RESERVOIR ASSEMBLY



CURRENT TRANSFORMER

## APPLICATION:

Many brushless exciter-equipped generators are required to sustain the substantial current overloads associated with starting large motors. Typically, such overloads can be several times the normal running current. Some generating systems may also be required to maintain line current during brief periods of short circuit fault conditions. Brushless exciter-equipped generators and their associated voltage regulators are unable to meet these requirements because the generator output provides the voltage regulator power. As the generator output voltage decreases, the ability of the voltage regulator to provide exciter field power also decreases, and the result can be a total loss of excitation. The Basler Excitation Support System compensates for this inherent limitation by providing a constant voltage regulator power souce. Application of this system is represented schematically in Figures 4, 7 and 8.

## FEATURES:

- Allows full regulator forcing output during heavy motor starting and 3 phase symmetrical short circuit.
- Adaptable to a wide range of generator sizes.
- Reliabily designed for long life and minimum maintenance.
- 50 and 60 Hertz units available.
- Static (no moving parts).
- Surge protection on output.
- Ruggedly constructed.
- Available from stock.
- CSA approved.

## Basler Electric

# DESCRIPTION:

The Basler Excitation Support System consists of a reservoir assembly (SBO) and a current transformer (CT) which function together to furnish a relatively constant voltage to the regulator power-stage during all operating conditions including severe generator overload and short circuit. The regulator, therefore, can delivery full forcing to the exciter field during such conditions.

The reservoir assembly consists of a transformer, reactor and associated components. It employs the ferro-resonant principle to provide the regulator with a regulated power input during no-load conditions. The CT provides virtually all power input to the regulator during periods of overload (motor starting or short circuit). For this reason, the CT must be capable of producing many times the power rating of ordinary metering type current transformers. It is of larger size than CT's used in metering applications and is designed with ample window space to accommodate generator cables. As the load varies from no-load to full-load, the source of power to the regulator gradually shifts from the reservoir assembly to the CT.

The Excitation Support System will permit a 3-wire generator to support any sustained 3 phase line-to-line short circuit. Generators employing a fourth wire neutral may not, however, sustain short circuit current between the neutral and the line not being "sampled" by a current transformer.

# SPECIFICATION:

• **OPERATING TEMPERATURE RANGE:** -40°C to +70°C (-40°F to +158°F).

• **SHOCK:** Withstands up to 15 G's in each of three perpendicular axes.

• **VIBRATION:** Withstands up to 5 G's at 260 Hertz.

• **POWER DISSIPATION:** Reservoir Assembly
  180 series - approximately 300 watts.
  220 series - approximately 200 watts.
  230, 240 and 270 series - approximately 175 watts.

• **DIMENSIONS:** Reservoir Assemblies - See Figures 1 and 2. Current Transformers - See Figures 3 and 6, and Tables 4 and 5.

• **WEIGHT:** Reservoir Assembly - 180 series, 70 lbs. net
  120 lbs. shipping
  Reservoir Assembly - 200 series, 45.5 lbs. net
  50 lbs. shipping
  Current Transformers - See Tables 4 and 5.

# SAMPLE SPECIFICATION:

Power for the voltage regulator shall be supplied by a device which will utilize both generator voltage and current to maintain generator field excitation under motor starting and short circuit conditions. This device shall utilize the current in two phases of the generator through use of power current transformers and shall be static throughout. The unit shall be a Basler Model SBO --- with appropriate power current transformer.

# HOW TO ORDER Reservoir Assembly

| When using Basler Regulator model | OR | A regulator with these power input requirements (Max.Continuous | With a nominal system line voltage of * | Select this Basler reservoir assembly |
|---|---|---|---|---|
| SR4A SR4F KR4FF | | 120 Vac @ 7A | 208-240 (60Hz) | SBO 241 |
| | | | 416-480 (60Hz) | SBO 242 |
| | | | 575-600 (60Hz) | SBO 245 |
| | | | 208-240 (50Hz) | SBO 243 |
| | | | 380-480 (50Hz) | SBO 244 |
| | | | 575-600 (50Hz) | SBO 246 |
| SR8A SR8F at full power | | 240 Vac @ 7A | 208-240 (60Hz) | SBO 181 |
| | | | 416-480 (60Hz) | SBO 182 |
| | | | 575-600 (60Hz) | SBO 185 |
| | | | 208-240 (50Hz) | SBO 183 |
| | | | 380-480 (50Hz) | SBO 184 |
| | | | 575-600 (50Hz) | SBO 186 |
| SR8A SR8F KR7FF at half** power | | 240 Vac @ 3.5A | 208-240 (60Hz) | SBO 271 |
| | | | 416-480 (60Hz) | SBO 272 |
| | | | 575-600 (60Hz) | SBO 275 |
| | | | 208-240 (50Hz) | SBO 273 |
| | | | 380-480 (50Hz) | SBO 274 |
| | | | 575-600 (50Hz) | SBO 276 |
| KR2FF | | 120/138 Vac @ 8A | 208-240 (60Hz) | SBO 221 |
| | | | 416-480 (60Hz) | SBO 222 |
| | | | 575-600 (60Hz) | SBO 223 |
| | | | 208-240 (50Hz) | SBO 224 |
| | | | 380-480 (50Hz) | SBO 225 |
| | | | 575-600 (50Hz) | SBO 226 |
| SR32A SR32H | | 60 Vac @ 20A | 208-240 (60Hz) | SBO 232 |
| | | | 416-480 (60Hz) | SBO 233 |
| | | | 575-600 (60Hz) | SBO 236 |
| | | | 208-240 (50Hz) | SBO 234 |
| | | | 380-480 (50Hz) | SBO 235 |
| | | | 575-600 (50Hz) | SBO 237 |

