

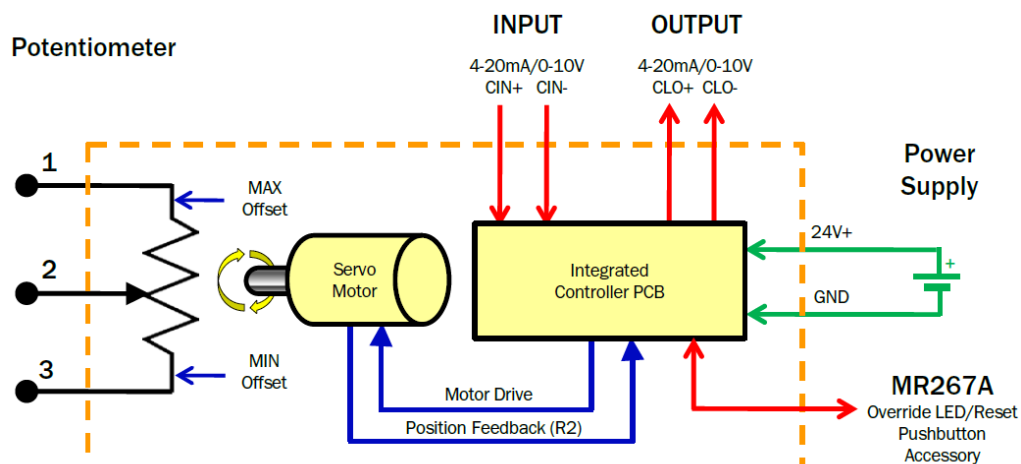
Motorized Potentiometer

MR267 Remote Controlled Motorized Potentiometer

MR267 SERIES

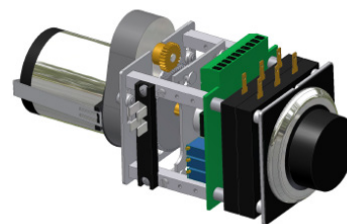
The MR267 series is a direct automation replacement for existing manual potentiometer controls. Interface options include 4-20mA or 0-10V which ensures compatibility with the majority of PLC or DCS control systems.

The MR267 series replaces manual potentiometer controls rated up to 5 Watts. Mounting options include front panel (where manual override is still desired) or DIN rail (side or end mount options, for mounting inside an equipment cabinet). For higher wattage potentiometers/rheostats (20W to 600W), please consult the MR266 series data sheet

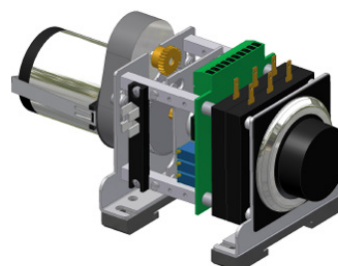


Features

- Front Panel or DIN Rail/Chassis Mount Options
- 4-20mA or 0-10V Input Control Options
- User-Adjustable Timing Cycle from 10 to 120 Seconds
- User-Selectable Override options
- Optional MR267A Front Panel Override LED Indicator and Reset Pushbutton Accessory



Front Panel Mount



DIN Rail Mount

Setting up the Motorized Rheostat

1. Make Power, Input, and Output Connections to Controller using the supplied PHOENIX plug.

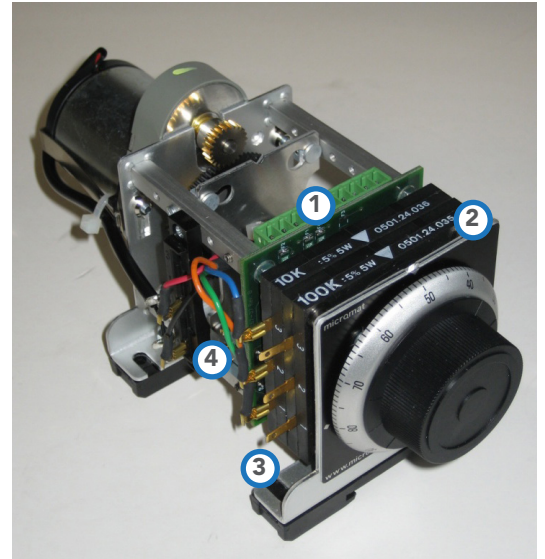
Note: if using MR267A Accessory, first mount to front panel and then connect to special mating receptacle on bottom side of Controller PCB (not visible in this photo).

