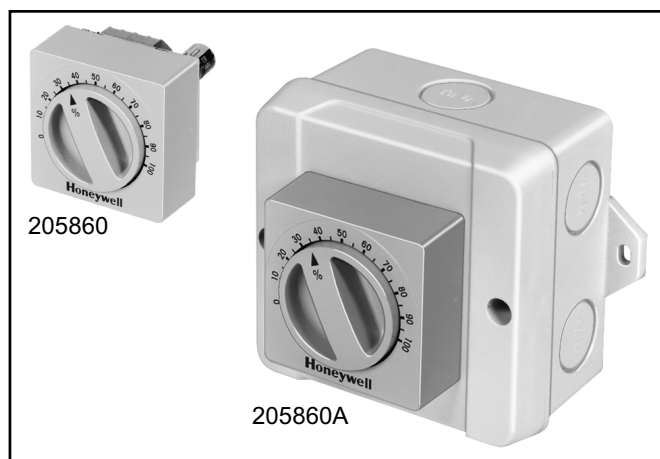


## 205860 and 205860A Remote Minimum Position Potentiometer

### PRODUCT DATA



### FEATURES

- Provides a minimum position signal to proportional control actuators.
- 205860 is panel mounted.
- NEMA 4 rating for 205860A wall mount enclosure.
- Control knob labeled from 0% to 100%.
- Accepts either current or voltage control signal.
- Converts 0 to 20 mA control signal to 0 to 10 Vdc signal.
- Converts 4 to 20 mA control signal to 2 to 10 Vdc signal.

### APPLICATION

The minimum position potentiometer is used to provide a minimum position signal to a Series 70 voltage control damper or valve motor. If the input is not used, the motor is controlled by the potentiometer signal. If the input is used, the motor is controlled by the potentiometer signal or the controller signal, whichever is greater. The 205860 is a panel mount potentiometer. The 205860A is a 205860 with a wall-mount NEMA 4 enclosure.

### SPECIFICATIONS

#### Electrical Ratings:

Operating voltage: 24 Vac  $\pm$  20%, 50/60 Hz.

#### Temperature Ratings:

Operational Temperature: -30 to +140°F (-35 to +60°C).

Storage Temperature: -30 to +150°F (-35 to +65°C).

Humidity: 5% to 95% at +95°F (noncondensing).

#### Dimensions:

205860: See Fig. 1 and 2.

205860A: See Fig. 3.

#### Wiring Connections:

Use 20 gauge or smaller wire for terminal block.

205860A: Outside Diameter of Cable:

3/8 in. (9 mm) minimum.

1/2 in. (13 mm) maximum.

#### Repair Parts:

Product is not field-repairable.

### INSTALLATION

#### When Installing this Product

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After the installation is complete, check out the product operation as provided in these instructions.

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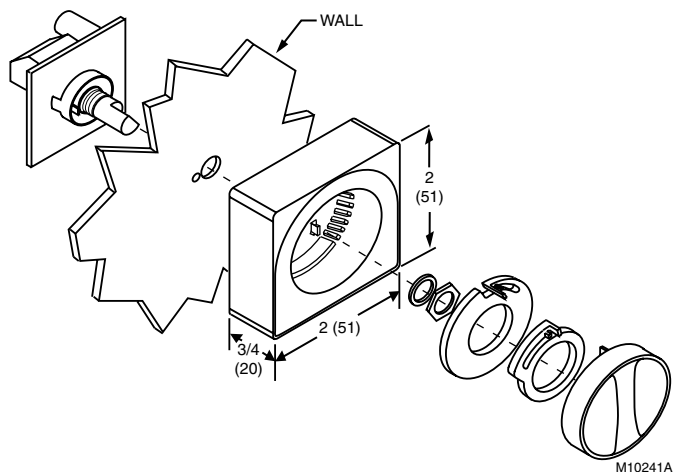


Fig. 1. 205860 exploded view with dimensions in in. (mm).

