



Uninterruptible Power Systems & Power Conversion Products

ED Series™ UVS PLUS® 1kVA to 5kVA Voltage & Frequency Converters

- True Double Conversion Design
- Precision Output Voltage & Frequency
- Pure Sinewave Output <3% THD
- 50, 60 & 400Hz Frequency Conversion
- Voltage Conversion Models Available
- Battery Backed Up Models Available
- Input Power Factor Corrected Models Available
- Superior Brownout, Surge and Transient Protection
- Battery Backed Up Models Available
- Small and Lightweight



Technology Breakthrough

Falcon® Electric's ED Series™ UVS Plus® is more than a frequency converter, voltage regulator, power factor corrector or line conditioner. Its unique features will significantly improve your equipment's reliability, virtually eliminating power-related downtime and dramatically increasing productivity. Its small size and lightweight construction makes it ideal for OEM and integrated applications.

Unique Frequency Converter & UPS Capability

The ED Series provides unique flexibility in a small footprint. The ED Series can be factory configured as a pure frequency converter accepting a 50, 60 & 400Hz input and yielding a fixed 50 or 60Hz output. It can also supply a 400Hz, 120V output if properly derated. The ED can be configured as an international converter, making it an ideal solution for those tough applications requiring both voltage and frequency conversions. A battery system may be added to most models, turning it into a true Regenerative On-line UPS.

Superior Voltage/Frequency Regulation & Extended Brownout Protection

Since the ED Series is a solid-state generator, it prevents daily power disturbances from reaching your equipment. Constant voltage transformers, line conditioners and other devices are not designed to prevent damage from these problems.

The ED continually regenerates new, clean AC power in pure sinewave form for superior protection. Even with wide input variations in voltage and frequency, the ED Series UVS Plus's output steadfastly remains at its designed voltage and frequency. It also allows your system to continuously operate during extended brownouts to 88 VAC.

Enhanced Surge Start-up Capability

Falcon Electric's ED Series is designed to start-up loads that exhibit high inrush when started from the utility. This gives the ED the ability to start tough loads such as motors, multiple computers or incandescent lighting.

Converts Generator Output Into Computer-Grade Power

Due to its Regenerative On-line design, the ED Series regenerates new, clean computer-grade power with tightly regulated voltage and frequency, independent of generator voltage and frequency drift.

Ideal for applications such as:

- Military & Aerospace
- Aircraft Frequency Conversion
- Off Shore Platforms
- Shipboard Systems
- Robotics
- Automated Manufacturing
- Test Equipment Benches
- Precision Motor Speed Application
- Mobile Office/Labs
- Communications/Microwave

| ED Model Series | -A Models | -PFC Models | -LC Models | -1 Models |
|--|---|---|---|---|
| Primary Function | Frequency Converter | Power Factor Corrector | Voltage & Frequency Converter | On-Line UPS |
| Wide Input Voltage Range? | YES -20% to +10% of Nominal Line | | | |
| Input PFC? | NO .65 - .7pf | YES .97 - .99pf | NO .65- .7pf | |
| Superior Brown out, Surge and Transient Protection | YES | | | |
| Input Voltage(s) Available | 120Vac Only | | <u>-1/2 Model</u> 120Vac <u>- 2/1 Models</u> 220Vac or 230Vac or 240Vac | 120Vac Only |
| Output Voltage(s) Available | 120Vac Only | | <u>- 1/2 Models</u> 220Vac or 230Vac or 240Vac <u>-2/1 Models</u> 120Vac | 120Vac only |
| Output Ratings Available | <u>1kVA – 5kVA</u> 1kVA = 700W 1.5kVA – 1050W 2kVA = 1400W 3kVA = 2100W 4kVA = 2800W 5kVA = 3500W | <u>1kVA – 2.4kVA</u> 1kVA = 700W 1.5kVA – 1050W 2kVA = 1400W 2.4kVA = 1680W | | |
| 3% Output Voltage Regulation? | YES | | | |
| True Sinewave Output? | YES <3% THD @ Full Load | | | |
| Handles High Inrush Loads? | YES | | | |
| Frequency Conversion? | Input – 50, 60 or 400Hz Output – 50, 60 or 400Hz | Input – 60 Output – 50, 60 or 400Hz | Input – 50, 60 or 400Hz Output – 50, 60 or 400Hz | Input – 50, 60 or 400Hz Output – 50, 60 or 400Hz |
| Cleans Dirty Generator Power and Eliminates Frequency Drift? | YES | | | |
| Voltage Conversion? | NO | | YES | NO |
| Battery Backup? | External Battery Bank Options Available | | | YES |
| High Temperature Operation? | YES 0°C-50°C 32°F - 122°F* | | | NO 0°C-35°C 32°F - 95°F |
| Dry Contact Closure Interface | YES | | | |
| Size | 13.6 H x 6.25 W x 19.4 D Typical | | | |
| Other | See Individual Datasheets for More Information | | | |

