

RS-CS-LS Series

Economical, indispensable tools for a variety of uses in engineering, design, troubleshooting, or service.

These small, rugged substituters can satisfy most requirements.

Features:

- Direct reading — No fumbling with multiple slide or rotary switches
The IET family of digital substituters uses convenient side-by-side thumbwheel switches. Simply dial in the desired values and use.
- Standard accuracies of 1%, 0.1%, and 0.05% available.
- Broad choice of standard and optional models.
A full line of standard substituters satisfies most requirements.
- Direct readings eliminate potential mistakes that come from rotary or slide-switch boxes.
- For easy value readings, ranges are separated by color-coded switches and numbers.
- The units are small, rugged, and portable.
- Combination units, such as Resistance and Capacitance Substituter (RCS-500), are available.

Options:

- Shielded case with grounding post
- Panel mounting
- Protection fuse

See also:

- Higher accuracy: **HARS-X**, **HACS-Z**, and **1491** Series
- Laboratory standards: **SRX**, **SCA**, and **1482** Series
- Programmable models: **PRS/PCS/PLS** Series
- Transfer standard: **SR-1030**
- Higher power: **HPRS** Series
- Higher resistance: **HRRS** Series
- Higher voltage: **HRRS-5kV** and **HRRS-10kV** Series
- Precision RTD simulators: **RTD** Series

R-Box

RS Series: Digital
Resistance Substituter

Available from 0.01 Ω to 299,999,999.9 Ω
(RS-200 Shown)



C-Box

CS Series: Digital
Capacitance Substituter

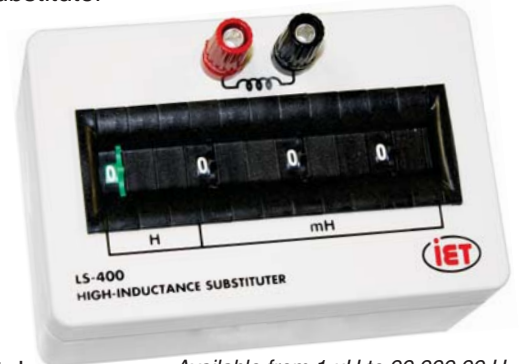
Available from 1 pF to 999.999 9 μ F
(CS-300 Shown)



L-Box

LS Series: Digital
Inductance Substituter

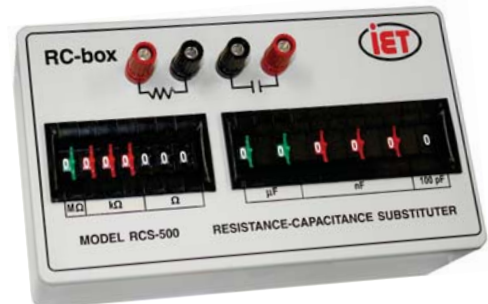
Available from 1 μ H to 99.999 99 H
(LS-400 Shown)



RC-Box

RCS Series: Digital
Resistance-Capacitance Substituter

Combines RS and CS units in one box
(RCS-500 Shown)



Standard Models

RS Series -- Standard Models

| Model | RS-200 | RS-201 | RS-200W | RS-201W | RS-200-2W | RS-201W-2W | RS-RTD | RCS-500 | RCS-502 |
|------------|--|----------------------|--------------------------|---------------------------------|--------------------------------|----------------------------------|-----------------|----------------------------|----------------------------------|
| Type | Resistance | Precision Resistance | Wide-Range Resistance | Wide-Range Precision Resistance | High-Power Resistance | High-Power Wide-Range Resistance | RTD Simulator | Resistance/Capacitance | Precision Resistance/Capacitance |
| Accuracy* | ±(1% + 25 mΩ) | ±(0.1% + 25 mΩ) | ±(1% + 36 mΩ) | ±(0.1% + 36 mΩ)** | ±(1% + 25 mΩ) | ±(0.1% + 36 mΩ)** | ±(0.1% + 25 mΩ) | Combines RS-200 and CS-300 | Combines RS-201 and CS-301 |
| Decades | 7 | | 9 | | 7 | 9 | 6 | | |
| Range | 0 to 9,999,999 Ω | | 0 - 99,999,999.9 Ω | | 0 - 9,999,999 Ω | 0 - 99,999,999.9 Ω | 0-9,999.99 Ω | | |
| Resolution | 1 Ω | | 0.1 Ω | | 1 Ω | 0.1 Ω | 0.01 Ω | | |
| Ratings*** | 0.5 W (rising to 2.5 W at step 9) | | | | 2 W (rising to 10 W at step 9) | | 0.5 W | | |
| Residual | ≤0.39 Ω (≤0.056 Ω/decade) | | ≤0.5 Ω (≤0.056 Ω/decade) | | ≤0.39 Ω | ≤0.5 Ω | ≤0.34 Ω | | |
| Components | Metal-film resistors; Manganin wire ≤0.9 Ω | | | | | | | | |
| Mechanical | A | | B | | A | B | A | C | |

