



902 SCR Controller Master and Slave

### System Description

The 902 and 903 Series three Phase SCR Controllers are designed to function as a Master/Slave system. The Master or Slave will be identified as either a two triac (902 Series) or three triac (903 Series) Controller, which may be connected in the line or inside the Delta or Wye respectively. The Master Controller includes a multiple input Logic that is capable of driving up to 18 902-Series or 12 903-Series SCR Controls. (Consult factory for applications requiring more circuits.)

Each three phase Master or Slave requires a separate three phase circuit connected to its specific KW load. Additional circuits (loads) require slaves only. Only one Master is required for each thermostat input. Each three phase Master or Slave Controller may be connected up to the maximum current or KW load described in Table-1.

The proportional 24V AC control circuit, when energized, provides “zero firing” of line voltage phases. This feature suppresses Radio Frequency Interference (RFI).

The Controllers consist of a “zero firing” line voltage load circuit section, with a 28 Amp maximum rating. A 901-D Series Logic is mounted atop the heat sink to accommodate the multiple input signal wiring for driving the master

power switch section. Slave Controllers used “stand alone”, without a Master Controller, function as a “zero firing”, three phase solid state contactor.

All 902 and 903 Series Controllers are designed in compliance with U.L. and C.S.A. standards.

### Power Switch Section

Each Master or Slave Controller is built with a separate line voltage “zero firing” crossover at each triac. The crossover logic is independent of the low voltage 901-D Series Logic. The 24V AC proportional output is factory wired on Masters to each “zero firing” power switch contained within the extruded aluminum heat sink. The power switch section may contain two or three “zero firing” triac circuits depending on the model selected. Each triac circuit of the Master or Slave is rated at 28-amps maximum. Selecting a two or three triac Controller allows the flexibility of matching the Controller to a three phase circuit. Additional three phase loads may be controlled by paralleling Slave Controller circuits as required.

### Time Proportioning Logic

The low voltage 901-D Series Multiple Input Logic is externally mounted on the Master Controller and is accessible for field wiring. This section accepts the input signal and furnishes the time based proportional 24V AC output to the power switch section of the Master (factory wired), or may be field wired to additional Slave Controllers. One 901-D Series Logic may drive up to 18 902-Series or 12 903-Series SCR Controls. (Consult factory for applications requiring more circuits.)

The 901-D Multiple Input Logic and 901-DP Pneumatic Input Logic are factory calibrated. The 901-D will accept any one of five electric/electronic low voltage input signals. The 901-DP has an “on board” transducer that directly accepts a 0–15 psi pneumatic signal.

The 901-D and 901-DP provide a “zero” and “span” adjustment if field calibration is required. The standard time base is factory set at 5 seconds; other time bases are available for special application requirements. The logic is designed as a Class II section and requires a separate 24V AC power supply.

# Specifications

Model	902 or 903 902-S or 903-S	Master Slave
Current, Max./Triac Circuit		28 Amps
Triac Circuits		
902 Series (Master or Slave)		2
903 Series (Master or Slave)		3
Voltage, AC		
<u>Prefix</u>	<u>Suffix</u>	
902 or 903 Series	120/277	120V
902 or 903 Series	120/277	208/240V
902 or 903 Series	120/277	277V
902 or 903 Series	347/480	347V
902 or 903 Series	347/480	480V
902 or 903 Series	600	600V
Voltage Limitations		+10%, -15%
Ambient		
Heat Sink		50°C (120°F)
Control Panel		75°C (167°F)
Control		
Voltage input		24V AC
Voltage output		24V AC
Power 902 Series		4.0 VA
Power 903 Series		6.7 VA
Terminal Blocks		30 Amps
Max. Wire Size		#10 A.W.G.
Dimensions (L x W x H)		
902 Series		8" x 5.75" x 4"
903 Series		12" x 5.75" x 4"
U.L. Recognized		File #E47100
C.S.A. Certified		95430

# Features and Benefits

- Factory wired and assembled three phase Controller.
- 28 amps maximum rated triac circuit.
- Optional two or three triac power switch.
- Separate low voltage logic externally mounted.
- 901-D accepts multiple input signals.
- 901-DP pneumatic input directly accepted by "on board" transducer.
- All inputs factory calibrated.
- "Zero firing" contactor applications (RFI).
- 48 amp/line rating (Max. approved by U.L.) (See Table 1).
- Compact modular design.

