



ELECTRICAL TEST TOOLS

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PHASE AND MOTOR ROTATION METERS

MODELS 6608, 6609 & 6610

Ideal for installing rotating machinery or motors, and for checking generator output phase direction

SPECIFICATIONS

MODELS	6608	6609	6610
ELECTRICAL			
Operating Voltage	40 to 850V _{AC} between phases	With leads connected: 40 to 600V _{AC} between phases	Static induction
Frequency Range	15 to 400Hz		45 to 65Hz
Power Supply	Self-powered via the measurement inputs	9V Alkaline battery (included)	One 9V Alkaline battery (included)
MECHANICAL			
Dimensions	5.1 x 2.7 x 1.3" (130 x 69 x 32mm)		5.0 x 2.8 x 1.8" (128 x 72 x 44mm)
Weight	4.5oz (130g)	6oz (170g)	13.4oz (380g) battery included
ENVIRONMENTAL			
Operating Temperature	32° to 104°F (0° to 40°C)		14° to 122°F (-10° to 50°C); max. 80% RH
Storage Temperature	-4° to 122°F (-20° to 50°C); < 80% RH		-4° to 140°F (-20° to 60°C); max. 80% RH
SAFETY			
Safety Ratings	IEC 61010-1, DIN VDE 0411; IEC 61557-7, DIN VDE 0413-7; Tightness: IP40		EN 61010-1, EN 61326-1
Electrical Safety	600V CAT III		1000V CAT III; 600V CAT IV



(Model 6610 Only)

FEATURES

- Voltage sensing detector clips – no metal contact points to promote greater safety (Model 6610)
- Indication of live phase presence or phase absence
- Designed for checking a wider range of 3-phase power source from 75V to 1000Vac (Model 6610)
- Determination of a motor's rotation direction (Model 6609)
- Automatic testing as soon as the instrument is connected
- Terminals and cables identified by color-coding to simplify connection (test leads are attached to Model 6610)
- Phase rotation indicators (Model 6608)
- Phase and motor rotation indicators (Models 6609 & 6610)
- Color-coded leads (red, black, blue) and alligator clips (black)
- Color-coded jacks for common U.S. phase colors
- Line supplied – no battery needed (Model 6608)
- Protected internally by high impedance circuit to limit the current to user safe limits

PRODUCT INCLUDES

6608 & 6609

Carrying case, three test leads (4ft), three alligator clips and a user manual.

6610

Soft carrying case, meter with attached test leads (black, red & blue) with alligator clips, 9V battery and user manual.



CATALOG NO.	DESCRIPTION
2121.10	Phase Rotation Meter Model 6608
2121.11	Phase & Motor Rotation Meter Model 6609
2121.12	Phase Rotation Meter Model 6610 (Non-contact)

ELECTRICAL TEST TOOLS

TESTER, SPLITTER AND DETECTOR



AC LINE SPLITTER MODEL ALS-1

For use with clamp-on meters & multimeters using current probes

FEATURES

- Avoids splitting lines - makes reading current easy
- Increases sensitivity of clamp-on current probes and clamp-on meters ten times in X10 mode
- Direct reading X1 mode
- Voltmeter input jacks
- Integral ground conductor
- Facilitates reading current draw of device plugged into it
- Facilitates reading current draw through extension cords
- 120V, 15A capacity



NON-CONTACT AC VOLTAGE DETECTOR MODEL NC-1



SPECIFICATIONS

MODEL	NC-1
Voltage Sensitivity	120 to 240Vac
Frequency	50/60Hz
Detection Distance	<5mm
Over Voltage	600V CAT III
Battery	2 x 1.5V AAA Alkaline (included)
Safety	For indoor use and in accordance with over voltage 600V CAT III, Pollution Degree 2

CATALOG NO.	DESCRIPTION
2121.05	AC Line Splitter Model ALS-1
2121.09	Non-Contact AC Voltage Detector Model NC-1

ELECTRICAL TEST TOOLS

NON-CONTACT HIGH VOLTAGE DETECTOR

MODEL 275HVD

Warns the operator of live conductors with the use of its detection sensor

SPECIFICATIONS

MODEL	275HVD
ELECTRICAL	
Detection Frequency	45 to 70Hz
Ranges	240V, 2kV, 6kV, 11kV, 22kV, 33kV, 132kV, 275kV
Detection	Selection range is detected at approximately 10" (25cm) from the voltage. Greater detection distances can be obtained at lower voltage positions
Power Source	Three 1.5V C cell batteries (included)
MECHANICAL	
Self Test	User selectable
Indicators	Bright red LED and audible buzzer
ENVIRONMENTAL	
Operating Temperature	5° to 130°F (-15° to 55°C)
Storage Temperature	-4° to 150°F (-20° to 65°C)
Humidity	0 to 93% RH @ 104°F (40°C)

