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.

- Fault tolerant.
- High integrity.
- Modular n + 1 redundancy.
- High Power.
- Self monitoring.

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

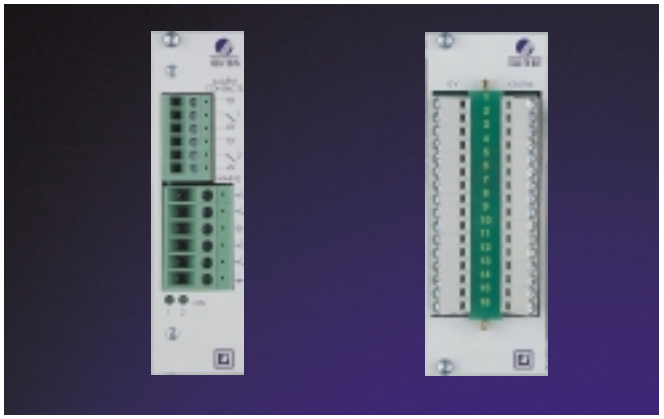
- All critical functions are automatically monitored and indicated by LED's and relay outputs.
- Output integrity is maintained even in the event of loss of:
  - Supply line.
  - Line Module.
  - Power Module.
  - Cooling fan module.
- Alarm monitoring provides a contact ouput for:
  - Low voltage on 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 1550/TB-OUT

- **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.

