

# SVI-450i cv/cc POWER SOURCE FOR 50 HZ SERVICE

ESAB Part No. 31960  
L-TEC Part No. 35617

## I. General

This supplement covers the SVI-450i Export Power Source specifically designed for 220/380/416 Volt — 50 Hertz service. It is identical to the standard SVI-450i, P/N 31950 unit covered in Form 15-071 except for the following

### IMPORTANT

As shipped from the factory, all Export units are hooked-up to operate from a 415 volt input. If your input requirements do not match the factory-shipped provisions, the following data should be heeded.

— You must change the input voltage links connections (for the main and control transformer) to match your actual input voltage, as described in Section II-C of this insert.

### A. Replacement Parts:

Main Transformer Assy. (MTR) - P/N 31693 replaces P/N 31133

Control Transformer Assy. (CTR) - P/N 31694 replaces P/N 31134

Voltage Changeover Terminal Board Assy (TB) - P/N 31697 replaces P/N 31142

## II. Form 15-071 is applicable to this unit except as follows:

- A. See Revised Specification Table following.
- B. See Revised Table for Recommended Input Conductors and Line Fuses.

Note that the customer can either use the factory-supplied input power cable (No. 6 AWG, 4/c, type SO, 90° C 12-ft. lg.), or provide his own leads per the Input Table.

| Rated Input |       | Input & Gnd. Conductor CU/AWG | Time-Delay Fuse Size Amps |
|-------------|-------|-------------------------------|---------------------------|
| Volts       | Amps  |                               |                           |
| 220         | 61    | 6                             | 90                        |
| 380/415     | 42/39 | 8                             | 60                        |

- Sized per National Electric Code for 90 C rated copper conductors @ 30 C ambient. Not more than three conductors in raceway or cable. Local codes should be followed if they specify sizes other than those listed above.

### SPECIFICATIONS

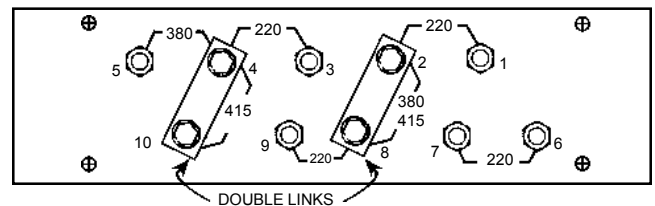
Rated Output @60% Duty ..... 450 amps @ 38 vdc  
 Open Circuit Voltage (Max. @ 220 v. Input) ..... 80 vdc  
 Input Voltage ..... 220/380/415 vac, 3 ph, 50 Hz  
 Input Current @ Rated Load ..... 61 amps @ 220 vac  
 ..... 42 amps @ 380 vac  
 ..... 39amps@415vac

Dimensions:  
 ..... 14.25" (362 mm) w x 23.0" (584 mm) d x 15.5" (394 mm) h  
 Weight ..... 115 lbs (52 kg)

Be sure this information reaches the operator.  
 You can get extra copies through your supplier.

## C. Primary Voltage Changeover Connections.

As mentioned in Section I, the primary windings of the main and control transformer are factory-connected for 415- volt operation. These connections are located on the terminal board under the top cover, and are made using reconnectable links. To accommodate the other input voltages available, the links must be repositioned as marked on the terminal board (see illustration following).



INPUT VOLTAGE TERMINAL BOARD (TB)

## D. Changes To Troubleshooting section VI, as follows:

1. Reference the "Power Boards, PB1/PB2, Troubleshooting" chart, and change the "voltage measurement" readings of the "Voltage Checks" data as follows;

### Voltage Checks (T.S. deenergized)

| (+) Probe | (-) Probe | Measurement (220/380/415v,50Hz) |
|-----------|-----------|---------------------------------|
| TB-1(+)   | TB-8(-)   | <b>H.V.</b> 311/269/294 vdc     |
| TB-2(+)   | TB-9(-)   |                                 |
| Gate-1    | Source-1  | -12 vdc                         |
| Gate-2    | Source-2  | -12 vdc                         |
| P1-1      | P1-3      | 24 vac                          |
| P1-1      | P1-2      | 12 vac                          |
| P1-2      | P1-3      | 12 vac                          |
| P1-8      | P1-10     | 24 vac                          |
| P1-8      | P1-9      | 12 vac                          |
| P1-9      | P1-10     | 12 vac                          |

