ELECTROSWITCH
ELECTRONIC PRODUCTS
UNIT OF ELECTRO SWITCH CORP.

MM Series Rotary Encoder

Features:

- Robust .865" Square Package
- Strong Electron Welded PC Terminations
- Dual and Tri-Concentric Shaft Option
- Enclosed High Temperature Design
- Push Button Feature Option
- Precious Metal Contacts
- Contacts Insert Molded

Benefits:

- Compact Size
- Easy Insertion into PCB
- Multiple Functions Save Panel Space
- Wave Solder Applications
- Addition of Push button allows Scroll and Select Function
- Long Service Life of over 50,000 cycles with Low Contact Resistance
- Maximum Switch Position Accuracy

MM Series Applications

Avionics:

- Radio Channel Select
- Auto Pilot Select
- Fuel / Air data systems
- Flight Simulators

Communication Equipment:

- GPS—Co-ordinates Input
- Military and Commercial Radio Channel Select

Medical:

- Defibrillators — Voltage Control
- X-Ray Equipment—Intensity Input

Construction / Agricultural Equipment

- Combine Platform Height Select
- HVAC Cab Controls

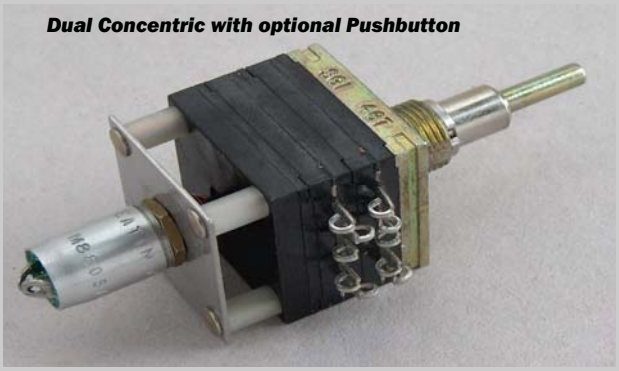
Test Equipment

- Oscilloscopes—Scale Input Control

Front facing PC terminals option

Electroswitch MM Series

Dual Concentric with optional Pushbutton



The MM Series represents the best in contemporary rotary technology and reflects the high standards of reliability that have made Electroswitch rotary devices known worldwide. At only .86" square, these compact switches have up to 36 positions and adapt to numerous design requirements.

Durable construction and an enclosed, high temperature resistant design make the MM Series ideal for wave solder applications. Contacts are insert molded in place for lifetime performance and switching accuracy.

Available options include concentric shafts as well as shaft and panel seals. These switches are highly versatile and economically customized. These options help make the MM Series a cost effective solution for a wide range of applications.

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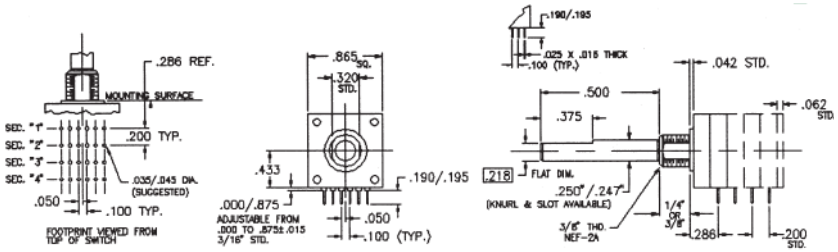
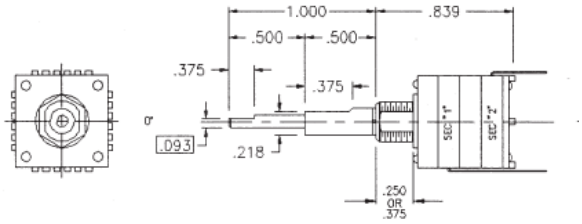
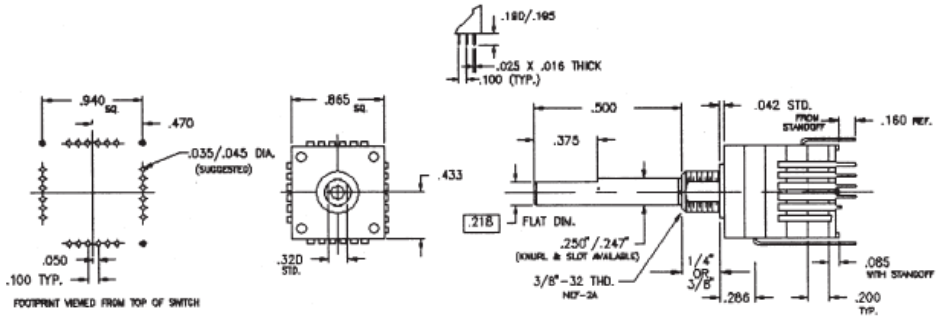