**TABLE 1 - SELECTING A RESERVOIR ASSEMBLY**

*The SBO reservoir assembly can also be used in high voltage applications by using a power isolation transformer and special high voltage insulated power current transformers. For high voltage applications (above 600V) consult factory for selection of transformers.

**If the exciter field current at short circuit is 5 Amperes or less and if the exciter field resistance is 36 Ohms or greater.

# HOW TO ORDER - Current Transformer (CT)

Selection of the appropriate CT is accomplished in the following manner:

**Step 1**. Calculate the exciter field current supplied by the voltage regulator during generator short circuit. Use the formula $I_1 = \dfrac{E}{R}$

where $I_1$ equals the exciter field current, R is the exciter field resistance and E is a value selected from the following chart. (During short circuit, generator output voltage is zero. Since the regulator power stage is receiving normal voltage from the SBO output, it will be "full on" delivering maximum voltage output, listed below. The amount of exciter field current that flows is a function of the exciter field resistance.)

| With this Basler regulator | E = |
|---|---|
| SR32A SR32H KR2FF | 45 volts |
| SR4A SR4F KR4FF | 90 volts |
| SR8A SR8F KR7FF | 180 volts |

# HOW TO ORDER CT (continued)

**Step 2.** From short circuit saturation data (plot of exciter field current versus line amps with the output of the generator short circuited), available from the generator manufacturer, determine the generator short circuit line current that would result from the exciter field current calculated in step 1.

| IF | THEN |
|---|---|
| this results in acceptable generator line current, | proceed to step 3 |
| this results in excessive generator line current, | proceed to step 4 |
| this results in insufficient generator line current, | use a Basler regulator with greater field voltage forcing capability |

**Step 3.** (Refer to Table 2)

a. In Column 1, locate the value determined in step 2 for generator line current to be sustained during a short circuit (or the closest value if the exact value does not appear). Using a straight edge, draw a horizontal line immediately under the selected number across the page to the corresponding number repeated in column 5.

b. In column 2, locate the model of Basler voltage regulator being used.

c. In column 3, opposite the appropriate regulator, locate the exciter field current calculated in step 1 (or the closest value if the exact calculated value does not appear).

d. Draw a vertical line through this value to intersect with the horizontal line drawn in step 3a.

e. Proceed to step 5.

**Step 4.**

a. Determine what constitutes acceptable generator line current at short circuit (typically 250-300% nominal).

b. From short circuit saturation data (plot of exciter field current versus line amps from the output of the generator short circuited), available from the generator manufacturer, determine the exciter field current required to generate the acceptable generator line current just determined. (To obtain this reduced current it will be necessary to place a current limiting resistor in series with the exciter field. See explanation in Note 1).

c. (Refer to Table 2) In Column 1, locate the value of acceptable generator line current at short circuit (step 4a) (or the closest value if the exact value does not appear). Using a straight edge, draw a horizontal line immediately under the selected number across the page to the corresponding number repeated in column 5.

d. In column 2, locate the model of Basler voltage regulator being used.

e. In column 3, opposite the appropriate regulator, locate the exciter field current determined in step 4b (or the closest value if the exact value does not appear).

f. Draw a vertical line through this value to intersect with the horizontal line drawn in step 4c.

**Step 5.** The point of intersection indicates the turns ratio for the transformer to be selected (turns ratio explained further in step 6). If the lines do not intersect a turns ratio, select the ratio indicated directly above the intersection. From the turns ratio selected, move to the right **within the same shaded area** to determine the correct CT, identified in column 4.

