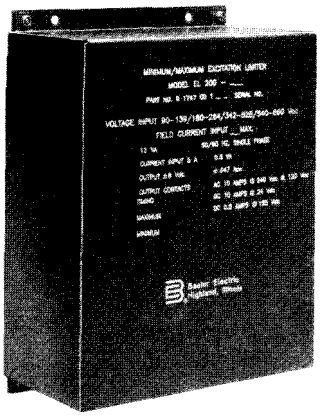

EL200 MINIMUM/MAXIMUM EXCITATION LIMITER

The minimum/maximum excitation limiter allows for safe operation of a generator or synchronous motor connected to the utility (infinite source). This is accomplished by controlling the field excitation within the operating limits of the generator's or synchronous motor's capability curve. The excitation limiter has become increasingly important in those applications where effective control of a generator means maximum utilization of the generator's total capability.

The excitation limiter, when used with a Basler automatic voltage regulator or a static exciter, offers excellent control of a generator operating in parallel with a utility grid. For proper operation of the EL200 with either a generator or synchronous motor, please refer to the Instruction Manual.

FEATURES:

- Easy to add to Basler excitation controls.
- Selectable curves for leading power factor limits.
- Both instantaneous limit and timed limit on overexcitation.
- Selectable inverse or definite time delay characteristics on over-excitation.
- LED indicators for easy calibration.
- Rugged solid-state design.
- CSA certified.

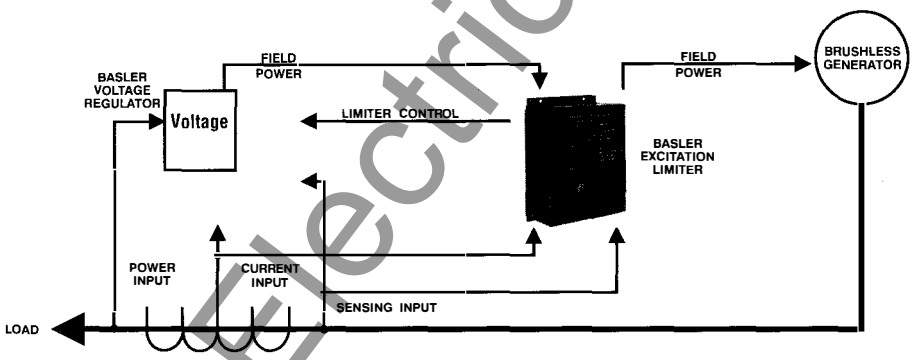

Figure 1 - Application Diagram

ADDITIONAL INFORMATION

INSTRUCTION MANUAL

Request publication 9174700995

Basler Electric

P. O. BOX 269 HIGHLAND, ILLINOIS, U.S.A. 62249 PHONE 618-654-2341 FAX 618-654-2351

DESCRIPTION

To prevent a loss of generator synchronization due to underexcitation but allowing the utilization of the generator's leading reactive load capacity, the underexcitation limiter offers a circular characteristic instead of setting a minimum field current level. Three curves are offered, selectable by a jumper, to match the generator capability curve. The three curves are illustrated in Figure 2, curves A, B, and C. The underexcitation limiter operates instantaneously to keep the generator operating within its leading power factor capability curve. When the underexcitation limiter is operating, an alarm relay is energized for external indication or connection to a time delay relay to initiate further action.

To prevent generator field overheating, a two-stage field current limiter first instantaneously limits the maximum field current, then, after a time delay, limits field current to a further reduced level. This two-stage action allows for high forcing current for a short time to allow for large load changes with fast response, but limits the time the field must endure the high current. The overexcitation relay is energized if either field current limiter is operating. The time delay for second state limiting may be selected as definite or inverse time and both times are adjustable. The inverse time curve range is shown in Figure 3. The timer will reset when the excitation returns to normal.