2. Set DIP switches for desired Override and Bias modes. See following page for detailed explanation of settings and factory defaults.
3. While soldering to the potentiometer terminals is OK, it is recommended to use crimp-style female terminals such as TE Connectivity/AMP FASTON Receptacles:
 - SAE, use size 0.110x0.020
 - Metric, use DIN 45244, 2.8x0.5mm

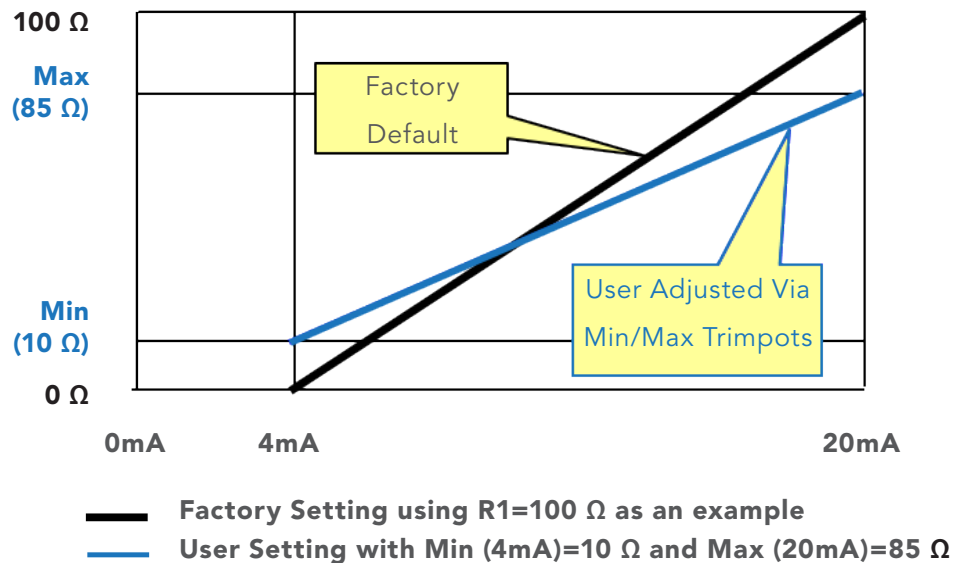
Sample TE Connectivity/AMP P/Ns:

- 42068, Straight, non-insulated
- 61070-2, Right Angle, non-insulated

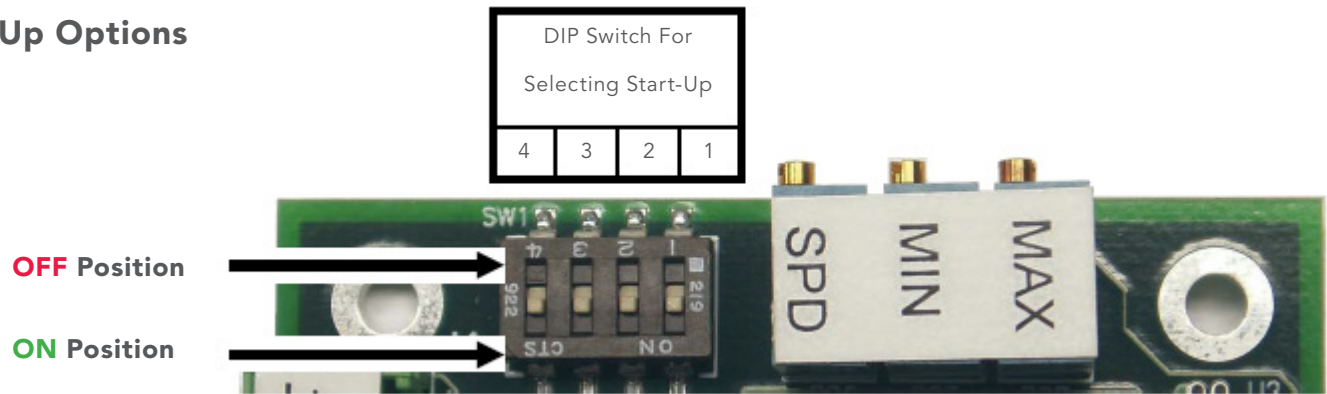
4. Adjust Min and Max offset if 4mA/0V and/or 20mA/10V set points are to be different than default 0Ω and Full Scale settings, respectively. Adjust SPD trimpot for timing cycle other than the default setting of 10 seconds (Adjustable range is 10-120 seconds).