CS Series -- Standard Models

| Model | CS-300 | CS-301 | CS-301L | CS-300H |
|------------|---|-----------------------|--|---------------------------------------|
| Type | Capacitance | Precision Capacitance | Low Precision Capacitance | High Capacitance |
| Accuracy* | ±(4% + 3 pF) | ±(1% + 3 pF) | ±(1% + 3 pF) | <100 μF: ±(4% + 3 pF) ≥100 μF: ±6% |
| Decades | 6 | | 7 | |
| Range | 0 to 99.999 9 μF | | 0 - 9.999 999 μF | 0 - 999.999 9 μF |
| Resolution | 100 pF | | 1 pF | 100 pF |
| Ratings*** | 100 V (25 V for 10 - 100 μF) | | 100 V | 100 V (25 V for 10 - 1000 μF) |
| Residual | ≤42 pF (≤7 pF/decade) | | ≤49 pF (≤7 pF/decade) | |
| Components | 1-900 pF: mica 1-9 μF: Polyester | | 0.001 - 0.9 μF: Polypropylene 10-900 μF: Tantalum | |
| Test Cond. | 1 kHz; 1 Vrms; for ≥10 μF: 120 Hz, series model; 23°C | | | |
| Mechanical | B | | | |

LS Series -- Standard Models

| Model | LS-400A | LS-400 | LS-400L |
|--------------------|---|----------------------------------|------------------------------------|
| Type | Inductance | High Inductance | Low Inductance |
| Accuracy* | ±(2% + 0.5 μH) | | |
| Decades | 3 | 4 | 6 |
| Range | 0 to 999 mH | 0 - 9.999 H | 0-999.999 mH |
| Resolution | 1 mH | 1 mH | 1 μH |
| Frequency Response | See http://www.ietslabs.com/ls-series-inductance-decade-box.html | | |
| Residual | ≤0.17 Ω; ≤1 μH (≤0.056 Ω/decade) | ≤0.23 Ω; ≤1 μH (≤0.056 Ω/decade) | ≤0.34 Ω; ≤1.5 μH (≤0.056 Ω/decade) |
| Components | Toroidal Inductors | | |
| Test Cond. | 1 kHz; 0.1 Vrms; series model; 23°C | | |
| Mechanical | B | | C |

***Accuracy:**

After subtraction of residual impedance
Traceable to SI

****Accuracy for RS-201W & RS-201W-2W:**

<10 MΩ: as shown above
≥10 MΩ: 0.2%

*****Rating:**

Subject to switch maximum dielectric strength of 750 Vdc peak or 550 Vrms, switching

Switches:

10-position thumbwheel switches
make-before-break

Maximum switch voltage:

750 Vdc peak or 550 Vrms, switching

Mechanical:

A: 8.1 x 7.9 x 5.6 cm; 184 g (3.2" x 3.1" x 2.2"; 6.5 oz)
B: 12.1 x 7.9 x 5.6 cm; 235 g (4.7" x 3.1" x 2.2"; 8.3 oz)
C: 18.8 x 11.6 x 6 cm; 410 g (7.4" x 4.3" x 2.4"; 14 oz)

Optional Models

