

Power Supply

SCR Solid State Technology

Power Range: 50kW – 1,250kW

Frequency Range: 200Hz – 3,000Hz

The MK8 is a voltage source inverter with a parallel tuned output. This power supply is designed as an economic and reliable solution for applications up to 1,250 kW. The parallel tuned circuit keeps the high currents away from the inverter thyristors (SCR), resulting in lower power loss and higher efficiency.

Operation is a combination of rectifier voltage control at lower power levels and inverter swept frequency at higher power levels. This provides consistent starting and excellent fault protection, along with constant output power over the entire melting cycle. Accurate and reliable control is achieved in extreme ambient conditions without the need for additional cooling.

Safety features include current leakage detector with meter to monitor the flow of electrical current to ground, preventing operation in the event molten metal has penetrated the refractory near the coil.

System Features Include:

- **Compact, Economical, Easy Access Package** incorporates a design with front access for convenient and logical maintenance
- **Most Efficient Coupling Method Utilized** to give the best matching capabilities over a wider range of operating conditions without the need of transformer tap or capacitor switching
- **High Efficiency** allows use of maximum inlet water temperature of 115° F.
- **Full Range Power Adjustment** from a single operator control.
- **Water Cooled Capacitors** with pressure sensitive safety switches
- **Shock Mounting** of all major electronic components for low noise and vibration
- **Space Available** for furnace selector switches
- **Positive Electronic Trip** with high speed fuses for positive back-up
- **OSHA Required Lockable Doors** and circuit breaker
- **Safety Interlock Door Switches** trip breaker if any door is opened
- **Water pressure Switches** on cabinet water inlet and each furnace water valve to prevent power from being applied if the water is off
- **Water Temperature Switches** on cabinet water inlet and each individual return for water over temperature protection
- **Fault Memory Circuits** for positive indication of all trip sources
- **Isolated Circuit Board Enclosure** with easy access
- **Diagnostic Monitor** pinpoints circuit malfunctions
- **All Wiring is Heavy Duty Industrial Quality**
- **Cabinet Lifting Eyes** are provided for easy installation
- **Oil-tight Lights** and push buttons

MK8

Features & Specifications



200 kW / 3,000 Hz (Size 1)



450 kW / 1,000 Hz (Size 2)



750 kW / 200 Hz (Size 5)

Power Supply

Operator Interface:

- Output Power (KW) Meter
- Output Voltage Meter
- Operating Frequency Meter
- Ground Leakage Meter
- Diagnostic Monitor:
 - Inverter on, control voltage limit, frequency limit, ramp limit, turn off time limit, voltage trip, current trip, ground trip
- Operator Controls:
 - High frequency power on, high frequency power off/reset, power control potentiometer, earth ground and leakage detector test button, oil-tight lights and push buttons



Furnace Selector Switches

The knife blade switches are standard options in MK8 to allow alternate selection of furnaces. The cast aluminum handles are located in front of the power supply to permit easy access.



HMI Control Panel (Optional)

The optional HMI Control Panel replaces the standard analog metering and is ethernet enabled to facilitate factory communication.

Optional Features:

- Internal Pressurized Closed Loop Cooling System
- Modular Furnace Selector Switches complete with safety interlocks, cast aluminum handles, furnace water valves and pressure switches
- Remote Operator Panel
- Demand and Control Interface integrated with the HMI and melt monitor package.
- Temperature Control Interface to enable connection of remote temperature controller for automatic power control
- Side Power Output

kW \ Hz	Cabinet Size				Utility Requirements		Input Voltage*
	200	600	1,000	3,000	kVA	Line Amps (Nominal line voltage of 480V)	50/60 Hz 3 Phase
100	–	1	1	1	116	140	480
150	–	1	1	1	174	210	480
200	4	1	1	1	232	280	480
250	4	1	1	2	290	420	480
300	4	1	1	2	348	560	480
400	5	2	2	3	464	630	480
500	5	3	3	6	580	722	480
600	5	3	3	6	696	800	480
750	5	3	3	–	870	1,046	480
1,000	7	6	6	–	1,160	1,395	480
1,250	7	6	6	–	1,450	1,745	575

*Line voltage options 208, 230, 277, 380, 415, 480, 575

Cabinet Specifications

Cabinet Size	Height	Width	Depth	Weight
Size 1	85" (2,160 mm)	71" (1,803 mm)	36" (915 mm)	1,620 / 2,750 lb (735 / 1,247 kg)
Size 2	85" (2,160 mm)	92" (2,337 mm)	36" (915 mm)	2,840 lb (1,288 kg)
Size 3	85" (2,160 mm)	114" (2,896 mm)	36" (915 mm)	3,750 lb (1,701 kg)
Size 4	85" (2,160 mm)	93" (2,362 mm)	48" (1,220 mm)	3,250 lb (1,474 kg)
Size 5	85" (2,160 mm)	146" (3,708 mm)	48" (1,220 mm)	3,550 lb (1,610 kg)
Size 6	85" (2,160 mm)	147" (3,708 mm)	42" (1,067 mm)	3,550 lb (1,610 kg)
Size 7	85" (2,160 mm)	150" (3,810 mm)	50" (1,270 mm)	3,750 lb (1,701 kg)

Specifications subject to change without notice.

- Process fixturing, tooling and turnkey systems available
- Preventative maintenance and extended warranty programs available

USA Headquarters

21905 Gateway Road
Brookfield, WI 53045
Phone: +1 262-317-5300
Fax: 262-317-5353

CANADA

333 Station Street
Ajax, Ontario
Canada L1S 1S3
(905) 683-4980
(905) 683-6550 (FAX)

CHINA

Building A-1, No.59 Yuan Di Road
Nanhui Industrial Zone
Shanghai, China 201399
(86) 21-68009546
(86) 21-68009542 (FAX)

ENGLAND

2 Dorset Road,
Sattley Business Park
Sattley, Birmingham B8 1 BG
(44) 121 322 8000
(44) 121 322 8080 (FAX)

GERMANY

Ersheimer Str. 87
69434 Hirschhorn, Germany
(49) 62 72 92 17 500
(49) 62 72 92 17 587 (FAX)

JAPAN

1-6-35 Shinsuna
N-Building, 7th Floor
Koto-Ku, Tokyo, 136-0075 Japan
(81) 33647 7661
(81) 33647 7662 (FAX)

KOREA, Seoul

Room #201, Dae-Ryuk Bldg, 103-9
Guro-Dong, Guro-Ku, Seoul Korea
(82) 2 837 2290
(82) 2 837 2292 (FAX)

MEXICO

Avenue Manantiales No. 11
Esq. Acueducto
Parque Industrial Bernardo Quintana
El Marquez, Queretaro
C P 76246 Mexico
(52) 442 221 5415
(52) 442 221 5090 (FAX)

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