## Table 1

### 902 Master or 902-S Slave (Two Triac Controller – Use In-Line)

Model/ Series	Line to Line Volts	Triac Current	Line Current	3 Phase KW
902-120/277	208	28	28	10.09
902-120/277	240	28	28	11.64
902-347/480	480	28	28	23.28
902-600	600	28	28	29.06

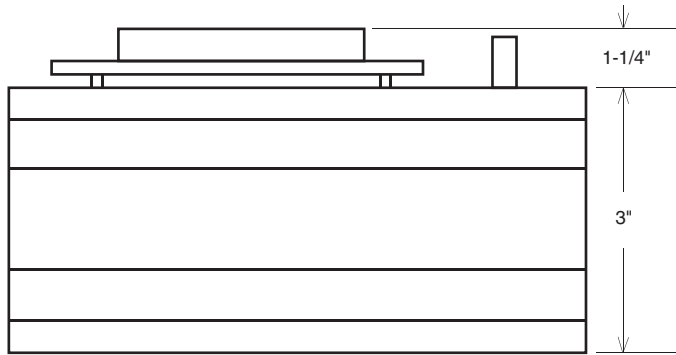
### 903 Master or 903-S Slave (Three Triac Controller – Use Inside Delta)

Model/ Series	Line to Line Volts	Triac Current	Line Current	3 Phase KW
903-120/277	208	28	48	17.29
903-120/277	240	28	48	19.95
903-347/480	480	28	48	39.91
903-600	600	28	48	50.40

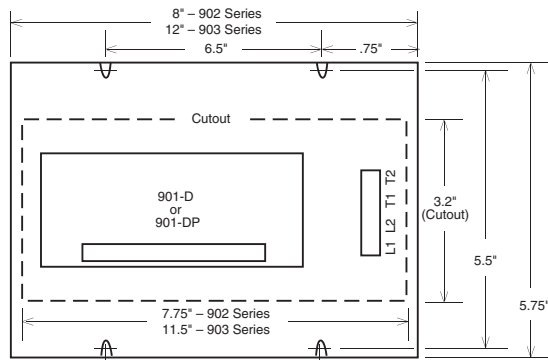
### 903 Master or 903-S Slave (Three Triac Controller – Use In-Line 4 Wire Wye)

Model/ Series	Line to Neutral Volts	Triac Current	Line Current	3 Phase KW
903-120/277	120	28	28	10.82
903-120/277	277	28	28	23.27
903-347/480	347	28	28	29.15

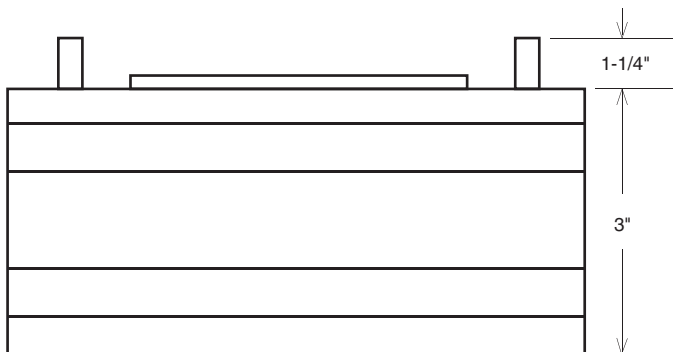
**Note:** Slave controllers are designated with an "S" in the suffix of the model number.



