

BOURNS

1/2" SQUARE / MULTITURN / WIREWOUND SEALED

■ Listed on the QPL for style RT22 per MIL-R-27208 and RTR22 per High-Rel MIL-R-39015

Model 3250/RT22/RTR22

Bourns® Trimming Potentiometer

Electrical Characteristics

- Standard Resistance Range
 325010 to 50K ohms
 RT2250 to 20K ohms
 RTR22500 to 20K ohms
 (see standard resistance table)
 Resistance Tolerance±5% std.
 (tighter tolerance available)
 Absolute Minimum Resistance
 ...0.1% or 1 ohm max. (whichever is greater)
 Noise100 ohms ENR max.
 ResolutionSee standard resistance table
 Insulation Resistance500 vdc.
 1,000 megohms min.
 Dielectric Strength
 Sea Level1,000 vac
 80,000 Feet400 vac
 Adjustment Travel25 turns nom.

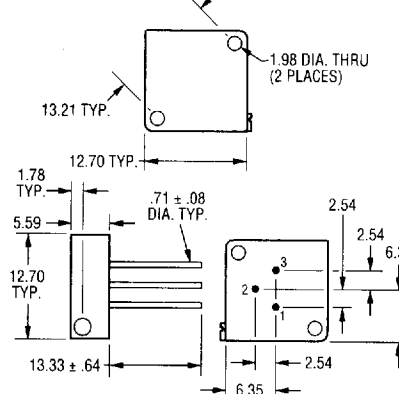
Environmental Characteristics

- Power Rating @ 85°C
 32501.0 watt
 RT22/RTR220.75 watt
 Power Rating @ 150°C0 watt
 Temperature Range-65°C to +150°C
 Temperature Coefficient
 3250±50ppm/°C
 RT22/RTR22±50ppm/°C
 Seal Test85°C Fluorinert* (pin styles only)
 HumidityMIL-STD-202 Method 106
 3250(2% ΔTR; 100 Megohms IR)
 RT22(1% ΔTR; 10 Megohms IR)
 RTR22(1% ΔTR; 100 Megohms IR)
 Vibration30G
 (1% ΔTR; 0.5% + resolution ΔVR)
 Shock100G
 (1% ΔTR; 0.5% + resolution ΔVR)
 Load Life
 32501,000 hours 1.0 watt @ 85°C
 (2% ΔTR; 500 ohms ENR)
 RT221,000 hours 0.75 watt @ 85°C
 (2% ΔTR; 2% + resolution ΔVR)
 RTR2210,000 hours 0.75 watt @ 85°C
 (3% ΔTR; 2% + resolution ΔTR)
 Rotational Life200 cycles
 3250(2% ΔTR; 500 ohms ENR)
 RT22/RTR22(2% ΔTR)

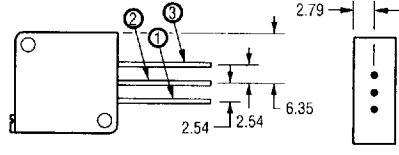
Physical Characteristics

- Torque5.0 oz-in. max.
 Mechanical StopsWiper idles
 Terminals
 3250Solderable printed circuit pins
 Flexible leads (7 strands of 30 AWG)
 RT22/RTR22MIL-STD-202; Method 208
 Weight0.06 oz.
 Machine Screw Mounting
 Torque12 oz-in. max.
 Marking
 3250Manufacturer's trademark,
 resistance code, terminal numbers,
 date code, manufacturer's model number
 and style
 RT22/RTR22Mil-spec part number
 WiperSet at CW end
 FlammabilityU.L. 94V-0
 Standard Packaging
 P&W Styles25 pcs. per tube
 L Style25 pcs. per bag

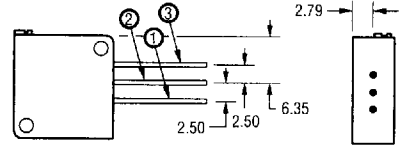
3250P/RT22/RTR22 COMMON DIMENSIONS (PIN STYLES)



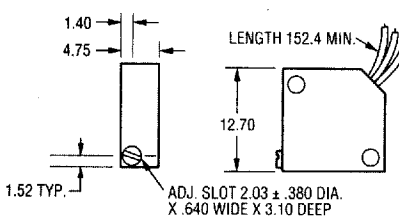
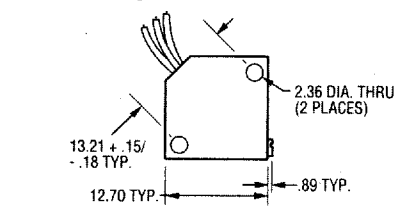
3250W/RT22/RTR22



