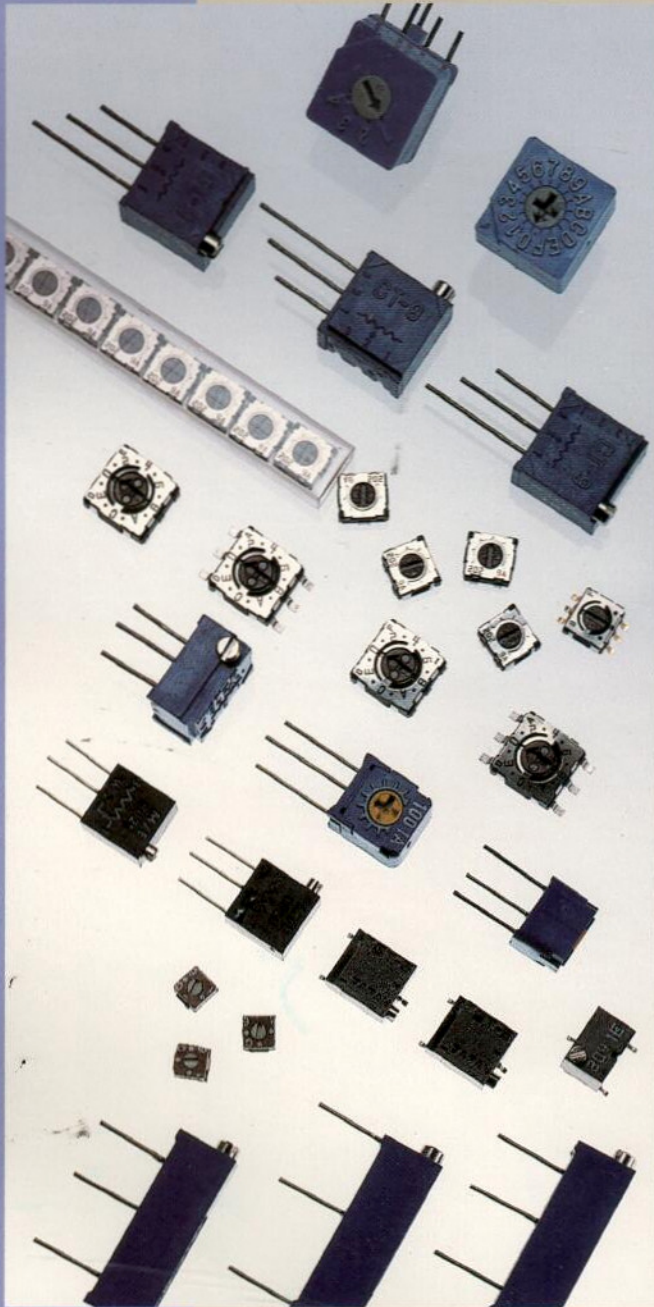


MEPCOPAL *Product Catalog*



Trimmers, Switches
and Specialty Products

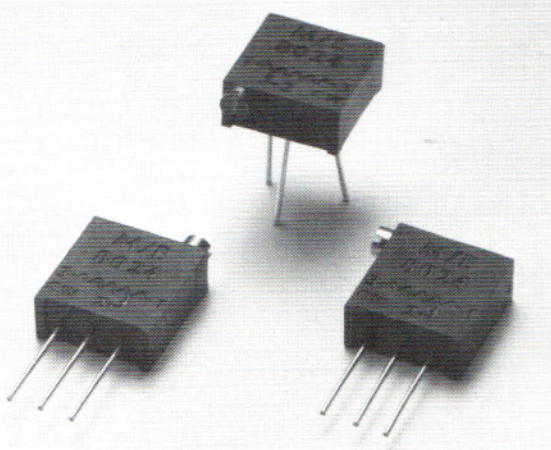
MEPCOPAL

Model 8024

Multiturn Trimming Potentiometer

3/8" Square Cermet

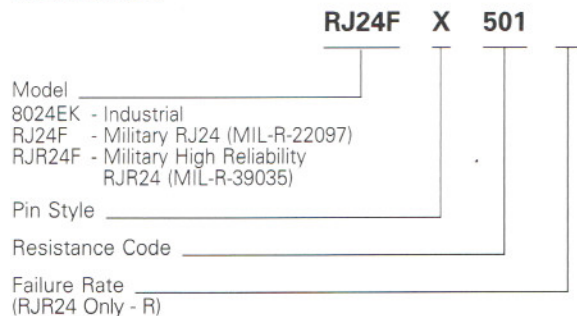
Industrial/Military



Features

- Sealed to Withstand Board Washing
- Precious Metal Contact
- Industrial Model meets RJ24 QPL (MIL-R-22097)
- Established Reliability Model meets RJR24 QPL (MIL-R-39035)

