

Paint Test Equipment

Holiday Detector



Data Sheet / Instructions

Holiday Detector



Information

ISO 29601: Paints and varnishes. Corrosion protection by protective paint systems. Assessment of porosity in a dry film.

ISO 2746: Vitreous and porcelain enamels. Enamelled articles for service under highly corrosive conditions. High voltage test.

The Holiday Detector is a DC voltage Holiday Detector for detecting pinholes and flaws in insulated coatings on conductive substrates.

Where coatings have to provide an effective safeguard against corrosion, it is essential that any pinholes or flaws that will eventually lead to corrosion are detected at the earliest possible stage, preferably immediately after the coating application.

The test voltage is of high impedance, enabling safe testing, and does not damage or cause burn marks to the coating.

The Holiday Detector is a compact and lightweight instrument, which can easily be carried by the operator with the supplied Neck Strap.

The Calibration Certificate with traceability to UKAS is an optional extra. The Certificate is supplied as hard copy and is available online through the Calibration Management Cloud (under Calibration) on our website.

All models are supplied in an industrial foam-filled Carrying Case with High Voltage Probe, Band Brush, 10m Earth Cable and Neck Strap.

Holiday Detector



Holiday Detector Specifications

| Part No | Range | Maximum Coating Test Thickness | Voltage Type | Resolution | Accuracy | Cal Cert Part No |
|---------|---------------------------|--------------------------------|--------------|------------|----------|------------------|
| S4001 | 0.5–6kV | 1100µm (43mils) | DC | 0.01kV | ±1% | NS001 |
| S4002 | 1–20kV | 3700µm (145mils) | DC | 0.1kV | ±1% | NS001 |
| S4003 | 1–30kV | 8000µm (315mils) | DC | 0.1kV | ±1% | NS001 |
| SA004 | Earth Cable 20m | | | | | |
| SS001 | Spare Band Brush Probe | | | | | |
| SS002 | Spare High Voltage Handle | | | | | |
| SS003 | Spare Earth Cable | | | | | |

Holiday Detector Accessories



Brass-filled Brushes for the testing of coatings on large flat areas.

Broad Brushes

| Part No | Product | Size Metric | Size Imperial | Extension Size |
|---------|-----------------------|----------------|------------------|----------------|
| SA502 | Broad Brush 45° Angle | 200mm | 8" | 200mm/8" |
| SA503 | Broad Brush 45° Angle | 500mm | 20" | 200mm/8" |

Holiday Detector Accessories



Brass-filled Circular Brushes for the testing of coatings on the internal diameter of pipes.

All Brushes come complete with the Connector Assembly.

Circular Brushes

| Part No | Product | Size Metric | Size Imperial | Extension Size |
|---------|---------------------------|----------------|------------------|----------------|
| SA302 | Circular Brush & Assembly | 51mm | 2" | 200mm/8" |
| SA303 | Circular Brush & Assembly | 76mm | 3" | 200mm/8" |
| SA304 | Circular Brush & Assembly | 102mm | 4" | 200mm/8" |
| SA306 | Circular Brush & Assembly | 152mm | 6" | 200mm/8" |
| SA308 | Circular Brush & Assembly | 203mm | 8" | 200mm/8" |
| SA310 | Circular Brush & Assembly | 254mm | 10" | 200mm/8" |
| SA312 | Circular Brush & Assembly | 305mm | 12" | 200mm/8" |
| SA002 | Extension Rod | 500mm | 20" | Order SA490 |
| SA003 | Extension Rod | 1000mm | 40" | Order SA490 |

Holiday Detector Accessories



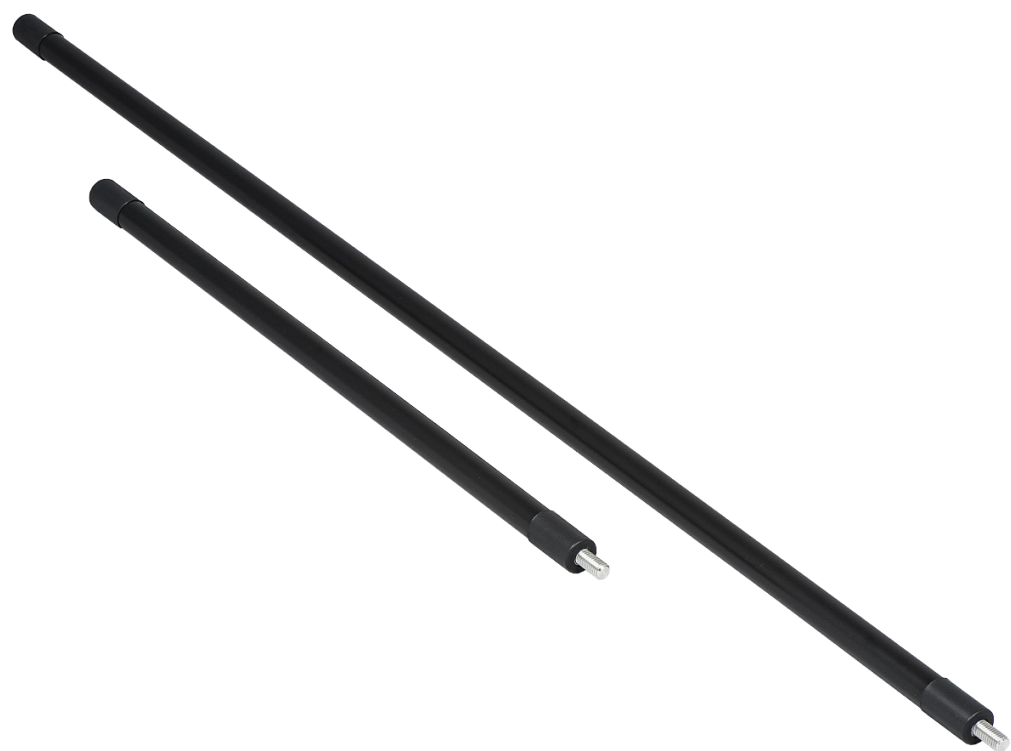
The Rolling Spring is for the testing of coatings on the external diameter of pipes.

