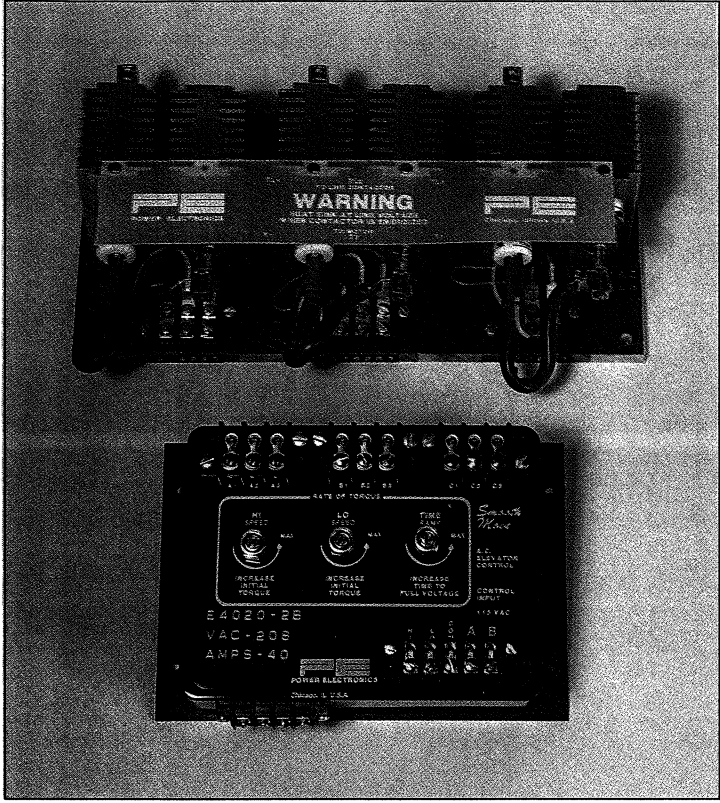


E-SERIES™

**1 & 2-SPEED A.C. ELEVATOR
 REDUCED TORQUE CONTROLS**



A.C. ELEVATORS NEED THIS CONTROL!

Eliminates resistor ballasts! The industry proven E4020-2B 2-speed a.c. elevator reduced torque control pictured above (3-phase 208VAC at 40 full load amps) "senses" elevator motor direction and its transitions from one speed to another, via contactor coils. Motor torque (voltage) is then electronically and steplessly adjusted to obtain smooth/soft motor control—even in the critical high to low speed transition. Models are available for both 1-speed and 2-speed a.c. elevator motors in either 50 or 60Hz. Signal inputs are standard 115VAC with other voltages available (including D.C.).

Smooth Move™

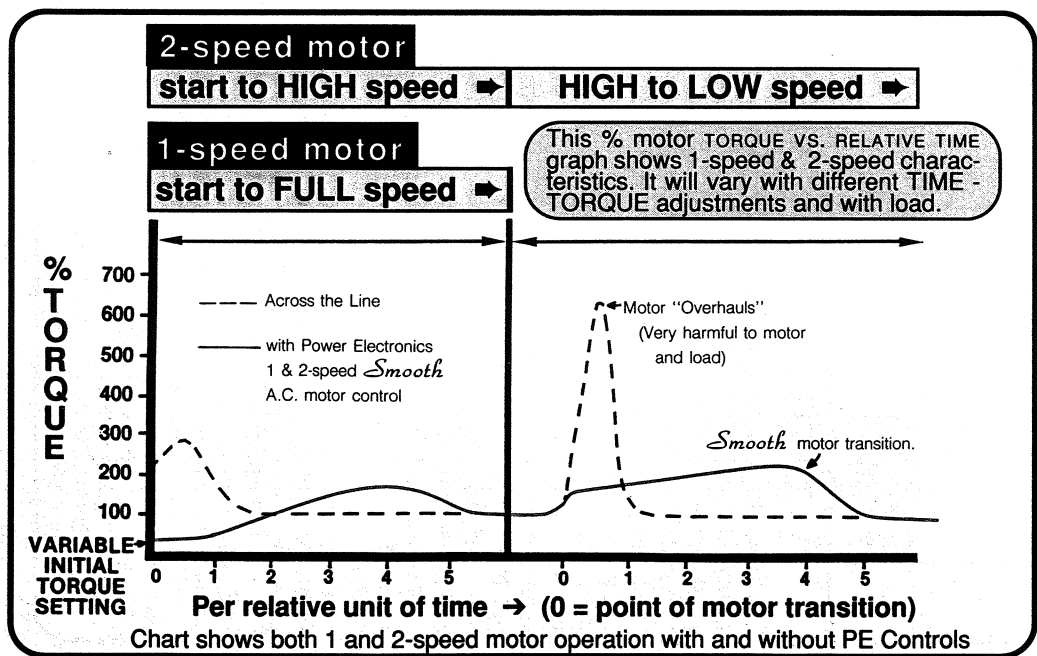
For 3-phase A.C. Elevator/Lifts
 4,9,20,40,60,90,150 AMPS
 208-230,385-415,460,575 VAC

UPDATE YOUR ELEVATORS!

