RS • CS • LS • Series

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

Best Substituter Value Available

- 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.
- Accurate
  In addition to standard 1% economical units, tolerances of 0.1% and 0.05% and are available.
- Broad choice of standard and optional models with many powerful features
  A full line of standard substituters will satisfy most requirements. Other IET families of precision products include:
  - Laboratory standards
  - Transfer standards
  - Programmable control
  - RTD simulation
  - High power
  - Very high resistance
- Error proof
  Since the impedance values are set and read directly, no mistakes can be made as with rotary or slide switch decade boxes. No need to examine and sum groups of switches — simply read one number.
- Color coded
  Different colored switches separate the various impedance ranges.
- Compact, convenient, and rugged
  Made of high impact plastic, these substituters are very portable and reduce clutter on a busy lab bench.

OPTIONS

- Shielded case with grounding post
- Panel mounting
- Protection fuse
- Programmable control (See PRS, PLS, PCS)

R-box
RS Series
Digital
Resistance
Substituter

Available from 0.01 Ω to 299,999,999.9 Ω
(RS-201 shown)

C-box
CS Series
Digital
Capacitance
Substituter

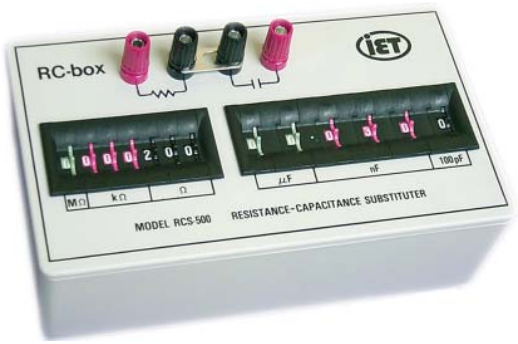
Available from 1 pF to 999.9999 μF
(CS-300 shown)

L-box
LS Series
Digital
Inductance
Substituter

Available from 1 μH to 99.99999 H
(LS-400 shown)

RC-box
RCS Series
Digital Resistance-
Capacitance
Substituter

The RC-box, shown on the right, combines the features and specifications of both the R-box and the C-box in one convenient package. Ideal for setting timers, oscillators, and filters, the resistance and capacitance may be used independently, in series, or in parallel. A shorting link allows them to be coupled or separated.



Combination Resistance-Capacitance
(RCS-500 shown)

IET LABS, INC. in the GenRad Tradition
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RS Series RESISTANCE - 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 - 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				2 W		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								
Physical	A		B		A	B	A	C	

CS Series CAPACITANCE- 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)	±(4%+3 pF)
Decades	6		7	7
Range	0 - 99.9999 µF		0 - 9.999999 µF	0 - 999.9999 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 - 1,000 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; 120 Hz for ≥10 µF, series model; 23°C.			
Physical	B			

LS Series INDUCTANCE- 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 - 999 mH	0 - 9.999 H	0 - 999.999 mH
Resolution	1 mH	1 mH	1 µH
Frequency Chart	See www.ietlabs.com/IET/LSbox.html		
Residual	≤0.17 Ω (≤0.056 Ω/dec)	≤0.23 Ω (≤0.056 Ω/dec)	≤0.34 Ω (≤0.056 Ω/dec)
Components	Toroidal Inductors		
Test Cond	1 kHz; 1 Vrms; series model; 23°C.		
Physical	B		

Physical A: 8.1 x 7.9 x 5.6 cm; 184 g (3.2 x 3.1 x 2.2 in; 6.5 oz.) B: 12 x 7.9 x 5.6 cm; 235 g(4.7 x 3.1 x 2.2 in; 8.3 oz) C: 18.8 x 11 x 6 cm, 410 g (7.4 x 4.3 x 2.4 in, 14 oz)
*Accuracy: After subtraction of residual impedance: traceable to SI. For 0.1% models accuracy is ±(0.2%+36 mΩ) for ≤ 9 Ω & ≥ 10 MΩ

OPTIONAL MODELS

In order to satisfy any requirements for decade substituters, construct a part number from the table below, or consult IET Labs.

RS - F - 4 - 0.1 - WC - ___

(Example: 0.1 Ω - 999.9 Ω, 1%, Resistance Substituter in a standard case)

Type of Substituter	Tolerance	No. of Decades	Impedance per Step for Lowest Decade	Packaging/Options	Rating
RS: Resistance CS: Capacitance LS: Inductance	A: 0.05% B: 0.1% C: 0.5% F: 1% G: 2% H: 4%	1 to 10	0.01 Ω to 100 MΩ 1 pF to 100 µF 1 µH to 10 H	-WC: Packaged in a std case -PM: Panel Mount w/o case -SC: Shielded case -FP Supplied with 2 A fuse residual increases by 0.06 Ω For any special requirements consult IET Labs	Blank: Std Rating 1 W & 2 W Available Consult IET Labs

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