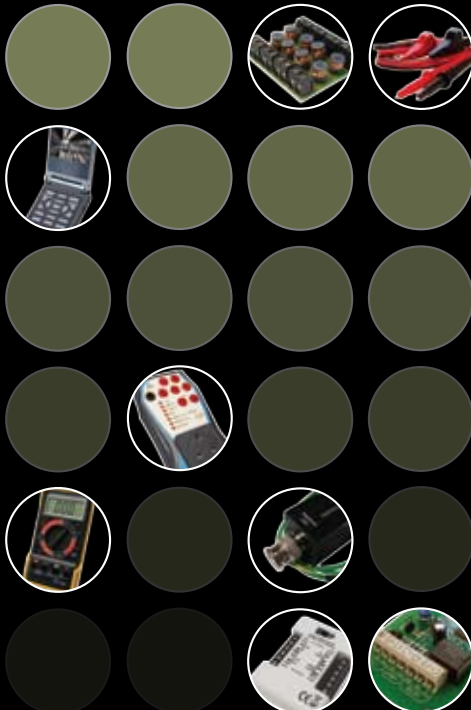


ACT METERS LTD

2010

PRODUCT CATALOGUE

alarm test equipment
false alarm management
training & troubleshooting
.....





ACT Meters Ltd
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ACT welcome

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The Company

Experience, creativity and providing a personal service are what our reputation is built on. We've been supplying alarm test equipment and alarm troubleshooting solutions to the security industry worldwide for more than 20 years. Our test equipment range is also popular with those who work outside of the security industry, such as automotive, healthcare and leisure.

The Solution

All technical enquiries are answered by the managing director David Grant. With more than 30 years experience in identifying various faults in troublesome systems, he has the knowledge and products to solve your problems.

The Products

ACT Meters Ltd is a mail order company which has more than 100 specialist products in its range. From multimeters, digital cable testers, battery testers to alarm suppressors and filters, we have the necessary products at hand when maintaining and troubleshooting alarm and other electrical systems. Our range is available to order through our secure website at www.actmeters.com or by calling 01744 886660.

new

The new GOLD-PLUS is a dual voltage intelligent battery tester designed for testing 6V and 12V SLA batteries from 1.2Ah to 100Ah. The easy to use GOLD-PLUS has a unique Ampere-hour (Ah) calibration control which enables the Ah reading to be adjusted to suit various battery technologies including Standby SLA, Cyclic GEL and Car FLOODED batteries.

The GOLD-PLUS is a far more versatile battery tester making it ideal for those who test a broad range of battery types in various applications such as alarm systems, UPS, golf, mobility and leisure.

For full details, turn to page 19.



Essential

tools every alarm installer should have...



ACT 2500 Manual Multimeter
Provides the security industry with a much needed 'budget' manual multimeter capable of performing all the tests necessary for alarm installation and troubleshooting. Page 8.



ACT CA60 mA Current Clamp
Enables mA current readings to be measured without disconnecting wires to comply with alarm inspectorate requirements. Page 10.



ACT GOLD-IBT
Essential to check Ah capacity available in the battery to prevent false alarms. Page 18.



ACT 452 Telephone Test Set
Ensure functions work correctly on a phone line with this essential tool. Page 17.



ACT Verifier
Saves time and money by audibly tracing cables, testing circuit devices and locating resistance faults. Page 12.



ACT Multi-Stripper+
A time-saving gadget for your toolbox, combining a screwdriver, volt tester and cable stripper and cutter in one, robust tool. Page 13.



Pricing Information

Take advantage of our great deals and price discounts

Always check the pricing information bar found at the end of the specification details for each product:

LIST PRICE	£75.00
WEB PRICE	£67.00
NSI/SSAIB PRICE	£63.00

List Price
Orders by phone or fax will be charged at normal, competitive list price. Some discount online items may not be shown in this catalogue.

Web Price
Order online at www.actmeters.com to obtain a 10% discount on selected products.

NSI and SSAIB Price
Members must visit www.actmeters.com and click on their member's logo at the top of the homepage. This will redirect them to their own exclusive website where they can receive a **15% discount** off selected products. This is a web-based discount offer which is only available by ordering online.

Please note, all products are subject to VAT at the standard rate. For more information on these discounts please visit www.actmeters.com or call us on 01744 886660.



ACT 3000
Autoranging Multimeter
CATIII 300V / CATII 600V

The ACT3000 autoranging multimeter has essential functions specifically designed for testing alarm circuits which some multimeters don't have. For example, it is able to measure induced AC voltage picked up by alarm cables, which if undetected, can cause random phantom false alarms. It's robust construction and ease of use makes it the right meter for alarm installers.

- Fully autoranging on resistance, voltage and current, enabling a wide range of measurements to be made without adjusting the switch
- Manual 'range' override button allows the user to fix selection on any of its 27 ranges as required
- Extra large 3200 count with bargraph LCD display gives a clear indication of reading as well as polarity, function, over range, data hold and low battery indication
- Includes an 'Auto-power-off' function to conserve batteries
- Supplied in a ABS case with flip stand, protective rubber holster, test leads and operating manual
- Optional calibration is available

VOLTAGE AC/DC	AC Range: 3.2V/32V/320V/740VAC DC Range: 320mV/3.2V/32V/1000V/1000VDC Resolution AC: 1mV/10mV/100mV/1V Resolution DC: 100µV/1mV/10mV/100mV Accuracy AC: ±1.2% rdg+5digs DC: ±0.5% rdg+5digs
RESISTANCE	Range: 320Ω/3.2KΩ/32KΩ/320KΩ/3.2MΩ/320MΩ Resolution: 0.1Ω/1Ω/10Ω/100Ω/1KΩ/10KΩ Accuracy: 0.8rdg+5digs
CURRENT AC/DC	Range: 320mA/3200mA/32mA/320mA/32A Resolution: 0.1mA/1mA/10mA/100mA/10mA Accuracy: AC: ±1.5% rdg+5digs DC: ±1.0% rdg+5digs Fuse Overload Protection: 0.5A/250V and 16A/250V
DIODE	Test: Forward/Reverse Resolution: 1mV Accuracy: ±1% rdg+5digs Test Current: 0.8mA Open Circuit Voltage: 3.2V Overload Protection: 450Vrms
DISPLAY	LCD: 3½ digit Max Count:3200 Auto-Power-Off:10min Sampling: Digital 2 per second, Analogue 12 per sec
OPERATION	Power: 2 x 1.5V AAA alkaline batteries Battery Life: Approx 800 hours Size: 160(x) x 62(w) x 36(d)mm
LIST PRICE	£75.00
WEB PRICE	£67.00
NSI/SSAIB	£63.00



click, click
[for DISCOUNTS]

Log on to www.actmeters.com for price discounts, special offers and the latest information on new products. Our complete product range is available to order online, 24/7.

- Receive a **10% discount** on selected products when ordered online
- New SALE section, offering discounts of up to **50%** on our 'archived' products that are no longer manufactured but are still in stock
- Exclusive offers such as general price cuts, FREE products and special 'Buy Two, Get Another Free' offers
- Latest information on new products
- Online troubleshooting guide
- Video demonstrations
- User manual database

Don't forget, NSI and SSAIB members receive a 15% discount from their own exclusive website. Visit www.actmeters.com and click on your member's logo to place your order.

Placing your order

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ACT Meters Ltd
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Closed bank holidays

NEW Delivery Service

The are two cost options for UK delivery on orders placed before 12 noon:

1. Standard 2 – 3 Working Day at £5.00 + VAT
2. Express Next Working Day before 5.00pm at £7.50 + VAT

Goods over the value of £100 will be delivered by Express Next Working Day **FREE OF CHARGE**. Export deliveries will be charged according to destination, size and weight.

How to Pay

All prices quoted in this catalogue exclude VAT. All major credit cards, cheques and cash payments are accepted. Credit accounts available on application.

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Digital Multimeters

Please note: Calibration, accessories and special promotions are not subject to discounts

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
NEW ACT 2500	Manual Multimeter CAT II	Yes	Yes	8
ACT 3000	Autoranging Multimeter CAT II	Yes	Yes	8
ACT 720	True RMS Datalogging Multimeter CAT IV	Yes	Yes	9

Current Clamp & Multimeter Accessories

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
ACT CA60	mA Current Clamp	n/a	n/a	10
ACT 415	Standard Test Leads	n/a	n/a	10
ACT 416	Quality Test Leads	n/a	n/a	10
ACT 418	Professional Test Leads	n/a	n/a	10
ACT 418F	Professional Fused Test Leads	n/a	n/a	10
ACT 410	Small Multimeter Carry Case	n/a	n/a	11
ACT 430N	Large Multimeter Carry Case	n/a	n/a	11
ACT 9268	ABS Carry Case	n/a	n/a	11

Cable Products

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
ACT VERIFIER	Circuit Cable Tester & Troubleshooter	Yes	Yes	12
ACT NETcat Pro	Digital Cable Tester	Yes	Yes	12
ACT NC-510	ACT NETcat Pro Accessory Kit	Yes	Yes	12
ACT 620K	Cable Tester	n/a	n/a	13
ACT 200GX	Inductive Amplifier Probe	n/a	n/a	13
ACT C.CASTER	Cable Caster	Yes	Yes	13
ACT Multi-Stripper+	Multipurpose Cabling Tool	Yes	Yes	13

Calibration Products

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
ACT CALMASTER	Multimeter Calibration Test Box	Yes	Yes	14
ACT EUROCHECK	Mains MultiTester Calibration Test Box	Yes	Yes	14
ACT GOLD CALKIT	GOLD-IBT In-House Calibration Kit	n/a	n/a	14
ACT RED CALKIT	RED-IBT In-House Calibration Kit	n/a	n/a	14
ACT RE-CAL SERVICE	Instrument Re-Calibration Service	n/a	n/a	15

Minor Works Certificates & Labels

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
ACT MET03	Minor Electrical Installation Works Certificates	n/a	n/a	15
ACT BLT	Battery Tested Labels	n/a	n/a	15
ACT LB1	In-House Calibration Labels	n/a	n/a	15
ACT LB2	Security Seals Labels	n/a	n/a	15
ACT LB3	Danger (Mixed Colour) Labels	n/a	n/a	15
ACT LB4	Danger High Voltage Labels	n/a	n/a	15
ACT 1050	Appliance Tested Labels	n/a	n/a	15
ACT 1051	Lead Test Labels	n/a	n/a	15

Specialist Tools

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
ACT 1345	Digital Sound Level Meter	Yes	Yes	16
ACT 1336	Digital Light Level Meter	Yes	Yes	16
ACT 455	Hands Free Headset	Yes	Yes	16
ACT 453	Plug-In BT Lead	n/a	n/a	16
ACT 454	Crock-Clip BT Lead	n/a	n/a	16
ACT 452	Telephone Test Set	n/a	n/a	17
ACT 5 MINUTE	Shunt Lock Installer Kit	Yes	Yes	17

Battery Testers & Monitors

Please note: Calibration, accessories and special promotions are not subject to discounts

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
ACT GOLD-IBT	Intelligent Battery Tester	Yes	Yes	18
NEW GOLD-PLUS	Dual Voltage Intelligent Battery Tester	Yes	Yes	19
ACT D4000	Universal Emergency Lighting Battery Tester	Yes	Yes	20
ACT 33	Multi-Tasking Battery Capacity Tester	Yes	Yes	21
ACT MEGAPULSE	Battery Rejuvenator	Yes	Yes	22
ACT 287	Battery Energy Checker LCD	Yes	Yes	22
ACT 512	Battery Charger	Yes	Yes	23
ACT 672	6-12V Nicad Battery Tester	Yes	Yes	23
ACT 1055	Battery Saver	Yes	Yes	23

PAT & Mains Testers & Part P Training

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
ACT SWIFT PAT	Portable Appliance Tester	Yes	Yes	24
ACT ALPHA PAT	Downloadable Portable Appliance Tester	Yes	Yes	24
ACT EasiPlus	Part P Mains Compliance Tester	Yes	Yes	25
PART P Training	One Day Part P Training Course	n/a	n/a	25

CCTV Test Equipment

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
ACT RAPPORT II PRO	Multifunction CCTV Tester with SD Card	Yes	Yes	26
ACT VIDICHECK	CCTV Test Kit	Yes	Yes	26
ACT CLEARVIEW	Monitor Ground Isolation Transformer	Yes	Yes	26
ACT CLEARBURST	Camera Mainspike Protection Device	Yes	Yes	27
ACT VIDEOSTIK	Video Sensing Device	Yes	Yes	27
ACT GSP01	Coaxial Surge Protector BNC M/F	Yes	Yes	27
ACT GSP02	Coaxial Surge Protector BNC F/F	Yes	Yes	27
ACT GSP03	Twisted Pair Protector RJ45/2 Pair	Yes	Yes	27
ACT GSP04	Surge Protection Device Term/Block	Yes	Yes	27
ACT GSP05	Surge Protection Device BNC/Block	Yes	Yes	27
ACT GSP06	Twisted Pair Protector RJ45/4 Pair	Yes	Yes	27

Suppressors, Filters, Relays & Modules

CODE	Product Description	NSI/SSAIB 15% Discount	Website 10% Discount	Page
ACT 1313	12VDC Spike Suppressor	Yes	Yes	28
ACT 1414	24VDC Spike Suppressor	Yes	Yes	28
ACT 2323	230VAC (EMI) Mainspike Suppressor	Yes	Yes	29
ACT 1166	Earth Line Choke	Yes	Yes	29
ACT 1376	PIR Stabiliser	Yes	Yes	29
ACT 230MSF	230VAC (EMI/RFI) Mains Suppression Filter	Yes	Yes	29
ACT CPS3	Control Panel Suppression Kit (EMI/RFI)	Yes	Yes	30
ACT 211	Control Panel Suppression Kit (EMI)	Yes	Yes	30
ACT 431	DSL Broadband Alarm Filter	Yes	Yes	31
ACT 431 EU-BOX	Filter Enclosure	Yes	Yes	31
ACT 2468	RFI Filter	Yes	Yes	32
ACT 3010	Ferrite Tubes	Yes	Yes	32
ACT 4425	ID Line Filter	Yes	Yes	32
ACT 4201	4-Zone Opto-Isolator	Yes	Yes	32
ACT 120L	Transistorised Relay	Yes	Yes	33
ACT 440	Tamper Splitter	Yes	Yes	33
ACT 0260	Timer Module	Yes	Yes	33
ACT DRM1	Delayed Release Module	Yes	Yes	33



ACT 2500
Manual Multimeter
CAT II

Offering fantastic value for money, our new ACT 2500 provides the security industry with a much needed 'budget' manual multimeter capable of performing all the tests necessary for alarm installation and troubleshooting.

- Provides two essential AC ranges, 2V and 20V for identifying troublesome induced AC voltage as well as 200V and 750V for direct testing of AC supplies
- Five DC voltage ranges
- Six selectable resistance ranges to allow testing and troubleshooting of any 'normally-closed' and 'end-of-line' alarm circuits
- Continuity 'beeper' for audible resistance testing up to 50Ω
- Selectable AC/DC current ranges for measuring accurate supply currents to PIRs, LIMs and external sounders etc
- Extremely useful battery tester is included for load testing 1.5V and 9V batteries
- 'Auto power off' function to conserve battery power
- 'Hold' button freezes the measurement on display to enable readings to be recorded easily
- Large rotary switch for precise selection of 24 ranges within 6 functions

VOLTAGE AC/DC	AC Range: 2V/20V/200/750VAC DC Range: 200mV/2V/20V/200V/1000V Resolution AC: 1mV/10mV/0.1V/1V Resolution DC: 0.1mV/1mV/10mV/0.1V/1V Accuracy: AC +/-1.0% rdg+5dgt. DC +/-1.2%rdg+5dgt
RESISTANCE	Range: 200Ω/2KΩ/20KΩ/200KΩ/2MΩ/20MΩ Resolution: 0.1Ω/1Ω/10Ω/0.1KΩ/1KΩ/10KΩ Accuracy: +/-1.2%rdg+3dgt. Audible Continuity: below 30Ω
CURRENT AC/DC	AC Range: 2mA/20mA/200mA/10A DC Range: 200uA/2mA/20mA/200mA/10A Resolution AC: 1uA/10uA/0.1uA/10mA Resolution DC: 0.1uA/1uA/10uA/0.1mA/10mA Max Accuracy: +/-3.0%rdg+7dgt. Note: Above 2A max duration 15secs allowing 15min cooling interval
DIODE	The approximate forward voltage drop will be displayed Open Circuit Voltage: About 2.8V Test Current: About 1mA
BATTERY TEST	Range: 1.5V battery load about 20mA. 9V battery load 5mA
DISPLAY	LCD: 3 1/2 digit Max Count: 1999 Auto-Power-Off:10min Sampling: About 3 times per second
OPERATION	Power: 1 x 9V Alkaline, Battery Life: Approx 500 hrs Size: 164x85x34mm Weight: Approx 230g
IN THE BOX	ACT 2500 Manual Digital Multimeter CW protective holster, test leads and operating manual
LIST PRICE	£29.00
WEB PRICE	£26.00
NSI/SSAIB WEB PRICE	£24.65
Optional New Meter Calibration	£30.00



ACT 3000
Autoranging
Multimeter CAT III

The ACT 3000 is a fully autoranging multimeter specifically designed for alarm industry. Its robust design and easy to use functions make the ACT3000 the perfect choice for alarm installers and service engineers alike. When you need a high quality, simple to operate multimeter for testing and troubleshooting alarm systems the industry standard ACT 3000 is the one to choose.