**Step 6.** The first numeral of the turns ratio indicates the number of turns of each generator feeder that must pass through the CT window (the same number of line A and line B turns is necessary). The second numeral indicates the number of secondary turns to be used. An increase in CT primary turns or a decrease in CT secondary turns on any specific transformer results in increased CT power output. Selection of a smaller turns ratio may result in the CT delivering slightly more secondary current than required. However, the SBO ferro-resonant circuitry has the capability of dissipating this energy. Tables 4 and 5 identify transformer secondary terminals.

**NOTE 1**–Calculate the value of the series resistance using the following formula: $R_s = \left(\dfrac{E}{I_2}\right) - R_f$

where $R_s$ = value of series field resistance to be added (Ohms).

$E$ = maximum regulator forcing voltage (from chart in step 1).

$I_2$ = field current required to produce acceptable generator line current at short circuit.

$R_f$ = exciter field resistance.

**THE SERIES RESISTANCE MUST NOT BE SO GREAT AS TO RESTRICT NORMAL FORCING.**

**EXAMPLE**

The following example, illustrated in table 2, summarizes the method used to select the appropriate CT.

1. Calculate the actual exciter field current that will be provided by a Basler SR4A voltage regulator during short circuit. Using the formula $I_1 = \dfrac{E}{R}$ ,

$$I_1 = \frac{90 \text{ volts (from chart)}}{11.1 \text{ Ohms (generator data)}} = 8.1 \text{ Amperes}$$

2. From data supplied by the generator manufacturer, you determine that a generator line current of 2700 Amperes would result using the 8.1 Ampere output of the SR4A regulator. You consider this to be an excessive generator line current.

3. You determine that 1800 Amperes would constitute an acceptable generator line current at short circuit.

4. From data supplied by the generator manufacturer, you determine that an exciter field current of 5.4 Amperes is required for the generator system to deliver 1800 Amperes during short circuit. To obtain this reduced current it will be necessary to place a current limiting resistor in series with the exciter field (See calculation at conclusion of this example).

5. In column 1 of table 2, locate 1838 Amperes (the value closest to 1800 Amperes). Draw a horizontal line under 1838 to the same number in column 5.

6. In column 2, locate the SR4A voltage regulator.

7. In column 3, opposite the SR4A, locate 5.6 Amperes (the closest value to 5.4 Amperes).

8. Draw a vertical line through 5.6 Amperes to intersect with the horizontal line drawn earlier.

9. A turns ratio of 1:300 is intersected and will be used. Moving to the right **within the non-shaded area** from the selected turns ratio, you determine the appropriate CT to be BE 02463 001.

