

FIRSTLINE[®] UPS

10, 15, and 20kVA

Three-phase, On-line, Double Conversion UPS System

- Most affordable three phase UPS available on the market today
- 208, 220 or 480Vac operation
- True on-line, double-conversion UPS
- Continuous, no-break operation
- Space saving design, durable all-steel construction
- Compact footprint and less weight provides for easier installation
- Easy to service and maintain
- Internal maintenance-free battery with optimum backup times; available with optional battery cabinets for virtually unlimited backup power

Full Three
Year Warranty



**STACO
ENERGY[®]**
PRODUCTS CO.

FIRSTLINE® UPS **Three-Phase, On-Line, Double Conversion**

The FirstLine® UPS combines all the features needed from a quality three-phase UPS, to meet virtually all user demands. Plus, it is easier to install and maintain than most UPS systems, and provides the continuous power conditioning and protection expected from double-conversion technology. Economically designed for initial purchase with low, long term operational costs, the FirstLine® is the "customers' choice".



- Front panel display and control design offers ease of use
- RS232 and SNMP communications available
- Quiet Operation
- Made in the USA



*70" cabinet
shown with
battery cabinet*

46" cabinet

Three Year Warranty

Electronics:

A full **Three Year On-site Warranty** comes standard, and covers both parts and labor. Start up is required for warranty coverage.

Battery:

A full **One Year Warranty**, 10-year pro-rated, on the Battery System ensures that your batteries are protected from system failure now and in the future. *(Warranty provided by battery manufacturer.)*

Extended warranties, customized service plans and preventative maintenance are also available. *Please refer to our warranty statement for complete details.*



Applications

- Data Centers
- Telecommunications
- Manufacturing Operations
- Broadcast
- Computer Networks
- Hospitals/Medical
- Education/Research
- Pharmaceuticals
- Packaging
- Water/Wastewater Treatment
- Food/Beverage Processing

Three Phase Uninterruptible Power Supply

In the event of an AC power failure, the FirstLine® UPS will automatically transfer to battery power and continue to provide power without any interruption for the full amount of time you select. When power returns to normal, the FirstLine® UPS will automatically recharge the batteries to be ready for the next unexpected power outage or disturbance.

Power Quality Protection

The FirstLine®'s all electronic design gives reliable blackout protection and superior power conditioning. Through its robust double-conversion technology, the FirstLine® UPS protects the connected load from the utility power supply, protecting it from damaging voltage imbalances, brown-outs and interruptions. Additionally, the FirstLine® UPS will protect electrical systems from other common power anomalies such as noise, transients, sags, harmonic distortion, spikes and surges.



Efficiency and Economy

A low voltage THD helps to optimize the UPS' function and compatibility within the electrical power system loads. Further, with a 90%+ efficiency rating utility costs may be reduced, while the cooler operation extends internal component life. The FirstLine® was designed to assure that the protected equipment operate at utmost efficiency, saving time and money, and reducing long-term cost of ownership.

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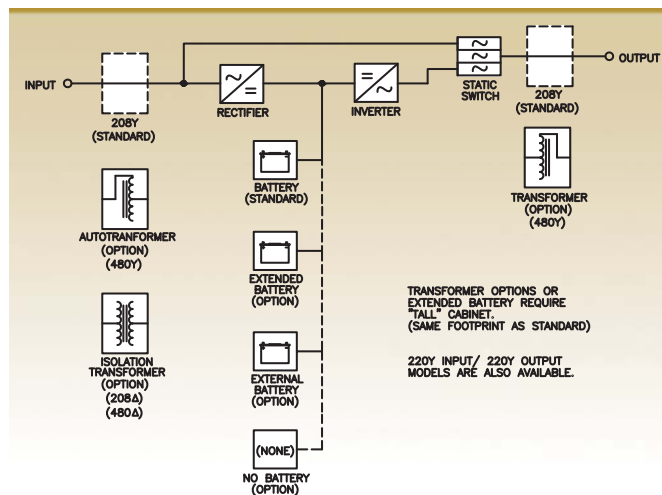
Your tailored power solutions provider™