- Fully autoranging on resistance, voltage and current, enabling a wide range of measurements to be made without adjusting the switch
- Manual 'range' override button allows the user to fix selection on any of its 27 ranges as required
- Extra large 3200 count with bargraph LCD display gives a clear indication of reading as well as polarity, function, over range, data hold and low battery indication
- Ohms, diode/audible continuity and capacitance input overload protection to 500Vrms
- Includes an 'Auto-power-off' function to conserve battery life

VOLTAGE AC/DC	AC Range: 3.2V/32V/320V/740VAC DC Range: 320mV/3.2V/32V/320V/1000VDC Resolution AC: 1mV/10mV/100mV/1V Resolution DC: 100uV/1mV/10mV/100mV Accuracy: AC - 1.2% rdg+4dgt. DC - 0.5% rdg+2dgt
RESISTANCE	Range: 320Ω/3.2KΩ/32KΩ/320KΩ/3.2MΩ/30MΩ Resolution: 0.1Ω/1Ω/10Ω/100Ω/1KΩ/10KΩ Accuracy: 0.8rdg+2dgt
CURRENT AC/DC	Range: 320mA/3200uA/32mA/320mA/20A Resolution: 0.1mA/1mA/10mA/100mA/10mA Accuracy: AC - 1.5% rdg+5dgt. DC - 1.0% rdg+2dgt Fuse Overload Protection: 0.5A/250V and 16A/380V
DIODE	Test: Forward/Reverse Resolution: 1mV Accuracy: 1% rdg+2dgt Test Current: 0.8mA Open Circuit Voltage: 3.2V Overload Protection: 400Vrms
DISPLAY	LCD: 3 1/2 digit Max Count:3200 Auto-Power-Off:10min Sampling: Digital 2 per second, Analogue 12 per sec
OPERATION	Power: 2 x 1.5V AAA alkaline batteries Battery Life: Approx 800 hours Size: 180(l) x 82(w) x 38(d)mm
IN THE BOX	ACT 3000 Autoranging Multimeter supplied in ABS case with flip-stand, protective rubber holster, test leads and operating manual
LIST PRICE	£75.00
WEB PRICE	£67.00
NSI/SSAIB WEB PRICE	£63.00
Optional New Meter Calibration	£30.00



This offer applies to the ACT 3000 Autoranging Multimeter. For every two multimeters bought at list price, you'll receive another completely free of charge. This offer is available exclusively at www.actmeters.com only.

ACT 720
True RMS Datalogging
Multimeter CAT IV



The ACT720 is a high resolution data-logging digital multimeter which enables remote circuit testing and troubleshooting by one engineer. It can store up to 43,000 data points, for example when testing circuit operation of motion sensors, magnetic contacts, shock sensors and tampers, which can then be viewed on the backlit LCD display or downloaded to a PC using the provided Windows software for future reference. The ACT720 combines practical functions with high end specification with step-by-step operating manual which can be viewed online at www.actmeters.com

- Measures AC/DC voltage and current, resistance, frequency, capacitance, temperature, diode and continuity
- Independent datalogger, highly suited for high speed data collection or long time studies thanks to 10 selectable sample rates from 0.05 seconds (50ms) to 480 seconds (8 minutes) per sample
- Storage for up to 43,000 data points
- Troubleshoots alarm circuit cables & detection devices such as magnetic contacts, PIRs, dual detectors, shock sensors and tamper & PA switches
- Logs operation of normally closed and end-of-line resistance readings
- Displays logged readings directly on backlit LCD
- Verifies operation of good, intermittent & faulty devices
- Supplied RS-232 PC interface with Windows® software enables engineer to collect, save or create graphic displays of event data for future reference
- Allows engineer to quickly analyse, predict and prevent faults from occurring
- Manual and automatic ranging
- High resolution 5000 count backlit LCD display with bargraph
- Smart automatic power off disabled if signal is present at test leads

AC/DC RANGE & RESOLUTION	1000V AC/DC resistance range with 0.01mV resolution
RESISTANCE RANGE & RESOLUTION	50MΩ resistance range with 0.01Ω resolution
CAPACITANCE RANGE & RESOLUTION	9999uF capacitance range with 0.01nF resolution
FREQUENCY RANGE & RESOLUTION	125kHz frequency range with 0.001Hz resolution
DIODE RANGE	0.8mA
TEMPERATURE RANGE	-50 to 1000°C (-58 to 1832°F)
HIGH BASIC DC VOLTAGE ACCURACY	0.08%
DATALOG SAMPLE RATE	0.05 (0.2 for °C/F & Ω, 0.4 for HZ and 1 for C), 1, 20, 40, 60, 120, 240 & 480 seconds
POWER SUPPLY	9V battery
DIMENSIONS & WEIGHT	186 x 87 x 35.5mm and 430g (all including holster)
IN THE BOX	ACT 720 Datalogging Multimeter with built-in stand & belt clip, protective rubber holster with water resistant housing, CAT IV silicon test leads with attachable crock clips, Temperature probe, Windows data acquisition software, RS-232 cable interface with 9 pin serial connector, Serial to USB adapter and Instrument user manual and alarm troubleshooting manual
LIST PRICE	£220.00
WEB PRICE	£198.00
NSI/SSAIB WEB PRICE	£187.00
Optional New Meter Calibration	£30.00

ACT CA60 mA Current Clamp



The ACT CA60 enables low mA current readings to be measured without the need for disconnecting circuit wires. It is designed to work in narrow spaces and connects to any multimeter with a 200mV or 2V range.

By recording mA current readings for future reference, this allows detector and cable faults caused by abnormal currents to be identified easily. Logging of accurate resistance, voltage AND current readings is an **absolute requirement** by alarm inspectorates in order to identify potential faults on the alarm system.

- Enables mA current readings to be made without disconnecting circuit wires
- Measures AC/DC current from 10mA to 60Amps
- Features dual hall effect sensors
- Designed to work in narrow spaces and connects to any multimeter with a 200mV or 2V range
- Operates by opening and placing its jaws around the wire, ensuring a secure connection
- Linked to a digital multimeter for mA current measurement to be displayed
- Ideal for recording mA readings for commissioning and maintenance inspections

RANGE MEASUREMENT	10mA - 60A DC or AC
FREQUENCY	(AC) 50Hz to 20KHz
ACCURACY	DCA: ±1.5% ACA: ±2% (40Hz - 2KHz) ACA: ±4% (2K - 10KHz) ACA: ±6% (10K - 20KHz)
RESOLUTION	1mA
LIST PRICE	£85.00
WEB PRICE	£76.50
NSI/SSAIB WEB PRICE	£72.00

ACT TEST LEADS Quality Test Leads

ACT 415 Standard Test Leads

- PVC moulded leads, with 4mm right angle plugs at one end and insulated test probes at the other
- Overall length 1 meter, supplied one red, one black



ACT 416 Quality Test Leads

- PVC moulded leads, with 4mm shrouded right angle plugs at one end and fully insulated probes with attachable crock-clips at the other
- Overall length 1 metre, supplied one red, one black
- Shrouding can be cut back to suit meter socket recess



ACT 418 Professional Test Leads

- Leads made from highly flexible silicone cable terminating at one end with retractable 4mm plugs and fully insulated probes with attachable crock-clips at the other
- Overall length 1.2 meters, supplied one red, one black



ACT 418F Professional Fused Test Leads

- Leads made from highly flexible silicone cable terminating at one end with retractable 4mm plugs
- Leads come with fully insulated fused probes and attachable crock-clips
- Overall length 1.2 meters, supplied one red, one black



	PRICE
ACT 415 STANDARD TEST LEADS	£9.00
ACT 416 QUALITY TEST LEADS	£15.00
ACT 418 PROFESSIONAL TEST LEADS	£20.00
ACT 418F PROFESSIONAL FUSED LEADS	£30.00

ACT CARRY CASES Cases for Individual & Multiple Test Equipment

ACT 410 Small Multimeter Case

- Suitable for protecting small test equipment such as pocket multimeters and battery testers
- Padded fabric construction with wrist strap
- Size: 180(l) x 120(w) x 40(d)mm



ACT 430N Large Multimeter Case

- Suitable for protecting large test equipment such as multimeters and battery testers
- Padded fabric construction with wrist strap
- Inner transparent pocket for instructions or test leads
- Size: 185(l) x 240(w) x 60(d)mm



ACT 9268 ABS Case

- Constructed from ABS poly carbonate PP with anodised aluminium profiles, monomatic locks & heavy duty metal hinges
- 'Pluck and Pick' diced foam enables you to remove segments to suit the shape of products to be housed
- Size / Weight : 440(l) x 340(h) x 90(d)mm / 3k

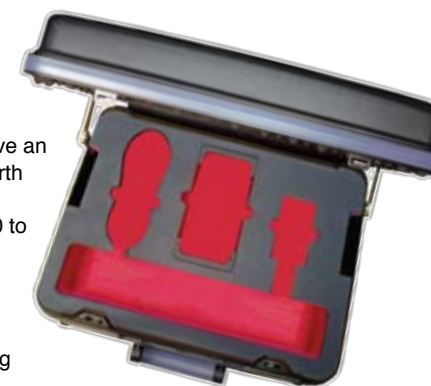


	PRICE
ACT 410 SMALL MULTIMETER CASE	£8.00
ACT 430N LARGE MULTIMETER CASE	£12.00
ACT 9268 ABS CASE	£99.00

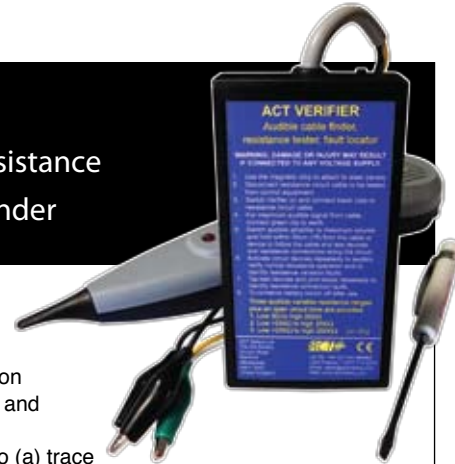


Select four **MIXED** products below and receive an ACT 9268 ABS case - worth £99.00 - free of charge. Please call 01744 886660 to order

- ACT 2500 Manual Multimeter
- ACT 3000 Autoranging Multimeter
- ACT 720 Datalogging Multimeter
- ACT Rapport II Series
- ACT CA60 mA Current Clamp
- ACT NETcat Pro Digital Cable Tester
- ACT 620K Cable Tracer
- ACT Verifier Circuit Cable Tester
- ACT 452 Telephone Test Set
- ACT GOLD-IBT Intelligent Battery Tester
- ACT GOLD-PLUS Intelligent Battery Tester
- ACT D4000 Universal Battery Tester
- ACT 1336 Digital Light Level Meter
- ACT 1345 Digital Sound Level Meter



ACT Verifier
Cable Tracer, Resistance Tester & Fault Finder



Verifier is a dual function 'Audible Cable Tracer' and 'Alarm Circuit Tester' exclusively designed to (a) trace hidden cables and (b) identify normal operation or faults on any alarm circuit devices such as Motion Sensors, Magnetic Contacts, Shock Sensors, Tamperers etc. It is designed to work on both 'normally-closed' and 'End-of-Line' alarm circuits, or any resistive device. An audible tone relative to the circuit resistance is passed throughout the cable and circuit devices under test. The audible tone is heard through the inductive amplifier probe supplied when placed within 1 metre from the circuit under test. The closer the probe is positioned to the cable or device the louder the tone becomes. Cable tracing, circuit testing and fault finding with Verifier can be performed in 4 simple steps:

1. Place probe near cable to audibly trace along or identify the cable under test
2. Place probe near the PIR or magnetic contact and activate repeatedly to audibly identify normal operation or intermittent faults
3. Place probe near cable joint box or tamper switch and tap test with a screwdriver to audibly identify good or bad resistance connections
4. Place probe near the circuit under to identify unwanted induced AC noise or RFI interference

There are 4 low to high sliding tone changes according to the circuit resistance:

1. 0 up to 250Ω
2. 250Ω up to 2.5kΩ
3. 2.5kΩ up to 250kΩ
4. 250kΩ up to 2.5MΩ

Verifier is an essential tool for cable tracing, circuit testing and troubleshooting, especially on first-fix and take-over installations.

VARIABLE RESISTANCE TONES	Low 0Ω to high 250Ω Low <250Ω to high 25kΩ Low <25kΩ to high 250kΩ
BATTERY TYPE	9V (PP3) Alkaline
ENCLOSURE	Flame retardant ABS
SIZE	110(l) x 63(w) x 20(d) mm
WEIGHT	150g
IN THE BOX	ACT Verifier ACT 200GX Inductive Amplifier Magnetic Test Screwdriver Carry case
LIST PRICE	£187.00
WEB PRICE	£158.00
NSI/SSAIB WEB PRICE	£149.00

ACT NETcat Pro
Digital Cable Tester



Perfect for those who deal with cable management and troubleshooting, the NETcat Pro is designed for fast, accurate checking of cables, wiring and network servicing. This touch-screen operated tool will conduct a broad range of tests from fault finding to TDR length measurement quickly and accurately.

- Tests a range of cables including shielded and unshielded twist pair, electrical, alarm and coaxial
- Touch screen display with contrast adjustment & backlight
- Measures cable length and distance (0 - 2000ft) to any short or break
- Detects open, reversed, crossed and split pairs
- Tests wiring continuity and proper pair allocation
- Generates four distinct, precision tones for tracing low-loss cables such as CAT 5
- Identifies active network devices (PC or Hub) on 10/100 Base-T networks and capabilities

NC-510 Accessory Kit (optional extra)

Allows the engineer to test 8 coax or twisted-pair jacks at a time from a central location.

- Kit contains 7 remote ID test modules
- Each module identifies each jack and provides full wire-map fault display in addition to the length of each pair
- No batteries required for the modules

POWER REQ	9 volt Alkaline battery (PP3)
DISPLAY LCD	Dot pixels: 128 x 128 dots
VIEWING AREA	60.0 x 58.4
BACKLIGHT	White LED
STORAGE TEMP	-20°C TO 70°C
INTERFACE CONNECTIONS	RJ45 shielded jacks, F-type threaded female coaxial connectors
LENGTH	2000 ft maximum
RESOLUTION	1 ft
ACCURACY OPEN/SHORT	+4% or 2 ft whichever is greater
DIMENSIONS	170(l) x 85(w) x 35(d)mm
WEIGHT	200g
LIST PRICE	£215.00
WEB PRICE	£193.00
NSI/SSAIB WEB PRICE	£182.00
NC-510 LIST PRICE	£65.00

ACT 620K
Cable Tracer Kit



- A combined audible cable tracer and continuity tester
- Probe will trace cables hidden behind plaster or under floorboards from up to 1 meter away, the closer the probe gets to the cable, the louder the tone becomes
- Probe can be used to trace individual cables or pairs
- Probe also enables EMI and RFI to be identified if another cable is fitted close by
- Probe resistive plastic carbon-fibre tip prevents accidental shorts when probing wires
- Includes audible continuity 'latch' feature which enables intermittent shorts or breaks to be found
- Supplied with carry case and full operating instructions

PROBE GAIN	Nominal 30 dB
PROBE INPUT IMPEDANCE	Nominal 100 M Ω
PROBE DIMENSIONS	231(l) x 55(w) x 28(d) mm
TONE GENERATOR OUTPUT POWER	3dBm (into 600Ω)
TONE GEN OUTPUT FREQUENCY	900/980Hz alternating
TONE GEN VOLTAGE PROTECTION	120VAC
TONE GEN LATCH SENSITIVITY	any occurrence > 100ms
TONE GEN DIMENSIONS	113(l) x 60(w) x 25(d) mm
LIST PRICE	£99.00
WEB PRICE	£89.00
NSI/SSAIB WEB PRICE	£84.00



ACT 200GX
Inductive Amplifier Probe

Used in conjunction with any tone generator, the ACT 200GX will trace hidden wires and cables.

- One-button operation
- Adjustable volume control
- LED for visual signal strength indication
- Recessed tabs for telephone test or handset connection
- Speaker bypass when using telephone test set
- Improved tipped design for better reception and lower risk of shorting terminals

SPEAKER SIZE	2"
POWER	9V Battery
LIST PRICE	£54.00

ACT Multi-Stripper+
Cabling Tool



- Combined screwdriver, volt tester, cable cutter & stripper
- Magnetic screwdriver with reversible slot & cross headed bit
- Volt tester alerts user with a glowing LED when live wires between 100 and 250 VAC are touched on connection
- Soft grip handle unlocks to reveal a number of stripping and cutting 'teeth' with corresponding cable sizes labelled
- Designed to strip numerous cable types including BT, alarm, mains (round & flat) and coaxial cables, between 0.5mm and 13mm, and cut up to 9mm

WIRE (SOLID & STRANDED WIRES)	0.5mm ² 1mm ² 1.5mm ² 2.5mm ² 4mm ² 6mm ²
CABLE	With optional length scale 50mm/2" For round cables Ø 8mm to 13mm
COAXIAL CABLE	For RG 6-SAT-TV-coax cables and RG 58/RG 59/ RG 62 (4.8mm to 7.5mm)
LIST PRICE	£19.00
WEB PRICE	£17.00
NSI/SSAIB WEB PRICE	£16.00



ACT
Cable Caster

ACT Cable Caster saves time and hassle when installing cables over rafters and suspended ceilings.

Simply tie the mono filament line to the dart, aim towards the cable supply and shoot. Once the cable is attached to the line it can be reeled in up & over any obstacles

- Supplied with three aerodynamic, glow-in-the-dark darts
- Trigger locks to prevent misfiring
- Includes 8 pound pull line

CAST DISTANCE	50 feet
PULL LINE WEIGHT	8 pounds
LIST PRICE	£65.00
WEB PRICE	£58.00
NSI/SSAIB WEB PRICE	£55.00

ACT CALMASTER
Calibration Test Box
For Multimeters



Fed up of sending multimeters away for re-calibration and paying someone else to perform the task?

