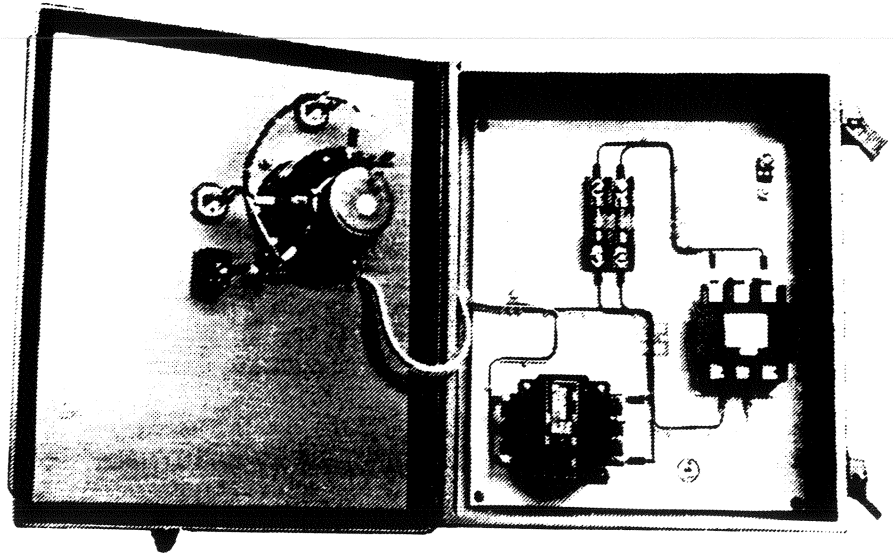
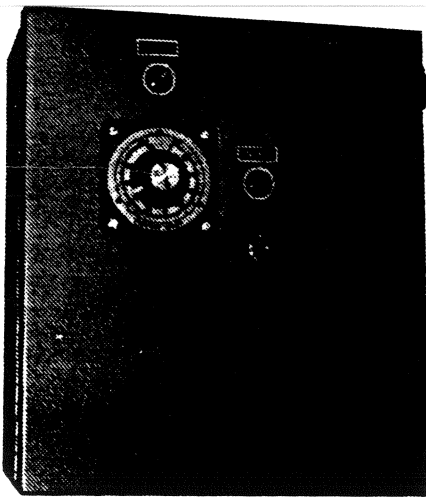


Chromalox[®]

Installation Instructions START-UP and SERVICE MANUAL

| SERVICE REFERENCE | | | |
|----------------------------------|------|--------|-------------|
| DIV. 4 | SEC. | HCP | NUMBER 3001 |
| SALES REFERENCE (0037-75060) | | PK-464 | |
| HCP-0643; PCN-285763; 8669-00083 | | | |
| DATE JUNE, 1982 | | | |

Chromalox HCP Type Input Controllers



INDEX

| SUBJECT | | ILLUSTRATIONS | |
|------------------------------------|------|---|------|
| Sections | Page | Fig. No. | Page |
| Scope | 1 | 1 Dimensional Diagram | 1 |
| Description | 1 | 2 Transformer Configuration | 1 |
| Installation | 1 | 3 Layout and Wiring Diagram | 2 |
| Operation | 2 | 4 Schematic Diagram | 3 |
| Maintenance | 2 | Renewal Parts Identification for HCP 0643 | 4 |
| Site and Storage Preparation | 4 | | |
| Warranty | 4 | | |
| Return of Material | 4 | | |

SCOPE

This manual applies to the Chromalox Type HCP Input Controller package.

DESCRIPTION

The HCP Input Controller is a factory wired mechanical control package for infinitely varying radiant heater output. The heavy gauge metal enclosure includes a door-mounted 30 second input controller, indicator lights and ON-OFF switch for the control circuit.

Panel-mounted inside is a three pole magnetic contactor, and a voltage step-down transformer with fused primary circuit. The transformer provides 120 volts to the control circuit from either 240 or 480 volt power supply. The HCP can be used to control either single or three phase loads.

