

# C.A 400 Series

## Testers for laboratory use



### **Ammeter, Voltmeter, Galvanometer with central zero, Wattmeter, Multimeter**

These rugged, easy-to-use analogue testers are ideal for both training and laboratory work:

- Single switch
- Safety sockets
- HRC fuses and electronic protection systems
- Double insulation

# Laboratory testers...

for teaching experience!

## AC/DC ammeter C.A 401

### Magneto-electric equipment with rectifier

- 11 DC ranges: 100  $\mu$ A to 10 A
- 100 mV DC calibre for shunts
- 7 AC ranges: 10 mA to 10 A

### Accuracy

- $\pm 2\%$  for DC
- $\pm 2.5\%$  for 10 A DC range
- $\pm 2.5\%$  for AC
- $\pm 3.5\%$  for 10 A AC range

### Frequency response

- Reference range: 45 Hz to 65 Hz
- Operating range: 45 Hz to 400 Hz

### Dial

- 2 black DC scales (0 to 100 and 0 to 30)
- 2 red AC scales (0 to 100 and 0 to 30)

### Fuses

- 1 A HRC and 10 A HRC



## AC/DC voltmeter C.A 402

### Magneto-electric equipment with rectifier

- 8 DC ranges: 100 mV to 1,000 V
- 6 AC ranges: 3 V to 1,000 V

### Internal resistance

- 20 k $\Omega$  / V DC and 6.32 k $\Omega$  / V AC

### Accuracy

- $\pm 1.5\%$  for DC
- $\pm 2.5\%$  for AC

### Frequency response

- Reference range: 45 to 65 Hz
- Operating range: 20 Hz to 400 Hz

### Dial

- 2 black scales (0 to 30 and 0 to 100)
- 1 red scale for the 3 V AC range



## Galvanometer with central zero C.A 403

### Magneto-electric equipment

- 2 ranges: 30  $\mu$ A DC and 3 mA AC
- 100 mV DC range for shunts

### Accuracy

- $\pm 1.5\%$

### Dial

- 2 black scales (0 to 30 and 0 to 100)

### Fuse

- 315 mA HRC



## Single-phase AC/DC wattmeter C.A 404

### Ferrodynamic equipment

- 4 voltage ranges: 60 V to 480 V
- 2 current ranges: 1 A and 5 A

### Accuracy

- $\pm 1\%$  for AC and  $\pm 2.5\%$  for DC

### Frequency response

- Reference range: 45 Hz to 65 Hz
- Operating range: 0 Hz to 500 Hz

### Dial

- 1 black scale (0 to 120)

### Fuse

- 1.25 A HRC



## Single and three-phase AC/DC wattmeter C.A 405

### Ferrodynamic equipment

- 6 DC or single-phase AC voltage ranges: 60 V to 480 V
- 4 balanced three-phase AC voltage ranges: 60 V $\sqrt{3}$  to 240 V $\sqrt{3}$
- 1 current range: 5 A

### Accuracy

- $\pm 1\%$  for single-phase AC
- $\pm 2\%$  for balanced three-phase AC
- $\pm 2.5\%$  for DC

### Frequency response

- Reference range: 45 to 65 Hz
- Operating range: 15 Hz to 500 Hz

### Dial

- 1 black scale (0 to 120)
- 1 red scale (0 to 90)

### Fuse

- 6.3 A HRC



## Multimeter C.A 406

### Magneto-electric equipment

- 8 DC voltage ranges: 100 mV to 1,000 V, accuracy:  $\pm 1.5\%$
- 6 AC voltage ranges: 3 V to 1,000 V, accuracy:  $\pm 2.5\%$
- 4 DC current ranges: 1 mA to 1 A, 1 x 50  $\mu$ A range (same switch position as the 100 mV DC range), accuracy:  $\pm 2\%$
- 5 AC current ranges: 0.3 mA to 3 A, 1 x 150  $\mu$ A AC range (same switch position as the 3 V AC range), accuracy:  $\pm 2.5\%$  and  $\pm 3\%$  for the 3 A AC range
- 3 resistance ranges: 0.5  $\Omega$  - 1 k $\Omega$  to 1 M $\Omega$ , accuracy:  $\pm 5\%$

### Internal resistance

- 20 k $\Omega$  / V DC and 6.32 k $\Omega$  / V AC

### Frequency response

- Reference range: 45 to 65 Hz
- Operating range: 20 Hz to 400 Hz

### Dial

- 2 black scales (0 to 30 and 0 to 100)
- 1 green expanded  $\Omega$  scale (0 to 1,000)
- 1 red A AC scale (0 to 30)
- 1 red 3 V AC scale (0 to 3)
- 1 red decibel scale (-10 dB to + 12 dB)

### Fuses

- 3.15 A HRC and 160 mA HRC



## Multimeter C.A 406 kit

For active training: a multimeter delivered as a kit for the professionals of tomorrow.

This build-it-yourself version of the C.A 406 is specially designed for students in technical and vocational education, as well as for fans of electronics as a leisure activity.

- Same specifications as the C.A 406 multimeter
- Easy-to-assemble and attractive
- Minimal tooling required: soldering iron, pliers and screwdriver
- Delivered with particularly detailed illustrated assembly instructions




# Laboratory testers... for teaching experience!

## Common specifications of the C.A 400 Series

### Dial

- Equipped with an anti-parallax mirror
- Scale length: 80 mm

### Casing

- Self-extinguishing polycarbonate
- Double insulation 
- IP40 protection (as per IEC 60529 standard)
- Safety terminals. Lead must be disconnected to open the casing
- Fold-way stand for use in tilted position
- Dimensions and weight:  
165 x 105 x 50 mm – 450 g

### Climatic conditions for operation

- Temperature: -10° C to +55° C
- Relative humidity: 20 to 90 % RH

### Electrical safety

- 600 V CAT III as per IEC/EN 61010-1 Edition 2

## To order

Except for the C.A 406, the testers in the C.A 400 Series are delivered without leads. The C.A 406 and C.A 406 kit multimeters are delivered with a set of test-probe leads and a 1.5 V battery (R6). All these testers are delivered with an operating manual.

### Testers

C.A 401 .....	P01170301	C.A 405 .....	P01170305
C.A 402 .....	P01170302	C.A 406 .....	P01170501
C.A 403 .....	P01170303	C.A 406 kit...	P01170701
C.A 404 .....	P01170304		



### Shockproof sheath

A recommended accessory for the whole C.A 400 Series. The test probes can be stowed on the side of the sheath.

Shockproof sheath ..... P01298016

### Spare fuses (set of 10)

1 A HRC 380 V 50 kA fuse .....	P03297507
10 A HRC 380 V 50 kA fuse .....	P03297510
315 mA HRC 380 V 50 kA fuse .....	P03297509
1.25 A HRC 380 V 50 kA fuse .....	P01297015
6.3 A HRC 380 V 100 kA fuse .....	P01297016
3.15 A HRC 380 V 50 kA fuse .....	P01100726
160 mA 380 V 50 kA fuse .....	P03297508

Fuse dimensions: 6.3 x 32 mm

## SAFETY ACCESSORIES

A wide range of accessories\* are available to extend the scope of your multimeter or give it new functions:

crocodile clips, wire grips, voltage probes, current clamps, temperature sensors, etc.



Documentation available on request.

\* compliant with the IEC 61010-031 standard

For information and ordering

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