

## High Voltage Tester Specifications

**T175HP:** This high voltage proximity detector is mostly used where personnel need to be informed of the presence of high voltage in their proximity or on equipment near where work is going to be performed.

There are different types of high voltage detectors:  
Proximity Detectors - Detect voltage as you approach the source

Contact Detectors - Only indicate when you make one or two contact with a source.

High voltage proximity detectors are only used to positively identify high voltage presence, but not their exact amplitude. These detectors are not to be used to confirm the absence of high voltage.

**TPC Series:** This is a high voltage dual pole phase comparator with a built-in voltage detector. This series of phase comparators uses a long established technique to detect and measure high voltages and perform phasing tests.

This instrument is used to detect and indicate the presence of high voltage AC or DC polarized on cables or equipment.

**T2713:** This high voltage proving unit is designed for high voltage dual pole phase comparators. This unit will determine if the phasing comparator under test is functioning. The high voltage proving unit is not a calibrator and can not be used for calibration. This tester can also be used for contact detectors.

**T288:** This is a personal safety voltage proximity detector. It is designed to alert the user that he or she is approaching live equipment where high voltages are present. This tester consists of a buzzer as well as a visual indicator to warn the user of the presence of high voltage.

**THVD Series:** These detectors are utilised to determine if a system is live or not so that it may be safely earthed or grounded. These models are designed for outdoor usage but can be utilised indoors and all weather conditions. These detectors are housed in a rugged reinforced nylon moulded casing and are shock drop and vibration resistant.

Non standard threshold voltages can be customised to suit application requirements.

### T175HP PROXIMITY DETECTOR

- Non-contact high voltage detector
- Wide range of detection: 80V to 275kV
- Ten switch-selectable voltage sensitivity ranges
- Lightweight
- Audible and visual indication of live voltage
- Test option
- Rose adaptor
- Check high frequency radiation

The T175HP is designed to detect the presence of high voltage without physical contact.

A ten position rotary switch selects the detection range. As the sensor is moved closer to the voltage carrying conductor, its sensor head picks up the radiated electric field. Once the range threshold is reached, the buzzer sounds and a bright red warning light warns the operator of live conductors.

Technical Specification	
Ranges	240V,3.3kV,6.6kV,11kV,22kV 33kV,66kV,132kV,275kV
Detection	Selection range is detected at approx. 25cm from the voltage 240V ±10cm 33kV ± 50cm
Self-Test	Selection
Indicators	Bright red LED & buzzer
Low Battery Indication	Intermittent beeps



Meter  
Supplied With  
Certificate of  
Conformance

Model Specification	
Accessories	Carry Pouch
Dimensions (mm)	260(H) x 98(W)
Power Source	3 x C Batteries
Weight	503g

## TPC7/11/22/33/44K High Voltage Phase Comparators / Live Line

### Features

- Designed to IEC61481:2001
- No user assembled parts
- Dual colour coded scale (% , Vac)
- Neon indicator lit when > 1200 Vac
- Measure and test phase to earth and phasing
- High quality fibreglass wound rod
- Self powered operation - No Battery
- Current is limited to Milli-ampere
- Grounded or ungrounded systems
- Lightweight, robust and compact
- High immunity to interference fields
- Robust carry case

### Description

Toptronic High Voltage Phase Comparators are available in five models for applications up to 44 kV. The TPC Series of Phase Comparators utilises a long established technique to detect and measure High Voltages and perform phasing tests. These dual poles high voltage phase comparators incorporate modern, high quality glass fibre front end and composite polyurethane main body mouldings to give tough and very light weight construction with superior safety features. They have an analogue scale with neon indication above 1.2kV.

These are IEC61481:2001 compliant and are housed in a high quality carry case with shock absorbing foam. The TPC Series is self powered, requires no dismantling or assembly thus eliminating the risks of assembly mistakes and accidents.

The indicator has also been screened to have high immunity to interference fields. Important applications include checking voltage fuses, testing for correct phase connections and for absence of high voltage on de-energized lines or apparatus. The Dual scale reads direct (no multiplier) in kVac or in % of full scale and is colour coded (Green = in phase, Red = out of phase). A bright neon is included on the scale for easy visibility indoors and it has a dual purpose; 1. Acting as a voltage detector (lit when the voltage across the poles is higher than 1200 Vac). 2. In case of unlikely failure of the analogue scale indicator, the neon will warn the user when voltage is present.

### Checking Phase Relationships

When checking phase relationships current from and to the phases under test are displayed on the analogue meter. If the phases are in phase, the neon will not light and the meter pointer will stay in the green band. For out-of-phase conditions the neon will light and the meter pointer will move into the red band. Before and after using a phase comparator and associated equipment, a functional test should be performed on the phase comparator.