Our ACT CALMASTER allows you to perform in-house testing and re-calibration of your own multimeters, simply and quickly, saving you time and money.

CALMASTER is used in conjunction with your own calibrated multimeter. It enables you to quickly compare the accuracy between the calibrated meter and the meter under test. If the accuracy is out, CALMASTER allows you to adjust and re-calibrate the meter under test to match the calibrated meter.

- Enables in-house testing and re-calibration of multimeters to meet BS ISO9000 requirements
- Works in conjunction with your own calibrated multimeter
- Quickly compares accuracy between calibrated meter and meter under test
- Allows you, if necessary, to adjust and re-calibrate the meter under test to match the calibrated meter
- Reduces calibration costs to one meter per year
- Minimises downtime and postage costs – no need to send any other meters away to be calibrated
- Tests AC/DC voltage, resistance and DC current
- Input sockets provided for calibrated meter and meter under test
- Controls provided for AC/DC and resistance
- Input sockets provided for DC current
- Supplied with mains lead for 115VAC or 230VAC and test leads for the master and meter under test
- Provided with easy to use operating instructions

RESISTANCE	00.0 Ω to 110K
AC VOLTS	0.0 - 230VAC
DC VOLTS	0.0 - 36VDC
DC CURRENT	1mA, 10mA, 1000mA and 1 Amp
FUSE PROTECTION AC INPUT	250VAC 1.6 Amp max
FUSE PROTECTION AC OUTPUT	250VAC 50mA max
DIMENSIONS	216(l) x 132(w) x 102(d)mm
WEIGHT	2.2kg
LIST PRICE	£390.00
WEB PRICE	£350.00
NSI/SSAIB WEB PRICE	£330.00

ACT EUROCHECK
Calibration Test Box
For Mains Multi-Testers



ACT Eurocheck will check the calibration of insulation, continuity, loop and RCD testers, both hand-held and multifunctional all-in-one units. Eurocheck can be used to test any make of mains multi-tester.

- Insulation calibration with test voltages up to 1000V
- Low Ω and continuity function calibration
- Continuity and insulation of measurement leads verification
- Fault loop and trip-lock impedance calibration
- Calibration of RCD trip-out time measurement including test current verification
- Line impedance, voltage and frequency calibration
- PE test terminal function verification
- Annual re-calibration costs reduced to Eurocheck only

POWER SUPPLY VOLTAGE	240VAC (207V /255V) 50 Hz/60Hz
PROTECTION CLASSIFICATION	Double Insulator
OVER VOLTAGE CATEGORY	CAT II 300V
POWER CONSUMPTION	5 VA
DIMENSIONS / WEIGHT	103(w) x 61(h) x 205(d) mm / 780g
WEIGHT	780g
LIST PRICE	£189.00
WEB PRICE	£170.00
NSI/SSAIB WEB PRICE	£160.00

ACT RED/GOLD CALKITS
For Intelligent
Battery Testers

Our in-house calibration kits for the RED and GOLD-IBT Intelligent Battery Testers are a simple, time saving and cost-effective way of re-calibrating meter. Kit consists of calibrated leads, clips, labels and instructions.

	PRICE
LIST PRICE	£25.00

ACT
Re-Calibration
Service



ACT Meters Ltd provides an instrument re-calibration and repair service for a wide range of measurement and test equipment. Re-calibration rates are extremely competitive and meter turnaround is one of the fastest on offer. Customers will receive a calibration certificate, detailing tests carried out and results. Those who purchase ACT products will also be placed on our re-calibration recall system for annual reminders. The service is traceable to National Standards with Certification with results conforming to BS EN5781. If repairs are necessary we will advise of additional cost or delays.

Post your meters to:
ACT Meters Ltd, The Old Smithy, Church Road, Rainford, Merseyside WA11 8HD

Ensure packages are marked 'Calibration Department' or 'Repairs Department' and place your contact details inside. Customers will be contacted by telephone to arrange payment. Prices below are for any make of test meter and exclude VAT and delivery.

ACT GOLD-IBT inc replacement leads & crock clips	£39.00
Digital multimeter inc replacement battery	£39.00
Digital sound or light level meter inc replacement battery	£39.00
Loop, insulation and RCD tester	£45.00
Portable Appliance Tester	£65.00
Mains Multi Tester inc replacement batteries	£75.00
ACT Eurocheck Calibration Test Box	£39.00
Rapport II and Rapport II Pro	£40.00
Carriage costs up to 5kg	£7.50

ACT Minor
Works Certificates
& Labels

ACT MET03 Minor Works Certificates

- In accordance with BS 7671
- Pack of 40 certificates
- Each certificate has two copies, the original given to the person ordering the work and a duplicate, retained by the contractor



ACT BTL Battery Tested Labels

- Insertions for temperature, volts, Ah, user initials and date
- 250 labels supplied per roll



ACT LB1 In-House Calibration Labels

- Insertions for serial number, user initials, calibration date and re-calibration due
- 250 labels supplied per roll



ACT LB2 Security Seal Labels

- 250 labels supplied per roll



ACT LB3 DANGER (Mixed Colours)

- 250 labels supplied per roll



ACT LB4 DANGER High Voltage

- 250 labels supplied per roll



ACT 1050 Appliance Test Labels

- 450 x passed labels
- 50 x failed labels



ACT 1051 Lead Test Labels

- 150 x passed cable wrap labels



	LIST PRICE
ACT MET03 Minor Electrical Installation Works Certificates	£20.00
ACT BLT Battery Tested Labels	£15.00
ACT LB1 In-House Calibration Labels	£15.00
ACT LB2 Security Seals	£20.00
ACT LB3 Danger Mixed Colours	£15.00
ACT LB4 Danger High Voltage	£15.00
ACT 1050 Appliance Test Labels (PAT)	£11.00
ACT 1051 Lead Test Labels (PAT)	£11.00

ACT 1345
Digital Sound
Level Meter



A digital sound level meter, ideal for measuring noise levels in offices, schools and factories, as well as testing sound levels of fire alarm systems. It is also suitable for checking the acoustics of studios, auditoriums and home stereo applications.

- Conforms to IEC651 type 2, ANSI S1.4 type 2 for sound level meters
- Designed to meet the measurement requirements of safety engineers, health, industrial safety officers and sound quality control in various environments
- Ranges from 30dB to 130dB at frequencies between 31.5Hz and 8KHz
- Display with 0.1dB steps on a 4-digits LCD
- With two equivalent weighted sound pressure levels, A & C
- Supplied with 9V battery, carry case and instructions

STANDARD APPLIED	IEC651 type 2, ANSI S1.4 type 2
FREQUENCY RANGE	31.5Hz - 8KHz
MEASURING LEVEL RANGE	30 - 130dB
FREQUENCY WEIGHTING	A/C
MICROPHONE	½ inch electret condenser microphone
CALIBRATION	Electrical calibration with the internal oscillator (1kHz sine wave)
DISPLAY	LCD 4 digits, resolution 0.1dB, display up data 0.5sec
TIME WEIGHTING	FAST (125mS), SLOW (1sec)
LEVEL RANGES	Lo: 30 - 100dB, Hi: 60 - 130dB
ACCURACY	±1.5dB (under reference conditions)
ALARM FUNCTION	'OVER' shown when input is out of range
MAX HOLD	Hold readings the maximum value, with decay <1dB/3minutes
AUTO POWER OFF	After 15 minutes of inactivity
POWER SUPPLY	1 x 9V
DIMENSIONS / WEIGHT	210(l) x 55(w) x 32(h) mm / 230g
LIST PRICE	£79.00
WEB PRICE	£71.00
NSI/SSAIB WEB PRICE	£64.00

ACT 1336
Digital Light
Level Meter

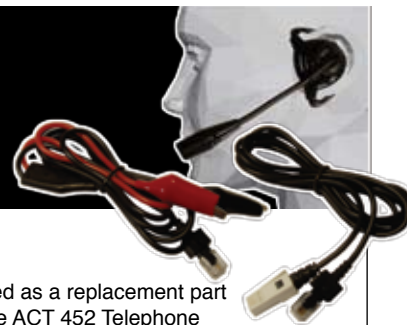


Precisely measures the intensity of light falling on to an area.

- Displays light level in terms of Foot Candles (Fc) or LUX over a wide range
- Measures from 0 to 50000 Lux/Fc in four ranges with resolution 0.1Lux/Fc
- 3½ digital LCD display with LUX, Fc, LOBAT, MAX, HOLD
- Max 'HOLD', 'DATA HOLD' and auto power off
- Easy to use, pocket sized and lightweight
- Supplied with operating instructions and carry case

DISPLAY	1999 Counts
POLARITY	Automatic, - negative polarity indication
OVER-RANGE	'1' mark indication
MEASUREMENT RANGE	1.5 times per second, nominal
POWER	1 x 12V, A23 battery
MEASURING RANGE	200, 2000, 20000, 50000 Lux/Fc (1fc = 10.76 Lux)
ACCURACY	± 10% rdg ± 10dgtS (> 10,000Lux/Fc) (20,000 lux range reading x 10, 50,000 lux range reading x 100)
REPEATABILITY	± 2%
METER DIMENSIONS / WEIGHT	188(h) x 64.5(w) x 24.5(d)mm / 160g
DETECTOR DIMENSIONS / WEIGHT	115(h) x 60(w) x 27(d)mm / 80g
LIST PRICE	£39.00
WEBSITE PRICE	£35.00
NSI/SSAIB WEB PRICE	£33.00

ACT
Telephone Test Set
Accessories



These items can be purchased as a replacement part or additional accessory for the ACT 452 Telephone Test Set.

	PRICE
ACT 453 PLUG-IN BT LEAD	£7.00
ACT 454 CROCK-CLIP BT LEAD	£7.50
ACT 455 HANDS FREE HEADSET	£9.50

ACT 452
Telephone
Test Set



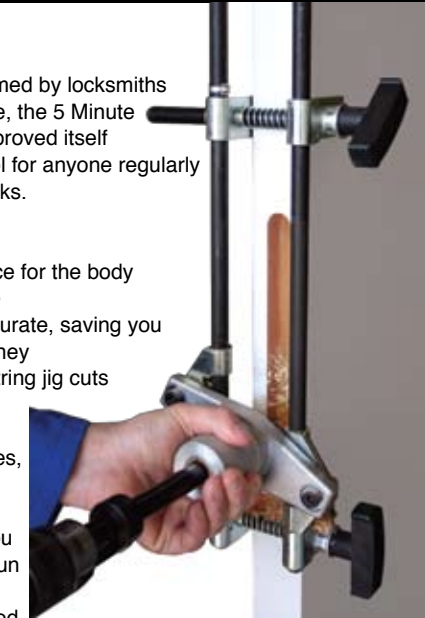
Popular and affordable, the ACT 452 is a trusted tool for telecom installation and maintenance - ideal for checking potential faults on telephone lines where an alarm communicator is fitted.

The ACT 452 operates safely in situations where telephone wiring may be carrying digital traffic, voltage feed to remote electronics or the hazardous voltages that result from fault conditions or misuse of the cable.

- Safe to use on analogue and digital lines
- 'TALK' and 'MONITOR' modes enable lines to be tested without disrupting signals
- Digital Service Protection (DSP) enables safe operation where telephone wiring may carry digital signals, hazardous voltages or fault connections
- 'POL' test button with green/red LEDs indicate correct or reverse A/B polarity connection
- Built-in over current protection against 230VAC and lightning surges
- Active polarity and fault LED indication
- Battery saving auto power on/off
- 3 position volume boost control with easy tone/pulse selection and finger tip microphone mute
- Rugged, drop proof design with belt hook
- Supplied with operating instructions and line cable with red/black crock-clip connectors

LONG LINE OPERATION	With a 48V feed > 5k Ω loop, minimum current < 10mA
DC RESISTANCE	Off-hook TALK mode: < 300 Ω On-hook idle: > 5M Ω (10uA @ 48VDC) Monitor: > 5M Ω (20uA @ 100VDC)
MONITOR IMPEDANCE	100k Ω @ 1kHz
DIAL	Pulse Dial: 100pps break 60% DTMF/Tone dial level: -3dm typical Flash/Timed Break Recall 100mS (switchable 600mS, 300mS)
MEMORY DIAL	32 digit last number redial PBX Pause: 2 seconds
ALKALINE BATTERY LED	One year normal use Low battery indication, 2 hours remaining continuous use
AUTOMATIC POWER SHUT OFF	Five minutes after disconnection
LIST PRICE	£89.00
WEB PRICE	£80.00
NSI/SSAIB WEB PRICE	£75.00

ACT 5 MINUTE
Shunt
Lock



Used and acclaimed by locksmiths and builders alike, the 5 Minute Shunt Lock has proved itself an invaluable tool for anyone regularly fitting mortice locks.

Features

- Cuts a mortice for the body and face-plate
- Fast and accurate, saving you time and money
- The self-centring jig cuts marking-up time
- Vertical guides, height and depth stop mean that you cannot overrun the cut area
- New, improved carbide-tipped mortice cutters increase the cutting speed by up to 50% and keep their sharpness for longer
- New Long Drill adapter enables the installer to convert both the self-centring and offset jigs in seconds without removal of the housing

What's included

- Mortice Jig
- NEW Long Drill Adapter
- NEW Standard Shaft (screw-on)
- CWB19 NEW 19mm Carbide Cutter
- CWB25 NEW 25mm Carbide Cutter
- 10mm x 850mm Long Wood Drill
- Carry case, spanner, safety gloves and goggles

LIST PRICE	£179.00
WEB PRICE	£161.00
NSI/SSAIB WEB PRICE	£152.00

ACT GOLD-IBT Intelligent Battery Tester

Award-winning in design, compact and affordable, the GOLD-IBT Intelligent Battery Tester provides a fast and precise solution for testing all 12V SLA batteries between 1.2Ah and 200Ah.

Although originally designed with the alarm installer in mind, engineers from various other sectors including automotive, leisure and healthcare trust the GOLD-IBT due to its accuracy, ease-of-use and portability.

Award-winning Features

- Tests 12V SLA batteries between 1.2Ah and 200Ah
- Simulates a full 20 hour battery discharge test in 6 seconds
- Automatically displays DC voltage, temperature and actual Ah capacity available
- By giving actual Ah capacity, rather than a percentage, this offers a far more meaningful result allowing the engineer to know exactly how long the battery will power the equipment
- Easy to use chart on the side of the tester, displaying the most common battery sizes and at what Ah capacity they should be recharged or replaced
- Free from complicated settings and simple to use
- Pocket sized and ideal for field work



Connect

Connect the GOLD-IBT clips to the battery terminals. It is essential to have a tight connection on clean battery terminals. Loose, high resistance connections will produce low, erratic Ah readings.

Result

Wait 6 seconds for the results to appear on the LCD display. Results will show the battery's DC voltage, temperature and most importantly, the Ah capacity. It will also display if the DC voltage is too high or low.

Compare

When the rated Ah capacity falls below 65%, it's time to either recharge or replace the battery. As soon as the Ah reading is displayed, look at the chart on the side of the GOLD-IBT. This chart shows the most common battery sizes and at what Ah capacity they should be recharged or replaced.



Granted UL listing status in 2006. The UL mark is the most widely recognised and accepted evidence of a product's compliance with US and Canadian safety requirements.

OPERATING VOLTAGE	12V DC
REVERSE POLARITY PROTECTION	Block diode
BATTERY TYPES	SLA (sealed lead acid) and car
BATTERY SIZES	1.2Ah to 200Ah
PULSE FREQUENCY TEST	20 hour (C20) discharge test to 10.50VDC
DISPLAY	Back-lit LCD
AMBIENT TEMPERATURE	0° - 100°C (32°F - 212°F)
VOLTAGE TOO HIGH	>15Volts DC -
VOLTAGE TOO LOW	<10Volts -
LOW CURRENT	<0.5Ah
NO AH READING	<0.2Ah
ACCURACY AMBIENT TEMPERATURE AND DC VOLTS	± 5%
ACCURACY AMPERE HOUR	± 10%
REPEAT TEST BEFORE OVERHEAT	Up to 10 times
OVERHEAT WARNING	40°C (105°F) ± 10%
SIZE	110(l) x 55(w) x 35(d) mm
GROSS WEIGHT	400g (inc. packaging)
IN THE BOX	ACT carry case, ACT 3532 essential battery connectors, certificate of conformity and quantity of ACT BTL battery tested labels
MANUFACTURERS WARRANTY	1 year
LIST PRICE	£159.00
WEB PRICE	£143.00
NSI/SSAIB WEB PRICE	£135.00

ACT GOLD-PLUS Intelligent Battery Tester

The new GOLD-PLUS is a dual voltage intelligent battery tester designed for testing 6V and 12V lead acid batteries from 1.2Ah to 100Ah. The easy to use GOLD-PLUS has a unique Ampere-hour (Ah) calibration control which enables the Ah reading to be adjusted to suit various battery technologies including standby SLA, cyclic GEL and car FLOODED batteries.

The innovative pulse analysis software employed by the GOLD-PLUS enables accurate Ah capacity results based on the battery age, temperature and state of charge. The GOLD-PLUS can be used for continuous repeat battery testing and an LED indicator warns against accidental reverse polarity connection.

