



VR Series Panel Potentiometers

July 2019



Agenda

- Product Overview
- Features & Benefits
- Product Custom/Value Added Capabilities
- Target Applications
- Available Collateral and Training Material
- Worldwide Distribution Network

VR Series Panel Potentiometers Overview

- 9mm, 11mm, 12mm, and 14mm sizes
- Durable carbon elements
- Rotational life: 5k to 30k cycles
- Operating temperature range: -10°C to +70°C
- Tracking: ± 2 dB (Series 11VR and 14VR)
- Mechanical travel: $300^\circ \pm 5^\circ$
- Center detent option
- Single and dual output options
- Vertical and horizontal mounting styles
- Standard shaft and bushing options
- LED backlit clear shaft (Series 12VR)
- Variety of standard resistance values
- Variety of standard JIS tapers available



Series
09VR



Series
11VR



Series
12VR



Series
14VR



VR Series Key Features/Benefits & Custom Capabilities

Features

9mm, 11mm, 12mm, 14mm sizes

Rotational life: 5k to 30k cycles

Wide operating temperature range

Excellent dual output tracking

Benefits

Sizes for std and space constrained applications

Chose the specified life required by the application

Suitable for use in cold or hot environments

Output matching

Custom and Value-Added Capabilities

- Custom resistance values
- Custom output tapers
- Modified bushings
- Modified shafts

VR Series Product Target Market Segments/Applications



Product Collateral and Training Material

Series 09VR
9mm

- Mini
- Rotary
- Wide
- Mechanical
- Various

Applications

- Consumer
- Commercial
- Instrumentation
- Keyboards
- Communications

Ordering

Series	Element
09VR	1

Code Spec
1 Single

* See shaft trim
** Other JIS type
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Series 11VR
11mm

- Compact
- Rotary
- Wide
- Mechanical
- Various

Applications

- Consumer
- Commercial
- Instrumentation
- Keyboards
- Communications

Ordering

Series	Element
11VR	1

Code Spec
1 Single

* See shaft trim
** Other JIS type
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Series 14VR
14mm

- Standard
- Rotary
- Wide
- Mechanical
- Various

Applications

- Consumer
- Commercial
- Instrumentation
- Keyboards
- Communications

Ordering

Series	Element
14VR	2

Code Spec
2 Dual

* See shaft trim
** Other JIS type
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Series 12VR
12mm Panel Potentiometer w/Illuminated Shaft

- Compact 12mm package size
- Single, dual and tri-color LED backlight shaft
- Rotational life (30,000 cycles)
- Switch life (20,000 cycles)
- Variety of standard resistances & tapers

Applications

- Consumer portable electronics
- Commercial appliances
- Instrument amplifiers and guitar effects
- Keyboards and synthesizers
- Communications equipment

Ordering Information

Series	LED Option	Terminal Configuration	Shaft Length	Shaft Trim	LED Color	Detent Option	Resistance Code	Resistance Taper
12VR	3	H	20	B	T	N	100	B1

Code Spec
H Vertical/Rear Mount Thread Bushing, PC Pins
S Horizontal/Side Mount Thread Bushing, PC Pins

Code Spec
B Knurled (18 teeth)
F Flatted

Code Spec
1 Red
2 Blue
3 Orange
4 White
5 Green
A Blue/Orange
B Green/Red
C Blue/Green
D Green/Orange
E Blue/Red
T Red/Green/Blue

Code Spec
1 1-Color (no switch)
2 2-Color (w/switch)
3 3-Color (w/switch)

Code Spec
15 15 mm
20 20 mm

Code Spec
502 5kΩ
100 10kΩ
200 20kΩ
500 50kΩ
100 100kΩ
254 250kΩ

* Other JIS tapers are available. See charts.
2019-04-16 Rev. A
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equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

- Data Sheets
- Application Notes
- Product Training Module
- Updated website landing page

Application Note

VR Series Panel Potentiometers

INSTRUMENTATION

Introduction

Panel potentiometers are used in instruments, collectively for indicating, measuring and control a function. Instruments from medical equipment to electronic appliances. Panel potentiometers screen display brightness, sensitivity levels, and have evolved from analog to digital prefer a human-to-machine grade applications.

Background

Instrumentation engineers the principle of operation various pieces of equipment engineering is loosely dependent. An expert in scope over an expert in controls. However, the appropriate controls for and/or calibrate the piece

Panel potentiometers are resistor is commonly constructed with phenolic, ceramic or hot molded plastic elements and a carbon or cermet resistive ink printed on the surface. A wiper rides across the element to create the variable resistive output. Wipers are commonly fabricated from stamped phosphor bronze, nickel-silver, or can even be fabricated from multiple formed wire strands (multi-finger wiper) welded to a tie bar. The wire tips are typically precious metal and are typically encountered in higher end potentiometers.

Panel potentiometers are used in two basic applications namely voltage divider and rheostat modes. Most commonly used a voltage divider, the potentiometer is powered between the outer terminals and the variable voltage is read through the center terminal. When the user turns the shaft, the voltage output changes directing the system to make a change to the frequency, volume, balance, or other function. In the rheostat mode, the actual resistance is used as the change in signal to drive the change in assigned function.

APPLICATIONS

Evolution of Audio Equipment

As sound and audio equipment continues to evolve, there is a trend for equipment to shrink in size. Concurrently, there is a trend to pack more controls into existing or smaller sized units. To address these trends, components of varying sizes are needed with the smaller sizes used to save printed circuit board space while maintaining performance and extending the individual control functionality.

Consumer grade audio mixers, better known as "prosumer" grade audio mixers, in compact sizes are now available for the avid musician who wants a home studio. Mixers use large quantities of various sized panel potentiometers to control frequency, tone, balance, effect send and attenuation. Each channel on a multichannel mixer requires a set of controls.

Application Note

VR Series Panel Potentiometers

AUDIO EQUIPMENT

Introduction

Panel potentiometers are used judiciously in all types of audio equipment. The potentiometers are used to control system functions such as frequency, tone, balance, sound and mix levels. Equipment such as audio mixing boards, instrument amplifiers, sound processing equipment and guitar effects pedals all use panel potentiometers as various adjustment controls.

Background

Panel potentiometers are simply variable resistors. This type of variable resistor is commonly constructed with phenolic, ceramic or hot molded plastic elements and a carbon or cermet resistive ink printed on the surface. A wiper rides across the element to create the variable resistive output. Wipers are commonly fabricated from stamped phosphor bronze, nickel-silver, or can even be fabricated from multiple formed wire strands (multi-finger wiper) welded to a tie bar. The wire tips are typically precious metal and are typically encountered in higher end potentiometers.

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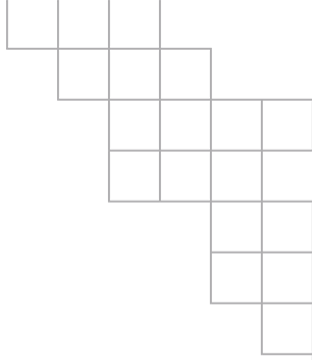


Summary

- VR Series family of panel potentiometers include four discrete models
- Various mechanical and electrical options along with a variety of standard resistance values and tapers are available
- Modifications and value added options are available on request
- Samples are available NOW!!!
- Digi-Key, Mouser Electronics and RS Electronics are stocking a variety of VR Series part numbers

e-Catalog
Distributors





Thank You