

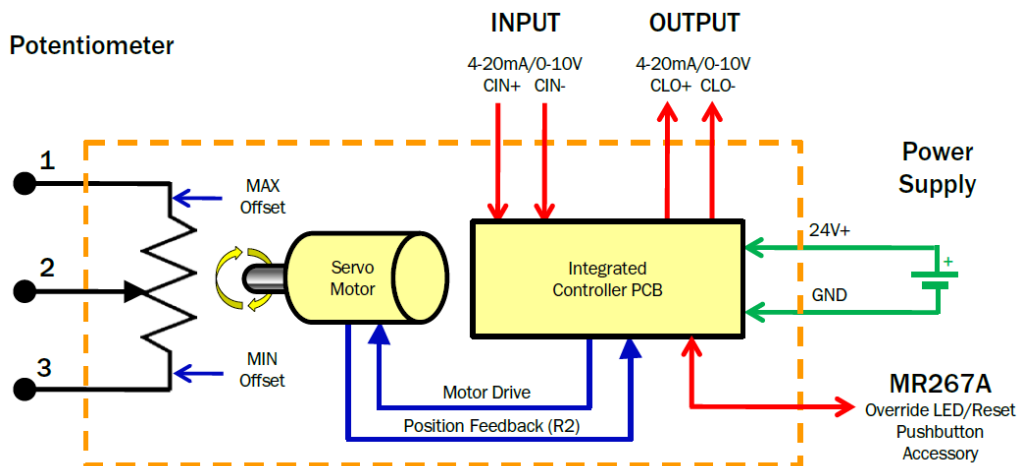
# Motorized Potentiometer

## MR267 Remote Controlled Motorized Potentiometer

**MR267 SERIES**

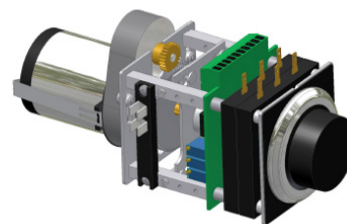
The MR267 series is a direct automation replacement for existing manual potentiometer controls. Interface options include 4-20mA or 0-10V which ensures compatibility with the majority of PLC or DCS control systems.

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 (10W to 1000W), please consult the MR266 series data sheet

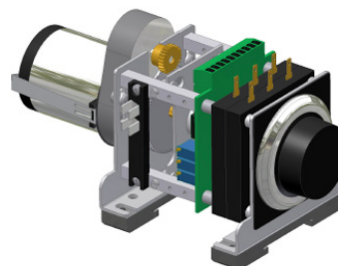


### Features

- Front Panel or DIN Rail/Chassis Mount 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
- Optional HPFF Front Panel Mount Remote Potentiometer Control 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.

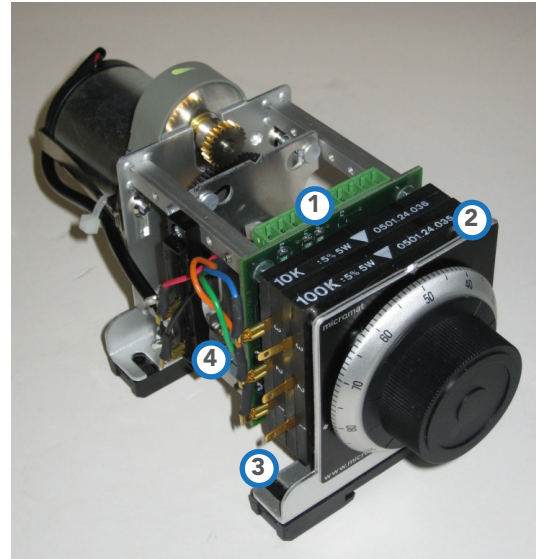
**Note:** if using MR267A Accessory, first mount to front panel and then connect to special mating receptacle on bottom side of Controller PCB (not visible in this photo).