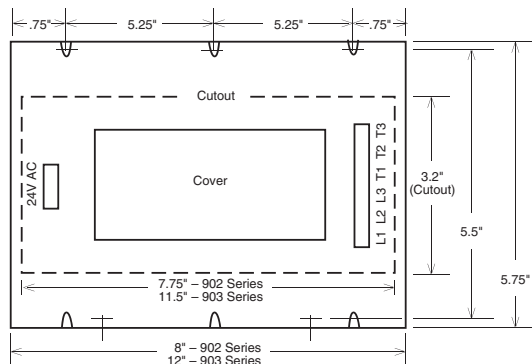
902 and 903 Master, Side View



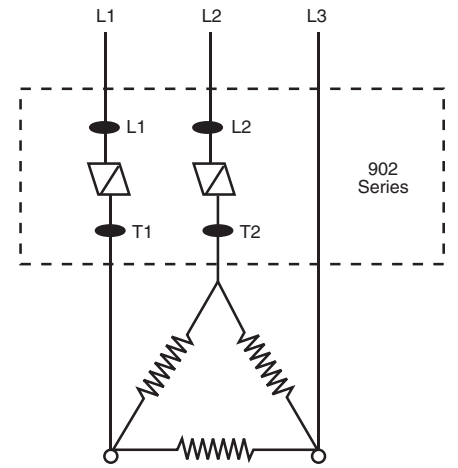
902 and 903 Master, Top View



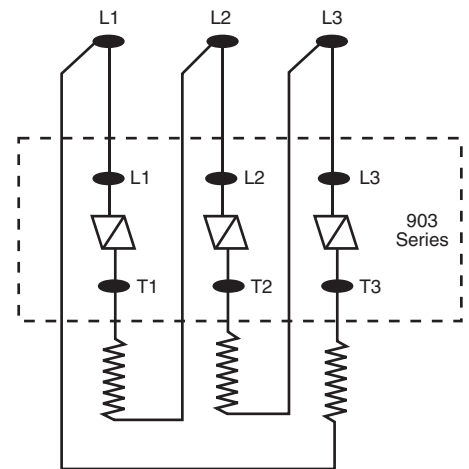
902-S and 903-S Slave, Side View



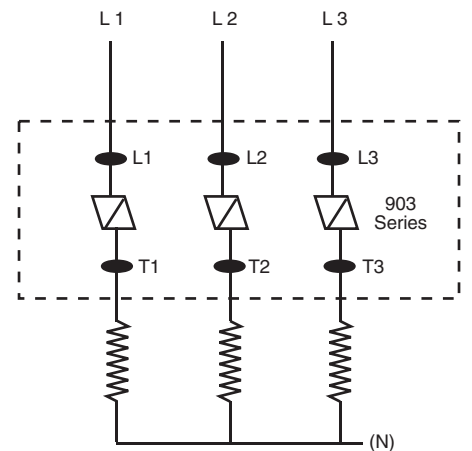
902-S and 903-S Slave, Top View



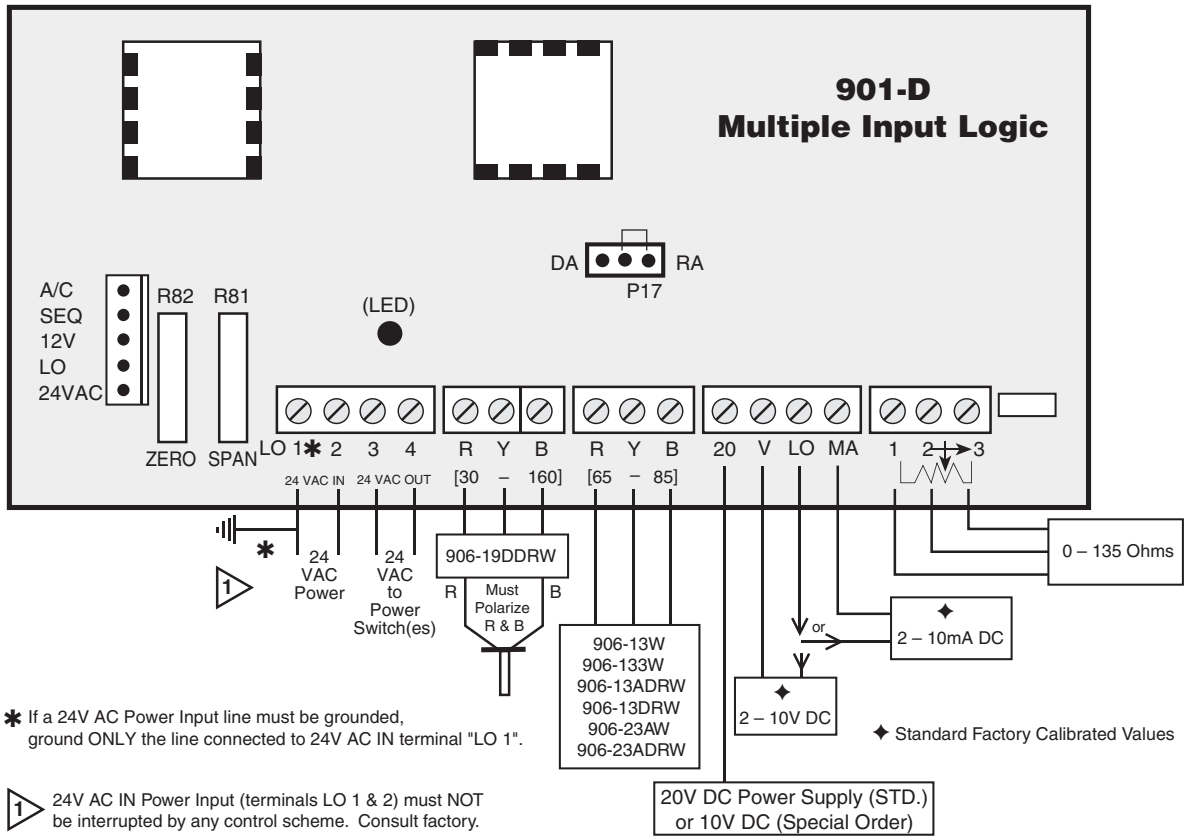
In-Line Delta Wiring  
902/903 Series Controllers