INSTALLATION

The HCP Controller package is designed for wall or bulkhead mounting. The unit should be mounted using 1/4" hex bolts. (See Figure 1 for mounting dimensions.)

Electrical installation requires customer connection of incoming three phase (or single phase) power lines and heater load lines. (See schematic and wiring diagram.)

(The customer is to provide openings for wiring entrance and exit of suitable size and positioned to suit individual needs.)

CAUTION: Select wire in accordance with the National Electrical Code and/or any local standards which may apply.

NOTE: For single phase applications, connect line and load wiring to the outside contacts of CON 1, i.e., L1 and L3.

NOTE: All units are configured for 480 volt operation at factory. For 240 volt operation, the swing clips on the primary of the transformer **must** be connected in parallel configuration. (See Figure 2.)

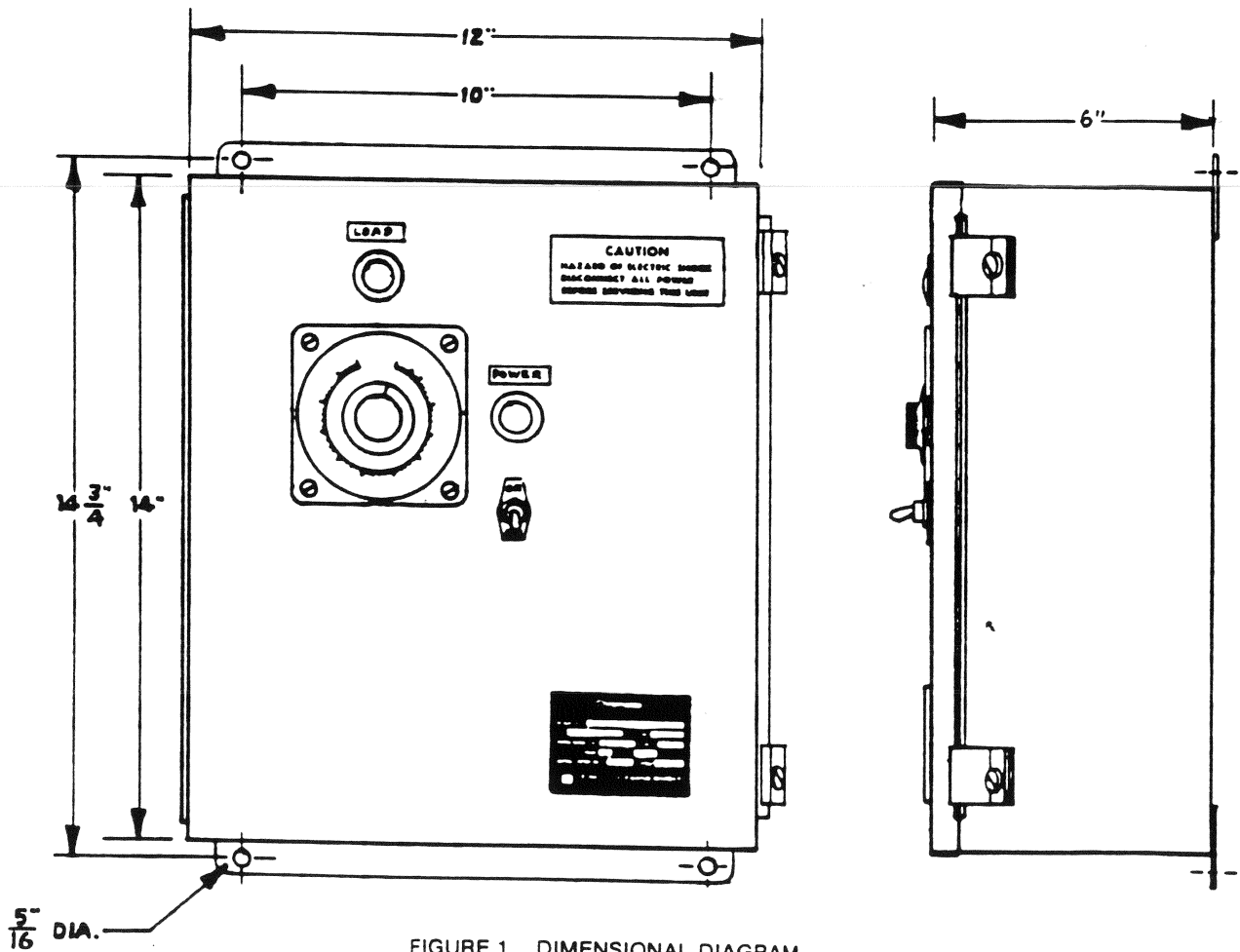


FIGURE 1. DIMENSIONAL DIAGRAM

NOTE: WHEN MOUNTING UNIT, ALLOW ADEQUATE SPACE FOR FULL OPENING OF ENCLOSURE DOOR.

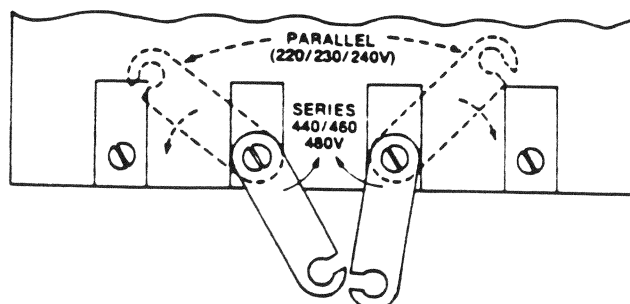


FIGURE 2. TRANSFORMER CONFIGURATION

OPERATION

This unit utilizes a percentage timer to accurately control output power to radiant heaters. With power applied and the control switch in the "ON" position, 120 volt control power is applied to the VCF percentage timer. The timer controls the closing and opening of the contacts of CON 1. The duty cycle is controlled by the setting of the timer dial, i.e., at 10%, contacts will be closed for approximately 3 seconds and open for 27 seconds; at 50%, the contacts are closed for 15 seconds and open for 15 seconds, etc. The selected duty cycle will continue as long as line power is applied and the control switch is in the "ON" position.

External indications include: a "POWER" on lamp which should illuminate at any time power is applied and the control switch is "ON".

A "LOAD" lamp, which cycles on and off in unison with the contactor opening and closing. (ON when contactor is closed, OFF when contactor is open.)

MAINTENANCE

There are no adjustments or calibration features incorporated in this

unit; therefore, maintenance can be kept to the minimum precautionary measures listed here:

CAUTION: Disconnect all power before servicing this unit.

1. Accumulated dust should be cleaned off periodically. Conductive build-up may lead to an arcing condition in the high-voltage section.
2. Check for pitting and corrosion caused by arcing at loose terminal connections.
3. Check periodically for rodent damage to wiring and internal materials.
4. Systems used in a corrosive atmosphere should have the electrical connections periodically inspected and tarnished connections should be cleaned.

Due to the simplicity of this unit, a failure can be caused only by a faulty fuse, faulty contactor, faulty timer or faulty wiring. Reference to the schematic and wiring diagrams and logical application of standard trouble-shooting technique should resolve any problems.

