

Resistances, capacitances, ... for intensive use

Decade boxes



IEC 1010.1 - 150 V / 50 V - Cat III - 2

**Modular units to very simply produce, for example,
a Wheatstone bridge.**

- Selection by rotary switch with gilt contacts
- Stop position avoiding accidental passage from 10 to 1
- Male earth terminal with safety blank
- Outputs on safety terminals \varnothing 4 mm
- Link leads IEC 1010-2-031

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 **CHAUVIN
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Decade resistance boxes

- 8 boxes with 11 position switch (0 = short circuit)
- 3 safety terminals Ø 4 mm

Box	Extend	I max.	Accuracy	Reference
$\Omega \times 0.1$	0.1 to 1 Ω	1 A	1% \pm 5 m Ω	P03.1975.21A
$\Omega \times 1$	1 to 10 Ω	750 mA	1% \pm 5 m Ω	P03.1975.22A
$\Omega \times 10$	10 to 100 Ω	250 mA	0.5 %	P03.1975.23A
$\Omega \times 100$	100 to 1000 Ω	75 mA	0.5 %	P03.1975.24A
$\Omega \times 1000$	1 to 10 k Ω	25 mA	0.5 %	P03.1975.25A
k $\Omega \times 10$	10 to 100 k Ω	7.5 mA	0.5 %	P03.1975.26A
k $\Omega \times 100$	100 to 1000 k Ω	2 mA	0.5 %	P03.1975.27A
M $\Omega \times 1$	1 to 10 M Ω	0.2 mA	0.5 %	P03.1975.28A

- Temperature coefficient: \pm 50 ppm for the ranges $> 1 \Omega$, \pm 100 ppm for the 1 Ω range and \pm 25 ppm for the 0.1 Ω range
- Residual: 15 m $\Omega \pm$ 5 m Ω suppressed from the first value
- Dimensions and weight: 72 x 72 x 90 mm - 220 g

Resistance box with 4 decades

Ref. P03.1975.14A

- Resistance box in desk unit
- 4 decades covering from 1 Ω to 10 k Ω
- 2 safety terminals Ø 4 mm and an earth terminal

Decade	Extend	I max.
1 st	1 Ω to 10 Ω	700 mA
2 nd	10 Ω to 100 Ω	200 mA
3 rd	100 Ω to 1 k Ω	70 mA
4 th	1 k Ω to 10 k Ω	20 mA

- Average accuracy: 1%
- Dimensions and weight: 290 x 78.5 x 85 mm - 1 kg

Resistance box of ratio K

Ref. P03.1975.31A

- A switch with 7 ratios
 - K = 1/1000 - 1/100 - 1/10 - 1 - 10 - 100 - 1000
 - Accuracy: \pm 0.2%
 - Temperature coefficient: \pm 10 ppm
- Three safety terminals Ø 4 mm

I max.	25 mA	75 mA	250 mA	750 mA
K	1	10	100	1000

- Dimensions and weight: 72 x 72 x 90 mm - 220 g


Capacitance decade boxes

- 3 boxes with 11 position switch (include. 0 position)
- Two safety terminals Ø 4 mm and an earth terminal

Box	Extend	Accuracy	Angle of loss	Reference
1 μ F x 10	1 to 10 μ F	2 %	$< 10^{-2}$	P03.1996-11A
0.1 μ F x 10	0.1 to 1 μ F	2 %	$< 10^{-2}$	P03.1996-12A
0.01 μ F x 10	0.01 to 0.1 μ F	2 %	$< 10^{-2}$	P03.1996-13A

- Dimensions and weight: 72 x 72 x 90 mm - 220 g

NB: Each box is supplied with a lead IEC 1010-2-031 except the resistance box with 4 decades.

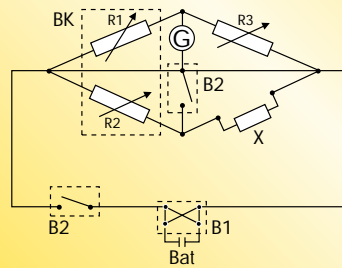
Electrical safety conforms to IEC 1010-1:
 - Double insulation  - Rated voltage 150 V*
 - Installation category III - Degree of pollution 2

* except capacitance boxes and resistance box with 4 decades: 50 V

Spare

Safety lead IEC 1010-2-031P01.2950.56
 Length 25 cm with 2 safety plugs Ø 4 mm with rear connection.

Application to the Wheatstone bridge



G = zero galvanometer

BK = box with ratio K

$$\text{with } K = \frac{R_2}{R_1}$$

R3 = resistance boxes

X = resistance to measure with $X = K \times R_3$

B1 = simple inverting box

B2 = double switch box

Bat = power supply

Zero galvanometer - Ref. P03.1976-11A

- Equipment with taut ribbon suspension.
- Dial with antiparallax mirror
 - Scale length: 20 mm
 - 10 divisions both sides of zero.
- 2 ranges with press button:
 - rest (x 1): \pm 1 mA i.e. 100 μ A/div
 - work (x 100): \pm 10 (A i.e. 1 μ A/div)
- Two safety terminals Ø 4 mm
 - I max: 1 mA
 - Internal resistance: 180 Ω (on both scales)
 - Accuracy: \pm 2.5% of the scale extent
 - Dimensions and weight: 72 x 72 x 63 mm - 220 g

Double switch box - Ref. P03.1975-29A

- Two switches with 3 positions: open - closed - fugitive (button)
- Four safety terminals Ø 4 mm
 - P max: 50 VA - I max: 5 A - U max: 250 V
 - Dimensions and weight: 72 x 72 x 90 mm - 220 g

Simple inverting box - Ref. P03.1975.30A

- One bipole inverter switch with 3 positions: open - closed - inverted
- Four safety terminals Ø 4 mm
 - P max: 50 VA - I max: 5 A - U max: 250 V
 - Dimensions and weight: 72 x 72 x 90 mm - 220 g

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