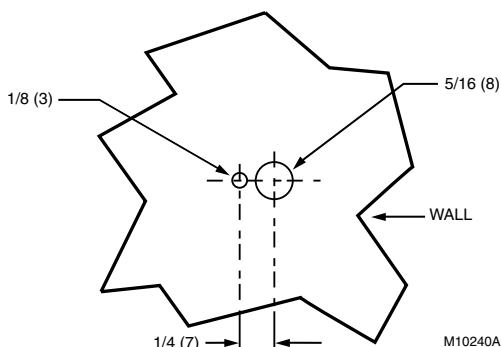
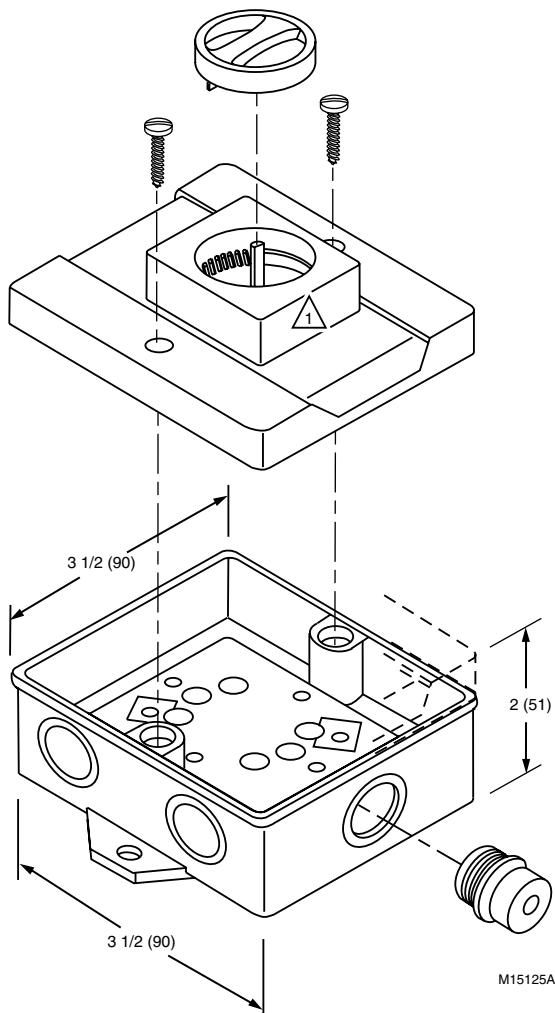


Fig. 2. 205860 mounting plate hole dimensions in in. (mm).



FOR POTENTIOMETER DIMENSIONS, SEE 205860 DIMENSIONAL DRAWINGS.

Fig. 3. 205860A exploded view with dimensions in in. (mm).

## CAUTION

**Electrical Shock or Equipment Damage Hazard.**  
 Can shock individuals or short equipment circuitry.  
 Disconnect power supply before installation.

## Location

Select a convenient location for the control. The maximum distance between the controller and the controlled device is 3000 feet.

## PLANNING THE INSTALLATION

### Pre-Installation Checkout

1. Configure the 205860/205860A to the desired settings listed in Table 1.

## ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Home and Building Control Sales Office (check white pages of your phone directory).
2. Home and Building Control Customer Relations  
 Honeywell, 1885 Douglas Drive North  
 Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Scarborough, Ontario M1V 4Z9.  
 International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

2. Wire terminals 1 and 2 according to Fig. 4.
3. Connect a voltmeter to terminals 1 and 3
4. Adjust the control knob to 0%, 100%, and the desired minimum setpoint while observing voltmeter readout.

NOTE: The 0% to 100% indicator on the control knob corresponds with the control signal range. Example: The control signal is 4-20 mA. The knob is set to 25%. The minimum position is 25% of 4-20 mA = 8 mA which the device converts to 4 Vdc. So, if the control signal is less than 8 mA, the signal from the device will be 4 Vdc.

### Replacement Considerations

This product can replace the controls listed in Table 2. Configure the 205860/205860A according to Table 2 (see Table 1 for configuration details).

