

Welding machine compliance tester BS EN IEC60974-4

Electrical safety testing of arc welding equipment should be carried out periodically (normally annually), during servicing, before Calibration to EN60974-14 & after repair of equipment. Engineers use different methods for 'safety testing' of welding equipment including PAT tests & Megger tests. However, unless you are using specialist equipment for testing arc welding power sources your testing will not comply with this standard. 'Megger' testing alone is insufficient to guarantee safety & welding equipment cannot be PAT tested, PAT testing of welding equipment is a complete nonsense, it gives the user confidence the equipment is safe but in reality the equipment could be lethal!

Our SAFE-ARC 1000 provides Engineer's with the fastest & easiest solution for 100% compliance to BS EN IEC60974-4 standard. It is the only equipment on the market which allows every type of test to the standard for every type of welding machine & with HF protection to inputs!

Main functions

- Insulation resistance tests (Megger) of equipment circuits,
- Earth conductor resistance tests at 200mA,
- V peak measurement with adjustable variable load 200Ω-5KΩ,
- V DC measurement with 5KΩ load,
- V AC RMS measurement with 5KΩ load,
- Welding circuit & normal touch current test in mA,
- Protective conductor current (leakage) test mA,

Important features

- Test & complete report in as little as 3 mins on an MMA inverter,
- Test all machines, MIG/MAG, TIG, MMA/ARC, SUB ARC, gouge etc,
- Inputs overload tested to more than double EN IEC 60974-4 specs,
- Accuracy exceeds EN IEC 60974-4 requirements.
- Inputs TIG HF proofed – tested on 20+ models with HF running,
- Earth free fully insulated design for operator safety,
- Inputs all fused for best protection,
- Battery powered –typical 3 year / 5000 test battery life,
- Auto shut down after 10 mins & low battery warning,
- Megger MIT300 (the best) used for insulation & earth tests,
- All test leads, clips & adaptors included,
- Cable accessory storage compartment.
- Storage area for laptop or report sheets & test labels.
- Professional rugged case design & weighs only 5kg.
- 3 years warranty (excludes cables/connectors/wear items)
- Every machine supplied with a calibration certificate.
- Simple no nonsense instructions included.
- Unlimited email & phone support.



SAFE-ARC 1000 complete kit Part number SA1000

Note; The SAFE-ARC 1000 complete kit includes everything needed to test to the standard. The accessories below assist in production of professional reports & labelling.

Options & accessories

A4 duplicate NCR report pads, with sequential numbering, the fastest way to complete the job & leave customer with a report. Part number is for pad of 50 reports.	Part No. SA1001R
Adhesive pass labels incorporating all info needed for the standard Part number is for 1 label, MOQ is for 1 roll, (normally 3340 labels).	Part No. SA1002L
Laptop software, easy intuitive software, a fast alternative to manual reports.	Part No. SA1003S
Optional ½ day training with certificate of competency included.	



PTO for further reading.

Electrical safety testing & inspection of Arc welding equipment to BS EN IEC 60974-4 is the only way to guarantee the equipment is safe to operate.

For Engineers repairing, servicing & calibrating welding equipment this is a vital part of the service you provide to the customer.

- **Repairing welding equipment**, after every repair the test & inspection should be carried out.
- **Calibration/validation to EN 60974-14** the standard specifies the safety tests should be carried out prior to calibration.
- **Servicing welding equipment**, it should be an integral part of the service.
- **Hire of welding equipment**, it should be carried out prior to hire.

In our experience around 30% of welding equipment currently in use will fail this standard, mostly small remedial repairs will be enough to allow a pass, however a few % of welding machines will require replacing or major repair works to comply.

It is commonplace to see PAT (Portable Appliance Test) stickers applied to welding equipment, usually issued by semi-skilled technicians trained to test tools & office equipment. PAT testing is almost completely useless for welding equipment & can even cause failure of the welding machine. More worryingly though, the welding equipment could be lethal to the operator, 'PAT' tests just do not pick up potential faults.

SAFE-ARC 1000 is the only equipment on the market which allows all the correct tests to be carried out & is TIG HF protected. This is a really important issue, many TIG models will generate a pulse or a few pulses of HF when just switched on or MMA is selected. This will destroy your expensive Fluke or similar multi-meter in milliseconds. We have tested the SAFE-ARC 1000 on over 20 TIG models with HF running without any damage. Furthermore, all the inputs to the SAFE-ARC 1000 are protected up to 270V AC for 5 seconds, this is more than double the requirement in the standard. The inputs are also fused for safety.

Some competitors' products do not work correctly with certain inverters & none are HF proof. In addition, some require add on devices to complete all tests.

SAFE-ARC 1000 uses our unique circuit for testing V peak, V DC, V AC rms, mA touch current & protective conductor current, this allows every type of machine to be tested, MIG/MAG/MCAW, MMA/ARC/SAW, TIG/WIG/GTAW, SUB ARC/SAW, Gouge/CAC, conventional, inverter, thyristor & chopper based equipment.

For the insulation resistance & earth conductor resistance tests we have incorporated the Megger MIT300, this is a superb British made unit designed for rough handling applications. It combines the highest degree of accuracy with long term reliability & long lifespan.

SAFE-ARC 1000 unit is manufactured in a tough waterproof case. Strong enough to take 100kg+ so will withstand long term abuse in industrial environments. Non metal construction eliminates the need to have any earth protection cable during testing. Dedicated storage compartments provide space for the test leads & adaptors & space for duplicate test sheet report forms or a laptop computer.

We include everything needed to start testing to the standard, all test leads, adaptors, clips & connectors for testing 1 phase & 3 phase machines are in the box. The instruction manual is easy to follow & covers testing & inspection of all types of ARC welding equipment along with fixes to problems you may find on machines. You can use your own reports & labels or purchase ours or the software. We offer unlimited technical support via email & telephone.

Technical specs

Description	Specification & accuracy
Welding voltage measuring range, V pk, V DC, V AC RMS	0-130V (protection up to 270V for 5 seconds + HF protection), resolution 0.1V, +/- 2% rdg +/-5 digits
V pk variable load range	200Ω-5000Ω (protection up to 270V for 5 seconds + HF protection)
V DC / V AC RMS load	5000Ω (protection up to 270V for 5 seconds + HF protection)
Touch current & protective conductor current range	0-199.9ma DC & AC RMS, (protection up to 270V for 5 seconds + HF protection) resolution 0.1mA, +/-2% rdg +/-5 digits
Megger insulation resistance test	10KΩ – 999 MΩ @ 500V@1ma, +/- 3% +/- 2 digits (up to 10MΩ)
Megger protective conductor resistance test	0.01Ω-99.9Ω, 205ma test, resolution 0.01Ω, +/-3% +/- 2 digits
Laptop / report storage compartment	400mm x 280mm x 50mm
Dimensions – closed case	450mm x 350mm x 170mm, 5kg
Recalibration frequency	1 year

Designed & manufactured by Technical Arc Ltd, York UK, www.tecarc.com