

HAL:400 Series

Comprehensive multi-function production line Hipot tester



The HAL:400 Series builds on our class leading HAL series to bring the ultimate production line test solution.

Advanced Production Features

Our history of working closely with our customers has allowed us to ensure we include features that improve your production processes.

The HAL:400 offers part number to test sequence mapping, ensuring the correct test sequence is performed on your products without fail, by simply

entering the part number of the product tested.

Custom test names can be used to clearly identify test points, making sure operators are testing to your exact standards.

Test results can be instantly transferred to a secure cloud based software option, giving instant access to results from anywhere in the world along with key production line metrics, such as Yield (Pass v Fail) and test failure indication by reason.

Key Features:

- > Perfect for any production line testing of electrical equipment
- > Full suite of electrical tests in accordance with worldwide standards including IEC / EN and UL
- > Automatic, manual and remote command modes offers full flexibility for labs, production lines and automated test cells
- > Full test results recording and large on-board memory

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Every. Single. Day.

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Touch Screen Interface

We spent many hours with our customers to ensure that we captured the very best way of working, with maximum flexibility.

Our first touch screen interface on a Seaward product has been designed with speed and simplicity in mind. Easily accessible and familiar menus allow you to get straight to the options required.

Upgradeable

The HAL:400 has been designed to ensure not only can it meet your test requirements but also your budget. Our base unit can be upgraded to add Earth Bond testing, potentially saving thousands of pounds in replacing test equipment that doesn't have the functionality your future needs require.

In addition any HAL:400 can be combined with our load / leakage module to add functional test capabilities, such as Power tests.

Modern Connectivity

The HAL:400 has all the connectivity you could ever need!

Wi-Fi and Ethernet connections allow test result data to be instantly transferred to network locations. Over the air upgrade capabilities mean that we can ensure your unit is running the most up to date firmware, and add features in the future.

USB allows for the connection of modern peripherals such as Barcode scanners and printers. Display output even allows for a larger display if required by simply plugging in a compatible monitor.

Features and Functions

(Subject to change)

- 3 level of instrument user (Operator, Supervisor, Engineer)
- Auto Log out after defined period
- Test Sequencing
- Manual Testing
- PC Remote Command
- External Screen Output
- Template system to aid global changes to test sequences
- Create messages to operators
- Add a visual failure via matrix
- Works Order / Part Number Count
- Simple and Advanced Test Screens
- Link Part numbers to test sequence for auto test selection
- Log and Use Works order to create unique ID
- Transfer Results to USB
- Display key production line metrics - Throughput***
- Barcode Scan Functionality
- Print Test Labels
- Clone Instruments
- Performance Dashboard View
- Remote firmware upgrade
- Performance Dashboard View - Remote
- Display Operational tests in Watts, V/A, Amps and more**

*Earth Bond functionality optional unlock

** When used in conjunction with the Load / Leakage Module

*** Via cloud software

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Electrical Test Functions:

- > 50Hz Hipot
- > 60Hz Hipot
- > DC Hipot
- > DC IR
- > Continuity
- > 50Hz Ground bond*
- > 60Hz Ground bond*
- > Power / functional**
- > Protective conductor current**
- > Touch leakage

What's in the box?:

- > 1x HAL:400
- > 1x Hipot Clip Set
- > 1x Earth Bond Clip Set
- > Mains Power Lead
- > 1x Guard Switch Plug
- > 1x Quick Start Guide
- > 1x Calibration Certificate

Technical Specification

Continuity Test

Display Range	0.00 Ω - 9.99 Ω , 10.0 Ω - 99.9 Ω , 100 Ω - 999 Ω , 1.00k Ω - 10k Ω
Measurement Range	0.00 Ω - 9.99 Ω , 10.0 Ω - 99.9 Ω , 100 Ω - 999 Ω , 1.00k Ω - 9.99k Ω
Display Resolution	0.01 Ω between 0.00 Ω - 9.99 Ω 0.1 Ω between 10.0 Ω - 99.9 Ω 1 Ω between 100 Ω - 999 Ω 0.01k Ω between 1.00k Ω - 10k Ω
Measurement Accuracy	+2.5% +0.05 Ω between 0.00 Ω - 9.99 Ω +2.5% +0.1 Ω between 10.0 Ω - 99.9 Ω +2.5% +1 Ω between 100 Ω - 999 Ω +5% +0.01k Ω between 1.00k Ω - 10k Ω
Open Circuit Voltage	12Vdc
Short Circuit Current	50mA dc