All Rolling Springs require the SA490 Rolling Spring Connector Assembly. One Connector Assembly can be used on multiple Rolling Springs.

Rolling Springs

| Part No | Product | Size Metric | Size Imperial | Extension Size |
|---------|-----------------------------------|----------------|------------------|----------------|
| SA404 | Rolling Spring | 102mm | 4" | Order SA490 |
| SA406 | Rolling Spring | 152mm | 6" | Order SA490 |
| SA408 | Rolling Spring | 203mm | 8" | Order SA490 |
| SA410 | Rolling Spring | 254mm | 10" | Order SA490 |
| SA412 | Rolling Spring | 305mm | 12" | Order SA490 |
| SA414 | Rolling Spring | 356mm | 14" | Order SA490 |
| SA416 | Rolling Spring | 406mm | 16" | Order SA490 |
| SA418 | Rolling Spring | 457mm | 18" | Order SA490 |
| SA420 | Rolling Spring | 508mm | 20" | Order SA490 |
| SA424 | Rolling Spring | 610mm | 24" | Order SA490 |
| SA430 | Rolling Spring | 762mm | 30" | Order SA490 |
| SA436 | Rolling Spring | 914mm | 36" | Order SA490 |
| SA442 | Rolling Spring | 1067mm | 42" | Order SA490 |
| SA448 | Rolling Spring | 1220mm | 48" | Order SA490 |
| SA490 | Rolling Spring Connector Assembly | | | 200mm/8" |

Holiday Detector Accessories



Extension Rods extend Brushes and Rolling Springs for applications where a long reach is required.

Extension Rods

| Part No | Product | Size Metric | Size Imperial |
|---------|---------------|----------------|------------------|
| SA002 | Extension Rod | 500mm | 20" |
| SA003 | Extension Rod | 1000mm | 40" |

Holiday Detector Operation

Safety



Safety precautions must be strictly followed whilst using the Holiday Detector.

The Holiday Detector must be operated by responsible and trained personnel, who are in good health and do not suffer from any cardiac conditions.

The Holiday Detector must not be used in any area which could have a combustible or flammable atmosphere, as the test voltage can cause a spark and an explosion could occur.

The work under test must be located in a clearly defined area, with unauthorised personnel prohibited.

All items under test must have a secure connection to earth or ground.

Testing

If the coating has been applied recently, it should be cured in accordance with the manufacturer's instructions before testing. In the absence of manufacturer's instructions the coating should be cured for at least 10 days.

The surface of the coating should be free of oil, dirt and other contaminants before testing.

The Holiday Detector must be switched off and the multiturn voltage control turned fully anticlockwise.

Connect the plugs on the High Voltage Handle and Earth Cable to the colour coded sockets on the front and back of the instrument.

Fit the required Brush or Rolling Spring to the High Voltage Handle.

Connect the Earth Cable to the base metal of the item under test. It is essential that the base metal of the item being tested is also connected to a true earth.

Switch the Holiday Detector on to switch position A. The green fault indicator will illuminate and there will be a low reading on the display. Press the switch on the High Voltage Handle and turn the multiturn voltage control on the instrument in a clockwise direction until the required test voltage is displayed.

For the majority of testing, switch position A is sufficient. However, for difficult-to-see flaws it may be necessary to select a continuous test voltage where the spark can be seen more easily, jumping across the flawed area. This can be achieved by selecting switch position B, which gives a continuous test voltage when the High Voltage Handle is pressed and will sound the alarm every time a spark occurs. The red flashing fault indicator illuminates and remains on until the High Voltage Handle switch is pressed again.



Continued next page

Holiday Detector Operation

Testing Continued

To reset the instrument, re-press the High Voltage Handle switch. This restores the test voltage so that testing can resume.

Always ensure that the High Voltage Probe is kept away from the instrument.

With the High Voltage Handle switch pressed on, place the Brush or Rolling Spring on the coating to be tested and move over the full area of the coating. If a flaw is detected a spark will jump across from the Brush or Rolling Spring through the flaw in the coating to the metal substrate, the alarm will sound, the red flashing fault indicator will illuminate and the test voltage will drop to zero.