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

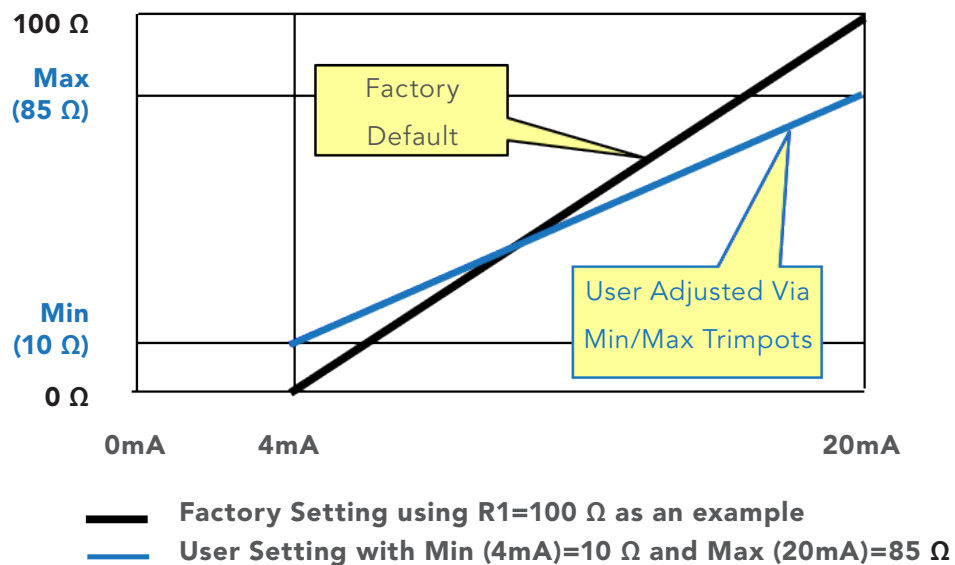
Sample TE Connectivity/AMP P/Ns:

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

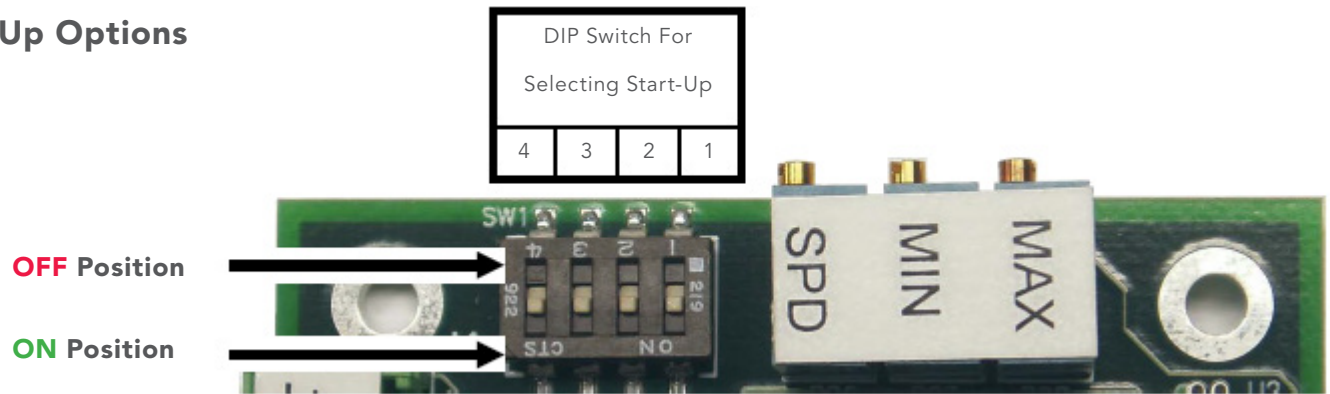
4. Adjust Min and Max offset if 4mA/0V and/or 20mA/10V set points are to be different than default 0Ω and Full Scale settings, respectively. Adjust SPD trimpot for timing cycle other than the default setting of 10 seconds (Adjustable range is 10-120 seconds).