Part Number



RJR24 Part Numbering Consistent with Military Part Designation per MIL-R-39035 (Char F, Failure Rate R).
Example: RJR24FX501R

RJ24 Part Numbering Consistent with Military Part Designation per MIL-R-22097 (Char F). Example: RJ24FX501

Marking

Units Marked With Part Number, Date Code, Pin Designation, and Mfr. Logo

Packaging

Bulk Pack

Standard Resistance Values and Codes			
Ω	Code	Ω	Code
10	100	20 K	203
20	200	25 K	253
50	500	50 K	503
100	101	100 K	104
200	201	200 K	204
500	501	250 K	254
1 K	102	500 K	504
2 K	202	1 M	105
5 K	502	2 M*	205
10 K	103		

*Non Mil Value

SPECIFICATIONS

Electrical

Resistance Range	: 10 Ohms to 2 Meg. Ohms
Resistance Tolerance	: ± 10% Standard
Temp. Coeff. Of Resistance	: ± 100 ppm/°C
Power Rating	: 1/2 Watt at 85°C
Operating Voltage Max.	: 300 VDC or Power Rating, whichever is less.
Wiper Current Max.	: 100 mA or power rating, whichever is less.
Electrical Angle	: 22 Turns, Nominal
Electrical Continuity	: Continuous over full mechanical range.
End Resistance	: 1% or 2 Ohms, whichever is greater.
Resolution	: Essentially infinite.
Contact Resistance Variation	: 3% or 3 Ohms, whichever is greater.
Operating Temp. Range	: -55°C to +150°C.
Insulation Resistance, Min.	: Min. 1000 Meg. at 500 VDC for 2 minutes.
Dielectric Strength	: 900 VAC rms, 1 minute, 1 milliamp max.

Mechanical

Mechanical Angle	: 25 Turns, Nominal
Operating Torque	: 5 Oz-in. (360 gram-cm) max.
Stop Strength, Min.	: Not applicable, wiper idles
Terminal Strength, Min.	: 1 Kg (MIL-R-39035)
Rotational Life	: 200 cycles (▲ R/R ≤ ±2%)

Environmental (MIL-R-39035)

Specifications listed are for Established Reliability (RJR) MIL-R-39035. In all cases these specifications meet or exceed those of (RJ) MIL-R-22097. Industrial (EK) and military (RJ) models meet the environmental specifications of both MIL-R-22097 and MIL-R-39035 (Characteristic F). Established reliability model RJR24 meets or exceeds the requirements of MIL-R-39035, Characteristic F, Failure Rate R.

Thermal Shock:

(-65°C to 150°C) ▲ R/R ≤ 1.00% ▲ SS ≤ 1.00%

Humidity:

(Per Mil-Std 202 M. 106) ▲ R/R ≤ 1.00%

Mech. Shock:

(100 g) ▲ R/R ≤ 1.00% ▲ SS ≤ 1.00%

Vibration:

(20 g, 10 to 2000 Hz.) ▲ R/R ≤ 1.00% ▲ SS ≤ 1.00%

Low Temp. Operation:

(-55°C, 2 Hrs.) ▲ R/R ≤ 1.00% ▲ SS ≤ 2.00%

High Temp. Exposure:

(150°C, 1000 Hrs.) ▲ R/R ≤ 3.00% ▲ SS ≤ 2.00%

Load Life:

(85°C, 0.50 W, 10,000 Hrs.) ▲ R/R ≤ 3.00%

Soldering Heat:

(350°C, 3 Sec.) ▲ R/R ≤ 1.00%

Solderability:

