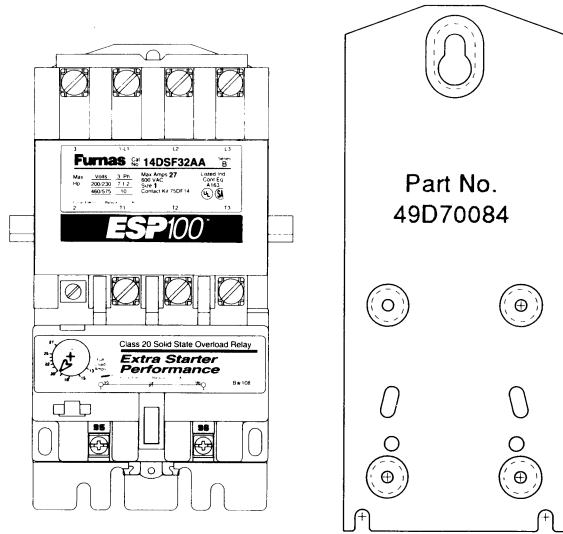


# 1 MOUNTING

No drilling required for retrofitting:



The Furnas ESP100 FVNR size 0-1 $\frac{3}{4}$  have as standard universal mounting which fits the following:

**Cutler Hammer-**  
Citation Series  
Freedom Series

**GE-** 300-Line

**Square D-** Type S

An additional adapter plate is required to retrofit the following:

**Allen Bradley-** Bulletin 509  
Bulletin 709

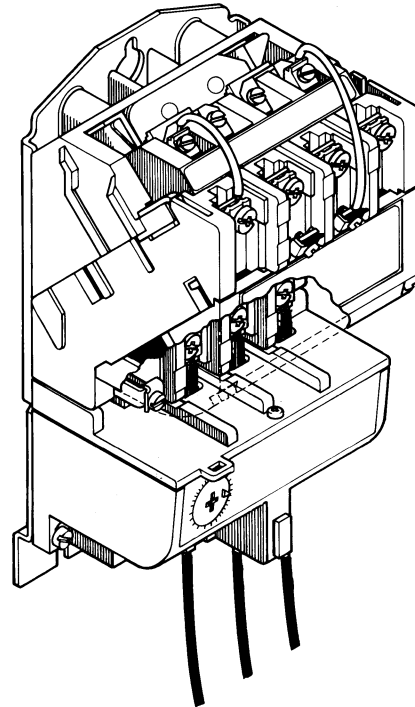
**Westinghouse-** Series A200

The ESP100 with its existing backplate mounts onto the piggy back mounting plate and is secured in place with three mounting screws.

# 2 WIRING

Push one motor lead through each pass-thru window in the overload and connect to terminals T1, T2 and T3 on the contactor.

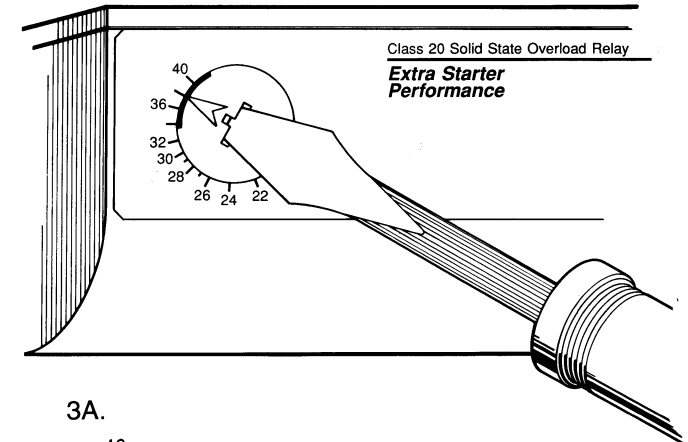
For contactor, wire per enclosed wiring diagram.  
Use with 3 phase motors at 50 or 60 Hz only.



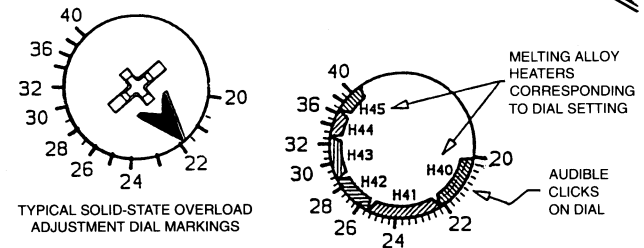
# 3 FLA ADJUSTMENT

Set the adjustment dial on the overload to the Full Load Amps on the motor nameplate.\*

In addition to the markings on the dial there are audible clicks which allow for extremely fine tuning. Note that while thermal overloads require a heater selection based on a relatively wide ampere range the overload on the ESP100 will have many clicks covering the same ampere range. See Figure 3A.



3A.



