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INSTRUMENT	MAC-ROG3	T1105	T1120	T1132	T1151	T1800	T1805	T1820	T1825	T1832	T1851	T2000	JUPITER
PAGE NO.	29	35	36	39	40	39	34	35	45	39	40	36	14
Continuity of bonding	•			•	•	•				•	•		•
Resistance of earth continuity conductor	•			•	•	•				•	•		•
Continuity of ring circuits (if applicable)	•			•	•	•				•	•		•
Earth loop impedance test: at main switch	•								•				•
Prospective short-circuit current at point of control (PSCC) for sub-distribution boards	•								•				•
Elevated voltage between incoming neutral and external earth	•			•	•					•+			•
Earth resistance at electrode (if required)	•	•	•				•	•				•	
Insulation resistance	•			•	•	•				•	•		
Voltage at main distribution board with no load for each phase to neutral	•			•	•				•	•			•
Voltage at main distribution board with load (as calculated for full load) for each phase	•								•				•
Voltage at available load (worst condition as calculated for full load) for each phase to neutral	•								•				•
Operation of earth leakage units	•												•
Polarity of points of consumption	•								•				•
Phase rotation at points of consumption for three-phase systems	•												•
All switching devices, make-and-break circuits	•			•	•	•				•	•		•

+ Indication only

NOTE:

Testing of operation of earth leakage test button, no instrument is required. The above is only a guide as many other instruments can be used.



All these instruments are used for SANS10142 testing



NEPTUNE	T416	T419	T60	T70	T860	T890	TBM 076	TBM 079	TBM 3030	TBM 811	TBM 878	TEL11	TEL28	TEL 25C	TEL2 TLB
13	34	29	30	51	50	49	19	24	19	11	13	48	47	47	49
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All these instruments are used for SANS10142 testing



FEATURES	T820	T835	T1300H	T235H	T48	TR10I	IRONMETER	FLASHMETER
PAGE NO.	7	7	7	7	7	7	8	8
LCD Display (Counts)	1 999	1 999	1 999	1 999	1 999	3 999	4 000	4 000
LCD Display (Digits)	3½	3½	3½	3½	3½	3¾	4	4
TRUE RMS				TRMS			TRMS	TRMS
Transistor HFE			•		•			
Logic					•			
Max AC Voltage (V)	600	500	500	750	750	600	600	600
Max DC Voltage (V)	600	500	500	1 000	1 000	600	600	600
Max AC Current (A)				20	20	10	10	
Max DC Current (A)	10	10	10	20	20	10	10	
Max Resistance (Ω)	20M	20M	200M	200M	200M	4M	40M	400
Continuity Beeper	•	•	•	•	•	•	•	
Diode Test	•	•	•	•	•	•	•	
Autoranging							•	
Frequency (Hz)					200K	500K	10K	
Capacitance (F)				200μ	200μ	200μ	400μ	
Temperature (°C)		1 000		1 000	1 000			
MIN/MAX Display							•	
Data Hold	•	•	•	•	•	•		
Crest (Peak hold)								
Backlight			•		•		•	•
Splash and Dust Proof								
Transient Proof (kV)								
Relative Reference								
Bar Graph								
Auto Power Off				•		•		
USB Interface								
Data Logger								
EF Detect								•
Safety Category	CAT III 600V	CAT III 600V	CAT III 600V	CAT II 1000V CAT IV 600V	CAT II 1000V CAT IV 600V	CAT II 600V	CAT III 600V	CAT IV 600V
Intrinsically Safe								
Dual Display								
Fuse: mA Rating	250mA 250V	250mA 250V	250mA 250V	250mA 250V	250mA 250V	400mA 250V		
Fuse Size (mm)	5 x 20	5 x 20	5 x 20	5 x 20	5 x 20	5 x 25		
Fuse: A Rating					12A 250V	10A, 12A 250V		
Fuse: Size (mm)					5 x 20	5 x 25		
IP Rating						IP52		IP67
Lifetime Warranty								
Dimensions (mm) LxWxH	145 x 85 x 30	150 x 73 x 35	150 x 73 x 35	190 x 88 x 27	189 x 97 x 35	154 x 74.3 x 47.4	120 x 65 x 45	140 x 75 x 40
Weight (g)	170	156	156	320	400	350	200	220

																	
TBM805	TBM807	TBM252	TBM239R	TBM829	TBM525	TBM811	TBM811XEX	T64	TBM319	TBM869	TBM878	NEPTUNE	JUPITER	MERCURY	TBM27	TR6016B	T8209
8	9	9	9	10	10	11	11	12	12	10	13	13	14	14	15	15	15
4 000	4 000	6 000	6 000	10 000	10 000	10 000	10 000	6 000	6 000	500 000	6 000	9 999	9 999	6 000	6 000	60 000	4 000
$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{5}{6}$	$3\frac{5}{6}$	$3\frac{9}{10}$	$3\frac{9}{10}$	$3\frac{9}{10}$	$3\frac{9}{10}$	$4\frac{1}{2}$	$3\frac{5}{6}$	$5\frac{4}{5}$	$3\frac{5}{6}$	4	4	$3\frac{5}{6}$	$3\frac{5}{6}$	5	$3\frac{3}{4}$
	TRMS		TRMS	TRMS	TRMS			TRMS	TRMS	TRMS	TRMS	TRMS	TRMS	TRMS		TRMS	
									•	•	•						
1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000			1 000	600	1 000	750
1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	999.9	690	1 000	600	1 000	1 000
10	10	8	10	10	10	10	10	10	10	10	10	3 000M	3 000	10	2 000µA	10A	10
10	10	8	10	10	10	10	10	10	10	10	10		199.9	10	2 000µA	10A	10
40M	40M	60M	60M	60M	60M	60M	60M	60M	60M	60M	60M	1 999		60M	6M	60M	40M
•	•	•	•	•	•	•	•	•	•	•	•		•		•	•	•
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1M	1M	1M	50K	1M	1M	1M	1M	1M	1k	1M	5k	999.9	999.9	10M	10 to 30k	1M	1k
3 000µ	3 000µ	3 000µ	2 000µ	20m	25m	20m	20m	20m	200µ	25m	30m			6000µ	2 000µ	1 000µ	100µ
	300	1 000	400	1 000	1 000			1 350	1 000	1 000	1 000			1 000		1 372	1 000
MAX	MAX	•	•	•	•			•	•	•	•	•	•	•		•	
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•
				•	•					•		•	•	•			
•	•			•	•			•	•	•	•		•	•		•	
		•	•	•	•	•	•	•	•	•	•			•			•
6.5	6.5	6.0	6.0	12	12	12	12	12	12	12	12						
•	•	•	•	•	•	•	•	•	•	•	•						•
		•	•	•	•	•	•	•	•	•	•	•	•		•	•	
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				•	•										•		
																	
