

SERIES WW24

Industrial Wirewound Rotary Potentiometer

24mm Diameter / 5 Watts



For more information about this product, visit our website at:
www.potentiometers.com

- 5 watt @ 25°C / 4 watt @ 55°C power rating
- Dust-proof construction
- Precision linearity
- Superior resistance stability in temperature and environment change
- 1/4" Dia. Shaft with 3/8" Diameter Bushing or 1/8" Dia. Shaft with 1/4" Dia. Bushing
- Rotary or Push-pull Switch Option
- Solder Lug Terminals
- RoHS compliant

State's **WW24** Wirwound Potentiometer replaces all discontinued Honeywell Wirewound Potentiometers **Series: 43, 49, 58**. Detailed specification comparison is on Page 4.

Mil-Series RA10, RA20 & RA30 were discontinued by Honeywell on 6/30/2016 with no other sources available. The WW24 series can be used as a commercial replacement for Mil-Series RA10, RA20 & RA30 where Mil approval is not required

Electrical and Mechanical Specifications

Resistance Range

Linear : 1 ohm through 25K ohms
Audio : 20 ohms through 10K ohms

Resistance Tolerance

±10% standard
±5% optional

Resistance Taper

Linear, Log, Reverse Log

Linearity (linear curve only)

Standard: 3% linearity
Special : 2% linearity

Power Rating

5 watts @ 25°C, 4 watts @ 55°C

Dielectric Strength

1,000 VAC for 1 minute

Maximum Operating Voltage

500 VDC

Insulation Resistance

100 Megohms minimum @ 250 VDC

Operating Temperature

-30°C to +105°C

Rotational Angle

Mechanical Angle: 300° ±5 °
Effective Angle without Switch: 280°
Effective Angle with switch: 240°

Rotational Torque

3/4 to 6 in. oz. (54 to 432 gf-cm)

Power Switch

Rotary Switch-SPST, DPST, SPDT
Pull-Push Switch-SPST (Pull-ON, Push-OFF)

Rotary Switch Actuating Angle

20°

Rotary Switch Actuating Torque

7 to 17 in. oz. (504 to 1225 gf-cm)

Mounting Information

Bushing Mount

Rotational Life

Standard : 50,000 cycles
Special : 100,000 cycles

Solder Heat Resistance

Maximum: 350° C for 3 sec

Series WW24 Wirewound Potentiometer

Specification

1. General:

This specification covers the requirements of the subject product, unless otherwise specified on the part drawing

1.1 Operating temperature: -30 °C to 105 °C

1.2 RoHS Compliance: This part is compliant with EU RoHS directive

2. Material:

All material shall be corrosion and moisture resistant.

2.1 Shaft: plastic (with UL Flame Class 94V-2 or better), brass, brass/nickel plated or aluminum, as specified on the part drawing.

2.2 Base (terminal board): Bakelite with UL Flame Class 94HB or better

2.3 Resistance Element: Wirewound

3. Mechanical:

3.1 Angle Of Rotation:

Total Rotation:(unless otherwise specified)

Without Switch: 300° ±5°

With Switch: 300° ±5°

Effective Rotation:(unless otherwise specified)

Without Switch: 280° approximately

With Switch: 240° approximately

3.2 Configuration / Dimensions: See attached drawing.

3.3 Turning Torque: 3/4 ~ 6 in.oz (54 ~ 432 gcm). (Standard)

3.4 Stop Strength: 17.0 Kgf-cm (15 in-lb)Min.

3.5 Push & Pull Strength Of Shaft: 13.6 Kgf (30lbs) Min.

4. Electrical:

4.1 Resistance, Tolerance & Taper: See Attached Drawing.

4.2 Power Rating: 5W @25 °C 4W @55 °C derated to No Load @105 °C.

4.3 Voltage Rating: Bushing to Terminals, Hi Pot Test, One Minute 1080VAC, Operating Max 500 VDC across end terminals, 350 VDC Max. Load Not To Exceed Listed Wattage Ratings.

5. Durability:

5.1 Rotational Life Test: On Linear Elements, ±5% ΔR during and after 10k Cycles. For Non-linear Elements or Special Requirements, See Part Drawing.

