

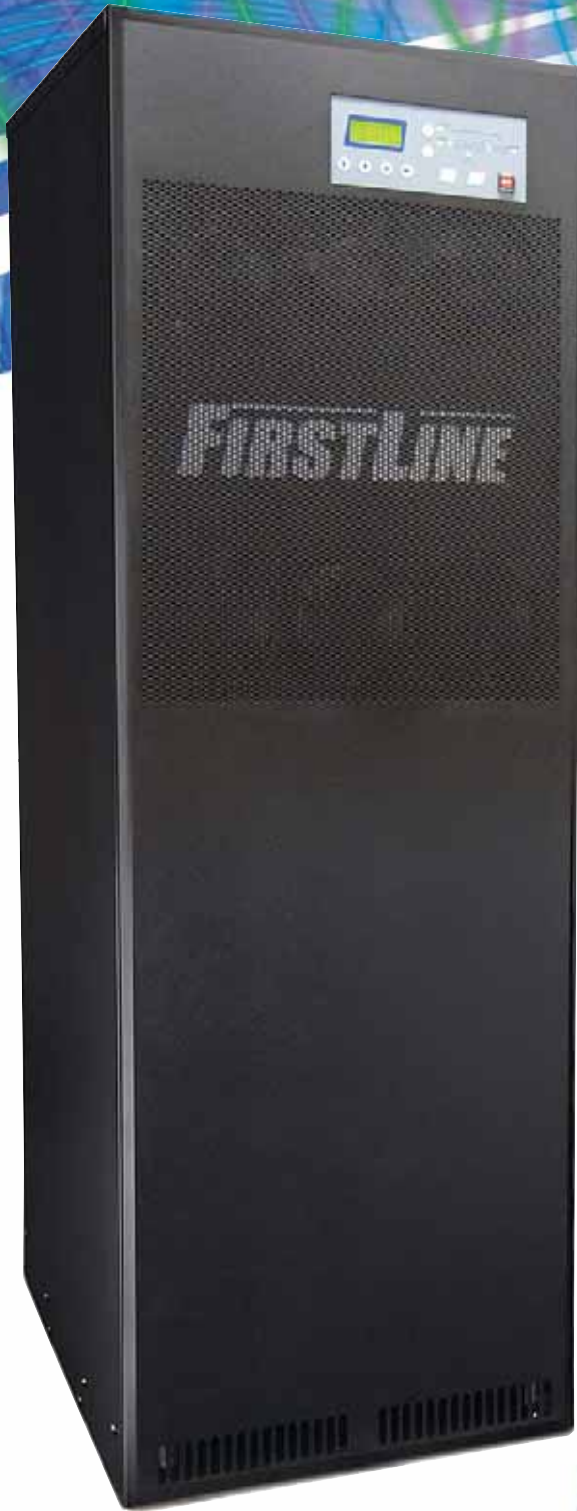
FIRSTLINE[®] UPS

25, 30, and 37.5kVA

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

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".

Full Two Year
Warranty



**STACO
ENERGY[®]
PRODUCTS CO.**

The FirstLine® UPS Three-Phase, On-Line, Double Conversion

- 208, 220 or 480Vac operation
- True on-line, double-conversion UPS
- Continuous, no-break operation
- Unmatched affordability, power performance, flexibility, and warranty
- Designed to meet today and tomorrow's power protection needs
- 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
- Can be used as a power conditioner with future capability to add batteries, upgrading to a UPS



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



FirstLine®
UPS shown
with optional
external
battery
cabinet

Two Year Warranty

Electronics:

