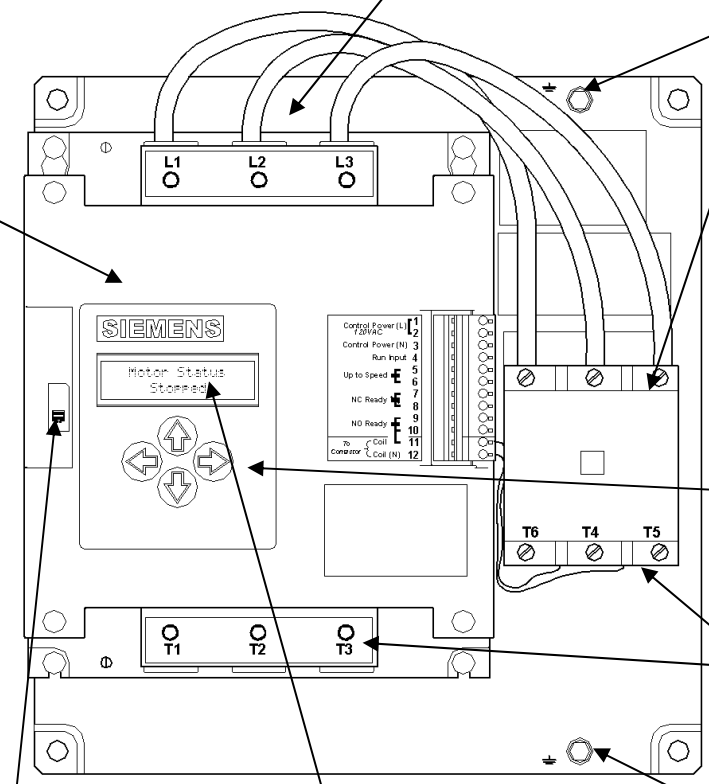
72G Series Elevator Starter

Features Overview:

The **72G** series of elevator starters consists of a Solid State Starter and Fault Contactor

The Solid State Starter controls the current during the start and provides overload, current imbalance, reverse phase, single phase and shorted SCR protection. In addition to those faults, on power up the starter will check the motor configuration.



Power wiring terminations

Ground Screw

The Fault Contactor provides a means for interrupting current during shorted SCR conditions. It **DOES NOT** provide electrical isolation when opened if wired in delta.

Keypad for easy setup and operation

Motor Terminations

Liquid Crystal Display

Ground Screw

Port for Infrared or Serial Communication

Figure 1: Soft Starter Overview

Starter Selection

Table 1: In Delta, 200 – 460 Volt starter ratings

	HP @ 200V	HP @ 230V	HP @ 460V	Rated Current (Amps)	Overload Range (Amps)	Current Limit Range (Amps)	Manufacturer Catalog Number
In Delta Configuration	5	7.5	15	22	7 - 27	26 – 94	72EG34AFP
	7.5	10	25	35	12 - 44	41 - 148	72GG34AFP
	10	15	30	42	14 - 53	49 - 179	72HG34AFP
	15	20	40	55	18 - 69	64 - 234	72JG34AFP
	20	25	50	68	22 - 85	79 - 289	72KG34AFP
	25	30	60	80	26 - 100	93 - 340	72LG34AFP
	30	40	75	105	35 - 131	121 - 447	72MG34AFP
	40	50	100	130	43 - 163	151 - 553	72NG34AFP
	50	60	125	156	52 - 196	181 - 663	72PG34AFP
	75	100	-	252	83 - 315	292 - 1071	72RG32AFP

Table 2: In Delta, 460 - 575 Volt starter ratings

	HP @ 460V	HP @ 575V	Rated Current (Amps)	Overload Range (Amps)	Current Limit Range (Amps)	Manufacturer Catalog Number
In Delta Configuration	15	20	22	7 - 27	26 - 94	72EG35AFP
	25	30	35	12 - 44	41 - 148	72GG35AFP
	30	40	42	14 - 53	49 - 179	72HG35AFP
	40	50	55	18 - 69	64 - 234	72JG35AFP
	50	60	68	22 - 85	79 - 289	72KG35AFP
	60	75	80	26 - 100	93 - 340	72LG35AFP
	75	100	105	35 - 131	121 - 447	72MG35AFP
	100	125	130	43 - 163	151 - 553	72NG35AFP
	125	150	156	52 - 196	181 - 663	72PG35AFP

