

Data Sheet / Instructions

Holiday Detector



Paint Test Equipment

Coating Thickness POROSITY Adhesion Inspection Kit Surface Roughness Surface Cleanliness Gloss



DC Holiday Detector

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.

Operation is by the test voltage being applied to the coating by moving a brush electrode across the surface and where there is either a pinhole or flaw, the voltage will spark through the coating, a red indicator will flash and an audible alarm will sound. The detected flaw can be marked for subsequent repair, and testing resumed for the remaining surface area.

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 Portal (under Browse Categories) on our website.

The Calibration Portal lists all your equipment calibrated by Paint Test Equipment, showing the renewal dates and enabling Calibration Certificates to be viewed at any time.

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

Holiday Detector Accessories and Spares

Part No	Product	Size Metric	Size Imperial	Extension Size	Information
SA002	Extension Rod	500mm	20"		To extend electrodes for applications where a long reach is required.
SA003	Extension Rod	1000mm	40"		
SA502	Broad Brush 45° Angle	200mm	8"	200mm/8"	Brass-filled Brushes for the testing of coatings on large flat areas.
SA503	Broad Brush 45° Angle	500mm	20"	200mm/8"	
SA302	Circular Brush & Assembly	51mm	2"	200mm/8"	Brass-filled Circular Brushes for the testing of coatings on the internal diameter of pipes.
SA303	Circular Brush & Assembly	76mm	3"	200mm/8"	
SA304	Circular Brush & Assembly	102mm	4"	200mm/8"	All Brushes come complete with the Connector Assembly.
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"	
SA404	Rolling Spring	102mm	4"	Order SA490	3/4" phosphor bronze Rolling Spring for the testing of coatings on the external diameter of pipes.
SA406	Rolling Spring	152mm	6"	Order SA490	
SA408	Rolling Spring	203mm	8"	Order SA490	All Rolling Springs require the SA490 Rolling Spring Connector Assembly. One Connector Assembly can be used on multiple Rolling Springs.
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"	
SS001	Spare Band Brush Probe	150mm	6"		Steel-filled Brush for general testing.
SS002	Spare High Voltage Handle				Fits all three models.
SS003	Spare Earth Cable	10m			To connect instrument to the test.



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.

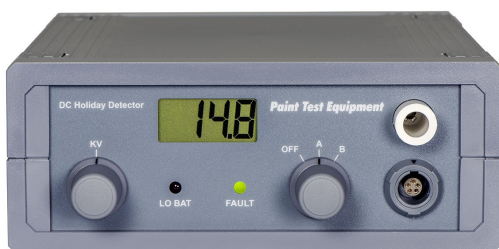
Testing

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.

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.

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

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.

Test Voltage

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

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



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. With over 30 years experience and extensive knowledge in delivering practical and cost effective 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 Equipments technologies and innovations in our unrivalled portfolio of products ensures that industrial coatings are applied to the highest achievable quality standards of ISO compliance.

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