OPAL MV APPLICATIONS

Industrial

- Pumps
- Compressors and Chillers
- Fans, Blowers, Centrifuges
- Conveyors, elevators, and Monorail systems
- Tachometer driven systems
- Starting from weak power supply (diesel generators, long supply lines etc)

Marine, Offshore, Oil & Gas

- LNG & LPG pumps (mainly in multi-start application)
- Water & ballast pumps
- Refrigeration chillers & compressors
- Hydraulic pumps & power packs
- Thrusters
- Main propulsion motors
- Unique protection for corrosive environments
- Generator ready - auto frequency tracking, sustains variations of 45-65Hz while starting

Application Specific Software

Starting From Diesel Generator

Wide 45-66 Hz auto-tracking frequency to overcome voltage and frequency instability. Designed especially for marine and off-shore industries, or any system operating from a generator.

Synchronous Motor Starting

Optional module allows you to utilize your existing synchronous motor.

Pump and Special Load Control

Eliminate Water Hammer During Stopping: The pump control feature enables selection between three voltage ramp-down curves or a torque curve, preventing a stall condition which eliminates water hammer.

Eliminate Over Pressure During Starting: The pump control also enables selection between three voltage ramp-up curves, as well as a torque curve, to reduce peak torque. Current ramp is available for special loads.

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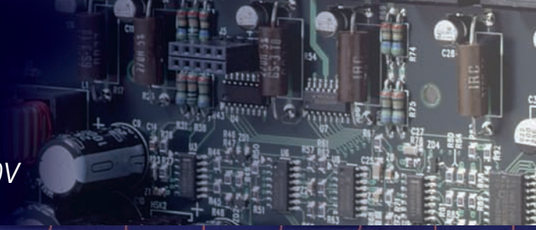
(Replies given within 24 hours)

OPAL MV

Medium Voltage Digital Soft Starter 60-2200A, 1500-15000V



SAF OPAL Starters

OPAL MV

Medium Voltage Digital Soft Starter 60-2200A, 1500-15000V

"For Every New Beginning You Need A Good Start."

FOR EVERY NEW BEGINNING YOU NEED A GOOD START.

This third generation, micro-processor controlled through fiber optic links, Medium Voltage soft starter is designed for use with standard asynchronous and synchronous motors. The OPAL-MV is a highly sophisticated digital soft starter which ensures smooth, stepless acceleration and deceleration, eliminating current and mechanical shocks on motor and load. The OPAL-MV may be supplied as a chassis or enclosed type with a multiple range of options.

ADVANTAGES AT GLANCE

Rugged Design - Rated at 50°C ambient temperature
Reduce Inrush Current - And mechanical shock
Advanced Control - Based on third generation microprocessor circuitry
Soft, Stepless Acceleration & Deceleration
Flexible - Multiple starting & stopping modes
Complete motor protection package
User-Friendly - Easy setting and operation
Safe Low Voltage / No Voltage Test Modes - Full testing with a small L.V motor using standard built in features and "dry" cabinet automation test
Reliable - Each starter is tested for Partial Discharge (Korona) according to EN50178/625.1

UNIQUE FEATURES

Wireless Electronic Potential Transformer (EPT) - The advanced electronic potential transformer utilizes the patent pending "wireless" voltage measurement system reducing space and installation costs.

Fiber-Optic Firing System - Fiber-optic firing system provides complete isolation between MV and LV compartments.

Direct Power Factor Capacitor Connection - Power factor capacitors can be connected directly to the upstream contactor, omitting the need for an additional contactor.

Multi-Motor Starting - Multi-Motor program allows for more than one motor to be used with the same soft starter.

Multi-Voltage Starters - Dual-Voltage connection permits more than one voltage level to be used with the same soft starter.

Fault Indication - Unique fault indication to the individual thyristor level

Communications - RS485 Communication with MODBUS, PROFIBUS or MODBUS/TCP protocols (others - upon request)

Auto-Tracking Frequency Range - Wide 45-65Hz Auto-tracking frequency range combining special software with unique hardware arrangement.

