DATA SHEET

Servo Motor Drive Module MD-003

The MD-003 servo motor drive control module provides connection to two servo motors. It is designed to work with points or semaphore signals that are operated by servo motor actuators. It requires separate power supply for operation. This gives a choice of operating voltage, independent of other components, to give reliable operation of the servo motors.

Specifications:

- Controls two servo motors
- Input Voltage – 12-16 V DC from separate source
- Input Signal – two position for each servo motor from external switches
- Adjustable operating stroke

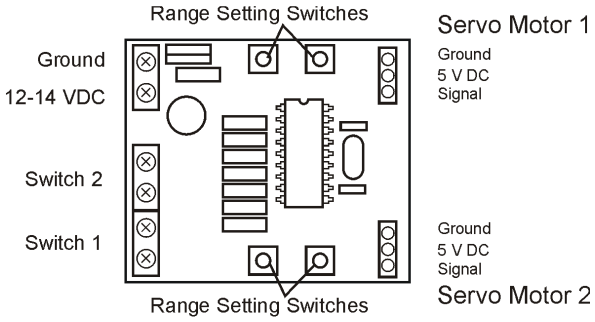

Figure 1 Servo Motor Drive Control Module

INSTALLATION

Mount the Module in a position central to the accessories to be controlled. Use the screw holes provided in the board to mount it but do not fix the screws too tightly or the board may be damaged.

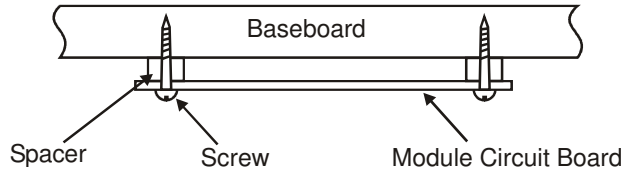

Figure 2 Module Mounting

The use of spacers as shown in Figure 2 is recommended.

Connect the two SPST toggle switches to the switch terminals, as shown in Figure 1.

Connect power (12-14 V DC) to the positive (+) and ground terminals, as shown in Figure 1. Connect the plugs on the cables that are attached to the servo motors to the 3-pin headers, as shown in Figure 1, for each of the two servo motors. Take care to orientate the plugs the correct way around.

The servo motors will switch to a default position when power is applied to the control system. This provides a known starting position each time the layout is powered up.

MOUNTING THE SERVO MOTOR

The method of mounting the servo motor for operating points will depend on the size and configuration unit chosen. Generally, there will be two methods – servo motor horizontal of servo motor vertical.

If the servo motor is to be mounted in the horizontal position then Figure 3 shows a suggested arrangement while if the vertical mounting is to be used then Figure 4 can be used as a guide.

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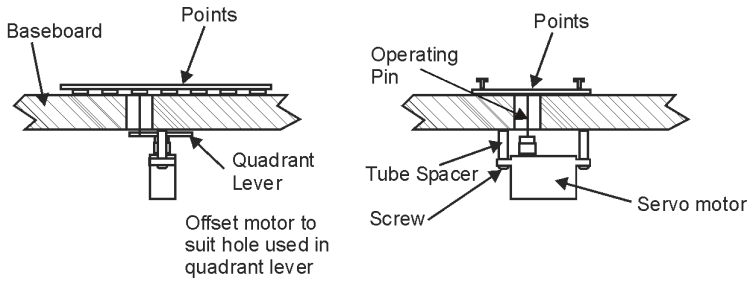

Figure 3 Horizontal Mounting

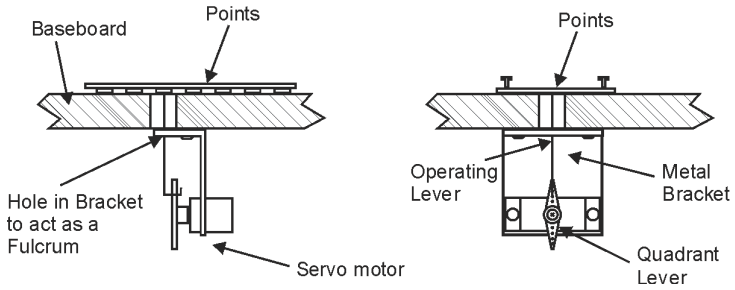

Figure 4 Vertical Mounting

ADJUSTING THE STROKE OF THE SERVO MOTOR

It is important to adjust the stroke of the servo motor to exactly match the stroke of the points, to prevent overloading the servo motor. To adjust the stroke of the servo, the range adjust switches on the servo motor drive module are used, refer to Figure 1. Carry out the following procedure for each servo motor connected to the servo motor drive module.

1. Press and hold both range setting switches for the servo motor to be adjusted until the servo motor is in the centre of its travel range.
2. Activate the servo motor to be adjusted in one direction via its operating SPST switch – note: the motor will not move as it is in its centre or neutral position. The purpose of this step is to set the direction of travel.
3. Using the range setting switches, move the servo motor to achieve the desired stroke. One range setting switch moves the servo motor clockwise and the other moves it anti-clockwise.
4. Continue to press the switches until the servo motor has moved the points fully to one position.
5. Move the operating switch to set the servo motor to the other direction and repeat steps 3and 4 until the points are fully in the other position.
6. Test the operation of the points in each direction to ensure that the servo motor does not stall in either direction. Make minor adjustments with the range setting switches, if required.

Mounting and adjusting the servo motors to operate semaphore signals is done similarly to points.

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