAC 3 Phase + N + E ± 20% (415 VAC +15%, +250% optional)
- **Frequency**: 50 Hz / 60 Hz: selectable, ±5%
- **Power Factor**: > 0.99
- **Harmonic Current Distortion (THDI)**: < 4%
- **By pass Voltage**: 380 / 400 VAC 3 Phase + N, 4 Wires, ± 10%
- **Voltage Distortions**: < 10%
- **Protection**
  - Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator

### OUTPUT

- **Power (kW)**: 180, 225, 270, 360, 400
- **Power Factor**: 0.9, 0.8
- **Voltage**: 380/400 VAC 3 Phase + N ± 1% (415 VAC optional)
- **Frequency**: 50 Hz / 60 Hz: selectable
- **Frequency Tolerance**: Line synchronized: ± 2% / Free running: ± 0.1% (adjustable)
- **Efficiency**: up to 95%
- **Crest Factor**: 3.1
- **Overload Protection**: 100% - 125% load: 10 min., 125% - 150% load: 1 min, > 150% load: by pass
- **Other Protections**
  - Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting
- **THD (at 100% Linear Load)**: < 3%

### BATTERY

- **Type**: VRLA AGM / GEL / NICd
- **Nominal Voltage**: ± 360 VDC
- **Float / End of Discharge Voltage**: ± 405 VDC / ± 300 VDC
- **Battery Cabinet**: External
- **Battery Ambient Temperature**: 25 ºC
- **Protections**: 3 Level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)
- **Automatic Testing**: Standard every 72 hours (adjustable)

### GENERAL

- **Standards**: EN62040-1, EN62040-2
- **User Interface**: TFT PANEL, 5 vector buttons, Buzzer,
- **Indicators**: P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time
- **Advanced**: Self diagnostics, 3 maintenance time indicators, Calibration over RS 232, operating hour meter
- **Communication**: 2xRS232 serial ports 4 standard and 8 optional DRY contact alarm relays
- **Inputs**: EPO input, interactive battery panel input, Gensel input
- **Gensel Kit**: Standard
- **Software**: Standard T-mon UPS Management Software (3 clients + 1 server management)
- **Alarm Logging**: Standard: with time & date 512 events
- **Protection**: Power module over-temperature, Over current, Temperature high alarm
- **Temperature Range**: 0 ºC - 40 ºC
- **Protection Degree**: IP20
- **Relative Humidity**: 90% max. (noncondensed)
- **Altitude**: < 1000m. above sea level
- **Acoustic Noise**: < 68 dBA, < 72 dBA
- **Weight Without Batteries (Kg)**: 482, 550, 638, 737, 780
- **Dimensions (Mm) Hxwxd**: 1900x880x775, 1900x1250x775, 2020x1250x775

### OPTIONS

- **Different Input / Output Voltage**: Please ask
- **Transformer**: Galvanic isolation transformer at the input & output
- **Software**: T-mon Admin Multi UPS monitoring 10-50-100-200 clients, T-mon Server 50-100-200 clients
- **Adaptors**: SNMP RS485, Remote monitoring panel, MOCBUS (RS485 or TCP/IP), USB Alarm Logger, TCP/IP/GSM/GPRS modem, Comport multiplexer
- **Parallel Operations**: up to 8

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### GENERAL SPECIFICATIONS

- True On-line Topology / Sinusoidal Output
- IGBT / IPM Technology (Inverter Circuit)
- 12 or 6 Pulsed Thyristor Controlled Rectifier
- Galvanic Isolation at the Output of the Inverter
- Static and Mechanical Maintenance By-Pass
- Advanced Automatic and Manual Battery Test System
- Superior performance on non-linear loads.
- RS232 and Dry Contacts or RS485, Modbus Communication and Remote Monitoring.
- High Efficiency up to 94%.
- Space Vector Application.
- High Performance Design.
- Overload and Short Circuit Protection.

### TECHNICAL SPECIFICATIONS

#### MODELS

<table>
<thead>
<tr>
<th>Power (kVA)</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>60</th>
<th>80</th>
<th>100</th>
<th>120</th>
<th>160</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>400</th>
<th>500</th>
</tr>
</thead>
</table>

#### INPUT

- **Input Voltage**: 3*190VAC / 3*220VAC / 3*360VAC / 3*380VAC / 3*400VAC / 3*415VAC (Phase to Phase)
- **Input Voltage Range**: +10%, -15%
- **Input Frequency**: 50 Hz or 60 Hz

#### OUTPUT

- **Power (kW)**: 8, 12, 16, 24, 32, 48, 64, 80, 96, 128, 160, 200, 240, 320, 400
- **Power Factor**: 0.8
- **Output Voltage**: 3*190VAC / 3*220VAC / 3*360VAC / 3*380VAC / 3*400VAC / 3*415VAC (Phase to Phase)
- **Voltage Stability**:
  - Balanced load: ±1% (Unbalanced load: ±2.5%)
  - (Step load: ±5%)
- **Correction Time After step load**:
  - Max 25 ms.
- **Frequency Tolerance**: Adjustable + %2 (synchronous), + %0.2 (free operation)
- **Efficiency of 50% Load**:
  - 87 - 91%
  - 90 - 92%
  - 92 - 94%
- **Total Harmonic Distortion**:
  - %3 (for linear loads), %7 (for non-linear loads)
- **Crest Factor**: 3:1
- **Overload Protection**:
  - (100% 125% load: 10min.)
  - (150% load: 1min.)
  - (>150% load: by-pass)
- **Short Circuit Protection**:
  - Short circuit protection electronically

#### BATTERY

- **Type**: Maintenance free lead-acid
- **Battery Number**:
  - 10 or 20 or 30 or 32
  - 30 or 32 or 44
- **Charge Voltage (Vdc)**:
  - 135 / 270 / 405 / 432
  - 405 / 432 / 540
- **Discharge Voltage (Vdc)**:
  - 102 / 204 / 300 / 320
  - 300 / 320 / 480
- **Ambient Temperature**: 25 °C
- **Battery Test**:
  - Automatic or manual

