

# PoWerMaster® ADV

## ADVanced PWM Technology

### 45kVA to 180kVA Solid State Frequency Converters



## DESCRIPTION

The Hobart PoWerMaster® ADV horizontal mount, solid state frequency converter combines state-of-the-art technology and over 55 years of ground power experience to provide the highest quality power under the most demanding conditions. User friendly controls and a superior diagnostic system result in a converter that is easy to use and requires minimal training. With a wide array of output ratings available, optional 28.5 VDC output and a broad choice of input voltage configurations, this unit has the versatility to provide power to all aircraft from the smallest commuter airplanes to the largest wide-body jets. State-of-the-art design, ease of use, and power reliability are among the many reasons the PoWerMaster® ADV has set a new industry standard.

## OPTIONS

- Dual output (not with DC option)
- 28.5VDC output (45, 60, 90 kVA models only)
- 600V 50/60 Hz line input
- 208 or 240V 50/60 Hz lineinput (45 & 60 kVA models only)
- Bridge mounting kit
- Trailer
- 12 pulse input current harmonic kit
- Remote control module
- CE Kit

## FEATURES AND BENEFITS

- State-of-the-art ADVanced PWM switching technology
- Clean, reliable power
- NBPT compatibility
- Lightest weight in the industry
- User friendly controls
- Easy access for service
- Rust-free aluminum enclosure
- Built-in input power circuit breaker
- Memory stores 200 events for >30 years
- Measures power flow (kwh)
- High efficiency for low operating costs
- ETL (UL 1012) Certification, CSA
- CE compliant
- Advanced diagnostics
- RS232 Communication Port
- Built-in Line-Drop Compensation
- Simplified fault reporting & maintenance
- Protected against input micro-breaks

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### Specifications

#### Inputs

Model	Amperage	Hertz	Voltage
45SX200	55 @ 460VAC	45-65	340-530
	61 @ 400 VAC		
	120 @ 208 VAC		
60SX200	43 @ 600 VAC	45-65	340-530
	68 @ 460VAC		
	78 @ 400 VAC		
90SX200	151 @ 208 VAC	45-65	340-530
	53 @ 600 VAC		
	118 @ 400 VAC		
120SX20	78 @ 600 VAC	45-65	340-530
	134 @ 460VAC		
	156 @ 400 VAC		
140SX20	103 @ 600 VAC	45-65	340-530
	156 @ 460VAC		
	180 @ 400 VAC		
160SX20	120 @ 600 VAC	45-65	340-530
	179 @ 460VAC		
	205 @ 400 VAC		
180SX20	138 @ 600 VAC	45-65	340-530
	200 @ 460VAC		
	230 @ 400 VAC		

- Configuration: 3 wire with grounded service
- Starting Current: <100% full load
- Power Factor: >0.98 lagging from 10% to full load

#### Output

- Ratings: 45kVA (36kW continuous)  
60kVA (48kW continuous)  
90kVA (72kW continuous)  
120kVA (96kW continuous)  
140kVA (112kW continuous)  
160kVA (128kW continuous)  
180kVA (144kW continuous)
- 115/200 VAC, 3Ph, 400Hz
- Overloads: 125% – 10 minutes  
150% – 30 seconds  
200% – 10 seconds
- Short Circuit Protected
- NBPT: specifically designed to service present and future aircraft no-break power requirements

#### Protection

- Input: Phase loss  
Low/High Input Voltage
- Output: Over/Under Voltage  
Over/Under Frequency  
Overload: (see above)  
Short Circuit – Solid state shutdown of unit without damage to unit  
Each individual output protected at 90kVA

- Internal: Door interlock  
Cooling loss/Over temperature  
Bridge Interlock  
Contactor Failure –  
Contacts Stuck (Open/Closed)  
Coil Open  
Power Supply Voltage  
Transistor failure/overcurrent  
Lamp test

#### Environmental

- Accoustical Noise: <65dBA @ 1.5M high, 1M distance
- Operating Temperature: -40°C to +52°C (-40°F to +125°F)
- Non-Operating Temperature: -40°C to +60°C (-40°F to +140°F)

#### Voltage

- Voltage Regulation: < ±1% up to rated load
- THD (total harmonic distortion): < 3%
- IHD (individual harmonic content): < 2%
- DC Content: 100 mV maximum
- Phase Displacement: 120 ±1.5 degrees
- Transient Performance exceeds Mil-Std-704E
- Output Voltage Adjustment Range: ±15%
- Phase Voltage Balance (balanced load): < 2%
- Voltage Unbalance (10% unbalanced load on a single phase): < 3 volts
- Crest Factor: 1.414 ±0.07
- Line Drop Compensation: Automatic up to 8%

#### Maintenance

- No preventive maintenance required
- Mean time to repair (MTTR) = 20 minutes

#### Enclosure

- Aluminum NEMA 3R IP55
- Ventilation: Filtered forced air
- External circuit breaker handle with lock-out capability

#### Codes and Standards

- UL1012
- MIL-STD 704E
- ARP 5015
- DFS 400
- EMC (89/336/EEC)  
EN55011: 1991  
EN61000-4-3: 1996  
EN50204: 1995  
EN61000-4-6: 1996  
EN61000-4-4: 1995  
EN61000-4-2: 1995
- Low Voltage (73/23/EEC)
- MIL-STD-461B/462

#### Frequency

- Frequency Modulation: < ±0.25%
- Frequency Regulation: ±0.2 Hz (.05%)
- Frequency Drift: ±0.05% at any load

#### Controls/Indicators

- On/Off: each output
- Output Voltage: each phase (L-N) and avg.
- Output Current: each phase and avg.
- Input Power Lamp (green)
- Output Power Lamp: each output (amber)
- Fault Lamp (red)
- EF Interlock Status
- Circuit Breaker Handle: removes input power
- Door Interlock
- Line Drop Compensation Adjust
- Elapsed time hour meter

Control Panel



#### Weight (Converter only)

	Standard	12-Pulse Option
45-90SX200	1040 lbs. (472 kg)	1300 lbs. (590 kg)
120-160 SX200	1330 lbs. (603 kg)	1782 lbs. (808 kg)
180SX200	1450 lbs. (657 kg)	1900 lbs. (861 kg)

#### Dimensions

- Length: 60 inches (153 cm)
- Depth: 50.1 inches (127 cm)
- Height: (45-160 kVA) 18 inches (46 cm)  
(180 kVA) 23.2 inches (59 cm)
- Trailer mounted (45-160 kVA):  
85" x 52" x 51" (towbar in up position)

Specifications subject to change without notice.

PoWerMaster® is a registered trademark of Hobart Brothers Company

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