

INTRODUCTION

The MOC2XXX series of motor operated controls consists of a motor-driven, variable potentiometer and the limit switches required to provide remote adjustment of resistance or voltage. MOC2XXX controls can be specified for ac or dc operation with 24-, 32-, 48-, or 120-volt control power.

MODEL NUMBER DEFINITION

The model number for this series of MOCs consists of the prefix MOC2 followed by three digits. The first digit establishes the input control voltage. The second and third digits establish the output control element characteristics. Table 1 lists the available model numbers and the corresponding operating characteristics. For example, MOC2305 has a 32 Vdc control input and a 500 ohm, 2 watt potentiometer.

Table 1. MOC2XXX Model Definitions

Model Number	Motor Drive Voltage *	Control Element	Resistance in Ohms	Maximum Power	Adjustment Rate	Traverse Time
MOC2	1: 120 Vdc/Vac	02: Potentiometer †	175, ±10%	10 W	8.15 Ω/s	21.5 s
	2: 48 Vdc/Vac	03: Potentiometer †	250, ±5%	2 W	3.13 Ω/s	80 s
	3: 32 Vdc/Vac	04: Potentiometer †	250, ±10%	10 W	11.7 Ω/s	21.5 s
	4: 24 Vdc/Vac	05: Potentiometer †	500, ±5%	2 W	6.26 Ω/s	80 s
	9: Special	07: Potentiometer †	5,000, ±10%	10 W	237.6 Ω/s	21.5 s
		99: Special ‡ (Specify potentiometer resistance and power rating.)				

Table 1 Notes

- * Motor drive voltage values have a tolerance of ±10%.
- † Potentiometers have a linear taper.
- ‡ Special linear, wire-wound potentiometers are available with normal resolution or precise resolution. Normal resolution potentiometers are available with a power rating of 10 watts and resistance values within the range of 1 to 25,000 ohms. Precise resolution potentiometers are available with a power rating of 2 watts and resistance values within the range of 10 to 10,000 ohms.

SPECIFICATIONS

MOC2XXX electrical and physical specifications are listed in the following paragraphs.

Motor Drive Power

Nominal Voltage: 24 Vdc/Vac, 32 Vdc/Vac, 48 Vdc/Vac, or 120 Vdc/Vac
Frequency Range: dc to 450 Hz
Maximum Voltage: Withstands 135% of the nominal value for 5 minutes
Maximum Current: 0.3 Adc/Aac

Control Element

Linear, wire-wound potentiometers are available in two basic types: normal resolution (10 W rating) and precise resolution (2 W rating).

Limit Switches

Motor-driven and auxiliary limit switches are factory preset at 2%, ±0.5% of the element electrical rotational limit. Auxiliary switches are user-adjustable.

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Configuration: SPDT
Contact Ratings:
AC: 5 Aac at 250 Vac
DC: 0.5 Adc at 125 Vdc, 0.25 Adc at 250 Vdc (resistive load)

Dynamic Braking

Motor shaft rotation stops within 10 ms after shorting of motor terminals.

Shock Withstand Capability

Withstands 15 G in all planes.

Operating Temperature

–40 to 70°C (–40 to 158°F)

Weight

Net: 9 lb (4.08 kg)
Shipping: 10.5 lb (4.76 kg)

FUNCTIONAL DESCRIPTION

Control Power

Control power of 24 Vdc/Vac, 32 Vdc/Vac, 48 Vdc/Vac, or 120 Vdc/Vac is applied at terminals 1 and 2. (The MOC model number determines the nominal input voltage level.) As necessary, it is rectified and decreased to 24 Vdc at terminals 3 (negative) and 4 (positive). This 24 Vdc is applied to the motor through a network of external switches which allow application of the 24 Vdc in either polarity. The polarity is determined by the need to raise or lower the system parameter controlled by the MOC.

Potentiometer Output

The potentiometer serves as the adjusting element of the MOC and is connected to terminals 14, 15, and 16. The potentiometer wiper arm, connected to terminal 15, moves toward terminal 14 when a raise command is received. A lower command moves the wiper arm to move toward terminal 16.

Terminals 8 and 13 are connected internally to switches that provide the centering feature for the potentiometer wiper arm.

Raise and Lower Inputs

When a raise or lower input is received, voltage is applied to the motor, causing it to rotate and move the slider of the potentiometer.

If a raise input is received, the polarity of the applied motor voltage causes the motor and potentiometer to rotate in the clockwise direction. This clockwise rotation continues until 24 Vdc is removed from the motor due to removal of the raise input or activation of the clockwise limit switch.

If a lower input is received, the polarity of the applied motor voltage causes the motor and potentiometer to rotate in the counterclockwise direction. This counterclockwise rotation continues until 24 Vdc is removed from the motor due to removal of the lower input or activation of the counterclockwise limit switch.

