

## Class 200 Equipment EDM200 Exciter Diode Monitor for Brushless Generator

The Basler Model EDM 200 is a solid-state device using a form C contact for alarm indication. The EDM 200 is designed for behind-the-panel-mounting. A bargraph display provides easy on-site calibration.

## APPLICATION

The EDM 200 Exciter Diode Monitor is used with brushless excited generators to monitor the operation of the rotating diodes of the exciter for alarm functions in the event of diode failure - shorted or open. Use with Basler SR, KR, XR, and APR series voltage regulators.

## FEATURES

- Compatible with brushless generators.
- Accurately detects open or shorted diodes.
- Immune to false operation during transients.
- Easy to read bargraph display for calibration and monitoring.
- Precision solid-state circuitry.
- Rugged construction.
- CSA certified.
- UL approved.

## ADDITIONAL INFORMATION

### INSTRUCTION MANUAL

Request publication 9177200990

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**Basler Electric**

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## FUNCTIONAL DESCRIPTION

### Power and Sensing Input

Power Input			Field Current Sensing Input
Voltage	VA	Frequency	
100-120 Vac $\pm 10\%$	10	50/60 Hz.	0.5 to 7 amperes or 20 to 100 mV Shunt
200-240 Vac $\pm 10\%$	10	50/60 Hz	
380-480 Vac $\pm 10\%$	10	50/60 Hz.	
528-600 Vac $\pm 10\%$	10	50/60 Hz.	

**OUTPUT:** One N.O. and one N.C. relay contact rated at 10 amperes at 120/240Vac. 10 amperes at 24Vdc, or 0.5 amperes at 125Vdc.

**INDICATOR:** Bargraph display

**TIME DELAY:** Open diode - Approximately 15 seconds.  
Shorted diode - Approximately 5 seconds.

**EXCITER FREQUENCY:** 50 to 400 Hz.

**EXCITER DIODE CONFIGURATION:** 3 phase, half or full-wave.

**OPERATING TEMPERATURE:** -40° C (-40° F) to 70° C (+157° F)

**STORAGE TEMPERATURE:** -65° C (-84° F) to +85° C (+185° F)

**VIBRATION:** Frequency Force  
2-27 Hz. 1.3Gs  
27-52 Hz 0.03 Inch  
52-260 Hz double amplitude 5 Gs

**SHOCK:** Withstands up to 15Gs in each of three mutually perpendicular directions.

**WEIGHT:** 3 lbs., 10 oz., (1.65 kg.) net  
4 lbs., 14oz., (2.22 kg.) shipping.

### PRINCIPLES OF OPERATION:

Figure 1A shows the normal field current waveform generated by the rotary exciter diode rectifiers induced into the exciter field current.

Figure 1B shows the exciter field current waveform generated when one diode rectifier opens. An open diode will cause the voltage rectifier to substantially increase the excitation to maintain the operating level. This constant, high level excitation could cause failure of the voltage regulator.

Figure 1C shows the exciter field current waveform generated when one diode shorts. A shorted diode causes very high current flow in the associated exciter armature winding causing excessive heating and probable failure of the exciter, and possibly the voltage regulator.

The Basler Model EDM 200 continuously monitors the induced ripple content in the input field circuit. When a diode failure is detected, the form C output contacts change state to actuate an alarm condition.

