SELCO USA, INC.

E7800 Motorized Potentiometer

- Direct access to manual operation of potentiometer.
- Low speed synchronous motor for accurate control with no coast time.
- 2 LEDs indicating “increase” and “decrease”.
- Any potentiometer with 6 mm or 1/4” shaft can be fitted.
- Adjustable potentiometer speed on DC versions
- Optional with DC voltage output
- Sealed wire wound potentiometer
- Dust sealed
- 50 hours burn-in before test
- Operating temperature range: -15°C to +70°C
- Flush mounted unit

Application

The E7800 Motorized Potentiometer is typically used as an interface between increase/decrease contacts and a device requiring control/adjustments by an external potentiometer.

In generator control applications with generator sets, the E7800 Motorized Potentiometer can be used as speed trim of an electronic speed governor, interfacing the synchronizer or the load sharer. To obtain the speed setting, the potentiometer supplied with the governor can be built into the E7800, and via this unit the frequency and load of the governor are controlled. It is important in this situation that the governor can operate with droop.

The Motorized Potentiometer can also be used alone for full range speed adjustment or speed trim of electronic governors. Another application is control of generator voltage, power factor and reactive load via the potentiometer for generator voltage adjustment. These are only some examples of many other industrial applications.

The E7800 Motorized Potentiometer houses a high quality wire wound potentiometer. The use of a wire wound potentiometer provides an extraordinary drive capability, not available on “simulated” motor potentiometers (electronic potentiometers). Wire wound potentiometers are superior to traditional carbon-based potentiometers, which wear quickly and are sensitive to “spark burns”. A dust tight seal ensures proper electrical contact at all times. The use of a real potentiometer also provides the additional feature of manual control.

Potentiometer resistance and number of turns (gearing) must be specified upon ordering. Optional RPM adjustment is also available. Potentiometer and output ramp time is defined by number of turns and the optional RPM setting. RPM setting is only available on the DC versions.

Function

The Motorized Potentiometer is a combination of a potentiometer and an electric motor, connected with a coupling. There is a direct mechanical link between the potentiometer and the knob, which gives access to adjusting the potentiometer in situations where manual control is necessary.

The E7800 motorized potentiometer is available for DC as well as AC voltage supply. The unit features a large size knob for manual control plus LED-based indication of turn direction.

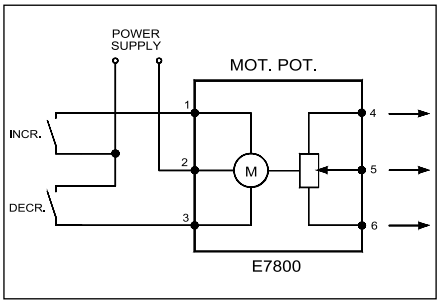

Fig. 1. Connections for E7800.

On DC versions the potentiometer speed is adjustable by a built-in trim potentiometer, which is an advantage for stabilising control circuits. The speed can be adjusted from 0.8 to 6 revolutions per minute (RPM), equal to 75 to 10 seconds per revolution.
The three potentiometer wires as well as the three motor connections are directly accessible on external connection terminals.

Changing Potentiometer

To fit into the assembly, the potentiometer to be attached must have a 6mm or 1/4” shaft diameter and a shaft length of 20.6mm, measured from the part of the potentiometer that touches the outside of the back plate to the end of the shaft. Unscrew the back plate and remove the supplied potentiometer. Remove the clutch and fit to new potentiometer. Fasten it firmly with an 0.05” Allen Key. Replace the back plate and fasten it with four screws, checking that the clutch has a firm connection. Adjust the knob for symmetrical turning angle using the centre screws on the knob under the cap.

An advantage of the design of the E7800 is that the potentiometer will “remember” its position, even when the supply is lost.

SELCO USA, INC.

Specifications

E7800 Motorized Potentiometer

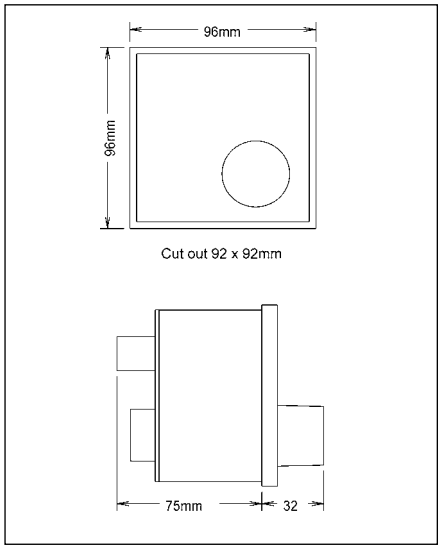

Fig. 3. Dimensions.

