INSTRUCTIONS

FOR

MANUAL VOLTAGE CONTROL MVC 104, MVC 108, AND MVC 232

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INTRODUCTION

The Manual Voltage Control (MVC 104, MVC 108, or MVC 232) allows the output voltage of a generator to be controlled manually or automatically and provides a means for system voltage shutdown. The Manual Voltage Control (MVC) is designed for use with Basler Electric automatic voltage regulators in brushless exciter applications.

MVC components are housed in a rugged metal case that may be door- or panel-mounted.

SPECIFICATIONS

MVC electrical and physical specifications are listed in the following paragraphs.

Input Power (Single-Phase)

Nominal Input Voltage *

MVC 104:	120 Vac, 50 to 400 Hz
MVC 108:	240 Vac, 50 to 400 Hz
MVC 232:	60 Vac, 50 to 400 Hz

* When the generator voltage does not match the nominal input values listed, an isolation transformer must be used. See Figure 5 for the isolation transformer connections.

Maximum Burden

MVC 104:	840 VA
MVC 108:	1,680 VA
MVC 232:	1,200 VA

Output Power (Maximum Continuous)

MVC 104:	110 Vdc, 7 Adc
MVC 108:	220 Vdc, 7 Adc
MVC 232:	55 Vdc, 20 Adc

Physical Specifications

Operating Temperature: –40 to 50°C (–40 to 122°F)

Weight

MVC 104:	29 lb (13.2 kg)
MVC 108 and 232:	36 lb (16.3 kg)

Agency Recognition

MVC 104 and MVC 108 certified per CSA Standard CAN/CSA-C22.2, No. 14.

MVC COMPONENTS

Manual Voltage Control components include a three-position switch, a variable autotransformer, a full-wave rectifier bridge, and fuses.

OPERATION

NOTE

The MVC autotransformer must be set at zero (fully counterclockwise position) before placing the three-position switch in the Manual position.

When the three-position switch is placed in the Manual position, the automatic voltage regulator is removed from the line and the generator voltage is controlled by the MVC. The variable autotransformer and rectifier bridge of the MVC supply a user-selected level of dc power to the exciter field. The dc output of the MVC is determined by the position of the auto-transformer, the exciter and generator parameters, and load conditions.

When the three-position switch is placed in the Auto position, the generator voltage is controlled by the automatic voltage regulator.

Complete system shutdown occurs when the three-position switch is placed in the Off position.

With the three-position switch in either the Off or Manual position, all automatic voltage regulator terminals are rendered “maintenance safe” and the regulator may be removed from the system.

OVERLOAD PROTECTION

Overload protection in Manual and Auto modes is provided by two fuses. These fuses provide overload protection for both the MVC and the voltage regulator.

MOUNTING

The MVC legend plate can be removed for front panel mounting.

Panel drilling dimensions are illustrated in Figure 1.

Outline dimensions for the MVC 104, MVC 108, and MVC 232 are shown in Figure 2.

CONNECTIONS

Typical MVC connections are illustrated in Figures 3 and 4.

When the generator voltage does not match the nominal input values listed in Table 1, an isolation transformer must be used. Figure 5 illustrates the isolation transformer connections.

Table 2 lists the recommended wire sizes for MVC connections.

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Table 2. Recommended Wire Sizes

Terminal	Recommended Wire Size
L1, L2, L3, E1, E2, E3, 1, and 2	14 AWG
F1, F2, F+, F–, 3, 4, 23, and 24	12 AWG

MVC terminal and fuse locations are illustrated in Figure 6.

