This manual is intended to be a quick reference guide for basic installation requirements and an overview of the connections, wiring considerations, and general specifications for the CTF Advanced SCR Power Controller. For complete installation, operation, programming and configuration, please refer to the following manuals: PK533 CTF Hardware Instruction Manual; PK534 CTF & CTF-XTRA Controller Programming Manual; PK537 C-PWR Configuration Software Manual. The most current revisions may be found on the Chromalox website: www.chromalox.com.

1. IMPORTANT SAFEGUARDS

**WARNING**

**ELECTRIC SHOCK HAZARD:** Read and understand all instructions before installing, servicing or operating this controller. Failure to do so could result in equipment or property damage as well as personal injury and even death.

**WARNING**

**HIGH VOLTAGE** is used in the operation of this equipment; **DEATH ON CONTACT** may result if personnel fail to observe safety precautions. Learn the areas containing high-voltage connections when installing or operating this equipment.

**WARNING**

Be careful not to contact high-voltage connections when installing or operating this equipment. Before working inside the equipment, turn power off and ground all points of high potential before touching them.

**WARNING**

**ELECTRIC SHOCK HAZARD:** Any installation involving control equipment must be performed by a qualified person and must be effectively grounded in accordance with the National Electrical Code or local governing electrical code/authority, to eliminate shock hazard.

**CAUTION**

The owner/installer must provide all necessary safety and protection devices and follow all current electrical wiring standards and regulations. Failure to do so may compromise the integrity of the controller and/or cause product failure resulting in a safety risk to operational and service personnel.

**CAUTION**

This controller utilizes a heat sink which is designed to cool the unit during operation. Under no circumstances should air flow around the heat sink be compromised in any way. Failure to do so may result in the overheating of the controller, product failure, product burnout, and/or cause product failure resulting in a safety risk to operational and service personnel.

**WARNING**

During continuous operation, the heat sink can reach very high temperatures, and keeps a high temperature even after the unit is turned off due to its high thermal inertia.

Installation Wiring Note:

Use the extra rapid fuses as indicated in the CTF Hardware Instruction Manual PK533, according to the wiring schematic examples and controller rating. Additionally, the applications with solid state units require a safety automatic switch to disengage the load power line during certain alarm events.

### 2. INSTALLATION

**Input & Output Connections: CTF 25 – 120 Amp Models**

#### Input & Output Connections: CTF 25 – 120 Amp Models

<table>
<thead>
<tr>
<th>Component</th>
<th>Cables/Line Size</th>
<th>Recommended Wire Gauges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control/Power</td>
<td>50A 1/L1, 2/T1, PE 50 mm²</td>
<td>2/0 AWG Wire terminal / Eye D. 6mm 2.5 Nm / Phillips screwdriver PH2 - PH3</td>
</tr>
<tr>
<td>Control/Power</td>
<td>75A 1/L1, 2/T1, PE 50 mm²</td>
<td>2/0 AWG Wire terminal / Eye D. 6mm 2.5 Nm / Phillips screwdriver PH2 - PH3</td>
</tr>
<tr>
<td>Control/Power</td>
<td>100A 1/L1, 2/T1, PE 50 mm²</td>
<td>2/0 AWG Wire terminal / Eye D. 6mm 2.5 Nm / Phillips screwdriver PH2 - PH3</td>
</tr>
<tr>
<td>Control/Power</td>
<td>120A 1/L1, 2/T1, PE 50 mm²</td>
<td>2/0 AWG Wire terminal / Eye D. 6mm 2.5 Nm / Phillips screwdriver PH2 - PH3</td>
</tr>
</tbody>
</table>

**Input & Output Connections: CTF 150 – 250 Amp Models**

<table>
<thead>
<tr>
<th>Component</th>
<th>Cables/Line Size</th>
<th>Recommended Wire Gauges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control/Power</td>
<td>250A 1/L1, 2/T1, PE 50 mm²</td>
<td>2/0 AWG Wire terminal / Eye D. 6mm 2.5 Nm / Phillips screwdriver PH2 - PH3</td>
</tr>
<tr>
<td>Control/Power</td>
<td>275A 1/L1, 2/T1, PE 50 mm²</td>
<td>2/0 AWG Wire terminal / Eye D. 6mm 2.5 Nm / Phillips screwdriver PH2 - PH3</td>
</tr>
</tbody>
</table>

**Recommended Wire Gauges**

- **25A 1/L1, 2/T1, PE** 0.5 x 0.6 mm² / Shield wire 25 mm² x 2.5 mm
- **45A 1/L1, 2/T1, PE** 0.5 x 0.6 mm² / Shield wire 25 mm² x 2.5 mm
- **75A 1/L1, 2/T1, PE** 0.5 x 0.6 mm² / Shield wire 25 mm² x 2.5 mm
- **100A 1/L1, 2/T1, PE** 0.5 x 0.6 mm² / Shield wire 25 mm² x 2.5 mm
- **120A 1/L1, 2/T1, PE** 0.5 x 0.6 mm² / Shield wire 25 mm² x 2.5 mm
- **250A 1/L1, 2/T1, PE** 0.5 x 0.6 mm² / Shield wire 25 mm² x 2.5 mm
- **275A 1/L1, 2/T1, PE** 0.5 x 0.6 mm² / Shield wire 25 mm² x 2.5 mm

**NOTE:** Cables must be copper "Stranded Wire" or "Compact-Stranded Wire" type with max. operating temp. 60/75 °C.