# Liebert® TFX 150 – 300 kVA PDU

Efficient and reliable power distribution for your mission-critical applications

## Overview

The Liebert® TFX is a power distribution unit for small to mid-sized data centers, server rooms, network closets, and remote facilities. The Liebert TFX offers flexible power configuration for enterprises and colocation companies with specific distribution needs. With a compact footprint and easy mobility, it is ideally suited for edge data centers and facilities with limited space.

### Benefits

- Reliable uninterrupted power distribution to your IT infrastructure
- Customized configuration with up to 3x42P panelboards, and up to 5x600AF or 12x250AF subfeeds
- Available in 150 kVA, 200 kVA, 225 kVA, 250 kVA, and 300 kVA
- Compact, space-saving transformer with easy mobility and installation
- Modular unit design allows for onsite maintenance of monitoring components while the unit is live
- Power monitoring system allows you to manage equipment loads on local and remote facilities

## How It Works

The Liebert TFX provides reliable uninterrupted single or two-stage power distribution for small to mid-sized mission-critical environments. The unit transforms UPS voltage into standard voltage for distribution to IT infrastructure, and can handle energy levels between 150-300 kVA. Manufactured for high energy efficiency, the made-to-order PDU is shipped to you with a custom configuration of panelboards and subfeeds, created for your facility's specific power requirements. Additionally, you can supplement the transformer with Liebert® FLX expansion cabinets for additional power distribution.

## Solving Problems

Many companies face the problem of limited floor space in their data centers, especially in smaller remote facilities. The Liebert TFX features a compact front-facing transformer cabinet that can be installed next to walls, and in corners or alcoves, allowing you to maximize space for IT infrastructure. The Liebert TFX cabinet offers easy mobility, and with a 36-inch depth, can fit through doorways or into service elevators.

Also, the Liebert TFX features a modular design that helps to minimize downtime during maintenance. Isolated panelboards make it easy for service personnel to replace or troubleshoot low-voltage monitoring components without powering down the unit.

## Adding Value

Monitoring power usage in your critical environment is essential to ensuring the safety and continuity of your IT infrastructure. Easy access to accurate, real-time data on power status and load levels is crucial, whether the IT footprint is deployed in an on-site data center or a remote facility.

The Liebert TFX features intelligent power monitoring, with a 9-inch color touchscreen display that provides one-line system and individual breaker status and equipment load levels. A navigation menu makes it easy to program the system and manage equipment loads, and to import or export site specific configurations to or from other PDU units. The monitoring system offers voltage, current, power, and energy metering accurate to 1%.

Furthermore, the monitoring system integrates with your BMS to provide management of local and remote power distribution, with automatic notification of potential overloads and local or remote emergency power-off.

## Technical Specifications

### Electrical

| | |
|---|---|
| kVA Rating | 150kVA, 200kVA, 225kVA, 250kVA, 300kVA |
| Input | 3-phase, 3-wire plus ground |
| Input Voltage | @50Hz, 380V-415V<br>@60Hz, 480V |
| Output | 3-phase, 4-wire plus ground |
| Output Voltage | @50Hz: 380/230V, 415/240V<br>@60Hz: 415/240V, 208/120V |
| Agency listed to | UL-60950-1, UL-62368-1, FCC Part 15, and ANSI/IEEE C62.41 for Category B1 locations |

### Operating Conditions

| | |
|---|---|
| Operating Temperature | 0 to 40°C |
| Storage Temperature | -20 to 55°C |
| Audible Noise | Meets NEMA ST-20 standard |
| Relative Humidity | 0 to 90% non-condensing |
| Altitude | up to 6,600ft |

### Transformer

| | |
|---|---|
| Meets DOE2016 standard | |
| Transformer Ratings available in | K4, K13, K20 |
| Transformer Material Type | Copper (Cu) and Aluminum (Al) |
| Neutral conductor rating | 200% |
| Temp Rise options | 150°C (Standard), 115°C, 80°C |

Vertiv transformers have been designed and built by Vertiv in our world-class manufacturing factility for over 40 years

