

HOBART POWERMASTER® 2400

30-45-60 & 90 kVA solid-state GPU



PLUG & PLAY
UNIQUE VOLTAGE QUALITY

*HOBART is part of ITW GSE
- the world's leading supplier of Ground Support Equipment*

ITW GSE HOBART

It's all about connections





OPTIMAL POWER AT THE AIRCRAFT

At ITW GSE, we monitor the market and are at the forefront of new aircraft requirements and market developments. This has been an objective since we introduced our first 400 Hz unit to the market. And it still is! Therefore, the Hobart PoWerMaster® 2400 is designed to fulfil the next edition of the ISO 6858 norm regarding voltage unbalance and phase displacement at the aircraft connector.

SMALL, SIMPLE, RELIABLE AND ROBUST

The 2400 series is the market's best choice when it comes to solid-state, point-of-use units. It is small and simple, reliable and robust. It has all kinds of outstanding technical qualities from the unique output voltage, the smart ITW GSE user interface, software update via USB and the standard overload capabilities that matches all types of aircraft.

UNIQUE VOLTAGE QUALITY AT THE PLUG

Fixed installations often include a mix of long symmetrical and asymmetrical output cables as well as connection boxes that

make it difficult to keep the required voltage quality at the aircraft connector. This is exactly where ITW GSE's patented Plug & Play voltage compensation system makes a difference.

ON-TIME DEPARTURES

The Plug & Play system is based on a true individual phase regulation combined with a predetermined model of the actual cable installation. Therefore, the Hobart PoWerMaster® 2400 is designed to provide an outstanding voltage quality at the connector thus ensuring on-time departures and happy passengers!

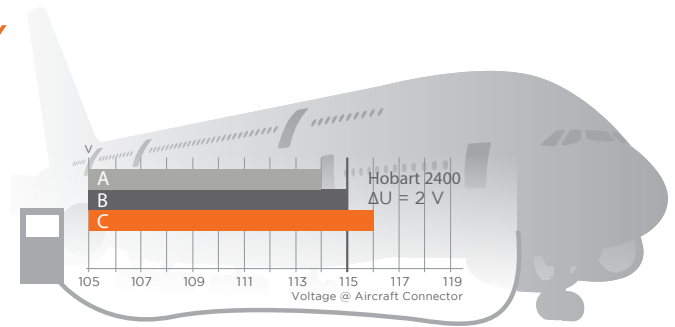
FURTHER BENEFITS OF THE Hobart 2400

- Supports 400% overloads
- 90 kW continuous power at an ambient temperature of 56°C
- Clean input power with a unity power factor and a current THD less than 5% due to the magnetic wave-shaping topology
- TCP / IP connection to BMS as standard

UNIQUE VOLTAGE QUALITY

The output voltage quality of the Hobart PoWerMaster® 2400 is unique due to the patented Plug & Play system. The Hobart PoWerMaster® 2400 is even designed to fulfil the coming ISO 6858 standard that requires max. phase unbalance of less than 4 V and a phase angle of $120^\circ \pm 2.5\%$.

The example to the right shows the voltage of the 3 phases at 35% unbalanced load @ PF 0.8 using a typical cable consisting of 210' of distribution wire and 80' of flexible banded cable.



The Hobart Powermaster® 2400 is designed to fulfil the coming ISO 6858 norm

SUPPLY ALL AIRCRAFT INCL. PF1

The Hobart PoWerMaster® 2400 is a true power factor 1 ground power unit that allows for 400% overload which means that it can be used for all types of aircraft from the narrow-body to the wide-body incl. B787/A350/A380.



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 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. 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.



MAXIMUM PERSONAL SAFETY

- Exposure to "live" parts is limited with the use of a protective panel behind the keyed front door.
- Monitoring of the 400 Hz neutral wire for breakage or excess leakage current
- Monitoring of the 400 Hz neutral voltage
- Detection of hazardous voltages at the aircraft frame by monitoring the E&F voltage
- Minimizing the chance of hazardous voltages in the control wires



EASY CABLE CONNECTION

Connection of rigid input and output cables is easy since there is plenty of space under the input and output devices at the bottom of the cabinet. Further, we have included a unistrut bar at the bottom for strain relief fittings. Access to the vital parts of the converter is extremely easy since those parts have all been positioned in the front of the unit.