FEATURES

- Non-contact high voltage detector
- Wide range of detection; 80V to 275kV; one instrument fits all applications
- Eight switch-selectable voltage sensitivity ranges
- Lightweight, minimizes sway at the end of long hot sticks
- Audible and visual (LED) indication of live voltage
- Self-test ensures that all system functions and indicators are working properly by energizing the complete system
- Designed for use with hot sticks incorporating a shotgun adapter

Note: Not designed to work on shielded cable or enclosure.

PRODUCT INCLUDES

Hard carrying case, 3 C cell batteries, shotgun adapter and user manual.



CATALOG NO.

DESCRIPTION

2131.12

Non-Contact High Voltage Detector Model 275HVD (240V to 275kV) Manual self-test

ELECTRICAL TEST TOOLS

VOLTAGE ABSENCE TESTERS (VATs)



FEATURES

- Full autotest
- Voltage detection, LED display:
 $12\text{VAC} \leq U \leq 1000\text{VAC}$
 $12\text{VDC} \leq U \leq 1400\text{VDC}$
- Frequency: DC, 16.67 to 800Hz
- Detection of stray voltages
- Unipolar phase detection (a single contact)
- Two-pole phase-sequence testing with 2-wire method = a third hand is not required
- Continuity test with audible and visual indication ($R < 100\Omega$)
- Extended continuity test with visual indication for $R < 2\text{k}\Omega$, $60\text{k}\Omega$ and $300\text{k}\Omega$ (Model C.A 771) $R < 0.5\Omega$ to $2.999\text{k}\Omega$ (Model C.A 773)
- RCD trip test
- Complies with EN 61243-3 & IEC 61010 1000V CAT IV
- Climatic conditions: -25.6° to 140°F (-30° to 60°C) (Class S) (Model C.A 771) and 5° to 113°F (-15° to 45°C) (Class N) (Model C.A 773)
- Battery life > 5000 x 10s (Model C.A 771) 2500 x 10s (Model C.A 773) measurements
- Removable lead and test probe
- Delivered complete and ready to use

MODEL C.A 771 & C.A 773

An essential tool for electricians to ensure no voltage is present before working on any electrical installation connected to the network

SPECIFICATIONS

MODELS	C.A 771	C.A 773
ELECTRICAL		
Display	LEDs	LEDs + backlit digital display
Voltage Absence Testing (VAT)	12Vac ≤ U ≤ 1000Vac; 12Vdc ≤ U ≤ 1400Vdc	
Voltage	12 to 1000Vac 12 to 1400Vdc	
Frequency	DC, 16.67 to 800Hz	
Impedance	> 500kΩ	
Max. Peak Current	3.5mA RMS	
Polarity Indication	Yes	
Redundant Hazardous Voltage Indication	The ELV (Extra-Low Voltage) LED indicates that the voltage is higher than the SELV (Safety Extra-Low Voltage) with the rate at which it flashes proportional to the voltage level	
Stray Voltage Detection	Yes (by low-impedance load switching)	
GFI Tripping	up to 30mA	
Phase/Neutral Identification	Above 50V (45 to 65Hz); Above 150V (16.67 to 45Hz)	
CONTINUITY & RESISTANCE		
Buzzer Trigger Threshold	100Ω typical (150Ω max.)	
Extended Continuity Test (Resistance)	2kΩ, 60kΩ, 300kΩ	0.5Ω to 2999kΩ
Test Current/ Open-circuit Voltage	≤ 1mA / ≤ 3.3V	
Phase Rotation	2-wire method with microprocessor	
Ph/Ph Voltage	50V ≤ U ≤ 1000Vac (45 to 400Hz)	
Buzzer	Intermittent beep for Voltage Detection Continuous beep for continuity	
Standards & Electrical Safety	IEC 61243-3, EN 61243-3, IEC 61010 1000V CAT IV	
Operating Temperatures	-25.6° to 140°F (-30° to 60°C) (Class S)	5° to 113°F (-15° to 45°C) (Class N)
Power Source	2 x AA batteries (included) or NiMH batteries	
Environment	Storage: -40° to 158°F (-40° to 70°C)	
Dimensions/Weight	7.72 x 3.54 x 1.85" (196 x 90 x 47.1mm) / 570g	

PRODUCT INCLUDES



2 x 1.5V LR06/AA batteries, velcro strap, set of removable test probes \varnothing 2mm with crystal safety cover, probe-tip protection, and user manual in 5 languages.