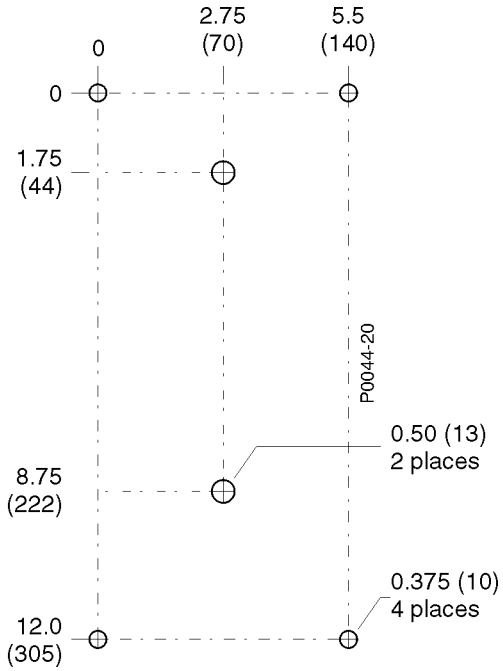


Figure 1. Panel Drilling Dimensions

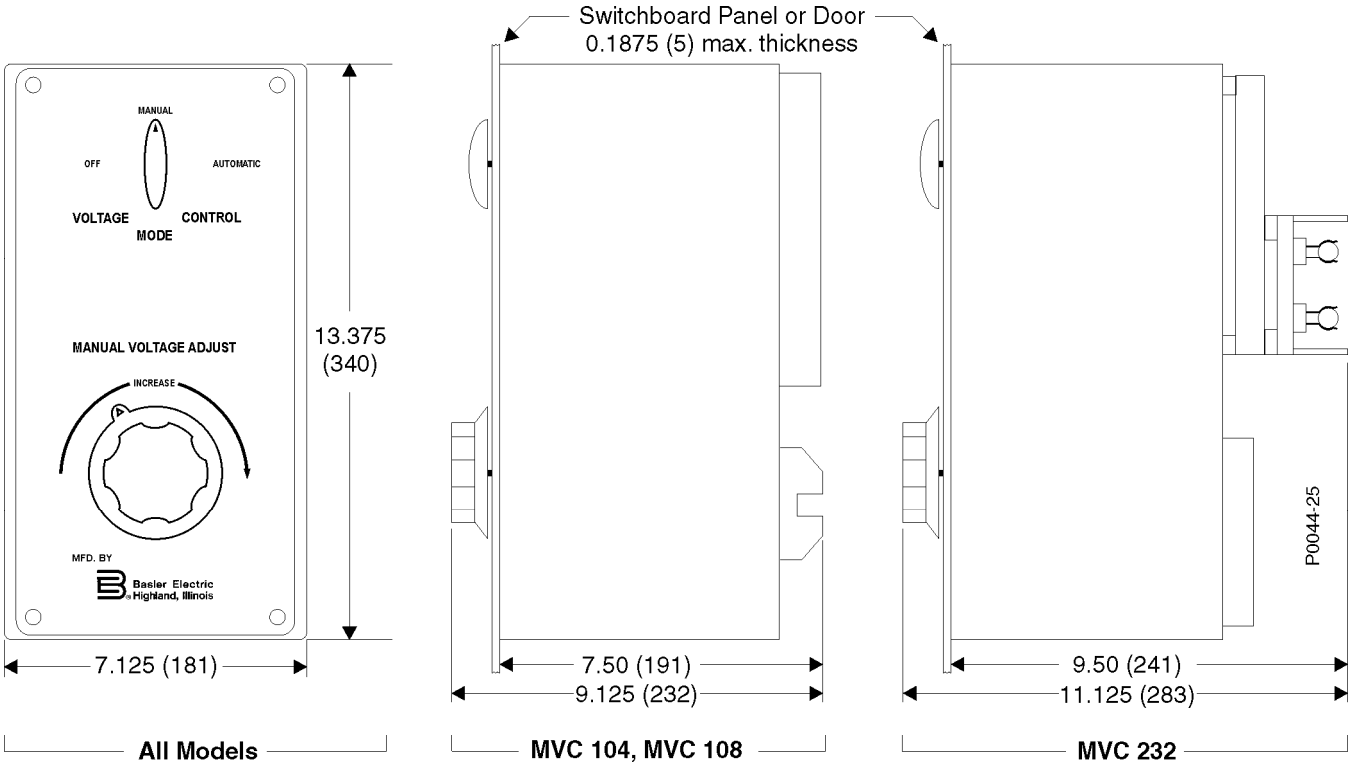


Figure 2. Outline Dimensions

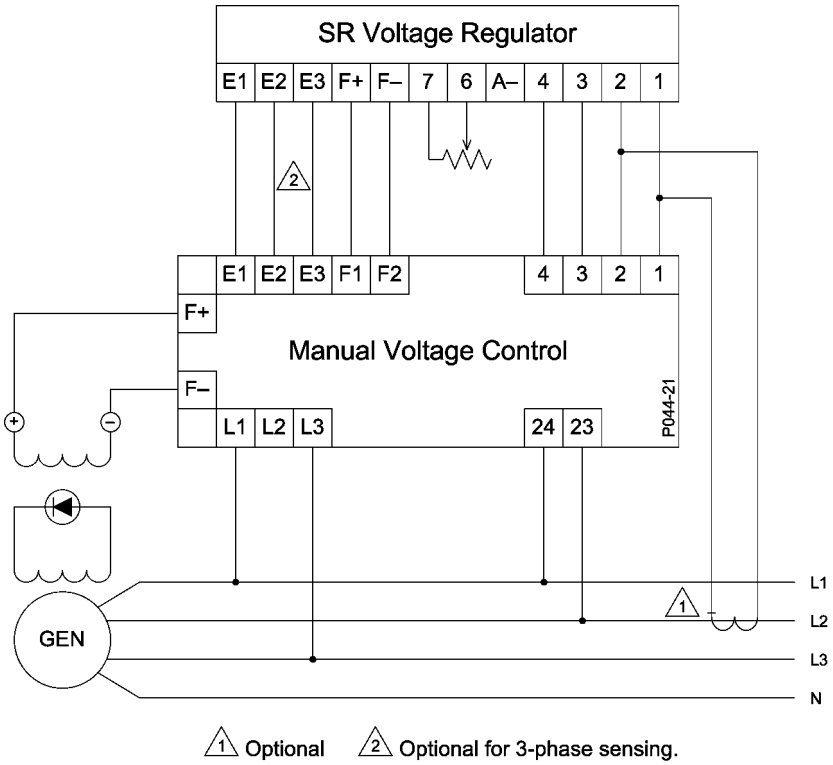


Figure 3. Typical Connections, SR Voltage Regulator

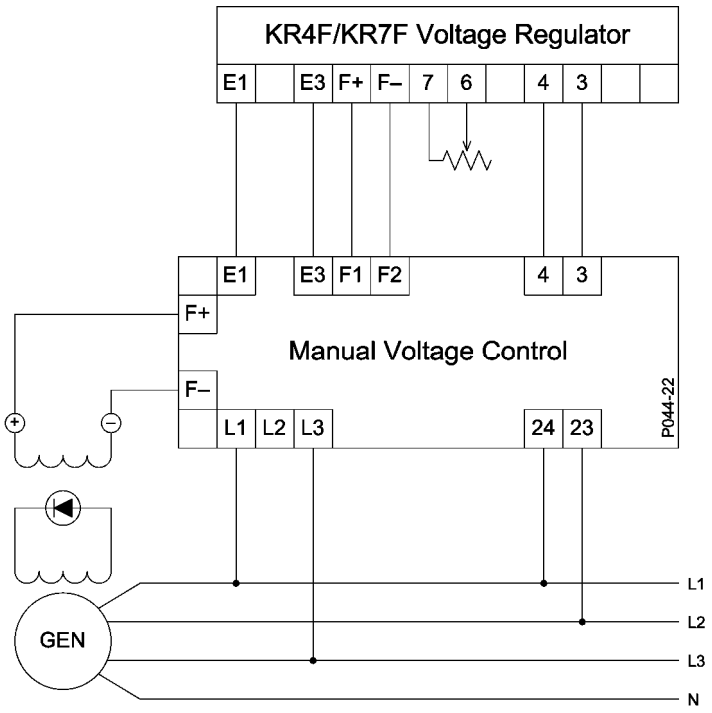