Ground Bond Test

Display Range	0.000 Ω - 1.999 Ω
Measurement Range	0.000 Ω - 1.999 Ω
Display Resolution	0.001 Ω
Measurement Accuracy	+2.5% +3m Ω for currents <2A +2.5% +2m Ω for currents 2A - 5A +2.5% +1m Ω for currents >5A
Open Circuit Voltage	6Vac
Test Current	1A to 40A User definable (240W maximum output)

Insulation Test

Display Range	0.50M Ω - 9.99M Ω for voltages 1001V - 5000V 10M Ω - 999M Ω for voltages 100V - 5000V 1.00G Ω - 50.00G Ω for voltages 500V - 5000V
Measurement Range	0.50M Ω - 9.99M Ω for voltages 1001V - 5000V 10M Ω - 999M Ω for voltages 100V - 5000V 1.00G Ω - 50.00G Ω for voltages 500V - 5000V
Display Resolution	0.01M Ω for range 0.10M Ω - 9.99M Ω 1M Ω for range 10M Ω - 999M Ω 10M Ω for range 1.00G Ω - 50.00G Ω

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Additional Solutions:

Our optional services and accessories ensure you get the best from your HAL:400, maximising safety and efficiency on the production line.

Load leakage module (Coming soon)

The Load Leakage module used in conjunction adds additional functionality such as Powered Load and Leakage tests, perfect for ensuring your product is working as expected prior to shipping.

> HAL:PL1 Load Leakage Module

Technical Specification (Continued):

Measurement Accuracy	+5% ±0.05MΩ for range 0.10MΩ - 9.99MΩ +10% ±5MΩ for range 10MΩ - 999MΩ +20% ±50MΩ for range 1.00GΩ - 50.00GΩ
Output Voltage Range	100V – 5000Vdc
Output Voltage Steps	10V
Output Voltage Accuracy	+1% ±5 digits
Maximum Output Ripple	5% ac rms
Maximum Capacitive Load	2uF
Maximum Rated Load	50VA (5kV @ 10mA)
Maximum Rated Current	10mA

AC Hipot Test

Display Range	0.001mA – 20.000mA
Measurement Range	0.001mA – 20.000mA
Display Resolution	0.001mA
Measurement Accuracy	+1% ±10uA
Output Voltage Range	100V – 5000Vrms
Output Voltage Steps	10V
Output Voltage Accuracy	+1% ±5 digits
Output Frequency	50Hz or 60Hz
Maximum Rated Load	100VA (5kV @ 20mA)
Maximum Rated Current	20mA
Arc Detection Sensitivity Level	1-40 / OFF

DC Hipot Test

Display Range	0.001mA – 10.000mA
Measurement Range	0.001mA – 10.000mA
Display Resolution	0.001mA
Measurement Accuracy	+1% ±10uA
Output Voltage Range	100V – 5000Vdc
Output Voltage Steps	10V
Output Voltage Accuracy	+1% ±5 digits
Maximum Output Ripple	5% ac rms
Maximum Rated Load	60VA (6kV @ 10mA)
Maximum Rated Current	10mA
Arc Detection Sensitivity Levels	1-40 / OFF

Mains Power Supply

Input Voltage Range	90Vac - 264Va
Input Frequency Range	50 / 60 Hz
Power Rating (Nominal)	500W

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General Specification:

Dimensions

Height (h)	160mm
Width (w)	300mm
Depth (d)	500mm
Weight	18kg

Getting the most from your tester:

Service and Warranty:

2 year warranty (subject to terms and conditions, available at seaward.com/warranty24)

Service and Calibration Packages

Keep your HAL:400 in peak condition with one of our service and calibration packages, including on site calibration at a date to suit, saving you lost production time in shipping instruments.

Rev 1

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