#### GENERAL

- **Series Communication**:
  - RS232(Standard), Dry Contacts (Standard), RS485(Optional), TCP(Optional), SNMP(Optional), GSM(Optional)
- **Operating Temperature Interval**: 0°C - 40°C
- **Cooling**: Forced cooling
- **Relative Humidity**: >90% condensing
- **Operating Height**: <1000m from sea level
- **Acoustic Noise**: <56dBA <60dBA <65dBA <70dBA
- **Protection Class**: IP20(Standard) to IP54(Optional), (consult to EPC for IP54 to IP65)

#### APPLICATION STANDARDS

- **EMC, Safety**:
  - IEC62040-1, IEC62040-2
- **Quality Assurance**:
  - ISO14001 - ISO9001

#### OPTIONS

- **Input Transformer**: Isolation transformer at input.
- **Input Harmonic Distortion THD**: %5 (12 pulse rectifier and filter)
- **Input Power Factor**: 0.90 (With additional filter or 12 pulse rectifier and filter)
- **MBS**: Full isolation with maintenance by-pass
- **Operating In Parallel**: 1+3 system (Standby, Current sharing, Parallel Redundant)

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## PLRM Series

**20-200 kVA (380V/400V/415V)**

**DESCRIPTION**
PLRM Series is modular online UPS for sensitive equipments. The single cabinet power rating covers from 20kVA to 200kVA. With the latest IGBT three-level and full DSP control technology, the PLRM series delivers the best of combination of reliability, hot-swappable and flexibility.

The PLRM Series develops the in-built transformer type range from 20kVA to 60kVA for customer’s choices.

**GENERAL SPECIFICATIONS**
- Modular design up to 20 power modules in parallel online hot-swappable N + X redundancy
- Independent charger for each module and intelligently control the whole charging process, prolong the life time of the battery.
- Top and bottom cable entry and connection
- Battery cold start, UPS can be powered on from the battery without utility
- Modular design with transformer (optional)
- High Power Density
- Integrated IGBT design
- Touch LCD display with abundant information
- Independent air channel to keep PCB’s free of dust

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODELS</th>
<th>PLRM200/20</th>
<th>PLRM120/20</th>
<th>PLRM060/20</th>
<th>PLRM060/20-TX (in-built transformer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kVA)</td>
<td>200kVA/180kW</td>
<td>120kVA/106kW</td>
<td>60kVA/54kVA</td>
<td>60kVA/48kW</td>
</tr>
<tr>
<td>Power Module</td>
<td>PM20(20kVA)</td>
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<td></td>
</tr>
<tr>
<td>INPUT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>3 P + N + G, 380V/400V/415V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Range</td>
<td>304V-378VAC (line-line), full load;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency Range</td>
<td>40Hz - 70Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Factor</td>
<td>&gt; 0.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THD&lt;3%</td>
<td>D&lt;100% linear load</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUTPUT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>380V/400V/415V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Regulation</td>
<td>1.5 %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Factor</td>
<td>0.9</td>
<td>0.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THDu</td>
<td>THD&lt;1%(linear load), THD&lt;5.5%(non-linear load)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crest Factor</td>
<td>3.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overload Capacity</td>
<td>110% for 1 hour; 125% for 10min; 150% for 1min; &gt;150% for 200ms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BATTERY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>± 240VDC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge Power</td>
<td>20% System Power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge Voltage Precision</td>
<td>± 1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYSTEM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Efficiency</td>
<td>Normal Mode: 95%; ECO Mode: 99%; Battery Mode: 95%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>LCD + LED, Touch Screen + Keyboard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP Class</td>
<td>IP20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface</td>
<td>Standard: RS232, RS485, Dry Contacts; Optional: SNMP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation/Storage Temperature</td>
<td>(0ºC)-(40ºC) / (-40ºC)-(70ºC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0-95%(non-condensing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise</td>
<td>55dB (1 meter away)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PHYSICAL**

<table>
<thead>
<tr>
<th></th>
<th>Cabinet</th>
<th>Power Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>179kg</td>
<td>145kg</td>
</tr>
<tr>
<td>Dimension (W<em>D</em>H)</td>
<td>600x900x2000(mm)</td>
<td>600x900x1600 (mm)</td>
</tr>
<tr>
<td>Power Module</td>
<td>22kg</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
### Modular Online UPS

**PLRM Series**

10-90 kVA (380V/400V/415V)

#### DESCRIPTION

The rack modular, scalable, hot-swappable, online double conversion UPS ranging from 10kVA to 90kVA, with its flexible configuration of 3/3, 3/1, 1/1, compact structure, is the ideal choice for small and medium data centers.

#### GENERAL SPECIFICATIONS

- Modular design compatible with 19" standart rack cabinet, convenient to be integrated with servers
- 10/15kVA power module in 2U height, saving great amount of space, easy for capacity expansion
- UPS can be integrated with battery cabinet, PDU and external maintenance bypass, offering excellent choice for data centers.
- The system intelligently control the whole process of the charging and discharging, improving the lifetime of the battery.
- The system can be configured to 3/3, 3/1, 1/1 without derating
- 7" touch color LCD with graphic display
- System can intelligently shutdown some power modules to increase total load rate, achieving higher efficiency
- Energy internal circle technology; system can run with full load saving more than 90% energy

#### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODELS</th>
<th>PLRM06/10X</th>
<th>PLRM04/10X</th>
<th>PLRM30/10X</th>
<th>PLRM20/10X</th>
<th>PLRM090/15X</th>
<th>PLRM045/15X</th>
<th>PLRM030/15X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kVA)</td>
<td>60kVA/60kW</td>
<td>40kVA/40kW</td>
<td>30kVA/30kW</td>
<td>20kVA/20kW</td>
<td>90kVA/90kW</td>
<td>45kVA/45kW</td>
<td>30kVA/30kW</td>
</tr>
<tr>
<td>Power Module</td>
<td>PM10(10kVA)</td>
<td>PM10(10kVA)</td>
<td>PM10(10kVA)</td>
<td>PM10(10kVA)</td>
<td>PM10(10kVA)</td>
<td>PM10(10kVA)</td>
<td>PM10(10kVA)</td>
</tr>
</tbody>
</table>

#### INPUT

<table>
<thead>
<tr>
<th>Phase</th>
<th>3 P + N + G, 380V/400V/415V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Range</td>
<td>304V-478VAC (line-line), full load; 228V-304VAC (line-line), load derated linearly</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>40Hz - 70Hz</td>
</tr>
<tr>
<td>Power Factor</td>
<td>&gt; 0.99</td>
</tr>
<tr>
<td>THDi</td>
<td>THDi&lt;4% @ 100% linear load</td>
</tr>
</tbody>
</table>

