**Features**

**High Integrity Power Supply System.**

High Integrity 19" rack mounting system with dual line redundancy. Integral fans ensures cool operating temperatures while providing a complete fault tolerant operation for Power Module or Line failures.

- Up to 36 Amps total or 30 Amps at 24 Vdc with full redundancy.
- Up to two (1550/LM) Line Monitoring Modules can accept independent supply lines for full redundancy.
- 19" rack for panel or surface mounting houses up to 2 Line Modules and 6 Power Modules.
- Each compact (1550/PM) Power Module is rated at 6 Amps at 24 Vdc.
- Plug-in flexibility to add Power Modules for n+1 to 5 redundancy.
- Alarm bus provides output contacts for up to 10 different integral alarm signals.
- Integral fan rack, with fault alarm, maintains a constant cooling efficiency.
- Power Modules self test for short circuits every 10 seconds.
- Automatic Power Module Load Sharing ensures that all modules operate at the same shared output load.
- Hot Swappable modules for live on-line replacement, provides a very low MTTR (Mean Time To Repair).
- No rear access required, all AC & DC wiring connections are made from the front.
- Short Circuit protection is ensured by internal current limiting.
- Overvoltage protection is ensured by automatic Power Module shutdown.
- Front Panel LED alarm status indication for all modules

**High Output With Full Redundancy**

- Maximum output of 36 Amps at 24 Vdc nominal per rack using six 1550/PM Power Modules.
- Fully redundant configuration provides 30 Amps at 24Vdc, with n+1 (1550/PM) Power Module and two (1550/LM) Line Module failure strategy.
- With a fully redundant strategy the system is tolerant to the loss of 1 Supply Line and 1 Line Module or one or more Power Modules.
- Load sharing across all Power Modules ensures that the load is supplied evenly on failure of a Power Module with automatic adjustment to the present load.
- Mixed AC/DC input capability permits battery back-up without the need for a UPS.
- Unlike current fold back designs the PS 1550 supplies full output (60 Amps total) in a short circuit, instantly clearing a faulty fuse to avoid voltage spikes affecting other units on the same supply bus.

**Self Monitoring**

- Under permanent (>10 sec.) overload, the output is automatically disconnected to prevent a cable fire. A short pulse transmitted every 10 seconds will restart the output automatically when the fault is removed, to avoid on-site manual restart procedures.

**Integral Alarm Monitoring**

- All critical functions are automatically monitored and indicated by LED's and relay outputs.
- Output integrity is maintained even in the event of loss of:
  - Supply line.
  - Line Module.
  - Power Module.
  - Cooling fan module.
- Alarm monitoring provides a contact output for:
  - Low voltage on supply lines.
  - Low voltage on output bus.
  - Power Module overload, with LED indication.
  - Power Module low output.
  - Power Module internal fault.
  - Power Module temperature limit protection, to prevent destructive failures.
  - Failure of one of the three integral fans, LED's indicate which fan has failed.
  - Two relay outputs are provided for users to set and/or alarm functions.

**Hot Swappable Plug-in Modules**

- Modular load sharing design including “Hot Swappable” modules with self detection and signalling of faults, minimizes servicing and maximises MTTR (Mean Time To Repair).
- Easy upgraded while on-line, by plugging in extra Power Modules.
Standard INPUT & OUTPUT Terminations

- Supplied plug-in terminations.

- **1550/TB-IN** AC input termination card, for dual independently isolated power inputs and alarm outputs.

- **1550/TB-OUT** output termination card with 16 pairs of 2.5mm², 4 Amp rated terminals.

Output Termination Options

- Additional plug-in output termination options to suit every application.

- **1550/TB-OUT 4/20** Optional output termination card, with 4 pairs of 6 mm², 20 Amp rated terminals.

- **1550/TB-OUT 60** Optional output termination card, provides 1 pair of 60 Amp rated terminals.

### Block Diagram

![Block Diagram Image]
Front View

Fan Top View sect. A-A

Cut Out (for front panel mounting)
**Input**

**Input line voltage (LINE 1 and/or LINE 2):**
- **AC:** 115 Vrms nominal ± 15% - (97.5 to 132 V) at 44 to 66 Hz
  
  230 Vrms nominal ± 15% - (195 to 264 V) at 44 or 66 Hz

- **DC:** 130 V nominal (110 to 180 V).

**Line 1 to Line 2 switching (with two Line Modules):**
Automatic, instantaneous in case of power down (semiconductor operated).

**Important:**
When using the PS-1550 with two independent supply lines they must be isolated from each other, (i.e. using a 1:1 isolating transformer) to prevent an interconnection of the lines outside the power supply, through the common connected neutral.

**Inrush current limiting:**
Peak inrush current limited at 150% of full load peak current for each Line Module (300% with two Line Modules).

