Shimaden, Temperature and Humidity Control Specialists

°C
%RH
SHIMADEN

Plug-In Type

Series EM52

SERVO CONTROLLER

BASIC FEATURES

- □ *Adjusts the rotation angle of the control motor (with F.B.POT) in proportion to the control input signal*
- □ *Feedback resistance (with F.B.POT) is optional between 100Ω and 2kΩ*
- □ *Output selectable from relay contact or triac (SSR)*
- □ *Plug-in type, mounting type for both panel surface and DIN rail*
- □ *RoHS directive supported*

SPECIFICATIONS

■ Input: : See ordering information.
● Feedback Resistance : 100Ω to 2kΩ random / 3-wire

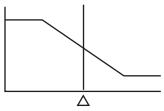
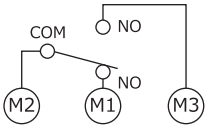
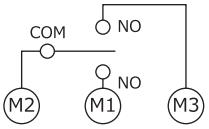
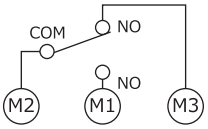
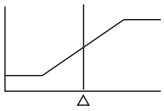
■ Output : Relay contact or Triac (SSR)
● Output Rating / Contact Protection
Relay contact : 240V AC, 1A (inductive load) / CR Absorber
Triac (SSR) : 20 to 120V AC / (inductive load) / CR Absorber + varistor
(Exclusively used for AC load)
● Hysteresis : Approx. 0.5% fixed of input signal range
● Deadband (DB) : 1 to 10% variable of input signal range
● Dead time : Approx. 0.2 seconds (Chattering prevention)
● Zero & Span Adjustment : 0% (ZERO) / 0 to 20% variable
100% (SPAN) / 70 to 100% variable
● Output Action Display : M2-M1/LED green lighting
M2-M3/LED red lighting

■ **General specifications**
● Operating environment conditions
Temperature : -10 to 50°C
Humidity : 90% RH max. (no dew condensation)
Elevation : 2000 m above sea level or lower
Overvoltage category : II
Pollution degree : 2 (IEC60664)
● Temperature when kept unused : -20 to 65 ℃
● Power Supply : 100 to 240V AC±10% 50/60Hz
● Insulation resistance : 500V DC, 100MΩ between the input and power supply terminals
500V DC, 100MΩ between the output and power supply terminals
● Dielectric strength : 1 min. at 1500V AC between each terminal of the power supply-heater voltage-heater current-alarm output.
● Material : ABS resin molding.
● External dimensions : H83.5×W50×D146.5mm (including socket terminal block)
● Mounting : 11P plug-in panel or DIN rail
● Weight : Main unit Approx. 170g
Socket terminal block Approx. 75g

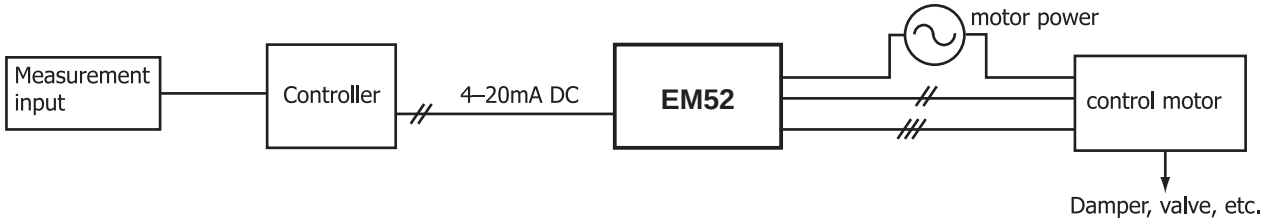
ORDERING INFORMATION

ITEM	CODE	SPECIFICATIONS	
SERIES	EM52-	Plug-in Type Servo Controller	
CONTROL INPUT	1	1 to 5mA DC, Receiving resistance: 250Ω	
	2	4 to 20mA DC, Receiving resistance: 63Ω	
	3	0 to 10V DC, Input resistance: 520kΩ	
	5	Potentiometer 100Ω to 2kΩ 3-wire system	
	9	Others (Please consult before ordering.)	
OUTPUT	Y	Contact 240V AC, 1A (inductive load) With CR absorber	
	R	Contact 240V AC, 1A (inductive load) without CR absorber	
	S	Triac 20 to 120V AC, 1A (inductive load) (Motor Supply Voltage: 20 to 120V AC)	
REMARKS	0	Without	
	9	With (Please consult before ordering.)	