A full Two 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.*

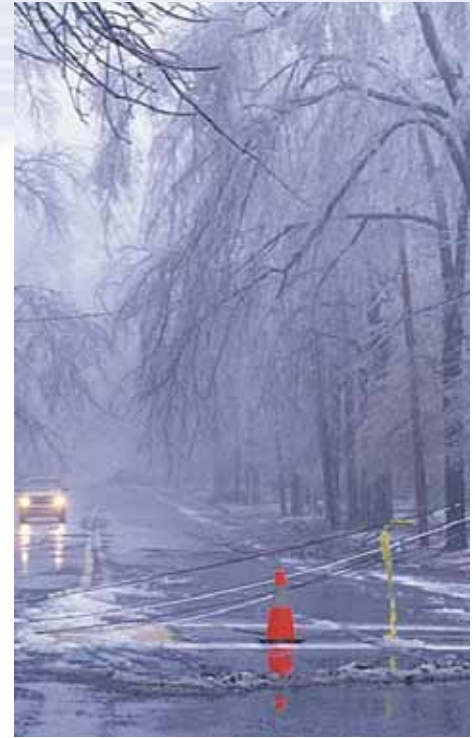
Three-phase, On-line, Double Conversion UPS System

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

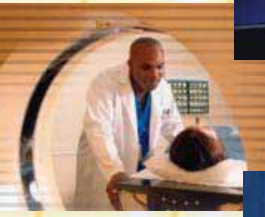
The FirstLine®'s all electronic design gives reliable blackout protection and superior power conditioning. Through its robust double-conversion technology, the FirstLine® UPS protects the connected load from the utility power supply, protecting it from damaging voltage imbalances, brown-outs and interruptions. 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.

The FirstLine® UPS offers three phase, uninterruptible power supplies (UPS) for 25, 30 and 37.5 kVA 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.



Applications

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

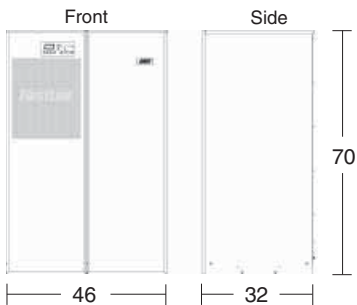
**STACO
ENERGY®
PRODUCTS CO.**

Your tailored power solutions provider™



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.

FirstLine® UPS with Battery Cabinet



Dimensions shown in inches.



The FirstLine® wall mount maintenance bypass switch (MBS)

is a great alternative to a complete distribution system. The MBS is an interlocked make-before-break wraparound bypass switch, **optional** for 2 X 2 and 4 X 4 configurations. The switch is tailored to meet the needs of most UPS installations and it provides a safe means of removing the UPS from the circuit while maintaining the connection between the load and the utility while not dropping your critical loads.



The FirstLine® OC is optional and can be configured for 4 X 2 applications, with transformer, MBS and distribution, with up to ninety-six branch circuits to support your loads. The OC can also be configured with a wrap around maintenance bypass switch providing a safe alternative to internal bypass configurations found on some UPS systems. For those installations that require metering, the OC offers an optional front panel meter complete with communications capability for remote monitoring. The OC is designed to be a perfect line-up and match solution with our FirstLine® UPS.

Technical Specifications

25kVA/20kW

30kVA/24kW

37.5kVA/30kW

INPUT	
Connection	Hardwire three-phase, 4-wire plus ground; Delta input with optional internal isolation transformer (3-wire)
Voltage (Vac)	208Y/120 480Y/277 220Y/127, three-phase, 4-wire plus ground; Delta input with optional internal isolation transformer
Voltage Range	+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	80A 100A 120A
OUTPUT	
Connection	Hardwire three-phase, 4-wire
Voltage (Vac)	208Y/120 480Y/277 220Y/127, three-phase, 4-wire
Frequency	60 Hz +/- 0.01%, auto sensing
Voltage Regulation	+/- 1% balanced load, +/- 3% with 100% unbalanced load
Rated Power Factor	0.8 Lagging
Sinewave	Sinusoidal
Efficiency	90% (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)	55A (20kW) 66A (24kW) 83A (30kW)
Heat Rejection (BTU/Hr)	7,584 9,101 11,375
BATTERY BACK-UP RATINGS	
FLU-25T-20-1	25 kVA / 20 kW Internal battery back-up time approximately 12 minutes (at full rated kW)
FLU-30T-20-1	30 kVA / 24 kW Internal battery back-up time approximately 9 minutes (at full rated kW)
FLU-37T-20-1	37.5 kVA / 30 kW Internal battery back-up time approximately 6 minutes (at full rated kW)
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	Rectifier/Charger, Battery, Inverter, Reserve Supply and Load/Static Switch.
Communications	RS232 Serial Port with Windows based Monitoring Software and RS232 Cable
ENVIRONMENTAL	
Operating Temperature	0 – 40° C
Relative Humidity	0-95% non-condensing
Storage Temperature	-20 to +60° C, exceeding 0 - 40° C will degrade battery life
Altitude	0 – 1000 meters, derate load capability above 1000 meters 1% per 100 meters
Acoustical Noise	< 75dba @ 3 feet
Mobility	Heavy-duty Casters
STANDARDS	
208V and 480V Models	UL Listed to 1778, c-UL (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, surge withstand, UBC Seismic Zone 4 Certified, ISO9001
HOUSING	
Standard Cabinet Dimensions:	70" high x 23" wide x 32" deep
	Freestanding NEMA 1 enclosure, powder coated painted black color with textured finish, bottom access for conduit entries
OPTIONS	
Communications	SNMP/WEB Box 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), for three-wire delta configuration
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
BATTERY	
Type	Valve Regulated Type Sealed Lead Acid, Maintenance Free
Number Cells	204
Nominal Voltage	408Vdc

