Series MRB

General Specifications

Electrical Capacity (Resistive Load)
Logic Level: 0.4VA maximum @ 28V AC/DC maximum
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
Note: See Supplement Index to find explanation of operating range.

Other Ratings
Contact Resistance: 80 milliohms maximum
Insulation Resistance: 100 megohms minimum @ 500V DC
Dielectric Strength: 500V AC minimum for 1 minute minimum
Mechanical Life: 30,000 operations minimum
Electrical Life: 10,000 operations minimum
Operating Torque: 0.04Nm average
Contact Timing: Nonshorting (break-before-make)
Indexing: 45° for On-On-On & 90° for On-None-On

Materials & Finishes
Shaft: Brass with nickel plating
Bushing: Zinc alloy with nickel plating
Frame/Bracket: Steel with tin plating
Moveable Contacts: Beryllium copper spring with gold plating
Stationary Contacts: Copper with gold plating
Terminals: Brass with tin plating
Base: Polyamide

Environmental Data
Operating Temperature Range: –10°C through +70°C (+14°F through +158°F)
Humidity: 90 ~ 95% humidity for 96 hours @ 40°C (104°F)
Vibration: 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
Shock: 50G (490m/s²) acceleration (tested in 3 right angled directions, with 5 shocks in each direction)
Sealing: Use of optional o-ring AT535 with MRB meets IP67 of IEC60529 specifications

Installation
Mounting Torque: .686Nm (6.08 lb•in)
Cap Installation Force: 19.6 ~ 29.4N (4.41 ~ 6.61 lbf)

PCB Processing
Soldering: Wave Soldering Recommended: See Profile B in Supplement section
Manual Soldering: See Profile B in Supplement section

Standards & Certifications
The MRB Series rotaries have not been tested for UL recognition or CSA certification.
These switches are designed for use in a low-voltage, low-current, logic-level circuit.
When used as intended in a logic-level circuit, the results do not produce hazardous energy.
Distinctive Characteristics

Double flatted bushing prevents rotation in panel and increases stability.

Totally sealed construction, achieved with combination of an interior o-ring, a seal between the frame and base, plus insert molded terminals, prevents contact contamination and allows automated soldering and cleaning.

Positive detent mechanism for distinct feel and audible feedback.

Break-before-make contact timing with sliding contact mechanism.

Metal bushing and frame/bracket provide durability.

Panel seal, achieved with use of optional exterior o-ring, conforms to IP67 of IEC60529 Standards.

High contact reliability achieved by the self-cleaning contact mechanism.

.100” x .100” (2.54mm x 2.54mm) terminal spacing conforms to standard PC board grid spacing for straight and right angle mounting.

Insert molded terminals lock out flux and other contaminants.
Series MRB

Miniature PCB Process Sealed Rotaries

TYPICAL SWITCH ORDERING EXAMPLE

MRB 1 2 B A

Poles
1 SPDT SP3T
2 DPDT DP3T

Termsinals
B Straight with Bracket
H Right Angle with Bracket

Knobs
A Plain Black
B Small Color Tipped
C Large Color Tipped

Circuits & Indexing
2 ON NONE ON 90°
4 ON ON ON 45°

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE
MRB12B-A
Plain Black Knob
SPDT with ON-NONE-ON Circuit & 90° Indexing
Straight PC Terminals with Bracket

POLES & CIRCUITS

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TERMINALS

B Straight PC Terminals with Bracket
H Right Angle PC Terminals with Bracket
TYPICAL SWITCH DIMENSIONS

90° Indexing • SPDT & DPDT • Straight PC

Actuator shown in Position 1

Single pole model does not have terminals 4, 5 & C2

MRB12B

90° Indexing • SPDT • Right Angle PC

Actuator shown in Position 1

MRB12H

90° Indexing • DPDT • Right Angle PC

Actuator shown in Position 1

MRB22H

45° Indexing • SP3T & DP3T • Straight PC

Actuator shown in Position 1

Single pole model does not have terminals 4, 5, 6 & C2

MRB14B
TYPICAL SWITCH DIMENSIONS

45° Indexing • SP3T • Right Angle PC

Actuator shown in Position 1

45° Indexing • DP3T • Right Angle PC

Actuator shown in Position 1

KNOBS

A AT433 Plain Black

Material: Polycetal
Color: Black

B AT4103 Small Color Tipped

Polyester Base: Black
Polyamide Tip Colors: A, B, C, E, F, G, H

C AT4104 Large Color Tipped

Polyester Base: Black
Polyamide Tip Colors: A, B, C, E, F, G, H

Color Codes: A Black B White C Red E Yellow F Green G Blue H Gray

Mounting Precaution for Cap Clearance on Right Angle Models

When mounting a right angle switch, a cap clearance of .035" (0.9mm) is recommended.

Panel Cutouts & Maximum Effective Panel Thickness

With Standard Hardware: .087" (2.2mm)

Without Locking Ring: .118" (3.0mm)

Sealed Panel with 1 Hex Nut & 1 Rubber O-ring: .165" (4.2mm)

See Supplement for details