

FE5A AC-DC Front End Data Sheet

Three-Phase Input, 5000 Watts



Features

- Three-phase Ac input
- High efficiency: 90% at full load
- 11.8 Watts/cubic inch power density
- Power factor corrected
- No minimum load required
- Single-wire current sharing
- Current limit and over-voltage protection
- Full power up to 50° C
- Compact size: 5" x 5" x 17"
- LED supply status indicators
- TUV, cTUVus & CB report

Model Number	Output Rating
FE5A-1D-0	12V/400A
FE5A-1E-0	15V/330A
FE5A-1F-0	24V/208A
FE5A-1G-0	28V/180A
FE5A-1H-0	36V/140A
FE5A-1J-0	48V/104A
Options O = M (Output power good – TTL high); N (Power fail – TTL high); R (Reverse airflow)	

Description

The ultra-compact FE5A Series Front-End Power Supply provides a single isolated output of up to 5000-Watts with inputs ranging from 365 Vac to 528 Vac, 3 phase, and can handle frequencies from 47 Hz to 63 Hz. Designed for high current applications requiring a compact size. The FE5A series operates either as a standalone unit or as part of rack-mounted power systems. The supply provides true front-end capability to automatic test equipment, telecom, data communications, and other distributed power designs.

Input Specifications

Input voltage range: 380 to 498 Vac, 480 Vac Nominal, Three Phase, 47 to 63 Hz.

Power Factor: >0.95 at full load and nominal line

Inrush Current: 40 A peak hot and cold start

Input Protection: 15A internal fuse per line is provided

Signals and Controls

LED Output Good Indicator: Front panel green LED indicates power supply is good; amber indicates fault.

LED AC Good Indicator: Front panel green LED indicates Ac input voltage is present and above minimum level.

Output Good Signal*: TTL compatible signal, normally high. Goes low when power supply is out of specified range.

Power Fail Signal*: TTL compatible signal, normally high (indicating Vin is present and above minimum level).

Enable*: Normally TTL High, drive low to enable.

*All interface signals are TTL compatible

Output Specifications

Output Power: 5000 W maximum

Output Voltage & Current Ratings: See chart shown above

Overshoot/Undershoot: Less than 1% at turn-on or turn-off. Less than 2% for 50% to 100% load step.

Start-Up Time: Less than 3 seconds

Efficiency: 90% typical measured at full load, nominal input

Hold-up Time: 20 ms minimum at full load and low line

Overcurrent Protection: Set to 105-130% of full rated load with automatic recovery

Overtemperature Protection: Automatic shutdown with auto recovery.

Remote Sense: Compensates for voltage drop of up to 0.5 V to the load. Shorted sense lead protection.

Overvoltage Protection: Set at 120%-130% of nominal; reset by cycling input power.

Output Noise and Ripple: PARD: 1% of output voltage measured at 20 Mhz bandwidth.

Single Wire Current Share: 5% full load rating

Load Regulation: 0.5% with remote sense, 2% without

Line Regulation: 0.2% over entire operating range

Minimum Load: No minimum load required

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Safety & Environmental

Temperature Range:

Operating: 0 to 50°C

Storage: -40°C to +85°C

Operating Humidity: Maximum 95% RH non-condensing

Operating Altitude: 10,000 feet

Non-operating Altitude: 40,000 feet

Temperature Coefficient: 0.01% per °C within rated load

Safety Agency Compliance: TUV, cTUVus & CB report

EMI: Meets EN55022, Class A

Harmonic Suppression: Meets EN6100-3-2

Input Transient Protection:

Electrostatic Discharge: EN61000-4-2, Criteria B

Radiated, Radio-Frequency, Electromagnetic Field:

EN61000-4-3, Criteria A

Electrical Fast Transients/Burst: EN61000-4-4, Criteria B

Voltage Fluctuations and Flickers: EN61000-3-3, Criteria B

Surge Test: EN61000-4-5, Criteria B

Conducted Immunity: EN61000-4-6, Criteria A

Safety & Environmental (continued)

Dielectric Withstand:

Input-to-ground: 2121 Vdc

Input-to-output: 4242 Vdc

Output-to-case: 50 Vdc

Ac Leakage Current: 2mA maximum at 480 Vac, 60 Hz

Mechanical Specifications

Size: 5" H x 5" W x 17" D

Input/Output Connector: Elcon Double Drawer male connector

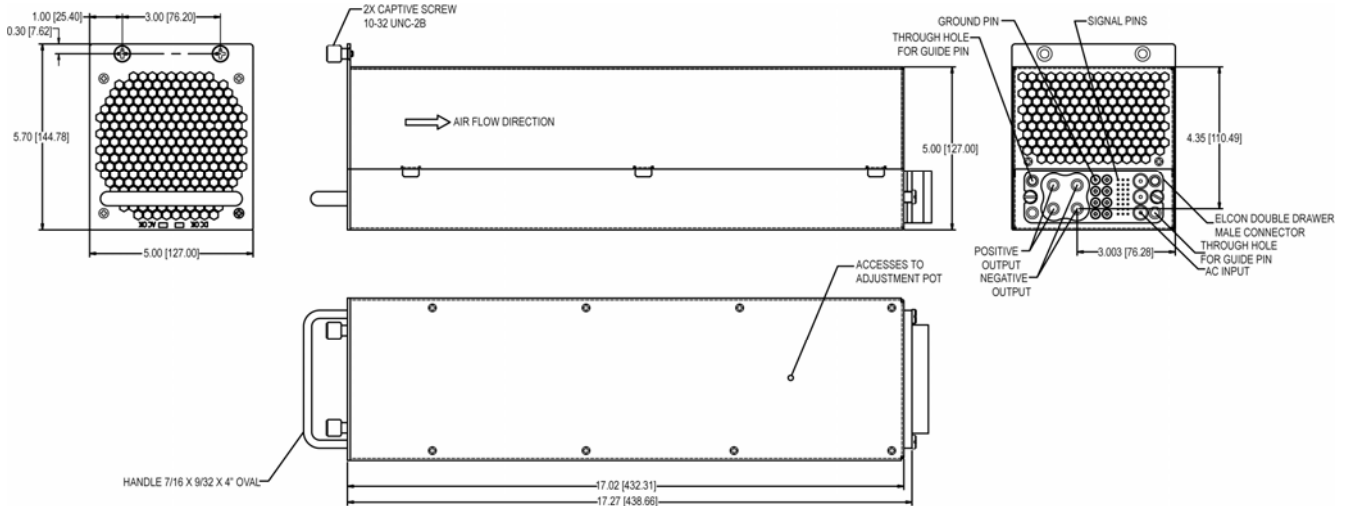
Mating Connector: Elcon Double Drawer female connector

MTBF: 100,000 hours calculated at 50°C, Bellcore Standard

Warranty: Two years from date of shipment, standard product only

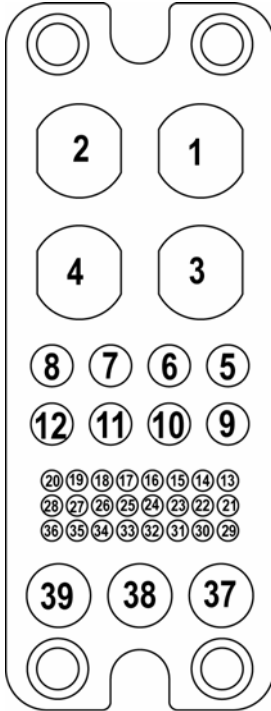
Specifications are subject to change without notice.

Outline Drawing and Dimensions





Connector Pin Descriptions



FRONT VIEW

Pin Number	Signal Name
1	Output (+)
2	Output (+)
3	Output (-)
4	Output (-)
9	Chassis Ground
17	I_Share_M
18	Remote Sense S+
19	DC_Enable (See Note 1)
20	PF_HI (See Note 2)
26	Remote Sense S-
27	Logic_Rtn
28	Pwr_OK (See Note 3)
37	Input Line A
38	Input Line B
39	Input Line C

Notes
1. To turn on output, short Dc-Enable pin # 19 to Logic_Rtn, Pin #27 and short pin 29 to pin 21
2. Ac Good: PF_Hi Pin #20 ref. to Logic_Rtn Pin #27
3. Output Good: Pwr_OK Hi Pin #28 ref. to Logic_Rtn Pin #27

NUCLEAR AND MEDICAL APPLICATIONS - Power-One products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of Power-One, Inc.

TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.