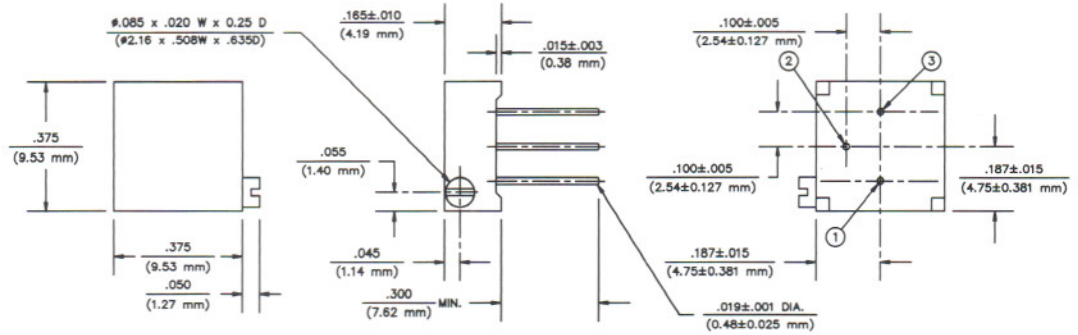
(Mil-Std-202, Mthd. 208) 8 Hr. Steam, 95% Coverage

Immersion: Fluorocarbon Liquid, 85°C, 1 min. No Lead

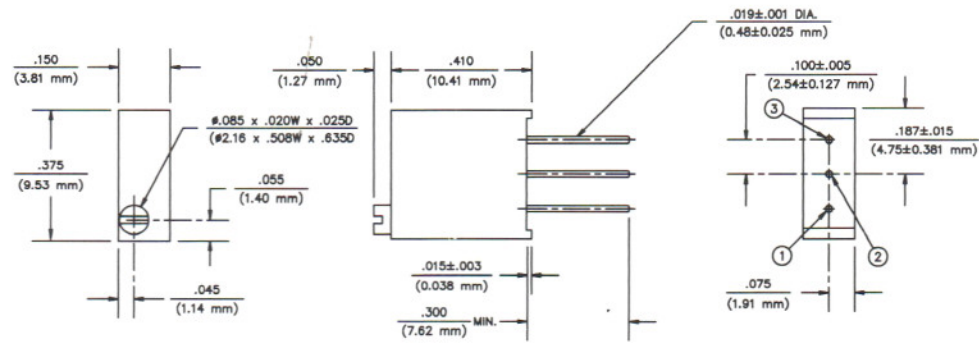
8024/RJ24/RJR24

Multiturn Sealed Cermet

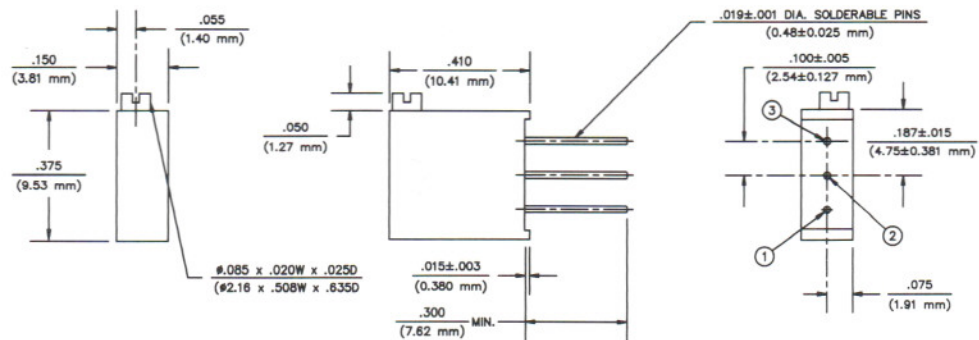
8024EKP RJ24FP RJR24FP Side Adjust



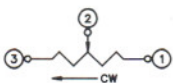
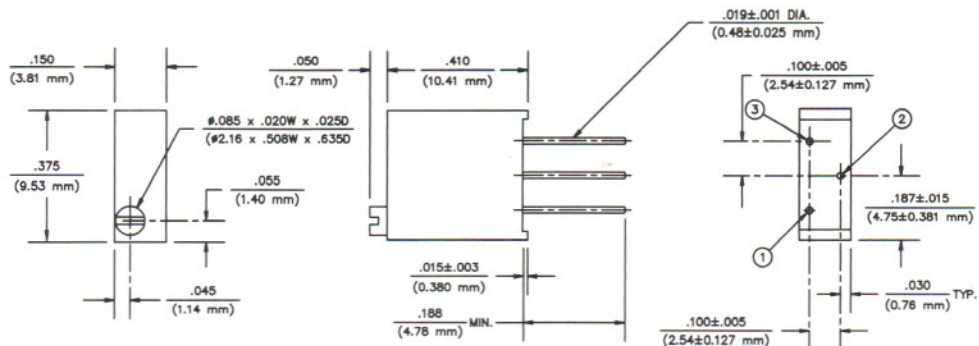
8024EKW RJ24FW RJR24FW Top Adjust