				•		•	•										
				•	•	•	•	•	•	•	•						
		630mA 500V		44mA 1 000V	44mA 1 000V	1A 600V	44mA 1 000V		630mA 500V	44mA 1 000V	630mA 500V					600µA	
		6 x 32		10 x 37	10 x 37	10 x 35	10 x 37	x 35	6 x 32	10 x 38	6 x 32						
		10A 600V	11A 1 000V	11A 1 000V	11A 1 000V	10A 600V	11A 1 000V		6.3A 500V	11A 1 000V	6.3A 500V					16A 1000V AC/DC	10A 600V
6 x 25	6 x 25	10 x 38	6 x 38	6 x 38	6 x 38	6 x 38	6 x 38		6 x 38	10 x 38	6 x 38					10 X 38	6 x 38
					IP54	IP64	IP54			IP54		IP40	IP40	IP65		IP50	
				LIFETIME WARRANTY		LIFETIME WARRANTY	LIFETIME WARRANTY										
189 x 97 x 55	189 x 97 x 55	161 x 80 x 50	161 x 80 x 50	208 x 103 x 64	198 x 97 x 55	208 x 103 x 64.5	208 x 103 x 64.5	190 x 94 x 48	160 x 80 x 50	208 x 103 x 64	208 x 103 x 64	175 x 85 x 55	175 x 85 x 55	190 x 75 x 55	113 x 53 x 10.2	200 x 91 x 54	192 x 92 x 55
396	396	340	334	635	430	635	635	460	340	635	635	420	420	555	78	500	400



T820

- Continuity test
- Diode test
- Large LCD display

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	200mV/ 2/ 20/ 200/ 600V	±0.5% + 3 Digit
AC Voltage (V)	200/ 600V	±1.2% + 10 Digit
DC Current (A)	200µA/ 2mA/ 20mA/ 200mA/ 10A	±1.5% + 3 Digit
Resistance (Ω)	200/ 2kΩ/ 20kΩ/ 200kΩ/ 20MΩ	±0.8% + 5 Digit
Display	3 3/4 Digits	1 999 Counts

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Test Leads



T235H

- Capacitance
- Transistor test
- Data Hold
- Auto Power Off
- Backlight
- Temperature

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	200mV/ 2/ 20/ 200/ 1000V	±0.5% + 3 Digit
AC Voltage (V)	2/ 20/ 750V	±1.2% + 10 Digit
DC Current (A)	20µA/ 2µA/ 20mA/ 200mA/ 20A	±0.8% + 3 Digit
AC Current (A)	20mA/ 200mA/ 20A	±2.0% + 5 Digit
Resistance (Ω)	2kΩ/ 20kΩ/ 200kΩ/ 200/ 2MΩ/ 20MΩ	±1.2% + 4 Digit
AC Frequency Response	40 - 400Hz	
Temperature (°C)	-20 to +1000°C	±0.8% + 4 Digi
Input Impedance	10MΩ	
Capacitance (F)	2nF/ 20nF/ 200nF / 2000µF/ 20mF	±2.5 % + 20 Digit
Display	3 1/2 Digits	1 999 Counts

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Temp Probe TBMTEMPPROBE , Test Leads, Instruction Manual



T835

- 200mA Protection
- Continuity test
- Diode test
- Data Hold
- Backlight
- Temperature

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	200mV/ 2/ 20/ 200/ 500V	±0.5% + 2 Digit
AC Voltage (V)	200/ 500V	±1.2% + 10 Digit
DC Current (A)	200mA/ 2mA/ 20mA/ 200mA/ 10A	±1.0% + 2 Digit
Resistance (Ω)	200/ 2kΩ/ 20kΩ/ 200kΩ/ 20MΩ	±0.8% + 5 Digit
Temperature (°C)	-20 to +1000°C	±1.0% + 3 Digit
Display	3 1/2 Digits	1 999 Counts

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Temp Probe TBMTEMPPROBE , Test Leads



T48

- Capacitance
- Inductance
- Frequency
- hFE Function
- Backlight
- Temperature

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	200mV/ 2/ 20/ 200/ 1000V	±0.5% + 3 Digit
AC Voltage (V)	200mV/ 2/ 20/ 200/ 750V	±0.8% + 5 Digit
DC Current (A)	2mA/ 20mA/ 200mA/ 20A	±0.8% + 3 Digit
AC Current (A)	2mA/ 20mA/ 200mA/ 20A	±1.0% + 5 Digit
Inductance (H)	2mH/ 20mH/ 200mH/ 2/ 20H	±2.5% + 20 Digit
Resistance (Ω)	200/ 2kΩ/ 200kΩ/ 2M/ 20M/ 2000MΩ	±0.8% + 3 Digit
Frequency (Hz)	2kHz/ 200kHz	±0.5% + 4 Digit
Temperature (°C)	-20 to +1000°C	±1.0% + 4 Digit
Input Impedance	10MΩ	
Capacitance (F)	20nF/ 200nF/ 2µF/ 20µF/ 200µF	±2.5% +20 Digit
Display	3 1/2 Digits	1 999 Counts

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Temp Probe TBMTEMPPROBE , Test Leads



T1300H

- Diode test
- Continuity test
- Data Hold
- Backlight
- Capacitance test

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	200mV/ 2/ 20/ 200/ 600V	±0.5% + 3 Digit
AC Voltage (V)	200/ 600V	±1.2% + 10 Digit
DC Current (A)	20mA/ 200mA/ 10A	±1.0% + 2 Digit
AC Current (A)	200mA/ 10A	±3.0% + 10 Digit
Capacitance (F)	20nF/ 200nF/ 2µF/ 20µF/ 200µF/ 2000µF	±5.0% + 10 Digit
Frequency (Hz)	10/ 100Hz/ 1kHz / 10kHz/ 100kHz/ 2mHz	±1.0% + 10 Digit
Resistance (Ω)	200/ 20kΩ/ 200kΩ/ 2MΩ	±2.5% + 5 Digit
Display	3 1/2 Digits	1 999 Counts

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Test Leads



TR10I

- Diode and Continuity test
- Relative measurement
- Data Hold
- Auto Power Off

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	100µV – 600V	±1.0% +9 Digit
AC Voltage (V)	100µV – 600V	±1.5% +9 Digit
DC Current (A)	40mA – 10A	±2.0% +5 Digit
AC Current (A)	40mA – 10A	±2.5% +5 Digit
Resistance (Ω)	400Ω – 4MΩ	±2.5% +5 Digit
Frequency (Hz)	9.999Hz – 500kHz	±0.5% +5 Digit
Capacitance (F)	5nF - 200µF	±5.0% +40 Digit
Display	3 3/4 Digits	3 999 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Test Leads, Protective Case, Operating Instructions
Certificates	IP52, IEC 60529, IEC 61010-1-2010