CATALOG NO.	DESCRIPTION
2121.14	Voltage Tester Model C.A 771
2121.15	Voltage Tester Model C.A 773

C.A 1725 & C.A 1727

Simple to use and offers numerous measurement capabilities with or without contact



SPECIFICATIONS

MODELS	C.A 1725 & C.A 1727
MEASUREMENTS	
Rotational Speed Function	Range: 6 to 100,000rpm Resolution: 0.0006 to 6rpm depending on range Accuracy: $\pm 1 \times 10^{-4}$ of Reading ± 6 counts
Linear Speed Function	Range: 0.1 to 10,000m/min or ft/min Resolution: 0.0006 to 6m/min depending on range Accuracy: $\pm 1 \times 10^{-4}$ of Reading ± 1 increment
Frequency Function	Range: 0.1 to 10,000Hz Resolution: 0.0004 to 0.4Hz depending on range Accuracy: $\pm 4 \times 10^{-5}$ of Reading ± 4 counts
Period Function	Range: 0.1 to 10,000ms Resolution: 0.0003 to 0.3ms depending on range Accuracy: $\pm 1 \times 10^{-4}$ of Reading ± 5 counts
Duty Cycle Function	Range: 10 to 10,000% Resolution: 0.1 to 1% depending on range Accuracy: $\pm 0.1\%$ of scale from 0.2 to 50Hz $\pm 0.2\%$ of scale from 50 to 125Hz / $\pm 1\%$ of scale otherwise
Count function	Range: 0 to 99,999 events; Accuracy: ± 1 event (Model C.A 1727)
GENERAL	
Power Source	9V battery Alkaline (included)
Battery life	250 x 5 min measurements with optical sensor; 600 x 5 min measurements with external sensor
Data Storage	4000 measurements (Model C.A 1727)
Dimensions	8.5 x 2.83 x 1.85" (216 x 72 x 47mm)
Weight	8.8oz (250g)
Weatherproofing	IP51
Environment	Storage: -4 to +158°F (-20 to +70°C) 95% RH; Operation: 32 to 131°F (0 to 55°C) 90% RH
SENSOR	
Optical	Reflective area: 10 to 90% of the target area. Measurement distance: 0.4 x 19.7" (1 to 50cm). The maximum distance is given for a reflective adhesive strip with a minimum area of 10cm ² . Measurement angle: $\pm 15^\circ$ in relation to the perpendicular of the reflective surface.
Mechanical	Mechanical adapter: End-fittings: elastomer with a durometer hardness of 80 Pressure on moving part: between 2 and 40N; maximum speed: 10,000rpm Service life: approx. 1000 hours at 3000rpm with a pressure of 20N
	Conical end-fitting accessory: Minimum diameter of measurement shaft: 0.2" (5mm)
	Cylindrical end-fitting accessory: Speed measurements on shafts with a diameter greater than 0.2" (5mm) or flat-ended shafts
	End-fitting accessory with wheel; Wheel diameter: 1.19" (30.183mm); Wheel development: 3.94" ± 0.004 " (10cm ± 0.1 mm)



FEATURES

- Measurements up to 100,000 RPM
- Multiple functions and automatic routines for data acquisition and storage: measurement of rotational speed, linear speed, count, frequency and period
- Extensive programming possibilities
- Digital display with analog bargraph
- USB interface for processing results on a PC (Model C.A 1727)
- Includes TachoGraph software on CD-ROM (Model C.A 1727) download memory only
- Stores up to 4000 measurements results (Model C.A 1727)

ACCESSORIES

MECHANICAL ACCESSORIES KIT

Catalog #1749.02

Mechanical adapter, calibrated wheel, conical end fitting and cylindrical end fitting



PRODUCT INCLUDES

Hard case, FRB F connector, 9V battery, set of fifteen reflective strips, quick start guide and user manual.
The Model C.A 1727 also includes a USB cable and TachoGraph software.

CATALOG NO.	DESCRIPTION
1748.10	Tachometer Model C.A 1725
1748.30	Tachometer Model C.A 1727
1749.02	Mechanical accessories kit