- Tests 6V and 12V SLA, GEL and Flooded batteries between 1.2Ah and 100Ah
- Displays DC voltage and actual Ampere-hour (Ah) capacity available in seconds
- Unique 'Ah Calibration Control' feature allows the operator to test various types of lead acid battery technology including standby SLA, cyclic GEL and car FLOODED
- Ultra low heat generation allows continuous battery testing
- State-of-the-art circuit protection against accidental reverse polarity connection
- Ideal for those who need to test a broad range of batteries types in various applications such as alarm systems, UPS, golf, mobility and leisure

Operation

The large backlit LCD display gives clear indication of; (a) FLAT BATTERY, (b) BATTERY VOLTS and (c) Ah CAPACITY. The LCD also indicates 'VOLTS TOO HIGH' if the battery voltage exceeds the 15VDC max. Once connected to the battery under test, an initial greeting of 'ACT GOLD-PLUS' is followed by 'BATTERY VOLTS', then 'PRESS TO TEST', and finally 'Ah CAPACITY'. The Ah capacity result is displayed within a few seconds after pressing test. If required, the battery can be repeat tested by pressing test again. A table is provided on the reverse of the battery tester recommending when popular size batteries need to be recharged or replaced.

When testing cyclic GEL or car FLOODED batteries, the Ah calibration control can be adjusted to match the stated battery Ah capacity. The GOLD-PLUS is powered by the battery under test and comes with quality replaceable test leads Part No: ACT-GPTL. The robust GOLD-PLUS is supplied with a flip stand, soft carry case, easy to follow operating instructions and certificate of conformity.



OPERATING VOLTAGE	6V and 12V DC
REVERSE POLARITY PROTECTION	Red LED Indication
MAXIMUM INPUT VOLTAGE	>15VDC
BATTERY TYPES	Standby SLA, Cyclic GEL & Car Flooded
BATTERY SIZES	6v 1.2Ah - 12Ah & 12V 1.2Ah to 100Ah
AH CAPACITY TEST	Simulated 20 hour (C20) load test to 10.50VDC
AH CALIBRATION	Calibrated at 0 (zero) position to brand new fully charged premium brand SLA batteries rated at C20hour at 20C (68°F)
AH RESULT	Based on the battery under test age, temperature and state of charge
AH ADJUSTMENT	Provides ± Ah adjustment to brand new fully charged standby SLA, cyclic GEL and car FLOODED lead acid batteries
BATTERY TABLE	Recharge or replace battery when Ah capacity available falls below 65% of the battery's stated capacity
DISPLAY TYPE	Back-lit LCD
FLAT BATTERY WARNING	6V <5.30VDC, 12V <10.50VDC
REPEAT TEST OPERATION	Can perform repeat tests continuously
DCV ACCURACY	± 3% of displayed reading
AH ACCURACY	± 10% Fully charged premium brand C20hour rated SLA batteries at 20 - 25C (68F - 77F)
APPLIED PULSE LOAD	6A 1.2Ah - 7Ah, 18A 8Ah - 100Ah
AH CAL ADJUSTMENT	Aprox ± 25 dgts
CASE CONSTRUCTION	High impact ABS
MOISTURE PROTECTION	IP54
SIZE / WEIGHT	H210 x W110 x D41mm x 0.4kg
TEST LEADS	Part Number ACT-GPTL
IN THE BOX	GOLD-PLUS Intelligent Battery Tester, ACT-GPTL Test Leads, ACT430N Soft Carrycase, Operating Instructions and Certificate of Conformity
LIST PRICE	£195.00
WEB PRICE	£175.50
NSI/SSAIB WEB PRICE	£165.75

ACT D4000 Universal Emergency Lighting Battery Tester

The ACT D4000 is a clever, multi-tasking solution for testing a wide range of rechargeable battery types, voltages and capacities fitted to emergency lighting systems.

It will test ALL rechargeable batteries, including lead-acid, lithium-ion, nickel-cadmium and nickel metal hydride, with voltages between 2.4V and 12V, with capacities above 4Ah. It is an ideal tester for batteries used in:

- Stand-alone emergency lighting luminaires
- Security and fire alarm panels
- Battery powered tools, bicycles and toys etc

This model slots perfectly in between the GOLD-PLUS Intelligent Battery Tester and ACT 33 Battery Capacity Tester, offering further versatility but at a competitive price. It is a good all-rounder, enabling the engineer to test various battery types all from the one unit.

- Tests ALL rechargeable batteries between 2.4V and 12V with capacities above 4Ah
- Ideal for testing various battery types including lead-acid, lithium-ion, nickel-cadmium and nickel metal hydride
- Simulates a 1 hour and full battery duration test in minutes by discharging 1Ah from the battery (single test)
- Identifies flat batteries in seconds
- Fully automatic, simulated load tests with pass and fail LED indication
- Quick and easy to use with no switches or complicated settings
- Reverse polarity protection fuse

How it Works

After connecting to the battery terminals, the D4000 will first measure the battery voltage, then automatically select the correct resistance load to discharge 1Ah from the battery within 10 minutes. During the test, if the battery voltage drops below a critical monitored level, a red 'fail' LED will latch on. Provided the battery voltage remains healthy, a green 'pass' LED will show at the end of the test. An amber LED will flash continuously throughout the test period. The D4000 can be used to load test new and used rechargeable batteries with capacities above 4Ah.



INPUT SOCKETS	Red + Black - (4mm)
TEST LEADS	2m long, heavy duty leads with durable clips (part no. ACT-LMTL)
POWER SUPPLY	Self-powered by battery under test (step-up inverter)
LED INDICATION	red/fail, amber/testing, green/pass
ACCEPTABLE BATTERIES	2.4V to 12V (Nicad, NIMH & SLA batteries)
ACCEPTABLE CAPACITY	Greater than 4Ah
TEST TIMES	Between 7 to 10 minutes dependant on battery voltage
HEAT DISSIPATION	Between 23 to 115 watts, heatsink cooling with processor controlled fan
AMBIENT OPERATING TEMP	-5 to 40 deg C
MAX HEATSINK TEMP	(safety trip point) 100 deg C
INPUT PROTECTION	Reverse polarity and high voltage protection (18VDC max)
INPUT FUSE	10Amp quick blow blade type
ENCLOSURE	Flame retardant ABS
DIMENSIONS	167mm x 107mm x 6mm
LIST PRICE	£195.00
WEB PRICE	£175.50
NSI/SSAIB WEB PRICE	£165.75

ACT 33 Multi-Tasking Battery Capacity Tester (RS-232)

Highly sophisticated, the ACT 33 enables true-life-on-line-testing of any battery between 1.5V and 24V with capacities up to 1200Ah, including SLA, Alkaline, Ni-Cd, Li-Ion and Ni-MH, in seconds. It allows the engineer to simultaneously measure open-circuit voltage, internal resistance, current, terminal temperature and Ah capacity whilst the battery is still connected.

This makes the ACT 33 an ideal meter for battery maintenance inspections needed in applications such as security, UPS, telecommunication, healthcare and all other emergency back-up systems.

Other features include a datalogging function for monitoring battery condition over a set period in real time, and a load test analysis feature for recording how much current is passing through the battery under load conditions. A built-in comparator enables the engineer to store up to 99 sets of various battery types for testing and analysis.

The ACT 33 also allows engineers to download recorded results on to a PC using the supplied RS-232 interface software and print them using the optional ACT 300XP Thermal Printer, priced below.

- Ideal solution for when a complete system shut down is not an option
- Accurately tests a wide range of batteries without the need for disconnecting them from the system
- Tests any battery between 1.5V and 24V with capacities up to 1200Ah, including SLA, Alkaline, Ni-Cd, Li-Ion and Ni-MH
- Simultaneously measures open-circuit voltage, internal resistance, current, terminal temperature and Ah capacity whilst the battery is still connected and operating
- Datalogging function for measuring battery condition over time
- Load test analysis function for measuring current under load conditions
- Built-in comparator for storing up to 99 sets of battery types
- RS-232 interface software for downloading test results
- Four-terminal test probe allows simultaneous measurement of battery voltage and internal resistance
- Heavy duty crock-clip test lead for testing battery temperature
- Clamp adaptor for measuring battery load current

Optional ACT 300XP Thermal Printer

LIST PRICE	£450.00
WEB PRICE	£400.00
NSI/SSAIB WEB PRICE	£380.00



BATTERY TYPES	SLA, Alkaline, Ni-Cd, Li-Ion and Ni-MH
BATTERY CAPACITY	0 to 1200Ah
RESISTANCE	Range: 4mΩ, 40mΩ, 400mΩ, 4Ω, 40Ω, 400Ω Resolution: 1mΩ, 10mΩ, 100mΩ, 1mΩ, 10mΩ, 100mΩ Accuracy: ±(1%reading + 8digits) on all ranges
MEASUREMENT CONDITION	Current: 40mA, 4mA, 400mA, 40mA, 4mA (approx) Frequency: 1KHz±30Hz
DC VOLTAGE	Range: 6V, 60V Resolution: 1mV, 10mV Accuracy: ±(0.1%rdg ±6digits)
TEMPERATURE	Range: -20°C to 60°C (-4°F to 140°F) Resolution: 0.1°C / 0.1°F Accuracy: ±1°C / ±1.8°F
DC CURRENT	Range: 60A, 600A Resolution: 0.01A, 0.1A Accuracy: 60A: ±(2%rdg+20dgt), 600A: ±(2%rdg+2dgt)
OPEN CIRCUIT VOLT	5V max
DATA MEMORY	(Manual) 999 data sets (Continuous) 6000 data sets (only use PC download)
COMPARATOR	Setting: Resistance upper and lower limits and voltage threshold limit, Memory: 99 sets of values
MAX INPUT VOLTAGE	60VDC
POWER SUPPLY OR AC ADAPTOR	Six AA size 1.5V alkaline batteries
BATTERY LIFE	5.5 hours
DIMENSIONS/WEIGHT	198(l) x 94(w) x 49(h)mm/530g including batteries
IN THE BOX	Four-terminal test probe, crock-clip test lead, 3092CP DCA current clamp adaptor, zero adjustment board, instruction manual, batteries, AC adaptor, optical RS232 cable, CD PC software and carry case
LIST PRICE	£580.00
WEB PRICE	£520.00
NSI/SSAIB WEB	£490.00

ACT Megapulse Battery Rejuvenator



Keep batteries in peak condition or bring old batteries 'back to life' with MegaPulse, an essential tool for deep-cycle applications and for batteries that sit unused for long periods of time.

- Prevents premature battery death
- Extends battery life
- Keeps batteries in 'like new' condition
- Reduces the number of batteries discarded in a lifetime
- Restores 100% battery capacity
- Reduces recharge time

When used in conjunction with your battery charger, MegaPulse cleans the battery plates of lead sulphate build-up, a common cause of battery failure. By removing this build-up, it will return the battery to near-new condition and improve battery charge times, capacity and life.

MegaPulse is essential for deep-cycle applications such as in mobility scooters and golf carts, when batteries are drained each time. MegaPulse is also ideal for batteries that sit unused for long periods of time, such as in classic cars, pleasure boats, agricultural equipment and back-up systems. In these applications, batteries are required to be replaced frequently as a result of sulphation but when MegaPulse is used, this problem is drastically reduced.

- Used in conjunction with your battery charger
- Removes lead sulphate build-up from battery plates
- Cleaner plates improve charge time, capacity & life
- Essential for deep-cycle applications (mobility scooters & golf carts) where batteries are drained each time

SUITABLE BATTERY TYPES	Wet-Cell, Dry-Cell and Gel-Cell Lead-Acid
MODELS AVAILABLE	6 volt, 12 volt, 24 volt, 36 volt and 48 volt
LIST PRICE	£65.00
WEB PRICE	£58.50
NSI/SSAIB WEB PRICE	£55.00

ACT 287 Battery Energy Check LCD



This popular and affordable battery tester is an effective tool for checking the capacity of popular disposable and rechargeable batteries. From alkaline and photo lithium used in wireless PIRs to the common household battery used in remote controls or camera, the ACT 287 will ensure you fit the best performing battery for the job.

- An intelligent battery tester for popular non-rechargeable and rechargeable batteries
- Tests Alkaline/NiCd/NiMh batteries in AAA, AA, C, D, PP3 (9V Block) sizes
- Simply connect the battery to the appropriate test terminals to start the test
- Displays the available capacity in 10% steps on the easy to read LCD display
- Indicates the voltage level to within 2 decimal places
- 'CAM Technology' (Computer Aided Measurement) enables the test to be performed in only two seconds

BUTTON CELLS	1.5V Alkaline: LR43, LR44, LR45, LR48, LR54, LR55, LR57, LR58, LR60, LR66 1.44V Zinc Air: V675, V13, V312
PHOTO BATTERIES	3V Lithium: CR1025, CR1216, CR1220, CR1616, CR1620, CR2016, CR2025, CR2032, CR2320, CR2430, CR2450, CR2, CR123, CR-V3 6V Lithium: CR-P2, 2CR5
STANDARD ALKALINE	1.5V Cylindrical: AAA, AA, C, D 9V: 9V-E-Block (PP3) 12V: A23
RECHARGEABLE BATTERIES	1.2V NiCd/NiMh: AAA, AA, C, D
POWER SUPPLY	1 x 9V E battery (included)
DIMENSIONS / WEIGHT	195mm x 34mm x 100mm / 220g
LIST PRICE	£24.00
WEB PRICE	£21.00
NSI/SSAIB WEB PRICE	£20.00

ACT 512 12V SLA Battery Charger



The ACT 512 Battery Charger is an easy to use tool, capable of charging up to five SLA batteries of different sizes simultaneously.

- Five channel, two stage charging circuit
- Charge any combination of 12V SLA batteries
- Current limited output
- Short circuit and reverse polarity protected
- Linear design, better for batteries and the environment
- Robust metal case with individual charge LEDs and switches

Remember, new SLA batteries normally self-discharge at 3% per month in storage so it is vital to get them on charge as soon as possible.

INPUT	240VAC
VARIABLE DC OUTPUT	Bulk 14.4VDC, Float 13.5VDC 5 x channel outputs at 1 Amp
SIZE / WEIGHT	208(l) x 190(d) x 63(h)mm / 3kg
LIST PRICE	£169.00
WEB PRICE	£152.00
NSI/SSAIB WEB PRICE	£143.00

ACT 1055 12V SLA Battery Saver



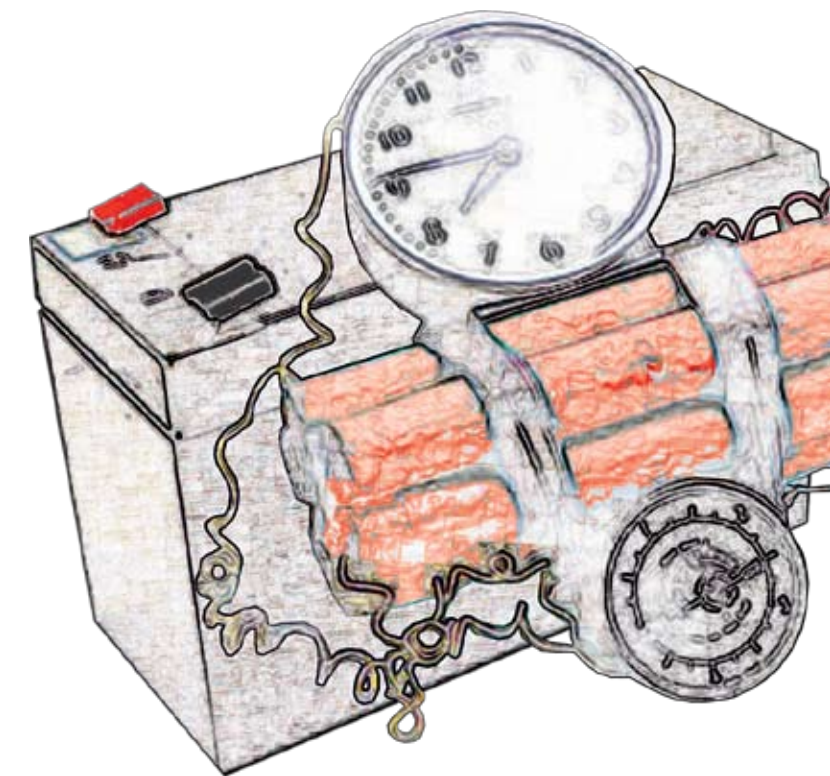
- Prevents batteries from deep discharging and aids quick charge recovery for remote installations where power cuts are commonplace
- Designed to disconnect the battery supply when it drops below 10.50V, giving earlier warnings of AC/DC charge problems or mains failure
- Ideal for alarm control panels and PSUs

MAX CHARGE / MAX DISCHARGE	3 Amps / 5Amps
BATTERY CONNECTED	11.88V ± 3% (relay on)
BATTERY DISCONNECTED	10.48V ± 3% (relay off)
QUIESCENT CURRENT	300 uA (when battery disconnected)
LIST PRICE	£24.00
WEB PRICE	£21.00
NSI/SSAIB WEB PRICE	£20.00

Is your battery a ticking time bomb?

Understanding how a battery works and why it may fail is a tricky business. Turn to our 'Battery Testing Guide' at the back of the catalogue to understand the different types of battery technology used and how you can get the best performance out of your batteries. Topics include:

- Understanding Battery Types and Technology
- Battery 'C' Rating - What Does This Mean?
- General Battery Performance Tips
- Like-for-Like Battery Performance Tips
- Mobility Feature: Power Struggle
- GOLD-IBT: Popular Question and Answers



ACT SWIFT

PAT
Tester



The ACT Swift PAT is the right choice for anyone wanting a straightforward digital PAT tester with easy to use functions. Simply select class, appliance and start to perform the test.