DOWNLOADS AND UPDATES

The software-based control system means your Hobart PoWerMaster® 2400 can be updated and given additional capabilities in the future, simply by transferring new software from a USB stick. Power log and Black Box 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

Hobart PoWerMaster® 2400 – 30-45-60-90 kVA solid-state GPU

Input

MODEL	AMPS (0.8)	AMPS (1.0)	HERTZ	VOLTAGE
30SX240	38 A	48 A	45-65	400 ± 15%
	31.6 A	40 A	45-65	480 ± 10%
	25.3 A	32 A	45-65	600 ± 10%
45SX240	58 A	71 A	45-65	230 ± 15%
	48.3 A	59 A	45-65	480 ± 10%
	38.6 A	47.3 A	45-65	600 ± 10%
60SX240	75 A	93 A	45-65	400 ± 15%
	62.5 A	77.5 A	45-65	480 ± 10%
	50 A	62 A	45-65	600 ± 10%
90SX240	111 A	140 A	45-65	400 ± 15%
	92.5 A	117.5 A	45-65	480 ± 10%
	74 A	94 A	45-65	600 ± 10%

- Line current distortion:
 - 90 kVA < 5%, 60 kVA < 9%
 - 45 kVA < 10%, 30 kVA < 12%
- Power factor:
 - 90 kVA: 1 @ nominal load
 - 45-60 kVA: 0.99, 30 kVA: 0.97
- Inrush current: None

Output

- Rated Power: 30-45-60-90 kVA, PF 0.8-1
- Voltage: 3 x 115/200 V
- Frequency: 400 Hz ± 0.001%
- Power factor:
 - 0.7 lagging to 0.95 leading
- Voltage regulation:
 - < 0.5% for balanced load and up to 30% unbalanced load
- Voltage recovery: ΔU < 8% Recovery time < 10ms 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% unbal. load

Protection

- Protection class: IP55 (NEMA 4)
- 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

Weight

Fixed and PBB units: 683 lbs. (310 kg)
Standard Mobile units: 1,055 lbs. (479 kg)

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

Environmental

- Operating Temperature at:
 - PF 1.0: -40°C to +56°C (-40°F to +132°F)
 - PF 0.8: -40°C to +60°C (-40°F to +140°F)
 - PF 1.0 with ARU: -40°C to +45°C (-40°F to +113°F)
- Relative humidity 10 - 100%
- Noise level < 65 dB(A) @ 1m

Overload Ratings

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

Miscellaneous

- MTTR: max. 20 minutes
- Color: RAL 7035 (standard)

Dimensions

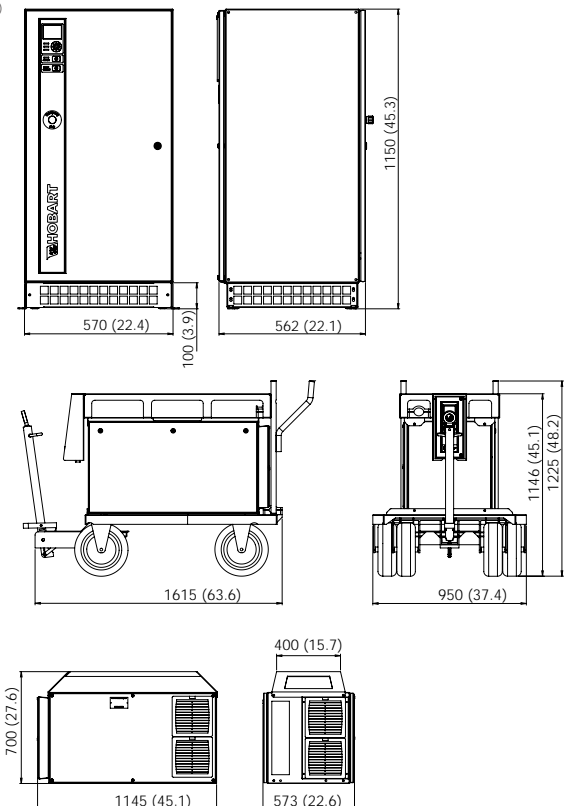
Please refer to the drawings or for further information: www.itwgse.com

Available Standard Options

- 28 VDC, 600 A output (ARU)
- 28 VDC, 400 A output
- See brochure page: "Power two aircraft with just one GPU"
- Additional 400 Hz output
- Additional base module
- Terminal extension for 2 pcs. of 7 core cable
- Remote control box
- Lockable door
- Door interlock
- RS485 interface
- Military interlock
- Neutral conductor rupture supervision
- Dry Contacts
- Service Software

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; specific safety requirements
- UL-1012 Standard for Power Units other than Class 2



Converter for under-bridge mounting
Dimensions are shown in mm and (inches).