Rotational Limit Output Contacts

Two sets of SPDT output contacts indicate the rotational limits of the MOC control potentiometer.

The clockwise limit is indicated by contacts at terminals 8, 9, and 10. At the clockwise limit, the contacts at terminals 8 and 9 open and the contacts at terminals 9 and 10 close.

The counterclockwise limit is indicated by contacts at terminals 11, 12, and 13. At the counterclockwise limit, the contacts at terminals 11 and 12 open and the contacts at terminals 12 and 13 close.

Dynamic Braking

Dynamic braking is obtained by placing a short-circuit across terminals 5 and 7. An available accessory switch provides the necessary contact arrangement for the raise/lower function and dynamic braking.

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ACCESSORIES

MOC2XXX accessories consist of switch and dial plate sets. Each set is supplied with a rotary, three-position, momentary-action switch with a pistol-grip handle.

For a switch with a blank dial plate, order Basler part number 9174805106.

For a switch with a dial plate labeled LOWER/OFF/RAISE and FREQUENCY CONTROL, order Basler part number 9174805107.

For a switch with a dial plate labeled LOWER/OFF/RAISE and VOLTAGE CONTROL, order Basler part number 9174805108.

MOUNTING

Mounting dimensions for the MOC are illustrated in Figure 1. Dimensions are expressed in inches with millimeters in parenthesis. All dimensions listed have a tolerance of ± 0.03 inches (± 0.762 millimeters).

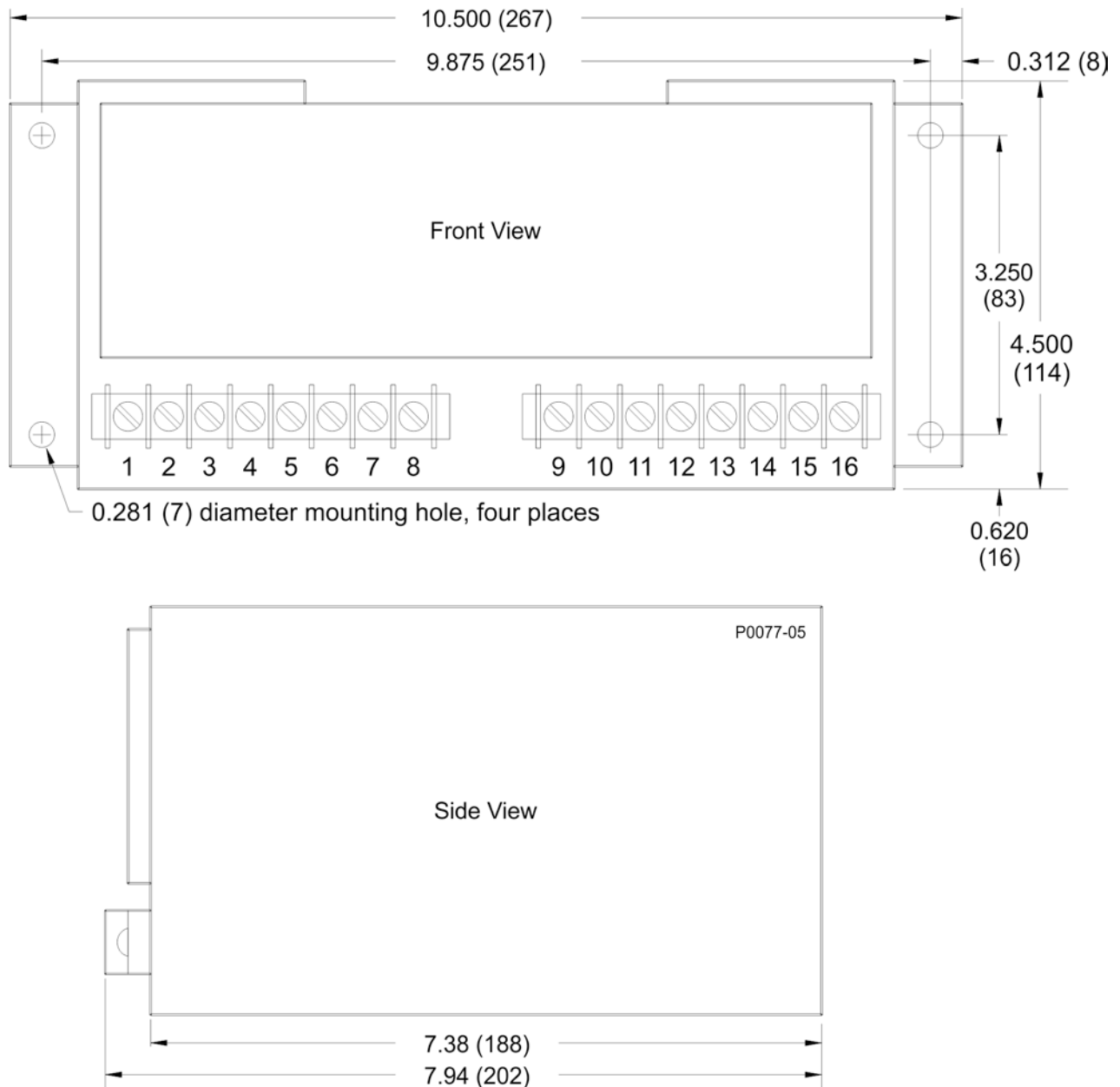


Figure 1. MOC2XXX Mounting Dimensions

CONNECTIONS

Typical MOC2XXX connections are illustrated in Figure 2. When making MOC connections, observe the following guidelines:

- Each terminal accommodates a maximum wire size of 12 AWG (3.31 mm²).
- When tightening each terminal screw, apply no more than 9 inch-pounds (1 N•m) of torque.

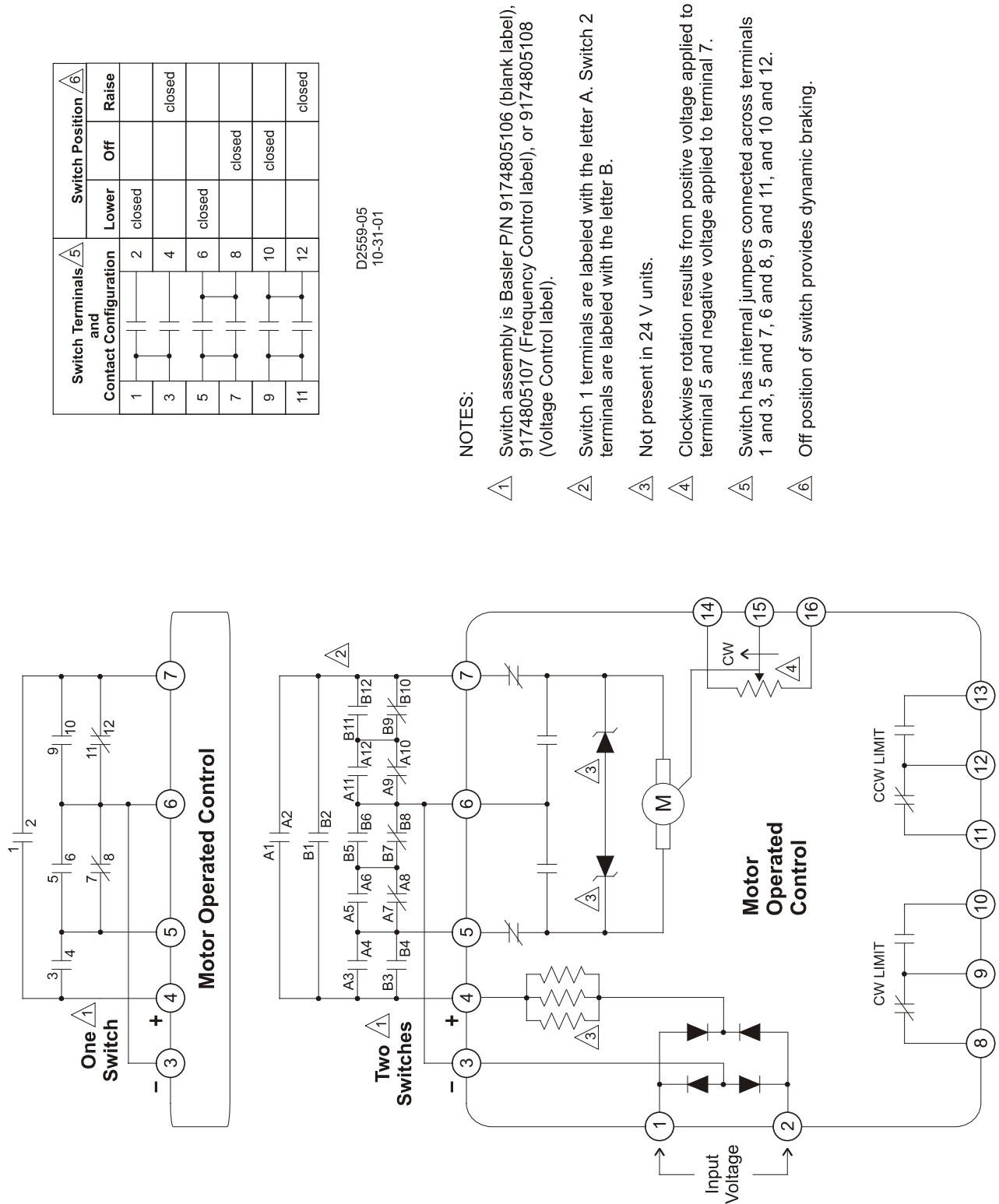


Figure 2. MOC2XXX Connections