Input Response is User Adjustable



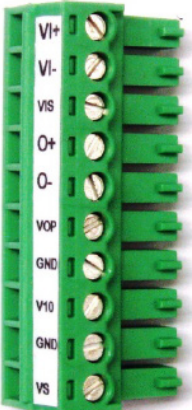
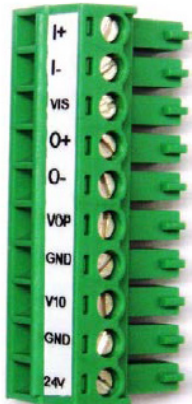
Start-Up Options



| DIP SW Position | Function | Description | 4-20mA | 0-10V |
|--------------------|---------------|---|---------|---------|
| | | | Default | Default |
| 1 | Input Bias | ON = Input range is 4-20mA or 2-10V. OFF = Input range is 0-20mA or 0-10V. | ON | OFF |
| 2 | Output Bias | ON = Output range is 4-20mA or 2-10V. OFF = Output range is 0-20mA or 0-10V. | ON | OFF |
| 3 | Override Mode | ON = Manual override disengages motor control until a Reset is performed. Optional MR267A accessory provides a turnkey remote Reset pushbutton/indicator solution. OFF = Manual override is disabled. System will drive motor to position determined by analog output. | ON | ON |
| 4 | ---- | Not used | ON | ON |

Controller Connections

| PIN | Function | Description |
|-----|----------|--|
| 1 | I+ or V+ | Input Signal Positive. May be either current (I+) or voltage (V+) depending on configuration. |
| 2 | I- or V- | Input Signal Return (Negative). May be either current (I-) or voltage (V-) depending on configuration. |
| 3 | VIS | Isolated voltage available for customer use. Voltage is nominal 12V. Maximum load 30mA. Can be used to power an external 4-20mA loop power sensor. Available on isolated 4-20mA Input Option 2 only. |
| 4 | O+ | Position output. May be either current or voltage depending on option |
| 5 | O- | Position output return signal. May be either current or voltage depending on option. |
| 6 | VOP | Isolated voltage available for customer use. Voltage is nominal 12V. Maximum load 30mA. This isolated voltage is only available with isolated 0-10V Input/Output. |
| 7 | GND | System ground. Internally connected to pin 9. |
| 8 | V10 | Precision Reference output 10V. Maximum load 6mA. May be used to power remote control potentiometer. Voltage is referenced to system ground. Optional HPF00-7-0-0 Remote Potentiometer accessory is available as a turnkey solution. |
| 9 | GND | System ground. Internally connected to pin 7. |
| 10 | 24+ | System power. Connect to external power supply. Peak current draw when motor is running is 220mA. Typical idle current draw is <60mA. |



MR267A LED/Pushbutton Accessory

The optional MR267A is a turnkey, plug-in assembly for users utilizing the Manual Override function (see Start-Up Options). If Override is set to ON, the LED will flash when the operator attempts to manually override the pot position. The LED continues to indicate that the unit is in Manual Override mode and will ignore the analog input. Externally toggling the power Off/On or pressing this push-button will restore the motor pot to normal analog input control.

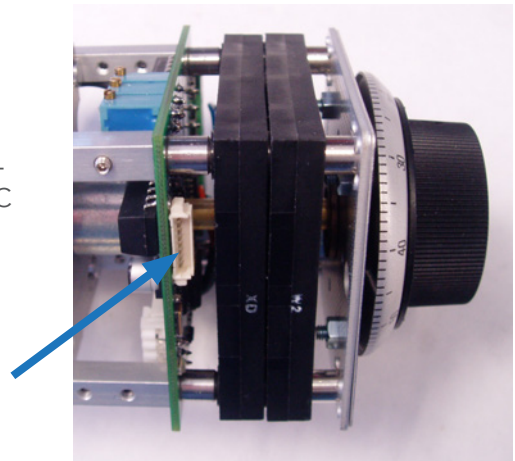
If user needs to make direct connections to the MR267A receptacle, then use Molex 51021-0800 plug (DigiKey WM1726-ND) and appropriate crimp terminals.



