Power Coil 270 VDC

270 VDC Converter with Integrated Powered Cable Reel

Unit shown with side panel removed.

THE ADVANTAGES

The Power Coil is a compact light weight adaptable design allowing flexible installation options. It can be floor mounted, overhead mounted or mounted on a trailer or castors.

- NFPA 70 Article 500 Class 1 Div. 2 compliant with 18" Floor Stand
- Overhead mounting of the Power Coil eliminates occupation of valuable floor space required by traditional cabinet style power supplies and cable rack/reel installations.
- Trailer mounted units are compliant with SAE AS8090 Type 1 Class 2 requirements.

AN ALL-IN-ONE APPROACH FOR PROVIDING GROUND POWER

Traditionally, a ground power system consisted of several separate elements; the Power Supply, a Cable Storage Rack or Reel, Interconnection Cables and Aircraft Cable, all supplied by different manufacturers. These elements would then have to be integrated, installed, and tested on-site as a complete system.

The 270 VDC Power Coil provides a complete fully integrated and tested system which is ready to install as delivered.

SYSTEM DESIGN

The 270 VDC Power Coil is a solid-state Power Supply and electro-mechanical chain driven cable drum integrated into a single cabinet. The Power Coil's fully integrated design eliminates the need for expensive unreliable slip rings, providing better performance and requiring less maintenance than traditional cable reels. The system includes a 66 ft. (20 m) aircraft cable. The motorized cable drum extends and retracts the aircraft cable eliminating the physical burden usually associated with wrestling aircraft power cables. The frequency drive control provides smooth rpm ramping, less mechanical stress, scuffing, and damage to the aircraft cable.

ITW MILITARY GSE

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PERFORMANCE FEATURES

Proven design:

- Meets and Exceeds MIL-STD-704F, F-22A and F-35 requirements
- Output Voltage Regulation ±3 VDC
- Total harmonic content <0.015%
- 12 Pulse front end
- Soft Start feature eliminates in-rush current

Easy to Operate:

- Remote Control Station with Pushbutton Controls, On/Off, Cable In/Out
- Motorized Cable Drum eliminates "cable wrestling"
- Easy to read Digital Information Display
- Modular Design allows for ease of Maintenance
- BIT: Digital Diagnostics aid troubleshooting

NSF
Registered to AS9100 (with ISO 9001)

Model	Input Power	Output Power	Length	Width	Height	Weight
270 VDC Power Coil	400/480 VAC, 50/60 Hz, 110/94 amps	270 VDC, 72 kW	78.5" (1994 mm)	34.5" (875 mm)	28" (710 mm)	1,798 lbs (816 kg)
Trailer-Mounted	400/480 VAC, 50/60 Hz, 110/94 amps	270 VDC, 72 kW	95.25" (2420 mm)	34.5" (875 mm)	57" (1448 mm)	1,998 lbs (907 kg)
With 18" Floor Stand	400/480 VAC, 50/60 Hz, 110/94 amps	270 VDC, 72 kW	78.5" (1994 mm)	34.5" (875 mm)	46" (1168 mm)	1,998 lbs (907 kg)

Power Coil 270 VDC Unit Specifications

INPUT
- Rated current: 94 amps ±15% @ 480 VAC, 60 Hz

OUTPUT
- 270 VDC @ 269 Adc - 72 kW
- 28 VDC @ 10 Adc - Interlock
- Voltage regulation: ±3 VDC
- Transient performance exceeds MIL-STD-704F
- Recovery from 95% Step Load in 40 ms to 704F requirements and 80 ms to recover to DC regulation
- Meets F-35 JSF power quality requirements for Pulse Loads.
- Overload Rating:
  - Limits total current between 460 – 490 Adc for 2s
  - 125% for 6 seconds
  - 150% for 3 seconds
- Harmonic distortion less than 0.015

EFFICIENCY
- 12 pulse Front End
- Overall efficiency:
  >0,93 at 35-90 kVA load
  >0,90 at 25 kVA load
- No load loss: <2 kW

PROTECTION
- Over/under voltage: Input and Output
- Overload
- Short circuit
- High temperature
- Internal system error

ENVIRONMENTAL
- Operating temperature: -40˚C to +55˚C
- Relative humidity 0—95%
- Airborne Noise <65 dba @ 1m - typically 60 dba

MISCELLANEOUS
- MTBF (Proven): 100,000 hours
- MTTR: max. 20 minutes

CABLE/CONNECTOR
- Highly flexible cable harness for power transfer from Power Supply to Aircraft Cable
- 66' (20 m) 270 VDC aircraft cable

MOTORIZED CABLE DRUM SYSTEM
- Aluminum cable drum w/spiral cable race
- VFD Drum Motor Speed Control (reduces drum speed for final 12')
- Stainless steel cable roller guide
- Fully Extends and Retracts Cable in 1 min. 10 sec.
- Drum Motor Overload Protected

STANDARDS
- MIL-STD-704F Aircraft electric power characteristics
- MIL-STD-1399-300 Interface Standard for Shipboard Systems
- MIL-STD-1472F Human Engineering
- UFGS-26 35 43 Unified Guide Specification
- DFS 400 Specification for 400 Hz Aircraft Power
- BS 2G 219 General Requirements for Ground Support Equipment

SPECIFICATIONS
UL-1012 Standard for Safety, Power Supplies
UL-508 Industrial Control Equipment
NEMA ST20 1992 Transformer Applications
NEMA 250 Enclosures for Electrical Equipment
IEEE C62.41 Surge Suppression of AC Power
NFPA 70 Article 500

OPTIONS
- 270 VDC @ 30 Adc – 8.1 kW FTI
- External Emergency Stop
- Remote Control Box
- 6 pulse Front End
- 94 kW Output
- 18" Floor Stand
- Trailer per SAE AS8090
- Auxiliary Power Outlets, 60 Hz
- Door/Panel Interlock
- Loss of Neutral Detection
- Portable Service Lamp
- 415 VAC 50 Hz Input

Specifications subject to change without notice.

The Power Coil 270 VDC is compatible with these aircraft:

F-22A Raptor

N-UCAS; UAVs

JSF F-35

ITW MILITARY GSE
Headquarters & Factory: 11001 US Hwy. 41 North, Palmetto, FL 34221 U.S.A.
Phone: 941.721.1003; 941.721.1006 • Fax: 941.723.3582; 941.531.5876
E-mail: sales@itwmilitarygse.com • www.itwmilitarygse.com

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FROM DESIGN TO DEPLOYMENT