RELAY ACTIONS

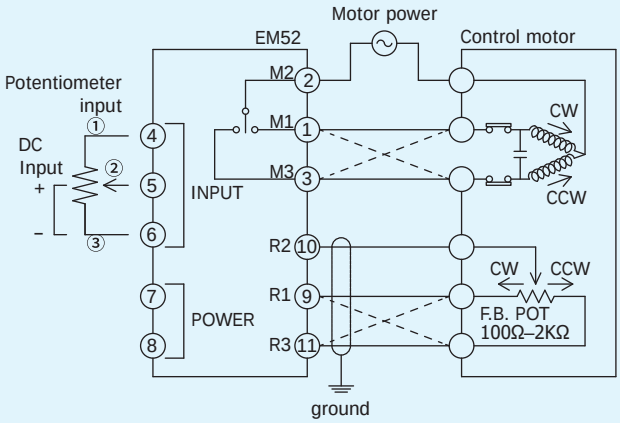
Characteristic		Run	Increased	Balanced	Decreased
RA		Heat	M2-M1: ON (Open)  LED Green lights	M2-M1, M3: OFF (Stop)  LED off	M2-M3: ON (Close)  LED Red lights.
DA		Cool			

WIRING EXAMPLE

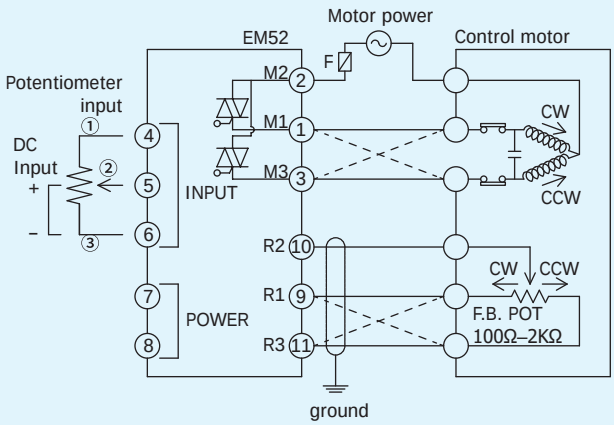


CONNECTION DIAGRAM

CONTACT



TRIAC (SSR)

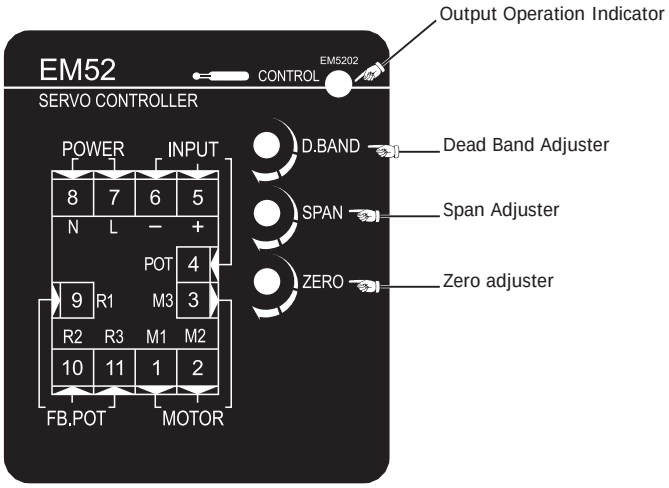


□ For model with Triac (SSR), motor power supply voltage range must be 20 to 240V AC.
It is recommended that the fuse between terminal 2 and the power supply terminal be used to protect motor upon malfunction.
(Current rating for fuse must be approximately twice the size which is appropriate for the motor for which it is being used.)

