



# SUPER SCR INSTRUCTIONS

## Models 12M04-00109 and 12M04-00110

### INTRODUCTION

The SUPER SCR™ series are designed for operation with 1/3 to 1 1/2 HP DC brush-type permanent magnet motors. The compact models are available in an economic chassis mount. Models are available for 115 and 230VAC input. Models 12M4-00109 and 12M4-00110 have adjustable electronic current limiting that limits the maximum level of output current.

#### Specifications:

Speed Range: 100:1

Overload Capacity: 150% of rated current for 60 seconds

Maximum Speed Adjustment: 50-110% of rated speed

<u>Model</u>	<u>Input Voltage</u>	<u>Output V. Range</u>	<u>HP</u>	<u>Cont. Output Amps</u>
12M4-00109	115	0-90VDC	3/4	7.5
12M4-00110	230	0-180	1 1/2	7.5

### GENERAL

These instructions provide basic information for installation and adjustment. Please contact Gemini Controls LLC if further information is necessary. It is possible to damage the drive through misuse or misapplication. Please read this material thoroughly before proceeding with installation.

Unpack the equipment noting any shortages or damaged equipment. Immediately notify the carrier of any damage. Store in clean, dry location if the product is not used immediately. The relative humidity should not exceed 95%, non-condensing.

### INSTALLATION

Carefully mount the chassis allowing clearances for access, air flow and conduit entry. The environment should be free of vibration and contaminants. The operating temperature range for the Gemini drive is 32 to 104 degrees Fahrenheit (0-40C). Since the drive produces heat, utilize a source of cooling, such as a fan, when the ambient temperature approaches 104 degrees.

**WARNING:** Do not drill or file the enclosure or chassis when the controller is installed, as metal particles can cause shorts and damage.

### WIRING

1. Input Wiring - Connect the AC line to terminals "L1" and "L2" (note wiring diagram). If the circuit is protected with a fuse or circuit breaker rated higher than 15 amps, fuse the "L1" connection path with a 15 amp fuse. If required, the chassis may be grounded at one of the unused holes. Input wire size must be in compliance with the National Electrical Code and all local codes and restrictions.

**WARNING:** Do not connect line power to the motor terminal connections.

2. Output Wiring - Connect the negative and positive of the motor to the "A-" and "A+" terminals of the drive. Do not operate the drive without connection to the motor.

3. Control Wiring - Connect a 10K, 1/4 watt speed potentiometer to the "L", "W", and "H" terminals, with the wiper connected to the "W" terminal. If shielded wire is used, ground the shield at the potentiometer. Never connect the shield at both ends. Do not run control wiring in conduit with high voltage (120V or greater) wiring.

3. Control Wiring - Connect a 10K, 1/4 watt speed potentiometer to the “L”, “W”, and “H” terminals, with the wiper connected to the “W” terminal, and the CCW end wired to the “L” terminal. If an external 0-10VDC speed reference signal is used, first set-up and adjust the system with a 10K potentiometer as a speed reference. Connect the **isolated**, external source only after satisfactory operation with a potentiometer, as any problem may then be directed toward interfacing. The frequency of a pulse width modulated, **isolated**, input signal must exceed 50Hz, otherwise damage may result. Wire the common to the “L” terminal and the positive voltage to the “W” terminal.

If shielded wire is used, ground the shield at the potentiometer. Never connect the shield at both ends. Do not run control wiring in conduit with high voltage (115V or greater) wiring.

## ADJUSTMENTS AND START-UP

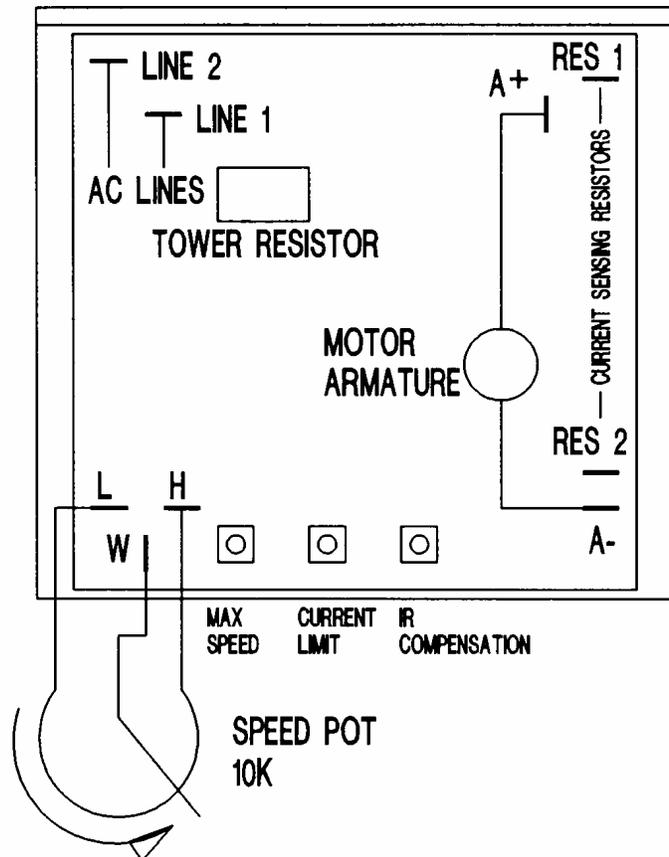
1. Turn the “IRC” and “M.S.” (maximum speed) potentiometers, located on the board, and speed adjustment potentiometer to their full counterclockwise position. Set the “C.L.” (current limit) pot. to mid-range.

2. Apply power and rotate the speed potentiometer slightly clockwise. Observe the direction of rotation. If incorrect, turn off the power and reverse the motor armature connections.

3. Rotate the speed potentiometer to the extreme clockwise position, and adjust the “M.S.” potentiometer for the desired maximum speed, or for rated motor voltage as measured with a DC meter at the armature connection.

4. Adjust the “IRC” potentiometer clockwise until the motor runs smoothly under different load conditions. If the motor starts to surge, turn the “IRC” pot. counterclockwise until surging stops. Uncontrolled surging may blow the fuse or damage the control.

5. The “CURR LIMIT” potentiometer can now be adjusted so that the motor will not stall under maximum load. Clockwise adjustment increases the current limit, and the torque available from the motor. If additional torque is required for acceleration, increase the current limit setting.



The system is now ready for operation.



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