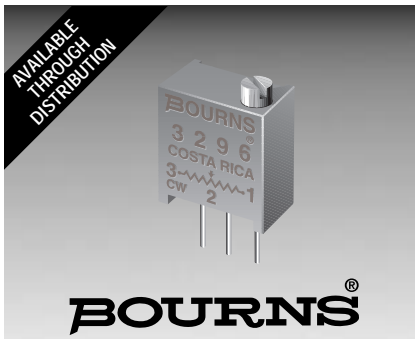
8024EKX RJ24FX RJR24FX Side Adjust



8024EKY Top Adjust



1. Dimensions are in inches (millimeters in parentheses are for reference only).
2. Tolerances unless otherwise specified ± 0.10 inches (± 0.254 mm).



Features

- Multiturn / Cermet / Industrial / Sealed
- Standoffs
- Patent #4427966 drive mechanism
- Listed on the QPL for style RJ24 per MIL-R-22097 and RJR24 per High-Rel Mil-R-39035

RJ24/RJR24 - 3/8" Square Trimming Potentiometer

Electrical Characteristics

Standard Resistance Range 10 to 1 megohm
 (see standard resistance table)
 Resistance Tolerance ±10% std.
 Absolute Minimum Resistance 1 ohm max.
 Contact Resistance Variation 3.0% or 3 ohms max.
 (whichever is greater)
 Adjustability
 Voltage ±0.01%
 Resistance ±0.05%
 Resolution Infinite
 Insulation Resistance 500 vdc.
 1,000 megohms min.
 Dielectric Strength
 Sea Level 1,000 vac
 80,000 Feet 400 vac
 Effective Travel 25 turns nom.

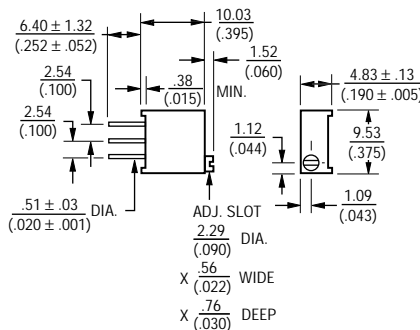
Environmental Characteristics

Power Rating (300 volts max.)
 85°C 0.5 watt
 150°C 0 watt
 Temperature Range -55°C to +150°C
 Temperature Coefficient ±100ppm/°C
 Seal Test 85°C Fluorinert*
 Humidity MIL-STD-202 Method 106
 RJ24 96 hours
 (1% ΔTR, 10 Megohms IR)
 RJR24 96 hours
 (1% ΔTR, 100 Megohms IR)
 Vibration 20G (1% ΔTR; 1% ΔVR)
 Shock 100G (1% ΔTR; 1% ΔVR)
 Load Life
 RJ24 1,000 hours 0.5 watt @ 85°C
 (2% ΔTR; 10% ΔVR)
 RJR24 10,000 hours 0.5 watt @ 85°C
 (3% ΔTR)
 Rotational Life 200 cycles (2% ΔTR)

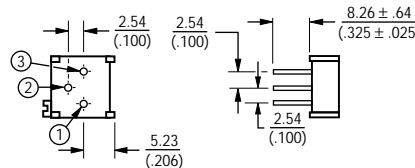
Physical Characteristics

Torque 5.0 oz-in. max.
 Mechanical Stops Wiper idles
 Terminals MIL-STD 202, Method 208
 Weight 0.025 oz.
 Marking Mil-spec part number,
 date code
 Wiper Positioned at 50% nominal
 Flammability U.L. 94V-0
 Standard Packaging 50 pcs. per tube
 Adjustment Tool H-90