\*Service factor 1.0 = amps x 0.9

# EASY INSTALLATION GUIDE

# ESP100™

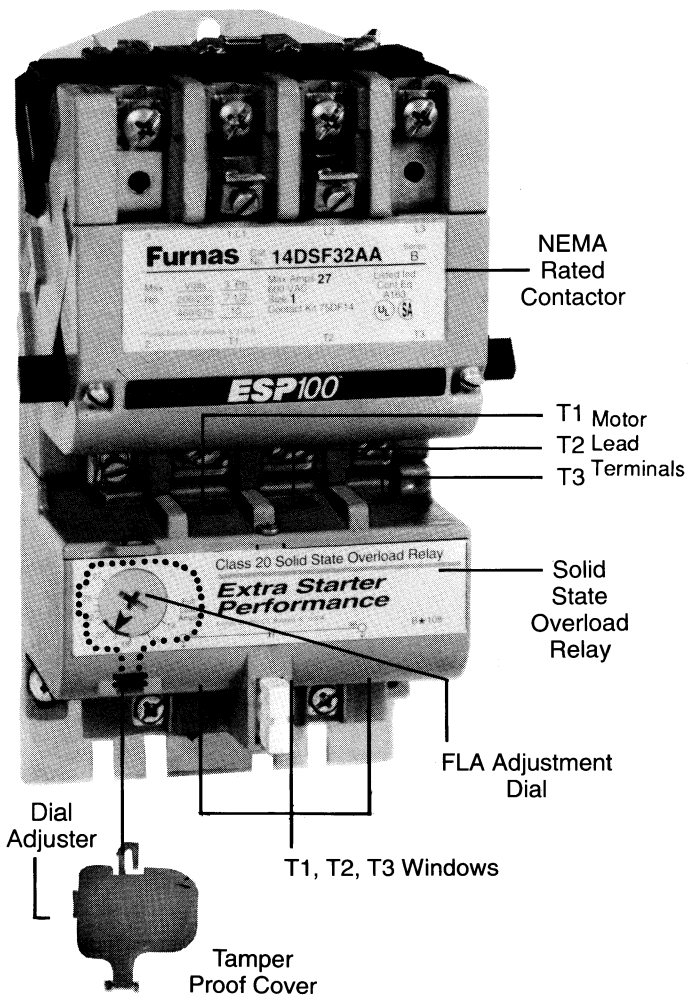


# Furnas

14-HES 6/93

# ESP100™

## EASY TO INSTALL. EASY TO MAINTAIN.

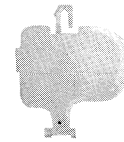


# TROUBLE SHOOTING

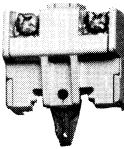
<b>Hot Terminals</b>	Loose connections. Clean connections and tighten.
<b>Failure to trip out</b> (causing motor burnout)	Incorrect current adjustment. Readjust to motor full load amperes found on the motor nameplate.
<b>Overload Trips</b> 1. Motor Overloaded 2. Loss of Phase 3. Dial Adjusted Too Low	Remove cause of overload and reset. Replace fuse or reconnect missing phase. Readjust to motor nameplate amperes.

# ACCESSORIES

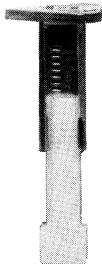
**Safety Cover:** Fitted cover plate may be closed with wire seal to prevent unauthorized tampering with FLA adjustment dial of solid state overload relay. 49ASTC (Pkg. of 10)



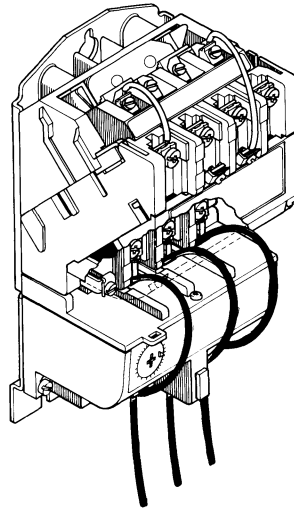
**Auxiliary Contact Block:** NO or NC block for use with ESP100's overload to signal remote alarms or other devices. 49ASNO  
49ASNC



**Reset Button Extender:** Permits use with Furnas System 89 MCC's and extra deep enclosures. 49ASRE



# LOOPING OPTION



In applications involving use of 12-14 gauge wire, usually motors of 5 HP or less, the wires may be looped and passed a second time through the windows before wiring to the contactor. By looping the motor leads through the windows in the overload, the overload will read twice the current actually going to the motor. Hence the overload can protect a motor needing half the FLA current capability of the overload; An overload with a current range of 9-to-18 amps can be used for a motor requiring from 4.5 to 9 FLA.

Similarly, motors that require only one-third, one-fourth, or one-fifth the overload's FLA current capability can use the same size ESP100 starter by looping three, four or five times.

The following table demonstrates how the looping process reduces the current setting of the overload by the number of times the wires pass through the windows of the overload.

All current values are expressed in Amps.

	Overload Current Range	# of Loops	# of Times Wire Passes Thru Window
Shown on label	9-18	0	1
	4.5-9.0	1	2
	3.0-6.0	2	3
	2.25-4.50	3	4
	1.80-3.60	4	5
	1.50-3.00	5	6

# How to wire for SINGLE PHASE MOTOR

The ESP100 design is a 3 pole device intended for use with 3 Phase motors. However, as a convenience it can be wired to accommodate Single Phase motors.

For an *approximate* setting of a Single Phase motor application, multiply the motor nameplate by .75 and set the dial on the overload to the resulting value.

**Warning:** The device must be wired with polarity as shown. Neutral and LI wires must be wired as indicated on the drawing, polarity is indicated by ↓↑.

Single Phase Connection Diagram