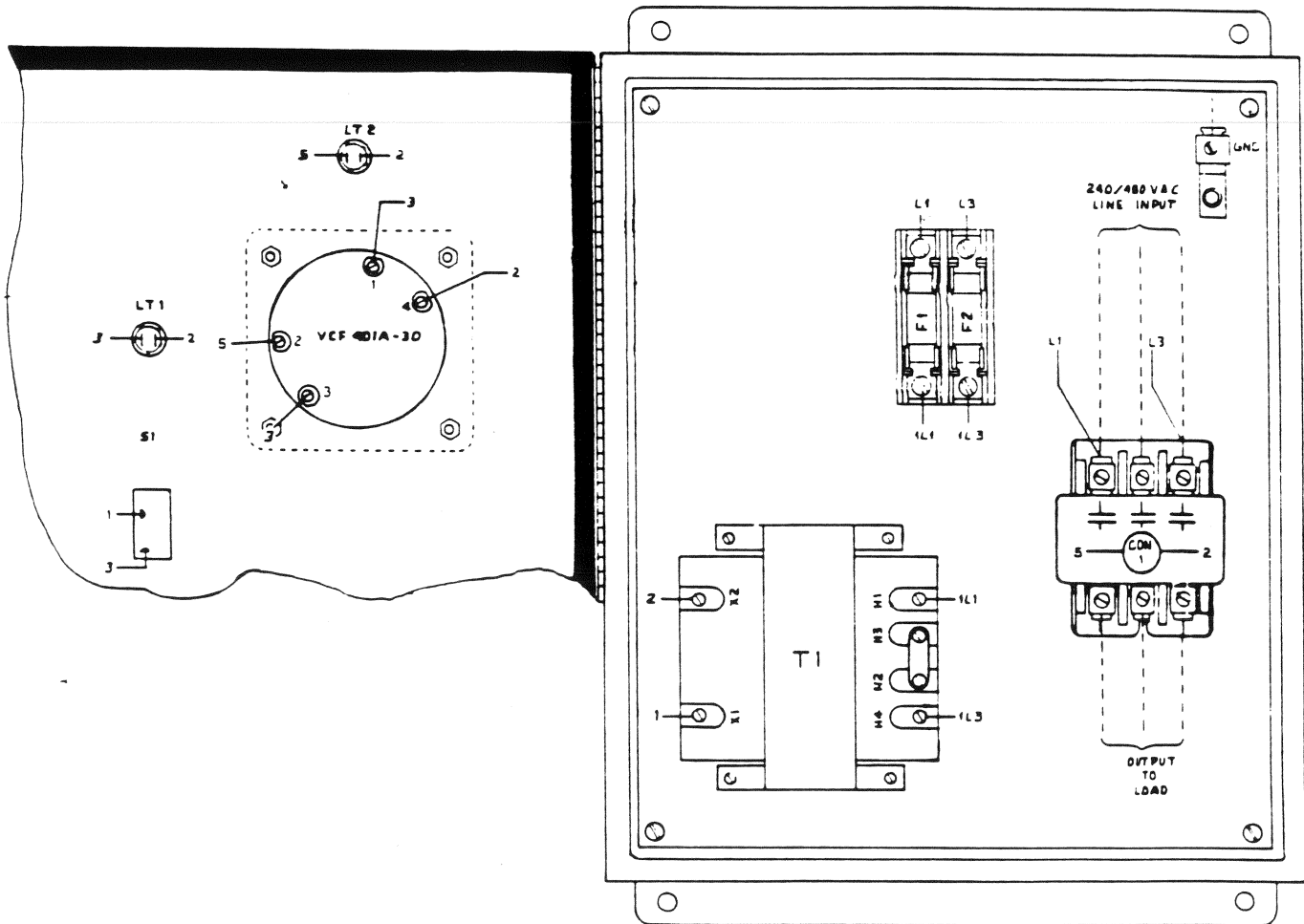


FIGURE 3. LAYOUT AND WIRING DIAGRAM

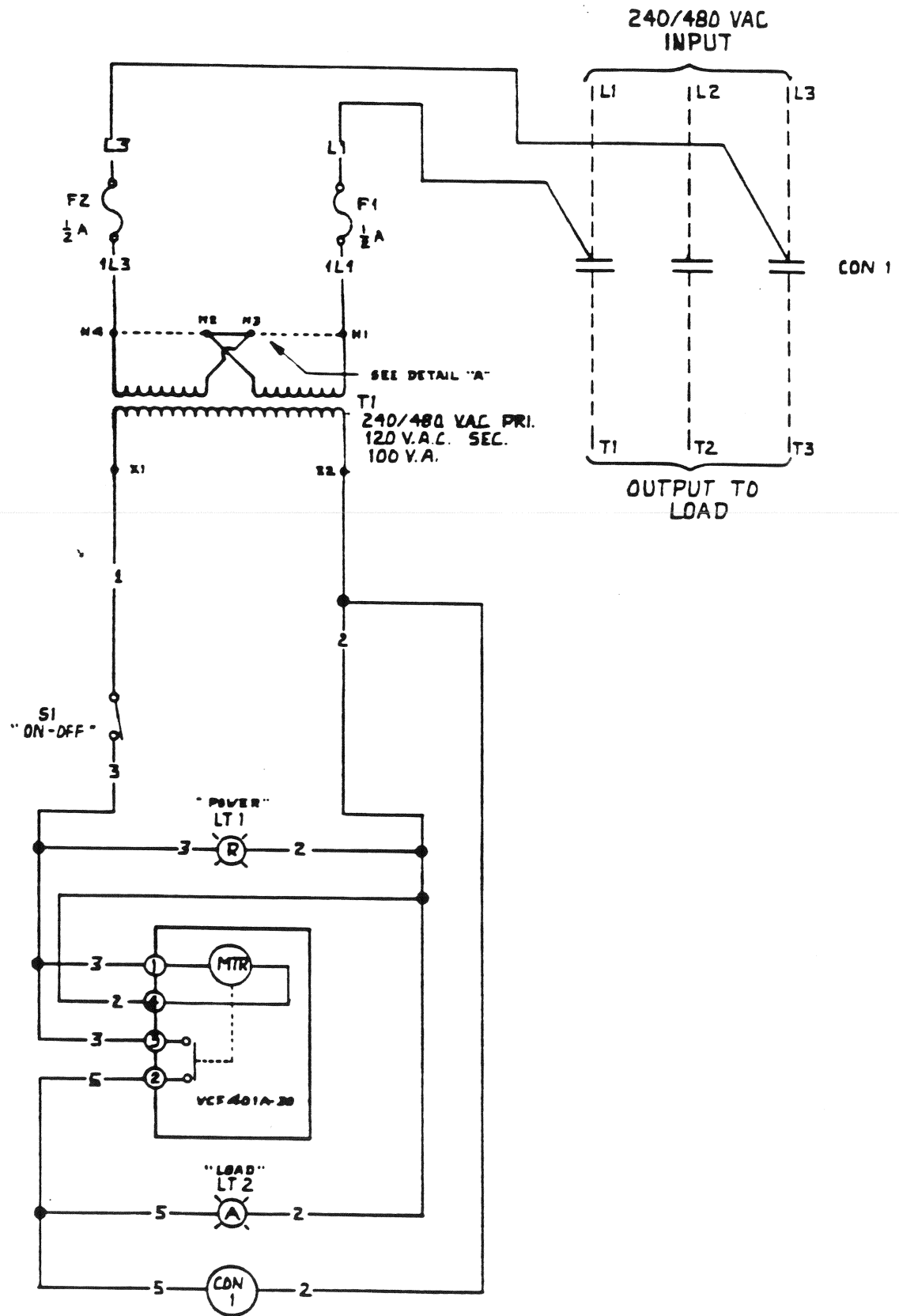


FIGURE 4 SCHEMATIC DIAGRAM

SITE AND STORAGE PREPARATION

The input controller package may be stored in its shipping container until ready for installation.

Storage site should be an indoor, cool, dry location.

There are no specific requirements for site preparation. User needs should dictate any site preparations.

WARRANTY INFORMATION

The warranty below complies with the Federal Law applicable to products manufactured after December 31, 1976. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Chromalox Warranty

Chromalox Instruments and Controls are warranted against defects in workmanship and materials. No other express warranty, written or oral applies with the exception of a written statement from an officer of Chromalox Instruments and Controls, Edwin L. Wiegand Division, Emerson Electric Company.