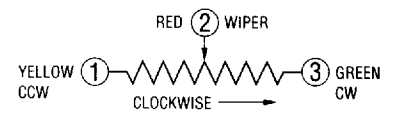
3250W-66/RT22X/RTR22X



"L" FLEX LEAD TYPE
 RT22 has mounting slots
 RTR22 has mounting holes



TOLERANCES: ± 0.25 EXCEPT WHERE NOTED
 DIMENSIONS: MM



STANDARD RESISTANCE TABLE

Resistance (Ohms)	Nominal Resistance Code	Resolution (Percent)
10	100	1.30
20	200	1.00
50	500	0.80
100	101	0.90
200	201	0.70
500	501	0.60
1,000	102	0.40
2,000	202	0.30
5,000	502	0.25
10,000	103	0.19
20,000	203	0.16
25,000	253	0.14
50,000	503	0.13

Popular values listed in boldface. Special resistances available.

HOW TO ORDER

Model **3250 L - 1 - 103 M**

Style _____

Standard or Modified Product Indicator _____
 -1 = Standard Product

Resistance Code _____

Optional Suffix Letter _____
 M = Panel Mount
 (Factory Installed)

See page 70 for RT22/RTR22 ordering information.

Consult factory for other available options.

Shaded areas typically not stocked by Distributors and not recommended for new designs. Specifications are subject to change without notice. *Fluorinert is a registered trademark of 3M Co.

HOW TO ORDER GUIDE Mil-Spec Part Numbers

High-Rel Wirewound Specification MIL-R-39015 RTR Styles

This specification has a procedure for ordering, processing, and marking parts entirely different than the other three specifications. IT DOES NOT USE THE TYPE DESIGNATION NUMBER AS THE PART NUMBER.

THE NUMBER TO ORDER BY CONSISTS OF:

- The individual specification sheet number
M39015/2 (FOR STYLE RTR22)
M39015/3 (FOR STYLE RTR24)
- A dash number from the specification sheet table for the resistance value

M39015/2	M39015/3
-003 500	- 006 500
-004 1K	- 007 1K
-005 2K	- 008 2K
-006 5K	- 009 5K
-007 10K	- 010 10K
-008 20K	
- Terminal Type

- Failure rate level M, P or R
M = 1%
P = 0.1%
R = 0.01%
% FAILURE/1,000 Hrs. — 60% Confidence

EXAMPLES OF PART NUMBERS

M39015/2 — **006LP**
5K Term. Type L — Failure Rate P

M39015/3 — **010XR**
10K Term. Type X — Failure Rate R

The table below shows all part numbers covered by this specification, the conversion to the RTR type designation number required by the supplier to manufacture the part, and the number that will be marked on the units you receive (same as part number ordered but with the letter "J" in front of it). The letter "J" is a government mark and it is certification that the parts comply with the specification.

INFORMATION NOTES

- M39015/3 was added to the Mil-Spec after its original release.

Bourns High Reliability Mil-Spec Part Numbers

Order By	Process By*	Marked With	Terminal Types	Failure Rates
M39015/2-003(TS)(FR) M39015/2-004(TS)(FR) M39015/2-005(TS)(FR)	RTR22D(TS)501(FR) RTR22D(TS)102(FR) RTR22D(TS)202(FR)	JM39015/2-003(TS)(FR) JM39015/2-004(TS)(FR) JM39015/2-005(TS)(FR)	L, P, W, X	M, P
M39015/2-006(TS)(FR) M39015/2-007(TS)(FR) M39015/2-008(TS)(FR)	RTR22D(TS)502(FR) RTR22D(TS)103(FR) RTR22D(TS)203(FR)	JM39015/2-006(TS)(FR) JM39015/2-007(TS)(FR) JM39015/2-008(TS)(FR)		
M39015/3-006(TS)(FR)	RTR24D(TS)501(FR)	JM39015/3-006(TS)(FR)		
M39015/3-007(TS)(FR) M39015/3-008(TS)(FR)	RTR24D(TS)102(FR) RTR24D(TS)202(FR)	JM39015/3-007(TS)(FR) JM39015/3-008(TS)(FR)	P, W, X	M, P, R
M39015/3-009(TS)(FR) M39015/3-010(TS)(FR)	RTR24D(TS)502(FR) RTR24D(TS)103(FR)	JM39015/3-009(TS)(FR) JM39015/3-010(TS)(FR)		

NOTE: See individual model pages for Bourns qualified resistance values.

*May also order using this part number.

Specifications are subject to change without notice.

QUALIFIED PART NUMBERS

Bourns reserves the right per MIL-R-39035 to substitute a higher grade temperature characteristic or failure rate (QPL) than requested.

