



Medium Voltage Power Converter System

- Rated up to 7,200 VAC
- Control loads up to 22MW
- Hybrid (SCR/Contactor) Power Control
- Control loads from 0 – 100% with proprietary Chromalox control algorithm
- Patented Automatic Element Dry-Out Functionality

Description

The DirectConnect™ medium voltage power converter system (MVPC) provides a safe, efficient, and cost-effective solution for controlling power to DirectConnect™ heating bundles.

Coupled with Chromalox's patented MV heating technology, the MVPC greatly reduces the number of circuits, installation and maintenance costs, as well as the footprint required to heat an application compared to a low voltage (< 1,000V) system.

The DirectConnect™ medium voltage power converter system controls all Chromalox DirectConnect™ MV heaters including bundles, circulation heaters, steam generators, and hot water generators.

Benefits

Automatic Element Dry-Out dries elements when excess moisture is detected via variable SCR firing modes and patented logic; drastically reducing process downtime and maintenance costs.

In-house Design and Build from the only third party certified manufacturer of medium voltage converter systems and metal-sheathed heaters. The MVPC has been independently tested and approved by the foremost medium voltage test lab in the world.

All-In-One Control provides power and heating system control in one system. One system reduces installation cost and system complexity while ensuring power and heating control are in sync.

Reduced Footprint compared to a low voltage system, the MVPC controls the same heat load in a smaller package. Utilizing a reduced number of circuits and smaller cables results in instant installation cost savings.

Proven Industry Leading Voltage Capabilities for resistance heating applications. The use of higher voltages results in an increase in system power efficiency through the reduction of I²R losses leading to operational cost savings.

Low Noise Power Transmission via overvoltage and overcurrent protection ensure reliable power transmission from a system with a Total Harmonic Distortion of less than 5%.



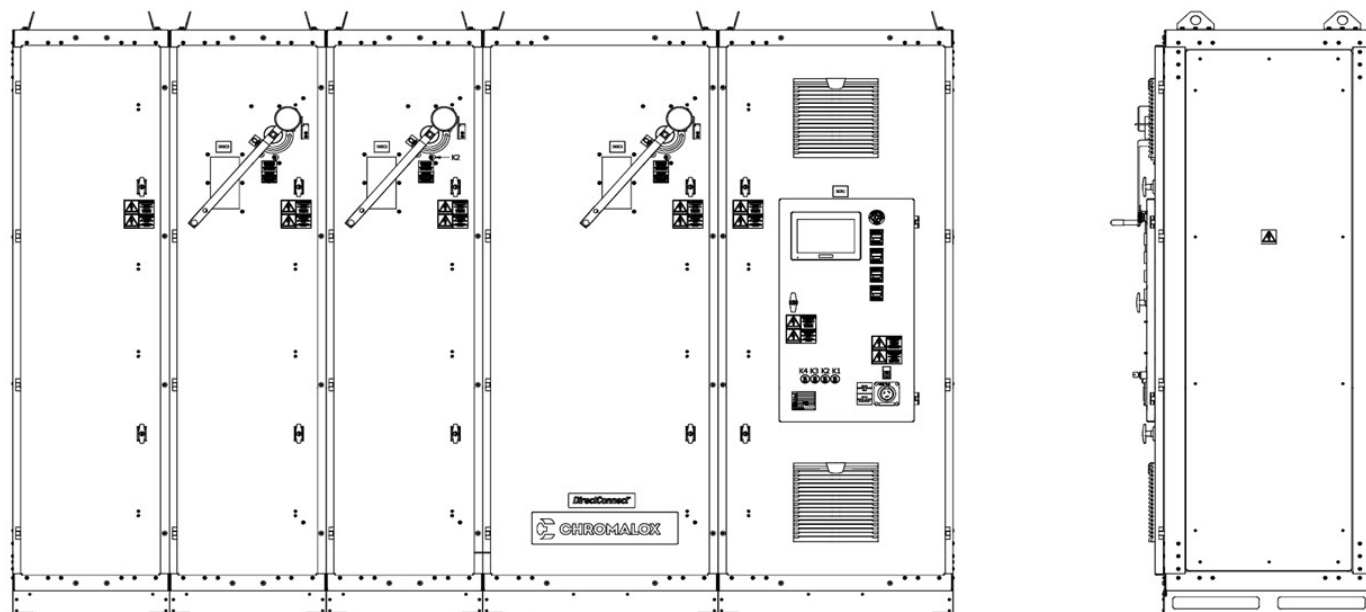
Specifications

Electrical	Standard Feature	Optional
Nominal (Rated) Voltage, 50/60Hz	4.16 kV (4.76 kV)	1.00 - 6.90 kV ¹ (up to 7.20 kV)
	6.60 kV (7.20 kV)	
Nominal (Rated) Capacity	960A (1,000A)	1,920A (2,000A)
Short Circuit Current Rating (SCCR)	50.0kA	
Basic Impulse Level (BIL)	40.0 kV	
Power Control Options	Hybrid (1 SCR + Contactor(s))	
Control Circuit Power	120V (internally derived)	120V, 230/240V (externally derived)
Main Bus	Tin plated copper with direct on line supply power termination	
Cable Entry/Exit Options	Bottom	Top
Safety/Protection	Kirk Key Interlock per circuit, Disconnecter per circuit, Surge Arrestors, Type E Branch Fuses, Isolated Low Voltage Control compartment	

¹ Supply voltage tolerance cannot exceed 7.2 kV

General	Standard Feature
Ingress Rating	Non-arc resistant, indoor: NEMA 2 / IP42
Enclosure Finish	Powder Coated Carbon Steel, RAL 7035
Central Control Unit	Pro-face™ HMI with Allen-Bradley® CompactLogix™ Controller
Control Input/Output	Remote Shutdown, Remote Start/Stop , Remote Enable, Common Alarm, Ready Status, Run Status, Over Temperature Retransmit
Process Input Options	Temperature (Sensor) From Boiler Control Panel: Heat Demand Signal (4 - 20mA, 0 – 100%)
Monitoring	Ground Fault, Circuit Output Current, SCR Output Voltage, Over Temperature (up to 8 sensors)
Communications	Modbus TCP
Ambient Temperature	32 °F (0 °C) min., 104 °F (40 °C) max.
Certifications	IEC/EN 62477-2, 2011/65/EU (RoHS 3), 2014/30/EU (EMC)

NEMA 2 (IP42) Enclosure Dimensions (3 Circuit System Shown)



Standard Size Specifications

4,160V, 50/60Hz, Hybrid Power Control

Circuits	Max. Power (kW)	Dimensions and Weights (approximate) in (mm) and lbs (kg)*			
		Height	Width	Depth	Weight
1	1,150	94 (2400)	94 (2400)	33 (829)	3055 (1385)
2	2,300	94 (2400)	118 (3000)	33 (829)	3885 (1762)
3	4,600	94 (2400)	142 (3600)	33 (829)	4715 (2139)
4	6,900	94 (2400)	165 (4200)	33 (829)	5545 (2515)

6,600V, 50/60Hz, Hybrid Power Control

Circuits	Max. Power (kW)	Dimensions and Weights (approximate) in (mm) and lbs (kg)*			
		Height	Width	Depth	Weight
1	1,820	94 (2400)	94 (2400)	33 (829)	3055 (1385)
2	3,650	94 (2400)	118 (3000)	33 (829)	3885 (1762)
3	7,300	94 (2400)	142 (3600)	33 (829)	4715 (2139)
4	10,960	94 (2400)	165 (4200)	33 (829)	5545 (2515)