IRONMETER - TRMS AC/DC Unbreakable

- Integrated LED flashlight
- Automatic polarity indication
- "OL" over-range indication
- Diode and Continuity Test
- MAX/MIN Hold
- Autoranging
- Backlight
- Double insulation

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	400mV/ 4/ 40/ 600V	±1.0% +3 Digit
AC Voltage (V)	4/ 40/ 400/ 600V	±1.0% +3 Digit
DC Current (A)	400μA/ 4000μA/ 40mA/ 400mA/ 4/ 10A	±1.2% +3 Digit
AC Current (A)	400μA/ 4000μA/ 40mA/ 400mA/ 4/ 10A	±1.2% +3 Digit
Resistance (Ω)	400/ 4kΩ/ 40kΩ/ 400kΩ/ 4MΩ/ 40MΩ	±1.5% +5 Digit
Frequency (Hz)	10Hz – 10kHz	±1.2%
Capacitance (F)	40nF/ 400nF	±4.5% +10 Digit
	4μF/ 40μF	±3.0% +5 Digit
	400μF/ 4000μF	±5.0% +5 Digit
Display	4 Digits	4 000 Counts



CAT III 600V

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Test Leads, Transport Bag and User Manual
Certificates	IEC/EN61010-1, EMC: IEC/EN61326-1



FLASHMETER – Unbreakable and Water Resistant

- Automatic measurement selection
- Detects AC Voltage without contact (NCV)
- Automatic polarity indication
- "OL" over-range indication
- Integrated white light illuminator
- Auto Hold
- Backlight

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	400/ 600V	±1.0% +5 Digit
AC Voltage (V)	400/ 600V	±1.0% +5 Digit
Resistance (Ω)	40/ 400Ω	±2.0% +18 Digit
	4kΩ/ 40kΩ/ 400kΩ	±2.0% +10 Digit
Display	4 Digits	4 000 counts



IP67

CAT IV 600V

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Test Leads, Transport Bag and User Manual
Certificates	IP67, EMC 2014/30/EU, EMC: IEC/EN61326, IEC/EN61010-1, LVD 2014/35/EU



TBM805

- Beep-Jack™ warning
- Rugged construction
- Data Hold
- MAX/MIN Hold
- Relative zero
- Frequency

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	400mV/ 4/ 40/ 400/ 1000V	±1.0% + 4 Digit
AC Voltage (V)	400mV/ 4/ 40/ 400/ 1000V	4 -400V ±1.5% + 5 Digit, 1000V ±4.0% + 5 Digit
DC Current (A)	400μA/ 4000μA/ 40mA/ 400mA/ 4/ 10A	±1.2% + 3 Digit
AC Current (A)	400μA/ 4000μA/ 40mA/ 400mA/ 4/ 10A	±1.8% + 4 Digit
Resistance (Ω)	400/ 4kΩ/ 40kΩ/ 400kΩ/ 4MΩ/ 40MΩ	±2.0% + 4 Digit
Capacitance (F)	500nF/ 5μF/ 50μF/ 500μF/ 3000μF	±3.5% + 6 Digit
Frequency (Hz)	50/ 500/ 5kHz/ 50kHz/ 500kHz/ 1MHz	±0.5% + 4 Digit
Display	3 3/4 Digits	4 000 Counts



CAT II 1000V

CAT III 600V

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance



CAT II 1000V

CAT III 600V

TBM807

- Beep-Jack™ warning
- Data Hold
- Frequency
- Temperature
- MAX/MIN Hold
- Relative zero
- Capacitance

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	400mV/ 4/ 40/ 400/ 1000V	±1.0% + 4 Digit
AC Voltage (V)	400mV/ 4/ 40/ 400/ 1000V	4 -400V ±1.5% + 5 Digit, 1000V ±4.0% + 5 Digit
DC Current (A)	400μA/ 4000μA/ 40mA/ 400mA/ 4/ 10A	±1.2% + 3 Digit
AC Current (A)	400μA/ 4000μA/ 40mA/ 400mA/ 4/ 10A	±1.8% + 4 Digit
Resistance (Ω)	400/ 4kΩ/ 40kΩ/ 400kΩ/ 4MΩ/ 40MΩ	±2.0% + 4 Digit
Temperature (°C)	-20 to +300°C	±2.0% + 3°C
Capacitance (F)	500nF/ 5μF/ 50μF/ 500μF/ 3000μF	±3.5% + 6 Digit
Frequency (Hz)	50/ 500/ 5kHz/ 50kHz/ 500kHz/ 1MHz	±0.5% + 4 Digit
Display	3½ Digits	4 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Temp Probe TBMTEMPPROBE , Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance



CAT III 600V

TBM252

- USB Interface
- Non-contact EF detection (NCV)
- Frequency
- Separate battery compartment
- Capacitance
- Beep-Jack™ warning

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	60mV/ 600mV/ 6/ 60/ 600/ 1000V	±0.2% + 3 Digit
AC Voltage (V)	60mV/ 600mV/ 6/ 60/ 600/ 1000V	±0.2% + 3 Digit
DC Current (A)	600μA/ 6000μA/ 60mA/ 600mA/ 6/ 8A	±0.5% + 3 Digit
AC Current (A)	600μA/ 6000μA/ 60mA/ 600mA/ 6/ 8A	±1.0% + 3 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ/ 600kΩ/ 6MΩ/ 60MΩ	±1.2% + 4 Digit
Temperature (°C)	-50 to +1000°C	±0.3% + 3 Digit
Capacitance (F)	60nF/ 600nF/ 6μF/ 60μF/ 600μF/ 3 000μF	±2.0% + 5 Digit
Frequency (Hz)	5Hz - 1MHz	±0.003% + 2 Digit
AutoCheck™ (DCV)	1 - 1000V	±1.3% + 3 Digit
Display	3½ Digits	6 000 Counts

Model Specification

Power Source	1.5V AAA Battery
Standard Accessories	Temp Probe TBMTEMPPROBE , Test Leads
Optional Accessories	USB Cable and Software TBU20X (P16), USB Adaptor (P16)
Certificates	UL, IEC61010-1, Certificate of Conformance



CAT IV 300V

TBM239R

- 3-Phase rotation
- VFD V Hz
- Hz of line level voltage
- Beep-Jack™ warning
- Non-contact EF detection (NCV)
- Temperature