#### OUTPUT

<table>
<thead>
<tr>
<th>Voltage</th>
<th>3Phase: 380V/400V/415V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Regulation</td>
<td>1.5 %</td>
</tr>
<tr>
<td>Power Factor</td>
<td>1</td>
</tr>
<tr>
<td>THDu</td>
<td>THDu&lt;1% (linear load), THDu&lt;5.5% (non-linear load)</td>
</tr>
<tr>
<td>Crest Factor</td>
<td>3:1</td>
</tr>
<tr>
<td>Overload Capability</td>
<td>110% for 1 hour; 125% for 10min; 150% for 1min; &gt;150% for 200ms</td>
</tr>
</tbody>
</table>

#### BATTERY

| Voltage | ± 240VDC |
| Charge Power | 20%* System Power |
| Charge Voltage Precision | ± 1% |

#### SYSTEM

| System Efficiency | Normal Mode: 95%; ECO Mode: 98%; Battery Mode: 94.5% |
| Display | 7.0" Color touch screen LCD + LED + Keyboard |
| IP Class | IP20 |
| Interface | Standard: RS232, RS485, Dry Contacts; Optional: SNMP |
| Operation/Storage Temperature | (0°C)-40°C / (-25°C)-(-70°C) |
| Relative Humidity | 0-95%(non-condensing) |
| Noise | 56dB @ 50% load (1 meter away) |

#### PHYSICAL

<table>
<thead>
<tr>
<th>Weight</th>
<th>Cabinet 85kg</th>
<th>51kg</th>
<th>55kg</th>
<th>43kg</th>
<th>85kg</th>
<th>55kg</th>
<th>42kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Module</td>
<td>15.3kg</td>
<td>15.3kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension (W<em>D</em>H)</td>
<td>Cabinet 485x751x1033 (21U)</td>
<td>485x697x575 (11U)</td>
<td>485x751x575 (11U)</td>
<td>485x697x398 (7U)</td>
<td>485x751x1033 (21U)</td>
<td>485x751x575 (11U)</td>
<td>485x697x398 (7U)</td>
</tr>
<tr>
<td>Power Module</td>
<td>436x590x85(2U)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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PLRM Series
80-500 kVA (380V/400V/415V)

DESCRIPTION
The PLRM Series Modular, online UPS ranging from 40kVA to 500kVA is designed to protect any critical load for medium and large data center achieving maximum availability. The PLRM Series feature the latest technology of 3-level technology and PFC input control, which guarantees high efficiency of 96% and ultra-reliability. 3 units can be paralleled for capacity or redundancy up to 1500kVA, making it an excellent choice for medium and large facilities.

GENERAL SPECIFICATIONS
► Compact design, 500kVA in one cabinet (1.45m²)
► 50kVA power modules in 4U height, easy for capacity upgrade
► High efficiency in double conversion mode up to 96%
► The system intelligently control the whole process of the charging and discharging, improving the lifetime of the battery.
► System can be configured 40kVA to 500kVA in one single cabinet and can paralleled 3 units for a capacity up to 1500kVA
► 10.4" touch color LCD with graphic display.
► System can intelligently shutdown some power modules to increase total load rate, achieving higher efficiency
► Provides RS232, RS485, USB, SNMP, AS400 and programmable dry contacts.

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODELS</th>
<th>PLRM500/50X</th>
<th>PLRM400/40X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kVA)</td>
<td>500kVA/450kW</td>
<td>400kVA/400kW</td>
</tr>
<tr>
<td>Power Module</td>
<td>PM50X(50kVA/45kVA)</td>
<td>PM40X(40kVA/40kW)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INPUT</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase</td>
<td>3 P + N + G, 380V/400V/415V</td>
<td></td>
</tr>
<tr>
<td>Voltage Range</td>
<td>30V-478VAC (line-line), full load; 228V-304VAC (line-line), load derated linearly</td>
<td></td>
</tr>
<tr>
<td>Frequency Range</td>
<td>40Hz - 70Hz</td>
<td></td>
</tr>
<tr>
<td>Power Factor</td>
<td>&gt; 0.99</td>
<td></td>
</tr>
<tr>
<td>THDi</td>
<td>THDi&lt;3% @ 100% linear load</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OUTPUT</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>380V/400V/415V</td>
<td></td>
</tr>
<tr>
<td>Voltage Regulation</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Power Factor</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>THDv</td>
<td>THDv&lt;1%(linear load), THDv&lt;5.5%(non-linear load)</td>
<td></td>
</tr>
<tr>
<td>Crest Factor</td>
<td>3:1</td>
<td></td>
</tr>
<tr>
<td>Overload Capability</td>
<td>110% for 1 hour, 125% for 10min, 150% for 1min, &gt;150% for 200ms</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BATTERY</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>± 240VDC</td>
<td></td>
</tr>
<tr>
<td>Charge Power</td>
<td>20%* System Power</td>
<td></td>
</tr>
<tr>
<td>Charge Voltage Precision</td>
<td>± 1%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SYSTEM</th>
<th>Normal Mode: 96%; Battery Mode: 96%</th>
<th>IP Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>10.4&quot; Color touch screen LCD + LED + Keyboard</td>
<td>IP20</td>
</tr>
<tr>
<td>Interface</td>
<td>Standard: RS232, RS485, USB, Dry Contacts(programmable); Optional: SNMP AS400, Parrel Kit, Battery Cold Start(standard for 250kVA and above), Lightning protection components, Dust Filter, LBS</td>
<td></td>
</tr>
<tr>
<td>Operation/Storage Temperature</td>
<td>(0ºC)-(40ºC) / (-25ºC)-(70ºC)</td>
<td></td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0-95%(non-condensing)</td>
<td></td>
</tr>
<tr>
<td>Noise</td>
<td>72dB @ 100% load; 69dB @ 45% load (1 meter away)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHYSICAL</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>Cabinet 900kg</td>
<td>Power Module 45kg</td>
</tr>
<tr>
<td>Dimension (W<em>D</em>H)</td>
<td>Cabinet 1300x1100x2000(mm)</td>
<td>Power Module 510x700x178(mm)</td>
</tr>
</tbody>
</table>