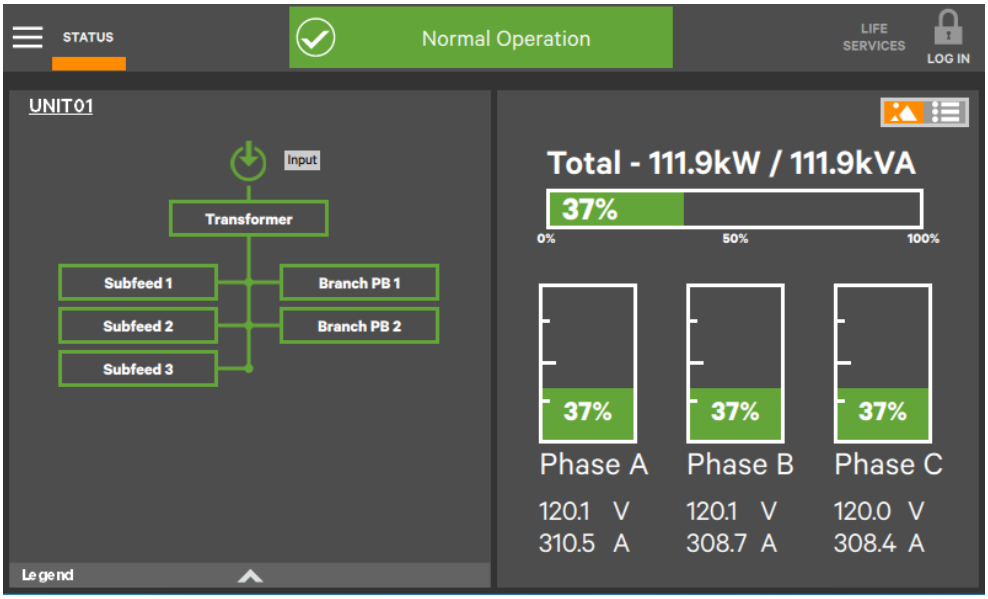
### Monitoring

| | |
|---|---|
| Monitoring Configurations | Monitoring at the System level (Input and Output) Monitoring down to the branch circuit level (BCMS) |
| Display | 9.0" Color touchscreen |
| Measured Values | Voltage, Current, Power Factor, Energy, Harmonics |
| Protocols | Modbus TCP, SNMP, BACnet IP or MSTP, Modbus/RTU, SMS, Email, HTTP/HTTPS and Vertiv Protocol |
| Environmental sensor enabled through same protocols | |

## Liebert® TFX PDU Distribution Power Monitoring

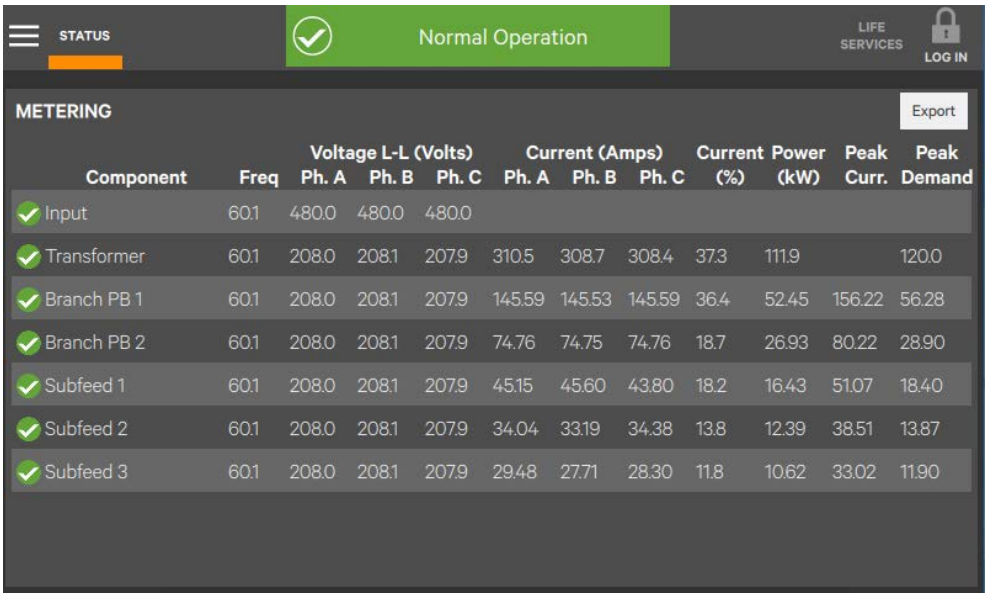
The Liebert® TFX PDU features an intelligent distribution power monitoring system, with a 9-inch color touchscreen display. Figure 1 (below) shows the "Status Page" visible on the display screen.