Parallel Shaft Mounting (relative to PC Board)



Perpendicular Shaft Mounting (relative to PC Board)



Perpendicular Shaft Mounting (relative to PC Board)

Shaft and Bushing Options			
Suffix	Shaft Diam	Shaft Lgth. From End of Bushing	Bush Lgth
01	.125"	.375"	.250"
02	.125"	.375"	.375"
03	.125"	.500"	.250"
04	.125"	.500"	.375"
05	.125"	.750"	.250"
06	.125"	.750"	.375"
07	.125"	1.00"	.250"
08	.125"	1.00"	.375"
09	.250"	.375"	.250"
10	.250"	.375"	.375"
11	.250"	.500"	.250"
12	.250"	.500"	.375"
13	.250"	.750"	.250"
14	.250"	.750"	.375"
15	.250"	1.00"	.250"
16	.250"	1.00"	.375"

Ordering Information

MM — [ ] [ ] [ ] [ ] [ ] [ ] — [ ] [ ] [ ] [ ] [ ]

Number of Decks

Number of Positions

Code Output:
G = Gray
Q= Quadrature
H = Hexidecimal *
B = BCD *
* = *optional*

Termination:
F = Front PC
R = Rear PC
P = Perpendicular PC
L = Solder Lug

Index Angle
90°, 60°,45°
36°, 30°
22.5° 20°
18°, 15°
12.8°, 11.25°
10°

Stop Type
F = Fixed
C= Continuous

Sealing:
S = Standard
(No Seals)
P = Shaft and Panel

See chart Above for Suffix

Consult Factory for Additional Available Options

Electrical / Mechanical Specifications

Electrical Specifications

Current Carrying Capacity:	Resistive Load 250 mA at 28 VDC
	Switching Loads 1.5 mA at 115VAC
	150 mA at 14 VDC
Contact Design:	Shorting or Non-shorting (non-shorting version up to 16 positions only)
Dielectric Strength:	From pole to shaft 1,000 volts minimum
Contact Resistance:	75 milliohms maximum over lifetime.
Codes:	Gray, Quadrature, BCD and Hexidecimal
	Others available for special order

Environmental Specifications

Operation Temperature:	-55°C to +85°C (105°C optional)
Shock / Humidity	MIL STD 202E Method

Mechanical Specifications

Operational Forces:	(Torque over detents): 7 to 20in /oz. ±25%
Stop Strength:	15 in/lb. minimum
Sealing:	Terminals are insert molded into housing. Front and rear molded sections of module are Interlock construction and ideally suited for wave soldering.
Anti-Rotation Device:	Flatted bushing .375" dia. X .320" , double "D"
Concentric Shafts:	Available
Life:	50,000 minimum cycles at rated load
Detent Angles:	90°, 60°,45°36°, 30°, 22.5°, 20°, 18°, 15° 12.8°, 11.25° 10°

Materials (RoHS Compliant)

Shaft and Hardware:	Shafts and Hardware are steel, zinc and chromate treated.
Molded Construction:	Molded parts are Ryton R4 and Polyester PBT, chosen for heat resistance and electrical characteristics. Rated UL 94 V-0 or better
Disc Construction:	Program Disc is glass epoxy, copper clad with silver plating standard. Gold upon request.
Contacts:	Phosphor-bronze with silver inlay at interface with program disc. Gold inlays available upon request. External terminals are tin plated except on die cut edges.

RoHS

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