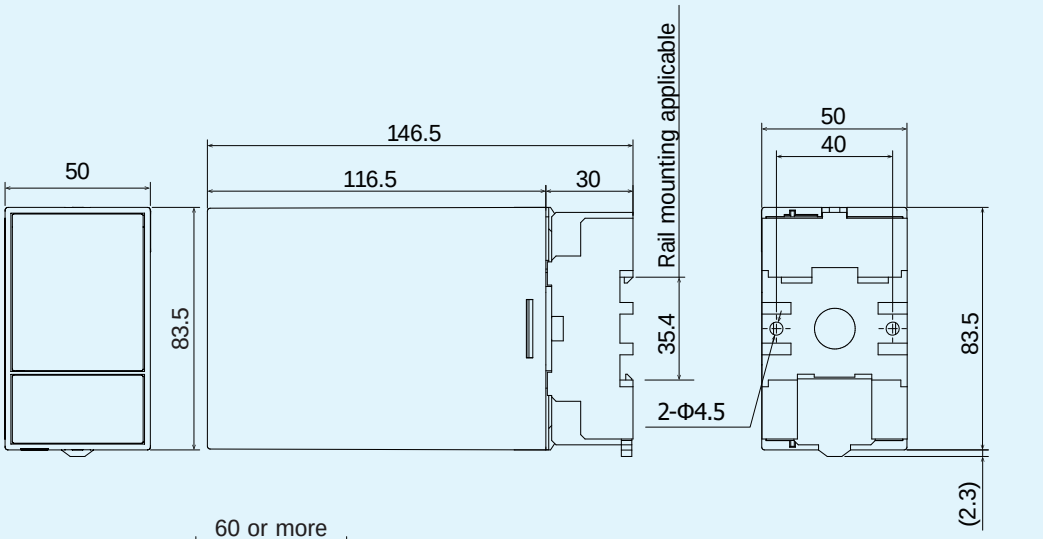
• Make sure the motor power supply matches the rating of the motor to be used.
• For inverting the operating direction of motor (to open with input at 0% and close with input at 100%), permute the wires for terminals ① and ③ as well as those for terminals ⑨ and ⑪ respectively.

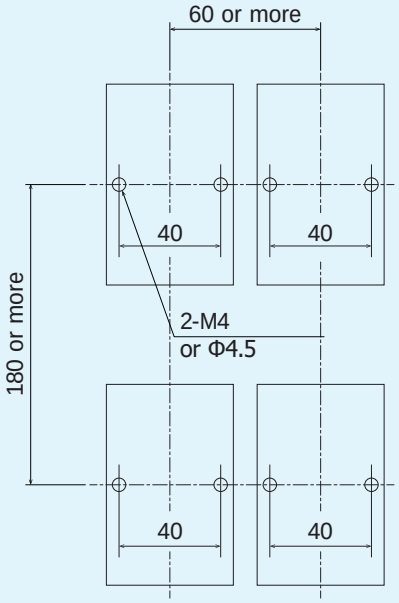
□ CW : Clockwise rotation (open)
CCW : Counterclockwise rotation (closed)
□ F : Fuse

TERMINAL ARRANGEMENT

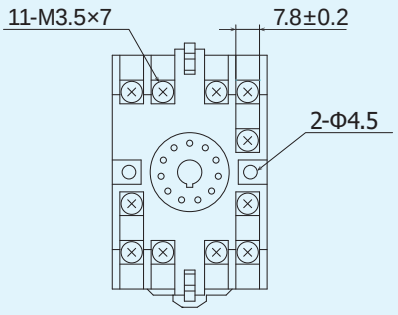


EXTERNAL DIMENSIONS AND PANEL CUTOUT





Panel cut out



Terminal block dimensions

Unit : mm

■ **Avoid using it for control of devices upon which human life is dependent.**

WARNING	* Be sure to follow the instruction manual when operating this device. * This device is designed for industrial use to control temperature, humidity and other physical values. Avoid using it for control of devices upon which human life is dependent. * If the possibility of loss or damage to your system or property as a result of failure of any parts of the process exists, proper safety measures must be made before the instrument is put into use so as to prevent the occurrence of trouble.

Head Office & Saitama Factory
ISO 9001/ISO14001 Certification Obtained

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