MR267A Connections

| | |
|----------------|---|
| Pin 1 = Common | Common Connection to LED cathode and switch Common |
| Pin 3 = Reset | Connection to switch NO contact and to internal NMCLR input with 4.3k Ω pull-up to +5VDC |
| Pin 6 = LED | Connection to LED anode to RBS processor input via internal 681 Ω series resistor |

Note: MR267A plugs into mating receptacle located on reverse side and bottom of controller PCB

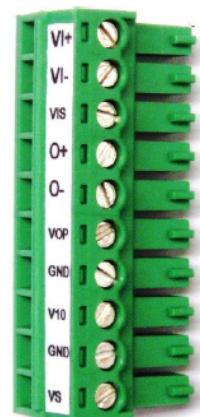


Replacement Plugs

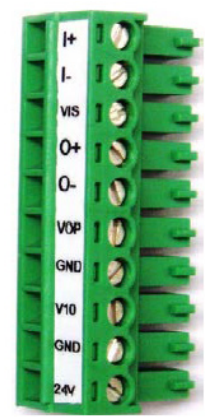
MR267B-10 for Current Models

MR267B-20 for Voltage Models

A specially labeled Phoenix 10C Mini Combicon plug (Phoenix 1803659) is supplied with each motor pot. Additional units can be purchased from Micronor. Be sure to order the correct version according to the type of interface (current or voltage) on your units.