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	60mV/ 600mV/ 6/ 60/ 600/ 1000V	0.03% + 2 Digit
AC Voltage (V)	6V/ 60V/ 600V/ 1000V	0.7% + 3 Digit
DC Current (A)	200μA/ 2000μA/ 6A/ 10A	0.7% + 3 Digit
AC Current (A)	200μA/ 2000μA/ 6A/ 10A	1.0% + 3 Digit
Resistance (Ω)	600Ω - 60MΩ	0.3% + 2 Digit
Temperature (°C)	-40 to +400°C	1.0% + 1°C
Capacitance (F)	2 000nF/ 20μF/ 200μF/ 2 000μF	1.5% + 2 Digit
Frequency (Hz)	100Hz - 50KHz	0.03% + 2 Digit
VDF ACV	10Hz - 440Hz/ 600V/ 1000V	2.0% + 3 Digit
Display	3½ Digits	6 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Temp Probe TBMTEMPPROBE , Test Leads, Crocodile Clips
Optional Accessories	Magnetic Hanger TBMH01
Certificates	EN6101-1/2-2-030/-2-033



LIFETIME WARRANTY

CAT IV 1000V

TBM829

- Ghost-Voltage-Buster™
- USB interface
- Crest (Peak-hold)
- Non-contact EF detection (NCV)
- AutoCheck™
- Dual display

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±0.08% + 2 Digit
AC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±2.0% + 3 Digit
DC Current (A)	600μA/ 6000μA/ 60mA/ 600mA/ 6/ 10A	±0.2% + 4 Digit
AC Current (A)	600μA/ 6000μA/ 60mA/ 600mA/ 6/ 10A	±1.0% + 4 Digit
Resistance (Ω)	0.1Ω - 60MΩ	±1.5% + 5 Digit
Temperature (°C)	-50 to +1000°C	±0.3% + 2°C
Capacitance (F)	60nF/ 600nF/ 6μF/ 60μF/ 600μF/ 20mF	±5.0% + 5 Digit
Frequency (Hz)	5Hz - 1MHz	±0.004% + 4 Digit
Display	4 Digits	10 000 Counts

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Temp Probe TBMTEMPPROBE , Test Leads
Optional Accessories	USB Cable and Software TBU86X (P16), Magnetic Hanger TBMH01
Certificates	UL, IEC61010-1, Certificate of Conformance



IP54

CAT IV 1000V

TBM525

- Data logger (140 hours at 60s intervals)
- 87 000 Points single display mode
- 43 000 Points dual display mode
- PC optional USB interface (USB cable required)
- Non-contact EF detection (NCV)

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±0.08% + 2 Digit
AC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±0.08% + 2 Digit
DC Current (A)	600μA/ 6000μA/ 60mA/ 600mA/ 6/ 10A	±0.8% + 6 Digit
AC Current (A)	600μA/ 6000μA/ 60mA/ 600mA/ 6/ 10A	±0.8% + 6 Digit
Resistance (Ω)	0.1Ω - 60MΩ	±0.8% + 10 Digit
Temperature (°C)	-50 to +1000°C	±0.3% + 2°C
Capacitance (F)	60nF/ 600nF/ 6μF/ 60μF/ 600μF/ 25mF	±5.0% + 5 Digit
Frequency (Hz)	5Hz to 1MHz	±0.004% + 4 Digit
Display	3 1/2 Digits	10 000 Counts

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Temp Probe TBMTEMPPROBE , Test Leads
Optional Accessories	USB Cable and Software TBU86X (P16), Magnetic Hanger TBMH01
Certificates	IP54, UL, IEC61010-1, Certificate of Conformance



IP54

CAT IV 1000V

TBM869

- Crest mode
- Dual K-Type temperature inputs
- Capacitance
- Beep-Jack™ warning
- Duty cycle
- Dual display
- VFD

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	500mV/ 5/ 50/ 500/ 1000V	±0.02% + 2 Digit
AC Voltage (V)	500mV/ 5/ 50/ 500/ 1000V	±1.2% + 40 Digit (20Hz-45Hz)
DC Current (A)	500μA/ 5000μA/ 50mA/ 500mA/ 5/ 10A	±0.15% + 20 Digit (0.5% + 50 Digit at 500μA)
AC Current (A)	500μA/ 5000μA/ 50mA/ 500mA/ 5/ 10A	±0.5% + 50 Digit
Resistance (Ω)	500/ 5kΩ/ 50kΩ/ 500kΩ 5MΩ/ 50MΩ	±0.07% + 10 Digit
Temperature (°C)	-50 to +1000°C	±0.3% + 1.5°C
Capacitance (F)	50nF/ 500nF/ 5μF/ 500μF/ 25mF	±0.8% + 3 Digit
Frequency (Hz)	10Hz - 3kHz	±0.002% + 4 Digit
Line Logic	5Hz - 1MHz	±0.002% + 4 Digit
Display	5 1/2 Digits	500 000 Counts

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	K-Type Temp Probe TBMTEMPPROBE , Test Leads, Holster
Optional Accessories	USB Cable and Software TBU86X (P16)
Certificates	IP54, UL, IEC61010-1, Certificate of Conformance



IP64

LIFETIME WARRANTY

CAT IV 1000V

TBM811/TBM812

- General Purpose
- Splash/Drop proof
- 1 000V AC/DC
- PC optional USB interface (USB cable required)
- Backlight dual display
- 41 Segment analogue bar graph 60/s
- Audible and visual Beep-Jack™ warning

Technical Overview

Feature	Parameter	Accuracy	Protection
DC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±0.08% + 2 Digit	1050Vrms, 1450V peak
AC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±2.0% + 3 Digit	1050Vrms, 1450V peak
DC Current (A)	600µA/ 6000µA/ 6mA/ 600mA/ 6/ 10A	±0.2% + 4 Digit	0.44A/1000V Fuse (IR10kA) 11A/1000V Fuse (IR20kA)
AC Current (A)	600µ, 6000µ, 60mA, 600mA, 6/ 10A	±1.0% + 4 Digit	0.44A/1000V Fuse (IR10kA) 11A/1000V Fuse (IR20kA)
Resistance (Ω)	40.1Ω - 60MΩ	±1.5% + 5 Digit	1.2V DC open circuit
Capacitance (F)	60nF/ 600nF/ 6µF/ 60µF/ 600µF/ 20mF	±5.0% + 5 Digit	
Frequency (Hz)	5Hz - 1MHz	±0.5% + 4 Digit	
Transient Protection			12kV surge (1.2/50 µs) surge
Display	3 ¹ / ₁₀ Digits	10 000 Counts	AC/DC Voltage/ Hz/ nS
		6 000 Counts	mV/ µA/ A/ mA/ Ω/ F



