

Elcometer 280 Pulsed DC Holiday Detector

The Elcometer 280 is a 'stick type' holiday detector which has been designed to make pulsed DC high voltage holiday detection safer, easier and more reliable than ever before.

Using state of the art electronics, the Elcometer 280 allows users to inspect coatings - without connecting the earth return lead to the component substrate - ideal for inspecting large surfaces and pipelines.

Flashing display, bright LED and a user adjustable volume alarm indicates detection of a holiday

0.5 - 35kV range (user selectable) for detecting porosity in coatings up to 25mm (1") thick

Safety trigger integrated inside the handle cuts power if released

Rugged, shock proof and water resistant design to ensure long life - even in harsh environments

Balanced, ergonomic design, complete with shoulder strap allows long periods of continuous use

A wide range of interchangeable probe accessories available - compatible with all Elcometer holiday detectors



Ideal for testing clean, damp, dirty or slightly conductive coatings

Voltage calculator automatically sets the correct voltage from your coating thickness value

Internal jeep tester ensures that the selected voltage equals the test voltage

Can be used in accordance with:
(see Standards Explained inside back cover)

AS 3894.1	ISO 29601	NACE SP0188
ANSI/AWWA C203	JIS G 3491	NACE SP0490
ANSI/AWWA C214	JIS G 3492	NACE TM0186
ASTM D4787	NACE RP0274	NACE TM0384
ASTM D5162		

The Elcometer 280 uses the high voltage pulsed DC technique to detect holidays in coatings - even if the coating is damp, dirty or slightly conductive.

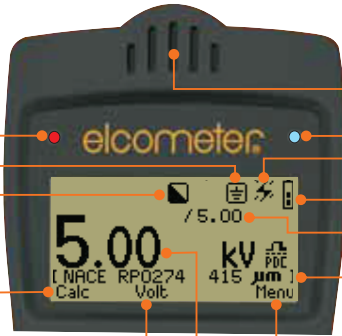
From the two stage safety switch, bright LED's and screen icons signifying when the high voltage is on, to the extended ribbing to protect the user from spark

creep, the Elcometer 280 sets the standard for high voltage measurement safety.

Using the wide range of probe accessories users can detect porosity / holidays in coatings up to 25mm (1") thick.

Rugged, shockproof and water resistant, each unit is designed for use even in the harshest of environments.

Elcometer 280 Features



- Red LED indicates high voltage ON
- Earth signal return lead disconnected icon
- Porosity Detector overload icon indicates that the unit cannot obtain selected voltage with current accessory / coating combination
- Calculation softkey select relevant standard & coating thickness value
- Voltage adjustment softkey

- Waterproof buzzer
- Blue LED flashes as holidays are detected
- Holiday detected icon
- Battery symbol indicating remaining charge
- Voltage selected
- Porosity standard in use used in conjunction with setting the coating thickness within the Voltage Calculator
- Menu softkey
- Voltage level achieved at probe



- Specialised extended ribbing designed to standard EN61010, ribs provide additional protection to the user during use
- Integrated safety trigger switch switches off the high voltage if released
- Quick release battery pack fully charged in 4 hours, provides up to 30+ hours of continuous use*
- Earth return lead socket including 1/4 turn lock/release to ensure connection during testing
- Rubberised second hand grip provides greater control and balance during testing
- Large, waterproof buttons ideal for use - even in gloves
- Shoulder harness point strap can be quickly clipped on as required
- Clear, backlit LCD display shows all relevant information, even in dark environments
- High Voltage ON/OFF separate button minimises risk of accidental switch on

* the battery life is dependant on selected voltage and load applied - see Technical Specification for more information