Starter Selection

Table 3: In Line, 200 – 460 Volt starter ratings

	HP @ 200V	HP @ 230V	HP @ 460V	Rated Current (Amps)	Overload Range (Amps)	Current Limit Range (Amps)	Manufacturer Catalog Number
In Line Configuration	-	5	10	18	6 – 25	24 – 85	72GG34AFP
	5	7.5	15	22	8 – 30	28 – 103	72HG34AFP
	7.5	10	20	28	10 – 39	36 – 135	72JG34AFP
	7.5	10	25	35	13 – 49	45 – 166	72KG34AFP
	10	15	30	42	15 – 57	53 – 196	72LG34AFP
	15	20	40	55	20 – 75	70 – 257	72MG34AFP
	20	25	50	68	24 – 93	87 – 319	72NG34AFP
	25	30	60	80	29 – 112	104 – 382	72PG34AFP
	40	50	-	130	48 – 181	168 - 618	72RG32AFP

Table 4: In Line, 460 - 575 Volt starter ratings

	HP @ 460V	HP @ 575V	Rated Current (Amps)	Overload Range (Amps)	Current Limit Range (Amps)	Manufacturer Catalog Number
In Line Configuration	10	15	18	6 – 25	24 – 85	72GG35AFP
	15	20	22	8 – 30	28 – 103	72HG35AFP
	20	25	28	10 – 39	36 – 135	72JG35AFP
	25	30	35	13 – 49	45 – 166	72KG35AFP
	30	40	42	15 – 57	53 – 196	72LG35AFP
	40	50	55	20 – 75	70 – 257	72MG35AFP
	50	60	68	24 – 93	87 – 319	72NG35AFP
	60	75	80	29 – 112	104 – 382	72PG35AFP

Typical Control Power Connections:

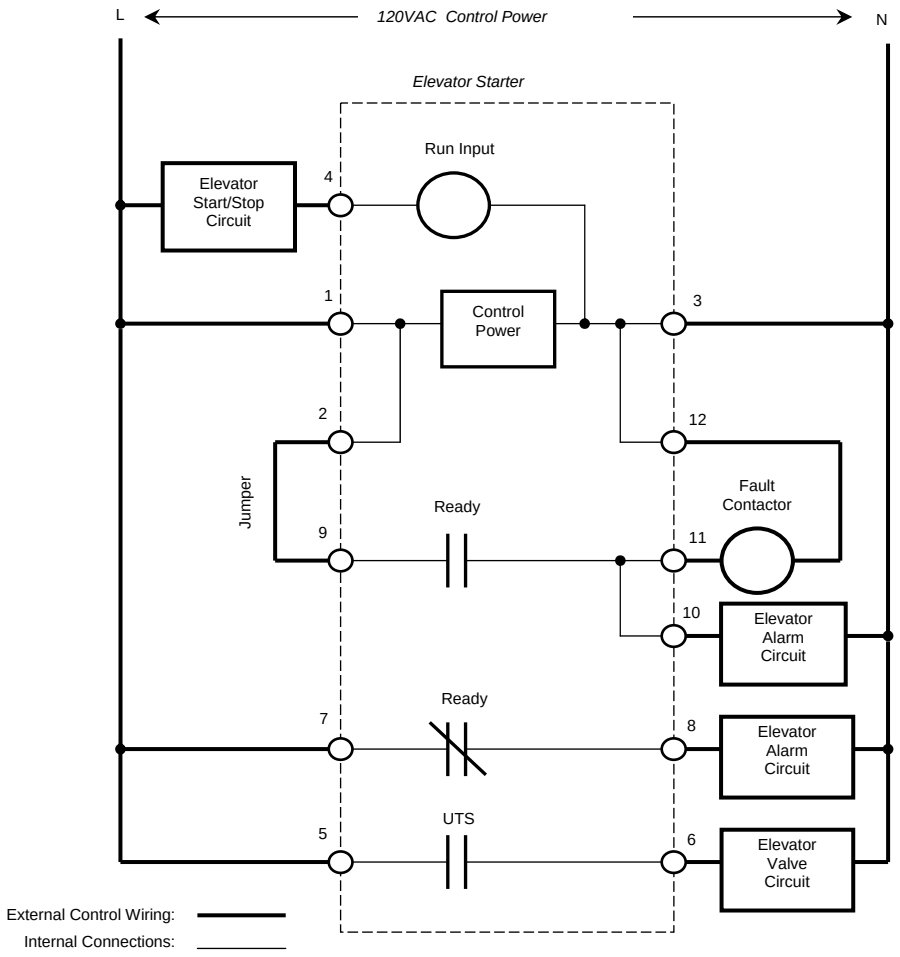
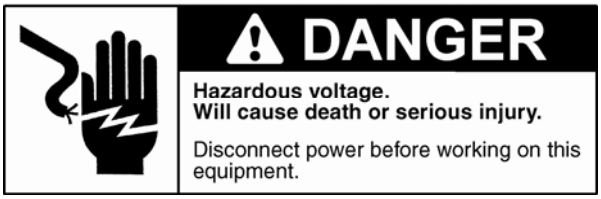
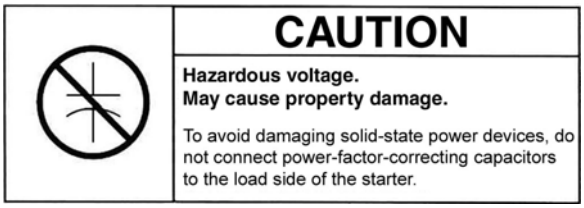