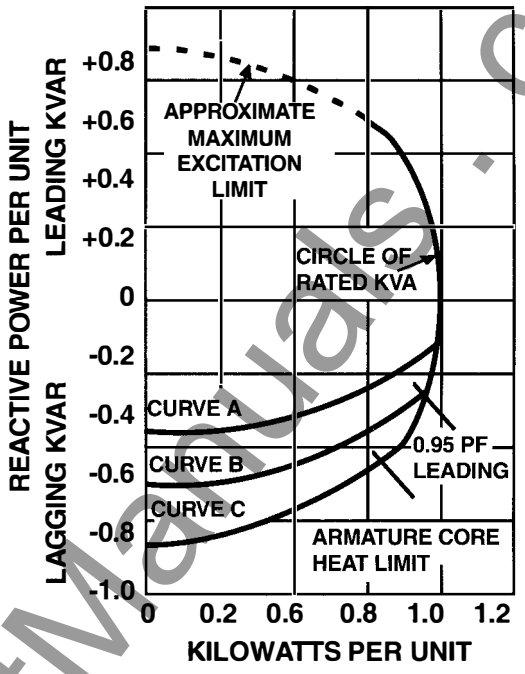

Figure 2 - Generator Reactive Capability Curves

Light emitting diodes (LEDs) are provided to indicate the operating status of the limiter and to aid in field calibration.

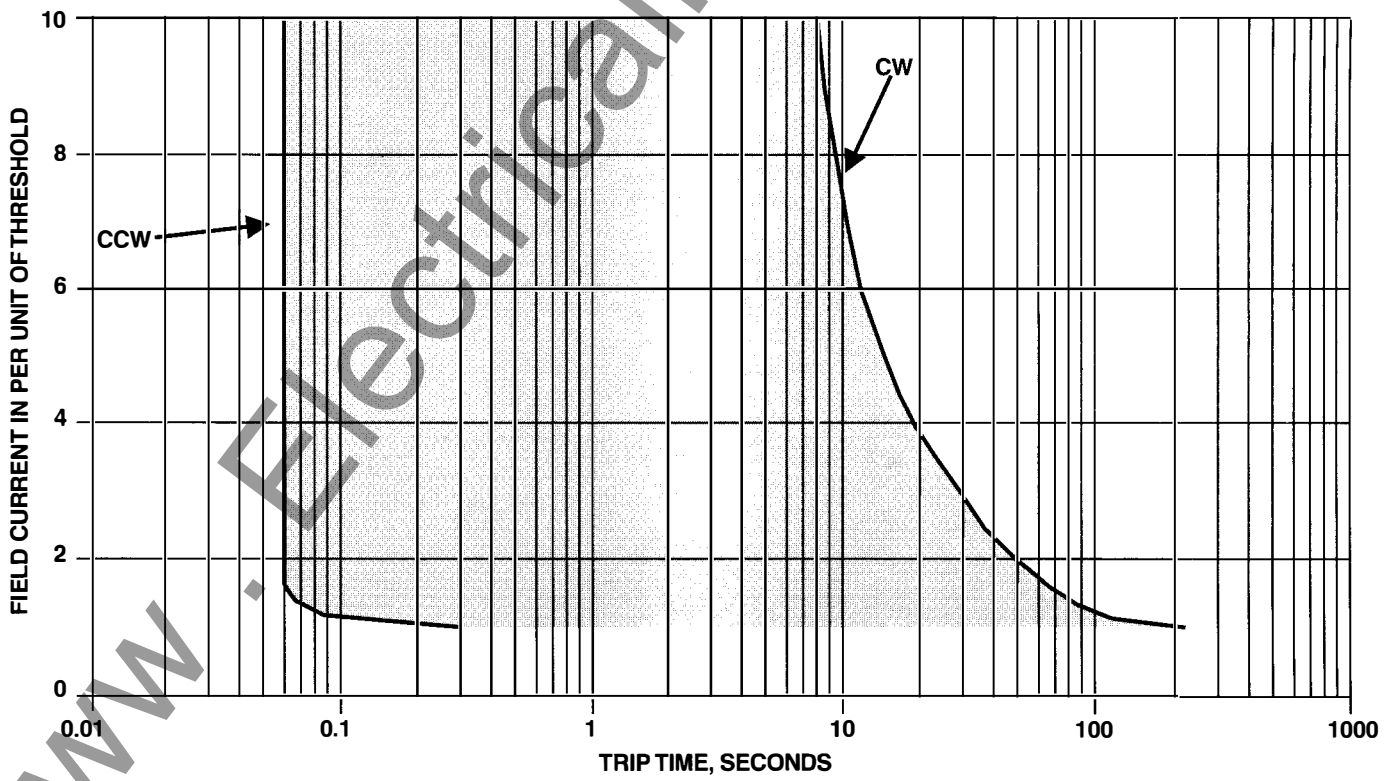

Figure 3 - Inverse Time Curve

SPECIFICATIONS

VOLTAGE INPUT

Tap Ranges: 90-139, 180-264, 342-528, 540-660 Vac
Frequency: 50/60 Hz.
Burden: 12 VA maximum.