Technical Specification

C certificate available

Description	Model S	Model T
Elcometer 280 Pulsed DC Holiday Detector	D280-S----	D280-T----
Elcometer 280 Pulsed DC Holiday Detector Inspection Kit	D280-S-KIT	D280-T-KIT
Rugged, Shock Proof & Water Resistant	●	●
Integrated Safety Trigger Switch	●	●
Quick Release Battery Pack	●	●
Internal Jeep Tester	●	●
Integrated Voltage Calculator		●
Pulsed DC High Voltage Range	0.5kV - 35kV	
Voltage Adjustment	User adjustable: 0.5 - 1kV: 10 Volt steps, 1 - 35kV: 100V steps	
High Voltage Output Accuracy	±5% or ±50V below 1000 Volts	
Pulse Repetition Rate	~30Hz	
Operating Temperature	0°C to 50°C (32°F to 120°F)	
Power Supply	Rechargeable lithium ion battery, fully charged within 4 hours	
Typical Battery Life	Battery life is dependant on selected voltage and load applied; 12" (DN305) Rolling Spring: 30 hours at 10kV; 12 hours at 35kV 40" (DN1016) Rolling Spring: 22 hours at 10kV; 8 hours at 35kV	
Instrument Case Dimensions	PC ABS case; (l x w x h): 603 x 219 x 193mm (23.7 x 8.6 x 7.6")	
Weight (no probes attached)	3.0kg (6.6lb) - including battery pack	
Packing List	<p>Elcometer 280 Pulsed DC Holiday Detector Gauge (Model S or T), 5m (16') trailing signal return lead, battery pack, battery charger with mains cables (UK, EUR and US), shoulder strap and operating instructions</p> <p>Elcometer 280 Pulsed DC Holiday Detector Inspection Kit Gauge (Model S or T), 5m (16') trailing signal return lead, battery pack (2 supplied with Model T), battery charger with mains cables (UK, EUR & US), stainless steel rolling spring holder (supplied with Model T only), 250mm (9.8") probe extension shaft, shoulder strap and operating instructions - packed in a light weight, rugged, wheeled transit case - ideal for transportation</p>	

Accessories

Light weight, rugged, wheeled transit case - ideal for gauge transportation, with additional space to house up to 20m (66') of phosphor bronze or 6m (30') of stainless steel rolling spring	T28022769
Grounding mats are ideal for testing on un-grounded pipes. The conductive rubber mat is wrapped around the coated pipe and connected to both the grounding pin (supplied separately) and the signal return lead.	
750mm (29.5") long - for pipe diameters up to 9" (NPS) / 229mm (DN)	T28022637-1
1500mm (59") long - for pipe diameters up to 18" (NPS) / 457mm (DN)	T28022637-2
2500mm (98.5") long - for pipe diameters up to 30" (NPS) / 762mm (DN)	T28022637-3
3500mm (137.5") long - for pipe diameters up to 42" (NPS) / 1067mm (DN)	T28022637-4
Grounding pin; 60cm (23.5") long x 0.2cm (0.75") diameter	T28022748
Trailing signal return lead, 5m (16')	T28022622
10m (32') earth lead, clips each end (for use with the grounding mat)	T28022749
10m (32') earth lead, clip / Elcometer 280 connector (for use with the grounding mat)	T28022750



For rolling springs, rubber or wire brush probes and other accessories see pages 14 - 18