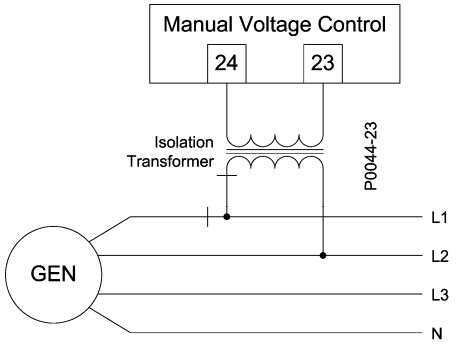


Figure 4. Typical Connections, KR Voltage Regulator



NOTE: Refer to either Figure 3 or 4 for overall connections.

Figure 5. Isolation Transformer Connections

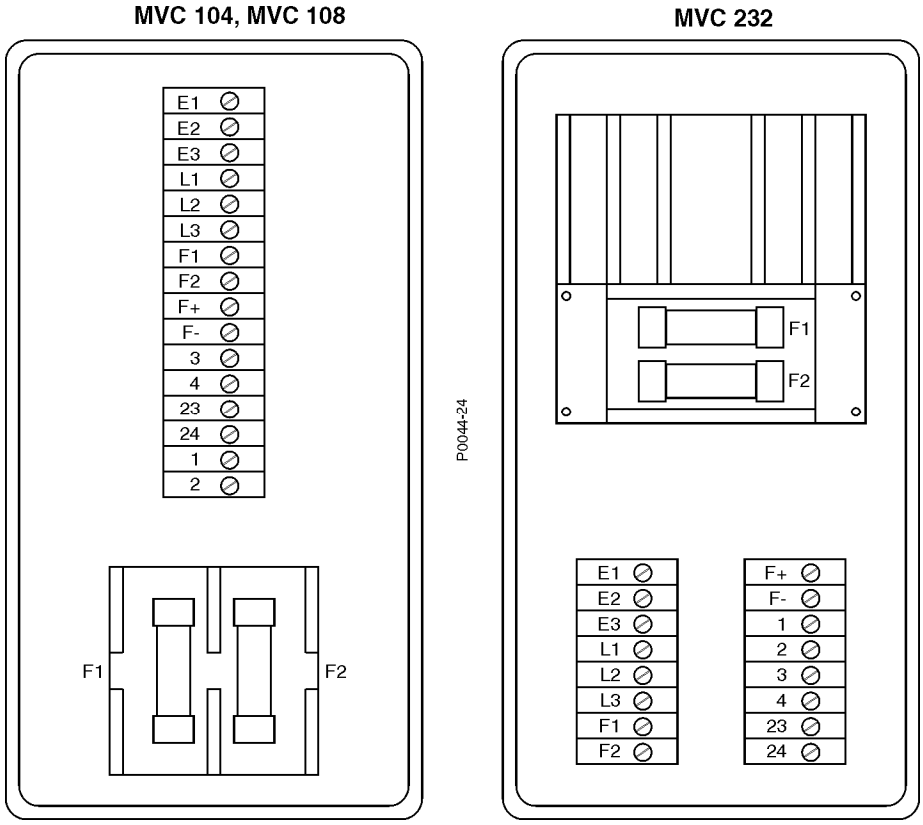


Figure 6. Terminal and Fuse Locations