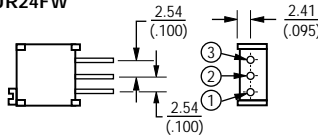
Common Dimensions



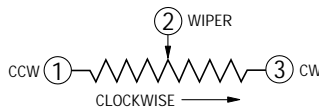
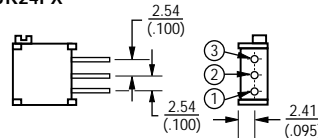
RJ24/RJR24FP



RJ24/RJR24FW



RJ24/RJR24FX



TOLERANCES: ± 0.25 (.010) EXCEPT WHERE NOTED

DIMENSIONS ARE: $\frac{\text{METRIC}}{\text{(INCHES)}}$

Standard Resistance Table

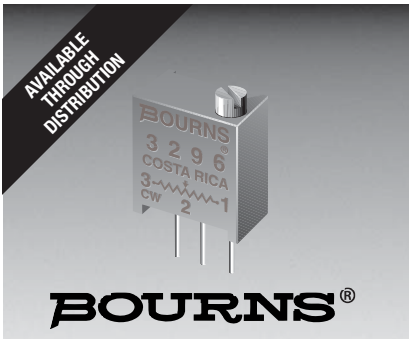
Resistance (Ohms)	Resistance Code
10	100
20	200
50	500
100	101
200	201
500	501
1,000	102
2,000	202
5,000	502
10,000	103
20,000	203
25,000	253
50,000	503
100,000	104
200,000	204
250,000	254
500,000	504
1,000,000	105

Popular values listed in boldface. Special resistances available.

How To Order

See page 81 for Model RJ24, and page 82 for Model RJR24.

*FLUORINERT® IS A REGISTERED TRADEMARK OF 3M CO.



Features

- Multiturn / Cermet / Industrial / Sealed
- Standoffs
- Listed on the QPL per MIL-PRF-22097 and High-Rel MIL-PRF-39035

RJ24/RJR24 - 3/8" Square Trimpot® Trimming Potentiometer

Electrical Characteristics

Standard Resistance Range 10 ohms to 1 megohm
 (see standard resistance table)
 Resistance Tolerance ±10 % std.
 Absolute Minimum Resistance
 RJ24 2 % or 20 ohms max.
 (whichever is greater)
 RJR24 2 % or 2 ohms max.
 (whichever is greater)
 Contact Resistance Variation
 3.0 % or 3 ohms max.
 (whichever is greater)
 Adjustability
 Voltage ±0.01 %
 Resistance ±0.05 %
 Resolution Infinite
 Insulation Resistance 500 vdc.
 1,000 megohms min.
 Dielectric Strength
 Sea Level 1,000 vac
 80,000 Feet 400 vac
 Effective Travel 25 turns nom.

Environmental Characteristics

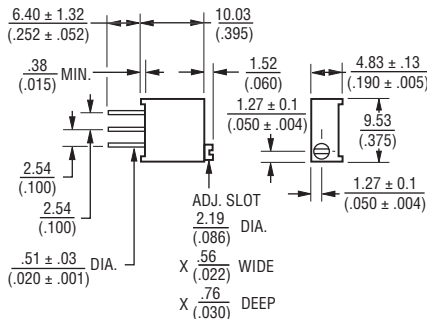
Power Rating (300 volts max.)
 85 °C 0.5 watt
 150 °C 0 watt
 Temperature Range
 -55 °C to +150 °C
 Temperature Coefficient
 ±100 ppm/°C
 Seal Test 85 °C Fluorinert*
 Humidity MIL-STD-202 Method 106
 RJ24 96 hours
 (1 % ΔTR, 10 Megohms IR)
 RJR24 96 hours
 (1 % ΔTR, 100 Megohms IR)
 Vibration 20 G (1 % ΔTR; 1 % ΔVR)
 Shock 100 G (1 % ΔTR; 1 % ΔVR)
 Load Life
 RJ24.... 1,000 hours 0.5 watt @ 85 °C
 (2 % ΔTR; 10% ΔVR)
 RJR24.. 10,000 hours 0.5 watt @ 85 °C
 (3 % ΔTR)
 Rotational Life 200 cycles (2 % ΔTR)