Accessories for all Elcometer High Voltage Holiday Detectors

Part Number	Description	Compatible with			
		Elcometer 236	Elcometer 266	Elcometer 280	
Batteries, Chargers & Earth Signal Return Leads					
	T23615550	External rechargeable battery pack	•		
	T23613907	Battery charger & mains lead (UK 240V)	•		
	T23613908	Battery charger & mains lead (EU 220V)	•		
	T23613909	Battery charger & mains lead (US 110V)	•		
	T99923482	Rechargeable lithium ion battery pack		•	•
	T99919999A	Battery charger & mains lead (UK 240V)		•	•
	T99919999B	Battery charger & mains lead (EU 220V)		•	•
	T99919999C	Battery charger & mains lead (US 110V)		•	•
	T236139031	Earth signal return lead, 2m (6.5')	•		
	T236139032	Earth signal return lead, 10m (32')	•		
	T99916954	Earth signal return lead, 4m (13')		•	
	T99916996	Earth signal return lead, 10m (32')		•	
	T28022750	10m (32') earth lead, clip / Elcometer 280 connector			•
	T28022622	Trailing signal return lead, 5m (16')			•
Telescopic Probes, Probe Extension Rods					
	T23622790-1	Telescopic probe handle, 0.6 - 1.20m (24 - 47")	◦		
	T23622790-2	Telescopic probe handle, 1.8 - 3.60m (71 - 142")	◦		
	T99919988-3	Probe extension piece, 250mm (9.8")	◦	•	•
	T99919988-1	Probe extension piece, 500mm (20")	◦	•	•
	T99919988-2	Probe extension piece, 1000mm (39")	◦	•	•
Accessory Adaptors, allowing other manufacturer's accessories to fit Elcometer models					
	T99920084	Adaptor for models: AP, APS, AP/S1, AP/S2, AP/W, 10/20, 14/20, 10, 20 & 20S	◦	•	•
	T99920083	Adaptor for models: P20, P40, P60, 780, 785 & 790	◦	•	•
	T99920252	Adaptor for models: PHD 1-20 & PHD 2-40	◦	•	•
	T99922747	Adaptor for models: 4S, 4.0, 8.0, 35	◦	•	•
	T99920082	Adaptor for current range to fit old accessories	•	•	•
	T99922768	Adaptor for Elcometer 136 and older 236 models	•		

◦ Older Elcometer 236 models may require adaptor piece T99922768

Accessories for all Elcometer High Voltage Holiday Detectors


Part Number	Description	Compatible with				
		Elcometer 236	Elcometer 266	Elcometer 280		
Wire Brush Probes, band brush, flat brush, internal and external pipe brush probes						
	T99919975	Band brush probe	○	●	●	
	T99922751	Phosphor bronze brush probe	○	●	●	
			Width			
T99920022-1	Right angled wire brush probe	0.25m 9.8"	○	●	●	
T99920022-2	Right angled wire brush probe	0.50m 19.7"	○	●	●	
T99920022-3	Right angled wire brush probe	1.00m 39"	○	●	●	
T99926621	Spare wire brush electrode	0.25m 9.8"	●	●	●	
T99926622	Spare wire brush electrode	0.50m 19.7"	●	●	●	
T99926623	Spare wire brush electrode	1.00m 39"	●	●	●	
		Diameter				
	T99920071-1	Internal circular wire pipe brush probe	38mm 1.5"	○	●	●
	T99920071-2	Internal circular wire pipe brush probe	51mm 2.0"	○	●	●
	T99920071-3	Internal circular wire pipe brush probe	64mm 2.5"	○	●	●
	T99920071-4	Internal circular wire pipe brush probe	76mm 3.0"	○	●	●
	T99920071-5	Internal circular wire pipe brush probe	89mm 3.5"	○	●	●
	T99920071-6	Internal circular wire pipe brush probe	102mm 4.0"	○	●	●
	T99920071-7	Internal circular wire pipe brush probe	114mm 4.5"	○	●	●
	T99920071-8	Internal circular wire pipe brush probe	127mm 5.0"	○	●	●
	T99920071-9	Internal circular wire pipe brush probe	152mm 6.0"	○	●	●
	T99920071-10	Internal circular wire pipe brush probe	203mm 8.0"	○	●	●
	T99920071-11	Internal circular wire pipe brush probe	254mm 10"	○	●	●
	T99920071-12	Internal circular wire pipe brush probe	305mm 12"	○	●	●
T9993766-	Spare circular wire brush electrode	38mm 1.5"	●	●	●	
T9993767-	Spare circular wire brush electrode	51mm 2.0"	●	●	●	
T9993768-	Spare circular wire brush electrode	64mm 2.5"	●	●	●	
T9993769-	Spare circular wire brush electrode	76mm 3.0"	●	●	●	
T9993770-	Spare circular wire brush electrode	89mm 3.5"	●	●	●	
T9993771-	Spare circular wire brush electrode	102mm 4.0"	●	●	●	
T9993772-	Spare circular wire brush electrode	114mm 4.5"	●	●	●	
T9993773-	Spare circular wire brush electrode	127mm 5.0"	●	●	●	
T9993774-	Spare circular wire brush electrode	152mm 6.0"	●	●	●	
T9993775-	Spare circular wire brush electrode	203mm 8.0"	●	●	●	
T9993776-	Spare circular wire brush electrode	254mm 10"	●	●	●	
T9993777-	Spare circular wire brush electrode	305mm 12"	●	●	●	