- Simple in operation, ideal for those who have little experience in PAT testing
- Suitable for maintenance staff, schools and colleges, care homes and leisure facilities
- Tests Class I and Class II equipment, general and information technology (IT) equipment and power supply cords
- Executes a fuse pre-test to assure proper connection of tested appliance
- Designed for testing 230V appliances but a special test adapter enables testing of 110V appliances
- Easy to view, LCD display
- 3 year warranty

CAPABLE TESTS	Earth Bond Earth Screen (IT) Insulation Resistance Sub Leakage Current IEC Polarity Cord Test
IN THE BOX	Soft carry case Earth bond clip Instruction manual Production verification data 110V test adaptor Calibration Certificate
RATED SUPPLY VOLTAGE	210 V ±264 V, 50 Hz or 60Hz
FUSE	T 1.6 A / 250 V, 5 x 22mm
DIMENSIONS	265(w) x 110(h) x 185(l) mm
WEIGHT	2.75kg
LIST PRICE	£445.00
WEB PRICE	£400.00
NSI/SSAIB WEB PRICE	£378.00

ACT Alpha

PAT
Tester



The ACT Alpha PAT is a high performance measuring instrument for electrical safety testing of portable appliances, IT equipment and IEC cords in accordance with IEC/EN and VDE standards.

- Excellent tool for periodic testing of portable appliances either as a field tester or as a bench instrument
- Tests all 110, 230 and 415V equipment and capable of storing up to 2,000 test results
- Designed for electrical safety testing of portable appliances, IT equipment and IEC cords in accordance with IEC/EN and VDE standards
- Performs most essential tests including earth bond, insulation, polarity and continuity
- 120 pre-programmed autotest sequences give information on allowed standard-set limits for all test parameters
- Alphanumeric keyboard for specific data entries
- Appliance identification and access to the test sequence via barcode scanner or RFID tags
- Tests, downloads and displays 2,000 results in under 5 minutes
- Fully conforms to all the testing standards issued by IEE, HSE, EAWR 1989, VDE, 701T1, 702T1, 0751T1 and IEC 60335-1, 60598-1, 60745 and 60950
- 3 year warranty

CAPABLE TESTS	Visual Earth Bond Insulation Earth Screen (IT) Sub Leakage Current Polarity (Cord) LN Continuity IT Continuity
IN THE BOX	Barcode scanner PC software PAT Link with RS 232 cable Earth bond/touch leakage clip Mains cable Carry bag Instruction manual Declaration of conformity Production verification data Calibration Certificate
DIMENSIONS	265(w) x 110(h) x 185(l) mm
WEIGHT	3.5kg
LIST PRICE	£645.00
WEB PRICE	£580.00
NSI/SSAIB PRICE	£548.00

ACT EasiPlus

Part P Mains
Compliance Tester



The ACT Easiplus is essential for anyone fitting domestic alarm systems where Part P compliance is a legal requirement. This easy to use mains multi-tester comes with a 3 year warranty and is 'future proof', in that the software can be upgraded to comply with future changes in wiring regulations.

- Fully conforms to BS 7671, BS EN 61557, 16th/17th Edition and Part P compliant
- Wide graphic display with backlight offers easy to read results and measurements
- Performs most essential tests including continuity, insulation, RCD, frequency, loop and polarity
- Triplock guaranteed not to trip RCDs when loop testing
- 3 year warranty

CAPABLE TESTS	Continuity test R1 & R2 Insulation test 100, 250, 500 & 1000V Insulation range up to 1000 MΩ Complete RCD auto test all 6 in 1 visit RCD ramp test indicates actual current trip Frequency test Loop ZE, ZS, 110, 230 & 415V PSC LE & LN Multi voltage monitor 'online' single/3 phase Phase rotation Polarity test
IN THE BOX	Instrument EasiPlus 13Amp mains plug Test cable Universal connection 3 x 1.5 m Power supply adapter + 6 NiMH AA accus Test tip (blue, green, black) Alligator clip, 3 pcs (blue, green, black) soft carrying neck belt soft carrying bag Instruction manual-short Instruction manual on CD Handbook "Measurements on electric installations" on CD Declaration of conformity Calibration Certificate
DIMENSIONS	230(w) x 103(h) x 115(l) mm
WEIGHT	1.3kg
LIST PRICE	£495.00
WEB PRICE	£445.00
NSI/SSAIB PRICE	£420.00

part p training

Learn to work safely and efficiently by following industry guidelines and regulations. As essential course for those working with any type of electrical apparatus in the security industry, in the wider workplace or in the home.

- Part P Regulations - 17th Edition Updates
- Understanding the dangers of electricity
- The implications of legislation
- BS 7671 and the Electricity at Work Act 1989
- Electric shock and first aid basics
- The electricity supply - single, and three phase
- Frequency and current
- Ring circuits
- Radial circuits
- Protective conductors
- Mains wiring terminology and application
- Circuit isolation - the procedures, isolation, fused connectors (spurs)
- Circuit breakers
- Practical wiring - installing a fused spur and connecting to the ring circuit
- Connection in junction boxes and control panels
- Inspection and testing criteria
- Documenting and reporting systems
- Cable size and new colour coding
- Health and safety

Who Should Attend?

All individuals installing electronic security devices or any other forms of electrical equipment in either commercial or domestic premises. There are no course prerequisites. All are welcome.

How You Will Benefit

You will gain the knowledge and competence to work safely and legally with electricity both in the workplace and in the home.

Please visit www.actmeters.com for course dates, venues and pricing or call 01744 886660.

ACT Rapport II Pro CCTV Tester

A highly sophisticated, yet compact CCTV tester which combines:

Colour CCTV Field Monitor The 3.5" colour TFT-LCD monitor supports both PAL and NTSC video signal format.

Video Signal Generator

The output colour bar – red, blue and green – screen allow technicians to inspect the video monitor or DVR. This too supports PAL and NTSC video signal formats.

Digital Multimeter Combines a voltmeter, ohmmeter and continuity tester.

CCTV PTZ Controller & Protocol Analyser Controls and programs a variety of speed and slow dome cameras. It has multi protocol and programmable baud rates. Analyser determines which protocol is used to control PTZ cameras from a PTZ controller or DVR. This will guide the installer to understand the protocol and find the fault device easily.

UTP Cable Tester Specified to quickly test UTP cables for continuity, miswiring and polarization. By using an attached remote terminator, the installer can easily test the cable before or after the cable is installed.

Digital Video Recorder Built-in MPEG4 digital video recorder which allows users to store video images on a SD card which can then be downloaded to a PC for future reference. Maximum 10 minutes/8 files.



PROTOCOLS	VCLTP, VC2500, PELCO-D, PELCO-P, KTL-ASC, KTL-DIGI, YUJIN-PD, WONWOO, WV-CS850, FASTRAK, SPD-2500, SCC-643, SUPREMACY, AD RS422, SJ-100, SJ-1000, DYC, DY-SP360D, DY-255RXC, ORX-1000, VICON, LG MULTI
BAUD RATES	2.4, 4.8, 9.6, 19.2 and 38.4
INPUT VOLTAGE	12V ± 10%, above 1.2A
SIGNAL SYSTEM	NTSC/PAL
VIDEO LEVEL	1 Vp-p, 140 IRE
TRANSMISSION SPEED	2400bps ~ 38400bps
TRANSMISSION MODE	RS-422, RS-485
MULTIMETER AC & DC VOLTAGE	MAX 400V
MULTIMETER RESISTANCE & CONTINUITY	MAX 40 MΩ, Beeper activated when resistance falls below 20Ω
IN THE BOX	Portable bag, Adjustable necklace, Power adaptor, BNC to BNC cable: 1.2m coaxial, Test leads, UTP test terminal
RAPPORT II PRO LIST PRICE	£440.00
RAPPORT II PRO WEB PRICE	£396.00
RAPPORT II PRO NSI/SSAIB WEB PRICE	£374.00

ACT VIDICHECK CCTV Test Kit

For a more cost effective solution for basic testing and troubleshooting CCTV installations, the ACT VIDICheck is your best option.



- Test kit comprises of a video signal generator and video strength meter
- Tests CCTV camera, monitor, cabling and connectors
- Video signal generator produces a 1vp-p, 75Ω signal which, when connected to the monitor, produces a black and white test card pattern
- Video strength meter has a 7 x LED coloured bargraph which, when connected to a camera, gives an indication of the strength received
- Allows the operator to adjust the camera to obtain an optimum 1vp-p signal
- Connecting both units to the coaxial cable will determine any loss of signal caused by a damaged cable or faulty connection

VIDEO SIGNAL GENERATOR OUTPUT	1vp-p into 75Ω
VIDEO SIGNAL GENERATOR SIZE	105 x 61 x 28 mm
VIDEO STRENGTH MONITOR SIZE	82 x 60 x 24 mm
CONNECTIONS	BNC
POWER	PP3 9V Alkaline
LIST PRICE	£149.00
WEB PRICE	£134.00
NSI/SSAIB WEB PRICE	£126.00

ACT CLEARSURGE Camera Mainspike Protection Device



- Protects CCTV cameras from mains spikes and lightning
- Micro size
- Fits between the coaxial cable and camera BNC connection

LIST PRICE	£38.00
WEB PRICE	£34.20
NSI/SSAIB WEB PRICE	£32.30

ACT VIDEOSTIK Video Sensing Device



ACT Videostik is an essential visual aid for verifying the presence of video signal when installing and troubleshooting CCTV equipment.

- No switches or buttons
- Powered only when a valid video signal is applied
- Housed in a sturdy aluminium tubular enclosure with a translucent nylon indicator tip that glows red whenever a video signal is detected

SENSITIVITY	<300mV
INPUT IMPEDANCE	75Ω
DIMENSIONS	180 x 20 mm
WEIGHT	50g
LIST PRICE	£29.00
WEB PRICE	£26.00
NSI/SSAIB WEB PRICE	£24.00

ACT CLEARVIEW 1 & 2 Monitor Ground Isolation Transformer



- Protects CCTV monitors from mains spikes and lightning
- Includes a 'ground isolation' transformer which eliminates picture 'hum'
- Micro size, fitted between the coaxial cable and monitor BNC connection
- Clearview 1 is designed for a single video line
- Clearview 2 is designed for a twin video line

ACT CLEARVIEW 1 LIST PRICE	£51.00
ACT CLEARVIEW 1 WEB PRICE	£49.50
ACT CLEARVIEW 1 NSI/SSAIB WEB PRICE	£43.35
ACT CLEARVIEW 2 LIST PRICE	£62.00
ACT CLEARVIEW 2 WEB PRICE	£55.80
ACT CLEARVIEW 2 NSI/SSAIB WEB PRICE	£52.70

ACT CCTV Surge Protection Devices

ACT GSPO1 Coaxial Surge Protector - BNC Male to BNC Female

- Two stage protection: under100ns – 90V, over100ns-12V

LIST PRICE	£12.50
WEB PRICE	£11.25
NSI/SSAIB WEB PRICE	£10.62



ACT GSPO2 Coaxial Surge Protector - F Connector (Male to Female)

- Two stage protection: under100ns – 90V, over100ns-12V

LIST PRICE	£12.50
WEB PRICE	£11.25
NSI/SSAIB WEB PRICE	£10.62



ACT GSPO3 Twisted Pair Surge Protector (RJ45 to RJ45 2 Pair)

- Two stage protection: under100ns – 90V, over100ns-12V
- RJ45 Jack to RJ45 Jack
- Two pair protection, Category 5, 5e and 6 UTP Cable – Pair 2 and Pair 4

LIST PRICE	£13.50
WEB PRICE	£12.15
NSI/SSAIB WEB PRICE	£11.47



ACT GSPO4 Surge Protection Device - Terminal Block Connector

- Ideal for data signal protection
- Two stage protection: under100ns – 90V, over100ns-12V
- Terminal Block to Terminal Block
- Use with GSP01/GSP02/GSP03 to protect 'Video+Data' speed dome cameras

LIST PRICE	£13.50
WEB PRICE	£12.15
NSI/SSAIB WEB PRICE	£11.47



ACT GSPO5 Video+Data Surge Protector - BNC & Terminal Block

- Surge protection device, BNC Female & Terminal Block to BNC Male & Terminal Block
- Perfect for speed dome cameras and control sign

LIST PRICE	£26.50
WEB PRICE	£23.85
NSI/SSAIB WEB PRICE	£22.52



ACT GSPO6 Twisted Pair Surge Protector - RJ45 to RJ45 (4 Pair)

- Two stage protection: under100ns – 90V, over100ns-12V
- RJ45 Jack to RJ45 Jack, four pair protection
- Protects Twisted Pair products

LIST PRICE	£29.50
WEB PRICE	£26.55
NSI/SSAIB WEB PRICE	£25.07



alarm troubleshooting

Protection, protection, protection is the key to reducing false alarms. Every alarm installer should fit the below products **AS STANDARD** to prevent RFI, EMI and static from causing problems on your system.

Protection Against EMI & Nearby Lightning

ACT 1313
12V Spike Suppressor
Protects DC supply against induced spikes and nearby lightning

ACT 2323
Mainspike Suppressor
Protects AC supply against induced spikes and nearby lightning

ACT 431
Broadband Filter
Protects the telephone line against induced spikes and nearby lightning

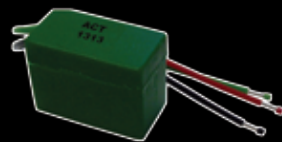
Protection Against RFI

ACT 1376
PIR Stabiliser
Protects PIR DC supply against RFI signals

ACT 3010
Ferrite Tubes
Protects keypad, LIM and shock sensor DC supply against RFI signals



ACT 1313 12VDC Spike Suppressor



To eliminate potential false alarms caused by induced AC, fit an ACT 1313 to the control panel and each remote PSU **as standard**.

Understanding Induced AC

Next to user error and defective batteries, the biggest cause of unexplained false alarms are caused by induced AC cable interference. Typically, alarm cables pick up induced AC at 1V per meter and substantially more where cables have been run too close to the mains. Induced AC noise causes the DC supply to alarm detectors and ancillary equipment to become unstable, causing unexplained false alarms and equipment malfunctions. Testing between DC voltage and earth with your multimeter switched to the 20VAC range will reveal how much induced AC exists from all alarm cables connected to the control panel. Fitting an ACT 1313 as standard will help eliminate this common problem.

- Prevents false alarms caused by induced AC and nearby lightning
- Clamps 12VDC against electrical spikes and connects between 12VDC supply and mains earth
- Essential for control panels and PSUs

QUANTITY	1+	25+	50+
LIST PRICE	£7.00	£6.00	£5.00
WEB PRICE	£6.30	£5.40	£4.50
NSI/SSAIB WEB PRICE	£5.95	£5.10	£4.25

ACT 1414 24VDC Spike Suppressor

Performs in the same way as the ACT 1313 spike suppressor (detailed above) but is designed for 24VDC fire alarm panels.

QUANTITY	1+	25+	50+
LIST PRICE	£8.00	£7.00	£6.00
WEB PRICE	£7.20	£6.30	£5.40
NSI/SSAIB WEB PRICE	£6.80	£5.95	£5.10

ACT 2323 230VAC (EMI) Mainspike Suppressor

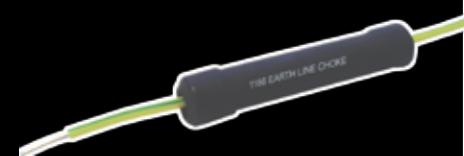


To prevent electrical mains interference (EMI) from fridges, central heating and fluorescent lights causing false alarms and equipment malfunctions, fit an ACT 2323 Mainspike Suppressor to the control panel and each remote PSU **as standard**. The parallel suppressor is designed to continuously clamp induced mains spikes up to 4,500Amps.

- Continuously protects all security and fire alarm panels, CCTV cameras, access control equipment and security lighting from false alarms and malfunctions
- Provides up to 4,500 Amps spike suppression across live, neutral and Earth
- Neat modular shape fits easily with simple parallel connections to LNE

QUANTITY	1+	25+	50+
LIST PRICE	£10.00	£9.00	£8.00
WEB PRICE	£9.00	£8.10	£7.20
NSI/SSAIB WEB PRICE	£8.50	£7.65	£6.80

ACT 1166 Earth Line Choke



As the DC negative (0V) is often connected to the metal case of the control panel, radio frequency interference (RFI) from other appliances connected to earth can cause unexplained false alarms and equipment malfunctions. To prevent this fit an ACT 1166 Earth Line Choke in series with the earth supply at the control panel.

- Prevents electrical RFI from affecting the 12VDC supply on metal alarm control panels
- Connect in line with mains earth inside the control panel

QUANTITY	1+	25+	50+
LIST PRICE	£9.00	£8.00	£7.00
WEB PRICE	£8.10	£7.20	£6.30
NSI/SSAIB WEB PRICE	£7.65	£6.80	£5.95

ACT 1376 PIR Stabiliser



Where unexplained false alarms are occurring on specific PIRs, radio frequency interference (RFI) from local radio stations, taxis and emergency vehicles is probably causing the problem. Changing the PIR does not work as the cable length and route can act as an aerial that will attract the RFI signals. The quick solution is to fit an ACT 1376 PIR stabiliser **as standard** inside (or behind) the troublesome detector which will stabilise the DC supply.

- Powers a PIR or dual detector for up to 250ms in the event of a DC spike
- Eliminates replacing non-defective motion sensors

QUANTITY	1+	25+	50+
LIST PRICE	£8.00	£7.00	£6.00
WEB PRICE	£7.20	£6.30	£5.40
NSI/SSAIB WEB PRICE	£6.80	£5.95	£5.10

ACT 230MSF 230VAC (EMI/RFI) Mains Suppression Filter



To prevent unexplained false alarms and equipment malfunctions caused by electrical mains interference (EMI), radio frequency interference (RFI) and nearby lightning, fit an ACT 230MSF Mains Suppression Filter **as standard** to your control panel and each PSU. The series filter is designed to clamp induced mains spikes and suppress radio frequency interference and will continuously clamp electrical spikes and lightning via the mains supply.