Warranty Period

This warranty extends for twelve months from the date of shipment from the factory.

Warranty Limitations

Products must be installed and maintained in accordance with Chromalox instructions. Users are responsible for the suitability of the products to their application. There is no warranty against damage resulting from corrosion, misapplication, improper specification or other operating conditions beyond our control. Claims against carriers for damage in transit must be filed by the buyer.

Remedy

Return the defective part or product, freight prepaid to: Chromalox Instruments and Controls, 100 Heil-Quaker Blvd., LaVergne, TN 37086. Items returned to Chromalox Instruments and Controls must be accompanied by a Return Authorization Number. This number may be obtained from Chromalox Instruments and Controls, Customer Service Department, Telephone Number (615) 793-7561, Ext. 18 or 59. Defective items will be repaired or replaced at our option, at no charge. SUCH REPAIR OR REPLACEMENT IS THE EXCLUSIVE REMEDY AVAILABLE FROM CHROMALOX

INSTRUMENTS AND CONTROLS, EDWIN L. WIEGAND DIVISION, EMERSON ELECTRIC COMPANY. CHROMALOX INSTRUMENTS AND CONTROLS IS NOT LIABLE FOR LABOR COSTS INCURRED IN REMOVAL, REINSTALLATION OR UNAUTHORIZED REPAIR OF THE PRODUCT OR FOR DAMAGE OF ANY TYPE WHATSOEVER, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGE. Some states do not allow the exclusion or limitations of incidental or consequential damages, so the preceding limitation or exclusion may not apply to you.

RETURN OF MATERIAL

Material returned for repair, whether in or out of warranty, should be shipped prepaid to:

Chromalox Instruments and Controls
 100 Heil-Quaker Boulevard
 LaVergne, Tennessee 37086
 ATTN: Customer Service Department

Contact factory for "Return Authorization" identification number. The packing slip should be marked:

Return for Repair RA- _____
 Model _____

The returned material should be accompanied by a letter of transmittal which should include the following information:

1. Location, type of service and length of time in service of the device;
2. Description of the faulty operation of the device and the circumstances of the failure;
3. Name and telephone number of the person to contact if there are any questions about the returned material;
4. State as to whether warranty or non-warranty service is requested;
5. Complete shipping instructions for return of material.

Adherence to these procedures will expedite handling of the returned material and will prevent unnecessary additional charges for inspection and testing to determine the problem with the device. If the material is returned for out of warranty repairs, a purchase order for repairs should be enclosed.

It is not advisable to attempt to modify any model without first consulting the factory.

RENEWAL PARTS IDENTIFICATION FOR HCP 0643

| DESCRIPTION | Q/U | REFERENCE DESCRIPTION | CHROMALOX PART NUMBER |
|-------------------------------------|-----|-----------------------|-----------------------|
| Contacter, 60 Amp, 120 V Coil | 1 | CON 1 | 8640-70003 |
| Percentage Timer, VCF-401A-30 | 1 | VCF | 0025-17000 |
| Transformer, 240-480/120VAC, 100 VA | 1 | T1 | 0485-07004 |
| Fuse Block, 2 Pole | 1 | — | 8640-08002 |
| Fuse FNQ 1/2 | 2 | F1, F2 | 0024-07543 |
| Toggle Switch, SPST | 1 | S1 | 8641-42003 |
| Pilot Light, Amber | 1 | LT 2 | 0014-00525 |
| Pilot Light, Red | 1 | LT 1 | 0014-00526 |
| Ground Lug | 1 | GND | 0754-38007 |

TO ORDER RENEWAL PARTS, CONTACT YOUR LOCAL CHROMALOX REPRESENTATIVE OR FACTORY.

Emerson Electric Co. • 1382 Heil Quaker Boulevard • Lavergne Tennessee 37086
Telephone (615) 793-3900 • FAX (615) 793-3563

Chromalox[®]
INSTRUMENTS AND CONTROLS