Technical Specifications for 10, 15, 20kVA Models

| INPUT | | | |
|--|--|----------|----------|
| Voltage (Vac) | 208Y/120 | 480Y/277 | 220Y/127 |
| Voltage Range | Optional 3 wire delta ISO available + 10% - 20% from Nominal | | |
| Frequency Range | 57-63 Hz | | |
| Power Factor | > 0.98 at Full Load | | |
| Current Distortion (THD) | < 5% at Full Load | | |
| Inrush Current | Walk-in from 25% maximum to 100% full load rating in 5 seconds | | |
| Maximum Input Current | 32 | 47 | 63 |
| OUTPUT | | | |
| Voltage (Vac) | 208Y/120 | 480Y/277 | 220Y/127 |
| Frequency | 60Hz +/- 0.01% | | |
| Voltage Regulation | +/- 1% balanced load, +/- 3% with 100% unbalanced load | | |
| Rated Power Factor | 0.8 Lagging | | |
| Sinewave | Sinusoidal | | |
| Efficiency | 92% (Nominal Conditions) | | |
| Voltage Distortion (THD) | < 2% with linear load, < 5% with 100% non-linear load | | |
| Voltage Transient Response | < 5% voltage change for 100% load step with recovery to less than 2% in less than 1 cycle | | |
| Inverter Overload | 100% continuous, 125% for 2 minutes, 150% for 1 second | | |
| Static Switch | Continuous Duty | | |
| Bypass Overload | 110% continuous, 125% for 2 minutes, 150% for 10 seconds, 700% for 5 cycles | | |
| Current (Amp's at 208V) | 22 | 33 | 44 |
| Heat Rejection (BTU/Hr) | 6,800 | 7,500 | 8,200 |
| FRONT PANEL DISPLAY, ALARMS and COMMUNICATIONS | | | |
| Status On LED Mimic Panel | For Rectifier, Battery, Inverter, Reserve Supply, Load/Static Switch Normal Operation. | | |
| Readings LCD | Input Voltage, Input Frequency, Output Voltage, Output Frequency, Load Percentage, Battery Voltage | | |
| Audible Alarms and Visual Communications | Rectifier/Charger, Battery, Inverter, Reserve Supply and Load/Static Switch. RS232 Serial Port with Windows based Monitoring Software and RS232 Cable | | |
| BATTERY | | | |
| Type | Sealed Lead Acid, Maintenance Free | | |
| Internal Strings | -1: 1 String -2: 2 Strings | | |
| Number Cells | 204 | | |
| Nominal Voltage | 408Vdc | | |
| ENVIRONMENTAL | | | |
| Operating Temperature | 0 - 40° C | | |
| Relative Humidity | 0 - 95% non-condensing | | |
| Storage Temperature | -20 - +40° C | | |
| Altitude | 0 - 1000 meters without derating | | |
| Acoustical Noise | < 65dbA @ 3 feet | | |
| Mobility | Heavy-duty Casters | | |
| STANDARDS | | | |
| 208V and 480V Models | UL Listed to 1778, cUL (CSA C22.2), NEMA PE-1, ASME, ASA-C-39. 1-1984, FCC PART 15 Subpart J Class B, NEC, OSHA, IEEE587, ANSI C 62.41-1980, ISO9000 | | |
| OPTIONS | | | |
| Communications | SNMP/WEB Unit External Mount with Shutdown Software | | |
| Seismic Bracing | Seismic Zone 4 Bolt Down Brackets (4) | | |
| External Battery Cabinets | External Cabinets with 1, 2 or 3 additional strings (70"H x 22"W x 33"D | | |
| Isolation Transformer Input | Galvanic Isolation Transformer (Internal Mounted) | | |
| Power Distribution Unit | The FirstLine® OC with up to ninety-six branch circuits for 2 X 2 and 4 X 2 applications | | |
| Maintenance Bypass Switch | Safely service equipment without load disconnection | | |

The FirstLine® UPS offers three phase, uninterruptible power supplies (UPS) for 10, 15 and 20kVA applications. By using a true on-line transformerless technology at 208Vac input/208Vac output; the FirstLine® is built for maximum computer-grade power quality at an affordable price.



