ITW GSE

2400 POWER COIL

90 kVA solid-state GPU and cable coil
– in one enclosure

PLUG & PLAY
UNIQUE VOLTAGE QUALITY

Aviation Ground Equipment Corp.
324 South Service Road, Unit 104 Melville, NY 11747
Tel (800)758-0044
Email: sales@aviationgroundequip.com

It's all about connections ITW GSE

THE AESTHETIC POWER SOLUTION

The ITW GSE 2400 Power Coil includes a 400 Hz, 90 kVA power supply and a cable coil in one single enclosure. This leaves the PBB and the apron nice, neat and pleasant to look at. Especially, where glass bridges is the preferred solution, the aesthetic aspect is important. The Power Coil works perfectly well with all sizes of bridges and all types of aircraft.

INNOVATIVE SOLUTION, BASED ON EXPERIENCE

The 2400 Power Coil offers a highly reliable and robust design including a front plate in stainless steel. The Power Coil has an improved cable guidance system that ensures easy and smooth cable handling. As a standard, the Power Coil comes with 24 m of cable (useable length). However, the spacious housing has room for at least 28 m cable. The cable is rolled completely into the housing after use. The rolling automatically stops when the plug head reaches the lower edge of the Power Coil thus leaving the apron free.

UNIQUE VOLTAGE QUALITY AT THE PLUG

With ITW GSE's patented Plug & Play compensation system, you obtain a unique voltage quality at the aircraft plug! The Plug & Play system is based on a true individual phase regulation combined with a predetermined model of the actual cable installation. Therefore, the voltage quality at the aircraft connector is simply the best you can get!

SUPPLY ALL AIRCRAFT INCL. PF1

The 2400 Power Coil is based on the ITW GSE design and provides all performance features from the well-known 2400 Compact GPU i.e. the unique voltage quality and the 400% overload at output as a standard. Further, it is equipped with the smart ITW GSE user interface. And software can be updated via USB. The Power Coil also includes standard overload capabilities that match all types of aircraft even those requiring Power Factor 1 like the B787/A350/A380.

INNOVATIVE DESIGN

The ITW GSE 2400 Power Coil consists of a 90 kVA solid-state converter and a cable drum in one enclosure. The completely encased unit is less susceptible to effects from exposure to the elements, such as sunlight and harsh weather. This minimizes the overall maintenance costs. And what's more, the 2400 Power Coil saves space and weighs up to 40% less compared to a traditional solution with a separate GPU and a separate coil. The frequency controlled direct driven coil with its robust cable guidance system, provides smooth coiling and less mechanical stress. All in all, the Power Coil is a very reliable power supply system, built to last. For power requirements above 90 kVA, two or more Power Coils are installed side by side.

QUICK INSTALLATION

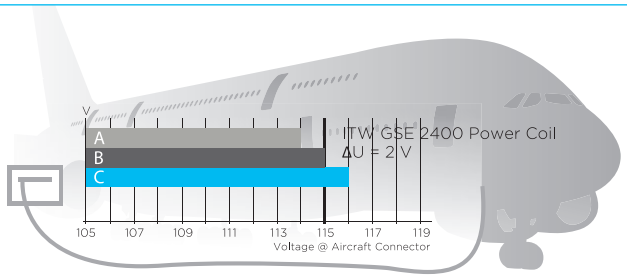
Traditionally, a 400 Hz ground power solution for passenger boarding bridges is made up of entirely separate systems or parts. These typically include a GPU, a cable handling system, interconnection cable and aircraft cable; components that are usually sourced from different suppliers and require separate on-site installation and testing.
The ITW GSE Power Coil combines all these parts in one state-of-the-art unit that comes fully tested and adjusted from the factory - ready to be placed under the PBB. Mount the unit under the bridge, connect the input cable and the power coil is ready for use. This is easy and helps you save time and money!

SUPPLY ALL AIRCRAFT INCL. PF1

The 2400 Power Coil is a true Power Factor 1 ground power unit. Its standard overload capabilities match all types of aircraft from the narrow-body to the wide-body incl. aircraft requiring Power Factor 1 like the B787/ A350/A380.

UNIQUE VOLTAGE QUALITY

The output voltage quality of the 2400 Power Coil is unique due to ITW GSE's patented Plug & Play system.
The Power Coil is even designed to fulfil the ISO 6858 standard that requires max. phase unbalance of less than 4 V and a phase angle of 120° ± 2.5°.



The ITW GSE 2400 Power Coil fulfils the ISO 6858 standard

THE ITW GSE OPERATOR INTERFACE

The ITW GSE operator interface is easy and intuitive. This is your guarantee for correct operation and on-time aircraft departures. The operator interface is common from one ITW GSE product to another. Therefore, airport staff familiar with one ITW GSE product can easily switch to another as the icons and display are the same.
The operator only has to press the combined start/stop button. Also, he can monitor various parameters such as voltage and current at the display screen. For easy set-up and maintenance purposes, there is a deeper level dedicated for the technician.

DOWNLOADS AND UPDATES

The software-based control system means your ITW GSE 2400 Power Coil can be updated and given additional capabilities in the future, simply by transferring new software from a USB stick/flash drive. Service log files and maintenance data can also be transferred the same way for analysis and to help ensure more efficient back-office procedures and more effective facility management.