### Input Response is User Adjustable



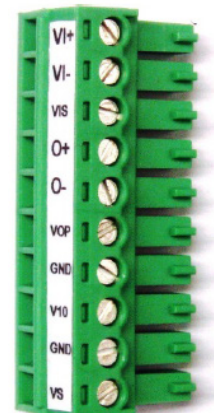
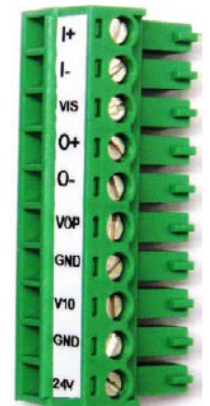
## Start-Up Options



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.

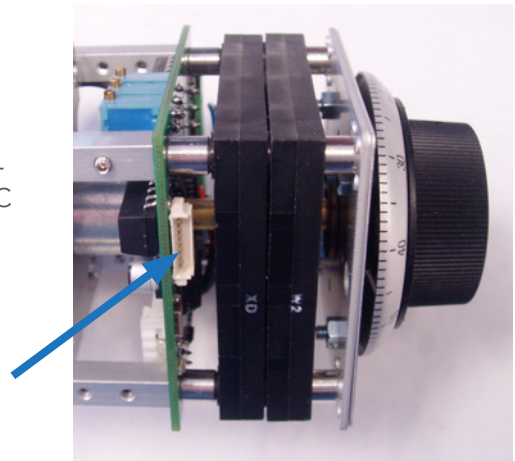
If user needs to make direct connections to the MR267A receptacle, then use Molex 51021-0800 plug (DigiKey WM1726-ND) and appropriate crimp terminals.



## 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 $\Omega$ pull-up to +5VDC
Pin 6 = LED	Connection to LED anode to RBS processor input via internal 681 $\Omega$ series resistor