Calculation of series resistance
$$R_s = \left(\frac{E}{I_2}\right) - R_f$$

$$= \left(\frac{90}{5.4}\right) - 11.1$$

$$= 16.6 - 11.1 = 5.5 \text{ Ohms}$$

**THE SERIES RESISTANCE MUST NOT BE SO GREAT AS TO RESTRICT NORMAL FORCING.**

3

| COLUMN | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **2** | **3** | | | | | | | | | | **4** | **5** |
| 3 phase short circuit line current in amperes | When using this Basler Voltage Regulator | supplying this maximum exciter field current during short circuit (in amperes) | | | | | | | | | | Select the Basler Current Transformer(s) Shown below. ** | 3 phase short circuit line current in amperes |
| | SR4A SR4F SR8A SR8F | 2.5 | 3.4 | 4.4 | 5.6 | 6.9 | 8.4 | 10 | -- | -- | -- | | |
| | SR8A* SR8F* KR7FF | 1.2 | 1.7 | 2.2 | 2.8 | 3.4 | 4.2 | 5 | -- | -- | -- | | |
| | SR32A SR32H | 5 | 6.8 | 8.8 | 11.2 | 13.8 | 16.8 | 20 | 21.2 | 25.1 | 28.2 | | |
| | KR2FF | 5.3 | 6 | 6.7 | 7.6 | 8.5 | 9.6 | 10.8 | 12 | -- | -- | | |
| | KR4FF | 2.5 | 3.4 | Consult Basler Electric Company for KR4FF applications below 2.5 Amperes. | | | | | | | | | |
| 102 | | 8:189 | | 8:150 | | 16:238 | | 16:189 | | 16:150 | | | 102 |
| 115 | | | 8:189 | | 8:150 | | 16:238 | | 16:189 | | 16:150 | | 115 |
| 129 | | 8:238 | | 8:189 | | 8:150 | | 16:238 | | 16:189 | | | 129 |
| 144 | | | 8:238 | | 8:189 | | 8:150 | | 16:238 | | 16:189 | | 144 |
| 163 | | 4:150 | | 8:238 | | 8:189 | | 8:150 | | 16:238 | | | 163 |
| 183 | | | 4:150 | | 8:238 | | 8:189 | | 8:150 | | 16:238 | | 183 |
| 204 | | 4:189 | | 4:150 | | 8:238 | | 8:189 | | 8:150 | | | 204 |
| 230 | | | 4:189 | | 4:150 | | 8:238 | | 8:189 | | 8:150 | | 230 |
| 258 | | 4:238 | | 4:189 | | 4:150 | | 8:238 | | 8:189 | | BE02461 001*** (For use with any 200 Series of Reservoir Assemblies) | 258 |
| 289 | | | 4:238 | | 4:189 | | 4:150 | | 8:238 | | 8:189 | | 289 |
| 325 | | 2:150 | | 4:238 | | 4:189 | | 4:150 | | 8:238 | | | 325 |
| 366 | | | 2:150 | | 4:238 | | 4:189 | | 4:150 | | 8:238 | | 366 |
| 408 | | 2:189 | | 2:150 | | 4:238 | | 4:189 | | 4:150 | | | 408 |
| 459 | | | 2:189 | | 2:150 | | 4:238 | | 4:189 | | 4:150 | | 459 |
| 515 | | 2:238 | | 2:189 | | 2:150 | | 4:238 | | 4:189 | | | 515 |
| 577 | | | 2:238 | | 2:189 | | 2:150 | | 4:238 | | 4:189 | | 577 |
| 651 | | 1:150 | | 2:238 | | 2:189 | | 2:150 | | 4:238 | | | 651 |
| 731 | | | 1:150 | | 2:238 | | 2:189 | | 2:150 | | 4:238 | BE 02462 001 (For use with the 180 Series of Reservoir Assemblies) | 731 |
| 818 | | 1:189 | | 1:150 | | 2:238 | | 2:189 | | 2:150 | | | 818 |
| 919 | | | 1:189 | | 1:150 | | 2:238 | | 2:189 | | 2:150 | | 919 |
| 1031 | | 1:238 | | 1:189 | | 1:150 | | 2:238 | | 2:189 | | | 1031 |
| 1155 | | | 1:238 | | 1:189 | | 1:150 | | 2:238 | | 2:189 | | 1155 |
| 1302 | | 1:300 | | 1:238 | | 1:189 | | 1:150 | | 2:238 | | | 1302 |
| 1462 | | | 1:300 | | 1:238 | | 1:189 | | 1:150 | | 2:238 | | 1462 |
| 1635 | | 1:378 | | 1:300 | | 1:238 | | 1:189 | | 1:150 | | | 1635 |
| 1838 | | | 1:378 | | 1:300 | | 1:238 | | 1:189 | | 1:150 | | 1838 |
| 2062 | | 1:476 | | 1:378 | | 1:300 | | 1:238 | | 1:189 | | | 2062 |
| 2310 | | | 1:476 | | 1:378 | | 1:300 | | 1:238 | | 1:189 | | 2310 |
| 2604 | | 1:600 | | 1:476 | | 1:378 | | 1:300 | | 1:238 | | | 2604 |
| 2925 | | | 1:600 | | 1:476 | | 1:378 | | 1:300 | | 1:238 | | 2925 |
| 3270 | | 1:756 | | 1:600 | | 1:476 | | 1:378 | | 1:300 | | | 3270 |
| 3675 | | | 1:756 | | 1:600 | | 1:476 | | 1:378 | | 1:300 | | 3675 |
| 4125 | | 1:952 | | 1:756 | | 1:600 | | 1:476 | | 1:378 | | BE 02463 001 | 4125 |
| 4620 | | | 1:952 | | 1:756 | | 1:600 | | 1:476 | | 1:378 | | 4620 |
| 5205 | | 1:1200 | | 1:952 | | 1:756 | | 1:600 | | 1:476 | | | 5205 |
| 5850 | | | 1:1200 | | 1:952 | | 1:756 | | 1:600 | | 1:476 | | 5850 |
| 6540 | | | | 1:1200 | | 1:952 | | 1:756 | | 1:600 | | | 6540 |
| 7350 | | | | | 1:1200 | | 1:952 | | 1:756 | | 1:600 | | 7350 |
| 8250 | | | | | | 1:1200 | | 1:952 | | 1:756 | | BE 02464 001 | 8250 |
| 9240 | | | | | | | 1:1200 | | 1:952 | | 1:756 | | 9240 |
| 10410 | | | | | | | | 1:1200 | | 1:952 | | | 10410 |

## TABLE 2 - SELECTING A CT

\*   at half power

\*\*   if dual CTs are used (in applications, for example, where primary bus connections would be difficult using a single CT) two identical CTs are required and identical turns ratios are employed.

\*\*\* BE 02470 001 can be substituted for BE 02461 001 in applications where it is desirable or necessary to reduce by one-half the number of primary turns specified in Table 2.