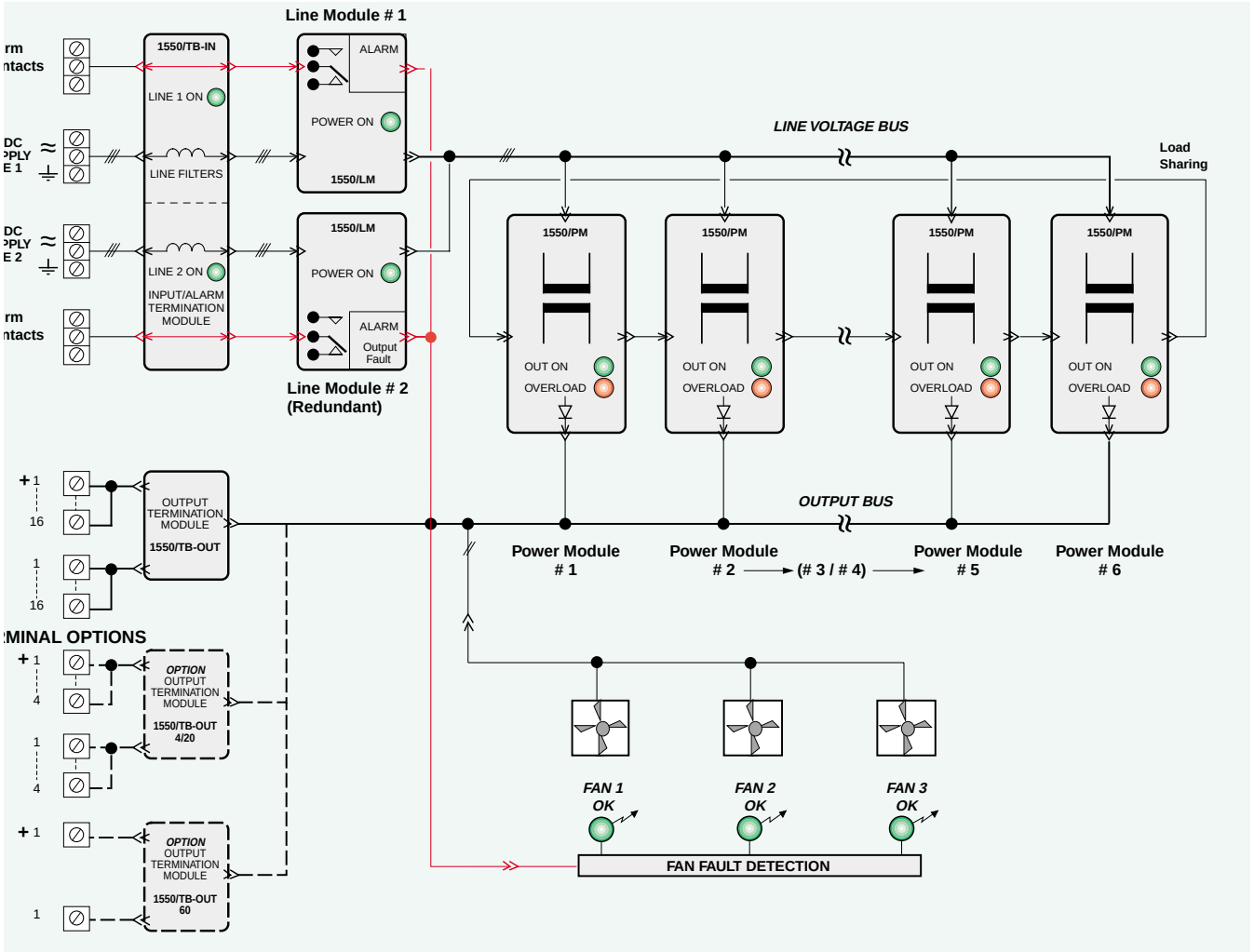
Output Termination Options

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

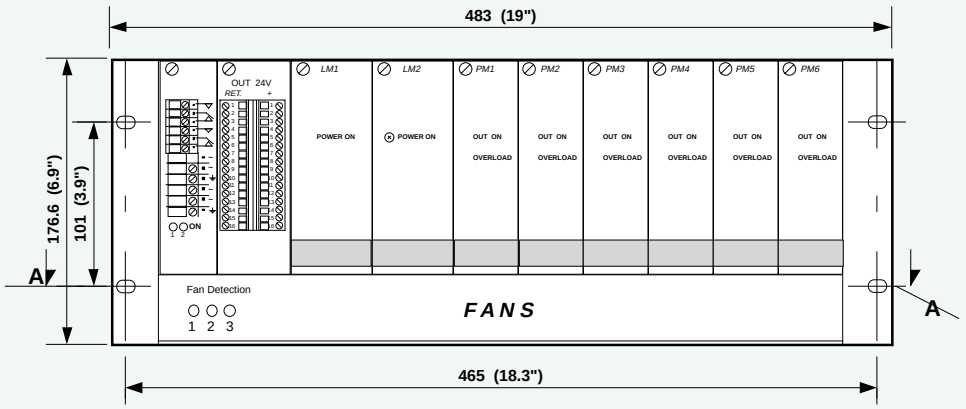
1550/TB-OUT 4/20 1550/TB-OUT 60

- **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.

