

The **VRP1120 current output series** is a high performance, 2 wire rotary potentiometer with an aluminium Ø1.1" synchro mounting case, the sensor is designed to provide a 4 to 20mA output signal.

Available with a stainless steel operating shaft for applications where system reliability is a design consideration, the shaft is guided by two precision stainless steel ball-race bearings, to provide superior vibration and shock performance.

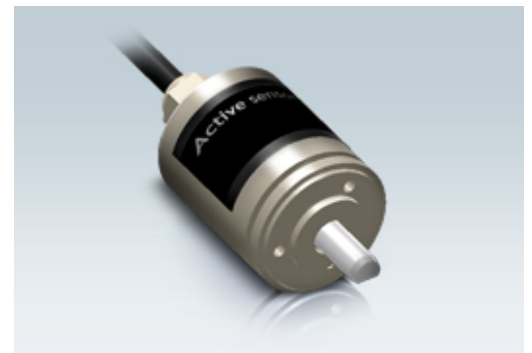
Incorporating innovative 'thick track' technology and precious metal multi-fingered electrical contacts, the sensor provides infinite output resolution and a long operational life.

Extensively specified for industrial motion control and measurements systems, they operate from an unregulated 12 to 40 VDC supply. They are rated to a maximum temperature of 105°C (221°F) and are environmentally protected against the ingress of dust and water to IP67.

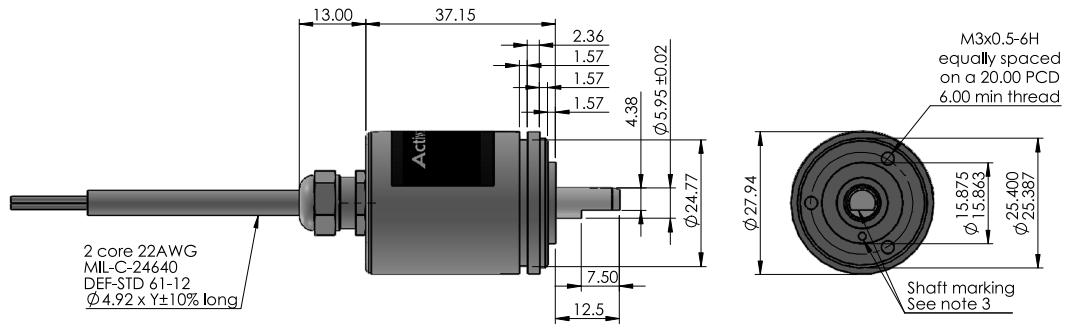
For total system integrity, these sensors are fitted with fire and chemical resistant 2 core 22AWG signal cabling, which is available in a choice of different cable lengths up to 9m.

Key features and benefits

- 2 wire, 4 to 20mA output
- Aluminium Ø1.1" synchro mounting case
- Choice of electrical angles, 100°, 130° and 350°
- Stainless steel shaft
- Maximum operating temperature 105°C (221°F)
- Superior non-linearity $<\pm 0.50$ %FS
- Sealed to IP67
- 2 core 22AWG MIL-C-24640 DEF-STD 61-12 cabling
- Custom designs available on request



VRP1120 – Synchro mounting with rear cable exit



Ordering information: VRP1120-11-XXX-Y-AA1

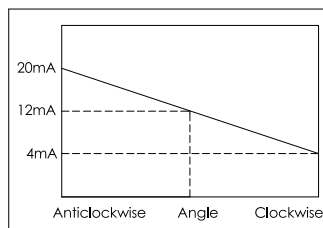
↑ Electrical angle in degrees
 ↑ Output signal A1 - 4-20mA
 ↑ Output direction (viewed on shaft) A=Anticlockwise
 Cable length 0 to 9
 0 - 0.5m, 1 - 1m, 9 - 9m

Mechanical specification				
Electrical angle (±2°)	350	130	100	°
Mechanical travel	360° Continuous			
Sensor weight (excluding cable)	60			grams
Materials	Case - Anodised aluminium alloy 6063-T5 Shaft - Stainless Steel 303 Cable gland - Nickel plated brass			
Performance specification				
Non-linearity (see note 2)	<±0.50			%FS
Resolution	Infinite			
Thermal drift	±0.01 TBD			%FS/°C
Electrical specification				
Input voltage (+Vs)	12 to 40			VDC
Line regulation (see note 7)	<0.002			%FS/V
Reverse polarity (max) (+Vs)	-60			VDC
Output current (Iout) (see graph)	2 wire 4-20			mA
Sensitivity <±2% (see note 2)	0.046	0.120	0.160	mA/°
Loop resistance (max) (see note 8)	(+Vs-8V)/0.02A			ohms
Output noise and ripple	<0.05			%FS RMS
Electrical connections	2 core x 22AWG (screened) Zerohal jacket			
Cable length (max) (see note 9)	0.5 to 9.0			m
Environmental specification				
Operating temperature range	-30 to +105			°C
Environmental	IP67			

Notes:

1. Incorrect wiring may cause internal damage.
2. Non-linearity error and sensitivity is calculated from least squares best fit method
3. When shaft flat is facing case shaft mark the instrument is mid travel.
4. Average thermal drift over operating temperature range
5. Nominal bandwidth (-3dB) with a 1st order (-20dB/decade) roll-off.
6. Within 20 seconds of power on condition and over 30 minutes period. (Whilst delta temperature sensor <2°C.)
7. When +Vs = +12VDC to +30VDC.
8. Includes all wiring resistance and RLoad resistance.
9. Includes all wiring between sensor and RLoad.
10. General dimension tolerance is ±0.25.

VRP mA output schematic



Electrical connections - (see note 1)