Available with TRMS - TBM812
(same technical specs)

Model Specification

Power Source	1 x 9V Battery
Optional Accessories	USB Cable and Software TBU86X , USB Adaptor (P16), Magnetic Hanger TBMH01
Certificates	UL, IEC61010-1 Ed:3.0, Certificate of Conformance, IP64



Ex

IP64

LIFETIME WARRANTY

CAT IV 1000V

TBM811XEX/TBM812XEX – Intrinsically Safe

- Hazardous environment
- 1 000V AC/DC
- 1A/1kV (IR10kA) for µA and mA (1000V HRC Fuse)
- 11A/1kV (IR20kA) for A (1000V HRC Fuse)
- Backlight dual display
- 41 Segment analogue bar graph 60/s
- Audible and visual Beep-Jack™ warning

Technical Overview

Feature	Parameter	Accuracy	Protection
DC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±0.08% + 2 Digit	1050Vrms, 1450V peak
AC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±2.0% + 3 Digit	1050Vrms, 1450V peak
DC Current (A)	600µA/ 6000µA/ 6mA/ 600mA/ 6/ 10A	±0.2% + 4 Digit	0.44A/1000V Fuse (IR10kA) 11A/1000V Fuse (IR20kA)
AC Current (A)	600µ, 6000µ, 60mA, 600mA, 6/ 10A	±1.0% + 4 Digit	0.44A/1000V Fuse (IR10kA) 11A/1000V Fuse (IR20kA)
Resistance (Ω)	40.1Ω - 60MΩ	±1.5% + 5 Digit	1.2V DC open circuit
Capacitance (F)	60nF/ 600nF/ 6µF/ 60µF/ 600µF/ 20mF	±5.0% + 5 Digit	
Frequency (Hz)	5Hz - 1MHz	±0.5% + 4 Digit	
Transient Protection			12kV surge (1.2/50 µs) surge
Display	3 ¹ / ₁₀ Digits	10 000 Counts	AC/DC Voltage/ Hz/ nS
		6 000 Counts	mV/ µA/ A/ mA/ Ω/ F

Model Specification (Refer to TBM811/TBM812 model specification)

Certificates	IECSANS 60079-0:2012, IEC60079-11:2012 Electrical apparatus for explosive gas atmospheres: • Part 0 - General requirements • Part 1 - Intrinsic Approved explosive protection rating is suitable for use in Zone 1 hazardous area. Group I (coal mines) underground and Group II (surface).
Meter Markings	• Ex ib IIA T4 Gb • Ex ib I Mb • Ex ib falls under Zone 1 which is an area where flammable gas can occur in normal operating conditions • IA Number: MTEX - MS/19.0358 X



Available with TRMS - TBM812XEX
(same technical specs)



IP40

CAT IV 600V

CAT III 1000V

T64 - TRMS/AC+DC with Data Logger (Colour Display)

- Data logger and graph
- Diode, Continuity and Resistance tests
- Automatic polarity indication
- "OL" over-range indication
- Colour TFT, 6000 pixels backlit display
- MAX/MIN/AVG Data Hold
- LoZ voltage measurement
- PEAK 1ms
- Double insulation
- 4-20mA% Passive signal measurement

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	600mV/ 6/ 60V	±0.1% + 5 Digit
	600/ 1000V	±0.2% + 5 Digit
AC TRMS Voltage (V)	600mV/ 6/ 60V	±0.1% + 5 Digit
	600/ 1000V	±0.2% + 5 Digit
AC+DC TRMS Voltage (V)	6/ 60/ 600/ 1000V	±3.0% + 20 Digit
DC Current (A)	600μA/ 6000μA/ 60mA	±0.9% + 5 Digit
	600mA	±0.9% + 8 Digit
	10A	±1.5% + 8 Digit
AC, AC+DC TRMS Current (A)	600μA/ 6000μA/ 60mA/ 600mA	±1.2% + 5 Digit
	10A	±1.5% + 5 Digit
Resistance (Ω)	600Ω	±0.8% +10 Digit
	6kΩ/ 60kΩ/ 600kΩ/ 6MΩ	±0.8% + 5 Digit
	60MΩ	±2.5% + 10 Digit
Frequency (Hz)	60/ 600/ 6kHz/ 60kHz/ 600kHz/ 1MHz	±0.9% + 5 Digit
Temperature (°C):	-40 to +1350°C	±105% + 3°C
Capacitance (F)	60nF/ 600nF/ 6000μF/ 60μF/ 600μF/ 6mF	±1.5% + 20 Digit
Display	4½ Digits	6 000 Counts

Model Specification

Power Source	1 x 7.2V Li-ION Rechargeable Battery
Standard Accessories	K-Type Wire Temperature Probe, Test Leads, Transport Bag
Certificates	EMC: IEC/EN61326, IEC/EN61010-1, Calibration certificate ISO 9000



CAT II 1000V

TBM319 - Automotive Tester

- Splash/Drop proof
- Selectable 4-stroke /2-stroke
- Sensitivity on RPM
- Selectable 1 to 12 cylinders
- Bar graph indication 40s



Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±0.4% + 3 Digit
AC Voltage (V)	60mV/ 600mV/ 6/ 600/ 1000V	±2.0% + 5 Digit
DC Current (A)	600μA/ 6000μA/ 60mA/ 600mA/ 6/ 10A	±0.7% + 3 Digit
AC Current (A)	600μA/ 6000μA/ 60mA/ 600mA/ 6/ 10A	±2.2% + 5 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ/ 600kΩ/ 6MΩ/ 60MΩ	±0.5% + 5 Digit
Temperature (°C)	-50 to +1000°C	±0.5% + 3 Digit
Capacitance (F)	6μF/ 60μF/ 600μF/ 2 000μF	±2.0% + 5 Digit
Frequency (Hz)	10Hz - 1kHz	±0.1% + 3 Digit
RPM	240-20 000RPM (Inductive), 60-20 000RPM (Contact)	2RPM
DWELL Angle	0 - 360°	±1.2°/kRPM + 1 Digit
Fuel Injector (ms)	0.05 - 250ms	±0.05ms + 1 Digit
Display	3½ Digits	6 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Temp Probe TBMTEMPPROBE , Banana Plug, Inductive Pickup Clip BP300
Certificates	UL, IEC61010-1, Certificate of Conformance



TRMS



CAT III 1000V

CAT IV 600V

TBM878 - Insulation/Combination

- Industrial test probe
- Earth bond resistance, 200mA
- VFD AC Voltage
- Relative zero
- Hz Line level frequency
- Earth Continuity
- BeepJack™ warning
- Autoranging
- Continuity and Diode test
- Dual digital display
- Data Hold