MOTOR & STARTER PROTECTION

- Too many starts & start inhibit time
- Stall protection
- Electronic overload with selectable curves
- Adjustable electronic shear-pin
- Independent Motor/Start overcurrent protection
- Undercurrent
- Unbalanced current
- Ground fault current
- Phase loss
- Phase sequence and under/over frequency
- Undervoltage
- Overvoltage
- External faults (2 separate inputs)
- Shorted SCR
- Starter over temperature
- Power on without start signal
- Open Bypass contactor
- Load loss

SWITCHGEAR FEATURES

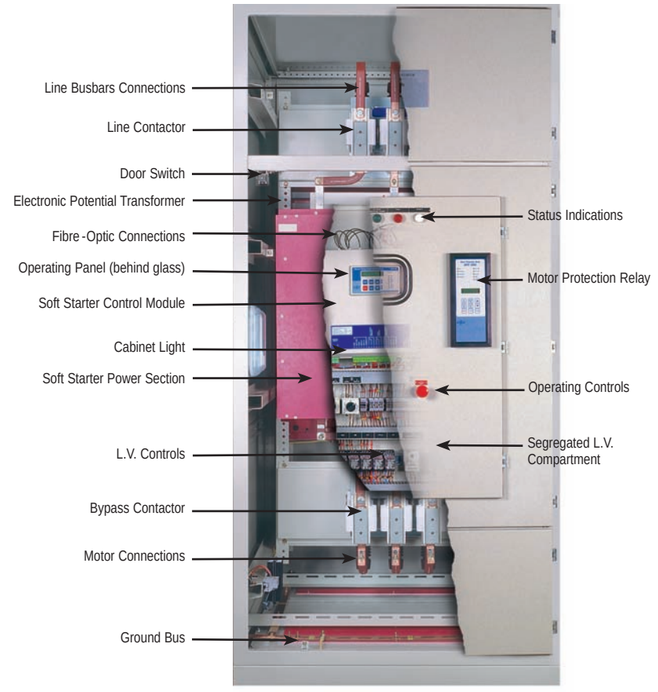
- Line Vacuum Contactor
- Bypass Vacuum Contactor
- Control Voltage: 110-220VAC, 110VDC
- MCT (Multi Cable Transit)
- Tin/Paint plated busbars (horizontal / vertical)
- Main Switch (On-load or Off-load)
- Main Fuses (with/without striker-pin indication)
- Metal Clad design

ADDITIONAL OPTIONS

- Motor Protection Relay (MPR 6, 2000 or 3000)
- C/T's and P/T's
- Digital Power Meter (DPM-10)
- L.V. Control devices (selector switch, push buttons, indication lights, etc.)
- NEMA 1-4X types are available

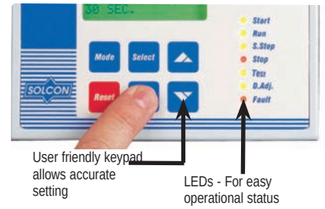
REQUEST A QUOTE

RUGGED DESIGN



INTERACTIVE LCD DISPLAY

- Select: English, French, German & Spanish



STARTING & STOPPING

- Soft start and soft stop
- Current limit
- Pump Control characteristics
- Torque and Current Control for optimized Starting & Stopping
- Dual Adjust - 2 start/stop characteristics for varying loads and two speed motors
- Kick start

CONTROL CIRCUITRY

- Multi-function programmable I/Os
- Opto-isolated control inputs
- Three Changeover output relays:
  - "Immediate" - upon Start
  - "Up-To-Speed"
  - "Fault" programmable as Trip or Trip-Fail safe
- Analogue output 4-20mA, 0-10VDC

MODEL RATINGS & DIMENSIONS

STARTER TYPE AMPERE	SYSTEM VOLTAGE	MOTOR RATING	NEMA 1-12 ENCLD DIMENSIONS (inches)			
		HP	WIDTH	HEIGHT	DEPTH	WEIGHT
OPAL-MV 60-1000	2300	270-4500 HP	36-44"	91"	40-44"	1100-1800kg
	4160	500-8000 HP	36-44"	91"	40-44"	1430-1800kg
	6600	750-13000 HP	44-60"	91"	44-48"	1500-1800kg
	7200-15000	* CONSULT FACTORY FOR ADDITIONAL RATINGS				