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# Line Interactive UPS

## HS Series

### GENERAL SPECIFICATIONS
- Automatic booting when the utility recovers
- Wide range of input voltage
- Alarm and mute
- Auto recharging
- Overvoltage and circuit short protection
- Interface of RJ45/11 and USB

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>HS500</th>
<th>HS600</th>
<th>HS800</th>
<th>HS1000</th>
<th>HS1200</th>
<th>HS1500</th>
<th>HS2000</th>
<th>HS3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>500VA</td>
<td>600VA</td>
<td>800VA</td>
<td>1000VA</td>
<td>1200VA</td>
<td>1500VA</td>
<td>2000VA</td>
<td>3000VA</td>
</tr>
<tr>
<td>Input voltage</td>
<td>110/120 VAC or 220/230/240 VAC</td>
<td>220 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input voltage range</td>
<td>85-150 VAC/145-290 VAC</td>
<td>175-275 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input frequency</td>
<td>50-60Hz (Auto sensing)</td>
<td>50Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output voltage</td>
<td>110/120 VAC or 220/230/240 VAC</td>
<td>220 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output voltage range</td>
<td>102-132 VAC or 200-255 VAC</td>
<td>200-240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output frequency</td>
<td>50/60Hz ± 0.5Hz</td>
<td>50Hz ± 0.5Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wave form</td>
<td>Pure Sine Wave</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer time</td>
<td>Typical 2-6, max≤10ms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QTY &amp; capacity of battery</td>
<td>1 pc*12V4.5 Ah</td>
<td>1 pc*12V7Ah</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charging period</td>
<td>4-6H to 90% capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection</td>
<td>Low voltage, overload and short circuit protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation Temperature</td>
<td>0-40°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>20% - 90% (Non-condensing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise</td>
<td>≤ 40dB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Weight (kg)</td>
<td>5.5</td>
<td>4</td>
<td>6</td>
<td>10.2</td>
<td>10.6</td>
<td>19</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>250<em>95</em>140</td>
<td>305<em>85</em>140</td>
<td>335<em>118</em>190</td>
<td>340<em>110</em>265</td>
<td>408<em>145</em>220</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional</td>
<td>LED/LCD, RJ45/11 &amp; USB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Hospital for IT Systems

EPCIT Series

Special Hospital Isolation Solutions (compatible with IEC 60364-7-710 standards)

IT Systems are mandatory to be used in Group 2 rooms for the safety of patients and healthcare workers against electrical shocks. The primary difference that separates this system from grounded network (TT or TN) is that it doesn’t have operation grounding. This is provided by an isolation transformer. On the other hand the second important feature is that all of the loads, which is connected to distribution system, is grounded separately. Places as Operating Rooms, Intensive Care Rooms, Premature Babies Rooms and Angiography Rooms are protected and well cared with our IT Systems consists of Isolation Transformer, insulation values, load and temperature monitoring unit and current transformer consists of and alert notification system which is produced in accordance to TS EN61588-2-15 Standard.

Usage Areas
- Intensive care rooms
- Premature babies’ rooms
- Angiography control-medical examination rooms
- Operating rooms
- Surgery preparation and recovery rooms
- Anesthesia Rooms
- Heart Catheterization rooms

Superior Features
- Over 4000 Units of operating STS Systems with superior knowledge.
- Uninterruptable Power and Energy reliability with STS.
- Transformer Power between 0.5 and 10kVA.
- Lowering the leakage current to microampere level.
- Fault detection system
- Monitoring of 24V loads.
- The multiple communication capability between devices
- Life safety of patient, doctor and healthcare workers.
- Customized panel design
- Easy and simple installation on place

General Information
- 50- 500 kΩ insulation resistance
- 0-50A load current
- Menu selection from the LCD panel
- The transfer time of less than 5 ms
- 4 different languages
- The static transfer switch (STS) system via RS232 / 485 data sharing

Isolation Transformer
Isolation Transformers have an important part in providing insulation between AC Input (Network) and the critical loads. Through the insulation transformer the energy in the room can be isolated from the network. That way leakage current in the room lowered to μA level from mA level. Another important feature…

Transformer Features
- Nominal Power of Transformer: 10kVA
- Single Phase input and output.
- For three phase system the voltage between phases must be 230Vac.
- Short circuit voltage should be less than %3.
- The blank current should be less than %3
- Initial current must be less than 8 times the rated current.
### Touch Screen Control Panel
- Microprocessor controlled, smart and flexible design
- 6-digit hour and 6-digit LED display timer
- User-friendly touch screen can do all the settings
- Multiple language options menu design
- Easy to clean front surface
- 2mm stainless front panel complies with the standard DIN 4301
- Operation ON / OFF, flow, damper, UV lamp, gas discharge
- Electric heating, air-conditioning controls
- Hands-free phone, and internal speaker Hi-Fi amplifier
- Control of Lighting Group

#### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>SCREEN TYPE</th>
<th>5.7” TOUCH LCD, 2X16 LCD DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clock Display</td>
<td>4 cm 6-Digit LED Display</td>
</tr>
<tr>
<td>Stopwatch screen</td>
<td>4cm 6-Digit LED Display</td>
</tr>
<tr>
<td>User Data Entry</td>
<td>Touch Panel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEASUREMENTS</th>
<th>UNIT / MEASUREMENT RANGE / INPUT INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>° C / 0 ~ 50 ° C / 0 ~ 10V analog</td>
</tr>
<tr>
<td>Humidity</td>
<td>% / 0 ~ 100% / 0 ~ 10V analog</td>
</tr>
<tr>
<td>Room pressure</td>
<td>Pascal / 0 ~ 100Pa / 0 ~ 10V analog</td>
</tr>
<tr>
<td>Filter Pollution Level</td>
<td>Pascal / 0 ~ 100Pa / 0 ~ 10V analog</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OUTPUTS / LED INDICATORS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting</td>
<td>4 Channel / (On-Off)</td>
</tr>
<tr>
<td>Operation Lamp</td>
<td>2 Channel / (On-Off)</td>
</tr>
<tr>
<td>Negatoscope</td>
<td>1 Channel / (On-Off)</td>
</tr>
<tr>
<td>UV Lamp</td>
<td>1 Channel / (On-Off)</td>
</tr>
<tr>
<td>Lighting Dimmer</td>
<td>1 Channel</td>
</tr>
<tr>
<td>Negatoscope Dimmer</td>
<td>1 Channel</td>
</tr>
<tr>
<td>Music</td>
<td>4 Channel / (On-Off)</td>
</tr>
<tr>
<td>Air conditioning (Full / Half Flow)</td>
<td>2 Channel / (On-Off)</td>
</tr>
<tr>
<td>Reserve</td>
<td>3 Channel</td>
</tr>
<tr>
<td>Heater</td>
<td>1 Channel / (On-Off)</td>
</tr>
<tr>
<td>Alarms</td>
<td>(On-Off)</td>
</tr>
<tr>
<td>Alarm Mute</td>
<td>(On-Off)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INPUTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10V Analog Sensor Input</td>
<td>16 Channel</td>
</tr>
<tr>
<td>Music input</td>
<td>4 Channel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GAS PRESSURE GAUAGES</th>
<th>(HIGH / NORMAL / LOW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>O2</td>
<td>OK</td>
</tr>
<tr>
<td>N2O</td>
<td>OK</td>
</tr>
<tr>
<td>CO2</td>
<td>OK</td>
</tr>
<tr>
<td>Air</td>
<td>OK</td>
</tr>
<tr>
<td>Argon</td>
<td>OK</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AUDIBLE WARNING</th>
<th>BUZZER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected to the automation system</td>
<td>TCP IP - RS485 - CANBUS</td>
</tr>
<tr>
<td>Front panel</td>
<td>DIN 4301 (2mm stainless steel)</td>
</tr>
<tr>
<td>Nutrition</td>
<td>220V - 50Hz</td>
</tr>
<tr>
<td>Internal Dimensions (W<em>H</em>D)</td>
<td>440<em>455</em>90 mm</td>
</tr>
<tr>
<td>External Dimensions (W*H)</td>
<td>490*475 mm</td>
</tr>
</tbody>
</table>

**NOTE:** All above technical specifications subject to change without notice. All specifications are just simple guidelines. Refer to the EPC for special applications. All trade names mentioned above are registered trademarks of their respective owners.

- Multi-Color 17” Touch Screen
- Windows-Based Operating System
- Mail and Messenger usage
- Communication with Automation,
- Elegant design
- Other features with user-friendly menu and application options
Electronic DC Load

GENERAL SPECIFICATIONS

- This device is developed for charging with a stable current the lead-acid, dry type and nickel cadmium batteries.
- Setted values are automatically calculated by a microcontroller and displayed on an LCD screen.
- The calculated values are saved in memory unless they are deleted.
- The system does not effected by the electrical failures so the charging process will automatically proceed. The voltage hysterisis are setted in production process and it chooses automatically the desired loads by means of the automatic voltage sense ability.
- Discharge current and other functionels can be displayed and adjusted easily by the LCD display on the device.
- Big advantages are supported to user with the neccecity safety precautions.
- Battery discharge device works checking the battery voltage value. In case of the batteries are empty, disconnected to the system or connected to the system wrongly the device will alarm automatically visually and loudy.
- This device is produced for lead-acid, dry-type and nickel-cadmium battery types.
- The proper battery groups can be connected according to the desired discharge voltage.
- Discharge current is setted according to the battery values.
- Discharge current can be calculated according to the battery capacity; (C5 %20) (C10 %10) (C20 %5). For special applications various discharge values can be selected unless the safety conditions arent exceed.

To reduce the risk of electric shock, do not remove cover.
Refer servicing to qualified service personnel.
Disconnect the mains supply before connecting or disconnecting the links to the battery.

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DC Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>200 - 240 V AC</td>
</tr>
<tr>
<td>Input Current</td>
<td>2 A (5A Fuse)</td>
</tr>
<tr>
<td>Frequency</td>
<td>50 Hz / 60Hz</td>
</tr>
<tr>
<td>Power</td>
<td>300 VA</td>
</tr>
<tr>
<td>Discharge Rechargeable Battery Voltage</td>
<td>12V - 24V - 36V - 48V - 72V - 80V - 96V - 110V - 150 V DC</td>
</tr>
<tr>
<td>Discharge Current</td>
<td>1A - 70A DC (1A)</td>
</tr>
<tr>
<td>Over-Current Protection</td>
<td>100A DC</td>
</tr>
<tr>
<td>Thermal Heat Protection (Mosfet)</td>
<td>60 °C</td>
</tr>
<tr>
<td>Thermal Heat Protection (Rezistans)</td>
<td>80 °C</td>
</tr>
<tr>
<td>Cooling</td>
<td>Continuous Cooling Fan</td>
</tr>
<tr>
<td>Operation Temperature</td>
<td>-10 °C - 50 °C</td>
</tr>
<tr>
<td>Degree of Protection</td>
<td>IP 21</td>
</tr>
<tr>
<td>Weight</td>
<td>30,3 kg ±300 gr</td>
</tr>
<tr>
<td>Cable Weight</td>
<td>36 kg ±300 gr</td>
</tr>
<tr>
<td>The battery capacity can be discharged</td>
<td>6 cell to 72 cell 10 Ah - 400 Ah(C5) -800 Ah(C10) -1600Ah (C20)</td>
</tr>
</tbody>
</table>

NOTE: All specifications subject to change without notice. Consult EPC’s Technical Support Department for special applications. All names used above are registered trademarks of their respective owners.
TECHNICAL SPECIFICATIONS

MODEL DC Load

Input Voltage 200 - 240 V AC
Input Current 2 A (5A Fuse)
Frequency 50 Hz / 60Hz
Power 300 VA
Discharge Rechargeable Battery Voltage 12V - 24V - 36V - 48V - 72V - 80V - 96V - 110V - 150V DC
Discharge Current 1A - 70A DC (1A)
Over-Current Protection 100A DC
Thermal Heat Protection (Mosfet) 60 °C
Thermal Heat Protection (Rezistans) 80 °C
Cooling Continuous Cooling Fan
Operation Temperature -10 °C - 50 °C
Degree of Protection IP 21
Weight 30.3 kg ±300 gr
Cable Weight 36 kg ±300 gr