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

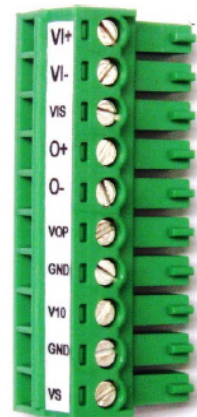


## Replacement Plugs

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




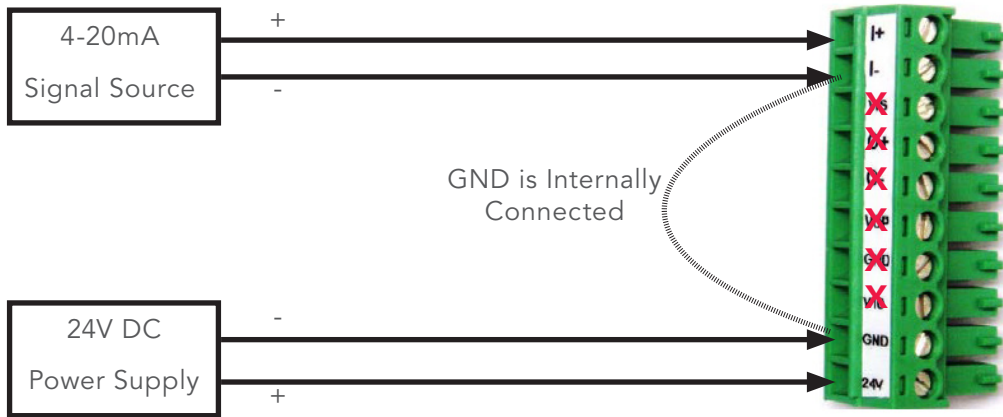
MR267B-10

## I/O Option 10

Input = Non-Isolated 4-20mA

Output = None


**X** = Not Connected  
 = Isolated Circuit



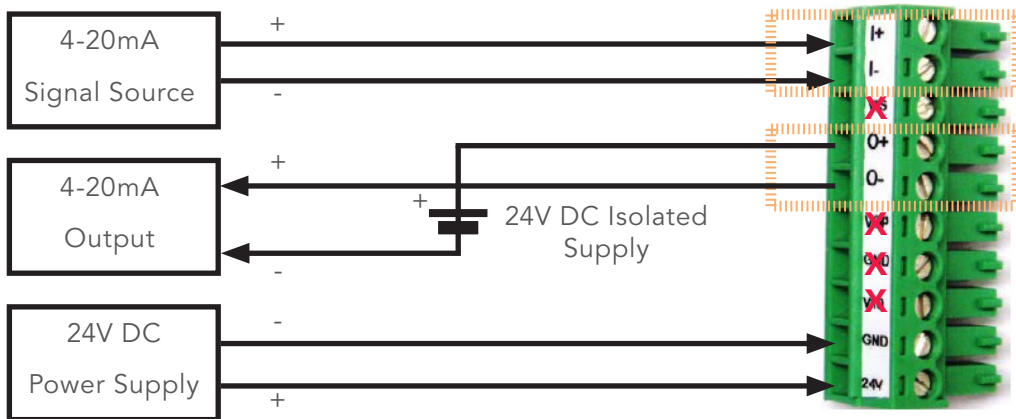
## I/O Option 22

Input = Isolated 4-20mA