#### IMPORTANT

The controller can produce either voltage or current signal, but actuator must be voltage controlled. See Table 1 to configure potentiometer.

Table 1. 205860/205860A Jumper Configuration and Adjustments.

Configuration	J2 (Jumper)	R4 (Resistor)
0 to 10 Vdc	Do <i>not</i> remove	Remove
2 to 10 Vdc	Remove	Remove
0 to 20 mA	Do <i>not</i> remove	Do <i>not</i> remove
4 to 20 mA	Remove	Do <i>not</i> remove

### Mounting

#### Panel Mount (205860)

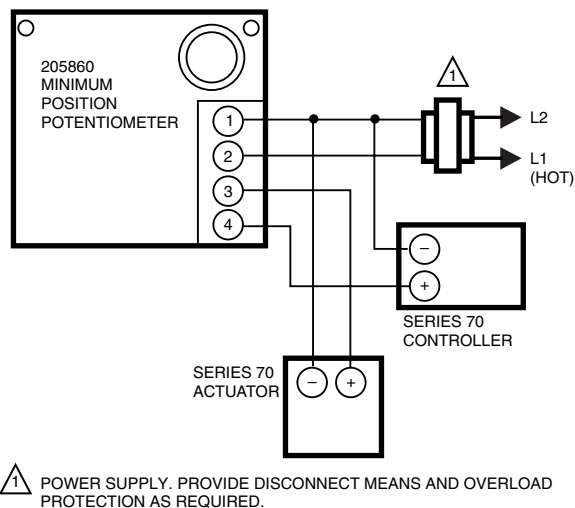
1. Attach the two stop pieces to the case as shown in Fig. 1. If stops are already in the case, adjust them with needle-nose pliers. Grip the stop and pull it away from the case backing, rotating it until it is in the desired position. Push it back into the case.

NOTE: If possible, set stops to desired positions *prior* to installing the control knob.

2. Drill holes in the mounting surface as shown in Fig. 2.
3. Insert the 205860 Potentiometer through holes from behind the mounting surface. Make certain that the 205860 orientation allows the lip to protrude into the smaller of the two holes.
4. With the 205860 inserted in the mounting surface, slide the cover and washer onto the shaft. Fasten the cover in place with the nut.
5. Slide the control knob onto the shaft. Make sure the indicator on the control knob is between the two stops. If not, when the control knob is just barely on the shaft, rotate it until it is between the two stops.

#### NEMA 4 Wall Mount (205860A)

1. Remove the control knob from the shaft with needle-nose pliers. Grip the control knob firmly and pull it off the shaft.
2. Adjust the stops with needle-nose pliers. Grip the stop and pull it away from the case backing, rotating it until it is in the desired position.



POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

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Fig. 4. 205860/205860A wiring diagram.

Table 2. Replacement Configurations.

To replace	Use this product	Configure as
Belimo SGA24	205860A	0-10 Vdc or 2-10 Vdc
Belimo SGF24	205860	0-10 Vdc or 2-10 Vdc
Landis & Gyr FZA61.11 <sup>a</sup>	205860	0-10 Vdc or 2-10 Vdc

<sup>a</sup>Replaces Landis & Gyr FZA61.11 only as a minimum position or voltage signal as described in the Application section.

3. Push it back into the case.
4. Slide the control knob onto the shaft. Make sure the indicator on the control knob is between the two stops. If not, when the control knob is just barely on the shaft, rotate it until it is between the two stops.
5. Drill holes in the mounting surface as shown in Fig. 5.
6. Loosen the screws and remove the cover from NEMA 4 case. Set it aside for later use.
7. Remove the caps from the NEMA 4 case and set one aside for later use; discard the extra caps.
8. Remove one of the knockouts.

NOTE: It is recommended that the bottom knockout be used. This provides the smallest chance for condensation or moisture to collect in the case.

9. Insert one of the caps in the knockout. See Fig. 3.
10. Thread the wiring cable through the hole in the cap.

#### IMPORTANT

If the cable does not fit snugly in the cap, the device will not meet NEMA 4 standards. The outside diameter of the cable can be increased locally using a sleeve, heat-shrink tubing, or insulator tape.