# HOW TO ORDER <u>MEDIUM VOLTAGE</u> CURRENT TRANSFORMERS:

This series of power current transformers is designed for use in systems having nominal line voltages of 2400 volts (60 Hz), 3300 volts (50 Hz) and 4160 volts (60 Hz). Two power CTs are required for each generating system. Selection of the appropriate CTs is accomplished in the same manner as described in the Excitation Support System Bulletin <u>USING TABLE 3 below and Step 6A, following, that replaces step 6.</u>

**Step 6A.**
The first numeral of the turns ratio indicates the number of primary turns wound on the CT. The second numeral indicates the number of secondary turns to be used. Note that the cable for each generator phase is connected to its respective CT. A decrease in CT secondary turns on any specific transformer results in increased CT power output. Selection of a smaller turns ratio may result in the CT delivering slightly more secondary current than required. However, the SBO ferro-resonant circuitry is designed to dissipate this energy. Table 5 identifies transformer secondary terminals.

| COLUMN | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | | | | | | | 4 | 5 |
| | When using this Basler Voltage Regulator | supplying this maximum exciter field current during short circuit (in amperes) | | | | | | | Select the Basler Current Transformer Shown Below ** | 3 phase short circuit line current in amperes |
| | SR4A SR4F | 2.5 | 3.4 | 4.4 | 5.6 | 6.9 | 8.5 | 10 | | |
| | SR8A SR8F (at half power *) | 1.2 | 1.7 | 2.2 | 2.8 | 3.4 | 4.2 | 5.0 | | |
| | SR32A SR32H | 5 | 6.8 | 8.8 | 11.2 | 13.8 | 16.8 | 20 | | |
| 102 | | 8:189 | | 8:150 | | | | | | 102 |
| 115 | | | 8:189 | | 8:150 | | | | | 115 |
| 129 | | 8:238 | | 8:189 | | 8:150 | | | | 129 |
| 144 | | | 8:238 | | 8:189 | | 8:150 | | | 144 |
| 163 | | 4:150 | | 8:238 | | 8:189 | | 8:150 | | 163 |
| 183 | | | 4:150 | | 8:238 | | 8:189 | | | 183 |
| 204 | | 4:189 | | 4:150 | | 8:238 | | 8:189 | BE 15622 001 | 204 |
| 230 | | | 4:189 | | 4:150 | | 8:238 | | | 230 |
| 258 | | 4:238 | | 4:189 | | 4:150 | | 8:238 | | 258 |
| 289 | | | 4:238 | | 4:189 | | 4:150 | | | 289 |
| 325 | | 2:150 | | 4:238 | | 4:189 | | 4:150 | | 325 |
| 366 | | | 2:150 | | 4:238 | | 4:189 | | | 366 |
| 408 | | 2:189 | | 2:150 | | 4:238 | | 4:189 | | 408 |
| 459 | | | 2:189 | | 2:150 | | 4:238 | | | 459 |
| 515 | | 2:238 | | 2:189 | | 2:150 | | 4:238 | | 515 |
| 577 | | | 2:238 | | 2:189 | | 2:150 | | | 577 |
| 651 | | 1:150 | | 2:238 | | 2:189 | | 2:150 | BE 15621 001 | 651 |
| 731 | | | 1:150 | | 2:238 | | 2:189 | | | 731 |
| 818 | | 1:189 | | 1:150 | | 2:238 | | 2:189 | | 818 |
| 919 | | | 1:189 | | 1:150 | | 2:238 | | | 919 |
| 1031 | | 1:238 | | 1:189 | | 1:150 | | 2:238 | | 1031 |
| 1155 | | | 1:238 | | 1:189 | | 1:150 | | | 1155 |
| 1302 | | | | 1:238 | | 1:189 | | 1:150 | BE 15620 001 | 1302 |
| 1462 | | | | | 1:238 | | 1:189 | | | 1462 |
| 1635 | | | | | | 1:238 | | 1:189 | | 1635 |
| 1838 | | | | | | | 1:238 | | | 1838 |
| 2062 | | | | | | | | 1:238 | | 2062 |