* Without optional battery bank .

ED Series Model -A Frequency Converter (120V Input/Output)

| Model Number | ED-1000-A | ED-1500-A | ED-2000-A | ED-3000-A | ED-4000-A | ED-5000-A |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Nominal VA | 1000 | 1500 | 2000 | 3000 | 4000 | 5000 |

Electrical Input

| | | | | | | |
|-----------------------|-----------|------|------|----|----|----|
| AC Voltage, +10% -20% | 120Vac | | | | | |
| Current-Amps | 10.4 | 15.6 | 20.8 | 29 | 39 | 48 |
| Frequency Range | 47-450 Hz | | | | | |

Electrical Output

| | | | | | | |
|--|--|------|------|------|------|------|
| AC Voltage, ± 3% | 120Vac | | | | | |
| Watts @ 50 or 60 Hz | 700 | 1050 | 1400 | 2100 | 2800 | 3500 |
| Watts @ 400 Hz | 595 | 892 | 1190 | 1900 | 2600 | 3200 |
| Current-Amps @ 50/60 Hz | 8.3 | 12.5 | 16.7 | 25 | 33 | 42 |
| Current-Amps @ 400 Hz | 7.1 | 10.6 | 14.2 | 19 | 26 | 35 |
| 50/60 Hz Non – Linear Repetitive Peak (Amps) | 20 | 30 | 40 | 60 | 80 | 100 |
| 400 Hz Non – Linear Repetitive Peak (Amps) | 14.2 | 21.3 | 28.3 | 42.5 | 56.1 | 71.8 |
| Total Harmonic Distortion | < 3% @ 100% Linear Load, < 5% @ 100% Non – Linear Load | | | | | |
| Overload | 200% for 0.5 Seconds, 120% for 30 Seconds | | | | | |
| Dynamic Response | ± 5% RMS for 100% Step Load Change, 1ms Recovery Time | | | | | |
| Output Protection | Short Circuit and Overload | | | | | |

Electrical Connections

| | | | | |
|--------|--------------------|--------------------|---------------------|-----------|
| Input | 6' Cord with 5-15P | 8' Cord with 5-20P | 8' Cord with L5-30P | Hardwired |
| Output | (4) 5-15R | (4) 5-15R | (4) 5-15R | Hardwired |

Environmental

| | | |
|----------------------------|---------------------------------|---------------------------------|
| Operating Temperature | 0° C to 50° C (32° C to 122° F) | 0° C to 40° C (32° C to 104° F) |
| Humidity | 10% to 95% Non – Condensing | |
| Altitude | 7,000 Feet | |
| Cooling | Low Velocity Forced Air Fans | |
| Audible Noise @ 1.5 Meters | 49dBA | 54dBA |

Controls and Indicators

| | |
|----------------|--|
| Sequenced LEDs | Load Level |
| Single LED | Utility Present, Summary Alarm, Inverter On |
| Audible Alarms | Utility Interrupt, Inverter Failure, Overload |
| Communications | Dry Contact Closures on Utility Loss via 9 Pin "D" Connector |