SPECIFICATIONS

ITW GSE 2400 Power Coil

March 2018 v2: M10484

Specifications for GPU Output

- Power: 90 kVA PF 0,8-1
- Voltage: 3 x 115/200 V
- Frequency: 400 Hz ± 0,1 %
- Power factor: 0,7 lagging to 0,95 leading
- Voltage regulation: <0,5% for balanced and up to 30% unbalanced loads
- Voltage recovery: Δ<8% and rec. time <10 ms at 100% load change
- Total harmonic content: <2% at linear load (typ. 1,5%) <2% at non linear load according to ISO 1540
- Crest factor: 1,414 ± 3%
- Voltage modulation: <1,0%
- Phase angle symmetry: 120° ± 1° for balanced load 120° ± 2° for 30% unbalanced load

Protection

- Protection class: IP55
- No break power transfer
- Over/under voltage at output
- Overload
- Internal high temperature
- Control voltage error
- Short circuit at output
- GPU Enable
- 90% switch interlock
- Neutral voltage supervision
- Broken neutral supervision
- Leakage current supervision

Environmental

- Operating temperature: -40°C to +56°C (-40°F to 132°F) (+60°C (140°F) at Aircraft Load)
- Relative humidity: 10-100%
- Noise level: <65 dB(A)@1m

Efficiency

- Overall efficiency: 0,94 at 35-90 kVA load PF 0,8 0,90 at 25 kVA load PF 0,8
- Stand by losses: 65 W
- No load losses: 2,2 kW

Miscellaneous

- MTTR: max. 20 minutes
- Colour: RAL 7035 (standard)
- Weight: 700 kg (1,543 lbs.) incl. 24 m (79 ft) cable w.strain relief

Norms and Standards

• DFS400	Specification for 400 Hz aircraft power
• ISO 6858	Aircraft ground support electric supplies
• BS 2G 219	General requirements for ground support equipment
• MIL-STD-704F	Aircraft electric power characteristics
• SAE ARP 5015	Ground equipment 400 Hz ground power performance requirement
• EN2282	Aerospace series characteristics of aircraft electrical supplies
• EN62040-1-1	General & safety requirement
• EN61558-2-6	General & safety requirement
• EN61000-6-4	Electromagnetic compatibility Generic emission standard
• EN61000-6-2	Generic immunity standard
• EN1915-1&2	Machinery; general safety requirements
• EN12312-20	Machinery; general safety requirements
• UL 355	Cord Reels
• ETL	Listed to above UL standard (Only 480 V version)

Specifications for Coil Cable/ Connector

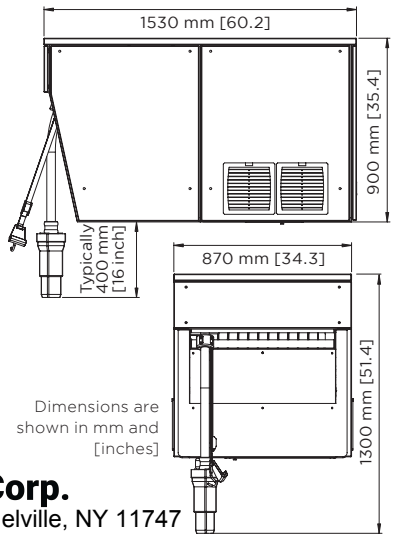
- Special twisted highly flexible cable harness for power transfer from fixed part to moving part
- 24 m (79 ft) flexible composite cable
- Aircraft connector with:
  - Start/stop push buttons
  - Cable IN/OUT push buttons
  - Replaceable pins & front
    - 90% Switch*
    - Indication lamps*

Electro Mechanical System

- Cable drum with spiral cable trace
- 1,1 kW gear motor
- VFD for gear motor
- Coiling speed 40 m/min

Protection

- Cable blocked
- Motor overload



Common specification for GPU & Coil Input

- Voltage range: 3 x 400 V ± 15%*
- Rated current: PF (load) 0,8 / PF 1 111 A ± 15% / 141 A ± 15%*
- Voltage range: 3 x 480 V ± 10%
- Rated current: PF (load) 0,8 / PF 1 97 A ± 15% / 123 A ± 15%
- Frequency: 50/60 Hz ± 5 Hz
- Rectification: Magnetic wave-shaping incl. 12-pulse rectification
- Line current distortion: <5%
- Power factor: 90 kVA: 1 @ nominal load
- Inrush current: None

Overload Ratings

- 125% for 600 seconds
- 150% for 60 seconds
- 200% for 30 seconds
- 300% for 10 seconds
- 400% for 1 second

Available standard options

- RS485
- 26 m* or 28 m (92 ft) flexible composite cable instead of standard cable
- Split F-pin/split F-contact (Americas only)
- Apron mounting stand*

*(Products sold outside Americas)

Specifications are subject to change without prior notice

Aviation Ground Equipment Corp.
324 South Service Road, Unit 104 Melville, NY 11747
Tel (800)758-0044
Email: sales@aviationgroundequip.com

It's all about connections

ITW GSE