MR267B-20




MR267B-10

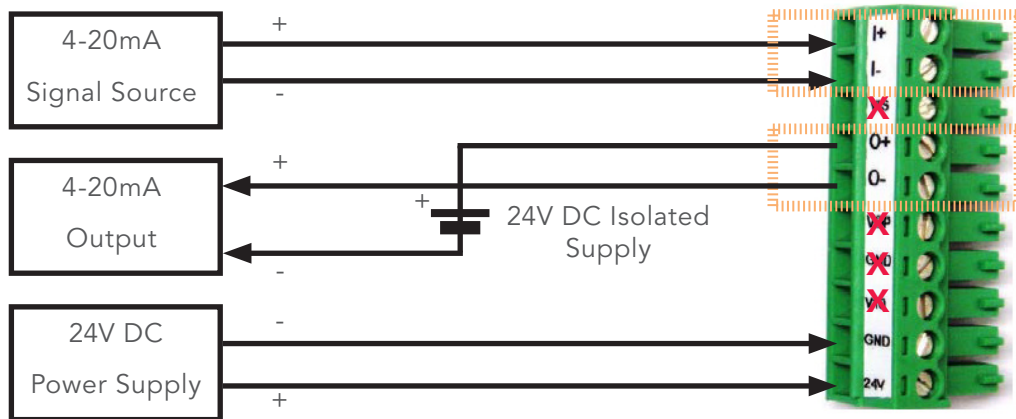
I/O Option 22

Input = Isolated 4-20mA

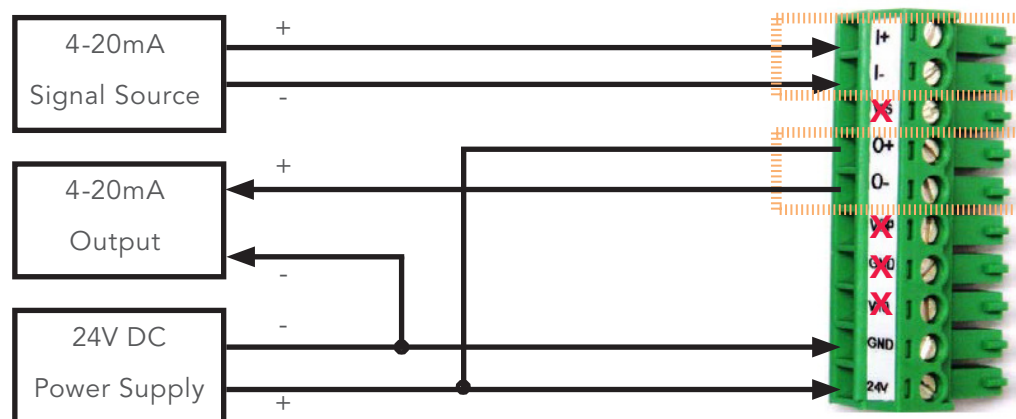
Output = Isolated 4-20mA, Loop Powered

X = Not Connected
 = Isolated Circuit

Isolated Input/Output Using
External 24V DC isolated Power Supply



Isolated Input/Output Using
External 24V DC isolated Power Supply

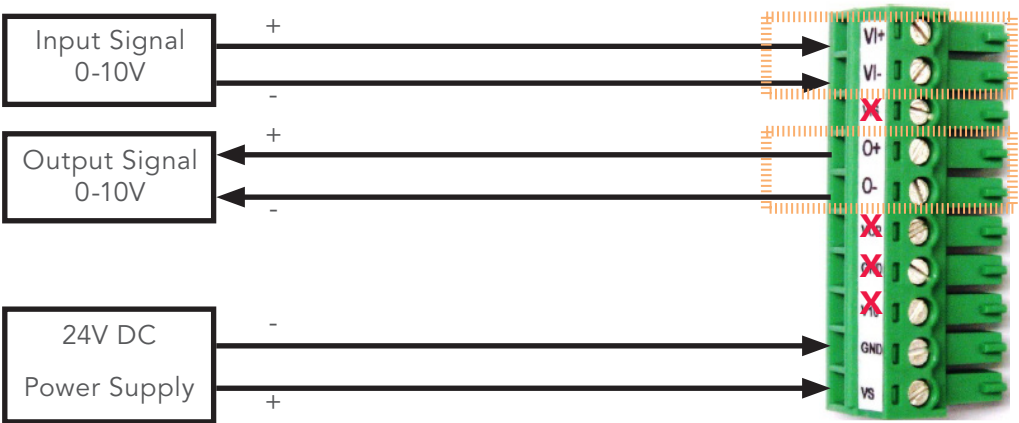


I/O Option 44

Input = Isolated 0-10V

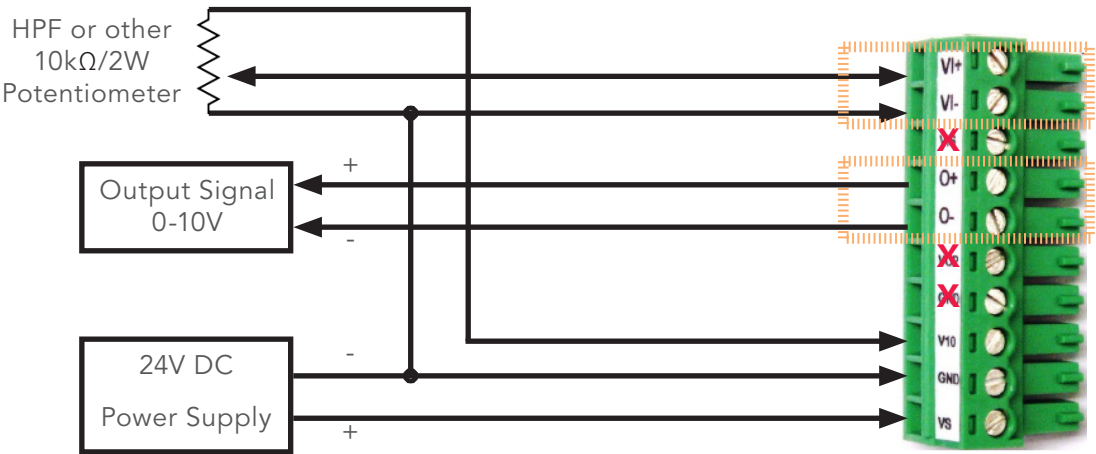
Output = Isolated 0-10V

X = Not Connected
[Orange dashed box] = Isolated Circuit



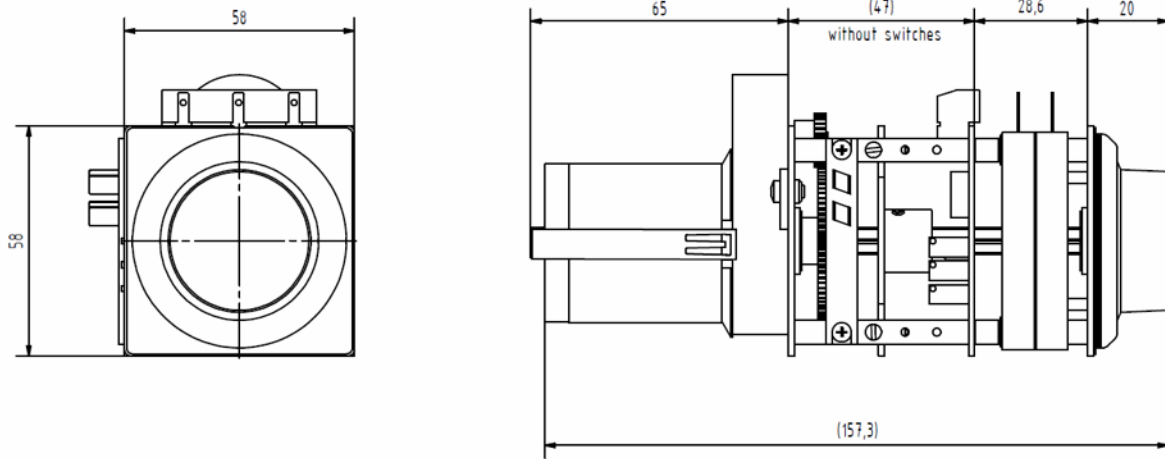