The battery capacity can be discharged 6 cell to 72 cell 10 Ah - 400 Ah (C5) - 800 Ah (C10) - 1600Ah (C20)

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**BATTERY LVD (Low Voltage Disconnect) RELAY**

**GENERAL SPECIFICATIONS**

- Battery Low Voltage Disconnect Relay
- Protects battery from deep discharges and prolongs battery lifetime
- 12V / 24V and 5A / 10A models
- Led indicator for relay status
- On / Off Switch
- Fuse Protection for Overcurrent and Short-Circuit
- Adjustable disconnect point
- DIN Rail Product

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**DC VOLTAGE MONITOR RELAY**

**GENERAL SPECIFICATIONS**

- Monitors DC Voltage and activates relay
- Microprocessor control
- 12V / 24V / 48V / 110V / 220V models
- Led indicator for relay status
- 10A Power Relay Output
- DIP switch for various options
- Adjustable high and low points
- DIN Rail Product

---

**DC INSULATION MONITOR**

**GENERAL SPECIFICATIONS**

- Monitors DC insulation and leakage current
- Microprocessor control
- 24V / 48V / 110V / 220V models
- Separate detection for positive and negative
- Led indicator for power and alarm
- DIP switch for various options
- Test and Alarm Reset buttons
- 2A Output Relay
- DIN Rail Product

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**RS232/RS485 CONVERTER**

**GENERAL SPECIFICATIONS**

- Performs RS232 / RS485 physical layer conversion
- Led indicators for Power On, RX and TX
- 9 - 18V Power Supply
- DIN Rail Product
SPI Series

DESCRIPTION
AC 3-Phase Submerged or surface pumps which normally powered by utility or generator can be powered by solar panels directly in the daytime at the places which has no utility line, thanks to today’s technology.
This system consists of, MPPT Power Conditioner Motor Driver, Solar panel mounting constructions and water tanks if necessary.
Peak instantaneous power received by the solar panels, transmitted to motor driver by the MPPT Power Conditioner. Driver supplies low flow in the morning and night, high flow in the noon time by changing its rated speed according to the transmitted instantaneous power.
Water can be used instantly as well as stored in a tank for the watering in the afternoon or night.
Cost and the equipments used in the system is found by technical planning according to data below;
- Well depth / m (only for submerged pumps)
- Requested water amount per day / ton
- Watering season
- Place of installation (village, town or country name)

GENERAL SPECIFICATIONS
- 100% compliance with all 3 Phase pumps up to 15kVA
- Automatic start/stop according to radiance
- Maximum efficiency with the MPPT technology
- Pump protection against dry operating with the low load detection and water level sensors.
- Function of operating together with solar panels and utility
- DSP Technology and PIM Design, Reliable with Category C3 EMC Filter, automatic and maintenance free.

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS</th>
<th>GENERAL PARAMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. DC Input Voltage</td>
<td>800 VDC</td>
</tr>
<tr>
<td>MPPT Voltage Range</td>
<td>350 - 750 VDC</td>
</tr>
<tr>
<td>Recommended Input Voltage</td>
<td>515 VDC</td>
</tr>
<tr>
<td>MPPT Efficiency</td>
<td>99.9 %</td>
</tr>
<tr>
<td>Output Voltage</td>
<td>3 Phase 380VAC</td>
</tr>
<tr>
<td>Output Frequency Range</td>
<td>0Hz - 60Hz</td>
</tr>
<tr>
<td>Maximum Efficiency</td>
<td>97.0 %</td>
</tr>
<tr>
<td>Maximum Ambient Temperature</td>
<td>(-10°C) - (50°C), derating over 40°C</td>
</tr>
<tr>
<td>Coolin System</td>
<td>Cooling Fans</td>
</tr>
<tr>
<td>Protection Class</td>
<td>IP20</td>
</tr>
<tr>
<td>Maximum Operating Altitude</td>
<td>&lt;1000m ; &gt;m (derating by 1% after each 100m)</td>
</tr>
<tr>
<td>Standard</td>
<td>CE</td>
</tr>
</tbody>
</table>

Recommended Inverter-Solar Panel-AC Pump Configuration

<table>
<thead>
<tr>
<th>Solar Pump Inverter</th>
<th>PV</th>
<th>AC Pump</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DC (kW)</td>
<td>Pump Power (kW)</td>
</tr>
<tr>
<td></td>
<td>Input Voltage (DC) (V)</td>
<td>MPPT Voltage (V)</td>
</tr>
<tr>
<td>SPI2200</td>
<td>4</td>
<td>500 - 800</td>
</tr>
<tr>
<td>SPI4000</td>
<td>11</td>
<td>500 - 800</td>
</tr>
<tr>
<td>SPI4000</td>
<td>15</td>
<td>500 - 800</td>
</tr>
<tr>
<td>SPI5500</td>
<td>11</td>
<td>500 - 800</td>
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<tr>
<td>SPI7500</td>
<td>11</td>
<td>500 - 800</td>
</tr>
<tr>
<td>SPI11K</td>
<td>11</td>
<td>500 - 800</td>
</tr>
<tr>
<td>SPI15K</td>
<td>15</td>
<td>500 - 800</td>
</tr>
</tbody>
</table>

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Solar Systems

GENERAL SPECIFICATIONS

- Field Surveys
- Power production potential simulations
- Field layout drawings
- Equipment selection and supply
- Single Line Diagram
- Mechanical projects
- Field supervision
- Consultance
- Commissioning, start up and maintenance
- Fast delivery from stock, ‘Solar panel, On grid/ Off grid inverter, Battery, Solar charger, power kits, led lighting, Wind Generator, Construction material etc.’
- Solar panel, On grid/ Off grid inverter, Battery, Solar charger, power kits, led lighting, Wind Generator, Construction material etc.
- No need to replace your existing AC motor.
- Converts solar power into mechanical power with very high efficiency
- Fast and easy installation
- Almost no maintenance, quiet and clean
- Grid power or costly combustion motors are not needed
- Low carbon footprint
- PV Panel, inverter, battery
- Off grid battery back up
- The batteries can be charged via grid & generator
- The batteries can be charged via built in solar charger
- Enhanced LCD display shows all essential data
- Pure sinus output
- Residential, Telecommunication and Military applications.
The EnerSys® range of PowerSafe™ OPzS single cells has been designed for use in all standby power applications that demand the highest levels of reliability and security. PowerSafe OPzS cells benefit from an optimised plate design that results in increased capacity compared to the requirements of the internationally recognised DIN standard. In addition, the tubular plate technology offers excellent cyclability together with a proven long life under float voltage conditions, for a truly flexible solution. The specification of the PowerSafe OPzS cells make it ideal for a wide range of applications such as telecommunications, telephony, power generation and distribution, railway, airport and seaport signalling, computing, emergency lighting, automation and measuring systems.