2. Reference the "Input Bridge, IBR, Troubleshooting" chart, and change the "voltage measurement" readings of the "Voltage Checks" data as follows;

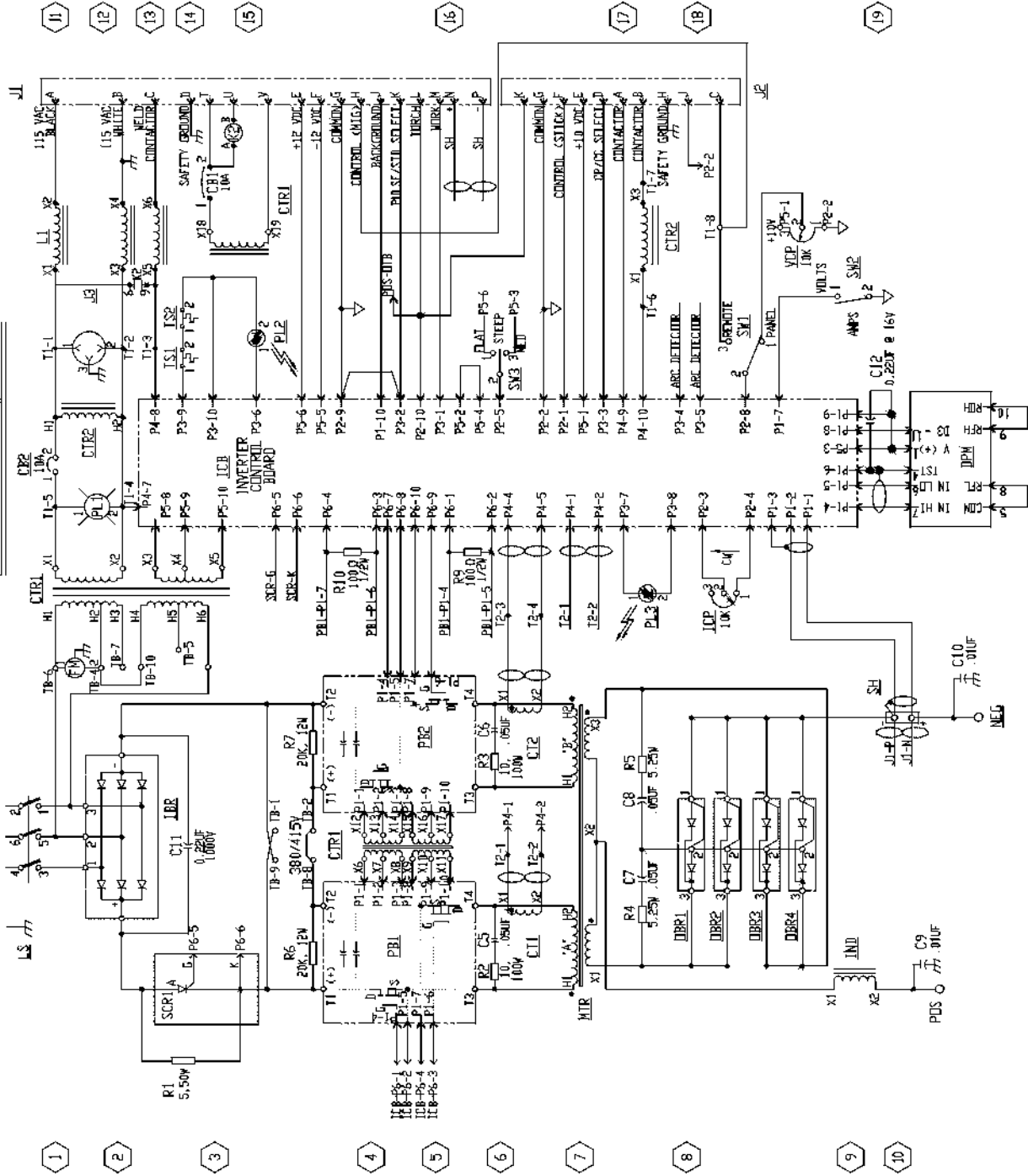
### Voltage Checks

|             |          |                                   |
|-------------|----------|-----------------------------------|
| TB-1 (+)    | TB-9 (-) | 358-280 vdc @ 220 vac (+15%/-10%) |
| <b>H.V.</b> |          | 618-484 vdc @ 380 vac (+15%/-10%) |
|             |          | 675-528 vdc @ 415 vac (+15%/-10%) |