FirstLine® 25, 30, 37.5kVA Part Numbers

Model	Description and Ratings		Weight (lbs.)	Battery Run Time (minutes)
FLU-25T-20-0	25 kVA /20 kW	208Y/120 to 208Y/120, 60Hz	741	0
FLU-25T-20-1	25 kVA /20 kW	208Y/120 to 208Y/120, 60Hz	1,253	11
FLU-25T-20-2	25 kVA /20 kW	208Y/120 to 208Y/120, 60Hz	1,765	28
FLU-25T-20-0-I	25 kVA /20 kW	208V Delta to 208Y/120, 60Hz	1,343	0
FLU-25T-20-1-I	25 kVA /20 kW	208V Delta to 208Y/120, 60Hz	1,855	11
FLU-25T-22-0	25 kVA /20 kW	220Y/127 to 220Y/127, 60Hz	1,343	0
FLU-25T-22-1	25 kVA /20 kW	220Y/127 to 220Y/127, 60Hz	1,855	12
FLU-25T-22-2	25 kVA /20 kW	220Y/127 to 220Y/127, 60Hz	1,765	31
FLU-25T-22-0-I	25 kVA /20 kW	220V Delta to 220Y/127, 60Hz	1,343	0
FLU-25T-22-1-I	25 kVA /20 kW	220V Delta to 220Y/127, 60Hz	1,855	12
FLU-25T-42-0	25 kVA /20 kW	480Y/277 to 208Y/120, 60Hz	1,343	0
FLU-25T-42-1	25 kVA /20 kW	480Y/277 to 208Y/120, 60Hz	1,855	11
FLU-25T-42-0-I	25 kVA /20 kW	480V Delta to 208Y/120, 60Hz	1,343	0
FLU-25T-42-1-I	25 kVA /20 kW	480V Delta to 208Y/120, 60Hz	1,855	11
FLU-25T-44-0	25 kVA /20 kW	480Y/277 to 480Y/277, 60Hz	1,343	0
FLU-25T-44-1	25 kVA /20 kW	480Y/277 to 480Y/277, 60Hz	1,855	11
FLU-25T-44-0-I	25 kVA /20 kW	480V Delta to 480Y/277, 60Hz	1,343	0
FLU-25T-44-1-I	25 kVA /20 kW	480V Delta to 480Y/277, 60Hz	1,855	11
FLU-30T-20-0	30 kVA /24 kW	208Y/120 to 208Y/120, 60Hz	741	0
FLU-30T-20-1	30 kVA /24 kW	208Y/120 to 208Y/120, 60Hz	1,253	8
FLU-30T-20-2	30 kVA /24 kW	208Y/120 to 208Y/120, 60Hz	1,765	22
FLU-30T-20-0-I	30 kVA /24 kW	208V Delta to 208Y/120, 60Hz	1,343	0
FLU-30T-20-1-I	30 kVA /24 kW	208V Delta to 208Y/120, 60Hz	1,855	8
FLU-30T-22-0	30 kVA /24 kW	220Y/127 to 220Y/127, 60Hz	1,343	0
FLU-30T-22-1	30 kVA /24 kW	220Y/127 to 220Y/127, 60Hz	1,855	9
FLU-30T-22-2	30 kVA /24 kW	220Y/127 to 220Y/127, 60Hz	1,765	24
FLU-30T-22-0-I	30 kVA /24 kW	220V Delta to 220Y/127, 60Hz	1,343	0
FLU-30T-22-1-I	30 kVA /24 kW	220V Delta to 220Y/127, 60Hz	1,855	9
FLU-30T-42-0	30 kVA /24 kW	480Y/277 to 208Y/120, 60Hz	1,343	0