## TABLE 3 - SELECTING A MEDIUM VOLTAGE CT

\* If the exciter field current at short circuit is 5 Amperes or less and if the exciter field resistance is 36 Ohms or greater.
\*\* Two identical CTs are required.  CT can be used with any SBO 230, 240, 270 series of excitation support.
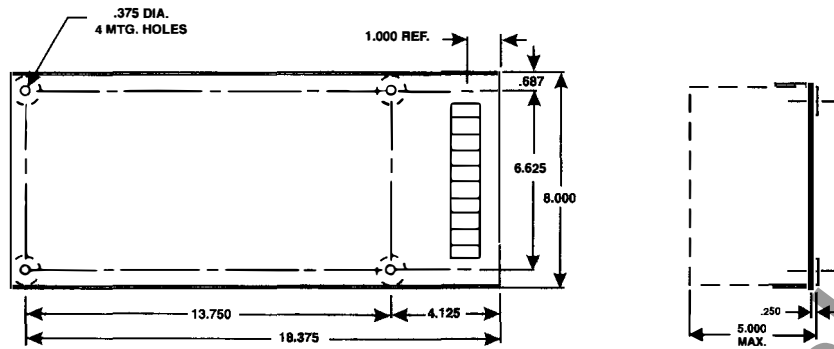
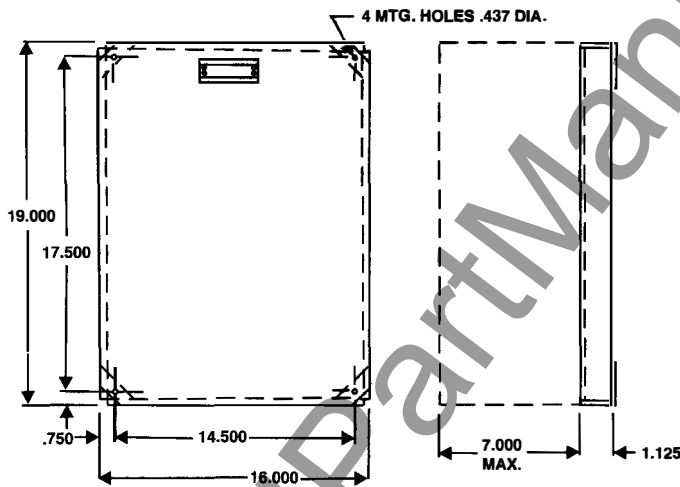**FIGURE 1 - OUTLINE DRAWING - RESERVOIR ASSEMBLY - SBO 200 SERIES**



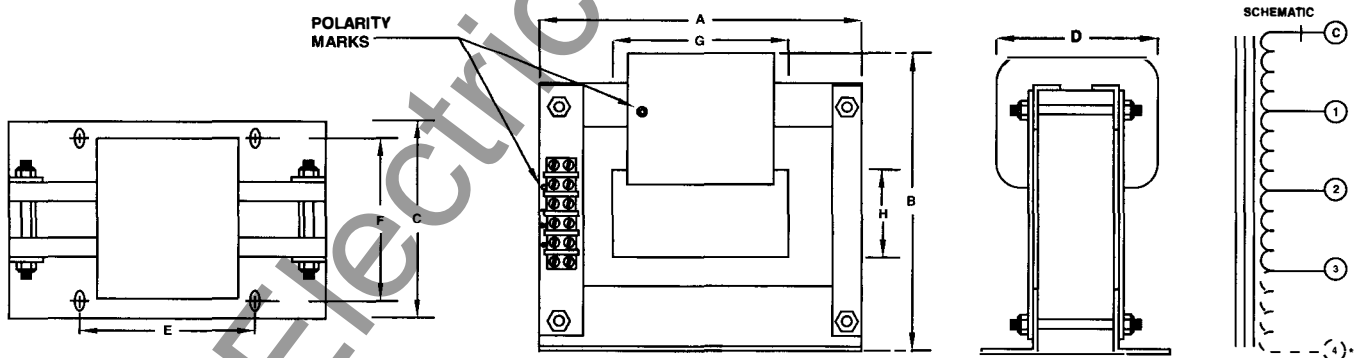**FIGURE 2 - OUTLINE DRAWING - RESERVOIR ASSEMBLY - SBO 180 SERIES**



**FIGURE 3 - OUTLINE DRAWING - CURRENT TRANSFORMER**

\* BE 02464 001 only

| | DIMENSIONS IN INCHES | | | | | | | | SECONDARY TURNS | | | | WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C.T. Part No. | A | B | C | D | E | F | G | H | C-1 | C-2 | C-3 | C-4 | Lbs. (Net) |
| **BE 02461 001** | 10.5 | 7.75 | 5.37 | 5 | 6 | 4.37 | 5 | 2 | 150 | 189 | 238 | --- | 44 |
| **BE 02462 001** | 10.5 | 9.25 | 7.75 | 7.37 | 6 | 6.75 | 5 | 3 | 150 | 189 | 238 | --- | 85 |
| **BE 02463 001** | 12.5 | 9.75 | 5.37 | 5.75 | 6 | 4.37 | 7 | 3 | 300 | 378 | 476 | --- | 63 |
| **BE 02464 001** | 11.5 | 10 | 4.62 | 5 | 6 | 3.62 | 7 | 3 | 600 | 756 | 952 | 1200 | 47 |
| **BE 02470 001** | 9.5 | 7.75 | 7.75 | 7 | 6 | 6.75 | 4 | 2 | 75 | 94 | 119 | --- | 70 |