**Figure 1: DPM Observer Main Screen**




At left is a "single-line," an electrical diagram of the PDU unit, showing the input, the transformer, and the output distribution of branch panelboards and subfeed breakers. At right is the PDU's total output load, with individual power levels for each phase in a 3-phase distribution, including voltage and amperage for each phase.

**Figure 2: DPM Observer Metering Screen**




| Component | Freq | Voltage L-L (Volts) Ph. A | Ph. B | Ph. C | Current (Amps) Ph. A | Ph. B | Ph. C | Current (%) | Power (kW) | Peak Curr. | Peak Demand |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Input | 60.1 | 480.0 | 480.0 | 480.0 | | | | | | | |
| Transformer | 60.1 | 208.0 | 208.1 | 207.9 | 310.5 | 308.7 | 308.4 | 37.3 | 111.9 | | 120.0 |
| Branch PB 1 | 60.1 | 208.0 | 208.1 | 207.9 | 145.59 | 145.53 | 145.59 | 36.4 | 52.45 | 156.22 | 56.28 |
| Branch PB 2 | 60.1 | 208.0 | 208.1 | 207.9 | 74.76 | 74.75 | 74.76 | 18.7 | 26.93 | 80.22 | 28.90 |
| Subfeed 1 | 60.1 | 208.0 | 208.1 | 207.9 | 45.15 | 45.60 | 43.80 | 18.2 | 16.43 | 51.07 | 18.40 |
| Subfeed 2 | 60.1 | 208.0 | 208.1 | 207.9 | 34.04 | 33.19 | 34.38 | 13.8 | 12.39 | 38.51 | 13.87 |
| Subfeed 3 | 60.1 | 208.0 | 208.1 | 207.9 | 29.48 | 27.71 | 28.30 | 11.8 | 10.62 | 33.02 | 11.90 |

Figure 2 shows the Metering display screen, which gives a one-line status summary and equipment load levels for each component of the PDU unit, including the power input. Using the touchscreen display, you can tap on any of the components in the list, and receive more detailed power distribution information for that component.

**Figure 3: DPM Observer Event Log**

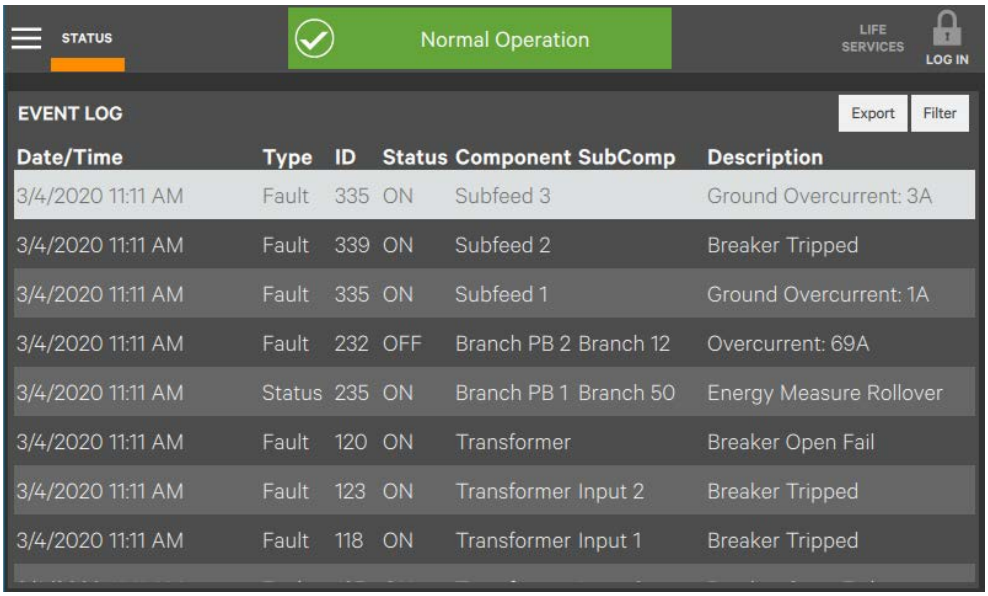



Figure 3 shows the Event Log, which gives one-line summaries of power events that have occurred in the unit, with the location, date, and time of those events.