FLU-30T-42-1	30 kVA /24 kW	480Y/277 to 208Y/120, 60Hz	1,855	8
FLU-30T-42-0-I	30 kVA /24 kW	480V Delta to 208Y/120, 60Hz	1,321	0
FLU-30T-42-1-I	30 kVA /24 kW	480V Delta to 208Y/120, 60Hz	1,855	8
FLU-30T-44-0	30 kVA /24 kW	480Y/277 to 480Y/277, 60Hz	1,343	0
FLU-30T-44-1	30 kVA /24 kW	480Y/277 to 480Y/277, 60Hz	1,855	8
FLU-30T-44-0-I	30 kVA /24 kW	480V Delta to 480Y/277, 60Hz	1,343	0
FLU-30T-44-1-I	30 kVA /24 kW	480V Delta to 480Y/277, 60Hz	1,855	8
FLU-37T-20-0	37.5 kVA /30 Kw	208Y/120 to 208Y/120, 60Hz	741	0
FLU-37T-20-1	37.5 kVA /30 kW	208Y/120 to 208Y/120, 60Hz	1,253	5
FLU-37T-20-2	37.5 kVA /30 kW	208Y/120 to 208Y/120, 60Hz	1,765	15
FLU-37T-20-0-I	37.5 kVA /30 Kw	208V Delta to 208Y/120, 60Hz	1,321	0
FLU-37T-20-1-I	37.5 kVA /30 Kw	208V Delta to 208Y/120, 60Hz	1,855	5
FLU-37T-22-0	37.5 kVA /30 Kw	220Y/127 to 220Y/127, 60Hz	1,343	0
FLU-37T-22-1	37.5 kVA /30 kW	220Y/127 to 220Y/127, 60Hz	1,855	6
FLU-37T-22-2	37.5 kVA /30 kW	220Y/127 to 220Y/127, 60Hz	1,765	17
FLU-37T-22-0-I	37.5 kVA /30 Kw	220V Delta to 220Y/127, 60Hz	1,343	0
FLU-37T-22-1-I	37.5 kVA /30 Kw	220V Delta to 220Y/127, 60Hz	1,855	6
FLU-37T-42-0	37.5 kVA /30 Kw	480Y/277 to 208Y/120, 60Hz	1,343	0
FLU-37T-42-1	37.5 kVA /30 kW	480Y/277 to 208Y/120, 60Hz	1,855	5
FLU-37T-42-0-I	37.5 kVA /30 Kw	480V Delta to 208Y/120, 60Hz	1,343	0
FLU-37T-42-1-I	37.5 kVA /30 Kw	480V Delta to 208Y/120, 60Hz	1,855	5
FLU-37T-44-0	37.5 kVA /30 Kw	480Y/277 to 480Y/277, 60Hz	1,343	0
FLU-37T-44-1	37.5 kVA /30 kW	480Y/277 to 480Y/277, 60Hz	1,855	5
FLU-37T-44-0-I	37.5 kVA /30 Kw	480V Delta to 480Y/277, 60Hz	1,343	0
FLU-37T-44-1-I	37.5 kVA /30 Kw	480V Delta to 480Y/277, 60Hz	1,855	5

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.

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

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.

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



Your tailored power solutions provider™



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