IEC approval for models  
TPC7, 11, 22, 33K

Meter  
Supplied With  
Certificate of  
Conformance



TPCAA90 - 90° Angle bends for the  
TPC Series (Optional Accessory)

### Technical Specification

ELECTRICAL					
Model	TPC7K	TPC11K*	TPC22K	TPC33K*	TPC44K
System Voltage (kV)	6.6	11	22	33	44
Full Scale Voltage (kV)	8	12	24	36	48
Total Resistance (MΩ)	3.95	6.78	13.5	20.1	27
Response Time	1 Second				
Neon Threshold	1.2 kV				
MECHANICAL					
Total Length (m)	1.105	1.105	1.225	1.375	1.525
Total Weight (kg)	1.2	1.2	1.3	1.4	1.5
Handle Material	Composite material with Polyurethane				
Front End	Fibreglass Wound Tubing				
Operating Temp	-25°C to 55°C				
Operating Humidity	20 to 96% RH				
Standard Acc.	Carry Case, Instruction Manual, IEC Certificate				
Optional Acc.	90° Bend TPCAA90				

Note: \* - Standard stock items.

### T2713 Proving Unit for TPC series

- Used to test Phasing Sticks
- 5000V DC supply
- Light Indication for Voltage
- Light for Battery Indication



Meter Supplied With Certificate of Conformance

Model Specification	
Accessories	Carry Case
Dimensions (mm)	210(L) x 90(W) x 55(H)
Power Source	6 x 1,5V AA Batteries
Weight	445g

### T288 Proximity Detector

- Personal safety
- Detects magnetic Field
- Battery operated
- Test function
- Water proof IP65
- Belt clip
- Internal circuit test function
- Low battery indication
- Permanently on feature (no ON and OFF switch)
- No detection through an armoured cable



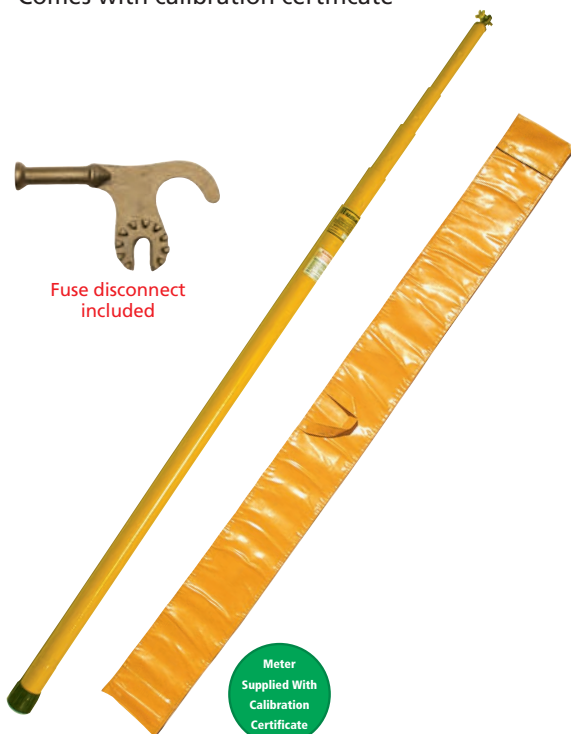
Meter Supplied With Certificate of Conformance

Technical Specification	
Non-Contact Voltage	80V ~44kV
Humidity	93% Rh
Operating Temperature	15°C ~ 55°C
Indication	Visual & Audio
Detection	220V 5cm ± 20%
Distance	11KV 4m ± 20%
	22KV 6,25m ± 20%
	33KV 8m ± 20%
	50KV 10m ± 20%
Operating Frequency	40 ~70 Hz

Model Specification	
Accessories	Carry Case
Dimensions (mm)	115(L) x 69(W) x 30(H)
Power Source	9V Battery
Weight	146g

### C4031601 (SH250)

- Length when extended 7.62m (25ft)
- Suitable for voltage ranging 1 to 132kV
- Fuse hook standard and bag
- Comes with calibration certificate

