

Extremely high accuracy & stability, sealed, on-site resistance standards requiring no oil or temperature bath. The SRL Series is available in a wide range of off-the-shelf and custom values and combinations.

- Very high stability
- Very low temperature coefficient
- No need for stabilization in a temperature-controlled bath

- Wide choice of values and custom values - 1 mΩ to 10 TΩ
- Combination units available
- Calibration report at 3 temperatures - Temperature chart and  $\alpha$  and  $\beta$  provided
- Very low hysteresis
- Direct plug-in unit for most DMM's - Fluke, Wavetek, Agilent, and others



**SRL-10 kΩ High-Accuracy Resistance Standard**

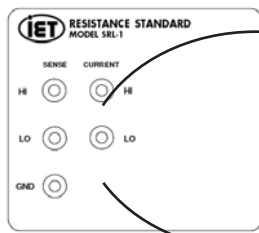
### AVAILABLE UNITS



**SRL-10 GΩ High-Accuracy Resistance Standard**



**SRL-Series High-Accuracy Resistance Standard Combination Unit**



**SRL-DMM Version:** Available in any value as a direct plug-in for most DMM's; this avoids external leads and noise pickup. (Part number SRL-XXX-DMM Model, e.g. SRL-10K-8508)

### SPECIFICATIONS

#### Retrace:

**1 Ω to 19 MΩ:** Permanent shift in resistance value is <2 ppm for 23°C to 0°C to 23°C cycle, and 23°C to 40°C to 23°C cycle

#### Calibration Report:

Initial SI traceable calibration data provided in 0.5°C increments for temperature range of 18°C to 28°C.

#### Operating Temperature:

Temperature range of 18°C to 28°C

#### Calibration Conditions:

At 23°C, low power, traceable to SI  
 <1 MΩ: Five-wire  
 1 MΩ - 20 MΩ: Three-wire  
 ≥100 MΩ: Four-wire

#### Terminals:

Gold-plated, tellurium-copper, low-thermal-emf binding posts on standard 3/4 inch spacing. A **GROUND** terminal is provided on all units.

#### Dimensions:

**for 1 mΩ - 1.9 mΩ:** 16 cm H x 9 cm Dia (6.3" x 3.55")  
**all others:** 8.6 cm H x 10.5 cm W x 12.7 cm D (3.4" x 4.15" x 5")

#### Weight:

**for 1 mΩ - 1.9 mΩ:** 0.9 kg (2 lbs)  
**all others:** 0.73 kg (1.6 lb)

#### Other available terminals:

- DMM direct input compatibles
- bnc, Triax, and custom connectors

#### Transit Case:

(see page 3)