**TABLE 4 - DIMENSIONS AND WEIGHTS**
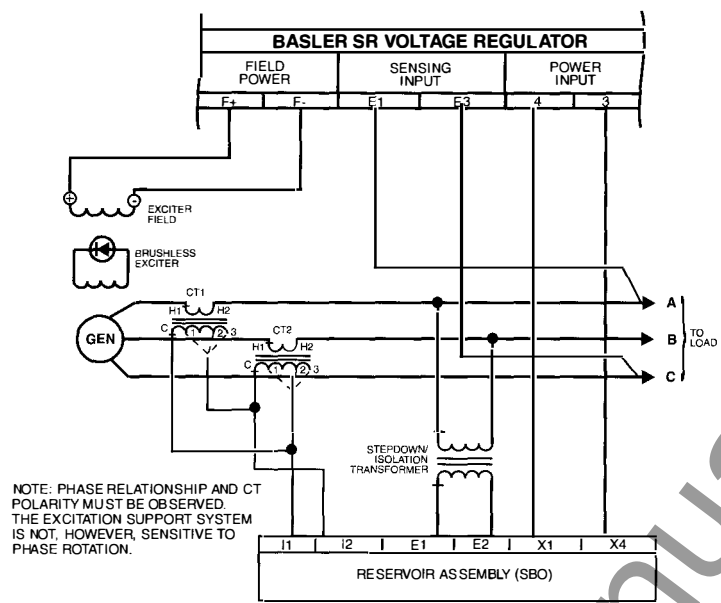
**FIGURE 4 - EXCITATION SUPPORT SYSTEM INTERCONNECTION DIAGRAM**

NOTE: PHASE RELATIONSHIP AND CT POLARITY MUST BE OBSERVED. THE EXCITATION SUPPORT SYSTEM IS NOT, HOWEVER, SENSITIVE TO PHASE ROTATION.



Shield to ground
BE 15620 001
BE 15621 001

Shield to ground
BE 15622 001

**FIGURE 5 - SCHEMATICS**



* Primary connections for BE 15621 001 are offset, rather than in-line as shown (6.750").
** Primary connections for BE 15622 001 are studs (see front view).

FRONT VIEW
BE 15622 001

FRONT VIEW
BE 15620 001
BE 15621 001*

SIDE VIEW
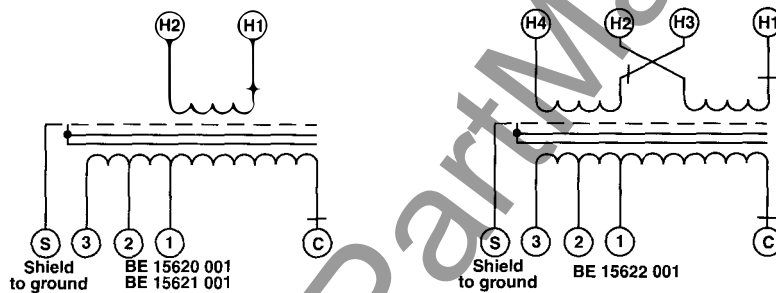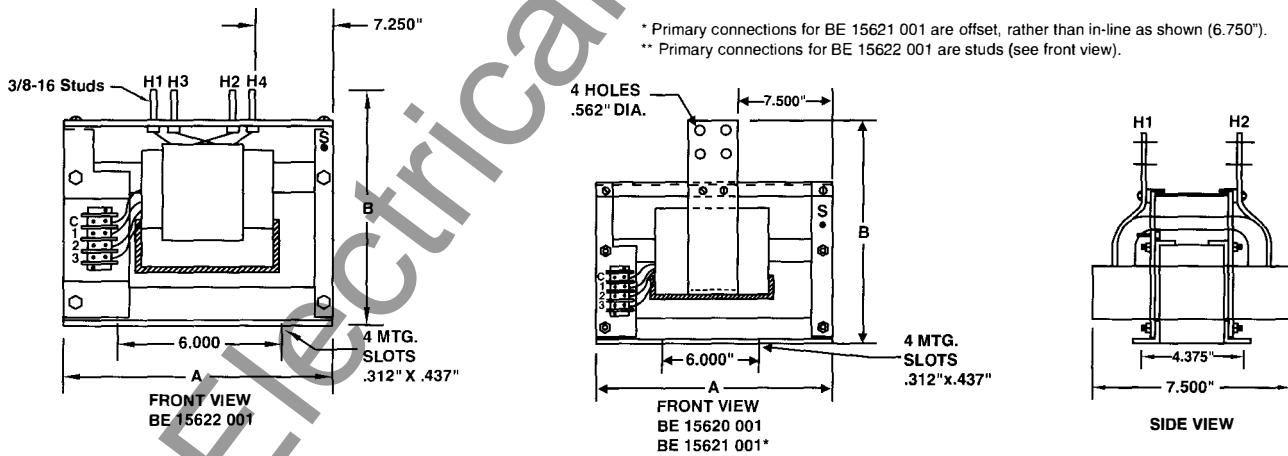
**FIGURE 6 - OUTLINE DRAWING - MEDIUM VOLTAGE CURRENT TRANSFORMERS**

