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 C4 4-Channel SCR Power Controller with Independent PID control. For complete installation and operation, refer to the PK544 C4 Hardware Instruction Manual. For complete configuration and programming refer to the PK548 C4 Configuration and Programming 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 voltage potential before touching.

**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 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 service and personnel.

**CAUTION**

This controller utilizes a heat sink which is designed to cool unit during operation. Under no circumstance should air flow around the controller be compromised in any way. Failure to do so may result in the overheating of the controller, product failure, product temperatures and even fire.

**WARNING**

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

### 2. OVERVIEW & LAYOUT

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<td>Connectors J1, J2, J3, J4</td>
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<td>Fuse holder terminals (F1, F2, F3, F4/N)</td>
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<tr>
<td>14.</td>
<td>Ventilation screen (DO NOT Obstruct)</td>
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</table>

**COOLING FAN CARE**

**Periodic Cleaning**

Every 6–12 months (depending on the dust level of the installation) blow a compressed air jet downward through the upper rectangular cooling grilles (on the side opposite the fan). This will clean the internal heat dissipater and the cooling fan.

In Case of Overheat Alarm

If periodic cleaning does not eliminate the problem, do as follows:

a. Remove the fan support grille by detaching the two support tabs
b. Disconnect fan connector from board
c. Check the condition of the fan
d. Clean or replace the fan (*)
e. Insert the connector into the board
f. Insert fan support grille until it attaches
g. Power up the device and check fan rotation when at least one load is on

**WARNING**

Before attempting board replacement, ensure that power to the controller has been cut and verify that the system is isolated for operator safety.

**INSERTING A NEW FIELD BUS INTERFACE CARD**

To insert a communication module, the Field Bus Interface Board compartment must be accessed. Follow these steps:

1. Remove the Fieldbus compartment cover screw 16
2. With a flat screwdriver, gently apply pressure at 18
3. Remove compartment cover 17
4. Insert Fieldbus card 19 into the proper connector 21
5. Remove applicable communication port tab 20 on cover 17
6. Carefully replace compartment cover 17
7. Tighten compartment cover screw 16

**WARNING**

Before and during the inspection/ maintenance cut power to the fan controller and verify that the system is isolated for operator safety.
3. WIRING

Model without fuse holder
Model with fuse holder

Voltage/Current Considerations

- Use adequately compensated cable for thermocouple inputs. Maintain polarity by avoiding junctions on the cables.
- If using a grounded thermocouple, the connection must be at a single point.
- For RTD inputs, use copper extension cables and avoid junctions on the cables.
- Resistance must not exceed 20 Ohm.
- For 2-wire RTD’s, make the connection indicated instead of the third wire.
- Refer to the applicable Connectors Detail.

Power Wiring Considerations

- Flexible
- Rigid

F1,F2,F3,F4/N Line Connection Terminals
U1,U2,U3,U4 Load Connection Terminals

4. OPTIONS, INPUTS AND OUTPUTS CONNECTIONS

- 4 Independent zones (4 single-phase loads)
- Zone 1: 3-phase load, start (bye) connection, without neutral
- Zone 1 & 3: Two 3-phase loads, closed delta connection.
- Zone 1 & 3: Two 3-phase loads, open delta connection.
- Zone 1 & 3: Two 3-phase loads, closed delta connection.
- Zone 1: 3-phase load, start (bye) connection, without neutral.

5. DIP SWITCH CONFIGURATION

- Function
- Description
- Load Connection Type

6. GENERAL DATA

- General Data
- Power Supply: 24 VDC +/-2.5%, max 8WA
- Indicators: RH CPU in run state , ER Fault Signal
- D1, D0 state of digital inputs
- D0...D4 state of outputs
- Protection: IP00
- Work/Storage Temperature: 0 - 50°C (see dissipation curves) / -20°C...70°C
- Relative Humidity: 20 - 85% RH non-condensing
- Ambient Work Conditions: Indoor use, altitude up to 2000m
- Installation: DIN RAIL EN50022 or panel using screws
- Installation Instructions: Installation category II, Pollution level 2, double isolation
- Critical Duty with Output Deactivated: 1050 W/sec
- Rated Isolation Voltage: 4000 V
- Minimum Clearance Considerations

- Attention: Respect the min. distances shown in figure to provide adequate air circulation.

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