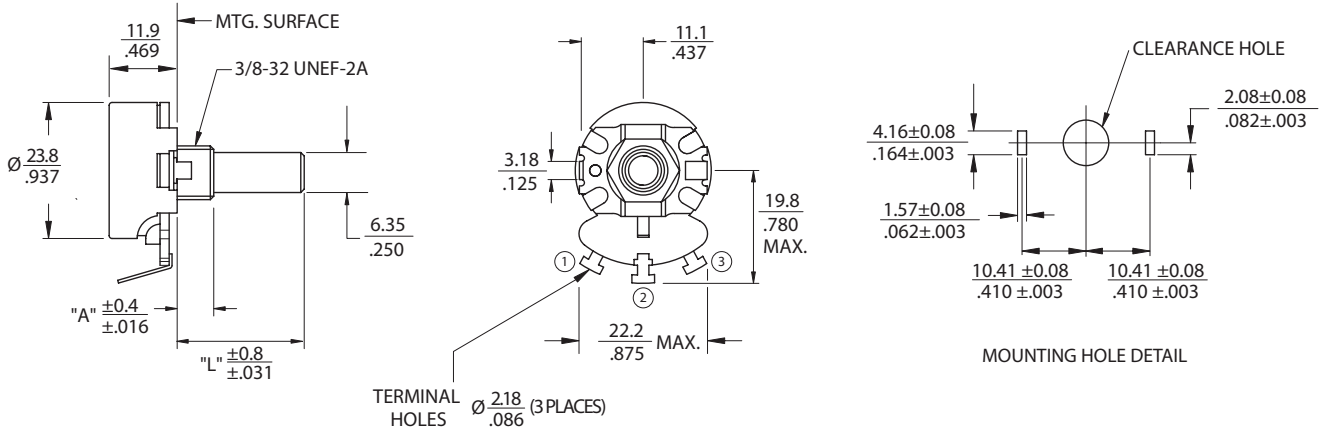
5.2 Humidity Test: 95% R.H.@ 40 °C For 240 Hrs (No Load). Check O.A. Resistance Continuity, Rust and Corrosion initially & after test. After 100 hrs, the allowable Resistance Change is ±5% After 240 hrs, the Allowable Resistance Change is±10%.

5.3 Insulation Resistance: 100 Megohms min. @ 250 VDC.

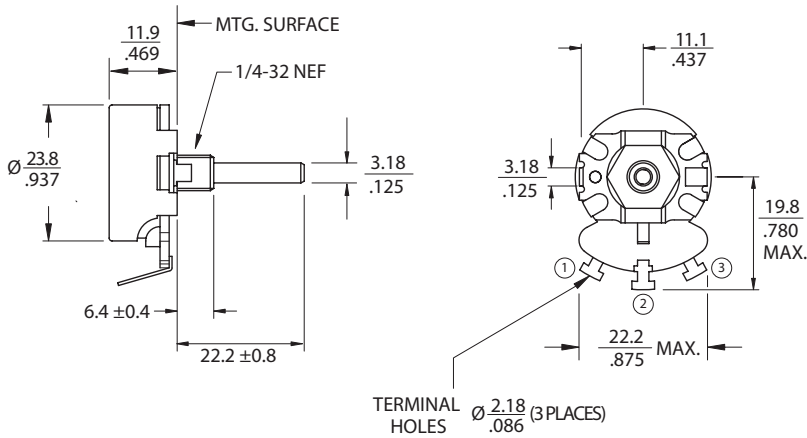
Series WW24 Wirewound Potentiometer

Outline and Mounting Dimensions (mm/inch)

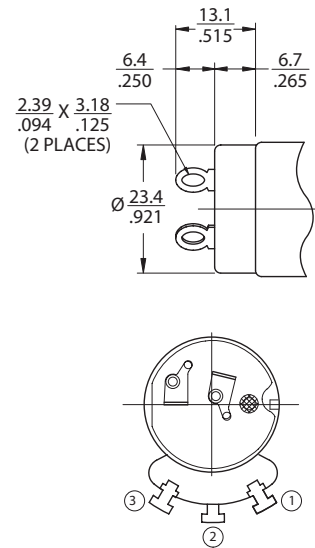
1/4" Diameter Shaft, 3/8" Diameter Bushing