Physical Characteristics

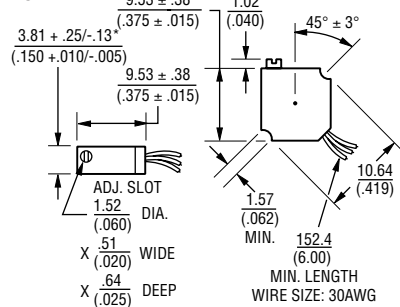
Torque 5.0 oz-in. max.
 Mechanical Stops Wiper idles
 Terminals Mil-Std 202, Method 208
 Weight 0.025 oz.
 Marking Mil-spec part number,
 date code
 Wiper 50 % (Actual TR) ±10 %
 Flammability U.L. 94V-0
 Standard Packaging 50 pcs. per tube
 Adjustment Tool H-90

Product Dimensions

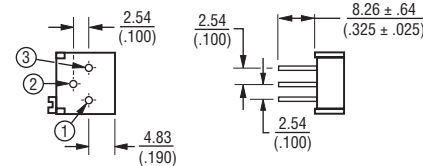
Common Dimensions



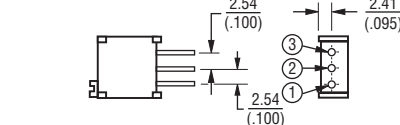
RJ24FL



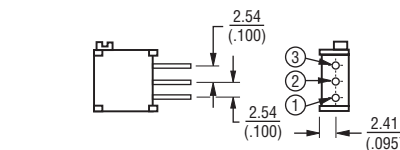
RJ24FP/RJR24FP



RJ24FW/RJR24FW



RJ24FX/RJR24FX



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

TOLERANCES: ± $\frac{0.25}{(.010)}$ EXCEPT WHERE NOTED

How To Order

MIL-PRF-22097 **RJ24 F L 202**

Model _____
 Characteristic _____
 F = ±100 ppm/°C Temp. Coeff. Max.
 Terminal Style _____
 Resistance Code _____

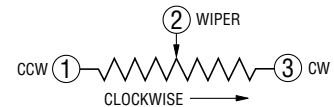
How To Order

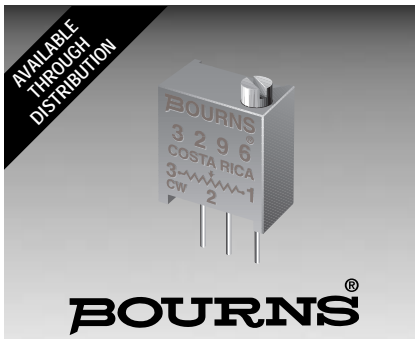
MIL-PRF-39035 **RJR24 F W 502 R**

Model _____
 Characteristic _____
 F = ±100 ppm/°C Temp. Coeff. Max.
 Terminal Style _____
 Resistance Code _____
 Failure Rate
 M = 1.0 %
 P = 0.1 %
 R = 0.01 %

Standard Resistance Table

Resistance (Ohms)	Resistance Code
10	100
20	200
50	500
100	101
200	201
500	501
1,000	102
2,000	202
5,000	502
10,000	103
20,000	203
25,000	253
50,000	503
100,000	104
200,000	204
250,000	254
500,000	504
1,000,000	105





Features

- Multiturn / Cermet / Industrial / Sealed
- Standoffs
- Patent #4427966 drive mechanism
- Listed on the QPL for style RJ24 per MIL-R-22097 and RJR24 per High-Rel Mil-R-39035

RJ24/RJR24 - 3/8" Square Trimming Potentiometer

Electrical Characteristics

Standard Resistance Range 10 to 1 megohm
 (see standard resistance table)
 Resistance Tolerance ±10% std.
 Absolute Minimum Resistance 1 ohm max.
 Contact Resistance Variation 3.0% or 3 ohms max.
 (whichever is greater)
 Adjustability
 Voltage ±0.01%
 Resistance ±0.05%
 Resolution Infinite
 Insulation Resistance 500 vdc.
 1,000 megohms min.
 Dielectric Strength
 Sea Level 1,000 vac
 80,000 Feet 400 vac
 Effective Travel 25 turns nom.