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	60mV/ 600mV/ 6/ 60V/ 1000V	±0.09% + 3 Digit
AC Voltage (V)	60mV/ 600mV/ 6/ 60V/ 1000V	±2.0% + 3 Digit
DC Current (A)	60mA/ 400mA	±0.4% + 3 Digit
AC Current (A)	60mA/ 400mA	±1.5% + 3 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ/ 600kΩ/ 6MΩ/ 60MΩ	±1.5% + 3 Digit
Insulation Resistance (Ω)	50V(3M-55MΩ)/ 100V(3M-110MΩ)/ 250V(3M-275MΩ) 550V(3M-550MΩ)/ 1000V (3M-25GΩ)	±1.5% + 3 Digit
Temperature (°C)	-50 to +1000°C	±9.0% + 2.0°C
Capacitance (F)	3μF/ 30μF/ 300μF/ 3 000μF/ 30mF	±10.0% + 5 Digit
Frequency (Hz)	10Hz - 5KHz	±0.02% + 4 Digit
Display	3 ¹ / ₆ Digits	6 000 Counts

Model Specification

Power Source	4 x 1.5V AA Batteries
Standard Accessories	Temp Probe TBMTEMPPROBE , Crocodile Clips TBM878CLIP , Test Lead Adaptor TBM878TIPS , Test Lead TBM878LEAD , Industrial Test Probe TBM878PROBE
Certificates	UL, IEC61010-1, Certificate of Conformance



TRMS

IP40

CAT III 1000V

to ground and
between inputs

CAT IV 600V

NEPTUNE - Insulation and Continuity Tester 1000V

- Harmonics analyser up to 25th harmonic and THD%
- Bar graph
- Automatic polarity indication
- Automatic range & detection of AC/DC signals
- Dynamic INRUSH
- Continuity of earth conductors (LoΩ)
- Phase sequence rotation with 1-wire method
- MAX/MIN/PEAK Hold
- Polarisation Index (PI)
- Dielectric absorption ratio (DAR)
- Continuity of Protective and equipotential conductors (PE)

Technical Overview

Feature	Parameter	Accuracy
Insulation Voltage DC	50/ 100/ 250/ 500/ 1000V	±5.0% + 2 Digit
DC Voltage (V)	0 - 999.9V	±0.5% + 2 Digit
AC, AC+DC, LoZ TRMS Voltage (V)	0.5 - 999.9V	±0.5% + 2 Digit
DC, AC, AC+DC Current (A) – Standard Rigid Clamp	1 - 1000mV	±0.5% + 2 Digit
AC TRMS Current (A) Flexible Clamp	1 - 3000mV	±0.5% + 2 Digit
Inrush Current: DC, AC, AC+DC TRMS – Standard Rigid and Flexible Clamp	1 - 1000mV	±2.0% + 2 Digit
Inrush Current: AC TRMS – Flexible Clamp	1 - 3000mV	±2.0% + 2 Digit
Resistance (Ω)	0 - 1999Ω	±1.0% + 5 Digit
Frequency (Hz)	32 - 999.9Hz	±0.1% + 1 Digit
Harmonic Voltage and Current (Hz)	DC: 42.5 - 69Hz	±5.0% + 20 Digit
	1 - 25: 42.5 - 69Hz	±5.0% + 10 Digit
	THD%: 42.5 - 69Hz	±10.0% + 10 Digit
Display	4 Digits	9 999 Counts

Model Specification

Power Source	4 x 1.5V AAA Batteries
Standard Accessories	Test Leads, Pouch
Optional Accessories	Flexible Clamp (F3000U) (P22), 400A Clamp HT4006
Certificates	IP40, IEC/EN61010-1, IEC/EN61010-2-030, IEC/EN61010-2-033, IEC/EN61326-1, Calibration Certificate ISO9000



IP40
CAT III 690V
 to ground and between inputs
CAT IV 600V

Test	Test Current (A)	Range (Ω)	Accuracy
Ra+RCD	15mA	1 - 1999Ω	+5.0% +3Ω
L-N, L-L, Ra±	100mA	0.1 - 199.9Ω	+5.0% +3Ω

Model Specification

Power Source	4 x 1.5V AAA Batteries
Standard Accessories	Test Leads, Pouch
Optional Accessories	Flexible Clamp (F3000U, P22), 400A Clamp HT4006
Certificates	IP40, IEC/EN61010-1, IEC/EN61010-2-030, IEC/EN61010-2-033, RCD Test: IEC/EN61557-6, - LOOP P-P, P-N, P-PE, Ra± Test, IEC/EN61557-3, Phase Sequence Rotation: IEC/EN 61557-7, IEC/EN61326-1, Calibration Certificate ISO9000

JUPITER – Loop and RCD Tester

- RCD tests
- Bar graph
- Phase sequence rotation with 1-wire method
- Automatic polarity indication
- Automatic detection of AC/DC signals
- Continuity check 200mA
- Dynamic INRUSH
- Harmonics analyser up to 25th harmonic and THD%
- MAX/MIN/PEAK Hold

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	0 – 690V	±0.5% + 2 Digit
AC, AC+DC. LoZ TRMS Voltage (V)	0.5 – 690V	±0.5% + 2 Digit
DC, AC, AC+DC Current (A): Standard Rigid and Flexible Clamp	1 – 1000A	±0.5% + 2 Digit
AC TRMS Current (A): Flexible Clamp	1 – 3000A	±0.5% + 2 Digit
Inrush Current: DC, AC, AC+DC TRMS – Standard Rigid and Flexible Clamp	1 – 1000mV	±2.0% + 2 Digit
Inrush Current: AC TRMS – Flexible Clamp	1 – 3000mV	±2.0% + 2 Digit
Resistance (Ω)	0 – 199.9Ω	±1.0% + 5 Digit
Voltage/Current Frequency (Hz)	33 – 999.9Hz	±5.0% + 10 Digit
Harmonic Voltage and Current (Hz)	DC: 42.5 – 69Hz	±5.0% + 20 Digit
	1 – 25: 42.5 – 69Hz	±5.0% + 10 Digit
	THD%: 42.5 – 69Hz	±10.0% + 10 Digit
Display	4 Digits	9 999 Counts

LOOP Impedance L-N, L-L, RA, RA+RCD (NO RCD TRIPPING)

L-PE, L-N, L-L Voltage range: 100V - 690V, 42.5 - 69Hz



IP65
CAT III 1000V
CAT IV 600V

MERCURY – Built-in Infrared Camera

- Data logger: max 16 recordings, 10 hours
- Automatic polarity indication
- "OL" over range indication
- Bluetooth Connectivity with HTMercury APP
- Laser pointer
- Micro SD card memory, screenshots in BMP format
- White LED illuminator