**Features & Benefits**
- Capacity range: 216Ah - 3360Ah (C10/1.80Vpc/20°C)
- C10 capacities exceed the DIN standard values
- Excellent cyclability
- Long design life
- High operational reliability
- Low maintenance
- 3 year topping-up interval
- DIN 40736-1 compliant

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Internal Type</th>
<th>Internal Type</th>
<th>Nominal Voltage (V)</th>
<th>Number of Terminals</th>
<th>10hr rate to 1.80Vpc @ 20°C</th>
<th>10hr rate to 1.75Vpc @ 77°F</th>
<th>Length</th>
<th>Width</th>
<th>Height Over Vent Plug</th>
<th>Dry</th>
<th>Acid Filled</th>
<th>Electrolyte Volume</th>
<th>Short Circuit Current (A)</th>
<th>Resis tance (mΩ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 OPzS 200</td>
<td>2</td>
<td>2</td>
<td>216</td>
<td>217</td>
<td>103</td>
<td>4.1</td>
<td>206</td>
<td>8.1</td>
<td>394</td>
<td>15.5</td>
<td>12.4</td>
<td>27.3</td>
<td>17.2</td>
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<tr>
<td>5 OPzS 250</td>
<td>2</td>
<td>2</td>
<td>270</td>
<td>266</td>
<td>124</td>
<td>4.9</td>
<td>206</td>
<td>8.1</td>
<td>394</td>
<td>15.5</td>
<td>14.8</td>
<td>32.6</td>
<td>20.8</td>
</tr>
<tr>
<td>6 OPzS 300</td>
<td>2</td>
<td>2</td>
<td>324</td>
<td>319</td>
<td>145</td>
<td>5.7</td>
<td>206</td>
<td>8.1</td>
<td>394</td>
<td>15.5</td>
<td>17.1</td>
<td>37.7</td>
<td>24.3</td>
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<tr>
<td>5 OPzS 350</td>
<td>2</td>
<td>2</td>
<td>390</td>
<td>388</td>
<td>124</td>
<td>4.9</td>
<td>206</td>
<td>8.1</td>
<td>310</td>
<td>20.1</td>
<td>19.0</td>
<td>41.9</td>
<td>26.9</td>
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<tr>
<td>6 OPzS 420</td>
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<td>2</td>
<td>468</td>
<td>466</td>
<td>145</td>
<td>5.7</td>
<td>206</td>
<td>8.1</td>
<td>310</td>
<td>20.1</td>
<td>22.1</td>
<td>48.7</td>
<td>31.5</td>
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<tr>
<td>7 OPzS 490</td>
<td>2</td>
<td>2</td>
<td>546</td>
<td>543</td>
<td>166</td>
<td>6.5</td>
<td>206</td>
<td>8.1</td>
<td>310</td>
<td>20.1</td>
<td>25.2</td>
<td>55.6</td>
<td>36.1</td>
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<tr>
<td>6 OPzS 600</td>
<td>2</td>
<td>2</td>
<td>660</td>
<td>648</td>
<td>145</td>
<td>5.7</td>
<td>206</td>
<td>8.1</td>
<td>685</td>
<td>27.0</td>
<td>31.9</td>
<td>70.3</td>
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<tr>
<td>7 OPzS 700</td>
<td>2</td>
<td>4</td>
<td>817</td>
<td>798</td>
<td>210</td>
<td>8.3</td>
<td>191</td>
<td>7.5</td>
<td>685</td>
<td>27.0</td>
<td>40.4</td>
<td>89.1</td>
<td>57.6</td>
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<tr>
<td>8 OPzS 800</td>
<td>2</td>
<td>4</td>
<td>880</td>
<td>856</td>
<td>210</td>
<td>8.3</td>
<td>191</td>
<td>7.5</td>
<td>685</td>
<td>27.0</td>
<td>44.4</td>
<td>97.9</td>
<td>61.3</td>
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<tr>
<td>9 OPzS 900</td>
<td>2</td>
<td>4</td>
<td>1040</td>
<td>1013</td>
<td>210</td>
<td>8.3</td>
<td>233</td>
<td>9.2</td>
<td>685</td>
<td>27.0</td>
<td>49.6</td>
<td>109.3</td>
<td>70.9</td>
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<tr>
<td>10 OPzS 1000</td>
<td>2</td>
<td>4</td>
<td>1100</td>
<td>1071</td>
<td>210</td>
<td>8.3</td>
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<td>685</td>
<td>27.0</td>
<td>53.5</td>
<td>118.0</td>
<td>74.6</td>
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<tr>
<td>11 OPzS 1100</td>
<td>2</td>
<td>4</td>
<td>1260</td>
<td>1227</td>
<td>210</td>
<td>8.3</td>
<td>275</td>
<td>10.8</td>
<td>685</td>
<td>27.0</td>
<td>58.9</td>
<td>129.9</td>
<td>84.4</td>
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<tr>
<td>12 OPzS 1200</td>
<td>2</td>
<td>4</td>
<td>1320</td>
<td>1293</td>
<td>210</td>
<td>8.3</td>
<td>275</td>
<td>10.8</td>
<td>685</td>
<td>27.0</td>
<td>62.8</td>
<td>138.4</td>
<td>88.0</td>
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<tr>
<td>13 OPzS 1375</td>
<td>2</td>
<td>4</td>
<td>1590</td>
<td>1631</td>
<td>210</td>
<td>8.3</td>
<td>275</td>
<td>10.8</td>
<td>835</td>
<td>32.9</td>
<td>74.5</td>
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<td>109</td>
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<td>14 OPzS 1625</td>
<td>2</td>
<td>6</td>
<td>1910</td>
<td>1962</td>
<td>214</td>
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<td>399</td>
<td>15.7</td>
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<td>32.0</td>
<td>91.2</td>
<td>201.1</td>
<td>140</td>
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<tr>
<td>15 OPzS 1900</td>
<td>2</td>
<td>6</td>
<td>2200</td>
<td>2208</td>
<td>214</td>
<td>8.4</td>
<td>399</td>
<td>15.7</td>
<td>811</td>
<td>32.0</td>
<td>101</td>
<td>222.7</td>
<td>149</td>
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<tr>
<td>16 OPzS 2250</td>
<td>2</td>
<td>6</td>
<td>2470</td>
<td>2546</td>
<td>214</td>
<td>8.4</td>
<td>487</td>
<td>19.2</td>
<td>811</td>
<td>32.0</td>
<td>119</td>
<td>262.3</td>
<td>180</td>
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<tr>
<td>17 OPzS 2625</td>
<td>2</td>
<td>8</td>
<td>2600</td>
<td>2669</td>
<td>212</td>
<td>8.3</td>
<td>487</td>
<td>19.2</td>
<td>811</td>
<td>32.0</td>
<td>125</td>
<td>275.6</td>
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</tr>
<tr>
<td>18 OPzS 3050</td>
<td>2</td>
<td>8</td>
<td>2800</td>
<td>2884</td>
<td>212</td>
<td>8.3</td>
<td>487</td>
<td>19.2</td>
<td>811</td>
<td>32.0</td>
<td>134</td>
<td>295.4</td>
<td>193</td>
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<tr>
<td>20 OPzS 3475</td>
<td>2</td>
<td>8</td>
<td>3150</td>
<td>3238</td>
<td>212</td>
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<td>22 OPzS 4000</td>
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<td>8</td>
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<td>3543</td>
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<td>22.7</td>
<td>811</td>
<td>32.0</td>
<td>163</td>
<td>359.4</td>
<td>234.5</td>
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</tbody>
</table>
Kokam Series