Figure 3

The figure above shows a typical control wiring diagram. While this diagram may not apply to all installations it does show various connections to the starter.





Motor Connections:

Inside Delta Motor Wiring

The motor wiring should be connected exactly as shown in Figure 4. If it is not, the starter will detect a motor wiring error. If you have elected to cycle the fault contactor on each start, you must contact technical support for directions on configuring the starter and wiring in a required off delay timer.

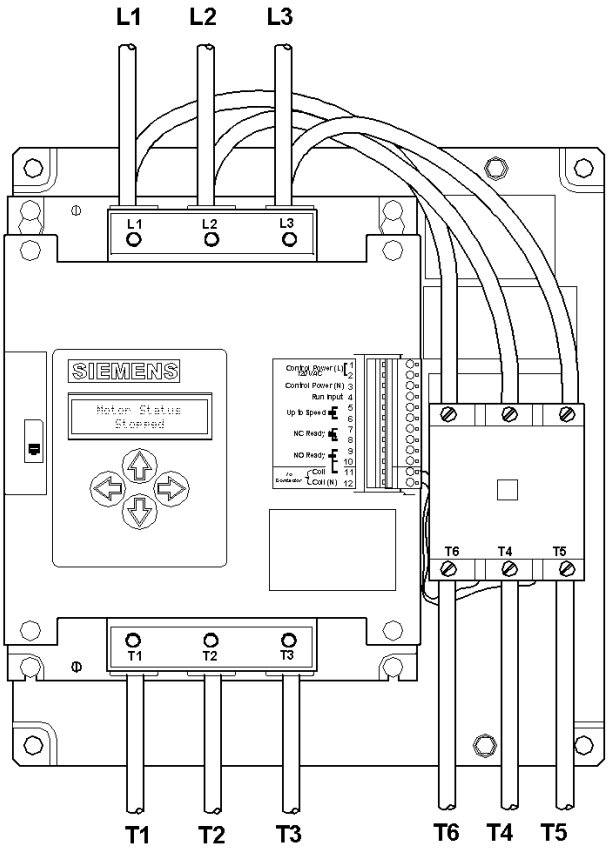
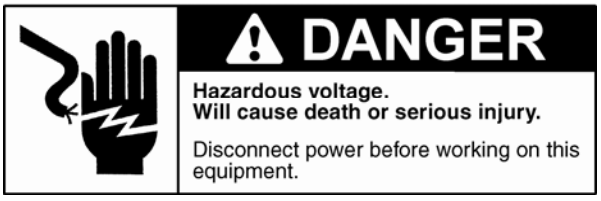
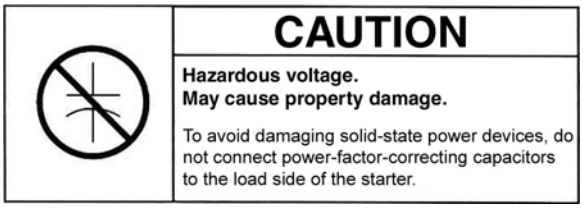
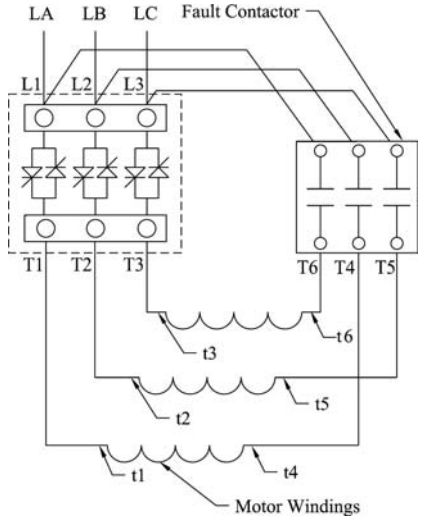