CURRENT TRANSFORMER INPUT

Range: 0-5 Amperes continuous.
CT Ratio: Select to provide 2.5 Amperes minimum at rated generator load.
Burden: 0.5 VA maximum.

FIELD CURRENT INPUT

Model No.	Maximum Continuous Current
EL200-2	2 Amperes DC
EL200-7	7 Amperes DC
EL200-20	20 Amperes DC
EL200-36	36 Amperes DC

RELAY CONTACT OUTPUTS

Overexcitation Relay: Form C, one N.O. and one N.C.
Underexcitation Relay: Form C, one N.O. and one N.C.
Contact Rating: 10 Amperes at 120/240Vac, 10 Amperes at 24Vdc or 0.5 Amperes at 125Vdc.

LIMITING OUTPUT

±8Vdc to automatic voltage regulator.

ADJUSTMENT RANGE

Maximum Excitation Limit: Stage 1
Stage 2
Definite Time Delay: 0-60 seconds
Inverse Time Delay: Adjustable 1x to 6x in Figure 3.
Minimum Excitation Limit: See Figure 2.

STORAGE TEMPERATURE RANGE

-65°C (-85°F) to +85°C (+185°F)

OPERATING TEMPERATURE RANGE

-40°C (-40°F) to +70°C (+185°F)

SHOCK

Withstands up to 15 Gs

VIBRATION

Frequency	Force
5-29 Hz	1.5 Gs
29-52 Hz	0.036 in. double amplitude
52-500 Hz	6 Gs

WEIGHT

10 lbs (4.55 kg) net, 13 lbs (5.91 kg) shipping

SAMPLE ORDER SPECIFICATION

The Basler voltage regulator shall be equipped with a minimum/maximum excitation limiter. The minimum excitation limiter shall include field selectable curve characteristics to match the reactive capability of the generator. The maximum excitation limiter shall limit the maximum field current. Indicators shall illuminate for easy calibration of the system. Relay contacts shall be provided for excitation limiter annunciation.

HOW TO ORDER

Use the following to select the proper minimum/maximum excitation limiter.

If Using:	Full Load Excitation Current of:	Use Model #
SR-A, KR, AEC 63-7	0.5-2 2-7	EL200-2 EL200-7
SSR	2-7 5-20	EL200-7 EL200-20
SR-H SR-E	5-20 10-36	EL200-20 EL200-36
SSE/ SSE-N		Contact Basler Factory