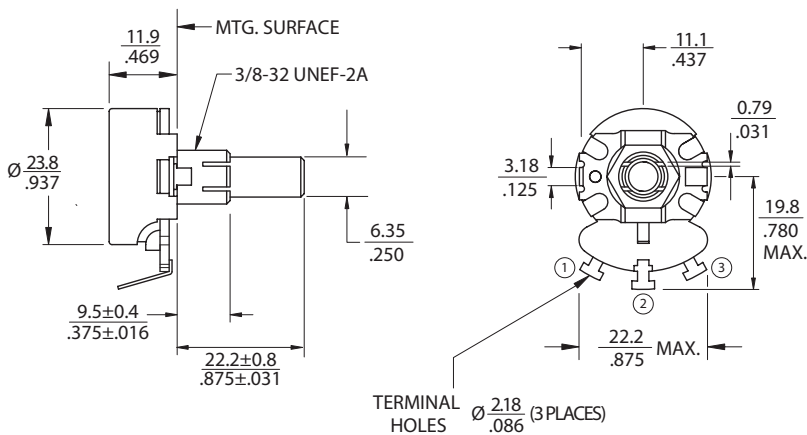
1/8" Diameter Shaft, 1/4" Diameter Bushing



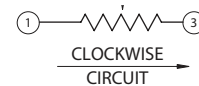
Rotary Switch Option



Locking Bushing



Circuit Diagram



Series WW24 Wirewound Potentiometer

Ordering Information - Single Turn Potentiometer

Example Part Number: **WW24-1-S-056-J-101-1-RS1**

WW24	1	S	056	J	101	1	RS1
Model WW24		Shaft Type: S = Slotted X = Special	Shaft Length: 032 = 1/2" 040 = 5/8" 056 = 7/8" 100 = 1" 200 = 2"	Resistance Tolerance: J = ±10% X = Special		Taper: 1 = S (Linear) 2 = Z (Log) 3 = RZ (Reverse Log)	Switch: Blank = No Switch RS1 = SPST 6A@125VAC RS2 = DPST 3A@125VAC
	Bushing Size: 1 = Plain 1/4" Dia. x 1/4" Length 2 = Plain 3/8" Dia. x 3/8" Length 3 = Locking 3/8" Dia. x 1/2" Length				Resistance Code Examples: 1A0 = 1 ohm 5A0 = 5 ohms 200 = 20 ohms 250 = 25 ohms 101 = 100 ohms 102 = 1K ohms 252 = 2.5K ohms 502 = 5K ohms 253 = 25K ohms		
	Bushing Style Blank = Plain Threaded L = Locking						

For more information about this product,
visit our website at:
www.potentiometers.com



Discontinued Honeywell / Clarostat Potentiometers and Recommended Replacement Options

Discontinued effective June 30, 2016

Attribute	43-Series	RA20	58-Series	RA30	49M	381
Physical Size	1-3/32" Dia	1-3/32" Dia	1-11/16" Dia	1-11/16" Dia	0.750" Dia.	0.625" Dia.
Resistive Element	Wire Wound	Wire Wound	Wire Wound	Wire Wound	Wire Wound	Conductive Plastic
Power Rating	2-Watt	2-Watt	4-Watt	4-Watt	1-1/2 Watt	1-Watt
Resistance Tolerance	± 10%	± 10%	± 10%	± 10%	± 10%	± 10%
Linearity	±5%	±5%	±5%	±5%	±5%	±5%
Military Qualification	N/A	Mil-R19	N/A	Mil-R19	N/A	N/A
Electrical Testing to	Mil-R-19	Mil-R-19	Mil-R-19	Mil-R-19	Mil-R-19	Mil-R-94
Mechanical Testing to	Mil-R-19	Mil-R-19	Mil-R-19	Mil-R-19	Mil-R-19	Mil-R-94
Environmental Testing to	Mil-R-19	Mil-R-19	Mil-R-19	Mil-R-19	Mil-R-19	Mil-STD-202
Operating Temperature	-55°C to 105°C	-55°C to 105°C	-55°C to 105°C	-55°C to 105°C	-55°C to 125°C	-55°C to 120°C
Mechanical Rotation (Note 1)	300° ±5°	300° ±5°	300° ±5°	300° ±5°	300° ±5°	300° ±5°
Effective Rotation	280° ±5°	280° ±5°	280° ±5°	280° ±5°	280° ±5°	270° ±5°
Bushing Diameter	3/8"	3/8"	3/8"	3/8"	1/4"	1/4"
Shaft Diameter	1/4"	1/4"	1/4"	1/4"	1/8"	1/8"
Mounting Tab φ	0.53"	0.53"	0.53"	0.53"	0.23"	0.313"
Rotational Life (Note 2)	25,000	25,000	25,000	25,000	25,000	25,000
Switch Options	Yes	Yes	No	No	No	Yes
IP Rating	N/A	N/A	N/A	N/A	N/A	N/A
Shaft Material	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated
Bushing Material	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated
Rotational Torque	.5 - 6 oz. in.	.5 - 6 oz. in.	.5 - 6 oz. in.	.5 - 6 oz. in.	.5 - 6 oz. in.	.2 - 6 oz. in.
Shaft Stop Torque	8 lbs. in. Min.	8 lbs. in. Min.	8 lbs. in. Min.	8 lbs. in. Min.	8 lbs. in. Min.	6 lbs. in. Min.
Shaft Pull Strength	Undocumented	Undocumented	Undocumented	Undocumented	Undocumented	Undocumented
Voltage Rating	310 Volts	310 Volts	350 Vdc	350 Vdc	175 Vdc	350 Vdc
Humidity	85% RH @ 40°C, 240 hours	85% RH @ 40°C, 240 hours	85% RH @ 40°C, 240 hours	85% RH @ 40°C, 240 hours	85% RH @ 40°C, 240 hours	90-95% RH @ 40°C, 96 hours
Insulation Resistance	100 Meg Ω Min	100 Meg Ω Min	100 Meg Ω Min	100 Meg Ω Min	100 Meg Ω Min	100 Meg Ω Min