Figure 4: Power Wiring for In-Delta Configuration





Wiring Diagram



Note the arrangement of motor terminations T6, T4, and T5

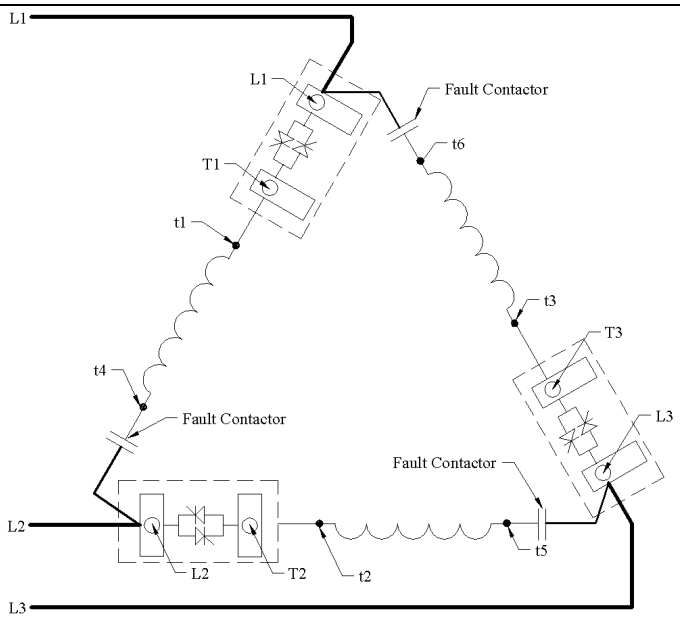


Figure 4a: Motor Wiring for In Delta Applications

Single Voltage Motors

6 lead motor (208 – 575VAC)

T1	T2	T3	T4	T5	T6
1	2	3	4	5	6

Dual Voltage Motors

High Voltage Connections,
12 lead motor, (460-480 VAC)

T1	T2	T3	T4	T5	T6
1	2	3	10	11	12
Connect	4&7	5&8	6&9		

Low Voltage Connections,
12 lead motor, (220-240 VAC)

T1	T2	T3	T4	T5	T6
1,7	2,8	3,9	10,4	11,5	12,6
Connect	1&7	2&8	12&6		

Note: This Solid State starter is wired at the factory for in-delta operation on 6 and 12 lead motors only! If you have a 9 lead delta motor, you must run it as the "In Line" configuration show on the following page. If you have a submersible application where only 3 motor leads are brought to the starter, you may elect to run the starter "in line" also. When running "in line", the correct size starter must be used. The following pages show how to connect the starter in the "In Line" configuration.