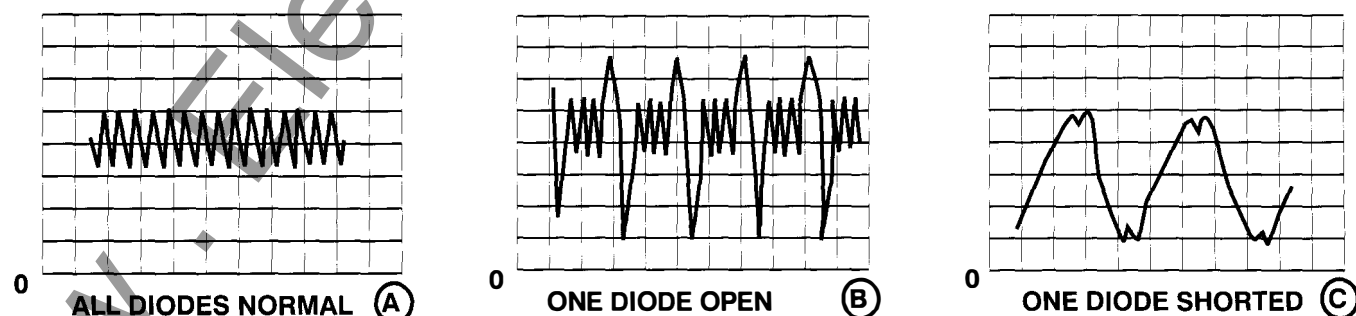


Figure 1 - Typical Rectifier Diode Waveform

## INTERCONNECTIONS

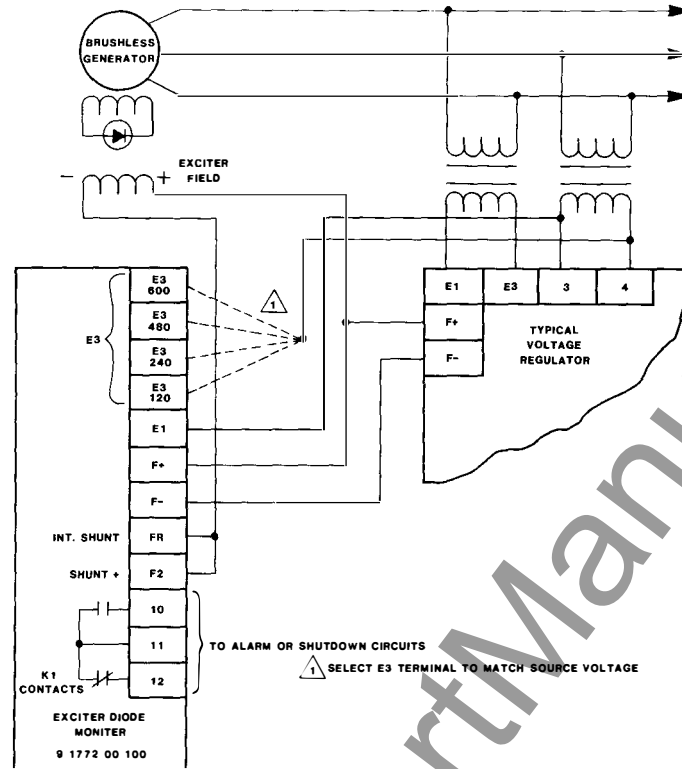


Figure 2 - Typical Interconnection, 0.5 TO 7 Amperes Exciter Current

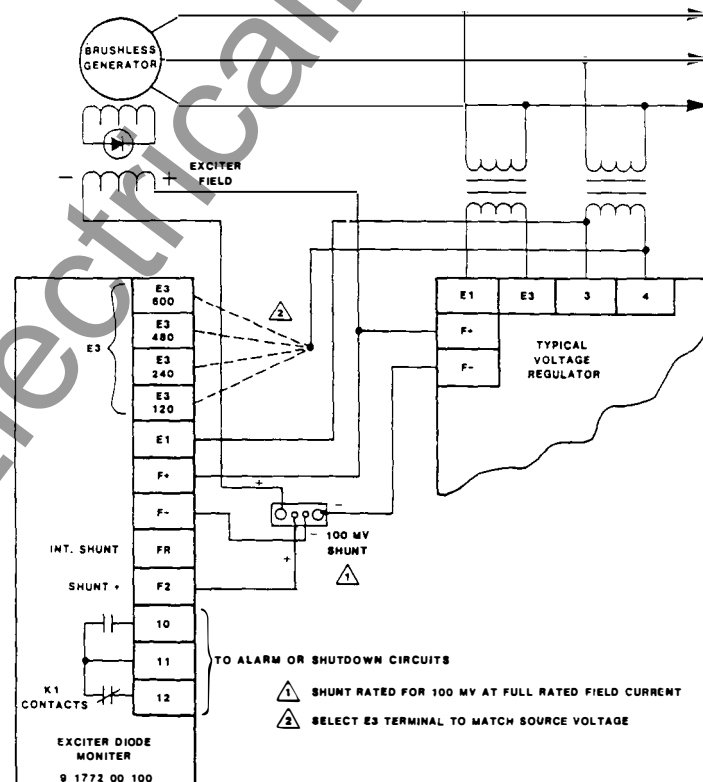


Figure 3 - Typical Interconnection, with 100 mV Shunt

## OUTLINE DRAWING

NOTE: ALL DIMENSIONS  
IN PARENTHESIS ARE IN  
MILLIMETERS.