Mechanical

| | | | | | | | |
|----------------------|-------------------------------------|--|-----------|-----------|-----------|-----------|-----------|
| Dimensions H x W x D | inches (mm) | 13.5 x 6.25 x 19.4 (342.9 x 158.8 x 492.8) | | | | | |
| Weight | lb. (kg) | 25 (11.3) | 38 (17.2) | 38 (17.2) | 50 (22.7) | 50 (22.7) | 60 (27.2) |
| Agency Listing | FCC Class A, Meets UL 1778 Standard | | | | | | |

Specify input/output frequency, 50/60 or 400Hz (any combination).
Standard models shown. Custom configurations available; Consult Factory.

ED Series Power Factor Corrector / Frequency Converter (120V)

| Model Number | ED-1000-PFC | ED-1500-PFC | ED-2000-PFC | ED-2400-PFC |
|--------------|-------------|-------------|-------------|-------------|
| Nominal VA | 1000 | 1500 | 2000 | 2400 |

Electrical Input

| | | | | |
|-----------------------|-------------------------|------|------|----|
| AC Voltage, +10% -20% | 120Vac | | | |
| Current-Amps | 6.9 | 10.7 | 14.2 | 17 |
| Frequency Range | 47-63 Hz | | | |
| Power Factor | .97 - .99pf | | | |
| Current Distortion | >3% any single harmonic | | | |

Electrical Output

| | | | | |
|--|--|------|------|------|
| AC Voltage, ± 3% | 120Vac | | | |
| Watts @ 50 or 60 Hz | 700 | 1050 | 1400 | 1680 |
| Watts @ 400 Hz | 595 | 892 | 1190 | 1487 |
| Current-Amps @ 50/60 Hz | 8.3 | 12.5 | 16.7 | 20 |
| Current-Amps @ 400 Hz | 7.1 | 10.6 | 14.2 | 17 |
| 50/60 Hz Non – Linear Repetitive Peak (Amps) | 20 | 30 | 40 | 48 |
| 400 Hz Non – Linear Repetitive Peak (Amps) | 14.2 | 21.3 | 28.3 | 33 |
| Total Harmonic Distortion | < 3% @ 100% Linear Load, < 5% @ 100% Non – Linear Load | | | |
| Overload | 200% for 0.5 Seconds, 120% for 30 Seconds | | | |
| Dynamic Response | ± 5% RMS for 100% Step Load Change, 1ms Recovery Time | | | |
| Output Protection | Short Circuit and Overload | | | |

Electrical Connections

| | | | |
|--------|--------------------|--------------------|---------------------|
| Input | 6' Cord with 5-15P | 8' Cord with 5-20P | 8' Cord with L5-30P |
| Output | (4) 5-15R | | |

Environmental

| | |
|----------------------------|---------------------------------|
| Operating Temperature | 0° C to 50° C (32° C to 122° F) |
| Humidity | 10% to 95% Non – Condensing |
| Altitude | 7,000 Feet |
| Cooling | Low Velocity Forced Air Fans |
| Audible Noise @ 1.5 Meters | 54dBA |

Controls and Indicators

| | |
|----------------|--|
| Sequenced LEDs | Load Level |
| Single LED | Utility Present, Summary Alarm, Inverter On |
| Audible Alarms | Utility Interrupt, Inverter Failure, Overload |
| Communications | Dry Contact Closures on Utility Loss via 9 Pin "D" Connector |

Mechanical

| | | | | |
|----------------------|-------------------------------------|--|-----------|---------------------|
| Dimensions H x W x D | inches (mm) | 13.5 x 6.25 x 19.4 (342.9 x 158.8 x 492.8) | | |
| Weight | lb. (kg) | 25 (11.3) | 38 (17.2) | 38 (17.2) 42 (19.1) |
| Agency Listing | FCC Class A, Meets UL 1778 Standard | | | |

