

HAL SERIES

Electrical Safety, AC/DC Hipot, Insulation and Ground Bond Tester with Results Memory

■ Multi Industry Use

The HAL family is designed to offer advanced automation techniques which can make dramatic improvements in productivity and efficiency of the production line test process.

The isolated floating test outputs make it one, if not the, safest flash/hipot tester on the market. The user interface can be operated manually or in automatic mode, with a barcode scanner to automate the production flow. The HAL family can be linked directly into most ISO quality systems which cover production, laboratory and audit usage.

The HAL family will collect up to 6000 test results internally. These can be downloaded to a PC if required (software is an optional accessory). It will even scan the equipment's barcode under test and produce result labels, making the whole test process accurate, efficient and fast. Test sequences can be automatically configured using a barcode scanner and the tester includes remote start and stop ports. In addition, the HAL family all have RS232 ports, both of which makes the HAL ideal for system intergration.



| KEY FEATURES: | HAL | HAL Scan | HAL Combi |
|--------------------------------------|------|----------|-----------|
| Earth Bond Test | | | ■ |
| AC / DC Flash / Hipot Test | ■ | ■ | ■ |
| Insulation Resistance | ■ | ■ | ■ |
| Scanner | | ■ | |
| Arc Detection | ■ | ■ | ■ |
| Visual Alarm | ■ | ■ | ■ |
| Audible Alarm | ■ | ■ | ■ |
| Storage of test results | 6000 | 6000 | 6000 |
| Predefined and custom test sequences | ■ | ■ | ■ |
| PLC interface | ■ | ■ | ■ |

SPECIFICATION

AC Flash / Hipot Test

| | |
|----------------------------|--------------------------------|
| Voltage Range | 0.100-5.000kV (programmable) |
| Voltage Resolution | 10V / step (settable) |
| Voltage Accuracy | 1% of reading +/-2 digits |
| Maximum Output Current | 20mA @5kV 50 / 60hz selectable |
| Display Current Range | 0.0-20.00mA |
| Current Accuracy | 1% of reading +/-2 digits |
| Display Current Resolution | 0.01mA |

DC Flash / Hipot Test

| | |
|----------------------------|--------------------------------|
| Voltage Range | 0.100 – 6.000kV (programmable) |
| Voltage Resolution | 10V / step (settable) |
| Voltage Accuracy | 1% of reading +/-2 digits |
| Maximum Output Current | 10mA @ 6kV |
| Display Current Range | 0.01 – 10.00mA |
| Current Accuracy | 1% of reading +/-2 digits |
| Display Current Resolution | 0.01mA |
| Output Ripple | <5% @ 6kV |

Earth / Ground Bond (HAL Combi Only)

| | |
|--------------------------|--|
| Test Voltage | Nominal 6V AC |
| Output Current Range | 0.1 – 40.0A settable in 0.1A steps |
| Compliance Ranges | 0-200m Ω up to 25.0A, 0-500m Ω up to 10A |
| Measurement Range | 0-1000m Ω +/- 1% +/-5 digits |
| Test Duration | 0.5 – 10.0s |
| Trip Level Upper / Lower | 1 - 1000 Ω |

DC Insulation Resistance

| | |
|-------------------------------|---|
| DC Output Voltage | 250, 500 or 1000V selectable or fully adjustable from 10-1000V |
| Resistance Ranges Measurement | 0.1 – 99.99MΩ and 100.0MΩ – 999.9MΩ |
| Resistance Ranges (Accuracy) | 0.50MΩ – 99.99MΩ 5% of reading +/- 5 digits, 100.0MΩ -699.0MΩ 5% of reading +/- 5 digits, 700.0 – 999.9MΩ 10% of reading +/- 5 digits |

Arc Detection

| | |
|----------------|-----------|
| Detect Current | 10 levels |
|----------------|-----------|

External Connections

| | |
|--------------------------------|--|
| Printer | RS232 |
| PC | RS232 |
| Beacon | Yes |
| Guard Switch | Yes via 3 pin rear connection |
| Scanner Boards (HAL Scan Only) | 5 (1 pair on front panel, 4 pairs on the rear) |

ADDITIONAL INFORMATION

Mechanical

| | |
|------------|-----------------------|
| Dimensions | 370W x 300H x 204D mm |
| Weight | Approx 12kg |

Electrical

| | |
|-----------------------|--|
| Supply Voltage | Selectable 115V / 230V 50 or 60Hz |
| Operating Temperature | 0°C to +40°C |
| Storage Temperature | -10°C to +60°C |
| EN50191 | Compliant when used with appropriate accessories |

Supplied With

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|--|
| Class I Grounded Output Box (HAL Combi only) |
| Guard Plug |
| Earth Probe (HAL Combi only) |
| HT Probe |
| HT Clip Lead, 5 supplied (excluding HAL Combi) |
| Mains Lead |
| Instruction Manual |

OPTIONAL EXTRAS

Hardware

| | |
|---------|----------------------------------|
| 312A912 | Desk Test 'n' Tag Printer |
| 194A922 | Barcode Scanner |
| H-5014 | Data Cable |
| G2/5001 | H103 Class I Output Socket Box |
| H-5009 | H101 Class I Output Socket Box |
| H-5022 | H101 Class II Output Socket Box |
| H-5008 | Foot Guard Switch |
| DCS317 | Guard Switch |
| 01521/1 | Earth Clip |
| 01520/1 | Earth Probe |
| 03919/2 | HT Probe - Yellow |
| 03918/2 | HT Probe - Red |
| H-5017 | Status Beacon |
| H-5003 | HT - Clip |
| H-5030 | Printer Lead (Desk Test 'n' Tag) |

Software

| | |
|---------|-------------------------------|
| 352A910 | PATGuard Elite 2 – Premier |
| 352A920 | PATGuard Pro 2 – Professional |
| 352A930 | PATGuard Lite 2 – Entry level |

Service

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|--------------------------|
| Onsite or return to base |
| Service |
| Calibration |

Order Numbers

| | |
|------|-----------|
| H101 | HAL |
| H102 | HAL Scan |
| H103 | HAL Combi |