

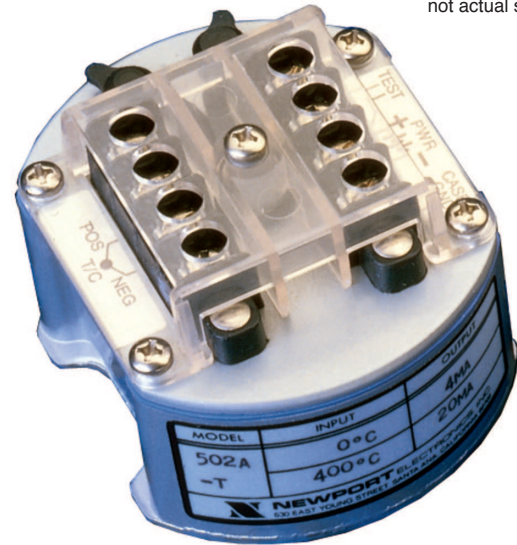
Signal Conditioners, Transmitters

500 Series for Demanding Applications



- ✓ Isolated to 1500 V rms
- ✓ Two-Wire 4-20 mA Operation
- ✓ 9-50 V Compliance
- ✓ Turndown Ratio to 10:1
- ✓ NMV Protection to 120 Vac
- ✓ -40 to +85°C (-40 to 185°F) Operation
- ✓ Shock Resistance to 55 g
- ✓ NEMA-4X Metal Case
- ✓ Field-Scalable

500 Series



Item shown is not actual size.

Unmatched Electrical Performance

Two-wire Operation:

Power is obtained directly from the 4-20 mA loop, with no need for separate power input. This simplifies field wiring and eliminates the possibility of noise pickup from power lines.

Extreme Operating Temperatures

The operating temperature can be from -40°C to +85°C (-40°F to +185°F) while meeting published performance specifications.

This allows the 500 Series to be used near furnaces or outdoors in the winter. The exceptionally wide operating temperature range is made possible by a proprietary electrical circuit and by extensive use of computer-graded and computer-matched electrical components.

Easy to Calibrate and install

There is no need to specify different models for different ranges of the same signal type. Zero and span are each set by push-on jumpers for coarse range selection and by a 15-turn precision potentiometer for fine adjustment. The two potentiometers are accessible from outside of the case through openings which are normally sealed by fluorosilicone plugs. To assist in calibration, two test terminals provide a 10 mV/mA output (200 mV full-scale). The scaling procedure is documented in a comprehensive user's manual, which is shipped with every unit.

For more information visit:
newportUS.com/500

Classical Application of a 500 Series

2-Wire Isolated Transmitter. The Transmitter amplifies a low-level voltage signal to 4-20 mA current signal, which is immune to voltage noise pick-up. The voltage detected in the control room is $V = IR$, where I is the loop current and R is the dropping resistor of the receiving equipment. The isolation provided by the transmitter protects the receiving equipment and eliminates the possibility of ground loops between the remote signal ground and the ground of the control room.

Model No.	Signal Type	Zero Suppression* for 4 mA Output	Maximum Signal* for 20 mA Output	Signal Span* for 4-20 mA Output	Input Impedance
501	RTD Pt 100 Ohms	-200 to +750°C -328 to +1382°F 0 to 365 Ω	+850°C +1562°F 400 Ω	100 to 1050°C 180 to 1890°F 35 to 400 Ω	N/A
502A-J	Type J T/C Iron-Constantan	-50 to +660°C -58 to +1220°F	+760°C +1400°F	100 to 810°C 180 to 1458°F	5 MΩ
502A-K	Type K T/C Chromwl-Alumel	-50 to +1272°C -58 to +2322°F	+1372°C +2502°F	100 to 1422°C 180 to 2560°F	5 MΩ
502A-T	Type T T/C Copper-Constantan	-50 to +350°C -58 to +662°F	+400°C +752°F	50 to 450°C 90 to 810°F	5 MΩ
502A-E	Type E T/C Chromel-Constantan	-50 to +900°C -58 to +1652°F	+1000°C +1832°F	100 to 1050°C 180 to 1890°F	5 MΩ
504	Millivolts	-30 to +60 mV	+160 mV	5 to 100 mV	100 MΩ
505	Milliamps	-30 to +60 mA	+160 mA	5 to 100 mA	1 Ω
506-1	Low Volts	-3.5 to +6.0 V	+11 V	0.5 to 5 V	1 MΩ
506-2	High Volts	-35 to +60 V	+110 V	5 to 50 V	1 MΩ

* The signal span shown in column 5 for 4-20 mA output cannot include inputs below the maximum signal in column 4.