- ◆ Gives **smooth, soft & stepless** elevators
- ◆ Replaces outdated resistor starting
- ◆ **1-speed** motors start, reverse, & relevel softly and smoothly.
- ◆ **2-speed** motors have smooth/soft starting, reversing and *smooth high to low speed transition*. Without timers!
- ◆ Safety & reliability of elevator increased
- ◆ Reduces inrush current
- ◆ **PATENTED** system *eliminates arcing* on contactor make & break (close and open). Old carbon to copper contactor life is increased, with minimized adjustment & maintenance. Metallic contact life and reliability is dramatically increased!

APPLICATIONS :

- ★ 1-speed passenger or freight elevators/lifts
- ★ 2-speed passenger or freight elevators/lifts
- ★ Hydraulic elevator motors
- ★ Starting of Motor/Generator sets
- ★ Upgrading of old elevator installations
- ★ Improvement of existing elevator designs
- ★ Useful on dumbwaiters and manlifts, etc.

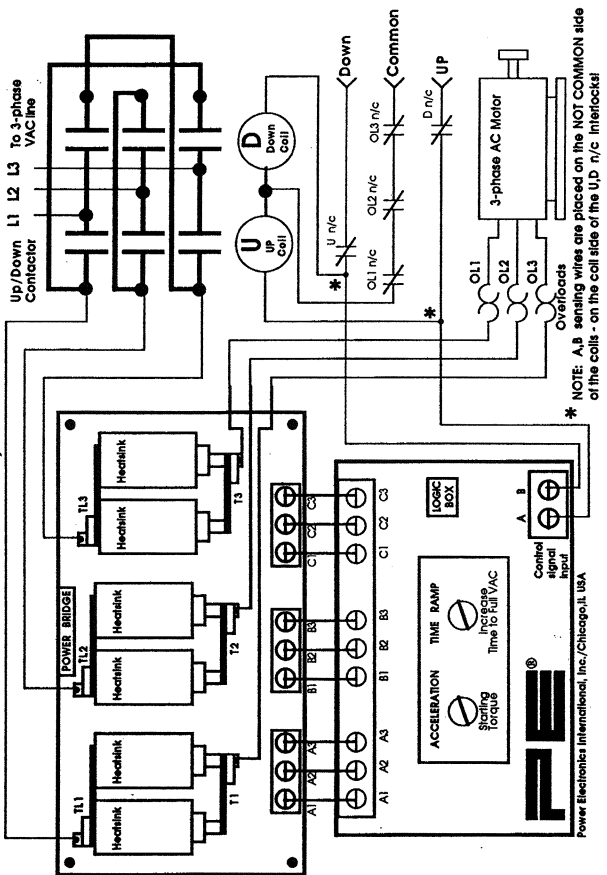


**Easy retrofit
 for existing
 elevators**

**Smooth/soft
 elevator ride**

**Eliminates
 contactor
 arcing**

TYPICAL 1-SPEED A.C. ELEVATOR/LIFT



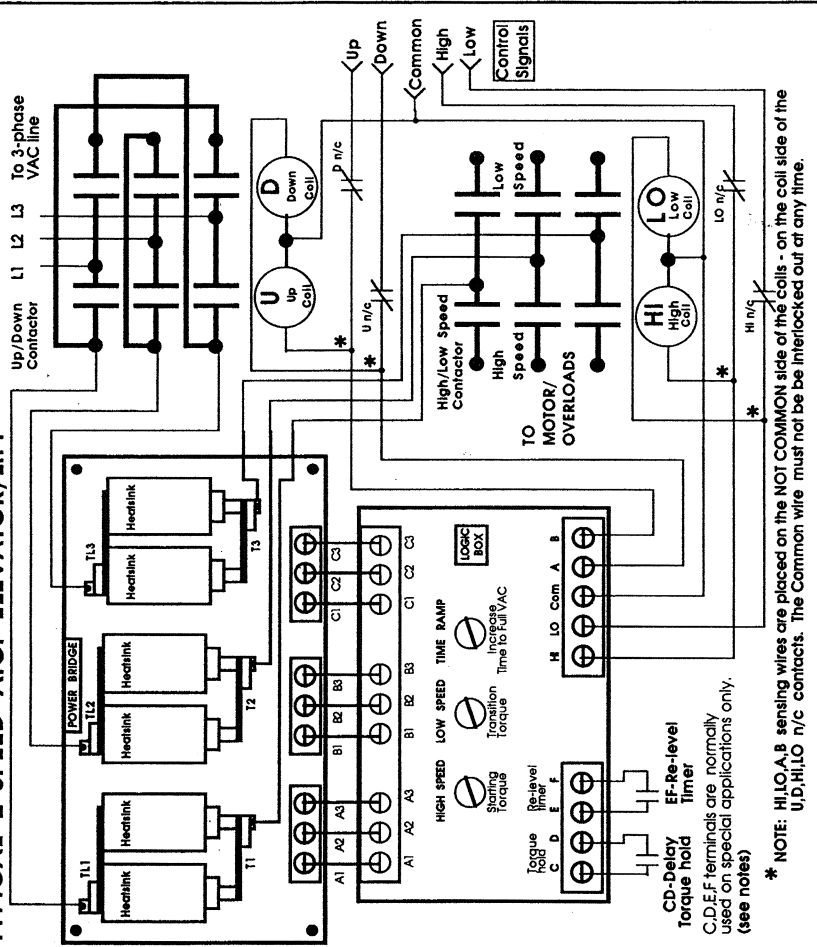
1-SPEED WIRING AND OPERATION

The power bridge contains the silicon controlled rectifiers (SCRs) which are phase controlled by signals coming from the logic box. The SCRs act as electronic "valves" controlling the amount of voltage which the elevator motor will see. With the TIME and TORQUE settings on the logic box it is possible to select a motor starting torque (voltage) and the amount of time to reach full motor torque. Upon reversing of the phases via the up/down contactor, the control will reset from the signal of the contactor coil giving smooth/soft and stepless ramping up of motor torque. Thus, the elevator will have a completely smooth/soft/stepless starting in either the up or down direction. Also, via the signals coming from the contactor coils, the power contactors will open and close under NO