ED Series™ UVS PLUS® Models -1/2LC & 2/1LC

ED Series Model -1/2LC & 2/1LC Voltage & Frequency Converter (1/2LC, 120V Input/200-240V Output ~ 2/1LC, 200-240 Input/120V Output)

| Model Number | ED-1000-1/2LC | ED-1500-1/2LC | ED-2000-1/2LC | ED2500-1/2LC | ED-1000-2/1LC | ED-1500-2/1LC | ED-2000-2/1LC | ED-2400-2/1LC |
|--------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|
| Nominal VA | 1000 | 1500 | 2000 | 2500 | 1000 | 1500 | 2000 | 2400 |

Electrical Input

| AC Voltage, +10% -20% | 120Vac | | | | 230Vac | | | |
|-----------------------|-----------|------|------|----|--------|-----|------|----|
| Current-Amps | 10.4 | 15.6 | 20.8 | 24 | 5.4 | 8.1 | 10.9 | 12 |
| Frequency Range | 47-450 Hz | | | | | | | |

Electrical Output

| AC Voltage, ± 3% | 230Vac | | | | 120ac | | | |
|--|--|------|------|------|-------|------|------|------|
| Watts @ 50 or 60 Hz | 700 | 1050 | 1400 | 1750 | 700 | 1050 | 1400 | 1680 |
| Watts @ 400 Hz | N/A | | | | 595 | 892 | 1190 | 1487 |
| Current-Amps @ 50/60Hz | 4.3 | 6.5 | 8.7 | 10.5 | 8.3 | 12.5 | 16.7 | 20 |
| Current-Amps @ 400 Hz | N/A | | | | 7.1 | 10.6 | 14.2 | 17 |
| 50/60 Hz Non – Linear Repetitive Peak (Amps) | 8.7 | 13.0 | 17.4 | 25 | 20 | 30 | 40 | 48 |
| 400 Hz Non – Linear Repetitive Peak (Amps) | N/A | | | | 14.2 | 21.3 | 28.3 | 33 |
| Total Harmonic Distortion | < 3% @ 100% Linear Load, < 5% @ 100% Non – Linear Load | | | | | | | |
| Overload | 200% for 0.5 Seconds, 120% for 30 Seconds | | | | | | | |
| Dynamic Response | ± 5% RMS for 100% Step Load Change, 1ms Recovery Time | | | | | | | |
| Output Protection | Short Circuit and Overload | | | | | | | |

Electrical Connections

| | | | | |
|--------|--------------------|--------------------|---------------------|--------------|
| Input | 6' Cord with 5-15P | 8' Cord with 5-20P | 8' Cord with L5-30P | As Specified |
| Output | As Specified | | | (4) 5-15R |

Environmental

| | |
|----------------------------|---------------------------------|
| Operating Temperature | 0° C to 50° C (32° F to 122° F) |
| Humidity | 10% to 95% Non – Condensing |
| Altitude | 7,000 Feet |
| Cooling | Low Velocity Forced Air Fans |
| Audible Noise @ 1.5 Meters | 54dBA |

Controls and Indicators

| | |
|-----------------|--|
| Sequenced LED s | Load Level |
| Single LED | Utility Present, Summary Alarm, Inverter On |
| Audible Alarms | Utility Interrupt, Inverter Failure, Overload |
| Communications | Dry Contact Closures on Utility Loss via 9 Pin "D" Connector |

Mechanical

| | | | | | | |
|----------------------------------|--|--|---------|-----------|---------|---------|
| Dimensions H x W x D inches (mm) | 13.5 x 6.25 x 22.4 (342.9 x 158.8 x 568.9) | 13.5 x 6.25 x 19.4 (342.9 x 158.8 x 492.8) | | | | |
| Weight lb. (kg) | 41 (18.6) | 64 (29) | 68 (31) | 41 (18.6) | 64 (29) | 68 (31) |
| Agency Listing | FCC Class A, Meets UL 1778 standard | | | | | |

Specify input/output frequency, 50/60 or 400Hz (any combination).
Standard configuration can be field changed to 200V, 220V or 240V.
Standard models shown. Custom configurations available; consult factory.
Batteries may be added to most ED Series Models; consult factory.