○ Older Elcometer 236 models may require adaptor piece T99922768

Accessories for all Elcometer High Voltage Holiday Detectors

Part Number	Description	Compatible with		
		Elcometer 236	Elcometer 266	Elcometer 280


Wire Brush Probes, band brush, flat brush, internal and external pipe brush probes

	T99922752 'C-type' wire brush holder [†] (order C-type brush from the list below)	○	●	●
	T99922907 'C-type' wire brush support handle	○	●	●

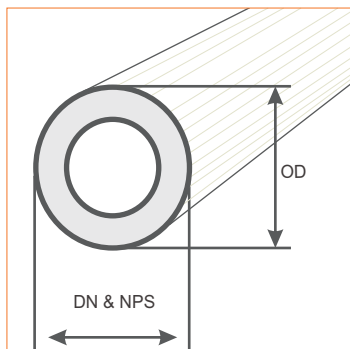
		Outside Diameter (OD)				
		DN	NPS			
T99922745-1	External 'C-type' wire brush	150 - 250mm	6 - 9"	●	●	●
T99922745-2	External 'C-type' wire brush	250 - 350mm	9 - 12"	●	●	●
T99922745-3	External 'C-type' wire brush	350 - 450mm	12 - 16"	●	●	●
T99922745-4	External 'C-type' wire brush	450 - 550mm	16 - 20"	●	●	●
T99922745-5	External 'C-type' wire brush	550 - 650mm	20 - 24"	●	●	●
T99922745-6	External 'C-type' wire brush	650 - 750mm	24 - 28"	●	●	●
T99922745-7	External 'C-type' wire brush	750 - 850mm	28 - 32"	●	●	●
T99922745-8	External 'C-type' wire brush	850 - 950mm	32 - 36"	●	●	●
T99922745-9	External 'C-type' wire brush	950 - 1050mm	36 - 40"	●	●	●
T99922745-10	External 'C-type' wire brush	1050 - 1150mm	40 - 44"	●	●	●

[†]Wire brush holder supplied separately (T99922752)

Conductive Rubber Probes

		Width				
	T99920022-11 Right angled rubber probe	250mm	9.8"	○	●	●
	T99920022-12 Right angled rubber probe	500mm	19.7"	○	●	●
	T99920022-13 Right angled rubber probe	1000mm	39"	○	●	●
	T99920022-14 Right angled rubber probe	1400mm	55"	○	●	●
	T99926731 Spare rubber electrode	250mm	9.8"	●	●	●
	T99926732 Spare rubber electrode	500mm	19.7"	●	●	●
	T99926733 Spare rubber electrode	1000mm	39"	●	●	●
	T99926734 Spare rubber electrode	1400mm	55"	●	●	●

Rolling Springs, available in phosphor bronze or stainless steel



Each spring is supplied with an easy-release coupling piece, allowing users to quickly connect and disconnect the rolling spring at stanchions, pillars, etc.

Please note that rolling springs are not supplied with a spring holder. Please order the appropriate rolling spring holder separately.