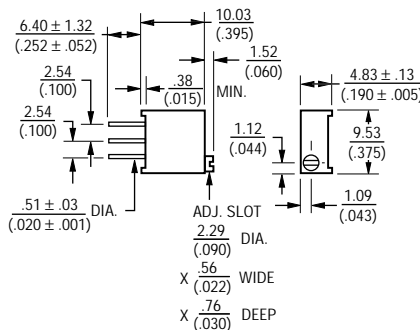
Environmental Characteristics

Power Rating (300 volts max.)
 85°C 0.5 watt
 150°C 0 watt
 Temperature Range -55°C to +150°C
 Temperature Coefficient ±100ppm/°C
 Seal Test 85°C Fluorinert*
 Humidity MIL-STD-202 Method 106
 RJ24 96 hours
 (1% ΔTR, 10 Megohms IR)
 RJR24 96 hours
 (1% ΔTR, 100 Megohms IR)
 Vibration 20G (1% ΔTR; 1% ΔVR)
 Shock 100G (1% ΔTR; 1% ΔVR)
 Load Life
 RJ24 1,000 hours 0.5 watt @ 85°C
 (2% ΔTR; 10% ΔVR)
 RJR24 10,000 hours 0.5 watt @ 85°C
 (3% ΔTR)
 Rotational Life 200 cycles (2% ΔTR)

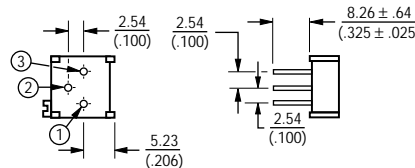
Physical Characteristics

Torque 5.0 oz-in. max.
 Mechanical Stops Wiper idles
 Terminals MIL-STD 202, Method 208
 Weight 0.025 oz.
 Marking Mil-spec part number,
 date code
 Wiper Positioned at 50% nominal
 Flammability U.L. 94V-0
 Standard Packaging 50 pcs. per tube
 Adjustment Tool H-90

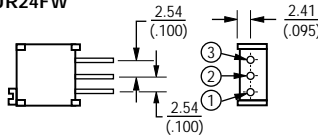
Common Dimensions



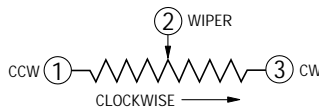
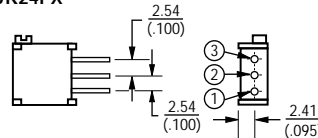
RJ24/RJR24FP



RJ24/RJR24FW



RJ24/RJR24FX



TOLERANCES: ± 0.25 (.010) EXCEPT WHERE NOTED

DIMENSIONS ARE: $\frac{\text{METRIC}}{\text{(INCHES)}}$

Standard Resistance Table

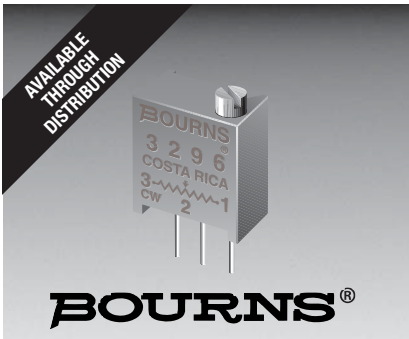
Resistance (Ohms)	Resistance Code
10	100
20	200
50	500
100	101
200	201
500	501
1,000	102
2,000	202
5,000	502
10,000	103
20,000	203
25,000	253
50,000	503
100,000	104
200,000	204
250,000	254
500,000	504
1,000,000	105

Popular values listed in boldface. Special resistances available.

How To Order

See page 81 for Model RJ24, and page 82 for Model RJR24.

*FLUORINERT® IS A REGISTERED TRADEMARK OF 3M CO.



Features

- Multiturn / Cermet / Industrial / Sealed
- Standoffs
- Listed on the QPL per MIL-PRF-22097 and High-Rel MIL-PRF-39035

RJ24/RJR24 - 3/8" Square Trimpot® Trimming Potentiometer

Electrical Characteristics

Standard Resistance Range	10 ohms to 1 megohm
	(see standard resistance table)
Resistance Tolerance	±10 % std.
Absolute Minimum Resistance	
RJ24	2 % or 20 ohms max.
	(whichever is greater)
RJR24	2 % or 2 ohms max.
	(whichever is greater)
Contact Resistance Variation	
	3.0 % or 3 ohms max.
	(whichever is greater)
Adjustability	
Voltage	±0.01 %
Resistance	±0.05 %
Resolution	Infinite
Insulation Resistance	500 vdc.
	1,000 megohms min.
Dielectric Strength	
Sea Level	1,000 vac
80,000 Feet	400 vac
Effective Travel	25 turns nom.