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	600mV/ 6/ 60V	±0.09% + 5 Digit
	600/ 1000V	±0.2% + 5 Digit
AC Voltage (V)	6/ 60/ 600/ 1000V	±0.8% + 5 Digit
	600μA/ 6000μA/ 60mA	±0.9% + 5 Digit
DC Current (A)	600mA	±0.9% + 8 Digit
	10A	±1.5% + 8 Digit
AC Current (A)	600μA/ 6000μA/ 60mA/ 600mA	±1.2% + 5 Digit
	10A	±1.5% + 5 Digit
DC Current (A) with Transducer clamp	1000mA/ 10/ 40/ 100/ 400/ 1000A	±0.8% + 5 Digit
AC, AC+DC TRMS Current (A) with transducer clamp	1000mA/ 10/ 40/ 100/ 400/ 1000A	±0.8% + 5 Digit
AC TRMS Current (A) with Flexible clamp	30/ 300/ 3000A	±0.8% + 5 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ/ 600kΩ/ 6MΩ/ 60MΩ	±5.0% + 20 Digit
Frequency (Hz)	60/ 600/ 6kHz/ 60kHz/ 600kHz/ 1MHz/ 10MHz	±0.09% + 5 Digit
Temperature (°C)	-40 to +1000°C	±1.5% + 3°C
Capacitance (F)	60nF/ 600nF/ 6μF/ 60μF/ 600μF/ 6000μF	±2.5% + 20 Digit
Colour TFT Display		6 000 Counts

Model Specifications

Power Source	1 x 7.2V Li-Ion Rechargeable Battery (1500mAh)
Standard Accessories	Test Leads, Micro SD card (8GB card) K-Type Temperature Probe, Pouch
Optional Accessories	Flexible Clamp (F3000U, P22), 400A Clamp HT4006
Certificates	IP65, IEC/EN61010-1, IEC/EN61326-1

Infrared Temperature

Feature	Parameter	Accuracy
Temperature (°C)	-20 to +260°C	±3°C or ±3% (@ env temp: 10 - 35°C, object temp > 0°C)
Thermal sensitivity	< 0.1°C @ 30°C / 100mK	
Colour palettes	4 (Iron, Rainbow, Grey, Grey Inverted)	
Field of View (FOV)	21° x 21° / 7.5mm	
IFOV (@1m)	4.53mrad	
Image frequency	50Hz	
IR Resolution	UFPA (80 x 80pxl, 34μm)	
Emissivity correction	0.01 to 1.00	
Measurement cursors	3 (FIXED, MAX, MIN)	
Automatic Focusing	Min distance 0.5m	



CAT II 600V

CAT III 300V

TBM27 - Card Sized Meter

- AutoCheck™
- EF detection
- Autoranging
- Diode test
- Audible continuity
- Capacitance
- Low impedance (LoZ)

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	6/ 60/ 450/ 600V	±0.5% + 3 Digit to 2.0% + 5 Digit
AC Voltage (V)	6/ 60/ 450/ 600V	±1.5% + 5 Digit
DC Current (A)	400μA/ 2000μA	±1.2% + 3 Digit
AC Current (A)	2000μA	±1.5% + 3 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ/ 600kΩ/ 6M	±2.0% + 6 Digit
Capacitance (F)	2000μF	
Frequency (Hz)	30kHz (Auto)	
Display	3 ¹ / ₆ Digits	6 000 Counts

Model Specification

Power Source	3V CR2032 Button Battery
Certificates	UL61610B-1



CAT IV 600V

CAT III 1000V

TR6016B - Bluetooth

- Continuity and Diode testing
- Duty Cycle
- Analogue bar graph
- Data and Peak Hold
- Programmable Go-No Go feature
- Relative measurement
- Data logging 32k readings
- Square wave output
- Bluetooth Connectivity to PC and Android App (up to 10m)

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	1μV – 1000V	±0.05% +5 Digit
AC Voltage (V)	1μV – 1000V	±0.5% +9 Digit
DC Current (A)	10nV – 10A	±0.5% +15 Digit
AC Current (A)	10nA – 10A (up to 6000A with clamp)	±0.1% +10 Digit
Resistance (Ω)	10mΩ – 40MΩ	±0.1% +10 Digit
Frequency (Hz)	6Hz – 1Mhz	±0.1% +5 Digit
Temperature (°C): Pt 100/1 000	-200 to +850°C	±0.3% + 15 Digit
Temperature (°C): K-, J-Type	-200 to +1372°C	±1.0% +20 Digit
Capacitance (F)	10μF – 1000μF	±1.0% +6 Digit
Display	5 Digits	60 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Alkaline Batteries
Standard Accessories	Test Leads, PT100 Temperature Probe, K Type Thermocouple, Carry Pouch
Optional Accessories	Current Clamps
Certificates	IP50



CAT III 600V

T8209 - Multipurpose 5-in-1

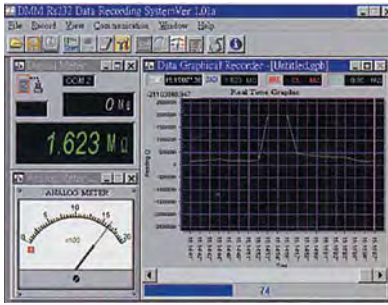
- Test probe input warning lights
- Diode test

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	400mV/ 4/ 40/ 400/ 1 000V	±0.7% + 2 Digit
AC Voltage (V)	4/ 40/ 400/ 750V	±1.0% + 3 Digit
DC Current (A)	400μA/ 400mA/ 10A	±2.0% + 10 Digit
AC Current (A)	400μA/ 400mA/ 10A	±3.0% + 10 Digit
Resistance (Ω)	400/ 4kΩ/ 40kΩ/ 400kΩ/ 40MΩ	±2.0% + 5 Digit
Temperature (°C)	-20 to +1000°C	±3.0% + 5 Digit
Capacitance (F)	4nF/ 400nF/ 4μF/ 40/ 100μF	±3.0% + 3 Digit
Frequency (Hz)	10Hz - 1kHz	±2.0% + 5 Digit
Humidity	20~95% RH	±5.0% RH
Sound Level (dB)	40~100dB	±3.5% at 94dB
Illuminance	1~40000 Lux	±5.0% + 10 Digit
Duty Cycle	0.1~99.9%	±3.0%
Display	3 ³ / ₄ Digits	4 000 Counts

Model Specification

Power Source	3 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Temp Probe TBMTEMPPROBE
Certificates	UL, IEC61010-1, Certificate of Conformance