E. Revised Wiring Diagram Contained Herein.

F. Revised Schematic Diagram Contained Herein.

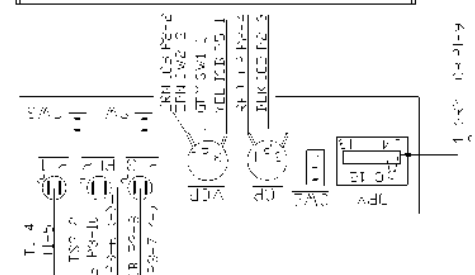
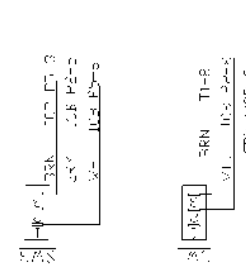
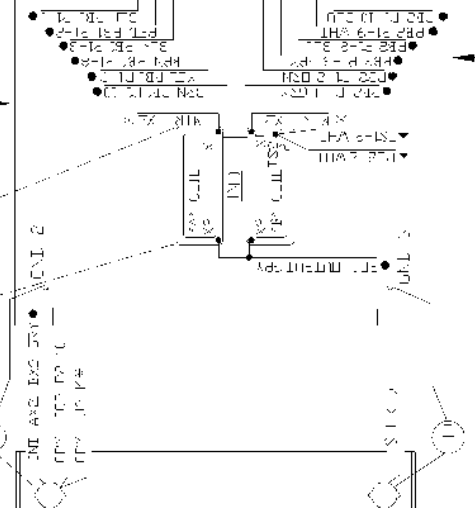
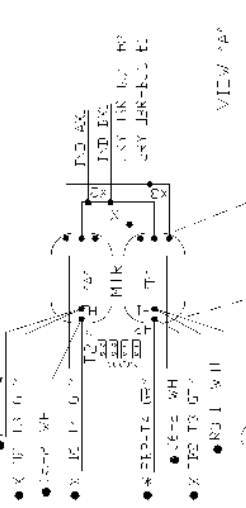
220/380/415/3 PH 50 HZ W/EQUIP GND



- ① LS - LINE SWITCH
- ② ITR - INPUT BRIDGE MODULE
- ③ PBI - POWER BOARD #1
- ④ PRE - POWER BOARD #2
- ⑤ CT1 - CURRENT TRANSFORMER #1
- ⑥ CT2 - CURRENT TRANSFORMER #2
- ⑦ MTR - MAIN TRANSFORMER
- ⑧ ICB - INVERTER CONTROL BOARD
- ⑨ CB1 - CIRCUIT BREAKER
- ⑩ TS1 - THERMAL SWITCH
- ⑪ TMI - THERMAL SWITCH - INDUCTOR
- ⑫ FM - FAN MOTOR
- ⑬ K2 - RELAY
- ⑭ CB1 - CIRCUIT BREAKER
- ⑮ CT2 - CONTROL TRANSFORMER #2
- ⑯ J1 - COMMON MODE COUPLER
- ⑰ TS2 - THERMAL SWITCH - INDUCTOR
- ⑱ TMI - THERMAL SWITCH - INDUCTOR
- ⑲ FM - FAN MOTOR
- ⑳ K2 - RELAY
- ㉑ CB1 - CIRCUIT BREAKER
- ㉒ CT1 - CURRENT TRANSFORMER #1
- ㉓ CT2 - CURRENT TRANSFORMER #2
- ㉔ J1 - COMMON MODE COUPLER
- ㉕ TS1 - THERMAL SWITCH - INDUCTOR
- ㉖ TS2 - THERMAL SWITCH - INDUCTOR
- ㉗ TMI - THERMAL SWITCH - INDUCTOR
- ㉘ FM - FAN MOTOR
- ㉙ K2 - RELAY
- ㉚ CB1 - CIRCUIT BREAKER
- ㉛ CT2 - CONTROL TRANSFORMER #2
- ㉜ J1 - COMMON MODE COUPLER
- ㉝ TS1 - THERMAL SWITCH - INDUCTOR
- ㉞ TS2 - THERMAL SWITCH - INDUCTOR
- ㉟ TMI - THERMAL SWITCH - INDUCTOR
- ㊱ FM - FAN MOTOR
- ㊲ K2 - RELAY
- ㊳ CB1 - CIRCUIT BREAKER
- ㊴ CT1 - CURRENT TRANSFORMER #1
- ㊵ CT2 - CURRENT TRANSFORMER #2
- ㊶ J1 - COMMON MODE COUPLER
- ㊷ TS1 - THERMAL SWITCH - INDUCTOR
- ㊸ TS2 - THERMAL SWITCH - INDUCTOR
- ㊹ TMI - THERMAL SWITCH - INDUCTOR
- ㊺ FM - FAN MOTOR
- ㊻ K2 - RELAY
- ㊼ CB1 - CIRCUIT BREAKER
- ㊽ CT2 - CONTROL TRANSFORMER #2
- ㊾ J1 - COMMON MODE COUPLER
- ㊿ TS1 - THERMAL SWITCH - INDUCTOR