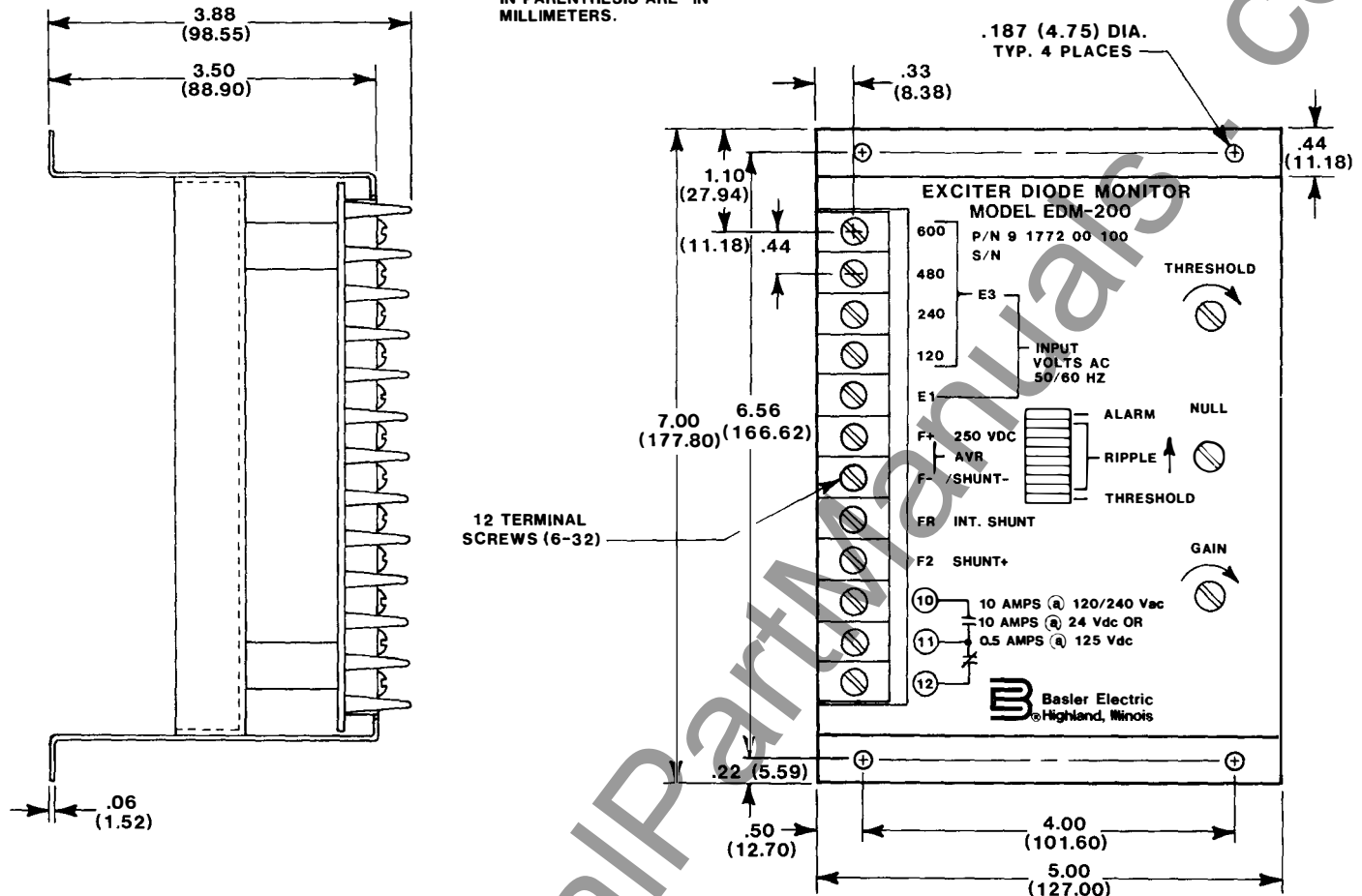


Figure 4 - Outline Drawing

## SAMPLE SPECIFICATION

The excitation system shall include a device to give alarm indication for possible shutdown of the generating system in the event of an exciter rotating diode failure, either shorted or open. The device shall include a time delay of 15 seconds for an open diode and 5 seconds

for a shorted diode. The device shall include a means of calibration and adjustment using a built-in indicator. The device shall be a Basler EDM 200 Exciter Diode Monitor.

## ORDERING INFORMATION

Specify by Model Number and Description: Basler Electric Model EDM 200 Exciter Diode Monitor.

**Basler Electric**

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