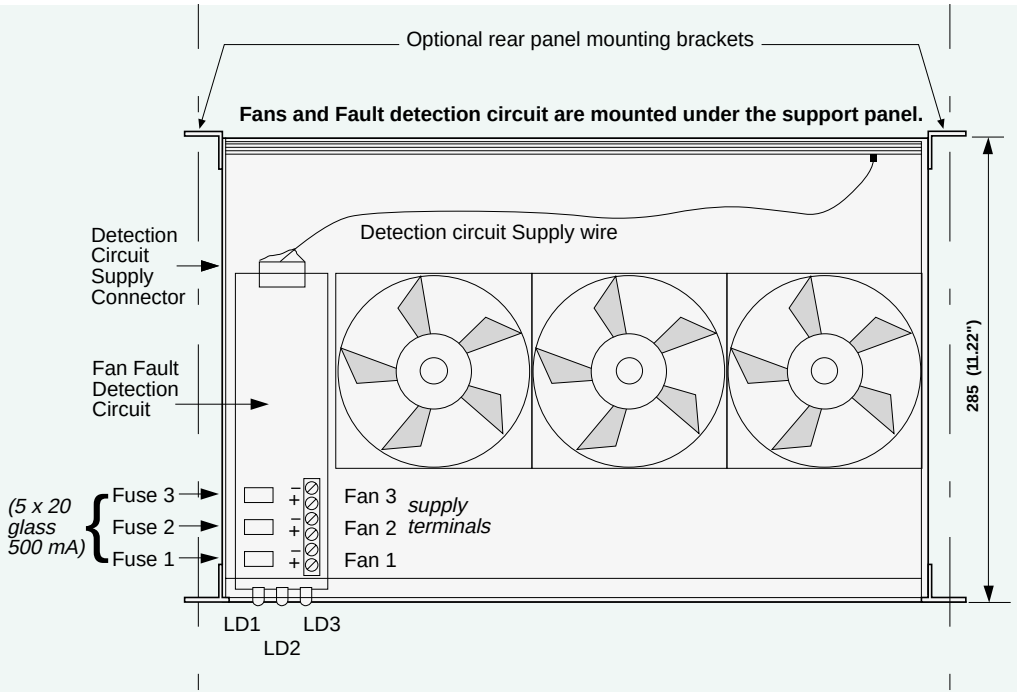
Block Diagram



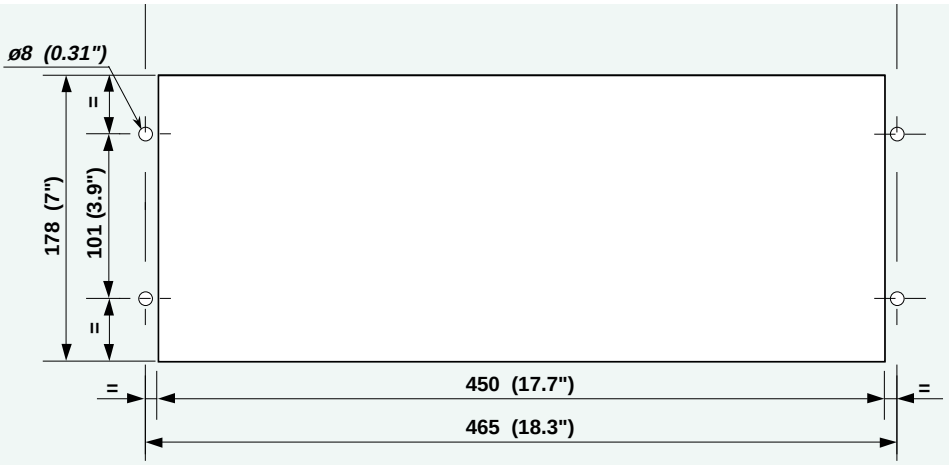
Front View



Fan Top View sect. A-A



Cut Out (for front panel mounting)



PS 1550 TECHNICAL SPECIFICATIONS

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).

Turn-on time: 250 ms nominal.

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 V 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 mm^2.

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 mm^2 (12 AWG) 4 Amps each.

Option:

- **1550/TB-OUT 4/20** four pairs of screw terminals 6 mm^2 (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

PS 1550/RFD / OUTPUT POWER TERMINATION / [ ] INPUT LINE MODULE / [ ] OUTPUT POWER MODULE / [ ] / [ ] [ ]

Blanking Plates:
Quantity for blank output modules
Quantity for blank input modules

RP Rear Mounting brackets
FP Standard 19" Rack mount

Output Module Options (24 Vdc, 6 A each)
1550/PM-115 (for 110-115 Vac/dc Operation
1550/PM-230 (for 220-240 Vac Operation)

Qty. (1 to 6)

Input power conditioning module options
1550/LM-115 (for 115±15% Vac/dc operat.)
1550/LM-230 (for 230±15% Vac operation)
If using two modules they must be the same.

Qty. (1 or 2)

24 Vdc Output Termination Options:
1550/TB-OUT
16 pairs screw terminals
2.5 mm^2 (12 AWG) 4 A each
1550/TB-OUT 4/20
4 pairs screw terminals
6 mm^2 (10 AWG) 20 A each
1550/TB-OUT 60
1 pair heavy duty stud 60 Amps each

19" Rack 4U high including supply input/alarm termination and fans

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.