Schematic Diagram - SVI-450i/50 Hz (Dwg. 31961)

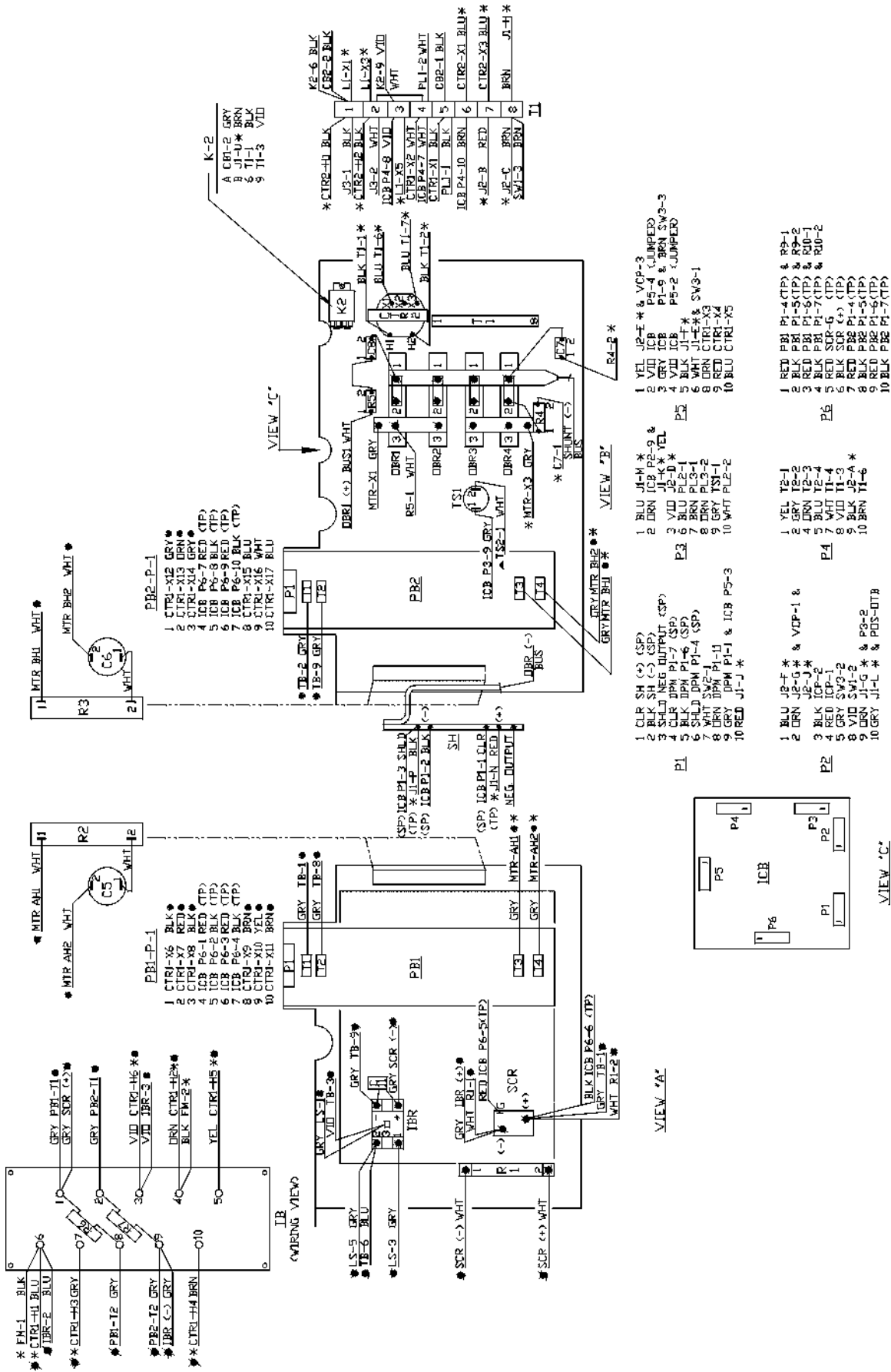
T1 J1-14  
 T2 J1-15  
 T3 J1-16  
 T4 J1-17  
 T5 J1-18  
 T6 J1-19  
 T7 J1-20