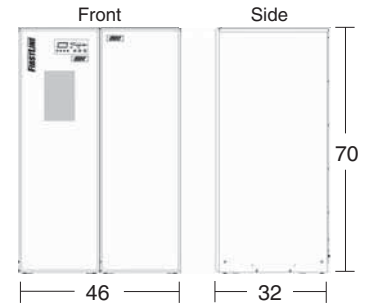
FirstLine® 10, 15, 20kVA Part Numbers

| Model | Description and Ratings | | Dimensions (H x W x D) | Weight (lbs.) | Battery Run Time (minutes @ 100% load, internal) |
|----------------|-------------------------|------------------------------|---------------------------|------------------|--|
| FLU-10S-20-1 | 10 kVA/8 kW | 208Y/120 to 208Y/120, 60Hz | 46" x 20" x 32" | 548 | 9 |
| FLU-10S-20-2 | 10 kVA/8 kW | 208Y/120 to 208Y/120, 60Hz | 46" x 20" x 32" | 803 | 24 |
| FLU-10S-22-1 | 10 kVA/8 kW | 220Y/127 to 220Y/127, 60Hz | 46" x 20" x 32" | 560 | 10 |
| FLU-10S-22-2 | 10 kVA/8 kW | 220Y/127 to 220Y/127, 60Hz | 46" x 20" x 32" | 827 | 26 |
| FLU-10S-42-1 | 10 kVA/8 kW | 480Y/277 to 208Y/120, 60Hz | 46" x 20" x 32" | 682 | 9 |
| FLU-10S-44-1 | 10 kVA/8 kW | 480Y/277 to 480Y/277, 60Hz | 46" x 20" x 32" | 807 | 9 |
| FLU-10T-20-0 | 10 kVA /8 kW | 208Y/120 to 208Y/120, 60Hz | 70" x 23" x 32" | 575 | 0 |
| FLU-10T-20-1 | 10 kVA /8 kW | 208Y/120 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,024 | 39 |
| FLU-10T-20-2 | 10 kVA /8 kW | 208Y/120 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,558 | 92 |
| FLU-10T-20-0-I | 10 kVA /8 kW | 208V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-10T-20-1-I | 10 kVA /8 kW | 208V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,485 | 39 |
| FLU-10T-22-0 | 10 kVA /8 kW | 220Y/127 to 220Y/127, 60Hz | 70" x 23" x 32" | 1,260 | 0 |
| FLU-10T-22-1 | 10 kVA /8 kW | 220Y/127 to 220Y/127, 60Hz | 70" x 23" x 32" | 1,558 | 42 |
| FLU-10T-22-2 | 10 kVA /8 kW | 220Y/127 to 220Y/127, 60Hz | 70" x 23" x 32" | 1,485 | 99 |
| FLU-10T-22-0-I | 10 kVA /8 kW | 220V Delta to 220Y/127, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-10T-22-1-I | 10 kVA /8 kW | 220V Delta to 220Y/127, 60Hz | 70" x 23" x 32" | 1,485 | 42 |
| FLU-10T-42-0 | 10 kVA /8 kW | 480Y/277 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,260 | 0 |
| FLU-10T-42-1 | 10 kVA /8 kW | 480Y/277 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,558 | 39 |
| FLU-10T-42-0-I | 10 kVA /8 kW | 480V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-10T-42-1-I | 10 kVA /8 kW | 480V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,485 | 39 |
| FLU-10T-44-0 | 10 kVA /8 kW | 480Y/277 to 480Y/277, 60Hz | 70" x 23" x 32" | 1,260 | 0 |
| FLU-10T-44-1 | 10 kVA /8 kW | 480Y/277 to 480Y/277, 60Hz | 70" x 23" x 32" | 1,558 | 39 |
| FLU-10T-44-0-I | 10 kVA /8 kW | 480V Delta to 480Y/277, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-10T-44-1-I | 10 kVA /8 kW | 480V Delta to 480Y/277, 60Hz | 70" x 23" x 32" | 1,485 | 39 |
| FLU-15T-20-0 | 15 kVA /12 kW | 208Y/120 to 208Y/120, 60Hz | 70" x 23" x 32" | 575 | 0 |
| FLU-15T-20-1 | 15 kVA /12 kW | 208Y/120 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,024 | 22 |
| FLU-15T-20-2 | 15 kVA /12 kW | 208Y/120 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,558 | 56 |
| FLU-15T-20-0-I | 15 kVA /12 kW | 208V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-15T-20-1-I | 15 kVA /12 kW | 208V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,558 | 22 |
| FLU-15T-22-0 | 15 kVA /12 kW | 220Y/127 to 220Y/127, 60Hz | 70" x 23" x 32" | 1,260 | 0 |
| FLU-15T-22-1 | 15 kVA /12 kW | 220Y/127 to 220Y/127, 60Hz | 70" x 23" x 32" | 1,558 | 24 |
| FLU-15T-22-2 | 15 kVA /12 kW | 220Y/127 to 220Y/127, 60Hz | 70" x 23" x 32" | 1,485 | 60 |
| FLU-15T-22-0-I | 15 kVA /12 kW | 220V Delta to 220Y/127, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-15T-22-1-I | 15 kVA /12 kW | 220V Delta to 220Y/127, 60Hz | 70" x 23" x 32" | 1,485 | 24 |
| FLU-15T-42-0 | 15 kVA /12 kW | 480Y/277 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,260 | 0 |
| FLU-15T-42-1 | 15 kVA /12 kW | 480Y/277 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,558 | 22 |
| FLU-15T-42-0-I | 15 kVA /12 kW | 480V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-15T-42-1-I | 15 kVA /12 kW | 480V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,485 | 22 |
| FLU-15T-44-0 | 15 kVA /12 kW | 480Y/277 to 480Y/277, 60Hz | 70" x 23" x 32" | 1,260 | 0 |
| FLU-15T-44-1 | 15 kVA /12 kW | 480Y/277 to 480Y/277, 60Hz | 70" x 23" x 32" | 1,558 | 22 |
| FLU-15T-44-0-I | 15 kVA /12 kW | 480V Delta to 480Y/277, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-15T-44-1-I | 15 kVA /12 kW | 480V Delta to 480Y/277, 60Hz | 70" x 23" x 32" | 1,485 | 22 |
| FLU-20T-20-0 | 20 kVA /16 kW | 208Y/120 to 208Y/120, 60Hz | 70" x 23" x 32" | 575 | 0 |
| FLU-20T-20-1 | 20 kVA /16 kW | 208Y/120 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,024 | 14 |
| FLU-20T-20-2 | 20 kVA /16 kW | 208Y/120 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,558 | 39 |
| FLU-20T-20-0-I | 20 kVA /16 kW | 220V Delta to 220Y/127, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-20T-20-1-I | 20 kVA /16 kW | 220V Delta to 220Y/127, 60Hz | 70" x 23" x 32" | 1,558 | 14 |
| FLU-20T-22-0 | 20 kVA /16 kW | 220Y/127 to 220Y/127, 60Hz | 70" x 23" x 32" | 1,260 | 0 |
| FLU-20T-22-1 | 20 kVA /16 kW | 220Y/127 to 220Y/127, 60Hz | 70" x 23" x 32" | 1,558 | 15 |
| FLU-20T-22-2 | 20 kVA /16 kW | 220Y/127 to 220Y/127, 60Hz | 70" x 23" x 32" | 1,485 | 42 |
| FLU-20T-22-0-I | 20 kVA /16 kW | 220V Delta to 220Y/127, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-20T-22-1-I | 20 kVA /16 kW | 220V Delta to 220Y/127, 60Hz | 70" x 23" x 32" | 1,485 | 15 |
| FLU-20T-42-0 | 20 kVA /16 kW | 480Y/277 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,290 | 0 |
| FLU-20T-42-1 | 20 kVA /16 kW | 480Y/277 to 208Y/120, 60Hz | 70" x 23" x 32" | 1,558 | 14 |
| FLU-20T-42-0-I | 20 kVA /16 kW | 480V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-20T-42-1-I | 20 kVA /16 kW | 480V Delta to 208Y/120, 60Hz | 70" x 23" x 32" | 1,485 | 14 |
| FLU-20T-44-0 | 20 kVA /16 kW | 480Y/277 to 480Y/277, 60Hz | 70" x 23" x 32" | 1,260 | 0 |
| FLU-20T-44-1 | 20 kVA /16 kW | 480Y/277 to 480Y/277, 60Hz | 70" x 23" x 32" | 1,558 | 14 |
| FLU-20T-44-0-I | 20 kVA /16 kW | 480V Delta to 480Y/277, 60Hz | 70" x 23" x 32" | 1,024 | 0 |
| FLU-20T-44-1-I | 20 kVA /16 kW | 480V Delta to 480Y/277, 60Hz | 70" x 23" x 32" | 1,485 | 14 |