| Current Transformer Part Number | ◆ Dimensions | | Primary | | Secondary Turns | | | Net Weight |
|---|---|---|---|---|---|---|---|---|
| | A | B | Turns | Amps* | C-1 | C-2 | C-3 | |
| **BE 15620 001** | 18.00" (457.20mm) | 12.75" (323.85mm) | 1 | 700 | 150 | 189 | 238 | 65 Pounds (29.44 kg) |
| **BE 15621 001** | 16.50" (419.10mm) | 12.75" (323.85mm) | 2 | 350 | 150 | 189 | 238 | 60 Pounds (27.18 kg) |
| **BE 15622 001** | 16.50" (419.10mm) | 11.12" (282.45mm) | 4/8 | 175/88 | 150 | 189 | 238 | 60 Pounds (27 18 kg) |

*Maximum Continuous

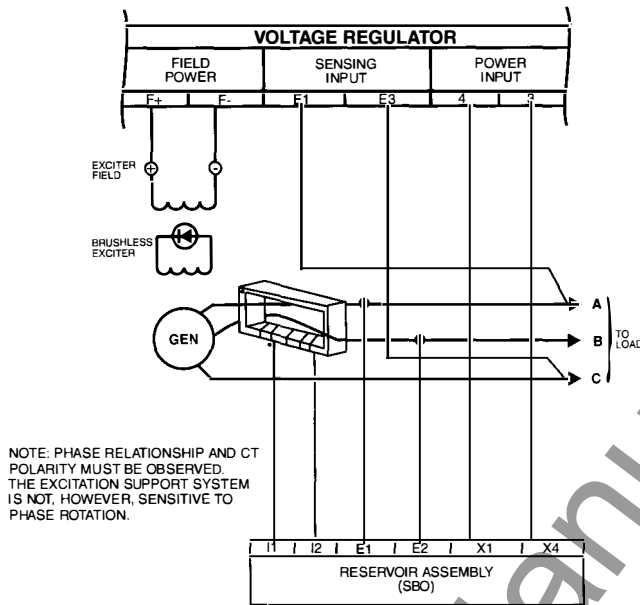**TABLE 5 - DIMENSIONS AND WEIGHTS**

**FIGURE 7 - EXCITATION SUPPORT SYSTEM INTERCONNECTION DIAGRAM
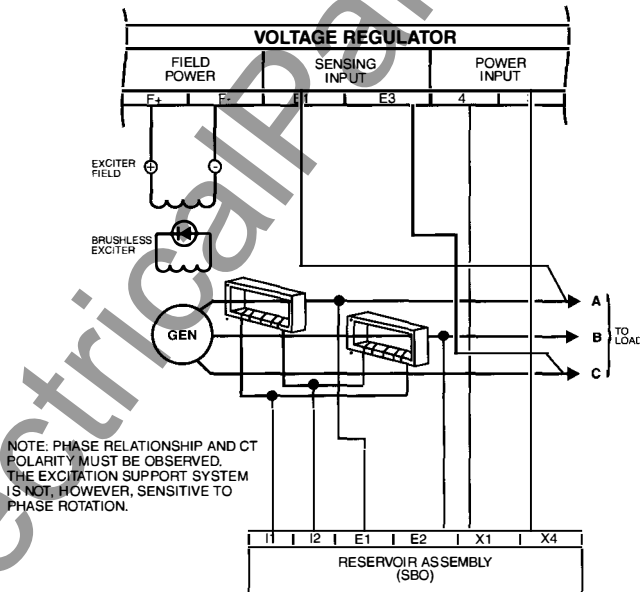ONE CURRENT TRANSFORMER (TYPICAL)**



**FIGURE 8 - EXCITATION SUPPORT SYSTEM INTERCONNECTION DIAGRAM
TWO CURRENT TRANSFORMERS (TYPICAL)**

NOTE: These drawings are NOT intended for installation purposes. Refer to Operation Manual received with equipment for proper installation drawings.

All drawings and data are subject to change without notice.

## Basler Electric