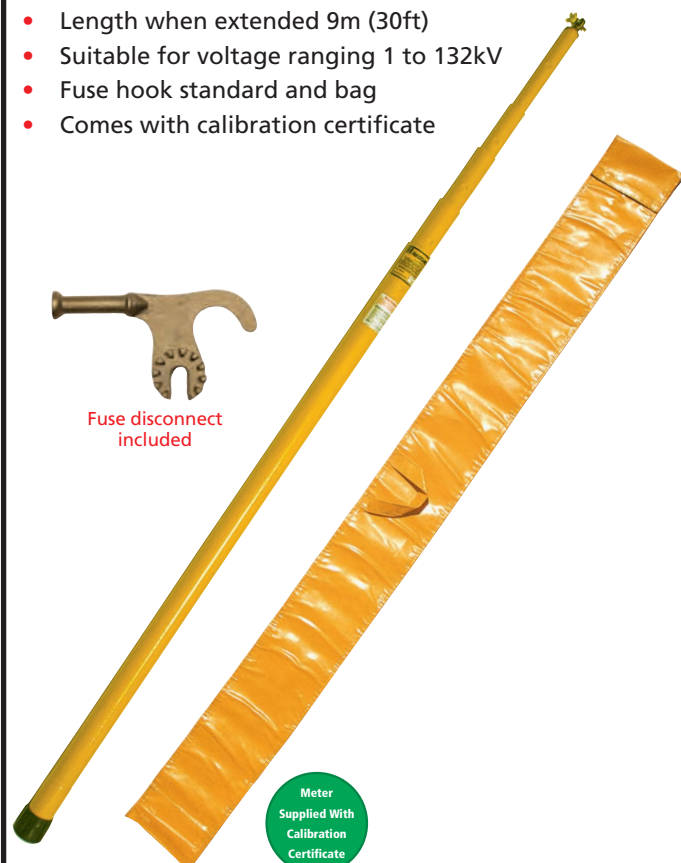


Fuse disconnect included

Meter Supplied With Calibration Certificate

### CSH230 (SH230)

- Length when extended 9m (30ft)
- Suitable for voltage ranging 1 to 132kV
- Fuse hook standard and bag
- Comes with calibration certificate



Fuse disconnect included

Meter Supplied With Calibration Certificate

## HVD High Voltage Detector

- Checks if HV system is alive or dead
- All weather use (indoor or outdoor)
- **HVD13AC** - 6,6-132 kV
- **HVD32AC** - 11-33 kV
- **HVD33AC** - 44-132 kV
- **HVD52AC** - 25-275 kV

### Description

The Spirent Instruments range of capacitive high voltage detectors has been designed to meet the latest IEC standards.

A cone shaped plastic moulding houses the detector. The inner wall of the cone has a metallic screen coating to which the earth/ground parts of the circuit are connected. This screen coating is capacitively coupled to the earth/ground of the electric field and acts as a voltage divider with an internal sensing capacitor. In this manner, high voltage appearing at the electrode is divided down and the voltage across the sensing capacitor is proportional to the voltage at the electrode with respect to earth/ground.

A test button is mounted on the viewing face of the detector. When the button is pressed a red lamp flashes and an audible alarm sounds. This is the display for voltage PRESENT. However, when the button is released the display changes to a green flashing lamp. This is the display for voltage NOT PRESENT. The detector is then armed and ready for use. This armed condition lasts about 150 seconds.

At the narrow top end of the detector housing there is a red band which indicates the limit mark. By definition the limit mark indicates the physical limit to which the detector may be inserted between live components or may touch them. However, when the detector is used with a contact electrode the rear moulding of the extension covers the limit mark. The rear moulding is coloured red and it then constitutes the limit mark.



### Technical Specification

Electrical	HVD13AC	HVD32AC	HVD33AC	HVD52AC <b>NEW</b>
System Voltage (kV)	6.6 to 132	11 to 33	44 to 132	25 to 275
Threshold Range (kV)	2,5kV Non standard threshold voltages can be set outside the range to suit customers requirements (Threshold for HVD52AC is set at 25kV)			
Spark Protection	The detector will not be damaged as a result of spark discharge while making contact with the conductor under test			
Bridging Protection	The detector & its accessories will not cause flashover between live parts of the installation or between live parts of the installation & earth/ground			
Current Consumption	30 mA maximum			
Test Button	Tests & arms the detector when pressed & released			
Visual Indicator (2Hz)	Red lamp (voltage present), green lamp (safe)			
Audible Indicator	Buzzer - 3.1 kHz tone modulated at 2 Hz - 70 dB (1.5 metres)			
Mechanical				
	Length (mm)	Diameter (mm)	Material	Other
Y Electrode	35	40	Stainless steel	

### Model Specification

Standard Accessories	Carry bag Cleaning kit Rose connector Y contact
Dimensions (mm)	180(L) x 100mm(Dia.)
Power Source	9V Battery
Weight	600g