**Steady state input current at full load (42 Amps out):**
- **AC:** 115 Vrms - 12 Amps average (36 Amps peak).
- **AC:** 230 Vrms - 6 Amps average (18 Amps peak).
- **DC:** 115 V - 11 Amps.

**Line voltage bus under-voltage detection:**
SPDT relay actuated below 70% of nominal input voltage.

**Power module input under-voltage lockout:**
at 65% of nominal input voltage.

**Internal fuses:**
Fast acting 6.3 x 32 mm (1/4” x 1 1/4) 500 V/1500 Amps breaking capacity.

**Ratings**
- **Line Module (1550/LM):**
  - AC: 115 V nominal 20 Amps (F1, F2) nominal 16 Amps (F3)
  - AC: 230 Vrms nominal 10 Amps (F1, F2) nominal 8 Amps (F3)

- **Power Module (1550/PM):**
  - AC: 115 V nominal 3.2 Amps
  - AC: 230 V nominal 1.6 Amps

**Fans supply fuses:** 500 mA (5x20 glass).

**Input Terminals:**
- 3 mains terminals per line 10 mm².

---

**Output**

**OUTPUT VOLTAGE:**
24 Vdc ±1% - Adjustable from 22.5 to 28 V on Power Module.

**Ripple:**
30 mVrms, 100 mV pk to pk.

**Temperature Coefficient of output voltage:**
± 0.02% per °C max.

**Line regulation:**
≤ 200 mV output change for a Vmin to Vmax line change.

**Load regulation:**
less than 500 mV output change for a Zero to max output load.

**Turn-on/Turn-off transient:**
Voltage ramps to final value in 250 ms max (No over/ undershoot).

**Under voltage alarm:**
at 22 V ± 0.5 Volts.

**Minimum hold-up time:**
70 ms at nominal input voltage and load current.

**OUTPUT CURRENT:**
6 Amps nominal per Power Module (36 Amps total).

**Overload alarm:**
8 Amps nominal per Power Module (48 Amps total).

**Short circuit limit:**
10 Amps nominal per Power Module (60 Amps max). Timed for 10 sec continual short before shutdown.

**Short reset/retry cycle:**
Cyclically the circuit provides short pulses at 10 Amps per module for supply auto reset. At first short removal (V out ≥ 22 V), the system automatically resets at the next retry cycle.

**Output terminals:**
- **1550/TB-OUT 32 output terminals with 16 pairs, 2.5 mm² (12 AWG) 4 Amps each.
- **1550/TB-OUT 4/20 four pairs of screw terminals 6 mm² (10 AWG) 20 Amps each.
- **1550 /TB-OUT 60 one pair output studs 60 Amps each.

**General**

**Isolation:**
- Output Versus Ground: 500 Vdc.
- Line Versus Ground: (Y capacitors removed) 2500 Vrms.
- Line Versus Output: (Y capacitors removed) 2500 Vrms.

**Storage temperature:**
-20 °C to +60 °C.

**Operating temperature:**
0 to +50 °C.

Conform to EU standard EN 61326.
Carries CE mark.
**PS1550 Ordering Information**

- **Output Power Termination Options**
  - 1550/TB-OUT 16 pairs screw terminals 2.5 mm² (12 AWG) 4 A each
  - 1550/TB-OUT 4/20 4 pairs screw terminals 6 mm² (10 AWG) 20 A each
  - 1550/TB-OUT 60 1 pair heavy duty stud 60 Amps each

- **Input Power Conditioning Module Options**
  - 1550/LM-115 (for 115±15% Vac/dc operation)
  - 1550/LM-230 (for 230±15% Vac operation)

- **Quantity Options**
  - 1550/PM-115 (24 Vdc 6A each) Qty. (1 to 6)
  - 1550/PM-230 (220-240 Vac operation) Qty. (2)

**Example Code:**
PS 1550 RFD / TB-OUT 60 / 2x1550 LM-115 / 5x1550 PM-115 / FP / 01

*24 Vdc 30 A Power supply system including fans, 60 Amp output studs, 2 only 1550/LM line modules 115 V, 5 only 1550/PM Power Modules (24 Vdc 6A each), standard 19” rack mounting, with no input blanking plates and 1 output blanking plate.*

**KFA6-STR-1.24.4**

**High Output Power Supply.**
- Total 4 Amp @ 24 Vdc.
- Universal 230 Vac/115 Vac supply.
- LED indication for output on (green) or flashing (red) for fault
- UL Approved.

*DIN-Rail mounting High current output power supply, for powering DIN rail modules and/or field devices.*

**KFA6-STR-1.24.500**

**DIN-Rail Power Supply.**
- Total 500 mA @ 24 Vdc.
- Universal 230 Vac/115 Vac supply.
- LED indication for output on (green).
- Removable terminals and Power Rail connection.

*DIN-Rail mounting power supply, for powering K-Series DIN rail modules and/or field devices.*