Rolling springs are available in 2 versions, phosphor bronze round spring and 304 stainless steel box section spring. The 19mm (0.75") diameter phosphor bronze springs are almost 3 times lighter than the 34mm (1.33") diameter stainless steel springs.

○ Older Elcometer 236 models may require adaptor piece T99922768

Accessories for all Elcometer High Voltage Holiday Detectors

Part Number	Description	Compatible with		
		Elcometer 236	Elcometer 266	Elcometer 280
Rolling Springs, available in phosphor bronze or stainless steel, rolling spring holders are supplied separately				
T99920086	Phosphor bronze rolling spring holder Order the relevant phosphor bronze spring(s) from the list below	○	●	●
T99922746	Stainless steel rolling spring holder Order the relevant stainless spring(s) from the list below	○	●	●



Rolling Spring Description / Dimensions

		Nominal Pipe Size		Pipe Outside Diameter (OD)			
		DN (mm)	NPS (inches)	millimeters (mm)		inches (")	
Phosphor Bronze	Stainless Steel			min OD	max OD	min OD	max OD
T99920438-15A	-	40	1.5	48	54	1.9	2.1
T99920438-15B	-			54	60	2.1	2.4
T99920438-20A	-	50	2.0	60	66	2.4	2.6
T99920438-20B	-			66	73	2.6	2.9
T99920438-25A	T99922744-25A	65	2.5	73	80	2.9	3.1
T99920438-25B	T99922744-25B			80	88	3.1	3.5
T99920438-30A	T99922744-30A	80	3.0	88	95	3.5	3.7
T99920438-30B	T99922744-30B			95	100	3.7	3.9
T99920438-35A	T99922744-35A	90	3.5	100	108	3.9	4.3
T99920438-35B	T99922744-35B			108	114	4.3	4.5
T99920438-40A	T99922744-40A	100	4.0	114	125	4.5	4.9
T99920438-45A	T99922744-45A	114	4.5	125	136	4.9	5.4
T99920438-45B	T99922744-45B			136	141	5.4	5.6
T99920438-50A	T99922744-50A	125	5.0	141	155	5.6	6.1
T99920438-50B	T99922744-50B			155	168	6.1	6.6
T99920438-60A	T99922744-60A	152	6.0	168	180	6.6	7.1
T99920438-60B	T99922744-60B			180	193	7.1	7.6
T99920438-70A	T99922744-70A	178	7.0	193	213	7.6	8.4
T99920438-70B	T99922744-70B			213	219	8.4	8.6
T99920438-80A	T99922744-80A	203	8.0	219	240	8.6	9.4
T99920438-90A	T99922744-90A	229	9.0	240	264	9.4	10.4
T99920438-100A	T99922744-100A	254	10.0	264	290	10.4	11.4
T99920438-110A	T99922744-110A	279	11.0	290	320	11.4	12.6
T99920438-120A	T99922744-120A	305	12.0	320	350	12.6	13.8
T99920438-140A	T99922744-140A	356	14.0	350	375	13.8	14.8
T99920438-140B	T99922744-140B			375	400	14.8	15.7

○ Older Elcometer 236 models may require adaptor piece T99922768

Accessories for all Elcometer High Voltage Holiday Detectors

Rolling Springs, available in phosphor bronze or stainless steel, rolling spring holders are supplied separately