In Line Motor Wiring:

Line Connections	Motor Connections

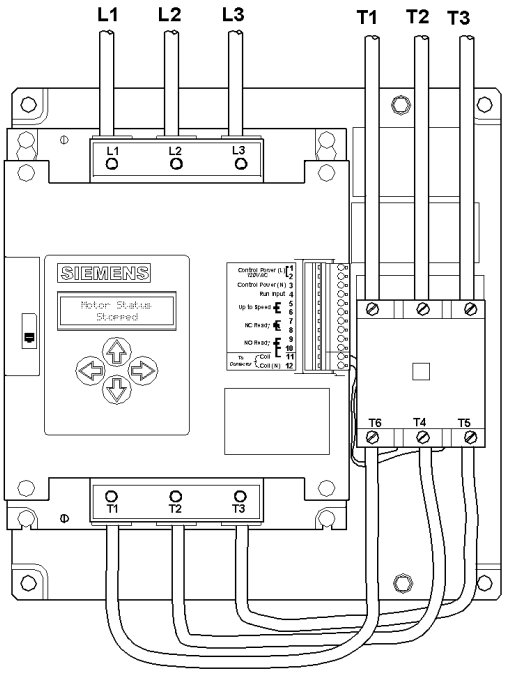


Figure 5: Conversion for In Line Applications
It is up to the end user to reconfigure the leads from the starter to the fault contactor for In-Line operation

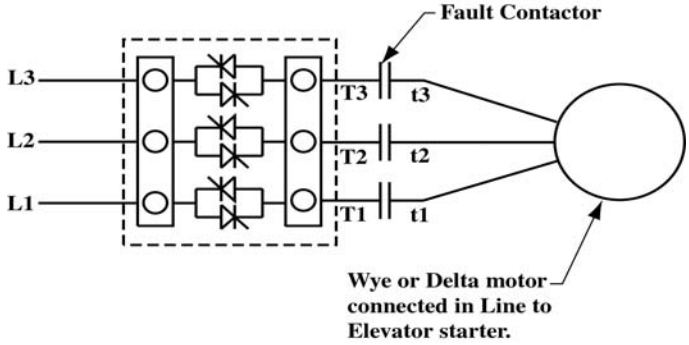
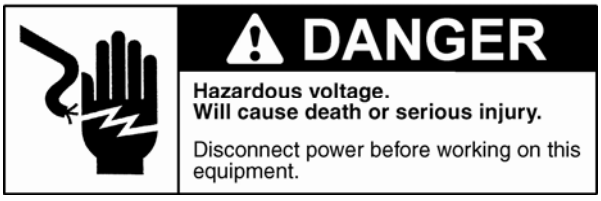
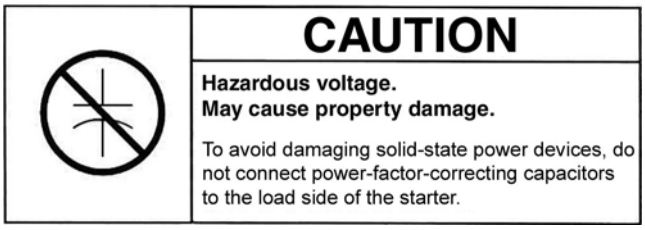
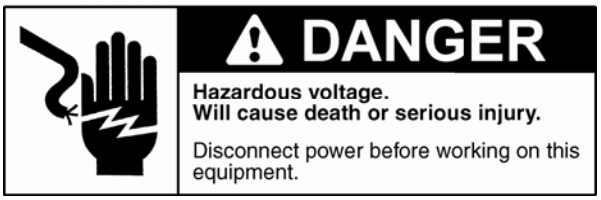


Figure 5a: Motor wiring for in line Applications







Basic Configuration of Your Siemens Elevator Starter using The Parameter Menu

Enter the desired settings in the Parameter Menu as indicated below. The factory default settings are shown in the default setting. Use the Up or Down keys to reach the desired parameter. Use the right arrow key to enter the edit mode. Use the right arrow key to select the digit to edit. Use the Up and Down keys to decrease or increase the flashing digit. When the desired value has been entered, use the Left key to exit. After exiting the editing menu, a screen asking you to accept or reject the changes will appear. The bottom line shows the new parameter. The sample screen shown below would be displayed if the Starting Amps parameter was changed to 350 Amps. Use the Up key to accept the change or the Down key to reject the change.