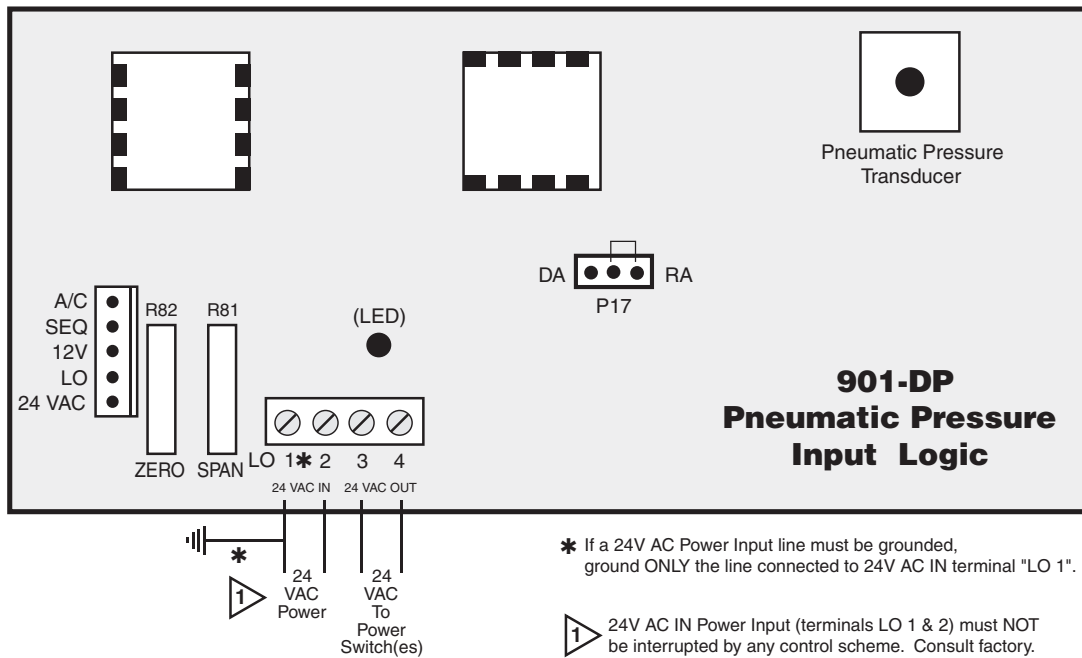
Inside Delta Wiring  
902/903 Series Controllers



In-Line Wye Wiring  
902/903 Series Controllers



901-D Multiple Input Logic Wiring Diagram



901-D Pneumatic Pressure Input Logic Wiring Diagram

**Hoffman|Controls**