11. Wire the 205860A. See Wiring section.
12. Replace the cover and tighten screws.

#### IMPORTANT

If screws are not tightened completely, the device will not meet NEMA 4 standards.

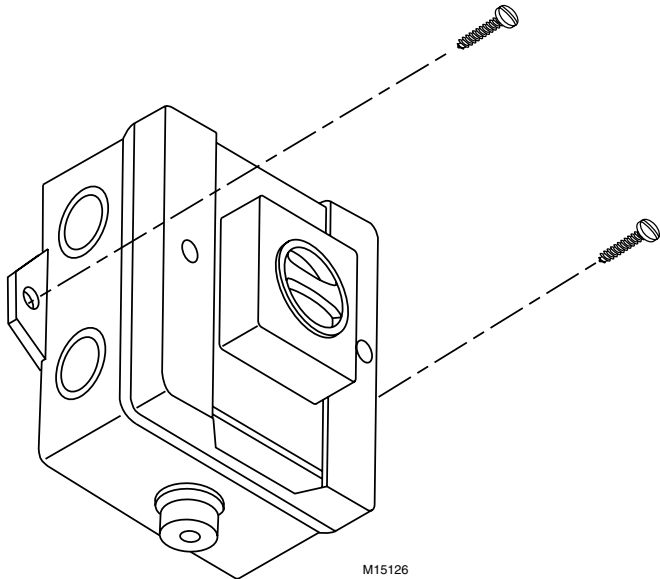
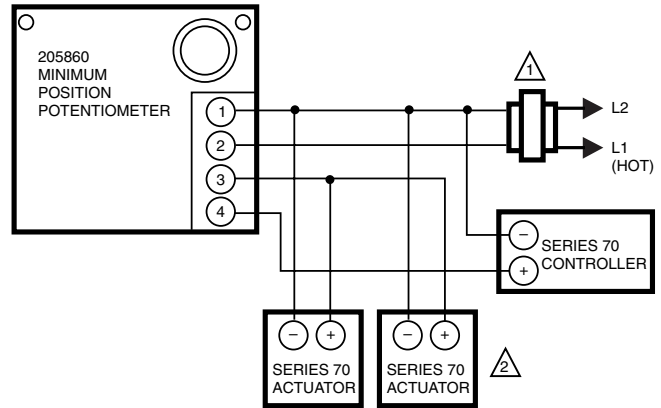


Fig. 5. 205860A mounting.



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 A MAXIMUM OF FOUR MOTORS CAN BE WIRED IN PARALLEL WITH THE 205860 MINIMUM POSITION POTENTIOMETER.

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Fig. 6. Parallel wiring multiple motors with the 205860/205860A.

## Wiring

### CAUTION

**Electrical Shock or Equipment Damage Hazard.**  
Can shock individuals or short equipment circuitry.  
Disconnect power supply before installation.

All wiring must comply with local codes and ordinances. Refer to information furnished with motor, relay and other system equipment.

See Fig. 4 and 6 for proper wiring.

## SETTINGS AND ADJUSTMENTS

### Setting Input Signal Zero and Span

The controller used with the 205860/205860A Potentiometer can provide one of four signals: 0-10 Vdc, 2-10 Vdc, 0-20 mA, or 4-20 mA. To configure the 205860/205860A, see Table 1.

## Setting Mechanical Stops

See Mounting section for details of adjusting the mechanical stops.

## OPERATION AND CHECKOUT

### Operation

When the 205860/205860A Potentiometer is adjusted, installed and wired, set the control knob to the desired minimum position.

### Checkout

#### Mechanical Stops

After the stops are set (see Mounting section), check them physically, using the control knob to verify the settings.

#### Signal

Set 205860/205860A Potentiometer to the desired setting and check the minimum position of the motor. See motor specifications for details. To verify setting accuracy, check the signal electronically (see Pre-Installation Checkout procedure).

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