RT12 (Commercial Model 3057)

STD. VALUES OHMS	RT12C2			NOMINAL RESOLUTION (PERCENT)
	L	P	Y	
10	RT12C2L100	RT12C2P100	RT12C2Y100	2.40
20	RT12C2L200	RT12C2P200	RT12C2Y200	1.90
50	RT12C2L500	RT12C2P500	RT12C2Y500	1.40
100	RT12C2L101	RT12C2P101	RT12C2Y101	1.00
200	RT12C2L201	RT12C2P201	RT12C2Y201	0.86
500	RT12C2L501	RT12C2P501	RT12C2Y501	0.89
1K	RT12C2L102	RT12C2P102	RT12C2Y102	0.72
2K	RT12C2L202	RT12C2P202	RT12C2Y202	0.58
5K	RT12C2L502	RT12C2P502	RT12C2Y502	0.43
10K	RT12C2L103	RT12C2P103	RT12C2Y103	0.39
20K	RT12C2L203	RT12C2P203	RT12C2Y203	0.31

RT/RTR22 (Commercial Model 3250)

STD. VALUES OHMS	RT22C2				RTR22D				NOMINAL RESOLUTION (PERCENT)
	L	P	W	X	L	P	W	X	
10	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-
50	RT22C2L500	RT22C2P500	RT22C2W500	RT22C2X500	-	-	-	-	0.80
100	RT22C2L101	RT22C2P101	RT22C2W101	RT22C2X101	-	-	-	-	0.90
200	RT22C2L201	RT22C2P201	RT22C2W201	RT22C2X201	-	-	-	-	0.70
500	RT22C2L501	RT22C2P501	RT22C2W501	RT22C2X501	RTR22DL501*	RTR22DP501*	RTR22DW501*	RTR22DX501*	0.60
1K	RT22C2L102	RT22C2P102	RT22C2W102	RT22C2X102	RTR22DL102*	RTR22DP100*	RTR22DW102*	RTR22DX102*	0.40
2K	RT22C2L202	RT22C2P202	RT22C2W202	RT22C2X202	RTR22DL202*	RTR22DP202*	RTR22DW202*	RTR22DX202*	0.30
5K	RT22C2L502	RT22C2P502	RT22C2W502	RT22C2X502	RTR22DL502*	RTR22DP502*	RTR22DW502*	RTR22DX502*	0.25
10K	RT22C2L103	RT22C2P103	RT22C2W103	RT22C2X103	RTR22DL103*	RTR22DP103*	RTR22DW103*	RTR22DX103*	0.19
20K	RT22C2L203	RT22C2P203	RT22C2W203	RT22C2X203	RTR22DL203*	RTR22DP203*	RTR22DW203*	RTR22DX203*	0.16

RT/RTR24 (Commercial Model 3290)

STD. VALUES OHMS	RT24C2			RTR24D			NOMINAL RESOLUTION (PERCENT)
	P	W	X	P	W	X	
10	RT24C2P100	RT24C2W100	RT24C2X100	-	-	-	1.11
20	RT24C2P200	RT24C2W200	RT24C2X200	-	-	-	0.93
50	RT24C2P500	RT24C2W500	RT24C2X500	-	-	-	0.62
100	RT24C2P101	RT24C2W101	RT24C2X101	-	-	-	0.60
200	RT24C2P201	RT24C2W201	RT24C2X201	-	-	-	0.54
500	RT24C2P501	RT24C2W501	RT24C2X501	RTR24DP501*	RTR24DW501*	RTR24DX501*	0.42
1K	RT24C2P102	RT24C2W102	RT24C2X102	RTR24DP102*	RTR24DW102*	RTR24DX102*	0.33
2K	RT24C2P202	RT24C2W202	RT24C2X202	RTR24DP202*	RTR24DW202*	RTR24DX202*	0.26
5K	RT24C2P502	RT24C2W502	RT24C2X502	RTR24DP502*	RTR24DW502*	RTR24DX502*	0.20
10K	RT24C2P103	RT24C2W103	RT24C2X103	RTR24DP103*	RTR24DW103*	RTR24DX103*	0.17

RT26 (Commercial Model 3260)

STD. VALUES OHMS	RT26C2		NOMINAL RESOLUTION (PERCENT)
	W	X	
10	RT26C2W100	RT26C2X100	1.90
20	RT26C2W200	RT26C2X200	1.50
50	RT26C2W500	RT26C2X500	1.25
100	RT26C2W101	RT26C2X101	1.00
200	RT26C2W201	RT26C2X201	0.94
500	RT26C2W501	RT26C2X501	0.58
1K	RT26C2W102	RT26C2X102	0.50
2K	RT26C2W202	RT26C2X202	0.45
5K	RT26C2W502	RT26C2X502	0.34

*Last letter in number is failure rate level. M = 1.0% P = 0.1% R = 0.01%

†For replacement purpose only. Not for new design.