Lithium polymer and lithium ion batteries

Insured Safety of Kokam’s SLPB
Kokam’s Superior Lithium Polymer Batteries have an excellent safety performance which originates in our unique technology.

Kokam Battery Pack Solution
Throughout the years, Kokam has developed and refined its own line of technology that has made way for the successful production of the most effective battery product for battery packs.

<table>
<thead>
<tr>
<th>No</th>
<th>Model</th>
<th>Capacity (Ah)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>SLPB10255255H</td>
<td>60</td>
</tr>
<tr>
<td>2</td>
<td>SLPB96255255</td>
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<td>3</td>
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</tr>
<tr>
<td>4</td>
<td>SLPB53460330</td>
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</tr>
<tr>
<td>5</td>
<td>SLPB10255255H</td>
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</tr>
<tr>
<td>6</td>
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</tr>
<tr>
<td>7</td>
<td>SLPB125255255H</td>
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<td>SLPB160460330</td>
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Cell Specification

<table>
<thead>
<tr>
<th>Value</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Capacity (Ah)</td>
<td>55 @ 0.5C</td>
</tr>
<tr>
<td>IR (mOhm)</td>
<td>0.5 @ 1kHz</td>
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<tr>
<td>Voltage</td>
<td>3.0 V ~ 4.2 V</td>
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<tr>
<td>Weight (kg)</td>
<td>1.36</td>
</tr>
<tr>
<td>Cycle Life @ 100% DOD</td>
<td>Over 4,500 cycles</td>
</tr>
<tr>
<td>Max Continuous Charge Current</td>
<td>147 A</td>
</tr>
<tr>
<td>Max Continuous Discharge Current</td>
<td>284 A</td>
</tr>
<tr>
<td>UL Certification</td>
<td>Certified</td>
</tr>
</tbody>
</table>

- Discharge capacity (Ah)
- Relative Capacity (%)
Ni-Cd Alcad Series

Connection type  LBE..P  MB..P  HB..P
Normal  LBE415P to LBE510P  MB370P to MB390P  -
Crosswise  LBE550P to LBE1600P  MB415P to MB1390P  HB230P to HB520P

Cell type  Capacity of the three  Approx. weight per cell  Overall height  Weight per cell  Number per set  Internal connections  Outside height
(ml)  (Ah)  (g)  (mm)  (g)  (W)  (W)  (W)  (W)  (W)
LBE101P  15  150  192  403  15  19.4  79  81  77  5  79  0.48  50
LBE103P  25  150  185  403  15  19.4  79  81  77  5  79  0.38  50
LBE301P  10  150  214  727  15  19.4  79  81  77  5  79  0.41  50
LBE305P  15  150  214  727  15  19.4  79  81  77  5  79  0.38  50
LBE601P  10  150  214  727  15  19.4  79  81  77  5  79  0.41  50
LBE605P  15  150  214  727  15  19.4  79  81  77  5  79  0.38  50
LBE101P  15  150  214  727  15  19.4  79  81  77  5  79  0.41  50
LBE103P  25  150  214  727  15  19.4  79  81  77  5  79  0.38  50
LBE301P  10  150  214  727  15  19.4  79  81  77  5  79  0.41  50
LBE305P  15  150  214  727  15  19.4  79  81  77  5  79  0.38  50
LBE601P  10  150  214  727  15  19.4  79  81  77  5  79  0.41  50
LBE605P  15  150  214  727  15  19.4  79  81  77  5  79  0.38  50
LBE101P  15  150  214  727  15  19.4  79  81  77  5  79  0.41  50
LBE103P  25  150  214  727  15  19.4  79  81  77  5  79  0.38  50
LBE301P  10  150  214  727  15  19.4  79  81  77  5  79  0.41  50
LBE305P  15  150  214  727  15  19.4  79  81  77  5  79  0.38  50
LBE601P  10  150  214  727  15  19.4  79  81  77  5  79  0.41  50
LBE605P  15  150  214  727  15  19.4  79  81  77  5  79  0.38  50

Cell connection bolt per pole:  LBE415P to LBE550P  2 x M10  LCE110P to LCE210P  4 x M10
LCE775P to LCE950P  6 x M10  LCE110P to LCE210P  5 x M10  LCE330P to LCE275P  2 x M10  LCE150P to LCE1600P  6 x M10
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Metin TEK. Tel: +90 532 307 33 48
Tuncay OKUR. Tel: +90 549 851 07 81
Email: epcas@epcas.com.tr
Web: www.epcas.com.tr

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