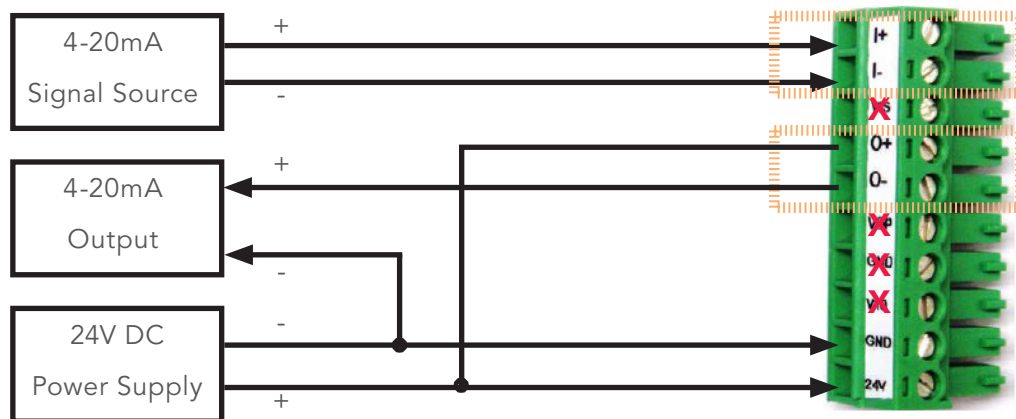
Output = Isolated 4-20mA, Loop Powered

**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

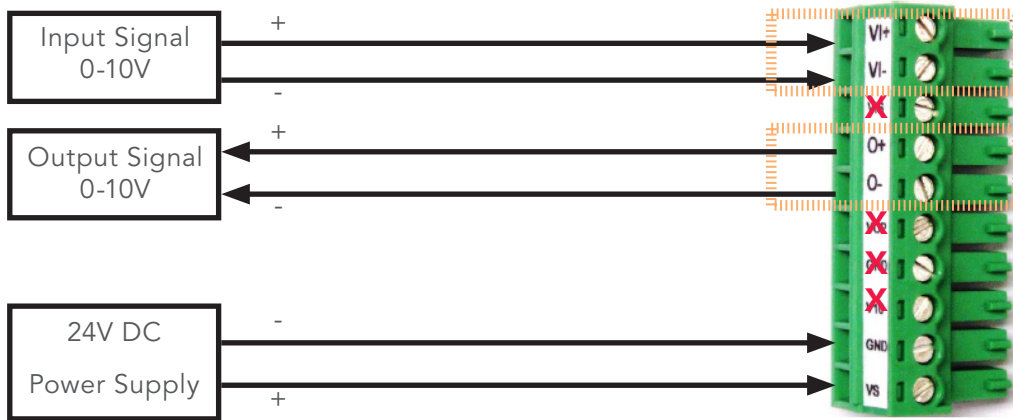


## I/O Option 44

Input = Isolated 0-10V

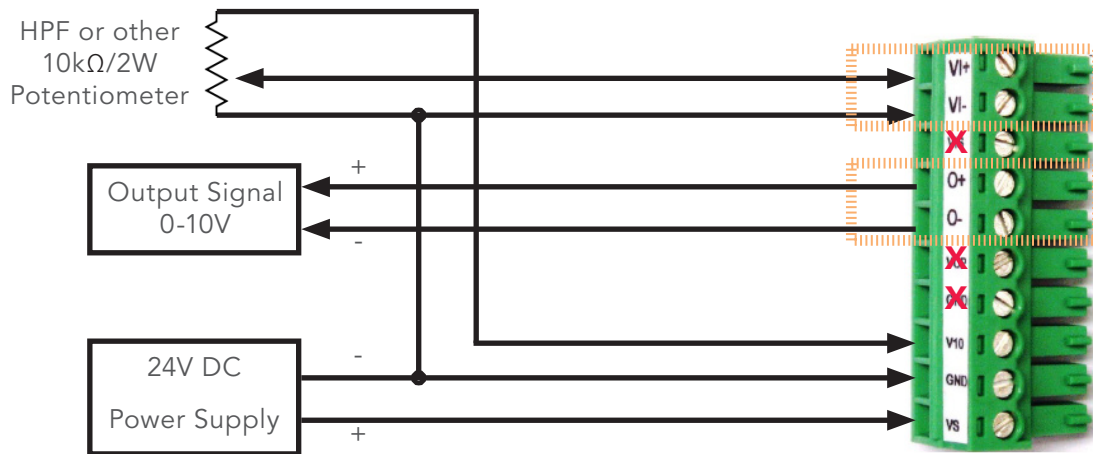
Output = Isolated 0-10V

**X** = Not Connected  
 = Isolated Circuit



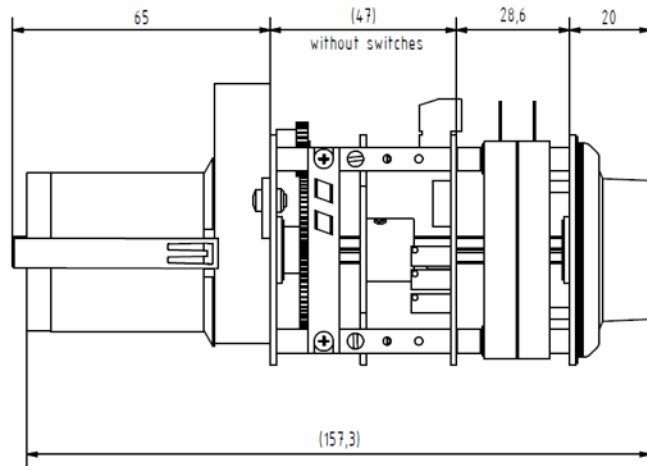
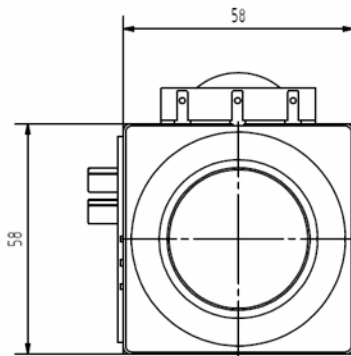
## Connections for Remote Potentiometer