- Prevents false alarms & system malfunctions caused by EMI/RFI & nearby lightning via 230VAC mains supply
- Protects against interference on a continuous basis
- Will self sacrifice in the event of a direct lightning strike
- Terminal connectors are provided

QUANTITY	1+	25+	50+
LIST PRICE	£20.00	£19.00	£18.00
WEB PRICE	£18.00	£17.10	£16.20
NSI/SSAIB WEB PRICE	£17.00	£16.15	£15.30

ACT CPS3 Intruder EMI/RFI Control Panel Suppression Kit



This kit combination provides the best protection against electrical mains interference (EMI), radio frequency interference (RFI) and nearby lightning via the AC, DC supply and earth and is recommended for metal intruder control panels. Each filter will continuously clamp electrical spikes and lightning via the respective supply to help protect your equipment.

Complete Kit

- ACT 230MSF 230VAC (EMI/RFI) Mains Suppression Filter, designed to clamp induced mains spikes and suppress RFI
- ACT 1166 Earth Line Choke, preventing electrical RFI from affecting the 12VDC supply on metal alarm control panels
- ACT 1313 12VDC Spike Suppressor, designed to clamp 12VDC supply against electrical spikes such as induced AC and nearby lightning

QUANTITY	1+	25+	50+
LIST PRICE	£34.00	£33.00	£32.00
WEB PRICE	£30.60	£29.70	£28.80
NSI/SSAIB WEB PRICE	£28.90	£28.05	£27.20

ACT CPS3 Fire EMI/RFI Control Panel Suppression Kit



As described above but is recommended for metal fire control panels. This kit is supplied with an ACT 1414 24VDC Spike Suppressor instead of the ACT 1313 which only offers 12VDC spike suppression.

QUANTITY	1+	25+	50+
LIST PRICE	£35.00	£34.00	£33.00
WEB PRICE	£31.50	£30.60	£29.70
NSI/SSAIB WEB PRICE	£29.75	£28.90	£28.05

ACT 211 Intruder EMI Control Panel Suppression Kit



This kit combination provides the best protection against electrical mains interference (EMI) via the AC, DC supply and earth and is recommended for metal intruder alarm control panels. Each filter continuously clamp electrical spikes via the respective supply to help protect your equipment.

Complete Kit

- ACT 2323 230VAC (EMI) Mainspike Suppressor, providing up to 4,500 Amps spike suppression across live, neutral and earth
- ACT 1166 Earth Line Choke, preventing electrical RFI from affecting the 12VDC supply on metal alarm control panels
- ACT 1313 12VDC Spike Suppressor, designed to clamp 12VDC supply against electrical spikes such as induced AC and nearby lightning

QUANTITY	1+	25+	50+
LIST PRICE	£24.00	£23.00	£22.00
WEB PRICE	£21.60	£20.70	£19.80
NSI/SSAIB WEB PRICE	£20.40	£19.55	£18.70

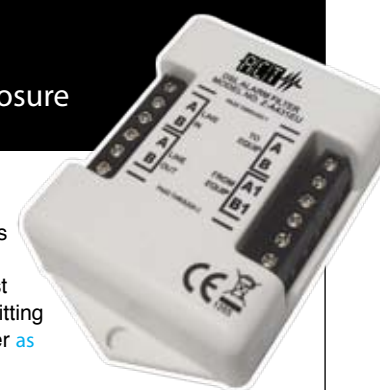
ACT 211 Fire EMI Control Panel Suppression Kit



As described above but is recommended for metal fire control panels. This kit is supplied with an ACT 1414 24VDC Spike Suppressor instead of the ACT 1313 which only offers 12VDC spike suppression.

QUANTITY	1+	25+	50+
LIST PRICE	£25.00	£24.00	£23.00
WEB PRICE	£22.50	£21.60	£20.70
NSI/SSAIB WEB PRICE	£21.25	£20.40	£19.55

ACT 431 DSL Broadband Alarm Filter & Filter Enclosure



Why not make your alarm systems 'BROADBAND-READY' and help protect your communicator against direct lightning via the BT line by fitting our ACT 431 DSL Broadband Filter as standard.

If your customer upgrades to broadband without telling you, your communicator may no longer work in the event of a break-in. This could compromise your customer's insurance if the analogue communicator fails to work by changing to a digital broadband line. The ACT 431 DSL filter has screw terminals for quick and easy installation within the control panel or optional ACT 431 EU-BOX.

If 'Line Seizure' is not necessary, the filter can be connected between any BT block terminal and the alarm communicator. If 'Line Seizure' is a requirement, the filter must be connected in accordance with instructions between the incoming Master BT Socket and the alarm communicator. When connecting filters and communicators, it is essential to test the BT line for voltage, polarity and fault conditions by using a telephone test set.

- Enables analogue alarm signals to operate securely on broadband and DSL lines
- Meets BSEN 50131 requirements
- Provides terminal connections to be wired directly to the master phone socket and alarm equipment
- Suitable for REDCARE, digital communicators and speech dialers

QUANTITY	1+	25+	50+
LIST PRICE	£23.00	£22.00	£21.00
WEB PRICE	£20.70	£19.80	£18.90
NSI/SSAIB WEB PRICE	£19.55	£18.70	£17.85

ACT 431 EU BOX Filter Enclosure

- Accommodates the ACT 431 DSL Broadband Alarm Filter outside the control equipment where necessary
- 85(w) x 110(h) x 35(d)mm



QUANTITY	1+	25+	50+
LIST PRICE	£4.25	£3.82	£3.60

alarm troubleshooting guide

There are many reasons why we get false alarms. For a clear picture, turn to our 'Alarm Troubleshooting Guide' at the back of the catalogue.

In this section we look at the most common causes of false alarms, why they occur and how you, the alarm installer, can identify and rectify the problem quickly. Also included is our popular 'Control Panel Checklist'. This is a step-by-step guide which helps you identify any type of fault, anywhere on a system. Other topics include:

- Common Causes of False Alarms
- 'Fit As Standard': Products to Reduce False Alarms
- 'Alarm Doctor' Q&A as featured in Security Installer magazine
- Identifying False Alarms By RFI
- Four Steps to Eliminate RFI
- Five Causes of PIR False Alarms
- Guide to Alarm Fault Finding
- 20 Tips to Prevent False Alarms
- Control Panel Checklist
- Pictorial Guide to Control Panel Checklist

Don't forget, you can always contact David Grant for free technical advice on alarm troubleshooting and on our products. Call him on 01744 886660, Monday to Thursday between 9am and 5pm.



ACT 2468

RFI Filter



To prevent RFI malfunctions affecting keypads or LIMs fit an ACT 2468 to the 12V and data wiring in the control panel.

- Powerful 1 Amp rated RFI filter designed for use on a DC troublesome alarm circuit cable
- Beneficial when data corruption occurs on keypads & LIMs
- Used to reduce RFI to alarm detectors, sounders and DC access control circuits
- Works on 12V and 24VDC, normally closed, end-of-line and fire alarm circuits
- Offers virtually no resistance to DC circuits but will reduce RFI signals between 2.5Hz and 800MHz, making them work quicker and more cost effective than re-wiring in screened cable
- Connects between alarm circuit wiring & control equipment
- Supplied as a 1 x 8 block which can be snapped apart to make 2 x 4 ways or 4 x 2 ways as required

QUANTITY	1+	25+	50+
LIST PRICE	£19.00	£17.00	£15.00
WEB PRICE	£17.10	£15.30	£13.50
NSI/SSAIB WEB PRICE	£16.15	£14.45	£12.75

ACT 3010

Ferrite Tubes



To prevent false alarms caused by RFI fit ACT 3010 tubes over the wires, inside the affected shock sensor.

- Reduces RFI signals from alarm circuit wiring
- Slides over DC, data and contact wires
- Fit as standard to both ends of alarm cabling
- Wideband EMI attenuation from 30 to 1000MHz
- Fits easily inside control panels, PIRs, vipers, keypads etc

QUANTITY	1+	25+	50+
LIST PRICE	£12.00	£11.00	£10.00
WEB PRICE	£10.80	£9.90	£9.00
NSI/SSAIB WEB PRICE	£10.20	£9.35	£8.50

ACT 4425

iD Line Filter



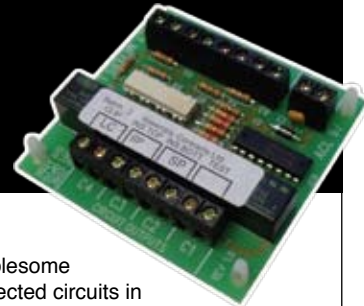
To prevent RFI malfunctions affecting iD biscuits fit an ACT 4425 to the iD line wiring in the control panel.

- Prevents RFI false alarms on iD alarm systems
- Designed to connect between the blue and yellow data wires and the input terminals of the alarm control panel
- Allows data to pass through normally but prevents RFI entering into the control panel
- Should be fitted to all iD systems, especially on take-overs where existing wiring has been used, to prevent potential false alarms from occurring

QUANTITY	1+	25+	50+
LIST PRICE	£10.00	£9.00	£8.00
WEB PRICE	£9.00	£8.10	£7.20
NSI/SSAIB WEB PRICE	£8.50	£7.65	£6.80

ACT 4201

4-Zone Opto-Isolator



To prevent false alarms on troublesome zones fit an ACT 4201 to the affected circuits in the control panel.

- Prevents false alarms by optical isolating troublesome zones from the control panel

OUTPUT CONNECTIONS TO PANEL	C1-C4 normally closed 'fail-safe' relay contacts (2A resistive/24VDC)
INPUT CIRCUIT CONNECTIONS	C1-C4 normally closed zone or tamper circuits
LOOP RESISTANCE	10K max
12VDC SUPPLY	120mA max
DIMENSIONS	75(l) x 65(w)mm
LIST PRICE	£29.00
WEB PRICE	£26.10
NSI/SSAIB WEB PRICE	£24.65

ACT 120L

Transistorised Relay



- Eliminates false alarms on a troublesome zone or tamper circuit
- Easy to install and can be used on positive or negative 'normally closed' circuits
- Includes an 'optional latch-link' enabling the module to be triggered by a momentary >5+ or 0V signal

OPERATING VOLTAGE	10-15VDC
INPUT / RELAY TERMINALS	+Trig, 12V+, 0V, -Trig / N/O, N/C, Common
MAX LOOP RESISTANCE	10KΩ
OUTPUT	Clean S/P relay changeover contacts at 1amp
RELAY RATING	3A at 24VDC
CURRENT ENERGISED	30mA max
TRIGGER VOLTAGE/CURRENT	Positive 5V+ and negative 0V/ 1mA max
DIMENSIONS	64(l) x 21(w)mm
LIST PRICE	£12.00
WEB PRICE	£10.80
NSI/SSAIB WEB PRICE	£10.20

ACT 440

Tamper Splitter

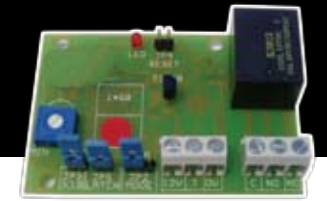


- Prevents false alarms caused by bad contacts or cable connections as well as false alarms caused by EMI/RFI
- Gives separate i.d. of tamper circuits where only a global tamper circuit is provided by the panel manufacturer
- Allows troublesome tamperers to be easily identified in the event of an alarm condition
- Four 'normally closed' tamper circuits with individual 'latching' LED indication

OPERATING VOLTAGE	10-15VDC
CURRENT ALARM & CURRENT QUIESCENT	70mA max & 5mA max
TAMPER LOOP RESISTANCE / CURRENT	8K max / 1.5mA at 12 VDC
RELAY CONTACTS	0.5A resistive/24VDC
DIMENSIONS	67(l) x 57(w)mm
LIST PRICE	£20.00
WEBSITE PRICE	£18.00
NSI/SSAIB WEB PRICE	£17.00

ACT 0260

Timer Module



A versatile adjustment timer suitable for security systems and many other applications where a reliable modular timer is required.

- Adjustable 0-60sec and 0-60min timer
- Will start when an input signal is applied
- Trigger can be either pulsed or continuous positive 5V+ or negative 0V signal
- Mode A enables the relay to operate after the time period. It will either latch on or activate momentarily for 2 or 3 seconds. If the input signal is continuous, the relay will stay latched, otherwise it will reset.
- Mode B enables the relay to operate for the time period. The relay will switch off after the time period, even if an input signal is still present. It will reset after the input signal is removed.

TIME INTERVAL RANGE 1	0 - 60 seconds Adjusted by potentiometer
TIME INTERVAL RANGE X 10	0 - 60 minutes Selected by jumper and adjusted by potentiometer
LIST PRICE	£28.00
WEB PRICE	£25.20
NSI/SSAIB WEB PRICE	£23.80

ACT DRM1

Delayed Release Module



- One minute adjustable (0-60sec)
- 12V and 24V DC operation with 3Amp COM/NO/NC
- Triggered by 0V or +5V DC supply
- Selectable 'latch' and 'non-latch' modes for flexibility
- Also available as 5 minute and 15 minute versions

INDICATOR	Red LED
DIMENSIONS	53(l) x 48(w)mm
LIST PRICE	£19.00
WEB PRICE	£17.10
NSI/SSAIB WEB PRICE	£16.15



Terms & Conditions

- 1.1 DEFINITIONS: In these terms and conditions of sale ("the Conditions of sale"); the Company means ACT Meters Ltd; the Customer means the person, firm or company, unincorporated association or public authority purchasing or agreeing to purchase the Goods from the company; the Goods means the goods and/or services agreed to be bought and sold under the Order; the Order means the Customer's order for the Goods which when accepted by the Company constitutes the contract.
- 1.2 **ALL DEALINGS (INCLUDING ORDERS) BETWEEN THE COMPANY AND THE CUSTOMER SHALL BE SUBJECT TO THESE CONDITIONS WHICH SHALL PREVAIL OVER ANY TERMS OR CONDITIONS WHENEVER OR STIPULATED BY THE CUSTOMER.**
- 2.1 GOODS: All descriptions, product specification and particulars relating to the Goods may be varied at any time by the Company and without notice.
- 2.2 The quantity quality description price and specification of the Goods shall be quoted in the order.
- 2.3 The Customer shall be responsible for ensuring the accuracy of the Order and that the Goods are suitable for the Customer's purpose.
- 3.1 PRICE AND PAYMENT: The price quoted in the Order is the price of the Goods. Prices quoted are exclusive of VAT, other taxes, packing, delivery and installation.
- 3.2 The Company without notice reserves the right to vary the prices quoted in the Order by upwards additions in accordance with charges in the Customer's specifications or due to increased market costs or exchange rates.
- 3.3 Orders placed shall only be accepted by the Company upon receipt of satisfactory references as to the credit worthiness.
- 3.4 Payment shall be due on the 20th of the month following the date of invoice. Interest on overdue invoices will be charged at the rate of 4% over Barclays Bank Plc current base lending rates. No extended credit will be allowed.
- 3.5 The Customer shall not be entitled to withhold or delay payment of any monies due to the Company on account of any claim counterclaim or right of set off or otherwise. Time of payment shall be of the essence of the contract.
- 4.1 DELIVERY AND RISK: The time for the delivery or collection of the Goods or the completion of any services relating to the Goods shall not be of the essence and shall not be breach of contract and the Company shall not be liable for any delay or the consequences arising therefrom.
- 4.2 Place of delivery shall be the Customer's place of business as specified on the Order. The Goods shall be at the Customer's risk from the time the Goods enter the Customer's premises or if the Customer specifies that he wishes to collect the Goods from the time of such collection.
- 4.3 All orders over the value of £100.00 net will be dispatched free of charge in mainland UK. Every endeavour will be made to dispatch Goods for delivery the next day (Monday to Friday) in which cases Orders must be placed by midday. The Company reserves the right to make an extra charge for delivery to a different address or for storage.
- 4.4 The Customer is required to inspect the Goods immediately upon delivery or upon completion of any services forming part of the Goods and to immediately notify the Company of any defects or complaints. **PARCELS DELIVERED DAMAGED SHOULD BE RETURNED IMMEDIATELY TO THE COMPANY.**
- 4.5 Export deliveries shall be charged at extra costs to include freight and insurance charges. Price available on application. Payments for deliveries to Customers abroad should be made to the Company by irrevocable letter or credit, banker's draft or through a UK confirming house.
- 5.1 ACCEPTANCE: No claims for damage, delivery, misdelivery, loss or storage of Goods will be considered unless notified in writing to the Company within 7 days of the date of the invoice, quoting the invoice number and giving full details. Packing etc should be retained.
- 5.2 Admitted shortages will be replaced at the previously quoted price on the Order.
- 6.1 PROPERTY IN GOODS: Notwithstanding the passing of risk in 4.2 the Goods shall remain the sole and absolute property of the Company and ownership shall not pass to the Customer until payment is received by the Company for all monies due from the Customer to the Company on any account.
- 6.2 Until ownership passes the Customer shall keep the Goods separate and distinct from any other property and insured, protected stored, marked and distinct so as to remain clearly identifiable as the Company's.
- 6.3 Until payment is made in full of all monies due from the Customer to the Company, the Customer is in possession of the Goods solely as a fiduciary bailee or the Company.
- 6.4 Until property in the Goods passes to the Customer the Company shall be entitled to request that the Customer delivers up the Goods failing which the Company shall be entitled to enter any premises where they are stored or affixed and may repossess or remove the same from such premises and the Customer shall keep the Company fully indemnified against any liability arising from the exercise of that right herein contained.
- 6.5 Until property in the Goods passes to the Customer the Customer shall not cause or suffer the Goods to be worked upon or mixed with or incorporated with any other goods or things belonging to the Customer or any third party.
- 7.1 RETURNS: No returns except "Under Guarantee" replacements are accepted without our consent. Goods returned "not wanted" or "incorrectly ordered" will only be accepted in their original packing and will be subject to a 12.5% handling charge. In all cases the invoice/delivery note number must be quoted. Goods out of warranty cannot be returned for credit.
- 7.2 Cancelled orders can only be accepted after prior negotiation. A cancellation fee may be charged by the Company.
- 8.1 WARRANTY: All Goods supplied by the Company are warranted free of defects caused by faulty workmanship for a period of one year from the date of invoice provided that this warranty shall not apply unless:-
- 8.1.1 the Customer promptly notifies the Company of breach of warranty and
- 8.1.2 the defective Goods are returned to the Company carriage paid and
- 8.1.3 examination by the Company confirms that there is a defect in the Goods and such a defect has not arisen by misuse, neglect, method of storage, faulty installation, handling testing, repair or by alteration or accident
- 8.2 A valid claim must be brought within the one year warranty period and shall be limited to replacing or repairing the Goods or the issuing of a credit note as the Company shall in its sole discretion determine.
- 8.3 Save as provided herein and save where the Goods are sold to a person dealing as a consumer and save to the extent provided by law all conditions, warranties or representations express or implied statutory or otherwise in relation to the Goods are hereby excluded.
- 8.4 No warranty is given and no liability is accepted where the Goods are supplied in accordance with the Customer's own specifications and designs and the Customer shall indemnify the Company for any breach of intellectual property of rights.
- 8.5 No warranty is given and no liability is accepted where the Company provides technical advice or consultancy services in connection with the Customer's Order or Goods supplied.
- 8.6 So far as the law permits the Company shall not be liable for any loss or damage arising from the Order or, Goods or services supplied with the Goods, or the actions of the Company including without limitation to the foregoing loss of profits, economic loss, loss of goodwill and costs or removal and reinstallation.
- 9.1 TERMINATION: If the Customer fails to comply with the terms of payment or any of these Conditions or if the Customer ceases to trade or any event or action is taken with regard to bankruptcy or insolvency or liquidation or administration then the Company reserves the right to terminate the Order, stop Goods in transit and discontinue further delivery of Goods and reclaim from the Customer any extra costs so incurred.
- 10.1 GENERAL: The restrictions contained in the Conditions are considered reasonable but if any condition is subsequently found to be unreasonable or unenforceable it shall be deleted from these Conditions and the remaining Conditions shall remain effective.
- 10.2 Any failure to enforce its rights here under shall not be taken as a waiver of those rights by the Company.
- 10.3 These Conditions shall be governed and construed in accordance with English Law and the parties shall submit to the exclusive jurisdiction of the English Courts.
- 11.1 TELEPHONE ORDERS: If it is your policy to send written confirmation of telephone orders, please ensure it is clearly marked "confirmation". Failure to do so may result in duplicated Orders. A duplicated order returned "not required" will be subjected to 7.1 in these Conditions.