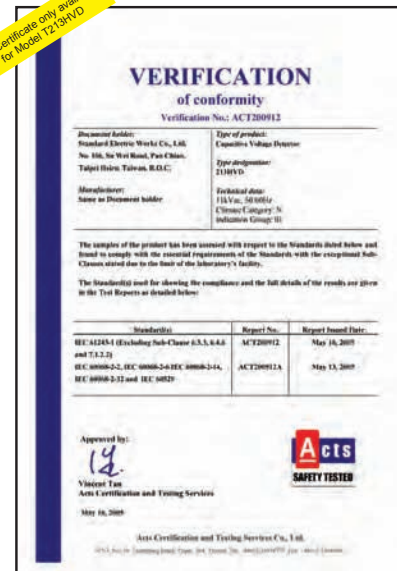
### THVD Series High Voltage Detector

- This family of Capacitive High Voltage Detectors have been designed to meet the latest IEC standards.
- The THVD's are self starting and automatically activated when the High Voltage is applied to the contact electrode.
- They can also be manually armed before use by depressing the "TEST/ARMING" button.
- These detectors are intended for use on sinusoidal (50 or 60Hz) High Voltage Systems.
- Models are available to cover systems voltage from 6.6kV to 132kV.
- Detectors are utilized to determine if a system is live or not, so that it may be safely earthed/grounded.
- This family of capacitive High Voltage Detectors are housed in a rugged, reinforced nylon moulded casing and are shock, drop and vibration resistant.
- Non-standard threshold voltages can be customized to suit application requirements.
- The THVD has a low battery detection which inhibit manual arming when the battery is too low.
- A visual indication shows when the THVD is armed. When armed, the Green LED's flash twice per second.
- When HV is detected, the red LED's flash twice per second together with an audible buzzer.
- Designed, manufactured and tested to IEC 61243-1 for capacitive type contact voltage detector for voltages above 1kV 50/60Hz.

Meter Supplied With Certificate of Conformance



IEC Certificate only available for Model T2 19HVD



#### Technical Specification

MODEL	T213HVD	T217HVD	T218HVD	T219HVD	T220HVD	T222HVD
System Voltage	11kV	11/33kV	6/22kV	44/132kV	6.6/132kV	11/44kV
Threshold Set within Range	1.65kV to 4.4kV	3.3kV to 4.95kV	1.8kV to 2.7kV	6.6kV to 19.8kV	1.65kV to 14.6kV	4.4kV to 5.0kV
Response Time	<1 Sec	<1 Sec	<1 Sec	<1 Sec	<1 Sec	<1 Sec
Auto-OFF	±3 Min	±3 Min	±3 Min	±3 Min	±3 Min	±3 Min
Bridging Protection	Yes	Yes	Yes	Yes	Yes	Yes
Spark Protection	Yes	Yes	Yes	Yes	Yes	Yes
Battery Low	<7V	<7V	<7V	<7V	<7V	<7V
Threshold	3.02kV	4.12kV	2.5kV	13.2kV	2.5kV	4.75kV
Battery Current	<30mA	<30mA	<30mA	<30mA	<30mA	<30mA
Green = Armed	Yes	Yes	Yes	Yes	Yes	Yes
Red = V Detected	Yes	Yes	Yes	Yes	Yes	Yes
Test / Arming Button	Yes	Yes	Yes	Yes	Yes	Yes

#### Model Specification

Standard Accessories	Carry Case Cleaning kit Rose connector Y-type contact, 16mm Hook
Dimensions (mm)	180(L) x 100mm(Dia.)
Power Source	9V Battery
Weight	600g



## LLT SERIES Live Line / Phasing Comparator

- Measures system volts (3-33 kV)
- Suitable for phasing tests
- All weather use

### Principle of operation

The Live Line Tester is a device which draws current from the source under test. This current flows through a resistive chain to earth/ground by way of a test cord. The current flow is monitored and displayed on a moving analogue moving coil meter which is graduated in kV.

### Checking phase relationships

When checking phase relationships a phasing rod is used in conjunction with a Live Line Tester, current from two sources are combined and displayed on the analogue meter at which time "in phase" voltages will read twice the phase to earth/ground voltage and "out of phase" voltages will read the phase to earth/ground voltage only. Before and after using a Live Line Tester and associated equipment, a functional test should be performed on the assembled items.



### List of Equipment

Kit	LLT14kV	LLT33kV
System Volts (kV)	13.8	33
Tester c/w Earth Lead	FO260B	FO257B
Phasing Rod c/w Phasing Lead	FO261B	FO259B
Bent End Adaptor	DFH5028	DPH5028
Extension Rod	DFH5002	DFH5026
Hot Rod Adaptor c/w Lead	DFK5004 (opt)	DFK5004 (opt)
Overhead Line Adaptor	DFK5000	DFK5000
Proving Unit c/w Leads	FOP01B	FOP01B
Repeater Unit	FOR03B (opt)	FOR02B (opt)
Carry Case 1	CMP5009	
Carry Case 2	CMP5008 (opt)	CMP5008 (opt)
Carry Bag	CMP5010 (opt)	CMP5010 (opt)

NOTE: OPT - Optional Accessories