Specifications subject to change without prior notice

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POWER TWO AIRCRAFT WITH JUST ONE GPU?

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Fax: +1-941-721-1087
Email: sales@itwgse.us
Web: www.itwgse.com/us



YES WITH THE ARU OPTION FOR THE Hobart PoWerMaster® 2400 GPU

Often, the same parking position accommodates a large mix of aircraft during a day. Typically, a parking position would require a 400 Hz source in the morning when the bigger aircraft are docking – but 28 V during other times of the day. If this is your requirement, the Hobart PoWerMaster® 2400 is the answer.

The Hobart PoWerMaster® 2400 is capable of delivering 400 Hz and regulated 28 VDC power, simultaneously and independently! The 28 V Active Rectifier Unit (ARU) - available as a standard option - delivers superior voltage quality at the aircraft plug without jeopardizing the 400 Hz voltage. It goes without saying that the Hobart PoWerMaster® 2400 will power your aircraft, whether a narrow body or a turbo prop, whenever you need it!

Output Specifications, 28 VDC ARU

- Voltage : 28 VDC
Max. output power for complete unit is limited to the nominal rating of the 400 Hz part of the unit
- Current : 600 A (400 A) continuously
- Voltage regulation : < 0.5%
- Voltage ripple : < 2%
- Voltage transient recovery complies with ISO 6858 / MIL-704F
- Overload capability: 600 A or (400 A option)
 - 1200 A (800 A) for 30 seconds
 - 1800 A (1200 A) for 10 seconds
 - 2100 A (1400 A) for 5 seconds
 - 2400 A (1600 A) for 2 seconds
 To protect the aircraft, the output voltage is decreased by 2 V per 600 A (400 A) in the overload range 600-2400 A (400-1600 A), *complies with ISO 6858*

Setup:

- Output voltage : 19-33 V
- Voltage compensation : 0-3 V (600/400 A)
- Current limit : 300-2400 A in steps of 300 A (200-1600 A in steps of 200 A)

Protection

- Rectifier temperature too high
- Short circuit at output
- Over and under voltage at output
 - U < 20 VDC for more than 4 seconds
 - U > 32 VDC for more than 4 seconds
 - U > 40 VDC for more than 150 ms

Weight :

- Fixed: 903 lbs (410 kg)
- Mobile - Extended Trailer with ARU or 208v/600v: 1,275 lbs (578 kg)

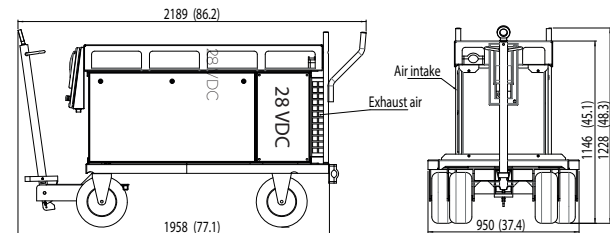
Environmental :

- Operating Temperature: Max. 45°C (113°F) (complete unit)

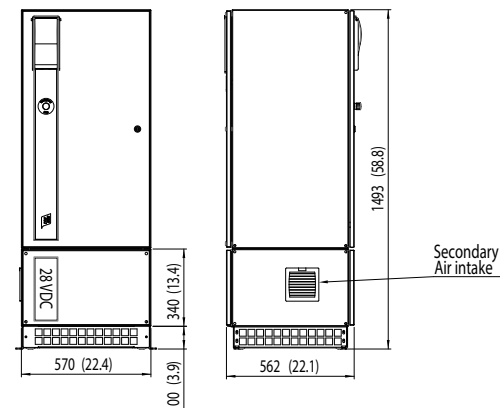
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Mobile Version



Fixed Version



Dimensions are shown in mm and (inches)

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