R1 15K 1/2W  
 R2 10K 1/2W  
 R3 5K 1/2W  
 R4 2.2K 1/2W  
 R5 1K 1/2W  
 R6 470 1/2W  
 R7 220 1/2W  
 R8 100 1/2W  
 R9 56 1/2W  
 R10 33 1/2W  
 R11 18 1/2W  
 R12 10 1/2W  
 R13 5.6 1/2W  
 R14 3.3 1/2W  
 R15 1.8 1/2W  
 R16 1 1/2W  
 R17 560 1/2W  
 R18 330 1/2W  
 R19 180 1/2W  
 R20 100 1/2W  
 R21 56 1/2W  
 R22 33 1/2W  
 R23 18 1/2W  
 R24 10 1/2W  
 R25 5.6 1/2W  
 R26 3.3 1/2W  
 R27 1.8 1/2W  
 R28 1 1/2W  
 R29 560 1/2W  
 R30 330 1/2W  
 R31 180 1/2W  
 R32 100 1/2W  
 R33 56 1/2W  
 R34 33 1/2W  
 R35 18 1/2W  
 R36 10 1/2W  
 R37 5.6 1/2W  
 R38 3.3 1/2W  
 R39 1.8 1/2W  
 R40 1 1/2W  
 R41 560 1/2W  
 R42 330 1/2W  
 R43 180 1/2W  
 R44 100 1/2W  
 R45 56 1/2W  
 R46 33 1/2W  
 R47 18 1/2W  
 R48 10 1/2W  
 R49 5.6 1/2W  
 R50 3.3 1/2W  
 R51 1.8 1/2W  
 R52 1 1/2W  
 R53 560 1/2W  
 R54 330 1/2W  
 R55 180 1/2W  
 R56 100 1/2W  
 R57 56 1/2W  
 R58 33 1/2W  
 R59 18 1/2W  
 R60 10 1/2W  
 R61 5.6 1/2W  
 R62 3.3 1/2W  
 R63 1.8 1/2W  
 R64 1 1/2W  
 R65 560 1/2W  
 R66 330 1/2W  
 R67 180 1/2W  
 R68 100 1/2W  
 R69 56 1/2W  
 R70 33 1/2W  
 R71 18 1/2W  
 R72 10 1/2W  
 R73 5.6 1/2W  
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 R75 1.8 1/2W  
 R76 1 1/2W  
 R77 560 1/2W  
 R78 330 1/2W  
 R79 180 1/2W  
 R80 100 1/2W  
 R81 56 1/2W  
 R82 33 1/2W  
 R83 18 1/2W  
 R84 10 1/2W  
 R85 5.6 1/2W  
 R86 3.3 1/2W  
 R87 1.8 1/2W  
 R88 1 1/2W  
 R89 560 1/2W  
 R90 330 1/2W  
 R91 180 1/2W  
 R92 100 1/2W  
 R93 56 1/2W  
 R94 33 1/2W  
 R95 18 1/2W  
 R96 10 1/2W  
 R97 5.6 1/2W  
 R98 3.3 1/2W  
 R99 1.8 1/2W  
 R100 1 1/2W

X 15-10 2-20  
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 X 15-99 1-15  
 X 15-100 2-15

Wiring Diagram - SVI-450/50 Hz (Dwg. 31962, Sh. 1 of 2)



Wiring Diagram - SVI-450/50 Hz (Dwg. 31962, Sh. 2 of 2)