I = with K-20 Isolation Transformer

Note: Internal battery run times listed may vary as a function of battery model, condition of battery and load.

FirstLine® UPS with Battery Cabinets



Dimensions shown in inches.

The External Battery

Cabinet is a line-up-and-match cabinet for use with the FirstLine® UPS. Ease of service access with removable panels plus slide-out shelves for mounting the batteries simplify maintenance and service. Available external battery cabinets can achieve long time back-up.

Service Options

With our ServiStar® program, a wide range of planned maintenance and extended service options are offered to maximize equipment life and reliability of your FirstLine® UPS. Through an extensive network of factory trained professionals you receive:

- Start-Up and Training
- Annual Service Plan
- 24/7 Emergency Service
- Preventative Maintenance
- Programs tailored to meet your needs

About Staco Energy Products Company

Since 1937, customers worldwide have been relying on Staco Energy Products Company to deliver voltage control and power quality solutions tailored to their needs.

As a leading power quality resource, we offer our customers world-class support; from our thorough applications assessment, to our ability to design and deliver a solution that is tailored to the specific needs of our customers; through delivery and commissioning.

Our professional, factory trained service team is in place to ensure that our customers' revenues are protected, and their investment provides them with many years of trouble free operation.

Staco develops total power solutions for OEM and end user applications.

Represented locally by:

In addition to the FirstLine® UPS we offer a wide array of power quality products, including:

- **Uninterruptible Power Supplies**
- **Power Conditioners**
- **Voltage Regulators**
- **Power Factor Correction and Harmonic Mitigation**
- **Active Harmonic Filters**
- **Variable Transformers**
- **Custom Engineered Test Sets**



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