

FlexTrol™ – Medium Voltage Motor Control

Class E2 Medium Voltage Motor Control by Powell Electrical Systems, Inc.

DESIGN CONCEPT

Powell's FlexTrol Class E2 motor control design concept is a metal-enclosed vertical structure utilizing a vacuum contactor in combination with medium voltage power fuses and isolation switch assembly installed in a Powell fabricated medium voltage enclosure assembly.

The contactor, isolation switch mechanism and secondary stab assemblies are purchased from Eaton and installed in the Powell enclosure along with appropriate wiring for instrument transformers, meters and relays to produce a finished product that meets all applicable industry standards.

DESIGN STANDARDS

The standard design is a NEMA (Type 1) indoor enclosure which typically consists of a non-load break isolation switch, medium voltage current limiting fuses and a 400 amp or 800 amp vacuum contactor, plus control and protection devices as specified.

The cubicle design consists of one-high or two-high vertical sections constructed of 14 gauge sheet steel with a bolted main enclosure assembly. Each motor controller consists of medium voltage and low voltage compartments which are totally isolated from each other with an interior barrier between the two compartments.

INDUSTRY STANDARDS

Powell's FlexTrol product is constructed as Metal-Enclosed and conforms to the requirements of NEMA ICS 3 and UL 347. Certified test reports are available upon request.

RATINGS

UL labeling in allowable configurations. CSA rating is available with an on-site or field inspection process.



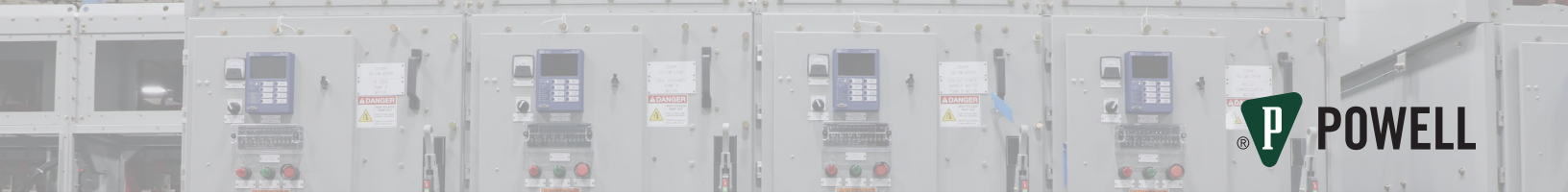
400A and 800A Vacuum Contactors

Front and Rear Accessible Design

Available in FVNR, FVR, FVC, RVAT and SSRV Design Configurations

**Available Voltage Ratings:
2300V, 4160V and 7200V**

Indoor NEMA-1 and NEMA-3R Construction



CONFIGURATIONS

Two-High 400 amp design:
In this configuration, there are two 400A contactors with one located in the top and another in the bottom of the medium voltage controller. An instrument (low voltage) compartment is provided on each medium voltage compartment door.

The standard enclosure dimensions are 36" wide x 107" Tall x 36" deep. One-high 400A enclosures are available as an option.

One-High 800 amp design:
In this configuration, there is one 800A contactor located at the bottom and an instrument compartment (low voltage) at the top of the medium voltage controller.

The standard enclosure dimensions are 36"W x 107"H x 36"D.

COMMON ACCESSORIES

BriteSpot™ – Thermal monitoring of multiple points inside the MVMCC bus system.

IR View Window – IR view windows are available. The Powell preferred method for thermal monitoring is BriteSpot.

Ground Studs – Provide temporary grounding of the conductors.

SERVICE CONDITIONS

The standard design for MVMCC is based on the usual service conditions as described below:

- The temperature of the ambient air surrounding the MVMCC enclosure is within the limits of 0°C and +40°C and its average value measured over a period of 24 hours does not exceed 35°C.
- The altitude of the installation does not exceed 1000 m (3300 ft.).
- The effect of solar radiation is not significant.
- The ambient air is not significantly polluted.
- The average value of relative humidity does not exceed 95% non-condensing.

The performance of the MVMCC is affected whenever the above usual service conditions are not met.

Refer to latest edition of UL Standard 347 for guidance on the unusual service conditions.

Unless noted, the MVMCC will be designed for a standard power system frequency of 60 Hz. 50 Hz frequency is available as an option.

Available Ratings and Configurations for MV MCC FlexTrol

Ratings				Configuration		Dimensions		
Maximum Voltage (kV)	Maximum Short-Circuit Current (kA)	Main Bus Continuous Current Rating (amperes)	Contactor Continuous Current Withstand Rating (amperes)	Bottom Compartment	Top Compartment	Width	Height	Depth
7.2	50*	1200/2000/3000	360	Contactor	Blank	36	107	36
				Contactor	Instrument	36	107	36
				Contactor	Contactor	36	107	36
			720	Contactor	Instrument	36	107	36

* Note: Modifications can be made to close couple with 63kA switchgear.

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