Recommended Replacement Series Options

WW24	388	389	70	70	5127
0.94" Dia.	1/2" Square	1/2" Square	5/8" Square	5/8" Square	1/2" Square
Wire Wound	Conductive Plastic	Cermet	Conductive Plastic	Cermet	Conductive Plastic
5-Watt @ 25°C 4-Watt @ 40°C	1/2 Watt	1-Watt	1/2 Watt	1-Watt	1/2 Watt
± 10%	± 10%	± 10%	± 10%	± 10%	± 10%
±3%	±5%	±5%	±5%	±5%	±5%
N/A	N/A	N/A	N/A	N/A	N/A
N/A	Mil-R-94	Mil-R-94	Mil-R-94	Mil-R-94	N/A
N/A	Mil-R-94	Mil-R-94	Mil-R-94	Mil-R-94	N/A
N/A	Mil-STD-202	Mil-STD-202	Mil-STD-202	Mil-STD-202	N/A
-30°C to 105°C	-55°C to 120°C	-55°C to 150°C	-55°C to 120°C	-55°C to 150°C	-55°C to 125°C
300° ±5°	295° ±5°	295° ±5°	300° ±5°	300° ±5°	295° ±5°
280° ±5°	265° ±5°	250° ±5°	260° ±5°	260° ±5°	265° ±5°
1/4" or 3/8"	1/4" or 3/8"	1/4" or 3/8"	1/4" or 3/8"	1/4" or 3/8"	1/4" or 3/8"
1/8" or 1/4"	1/8" or 1/4"	1/8" or 1/4"	1/8" or 1/4"	1/8" or 1/4"	1/8" or 1/4"
0.410"	0.25"	0.25"	0.53"	0.53"	0.25"
10,000 Standard 100,000 Optional	50,000	25,000	100,000	100,000	1,000,000
Yes	Yes	Yes	Yes	Yes	Yes
N/A	N/A	N/A	N/A	N/A	IP67
Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Stainless Steel	Stainless Steel	Brass / Nickel Plated
Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated	Brass / Nickel Plated
6 oz. in.	.2 - 3 oz. in.	.2 - 3 oz. in.	.5 - 3 oz. in.	.5 - 3 oz. in.	1.5 oz. in. Max.
15 in-lb	3 lbs. in Min STD 8 lbs. in Optional	3 lbs. in Min STD 8 lbs. in Optional	4 lbs. in. Min.	4 lbs. in. Min.	40 oz. in.
30 lbs. min.	18 lbs. min.	18 lbs. min.	Undocumented	Undocumented	Undocumented
350 Vdc	350 Vdc	350 Vdc	350 Vdc	350 Vdc	350 Vac
85% RH @ 40°C, 240 hours	90-95% RH @ 40°C, 96 hours	90-95% RH @ 40°C, 96 hours	90-95% RH @ 40°C, 96 hours	90-95% RH @ 40°C, 96 hours	IP67
100 Meg Ω Min	100 Meg Ω Min	100 Meg Ω Min	100 Meg Ω Min	100 Meg Ω Min	100 Meg Ω Min

Note 1 - Without switch

Note 2 - Maximum change in resistance to be less than ±10% of Total Resistance.

Call State Electronics at (800) 631-8083 to for assistance with your requirements.