Connections for Remote Potentiometer

Used to Control Local MR267 Motorized Potentiometer



Reference Drawings

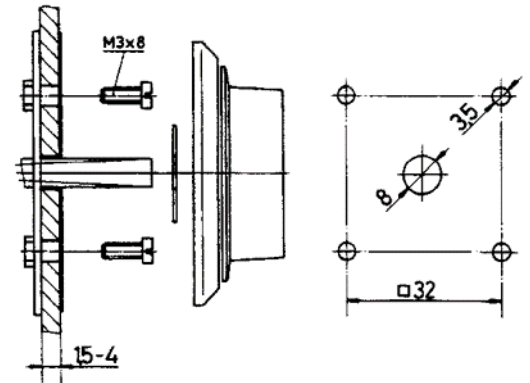
Front Panel Mount



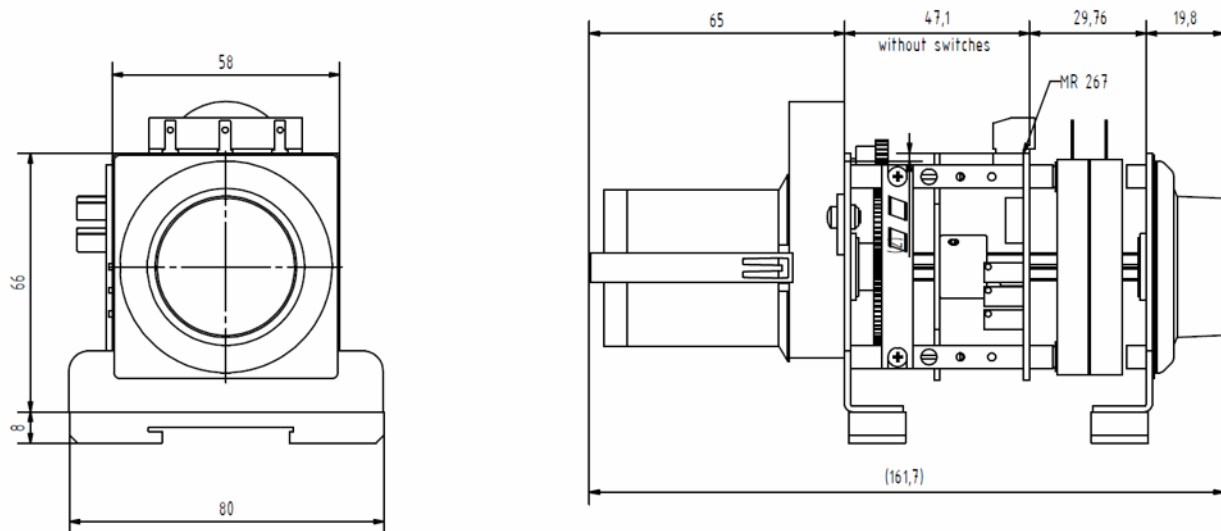
Front Panel Mounting Instructions:

1. Remove knob from shaft by loosening set screw.
2. Remove front plate via the 4 M3x8 screws.
3. Mount motor pot assembly to panel by affixing from front with same plate and screws.
4. Reinstall knob onto shaft

Note: Drawing to right shows hole layout for mounting Front Panel Mount (Style 1) to a panel. with supplied hardware, the maximum allowable panel thickness is 4mm.