# High-Accuracy, High-Stability Resistance Standards

## SRL Series

### SPECIFICATIONS

Nominal Value	Model Number	Adjustment to Nominal	Stability per year (max change)	Max Resistance Change 18-28°C from 23 °C	Max Applied Input			Typical change at 1 kHz	Terminals
					0 ppm change*	<1 ppm change**	<3 ppm change**		
1 mΩ	SRL-0.001	±50 ppm	±50 ppm	25 ppm/°C †				<100 ppm	4 bp's + gnd
1.9 mΩ	SRL-0.0019	±50 ppm	±50 ppm	25 ppm/°C †					4 bp's + gnd
2 mΩ	SRL-0.002	±50 ppm	±50 ppm	20 ppm/°C					4 bp's + gnd
10 mΩ	SRL-0.01	±5 ppm	±15 ppm	5 ppm/°C	25 mW	50 mW	200 mW		4 bp's + gnd
19 mΩ	SRL-0.019	±5 ppm	±15 ppm	5 ppm/°C	25 mW	50 mW	200 mW		4 bp's + gnd
20 mΩ	SRL-0.02	±5 ppm	±15 ppm	5 ppm/°C	25 mW	50 mW	200 mW		4 bp's + gnd
100 mΩ	SRL-0.1	±5 ppm	±12 ppm	2 ppm/°C	50 mW	100 mW	250 mW		4 bp's + gnd
190 mΩ	SRL-0.19	±5 ppm	±12 ppm	2 ppm/°C	50 mW	100 mW	250 mW		4 bp's + gnd
200 mΩ	SRL-0.2	±5 ppm	±12 ppm	2 ppm/°C	50 mW	100 mW	250 mW		4 bp's + gnd
1 Ω	SRL-1	±2 ppm	±8 ppm	3 ppm tot	175 mW	350 mW	850 mW		4 bp's + gnd
1.9 Ω	SRL-1.9	±2 ppm	±8 ppm	3 ppm tot	175 mW	350 mW	850 mW		4 bp's + gnd
2 Ω	SRL-2	±2 ppm	±8 ppm	3 ppm tot	175 mW	350 mW	850 mW		4 bp's + gnd
10 Ω	SRL-10	±2 ppm	±8 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
19 Ω	SRL-19	±2 ppm	±8 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
20 Ω	SRL-20	±2 ppm	±8 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
25 Ω	SRL-25	±2 ppm	±8 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
30 Ω	SRL-30	±2 ppm	±8 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
50 Ω	SRL-50	±2 ppm	±8 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
100 Ω	SRL-100	±2 ppm	±6 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
190 Ω	SRL-190	±2 ppm	±6 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
200 Ω	SRL-200	±2 ppm	±6 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
350 Ω	SRL-350	±2 ppm	±6 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
400 Ω	SRL-400	±2 ppm	±6 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
1 kΩ	SRL-1K	±2 ppm	±6 ppm	3 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
1.9 kΩ	SRL-1.9K	±2 ppm	±6 ppm	2 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
2 kΩ	SRL-2K	±2 ppm	±6 ppm	2 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
4 kΩ	SRL-4K	±2 ppm	±4 ppm	2 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
10 kΩ	SRL-10K	±2 ppm	±4 ppm	1.5 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
19 kΩ	SRL-19K	±2 ppm	±4 ppm	2 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
20 kΩ	SRL-20K	±2 ppm	±4 ppm	2 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
100 kΩ	SRL-100K	±2 ppm	±6 ppm	2 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
190 kΩ	SRL-190K	±2 ppm	±8 ppm	2 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
200 kΩ	SRL-200K	±2 ppm	±8 ppm	2 ppm tot	100 mW	200 mW	500 mW		4 bp's + gnd
1 MΩ	SRL-1M	±2 ppm	±8 ppm	2 ppm tot	100 mW	200 mW	500 mW		2 bp's + gnd
1.9 MΩ	SRL-1.9M	±2 ppm	±9 ppm	3 ppm tot	100 mW	200 mW	500 mW		2 bp's + gnd
2 MΩ	SRL-2M	±2 ppm	±9 ppm	3 ppm tot	100 mW	200 mW	500 mW		2 bp's + gnd
10 MΩ	SRL-10M	±2 ppm	±9 ppm	3 ppm tot	500 V	1000 V	2500 V		2 bp's + gnd
19 MΩ	SRL-19M	±2 ppm	±10 ppm	4 ppm tot	1000 V	2000 V	5000 V		2 bp's + gnd
20 MΩ	SRL-20M	±2 ppm	±10 ppm	4 ppm tot	1000 V	2000 V	5000 V		2 bp's + gnd
100 MΩ	SRL-100M	±10 ppm	±20 ppm	5 ppm/°C	2000 V	4000 V	5000 V		2 bp's + gnd + guard
190 MΩ	SRL-190M	±10 ppm	±20 ppm	5 ppm/°C	2000 V	5000 V		2 bp's + gnd + guard	
200 MΩ	SRL-200M	±10 ppm	±20 ppm	5 ppm/°C	5000 V			2 bp's + gnd + guard	
1 GΩ	SRL-1G	±0.1%	±200 ppm	20 ppm/°C	5000 V			2 bp's + gnd + guard	
1.9 GΩ	SRL-1.9G	±0.1%	±200 ppm	20 ppm/°C	5000 V			2 bp's + gnd + guard	
2 GΩ	SRL-2G	±0.1%	±200 ppm	20 ppm/°C	5000 V			2 bp's + gnd + guard	
10 GΩ	SRL-10G	±0.1%	±500 ppm	25 ppm/°C	5000 V			2 bp's + gnd + guard	
19 GΩ	SRL-19G	±0.1%	±500 ppm	25 ppm/°C	5000 V			2 bp's + gnd + guard	
20 GΩ	SRL-20G	±0.1%	±500 ppm	25 ppm/°C	5000 V			2 bp's + gnd + guard	
100 GΩ	SRL-100G	±0.2%	±500 ppm	25 ppm/°C	5000 V			2 bp's + gnd + guard	
190 GΩ	SRL-190G	±0.2%	±500 ppm	25 ppm/°C	5000 V			2 bp's + gnd + guard	
200 GΩ	SRL-200G	±0.2%	±500 ppm	25 ppm/°C	5000 V			2 bp's + gnd + guard	
1 TΩ	SRL-1T	±0.5%	±500 ppm	50 ppm/°C	5000 V			2 bp's + gnd + guard	
1.9 TΩ	SRL-1.9T	±0.7%	±1000 ppm	100 ppm/°C	5000 V			2 bp's + gnd + guard	
2 TΩ	SRL-2T	±0.7%	±1000 ppm	100 ppm/°C	5000 V			2 bp's + gnd + guard	
XXX Ω	SRL-XXX	customer-selected value and power specifications							

\* negligible effect of self-heating; do not exceed voltage limits where given.

\*\* non-permanent self-heating change; exceeding this value may cause a permanent change in the resistance..

† Maximum dissipation: in air - 1 W; in oil - 4 W

### ORDERING INFORMATION

Standard model      Select from table above  
 Custom value        SRL-XXX  
 DMM direct plug-in   Add -DMM at the end of part number  
 Transit case for SRL units   SRC-100, for 2 units  
   SRC-10-n, for n units

**-N Option**  
 Dual N-type terminal connections with ground terminal to fully shielded metal case. Inner enclosure can be separately driven with guard voltage.



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### TRANSIT CASES

Optional **Model SRC-100** or **SRC-10-n** lightweight transit cases provides mechanical protection and insulation from temperature

changes during transportation or shipping. It is suitable for transporting and storing two or more units.



*SRC-100 Transit Case  
for 2 units*



*SRC-10-n Transit Case  
for n units (5 units shown)*