Discontinued Honeywell / Clarostat Wirewound Products

		2-Watt Honeywell Series				4-Watt Honeywell Series			
Ohmic Value	Abbreviation	Commercial Version		Mil-Rated Version		Commercial Version		Mil-Rated Version	
		2"-Shaft	Locking Bushing	Mil-Rated 7/8"-Shaft	Mil-Rated Locking Bushing	2"-Shaft	Locking Bushing	Mil-Rated 7/8"-Shaft	Mil-Rated Locking Bushing
3	3	43C13	43C23	RA20NASD3R0A	RA20LASB3R0A	58C13	58C23	RA30NASD3R0A	RA30LASB3R0A
5	5	43C15	43C25	RA20NASD5R0A	RA20LASB5R0A	58C15	58C25	RA30NASD5R0A	RA30LASB5R0A
10	10	43C110	43C210	RA20NASD100A	RA20LASB100A	58C110	58C210	RA30NASD100A	RA30LASB100A
25	25	43C125	43C225	RA20NASD250A	RA20LASB250A	58C125	58C225	RA30NASD250A	RA30LASB250A
50	50	43C150	43C250	RA20NASD500A	RA20LASB500A	58C150	58C250	RA30NASD500A	RA30LASB500A
100	100	43C1100	43C2100	RA20NASD101A	RA20LASB101A	58C1100	58C2100	RA30NASD101A	RA30LASB101A
200	200	43C1200	43C2200	RA20NASD201A	RA20LASB201A	58C1200	58C2200	RA30NASD201A	RA30LASB201A
250	250	43C1250	43C2250	RA20NASD251A	RA20LASB251A	58C1250	58C2250	RA30NASD251A	RA30LASB251A
300	300	43C1300	43C2300	RA20NASD351A	RA20LASB351A	58C1300	58C2300	RA30NASD351A	RA30LASB351A
400	400	43C1400	43C2400	RA20NASD401A	RA20LASB401A	58C1400	58C2400	RA30NASD401A	RA30LASB401A
500	500	43C1500	43C2500	RA20NASD501A	RA20LASB501A	58C1500	58C2500	RA30NASD501A	RA30LASB501A
750	750	43C1750	43C2750	RA20NASD751A	RA20LASB751A	58C1750	58C2750	RA30NASD751A	RA30LASB751A
1,000	1K	43C11000	43C21000	RA20NASD102A	RA20LASB102A	58C11000	58C21000	RA30NASD102A	RA30LASB102A
1,500	1.5K	43C11500	43C21500	RA20NASD152A	RA20LASB152A	58C11500	58C21500	RA30NASD152A	RA30LASB152A
2,000	2K	43C12000	43C22000	RA20NASD202A	RA20LASB202A	58C12000	58C22000	RA30NASD202A	RA30LASB202A
2,500	2.5K	43C12500	43C22500	RA20NASD252A	RA20LASB252A	58C12500	58C22500	RA30NASD252A	RA30LASB252A
3,000	3K	43C13000	43C23000	RA20NASD302A	RA20LASB302A	58C13000	58C23000	RA30NASD302A	RA30LASB302A
4,000	4K	43C14000	43C24000	RA20NASD402A	RA20LASB402A	58C14000	58C24000	RA30NASD402A	RA30LASB402A
5,000	5K	43C15K	43C25K	RA20NASD502A	RA20LASB502A	58C15K	58C25K	RA30NASD502A	RA30LASB502A
7,500	7.5K	43C17.5K	43C27.5K	RA20NASD752A	RA20LASB752A	58C17.5K	58C27.5K	RA30NASD752A	RA30LASB752A
10,000	10K	43C110K	43C210K	RA20NASA103A	RA20NASA103A	58C110K	58C210K	RA30NASA103A	RA30NASA103A
15,000	15K	43C115K	43C215K	RA20NASA153A	RA20NASA153A	58C115K	58C215K	RA30NASA153A	RA30NASA153A
20,000	20K	43C120K	43C220K	RA20NASA203A	RA20NASA203A	58C120K	58C220K	RA30NASA203A	RA30NASA203A
25,000	25K	43C125K	43C225K	RA20NASA253A	RA20NASA253A	58C125K	58C225K	RA30NASA253A	RA30NASA253A
50,000	50K	43C150K	43C250K	RA20NASA503A	RA20NASA503A	58C150K	58C250K	RA30NASA503A	RA30NASA503A

Products shown above were previously available from Honeywell subject to minimum order requirements of 100 pieces or greater

States WW24 series product is a functional equivalent to these former Honeywell products.

In most cases, the specifications will be similar to, or exceed, Honeywells previously published specifications.