Used to Control Local MR267 Motorized Potentiometer



## Reference Drawings

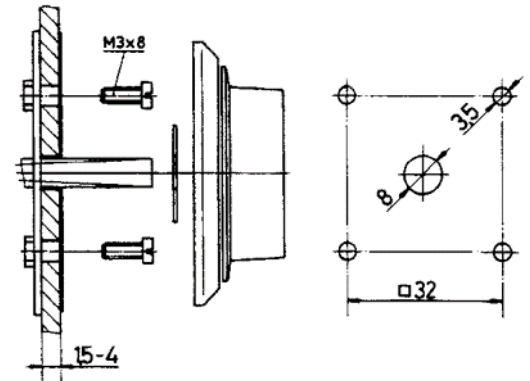
### Front Panel Mount



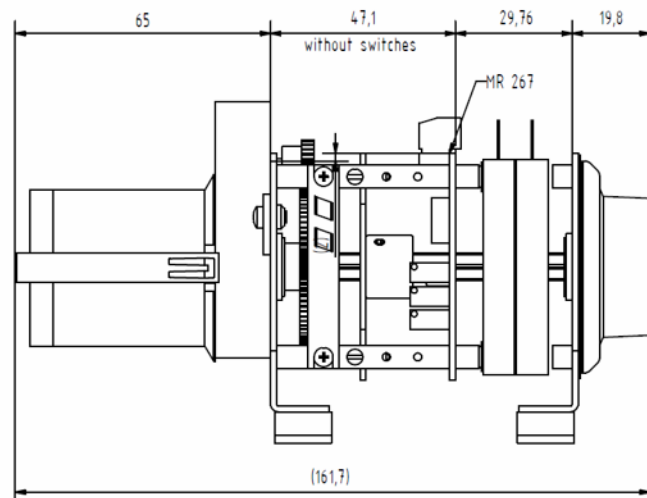
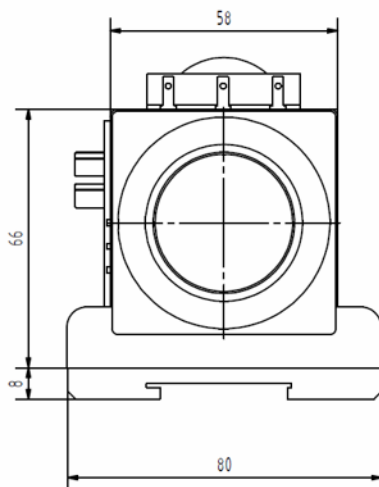
#### Front Panel Mounting Instructions:

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 ground.
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 $\Omega$ 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

- 10 Input 4-20mA Non-Isolated ONLY
- 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.

### Quick Ship Configurations

- MR267-1-10-7** Front Panel Mount, Input 4-20mA Non-Isolated ONLY, and 10k potentiometer
- MR267-1-22-7** Front Panel Mount, Isolated 4-20mA input and Output, and 10k potentiometer
- MR267-1-44-7** Front Panel Mount, Isolated 0-10V input and Output, and 10k potentiometer
  
- MR267-2-10-7** DIN Rail Mount, Input 4-20mA Non-Isolated ONLY, and 10k potentiometer
- MR267-2-22-7** DIN Rail Mount, Isolated 4-20mA input and Output, and 10k potentiometer
- MR267-2-44-7** DIN Rail Mount, Isolated 0-10V input and Output, and 10k potentiometer

## Ordering Info Reset Switch / Override LED Assembly

**M R 2 6 7 A**

### Other Accessories

- HPFF00700** Front Panel Mount Remote Potentiometer Assembly
- 1803659** Replacement Phoenix Mini Combicon Plug
- 610702-10** Package of 10x AMP 61070-2 Crimp-style FASTON Receptacle

MICRONOR INC, 900 Calle Plano, Suite K,  
Camarillo, CA 93012 USA  
T +1 805 389 6600 F +1 805 389 6605  
sales@micronor.com www.micronor.com

MICRONOR AG, Pumpwerkstrasse 32,  
CH-8105 Regensdorf, Switzerland  
T +41 44 843 4020 F +41 44 843 4039  
sales@micronor.ch www.micronor.com