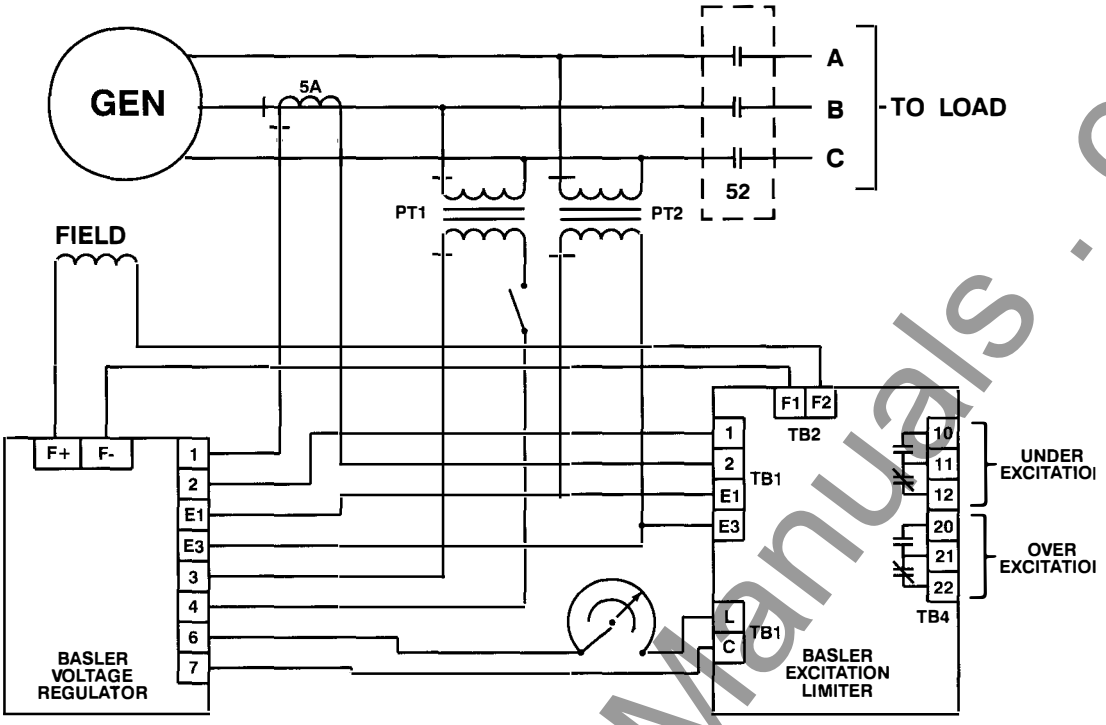

Figure 4 - Typical Interconnect

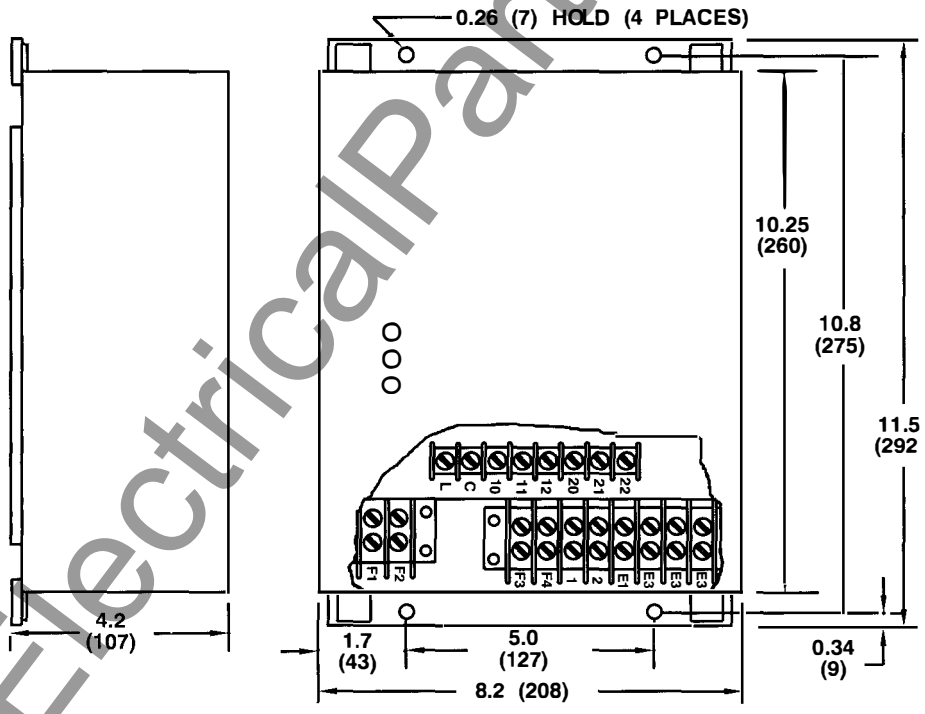

Figure 5 - Outline Drawing

NOTES: For more detailed interconnect drawings, see Instruction Manual 9174700995.
All drawings and data subject to change without notice.
Numbers of parentheses are in millimeters.

Basler Electric

ROUTE 143, BOX 269, HIGHLAND, ILLINOIS U.S.A. 62249
PHONE 618-654-2341 FAX 618-654-2351

P.A.E. Les Pins, 67319 Wasselonne Cedex FRANCE
PHONE (33-3-88) 87-1010 FAX (33-3-88) 87-0808

http://www.basler.com, info@basler.com

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