ED Series Model -1 Frequency Converter with Battery Back-Up (120V Input/Output)

| Model Number | ED-1000-1 | ED-1500-1 | ED-2000-1 | ED-2400-1 |
|--------------|-----------|-----------|-----------|-----------|
| Nominal VA | 1000 | 1500 | 2000 | 2400 |

Electrical Input

| | | | | |
|-----------------------|-----------|------|------|----|
| AC Voltage, +10% -20% | 120Vac | | | |
| Current-Amps | 10.4 | 15.6 | 20.8 | 22 |
| Frequency Range | 47-450 Hz | | | |

Electrical Output

| | | | | |
|--|--|------|------|------|
| AC Voltage, ± 3% | 120Vac | | | |
| Watts @ 50 or 60 Hz | 700 | 1050 | 1400 | 1680 |
| Watts @ 400 Hz | 595 | 892 | 1190 | 1487 |
| Current-Amps @ 50/60 Hz | 8.3 | 12.5 | 16.7 | 20 |
| Current-Amps @ 400 Hz | 7.1 | 10.6 | 14.2 | 17 |
| 50/60 Hz Non – Linear Repetitive Peak (Amps) | 20 | 30 | 40 | 48 |
| 400 Hz Non – Linear Repetitive Peak (Amps) | 14.2 | 21.3 | 28.3 | 33 |
| Total Harmonic Distortion | < 3% @ 100% Linear Load, < 5% @ 100% Non – Linear Load | | | |
| Overload | 200% for 0.5 Seconds, 120% for 30 Seconds | | | |
| Dynamic Response | ± 5% RMS for 100% Step Load Change, 1ms Recovery Time | | | |
| Output Protection | Short Circuit and Overload | | | |

Battery

| | | | | |
|-------------------------------------|------------------------------------|-------------------------|------------------------|--|
| Type | Sealed Lead Acid Maintenance -Free | | | |
| Back Up Time @ Full Load @ 1/2 Load | 8 Minutes 20 Minutes | 5 Minutes 14 Minutes | 3 Minutes 9 minutes | |

Battery times are approximate.

Electrical Connections

| | | | |
|--------|--------------------|--------------------|---------------------|
| Input | 6' Cord with 5-15P | 8' Cord with 5-20P | 8' Cord with L5-30P |
| Output | (4) 5-15R | | |

Environmental

| | |
|----------------------------|---|
| Operating Temperature | UL Listed - 0° C to 35° C (32° F to 95° F) Non-UL Listed - 0° C to 50° C (32° F to 122° F) With Hawker High Temperature batteries - 0° C to 60° C (32° F to 140° F) |
| Humidity | 10% to 95% Non – Condensing |
| Altitude | 7,000 Feet |
| Cooling | Low Velocity Forced Air Fans |
| Audible Noise @ 1.5 Meters | 54dBA |

Controls and Indicators

| | |
|-----------------|--|
| Sequenced LED s | Load Level |
| Single LED | Utility Present, Low Battery, Summary Alarm, Inverter On |
| Audible Alarms | Utility Interrupt, Inverter Failure, Overload, Low Battery |
| Communications | Dry Contact Closures on Utility Loss & Low Battery via 9 Pin "D" Connector |

Mechanical

| | |
|----------------------------------|--|
| Dimensions H x W x D inches (mm) | 13.5 x 6.25 x 19.4 (342.9 x 158.8 x 492.8) |
| Weight lb . (kg) | 41 (18.6) 64 (29) |
| Agency Listing | UL Listed 1778, FCC Class A |

Specify input/output frequency, 50/60 or 400Hz (any combination).
Standard models shown. Custom configurations available; consult factory.