CURRENT. This patented feature effectively eliminates contactor arcing on the "make and break" (open & close) cycle giving little to no contactor wear and greatly reducing the chance of contacts burning or welding! This system gives increased safety to all elevators since it waits for a coil signal to begin operation. A falsely closed contactor will not see current flow until the unit detects a coil control signal. In this way E-Series™ reduced torque control acts as a redundant 3-phase safety switch!

Physical Construction of 1 and 2-speed controls

E-Series™ units under 20 FLA (4 & 9 amps) are of single piece construction. Controls of 20 amps or larger ("c" size & above) consist of 2-pieces, a power bridge portion and the logic box. The 2-piece controls are connected together, as shown, with the LOGIC BOX DIMENSIONS: 7-3/8" x 5.5" x 3-1/8" (18.7cm x 14cm x 7.9cm) POWER BRIDGE DIMENSIONS: 20A=11"x5"x3-1/8"(27.9cmx12.7cmx7.9cm); 40A=12"x6"x3-3/4"(30.5cmx15.2cmx9.5cm); 60A=12"x7"x3-3/4"(30.5cmx17.8cmx9.5cm); 90A=20"x7"x5-1/8"(50.8cmx17.8cmx13.3cm); 150A=28"x12"x5-1/4"(71.1cmx30.5cmx13.3cm). Other ampage sizes (including 4A & 9A units) dimensions are on the separate model chart.

TYPICAL 2-SPEED A.C. ELEVATOR/LIFT



2-SPEED WIRING AND OPERATION

The 2-speed system operates like the 1-speed system except for the necessity of switching from one speed to another. The 2-speed logic box receives not only an up/down signal, but also a high/low speed signal. Like the 1-speed control, contactor arcing is eliminated on all power contactors! By "sensing" the control signals from the contactor coils the PE 2-speed reduced torque unit is able to give a very smooth 2-speed a.c. elevator from start into high speed and a smooth/soft transition from high speed to low speed! This control has both HIGH and LOW speed initial starting torque adjustments and a TIME adjustment to reach full torque (only one TIME adjust is required since 2-speed motors are con-