Weee Directive

ACT badged products that are broken, faulty or have come to the end of their serviceable life can be returned to ACT Meters for disposal under the WEEE directive. Test meters sent for re-calibration that are found to be faulty or beyond economical repair will be disposed of under the WEEE directive on written authority from the customer.

RoHs Directive

Although every endeavour will be made to use RoHs components and manufacturing procedures, test and measuring equipment falls under category 9 (monitoring and control equipment) which is outside the RoHs directive.

alarm

Troubleshooting Guide



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Common Cause of False Alarms **p4**

User Error
Checking the AC/DC Power Supply
RFI, EMI and ESD
Fit As Standard: Reducing false alarm

Alarm Doctor Q&A **p5**

As featured at www.info4security.com

Tips To Reduce False Alarms **p6**

Identifying False Alarms by RFI
Four Steps to Eliminate RFI
Five Causes of PIR False Alarms
Guide to Alarm Fault Finding
20 Tips to Prevent False Alarms

Tips To Reduce False Alarms **p7**

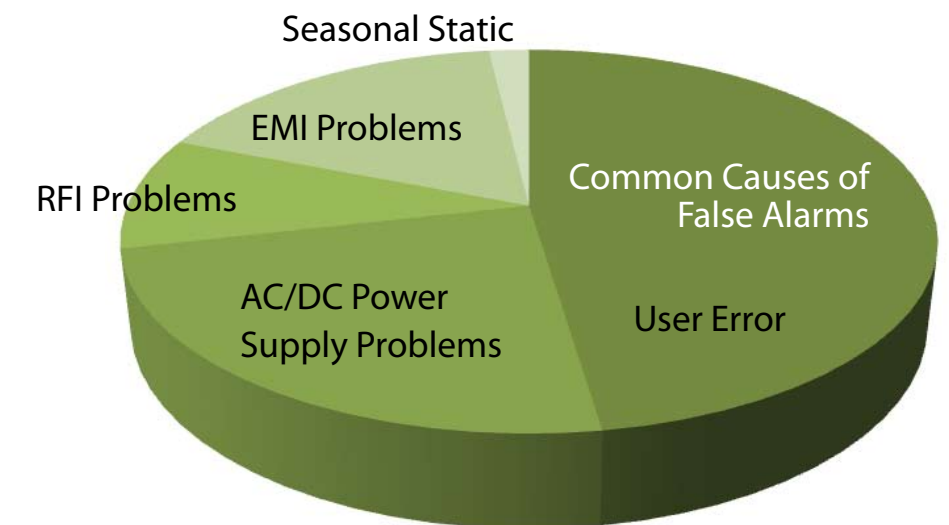
Guide to Alarm Fault Finding
20 Tips to Prevent False Alarms

Control Panel Checklist **p8**

Installation Form
Pictorial Guide

Battery Testing Tips **p10-12**

Battery Types & Technology
Battery 'C' Rating
General Battery Performance Tips
Battery Performance Tips for Mobility users
Like for Like Battery Performance
GOLD-IBT: Common Q&As



Alarm Troubleshooting

There are many reasons why we get false alarms. In this section, we'll look at the most common causes of false alarms, why they occur and how you, the alarm installer, can identify and rectify the problem quickly. Also included is our popular 'Control Panel Checklist'. This is a step-by-step guide which helps you identify any type of fault, anywhere on a system.

Battery Solutions

Understanding how a battery works and why it may fail is a tricky business. In this section, we'll explain the different types of battery technology used and how you can get the best performance out of them.

Don't Forget...

You can always contact David Grant for further technical advice on 01744 886660. If he is on another call or away from his desk, leave a message and he'll get back to you.

Check out www.actmeters.com for our latest information on alarm troubleshooting, available 24/7



Common Causes of False Alarms

1

User Error

User error is the biggest cause of false alarms. It is critical for the alarm installer to train their customer on how to operate the system and follow procedure such as closing windows and doors, securing the family pet and following the correct entry/exit route.

Checking the AC/DC Power Supply

2

When a false alarm occurs which hasn't been triggered by user error, the first thing that should be checked is the AC/DC power supply. It is critical for the AC/DC supply to be stable to prevent random false alarms and control panel crashes. An AC supply fault or low capacity battery would cause PIRs to trigger falsely and cause LIMs to lockout.

Alarm installers have a duty of care to ensure the AC supply is safe **BEFORE** connecting the control equipment. Voltage, polarity and Earth loop resistance are the most essential safety tests to perform when checking this power supply. Loop faults can only be performed using a mains multimeter such as the ACT Easiplus. Test for stable DC voltage between 13.5 min and 14.0 max at battery, PIRs, keypads and LIMs.

Remember, AC/DC problems can only be prevented by testing during installation and service inspections.

3

RFI EMI ESD Interference

If an unstable AC/DC power supply is not the cause of the false alarm, the next likely cause is electrical interference. Radio Frequency Interference (RFI), Electromagnet Interference (EMI) and Electro Static Discharge (ESD) can cause big problems for alarm and other electrical systems.

RFI - caused from signals omitted by an external source such as the local police office, taxi CB or HAM radio equipment - will cause specific PIR or shock sensors to activate.

EMI - caused by AC voltage induced from electrical wiring or kitchen appliances into DC alarm cables - will cause random PIR or shock sensors to activate or the control equipment to crash.


ESD - caused by seasonal weather changes and lightning - will cause keypads to lock out or the control panel to crash when the user enters their entry/exit code.


Fit As Standard



Protection, protection, protection is the key to reducing false alarms. Every alarm installer should fit the below products **AS STANDARD** to prevent RFI, EMI and static from causing problems on your system.


Protection Against EMI & Nearby Lightning

 ACT 1313
12V Spike Suppressor
Protects DC supply against induced spikes and nearby lightning

 ACT 2323
Mainspike Suppressor
Protects AC supply against induced spikes and nearby lightning

 ACT 431
Broadband Filter
Protects the telephone line against induced spikes and nearby lightning

Protection Against RFI

 ACT 1376
PIR Stabiliser
Protects PIR DC supply against RFI signals

 ACT 3010
Ferrite Tubes
Protects keypad, LIM and shock sensor DC supply against RFI signals

Check out our 'Alarm Doctor' Feature at www.info4security.com. MD David Grant is a regular contributor, offering solutions to your most common problems with alarm systems...

Q: I have some PIRs on an installation which are reacting to passing taxis using radio equipment. I have changed the detectors for the same type but this has made absolutely no difference. What can I do to prevent these nuisance false alarms?

A: Identifying false alarms caused by radio frequency interference (RFI) is a process of elimination. The first thing is to check that the voltage at each PIR is above 13VDC and stable. The lower the voltage, the more susceptible the PIR will be to RFI interference. One simple yet effective trick for identifying RFI as a possible cause is to position your mobile phone against the troublesome PIR and, standing perfectly still, dial a number and press send. If the PIR LED lights up RFI is definitely the problem. The RFI signal is either modulating the cable DC supply or affecting components on the PCB, causing the PIR to react falsely. To combat this problem, fit any PIR stabiliser inside or behind the detector and retest using your mobile phone. If the PIR stops reacting, the cable was to blame. If not, remove the stabiliser and change the PIR to a totally different make and model with superior RFI protection.

'RFI immune' PIRs

Many PIRs claim to have 'high RF immunity' but don't specify at what frequencies. In the UK, PIRs must be immune to at least 10V/m (volts per metre) of RF interference over a frequency range of 1 - 1000MHz. Many PIRs claim immunity to between 20 or 30 V/m but only cover a

limited range such as 26 - 1000MHz. This, however, does not cover various radio bands from 1.8 - 24MHz. There are many reputable PIRs on the market but always go for a well known premium brand and study the specification carefully before choosing. As a general guide, the bigger the PIR lens, the less amplification is required for motion detection, making it far less susceptible to RF interference.

Proving RFI is the cause

If you want to prove to your customer that RF is to blame, mask the PIR against motion and set the system. If it's still the only PIR to false alarm then RF interference is definitely the cause.

Alarm cable

Short cables are more susceptible to RF interference. If standard eight core alarm cable is used, don't double up on DC power wires as this can create aerials. Connect all unused spares to a chock-block and tie them to earth at the control panel. If screened cable is used, make sure that the earth drain wire is connected to mains earth.

Induced AC

Make sure that there is no AC voltage on the DC supply to the PIR. Test for AC voltage between DC+ and earth with your multimeter set to 20VAC range and if more than 1.2VDC, fit any 12 volt spike suppressor across the DC supply feeding the PIRs and earth.

Q: I keep getting intermittent tamper false alarms for no apparent reason but can't identify why or which tamper is reacting because the panel has a global tamper circuit. How can I identify and fix this difficult, time consuming problem?

A: Global tamper circuits are the scourge of the industry. Apart from someone actually tampering with one of the circuit devices, a tamper fault can be caused by a loose cable joint, faulty tamper switch, cable short, unstable resistance, moisture ingress or induced mains spike - and up to ten tamper circuits can be connected in series to make a global circuit.

Process of elimination: First open the panel and disconnect the global tamper circuit from the panel. Separate each tamper circuit so they can be tested individually. Next, switch your multimeter to the lowest available resistance range and measure the resistance of each tamper circuit.

A 10m length of alarm cable connected to a good tamper switch should measure approx 1ohm and the reading should be stable. Knowing this will enable you to test tamper circuits and identify high or varying resistances.

If one of the tamper circuits is 'open' then the fault has been identified. But if tamper circuits are all 'closed' with stable resistance readings and intermittent tamper faults keep occurring, troubleshooting is harder.

Visually identifying tamper faults with a Multimeter: Important ... The following tests must be carried out with the tamper circuits removed from the control panel terminals.

(1) Switch your meter to the lowest ohms resistance range (e.g. 200 ohms) and connect to the circuit under test. Visually note the resistance reading obtained. Using a terminal screwdriver, tap each alarm detector or joint box in turn and check the meter reading to see if the resistance has changed. Repair or replace any tamper joint or switch which fluctuates up or down in resistance by more than 5 ohms.

(2) Next, switch to the 20VAC range and look for induced AC voltage between DC positive and individual tamper circuits. Any induced voltage above 1.2VAC can cause tamper faults and should be eliminated by fitting any 12V spike suppressor across the 12VDC supply and mains Earth in the control panel.

Five Causes Of PIR False Alarms



1

The first cause of PIR false alarms is low or unstable voltage at the detector. Test to make sure the voltage at each PIR is above 13VDC and stable.

2

The second cause of false alarms is sudden infrared movement / heat changes in view of the detector. Check behind and inside the PIR for insects and identify objects that can move or rapidly change temperature (e.g. pets, vermin, fax, mailbox, radiator or boiler etc).

3

The third cause of false alarms is white light momentarily blinding the detector. Always choose PIRs with genuine white light filters and avoid fitting facing glass with 50% of its operating range.

4

The fourth cause of false alarms is a direct draught striking the detector. This causes air convection inside the PIR. Make sure cable and screw holes are totally sealed and don't forget the hole where the cable comes through the cavity wall or ceiling.

5

The fifth cause of false alarms is RFI/EMI signals. A mobile phone can be used to test susceptibility to RFI by placing the aerial against the PIR casing and transmitting. Fit an ACT 1376 stabilise inside the PIR to eliminate RFI.

IDENTIFYING False Alarms by RFI

Visual Inspection

Go outside and look for close sources of RFI signals such as CB/Ham radio aerials, local taxi ranks and police, fire and ambulance stations.

Mobile Phone

Place the aerial of your mobile phone against the PIR cover and, standing perfectly still so you don't activate it, dial a number and press send. This test can be performed on any power detector.

Cover

Mask the troublesome PIR securely with a business card or PVC tape and put the circuit on a soak-test

Finally

If RFI is identified as a potential cause of fire alarms, don't fit a dual microwave/PIR. Microwave is a receiver of RFI and could give more false alarms than an ordinary PIR

FOUR STEPS To Eliminate RFI

- 1 Instead of changing the detector with an identical PIR, go through our 'Five Causes of PIR False Alarms' guide above to prove the cause is RFI
- 2 Swap the troublesome PIR with another in the same building
- 3 Fit an ACT 1376 PIR stabiliser inside the troublesome zone PIR and put the circuit on a soak-test
- 4 If a false alarm moves to the other zone, change the PIR and recover the PIR

GUIDE To Alarm Fault Finding

Does the control panel fully operate correctly?
No? Then check panel AC/DC supply for faults.

What is the control panel made of?
If metal, fit an ACT 211 control panel suppression kit but if plastic, fit an ACT 1313 spike suppressor and ACT 2323 mainspike suppressor.

Are there any remote PSUs?
If so, fit an ACT 1313 spike suppressor and ACT 2323 mainspike suppressor.

Have standby batteries been tested?
No? Then test with a GOLD-IBT Intelligent Battery Tester or replace batteries.

Do false alarms occur when switched off?
Yes? Check for contact faults. Fit an ACT 120L transistorised relay to the troublesome panel contact circuit.

Do false alarms occur on door contact zones?
If so, check for contact faults. Fit an ACT 120L transistorised relay to the troublesome panel contact circuit.

Do false alarms occur on PIR/dual detector zones?
Yes? Check voltage at each detector is stable and above 13VDC. Fit an ACT 1313 spike suppressor.

Do false alarms occur on specific PIR/dual detector zones?
If so, fit an ACT 1376 PIR stabiliser inside the troublesome PIR but if not, check voltage at each detector is stable and above 13VDC. Fit an ACT 1313 spike suppressor.

Do false alarms occur on window or door shock sensors?
Yes? Then check sensitivity. Fit an ACT 3010 ferrite tube over each wire at the troublesome shock sensor.

Does the control panel crash or lock out?
If so, check the AC supply, Earth and standby battery for faults. Fit an ACT 2323 mainspike suppressor.