↑Accept ↓Reject
350 Amps

Menu Choice		Default Setting
Starting Amps	This is the level that the elevator starter will hold the current limit to during the start. Keep in mind that while lower settings reduce the inrush currents, they increase the starting time. This setting should not be less than twice the motor's FLA.	425% of the starter current rating as measured in Amps
Overload Amps	This setting should be set at or below the FLA of the hydraulic pump motor.	50% of the starter rating in Amps
Line Rotation	The choices for this are either ABC or CBA. To change the setting from the factory default of ABC rotation, select the right key, which causes the ABC to flash and select the up key. To exit select the left key.	ABC Rotation
Off Delay	This is the time the starter continues to run after the run signal has been removed. This value is adjustable from 0 to 2500 milliseconds. To change from the factory default of 500 milliseconds, press the right key then select the desired setting the same using the up, down and right keys. Once the desired value is reached, press the left key to exit.	500 milliseconds
On Delay	This is the time the starter waits before running after receiving a run signal. The factory default is 0 milliseconds. This value is adjustable from 0 to 2500 milliseconds. It is adjusted the same way the Off delay is adjusted.	0 milliseconds

Starter Reset

Menu Choice	
Reset Fault	To reset the starter, press the right key followed by the up key and the left key. The starter may also be reset by pressing both the Up and Down keys at the same time or by cycling the control power.

Electrical Specifications

Input Power and Control	**Control Power**	± 15% of 120 VAC
	Operating frequency	50/60 Hz
	Three Phase	-15%/+10% 200-460 VAC -15%/+10% 460-575 VAC ± 5 Hz of 50/60 Hz
	Motor Run Input	Pull in: 79 VAC max. Drop out: 20 VAC min. Off State Leakage: 1.5mA max.
	Up to Speed Output	Solid State, AC Voltages Only
	Number of Contacts	1 Normally Open
	Rated Operational Current	1 Amp @ 120 VAC
	Make/Break VA	1200 VA for 250 mS / 120 VA
	Expected Operations @ rated load	10×10^6 cycles
	Ready Output	Mechanical Relay
	Number of Contacts	1 Normally Open, 7 & 8 1 Normally Closed 9 & 10,11
	Rated Operational Current	3.0 Amps @ 120 VAC
	Make/Break VA	3600/360 VA
	Expected Operations @ rated load	100,000 cycles
Duty Cycle Rating	Duty Cycle	30% @ 140% of rated FLA
	Starts per hour	80
Motor Protection	Overload	Class 5, adjustment range is 33% to 125% of Rated Amps
	Current Imbalance	Adjustable trip ratio (lowest motor winding current divided by the highest motor winding current) from .1 to .75. Two second delay allows for system to recover if possible.
	Shorted S.C.R.	Trips in 2 seconds if a shorted SCR is detected.
	Fault Contactor	Opens on all faults. Note: **The motor is not electrically isolated with the contactor open when wired in Delta.**

Starter Protection	Fusing and/or circuit breaker provided by customer	Fuse: Size per NEC with maximum interrupting capability of 100,000 amps. Breaker: sized per NEC with maximum interrupting capability of 42,000 amps.
Adjustment	Current Limit	116% to 425% of starters rating in amps.
	Overload	33% to 125% of starters rating in amps.
	Incoming Phase Rotation	ABC or CBA
	Off Delay	0 to 2500 mS
	On Delay	0 to 2500 mS
LCD	Type	16 characters by 2 lines
	Backlight	On for two minutes after last keypad input.
Environmental	Operating Temperature	0 - 50° C
	Humidity	5% ….95% non-condensing
Agency Approvals	UL and cUL	UL & cUL 508 File Number: E1878467, 02NK50596
	CSA	File Number: LR6535 Report Number: 2003-1