Environmental Characteristics

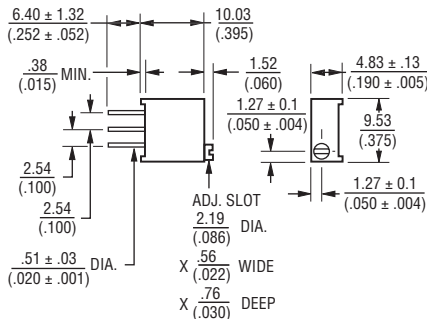
Power Rating (300 volts max.)	
85 °C	0.5 watt
150 °C	0 watt
Temperature Range	-55 °C to +150 °C
Temperature Coefficient	±100 ppm/°C
Seal Test	85 °C Fluorinert*
Humidity	MIL-STD-202 Method 106
RJ24	96 hours
	(1 % ΔTR, 10 Megohms IR)
RJR24	96 hours
	(1 % ΔTR, 100 Megohms IR)
Vibration	20 G (1 % ΔTR; 1 % ΔVR)
Shock	100 G (1 % ΔTR; 1 % ΔVR)
Load Life	
RJ24	1,000 hours 0.5 watt @ 85 °C
	(2 % ΔTR; 10% ΔVR)
RJR24	10,000 hours 0.5 watt @ 85 °C
	(3 % ΔTR)
Rotational Life	200 cycles (2 % ΔTR)

Physical Characteristics

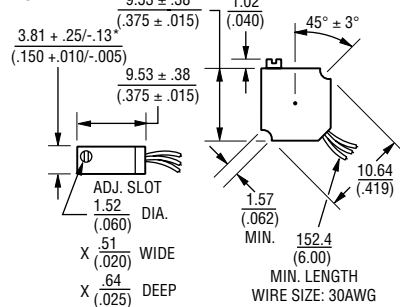
Torque	5.0 oz-in. max.
Mechanical Stops	Wiper idles
Terminals	Mil-Std 202, Method 208
Weight	0.025 oz.
Marking	Mil-spec part number, date code
Wiper	50 % (Actual TR) ±10 %
Flammability	U.L. 94V-0
Standard Packaging	50 pcs. per tube
Adjustment Tool	H-90

Product Dimensions

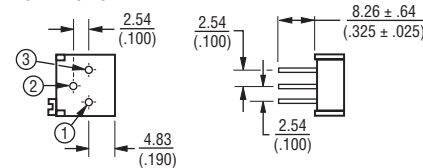
Common Dimensions



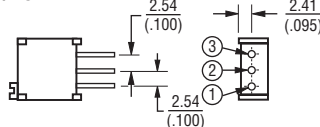
RJ24FL



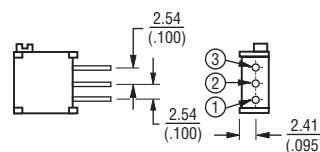
RJ24FP/RJR24FP



RJ24FW/RJR24FW



RJ24FX/RJR24FX



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

TOLERANCES: $\pm \frac{0.25}{(010)}$ EXCEPT WHERE NOTED

How To Order

MIL-PRF-22097 **RJ24 F L 202**

Model	_____
Characteristic	_____
	F = ±100 ppm/°C Temp. Coeff. Max.
Terminal Style	_____
Resistance Code	_____

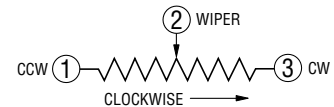
How To Order

MIL-PRF-39035 **RJR24 F W 502 R**

Model	_____
Characteristic	_____
	F = ±100 ppm/°C Temp. Coeff. Max.
Terminal Style	_____
Resistance Code	_____
Failure Rate	_____
	M = 1.0 %
	P = 0.1 %
	R = 0.01 %

Standard Resistance Table

Resistance (Ohms)	Resistance Code
10	100
20	200
50	500
100	101
200	201
500	501
1,000	102
2,000	202
5,000	502
10,000	103
20,000	203
25,000	253
50,000	503
100,000	104
200,000	204
250,000	254
500,000	504
1,000,000	105



REV. 03/10

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.
"Trimpot" is a registered trademark of Bourns, Inc.
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.