**Explaining
the unexplained**

False Alarm
...caused by an apparent reason
such as an open door or movement
by the family pet

Phantom False Alarm
...caused by no apparent reason
such as RFI or EMI

20 TIPS To Prevent False Alarms

Control Equipment

- 1 Take the mains supply from the consumer board
- 2 Charge batteries overnight before using them
- 3 On larger systems, power PIRs from a separate PSU
- 4 Make sure PSUs come off the same phase / Earth mains supply
- 5 Always eliminate induced AC by fitting a 12V spike suppressor

Alarm Cables

- 6 Don't run alarm cables next to mains or any other service cables
- 7 Connect unused spare wires down to Earth
- 8 Always use screened cable for keypads, LIMs and iD circuits
- 9 Never run data and sounder circuits in the same cable
- 10 Use insulated staples in staple guns
- 11 Always solder twisted joints on EOL and iD circuits

PIR Detectors

- 12 Choose PIRs fitted with genuine white light filters
- 13 Don't fit PIRs within 50% of their range facing glass
- 14 Avoid placing PIRs close to radiators, fireplaces and boilers etc
- 15 Make sure all windows and doors are closed
- 16 Seal PIR entry holes, especially where cables come through walls
- 17 Use dual technology where insects and rodents are a problem
- 18 Make sure the DC supply is above 13V and stable
- 19 Fit a PIR stabiliser to prevent false alarms caused by RFI

Commissioning

- 20 Complete the control panel checklist as part of your procedure

CONTROL Panel Checklist - Installation Details

Date: Ref: User Code:
 Name: Default Code:
 Address:
 Tel: Panel Model:

Always perform the following test in the order shown

MAINS PHASE NEUTRAL TEST: AC voltage between live and neutral This should measure between 220 - 250VAC			
MAINS PHASE EARTH TEST: AC voltage between live and earth This should be the same as the previous reading			
MAINS NEUTRAL EARTH TEST: AC voltage between neutral and earth This reading should not exceed 1.2VAC			
POWER SUPPLY CURRENT NORMAL TEST: AC current used by system when unset. Measure with meter in series with the transformer output			
POWER SUPPLY CURRENT IN ALARM TEST: AC current used by system when in alarm. As step 3			
INDUCED AC TEST: AC voltage between DC+ and earth. AC noise should not exceed 1.2volts max			
BATTERY CHARGING VOLTAGE TEST: DC voltage at battery terminals. Measure with charge leads connected to the battery			
PANEL AUXILIARY DC VOLTAGE TEST: DC voltage supply to detectors. Should be within ± 1 volt of the battery charging voltage			
BATTERY FLOAT CHARGE TEST: DC mA current flowing through battery. Should fall from a double mA figure to a single mA figure within 30 seconds			
BATTERY SYSTEM CURRENT NORMAL TEST: DC current used by system when unset. Ideally, not more than five percent of the battery's Ah capacity			
BATTERY SYSTEM CURRENT IN ALARM TEST: DC current used by system when in alarm. Ideally, not more than ten percent of the battery's Ah capacity			
BATTERY TEST: Record temperature, voltage and capacity available. Replace battery when reading falls below 65% of Ah capacity	°C	DCV	Ah
CIRCUIT RESISTANCE TESTS: Record all circuit resistances. Circuits must be removed from control panel before testing			
CIRCUIT EARTH LEAKAGE TEST: Check for resistance between zone, tamper and earth. Test with meter on highest meg ohm range			
BELL TAMPER RETURN TEST: Record resistance between 0 volt and removed tamper return. Check for stable resistance. Ring bell to induce vibration			
PANEL ZONE WALK TEST: Walk test all detection zones to confirm operation. Check each circuit operates normally, especially after lightning			
SELF-ACTIVATING BELL TEST: Remove hold-off voltage to confirm operation. Replace if defective			
BELL AND STROBE TEST: Activate bell and strobe to confirm operation. Replace if defective			
COMMUNICATOR TEST: Activate communicator to confirm operation. Confirm correct operation with alarm receiving centre			
WIRING AND CONNECTIONS: Check panel for incorrect or loose wiring connections. Check all cables are marked and connected correctly			
DETECTOR VOLTAGE TEST: Check voltage at furthest detector is above 13VDC. Low or unstable DC voltage at the detector is a main cause of false alarms			

STEP BY STEP GUIDE - Pictorial Guide to Control Panel Checklist

STEP 1

MAINS VOLTAGE ACROSS LIVE AND NEUTRAL

- 1 Switch multimeter to highest AC range
- 2 Connect test probes across live and neutral
- 3 Reading should be between 220 and 250VAC and reasonably stable



STEP 1.2

MAINS VOLTAGE ACROSS LIVE AND EARTH

- 1 Connect test probes across live and Earth
- 2 Reading obtained should be almost identical to previous reading
- 3 A difference of more than 1.2VAC means an Earth fault may exist



STEP 1.3

MAINS VOLTAGE ACROSS NEUTRAL AND EARTH

- 1 Switch the multimeter to 20VAC range
- 2 Connect test probes across neutral and Earth
- 3 Reading should not exceed 1.2VAC (example shows .0299mV)



STEP 2

POWER SUPPLY CURRENT NORMAL (UNSET)

- 1 Switch meter to highest AC current range
- 2 Disconnect either AC output lead to panel
- 3 Connect test probes in series with removed lead and power supply terminal
- 4 Record AC mA reading obtained



STEP 3

POWER SUPPLY CURRENT IN ALARM

- 1 Generate a full alarm condition
- 2 Record AC mA reading obtained
- 3 Excessive current in this or previous test indicates a system fault. Disconnect 12VDC supply to PIRs, bells, battery etc in turn to identify fault.



STEP 4

INDUCED AC VOLTAGE

- 1 Switch multimeter to 20VAC range
- 2 Connect probes across any DC+ and Earth
- 3 Induced AC reading should not exceed 1.2V
- 4 To eliminate induced AC, fit an ACT 1313 12v spike suppressor



STEP 5

BATTERY CHARGING VOLTAGE

- 1 Switch multimeter to 20VDC range
- 2 Connect test probes across battery
- 3 Reading should be between 13.5 - 14VDC (Below 13V the battery will not charge, above 14.5V the battery will overcharge)



STEP 6

AUXILIARY DC VOLTAGE

- 1 Connect probes across auxiliary DC supply
- 2 Reading obtained should be within 0.5VDC of battery charging voltage. Any variation ± 1 VDC may cause false alarms



STEP 7

BATTERY FLOAT CHARGE

- 1 Switch multimeter to DC mA range
- 2 Remove red charge lead from battery
- 3 Connect test probes in series with removed charge lead & positive battery terminal
- 4 A double mA reading, falling to a single mA reading should occur within 30 seconds
- 5 If a constant high or no mA reading, replace battery



STEP 8

BATTERY CURRENT NORMAL (UNSET)

- 1 Switch multimeter to 20A DC range
- 2 Disconnect mains supply by removing panel or 'spur' fuse
- 3 Reading ideally should not exceed 5% of battery capacity (7Ah = 350mA)



STEP 9

BATTERY CURRENT IN ALARM

- 1 Generate a full alarm condition
- 2 Reading ideally should not exceed 10% of battery capacity (7Ah + 700mA)



STEP 10

BATTERY CAPACITY TEST

- 1 Disconnect battery from control panel
- 2 Check battery terminals are clean
- 3 Connect battery tester leads red+ black-
- 4 Record ambient temperature, DC voltage and Ah capacity available
- 5 Replace battery when capacity falls below 65% (e.g. 7Ah replace below 4.55Ah)



UNDERSTANDING

Battery Types & Technology

SLA Battery Types

There are two common types of SLA battery, general standby (permanently charged) and cyclic use (charged, then discharged).

General Standby

Standby SLA batteries are designed to be normally permanently charged. Applications include security, fire, UPS and telecommunication standby systems. In the event of mains failure, they are designed to provide 1/20th of the stated capacity for 20 hours (e.g. 7Ah/20 = 350mA). **IMPORTANT:** To avoid damage, standby batteries should not be deep discharged below 10.5V.

Cyclic Use

Cyclic SLA batteries are designed to be charged then deep discharged repeatedly. Applications include mobility scooters and golf carts. **IMPORTANT:** To avoid damage, cyclic batteries must be fully recharged immediately after use. SLA batteries normally self-discharge at 3% per month and so must be fully recharged when the voltage drops below 12.30V.

SLA Battery Technology

There are two types of SLA technology, AGM and GEL.

AGM

In AGM (Absorbed Glass Mat) sealed batteries, an electrolyte paste is absorbed between the plates and a fibre glass mat. AGM technology is cheaper to produce than GEL and accounts for the vast majority of SLA sales. Applications include general standby and motor vehicles.

GEL

In GEL sealed batteries, a silica additive causes the electrolyte liquid to stiffen. GEL technology provides less instant energy than AGM but gives greater long term energy delivery. Applications include mobility scooters and golf carts.

BATTERY 'C RATING' What Does This Mean?

Battery C Rating

In addition to the stated voltage and Ah capacity, SLA batteries have a 'C' rating designed to meet specific load applications such as C5, C10 and C20. The vast majority of SLA batteries are rated C20 which means they are designed to provide 1/20th of the stated Ah capacity for 20 hours to 10.5V. For example, 7Ah/ C20 = 350mA load for 20 hours. If the 'C' rating is not specified consult the battery manufacturer.

Data Code

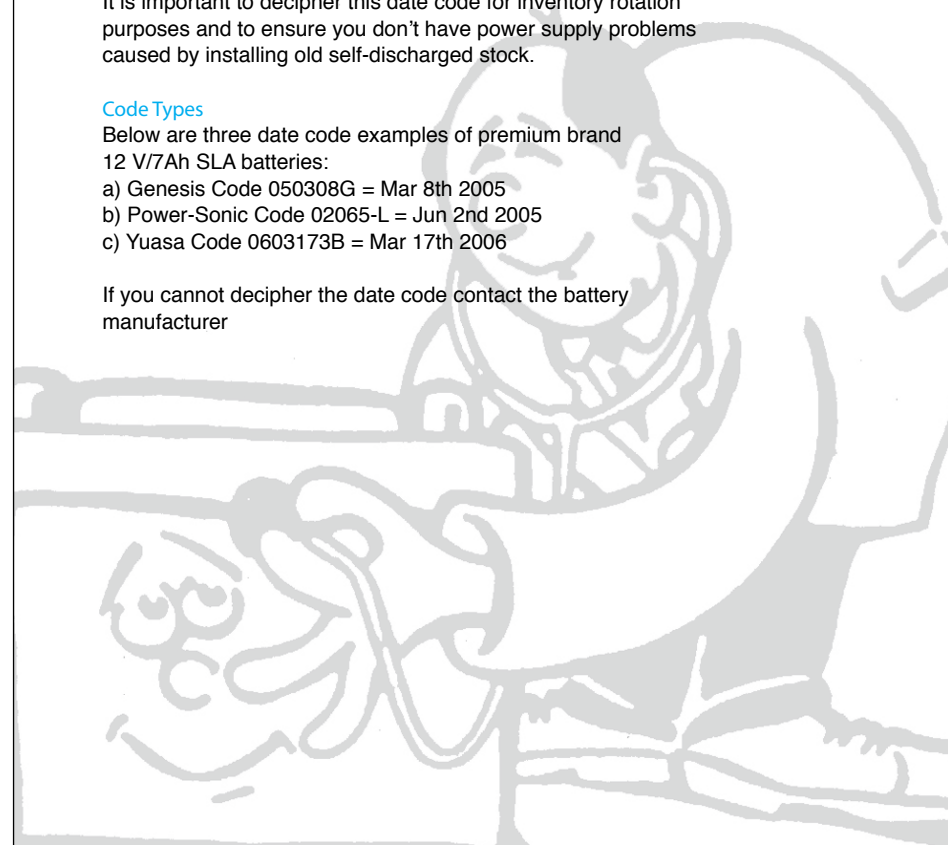
Manufacturers use different codes to decipher the date of production which is normally stamped on the battery. It is important to decipher this date code for inventory rotation purposes and to ensure you don't have power supply problems caused by installing old self-discharged stock.

Code Types

Below are three date code examples of premium brand 12 V/7Ah SLA batteries:

- Genesis Code 050308G = Mar 8th 2005
- Power-Sonic Code 02065-L = Jun 2nd 2005
- Yuasa Code 0603173B = Mar 17th 2006

If you cannot decipher the date code contact the battery manufacturer



GENERAL BATTERY PERFORMANCE

Tips

Visual Inspection

If an SLA battery shows any sign of white residue leakage around the cells or battery terminals it is defective and must be replaced. If a battery in service rattles when shaken it is faulty and must be replaced and recycled.

Check the Voltage

To avoid potential battery failure problems, it is essential to check the voltage level in new batteries to ensure that they have been sufficiently charged by the manufacturer before leaving the factory. Any battery with less than 12.30V should be returned to your supplier as suspect. A new out-of-the box battery should show above 12.60VDC.

Battery Charging - Constant Voltage

In order for 12V SLA batteries to charge fully, they must be charged at between 13.5VDC minimum and 14.0VDC maximum. The time taken to fully charge will vary substantially depending on the Ah size of the battery. A flat battery after fully recharging should be allowed to rest for 24 hours before testing with the GOLD-IBT. Batteries that are on permanent charge can be tested immediately.

Batteries Hate Heat

For maximum life and performance, an SLA battery should be maintained at between 20°C - 25°C (68°F - 77°F). At significantly higher or lower temperatures the Ah capacity available could vary by up to 50%. Be aware that SLA batteries hate heat, the hotter the battery the shorter its life.

Battery Life

For maximum life and performance, a standby SLA battery should be maintained at a constant 20°C to 25°C (68°F - 77°F) temperature and charged at a constant 13.8VDC (2.3V per cell). Under these conditions, an SLA battery should have 90% of its stated Ah capacity after 3 years, 65% after 4 years and 40% after five years

Tips for mobility users...

Due to the huge success our battery testers have experienced in the mobility market, we've included a small feature David Grant, MD, wrote for Disability Product News magazine below...

David says: "Looking after your battery is a critical yet simple task for every mobility user but unfortunately there are three, common mistakes that many fall foul of. Firstly, the most obvious mistake is for the user not to put the battery back on charge immediately after returning from their journey. After each and every use, no matter how short the journey, the battery must be recharged. As well as running the risk of a break down, not recharging the battery after each use can quickly damage the battery plates and shorten the battery life.

"The next mistake made is failing to leave the battery on charge long enough for it to be fully replenished. There is this myth that lead-acid batteries should not be left permanently on charge. These batteries are designed to be left on charge continuously when not in use as they will only draw sufficient current to maintain all capacity and prevent self discharge. The ideal solution is to leave the battery on charge until it is next needed.

"Finally, the user must avoid leaving the battery for long periods of time in a discharged state. This can cause sulphation, a process in which sulphate crystals form on the battery plates. This contaminates the plates, reducing their surface area that can accept a charge. The end result is having a battery that will charge by a smaller percentage or not take a charge at all. As previously mentioned, it is always best to leave a battery on charge continuously when not in use."

David adds: "As a general tip, always purchase trusted, premium brand batteries as there are many cheap, imported batteries that use poor quality recycled materials. Like with everything in life, you only get what you pay for."



Derek Tittle, service engineer of Brighter Future Workshop mobility services, Skelmersdale

LIKE-FOR-LIKE

Battery Performance

When evaluating one battery brand against another, always compare the physical size and weight of the batteries (average 40WH/kg) and carefully compare the manufacturers specification data sheets. Make sure they are constructed using the same technology (e.g. AGM, GEL)

When comparing like-for-like batteries, make sure that the stated Ampere hour (Ah) capacity is specified at C20 (20hr rate). This important 'C' rating is often missing on the battery. For example, if brand 'A' is specified at 7Ah and rated at C20 (20hrs) and brand 'B' is specified at 7.2Ah but rated at C15(15hrs), brand 'A' will out perform brand 'B' by 5hrs. If both batteries show the Ah rating but not the 'C' rating, you would incorrectly assume brand 'B' would out perform brand 'A'.

When evaluating new out-of-the-box batteries, always allow them to acclimatize to 20 - 25°C (65 - 77°F) before testing, as the stated Ah can only be verified at this temperature. Also take into account that new batteries may not come fully charged and normally self-discharge at 3% per month whilst in storage.

The GOLD-IBT Intelligent Battery Tester

The GOLD-IBT is programmed to perform a C20 test in seconds and displays the Ah capacity at the 20hr rate. Based on this, the GOLD-IBT would correctly display 7Ah for brand 'A' and 6.5Ah for brand 'B'. This enables you to compare both batteries Ah capacity at 20hrs, irrespective of the stated Ah capacity and without knowing the battery's 'C' rating.

To obtain accurate, repeatable Ah readings, connect the GOLD-IBT clips TIGHTLY TO THE BATTERY TERMINALS ONLY and not to high resistance steel bolts screwed into the battery posts.

When testing batteries with recessed posts, use the ACT 3532 Battery Terminal Connectors supplied with the GOLD-IBT. Verify the accuracy of your GOLD-IBT by testing a new out-of-the-box Yuasa NP12 12Ah battery at 20 - 25°C (65 - 77°F). Depending on battery temperature, the Ah reading should be between 11 - 12Ah. If you obtain low or erratic Ah readings when repeat testing, the test leads/clips require replacing. These are available from ACT Meters (part number RED-IBT CALKIT or GOLD-IBT CALKIT).

Q&A

Most common questions on the GOLD-IBT



- Q.** Why does my GOLD-IBT display half the stated Ah reading on the battery?
- A.** 1) The battery is 50% discharged and needs to be recharged or replaced
2) It is a special GEL battery with twice the normal internal resistance, so you must double the Ah reading obtained
3) The test leads/clips on the GOLD-IBT are damaged and need replacing by sending it to ACT Meters for re-calibration
- Q.** Why does the GOLD-IBT display double the stated Ah reading on the battery?
- A.** The battery has been damaged by excessive overcharging and must be replaced
- Q.** Why does the GOLD-IBT display 'low current'?
- A.** The battery has no measurable Ah capacity available in the battery and must be replaced
- Q.** Why does the GOLD-IBT display temperature and voltage only?
- A.** The battery is completely flat and must be replaced
- Q.** Does the temperature of the GOLD-IBT affect the battery Ah reading obtained?
- A.** No, but let the GOLD-IBT acclimatise to the temperature of where the battery is situated so as to record a relevant battery ambient temperature
- Q.** Why does the GOLD-IBT display 'Overheat'?
- A.** After approximately ten consecutive battery tests the GOLD-IBT needs a few minutes to cool down
- Q.** Can the GOLD-IBT test 'flooded' 12V lead acid batteries?
- A.** The GOLD-IBT can test SLA and flooded 12V lead acid batteries
- Q.** What do I do if the answer to my question is not listed above?
- A.** Email your questions to batterydoctor@actmeters.com or call 01744 886660



ACT METERS LTD

2010

TROUBLESHOOTING GUIDE

alarm test equipment
false alarm management
training & troubleshooting
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