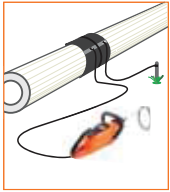
Rolling Spring Description / Dimensions

		Nominal Pipe Size		Pipe Outside Diameter (OD)			
		DN (mm)	NPS (inches)	millimeters (mm)		inches (")	
Phosphor Bronze	Stainless Steel			min OD	max OD	min OD	max OD
T99920438-160A	T99922744-160A	406	16.0	400	435	15.7	17.1
T99920438-160B	T99922744-160B			435	450	17.1	17.7
T99920438-180A	T99922744-180A	457	18.0	450	500	17.7	19.7
T99920438-200A	T99922744-200A	508	20.0	500	550	19.7	21.7
T99920438-220A	T99922744-220A	559	22.0	550	600	21.7	23.6
T99920438-240A	T99922744-240A	610	24.0	600	650	23.6	25.6
T99920438-260A	T99922744-260A	660	26.0	650	700	25.6	27.6
T99920438-280A	T99922744-280A	711	28.0	700	750	27.6	29.5
T99920438-300A	T99922744-300A	762	30.0	750	810	29.5	31.9
T99920438-320A	T99922744-320A	813	32.0	810	860	31.9	33.9
T99920438-340A	T99922744-340A	864	34.0	860	910	33.9	35.8
T99920438-360A	T99922744-360A	914	36.0	910	960	35.8	37.8
T99920438-380A	T99922744-380A	965	38.0	960	1010	37.8	39.8
T99920438-400A	T99922744-400A	1016	40.0	1010	1060	39.8	41.7
T99920438-420A	T99922744-420A	1067	42.0	1060	1110	41.7	43.7
T99920438-440A	T99922744-440A	1118	44.0	1110	1160	43.7	45.7
T99920438-460A	T99922744-460A	1168	46.0	1160	1210	45.7	47.6
T99920438-480A	T99922744-480A	1219	48.0	1210	1270	47.6	50.0
T99920438-500A	T99922744-500A	1270	50.0	1270	1320	50.0	52.0
T99920438-520A	T99922744-520A	1321	52.0	1320	1370	52.0	53.9
T99920438-540A	T99922744-540A	1372	54.0	1370	1425	53.9	56.1

Other sizes are available upon request. Please contact your nearest distributor for more information.

Accessories for all Elcometer High Voltage Holiday Detectors

Grounding mats



Grounding mats are ideal for testing on un-grounded pipes. The conductive rubber mat is wrapped around the coated pipe and connected to both the grounding pin (supplied separately) and the signal return lead.

	Outside Diameter (OD)		Compatible with		
	DN	NPS	Elcometer 236	Elcometer 266	Elcometer 280
T28022637-1 Grounding Mat	up to 229mm	up to 9"			•
T28022637-2 Grounding Mat	up to 457mm	up to 18"			•
T28022637-3 Grounding Mat	up to 762mm	up to 30"			•
T28022637-4 Grounding Mat	up to 1067mm	up to 42"			•
T28022748 Grounding pin; 60cm (23.5") long					•
T28022749 10m (32') earth lead, clips each end					•
T28022750 10m (32') earth lead, clip / Elcometer 280 connector					•

Why choose Elcometer ?

For more than sixty years Elcometer has been a world leader in the design, manufacture and supply of inspection equipment to the coatings industry.

Ever since the first Elcometer gauge was manufactured in 1947, our philosophy has been to provide 'best in class' design, quality and service at a competitive price. By concentrating on these core values, Elcometer has grown into a global network with representation in over 70 countries.

With a range of products specifically developed to meet the needs of the coatings industry, Elcometer is well positioned to provide you with the solution to your inspection requirements - whatever and wherever they might be.

Fit for Purpose - Standards Explained

All Elcometer products are designed to comply with National and International Standards. We have a team of experts working with Standards bodies around the world, ensuring we have products fit for purpose, exceeding the demands of our customers.

In this catalogue, we have identified the latest National and International Standards - those in Orange are current and those in Grey have been superseded but are still recognised in some industries.

We continuously review our products against current and new Standards and for the most up to date list, visit our online catalogue which provides the latest information on all new, current and superseded Standards which our products can be used in accordance with.

Service and Support

Elcometer has over 150 Distributors around the world, all comprehensively trained in our products, providing a full after sales service and support within your region. With the widest range of own manufactured products, Elcometer can provide a complete solution to all your inspection requirements.

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SLI0042 Issue 1