DIN Rail Mount



Specifications

| Analog Input | | |
|--|---|---|
| Position Input Current Input Bias = ON | -4mA to 20mA | A signal dropout below 4mA will cause the motor pot to remain at its last position. Signals $\geq 20\text{mA}$ are interpreted as 20mA signal. |
| Input Bias = Off | 0mA to 20mA | Signals $\leq 0\text{mA}$ or less are interpreted as 0 position. Signals $\geq 20\text{mA}$ are interpreted as 20mA signal. |
| Position Input Voltage Input Bias = ON | 2V to 10V | Signals $\leq 2\text{V}$ are interpreted as 0 position. Signals $\geq 10\text{V}$ are interpreted as 10V signal. |
| Input Bias = OFF | 0V to 10V | Signals $\leq 0\text{V}$ are interpreted as 0 position. Signals $\geq 10\text{V}$ are interpreted as 10V signal. |
| Input Isolation | 1kV | Only applies if isolated input option is ordered |
| Reference Output | 10.00V, max 6mA | Used to power external potentiometer. Voltage referenced to system around. |
| Position Accuracy | 0.5% m | |
| Position Resolution | 0.25% typical | |
| TIME Setting Range | 10s to 120s | Default factory setting is 10 seconds. |
| MIN Setting Range | 0% to 25% | Corresponds to 4mA / 0V input. Default setting is 0% |
| Max Setting Range | 52% to 100% | Corresponds to 0mA / 10V input. Default setting is 100% |
| Potentiometer Output | | |
| Type | Wire Wound | See DPC data sheet for additional technical details |
| Resistance Tolerance | $\pm 5\%$ | |
| Linearity | $< 0.15\%$ | Actual value depends on potentiometer value, see DPC data sheet |
| Power Rating | 5 W | At 40°C, Max slider current = 100mA |
| Dielectric Strength | 900 VDC | |
| Analog Output | | |
| Position Output Current Power Supply Loop Voltage Output Bias = ON Output Bias = OFF | Loop Powered 26V max 4mA to 20mA 0mA to 20mA | 500 Ω external burden resistance, max with 24 V or higher |
| Position Output Voltage Load Current Output Bias = ON Output Bias = OFF | 5mA max 2V to 10V 0V to 10 V | |
| Output Isolation | 1kV | Only applies if isolated output option is ordered |
| Position Accuracy | 0.5% max | |
| Position Resolution | 0.25% typical | |
| Power | | |
| Supply Voltage | 20V to 26V DC | |
| Supply Current Standby Running Peak | $< 35\text{mA}$ 200mA typical 500mA max | When the motor has reached position, the current consumption is reduced to a standby current. During a typical move, the current draw is approximately 200mA. Start and stop peaks may reach the peak maximum. Recommended power supply is 24VDC at 400mA |
| Environmental | | |
| Temperature Operating Storage | -15°C to +65°C -25°C to +75°C | |
| Humidity | 0-95% non condensing | |
| Physical Attributes | | |
| Weight | 20 oz (560 g) | |

Specifications subject to change without notice

Ordering Info MR267 Motorized Potentiometer

M R 2 6 7 - 1 - 2 2 - 7

Mounting Style

- 1** Front Panel Mount
- 2** DIN Rail Mount

Input/Output Interface

- 22** Input and Output 4-20mA Isolated
- 44** Input and Output 0-10V Isolated

User Potentiometer, Resistance (5W)

- | | | | |
|----------|------|-----------|-------|
| 1 | 100Ω | 2 | 200Ω |
| 3 | 500Ω | 4 | 1kΩ |
| 5 | 2kΩ | 6 | 5kΩ |
| 7 | 10kΩ | 8 | 2.5kΩ |
| 9 | 20kΩ | 10 | 100kΩ |

Note: Units with multiple potentiometers are also available.
Contact Micronor with your special requirements.

Ordering Info Reset Switch / Override LED Assembly

M R 2 6 7 A

Other Accessories

- 1803659** Replacement Phoenix Mini Combicon Plug

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