Test Voltage

The test voltage should be set in accordance with the coating manufacturer's instructions.

In the absence of manufacturer's instructions the test voltage table shows the test voltage required for the testing of the coating thickness in compliance with ISO 29601.

The Holiday Detector can be used on coatings above 300 microns in compliance with ISO 29601. The 0.5 to 6kV Holiday Detector (S4001) can be used on coatings above 100 microns.

General

Replacing Batteries

When the batteries require replacement, the red Lo Bat indicator will illuminate.

To replace, pull out the 2 drawers located on the rear of the instrument. Replace with 2 lithium PP3 batteries, ensuring correct polarity.



Holiday Detector Operation

Test Voltage Calculator

| Mean Coating Thickness | Test Voltage | Suitable Detector | Mean Coating Thickness | Test Voltage | Suitable Detector |
|------------------------|--------------|-------------------|------------------------|--------------|-------------------|
| Up to 500µm | 2.3kV | S4001/S4002/S4003 | 2800µm–2900µm | 16.0kV | S4002/S4003 |
| 500µm–600µm | 2.9kV | S4001/S4002/S4003 | 2900µm–3000µm | 16.5kV | S4002/S4003 |
| 600µm–700µm | 3.5kV | S4001/S4002/S4003 | 3000µm–3100µm | 17.0kV | S4002/S4003 |
| 700µm–800µm | 4.0kV | S4001/S4002/S4003 | 3100µm–3200µm | 17.5kV | S4002/S4003 |
| 800µm–900µm | 4.5kV | S4001/S4002/S4003 | 3200µm–3300µm | 18.0kV | S4002/S4003 |
| 900µm–1000µm | 5.0kV | S4001/S4002/S4003 | 3300µm–3400µm | 18.5kV | S4002/S4003 |
| 1000µm–1100µm | 5.5kV | S4001/S4002/S4003 | 3400µm–3500µm | 19.0kV | S4002/S4003 |
| 1100µm–1200µm | 6.5kV | S4002/S4003 | 3500µm–3600µm | 19.5kV | S4002/S4003 |
| 1200µm–1300µm | 7.0kV | S4002/S4003 | 3600µm–3700µm | 20.0kV | S4002/S4003 |
| 1300µm–1400µm | 7.5kV | S4002/S4003 | 3700µm–3800µm | 21.0kV | S4003 |
| 1400µm–1500µm | 8.0kV | S4002/S4003 | 3800µm–3900µm | 21.5kV | S4003 |
| 1500µm–1600µm | 8.5kV | S4002/S4003 | 3900µm–4000µm | 22.0kV | S4003 |
| 1600µm–1700µm | 9.0kV | S4002/S4003 | 4000µm–4100µm | 22.5kV | S4003 |
| 1700µm–1800µm | 10.0kV | S4002/S4003 | 4100µm–4200µm | 23.0kV | S4003 |
| 1800µm–1900µm | 10.5kV | S4002/S4003 | 4200µm–4300µm | 24.0kV | S4003 |
| 1900µm–2000µm | 11.0kV | S4002/S4003 | 4300µm–4400µm | 25.0kV | S4003 |
| 2000µm–2100µm | 11.7kV | S4002/S4003 | 4400µm–4500µm | 25.8kV | S4003 |
| 2100µm–2200µm | 12.4kV | S4002/S4003 | 4500µm–4600µm | 26.4kV | S4003 |
| 2200µm–2300µm | 13.0kV | S4002/S4003 | 4600µm–4700µm | 26.8kV | S4003 |
| 2300µm–2400µm | 13.5kV | S4002/S4003 | 4700µm–4800µm | 27.4kV | S4003 |
| 2400µm–2500µm | 14.0kV | S4002/S4003 | 4800µm–4900µm | 28.0kV | S4003 |
| 2500µm–2600µm | 14.5kV | S4002/S4003 | 4900µm–5000µm | 28.5kV | S4003 |
| 2600µm–2700µm | 15.0kV | S4002/S4003 | 4900µm–5300µm | 29.0kV | S4003 |
| 2700µm–2800µm | 15.5kV | S4002/S4003 | 5300µm–8000µm | 30.0kV | S4003 |

About Us

Paint Test Equipment is a global leader in the manufacture of specialist test equipment specifically for the industrial painting and coating industries for the protection of steel assets from corrosion, mainly in the oil, renewables and steel construction sectors. We have over 30 years experience and extensive knowledge in delivering practical solutions in supporting our customers with world class products for corrosion prevention.

Prevention of corrosion on steel is essential to extend the asset lifetime, optimise performance and minimise downtime for expensive maintenance work. Using Paint Test Equipment products ensures that industrial coatings are applied to the highest achievable quality standards of ISO compliance.

We supply small, medium and multinational companies with the full range of technologies and innovations in our unrivalled portfolio of products for our customers to grow their business and enhance profits through cost effective corrosion management equipment.

Paint Test Equipment is committed to providing proactive and innovative solutions to meet customer requirements for the highest quality, user friendly inspection equipment. Paint Test Equipment is the partner of choice.

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