Voltage range	AC: 90 - 120% DC: 75 - 125%
Consumption	AC: 2.5VA DC: 2W
Coast time	Zero
Operating temperature	-15°C to +70°C
Dielectric test	2kV, 50Hz, 1 minute
EMC	CE according to EN50081-1, EN50082-1, EN50081-2, EN50082-2
Approvals	CSA, UL component recognition
Burn-in	50 hours before final test
Weight	0.35kg
Dimensions	96 x 96 x 80mm (H x W x D)
Panel cut out	92 X 92mm (H x W)

The specifications are subject to change without notice.

Type Selection Table

E7800.0010	220-240VAC, 5kΩ - 1Turn, 1RPM	E7800.0150	100-120VAC, 5kΩ - 1Turn, 1RPM
E7800.0020	220-240VAC, 100Ω - 1Turn, 1RPM	E7800.0160	100-120VAC, 100Ω - 1Turn, 1RPM
E7800.0030	220-240VAC, 200Ω - 1Turn, 1RPM	E7800.0170	100-120VAC, 200Ω - 1Turn, 1RPM
E7800.0040	220-240VAC, 500Ω - 1Turn, 1RPM	E7800.0180	100-120VAC, 500Ω - 1Turn, 1RPM
E7800.0050	220-240VAC, 1kΩ - 1Turn, 1RPM	E7800.0190	100-120VAC, 1kΩ - 1Turn, 1RPM
E7800.0060	220-240VAC, 2kΩ - 1Turn, 1RPM	E7800.0200	100-120VAC, 2kΩ - 1Turn, 1RPM
E7800.0070	220-240VAC, 10kΩ - 1Turn, 1RPM	E7800.0210	100-120VAC, 10kΩ - 1Turn, 1RPM
E7800.0080	220-240VAC, 5kΩ - 10Turn, 2RPM	E7800.0290	100-120VAC, 5kΩ - 10Turn, 2RPM
E7800.0090	220-240VAC, 100Ω - 10Turn, 2RPM	E7800.0300	100-120VAC, 100Ω - 10Turn, 2RPM
E7800.0100	220-240VAC, 200Ω - 10Turn, 2RPM	E7800.0310	100-120VAC, 200Ω - 10Turn, 2RPM
E7800.0110	220-240VAC, 500Ω - 10Turn, 2RPM	E7800.0320	100-120VAC, 500Ω - 10Turn, 2RPM
E7800.0120	220-240VAC, 1kΩ - 10Turn, 2RPM	E7800.0330	100-120VAC, 1kΩ - 10Turn, 2RPM
E7800.0130	220-240VAC, 2kΩ - 10Turn, 2RPM	E7800.0340	100-120VAC, 2kΩ - 10Turn, 2RPM
E7800.0140	220-240VAC, 10kΩ - 10Turn, 2RPM	E7800.0350	100-120VAC, 10kΩ - 10Turn, 2RPM

E7800.0640	24VDC, 5kΩ - 1Turn, 0.8-6.0RPM
E7800.0650	24VDC, 100Ω - 1Turn, 0.8-6.0RPM
E7800.0660	24VDC, 200Ω - 1Turn, 0.8-6.0RPM
E7800.0670	24VDC, 500Ω - 1Turn, 0.8-6.0RPM
E7800.0680	24VDC, 1kΩ - 1Turn, 0.8-6.0RPM
E7800.0690	24VDC, 2kΩ - 1Turn, 0.8-6.0RPM
E7800.0700	24VDC, 10kΩ - 1Turn, 0.8-6.0RPM
E7800.0710	24VDC, 5kΩ - 10Turn, 0.8-6.0RPM
E7800.0720	24VDC, 100Ω - 10Turn, 0.8-6.0RPM
E7800.0730	24VDC, 200Ω - 10Turn, 0.8-6.0RPM
E7800.0740	24VDC, 500Ω - 10Turn, 0.8-6.0RPM
E7800.0750	24VDC, 1kΩ - 10Turn, 0.8-6.0RPM
E7800.0760	24VDC, 2kΩ - 10Turn, 0.8-6.0RPM
E7800.0770	24VDC, 10kΩ - 10Turn, 0.8-6.0RPM

SELCO USA, INC.

Phone: 770-455-9110 Fax: 770-457-3754
INFO@SELCOUSA.COM
SELCOUSA.COM