TBU Software

- Optical interface adaptor
- USB cable and software
- Software free to download (<http://www.brymen.com/download1.html>)

Digital Multimeters

Code	TBRUSB	TBM252	TBM811	TBM812	TBM525	TBM829	TBM869
Page No.	16	9	11	11	10	10	10
TBU20X	TBRUSB (USB Adaptor)						
TBU86X							

Digital Clamp Meters

Code	TBRUSB	TBM135	TBM157	TBM195	TBM197
Page No.	16	21	27	26	26
TBU13X	TBRUSB (USB Adaptor)				
TBU19X					

Fits TBU20X, TBU13X, TBU19X



FEATURES	T6016	TBM3030	TBM031	TBM175D	TBM072	TBM076	TBM086	T98
PAGE	19	19	19	20	20	20	20	20
MAX AC Current (A)	600	600	600	600	600	600	1000	1000
MAX DC Current (A)			600	2				
MAX AC Voltage (V)	500	600	600	600	600	600	1000	750
MAX DC Voltage (V)	500	600	600	600	600	600	1000	1000
MAX Resistance (Ω)	2000	40M	6k	6M	60k	60k	60k	2k
Jaw Size (mm)	30	26	30	30	30	30	51	42
Temperature (°C)				400		400	400	
Continuity	•	•	•	•	•	•	•	•
Frequency (Hz)		100k		1000k	100k	100k	100k	
Capacitance (F)		3000μ		2500μ		2500μ	2500μ	
Diode	•	•	•	•	•	•	•	•
Display (Counts)	1 999	4 000	6 000	4 000	6 000	6 000	6 000	1 999
Backlight				•	•	•	•	•
Autoranging	•			•	•	•	•	•
Data Hold	•	•		•	•	•	•	•
MIN/MAX Display		•	•	•	•	•	•	•
AmpTip™			•	•	•	•	•	
TRUE RMS								
Lifetime Warranty								
Data Logging								
Safety Category			 					
Dimensions (mm) LxWxH	165 x 68 x 28	190 x 63 x 32	188 x 66 x 32	217 x 76 x 37	223 x 76 x 37	223 x 76 x 37	258 x 94 x 44	250 x 99 x 43
Weight (g)	180	187	158	186	186	186	312	460

																				
T260D	TBM116	TBM118	TBM135	T77N	TF3000	F3000U	T223	TBM061	TBM062	TBM037	TBM079	T8056	TBM162	TBM089	T2608	T261	TBM195	TBM197	TBM157	TR1000P
20	21	21	21	22	22	22	23	23	23	24	24	24	25	25	25	26	26	26	27	27
1000	1000	2000	1000	100	3000	3000	100	400	400	600	600	1000	800	1000	1500	200	2000	2000	1000	1000
							100	400	400	600	600	1000	1000	1000	2000	200	2000	2000		1000
750	600	600	600				600	600	600	600	600	700	600	1000	750	600	1000	1000	600	1000
1000	600	600	600				600	600	600	600	600	1000	600	1000	1000	600	1000	1500	600	1000
2M	40M	6M	1k				10k	40M	40M	6000k	60k	40M	40M	60k	40M	600k	40M	40M	999.9	9999
60	45	45	45	40	110	110	12.5	30	30	26	35	42	50	51	57	20	55	55	45	51
										400	400	750		400				1000		
•	•	•	•				•	•	•	•	•	•	•	•	•	•	•	•	•	•
		30k	500		500			100k	100k	999.9	400	100k	1000k	400k	400k		400	400	500	100k
		2000μ	2000μ					3000μ	3000μ	2500μ	2500μ	40μ	3000μ	2500μ	40μ	1000μ	2000μ	2000μ		30μ
•	•	•	•					•	•	•	•	•	•	•	•	•	•	•	•	•
1 999	4 000	6 000	6 000	6 000	3 000	3 000	4 000	4 000	4 000	6 000	6 000	4 000	4 000	6 000	4 000	6 000	6 000	6 000	6 000	3 000
		•	•	•	•	•			•		•		•	•		•		•	•	
	•	•	•	•	•		•	•	•		•	•	•	•	•	•	•	•	•	
•	•	•	•	•	•		•	•	•		•	•	•	•	•	•	•	•	•	•
	•	•	•		•		•	•	•	•	•	•	•	•	•		•	•	•	•
										•	•			•						
	TRMS	TRMS	TRMS	TRMS	TRMS	TRMS			TRMS	TRMS	TRMS		TRMS	TRMS	TRMS	TRMS		TRMS	TRMS	TRMS
										LIFETIME WARRANTY				LIFETIME WARRANTY						
			•														•	•	•	
																				
235 x 96 x 46	224 x 78 x 40	224 x 78 x 40	224 x 78 x 40	200 x 70 x 40	280 x 120 x 25	280 x 125 x 25	202 x 70 x 34	188 x 63 x 40	188 x 63 x 40	188 x 66 x 32	223 x 76 x 37	250 x 99 x 43	227 x 78 x 40	258 x 94 x 44	277 x 102 x 49	232 x 72 x 35	264 x 97 x 43	264 x 97 x 43	224 x 78 x 40	270 x 90 x 70
268	220	220	224	265	170	170	180	218	218	202	234	480	290	392	540		608	608	224	500



T6016 - 600A AC

- Jaw size: 30mm
 - Diode test
 - Continuity buzzer
- Data Hold
 - Autoranging

Feature	Parameter	Accuracy
AC Current (A)	200mA/ 20/ 200/ 600A	±2.0% ± 1 Digit
AC Voltage (V)	500V	±1.2% ± 5 Digit
DC Voltage (V)	500V	±0.8% ± 5 Digit
Resistance (Ω)	2000Ω	±1.0% ± 5 Digit
Input impedance	10MΩ	
Display	3½ Digits	1 999 Counts

Model Specification	
Power Source	2 x 1.5 AAA Batteries
Standard Accessories	Test Leads
Certificates	IEC1010-1



TBM3030 - 600A AC

- Jaw size: 26mm
 - Diode test
 - Continuity test
- Relative zero
 - Data Hold
 - Large LCD display

Feature	Parameter	Accuracy
AC Current (A)	40/ 600A	±1.9% + 8 Digit
AC Voltage (V)	4/ 40/ 400/ 600V	4/ 40/ 400V ±1.5% + 5 Digit, 600V ±2.0% + 5 Digit
DC Voltage (V)	400mV/ 4/ 40/ 400/ 600V	±1.0%+ 4 Digit
Resistance (Ω)	400/ 4kΩ/ 40kΩ/ 400kΩ/ 4MΩ/ 40MΩ	4k/ 40k/ 400kΩ ±0.6% + 4 Digit, 4MΩ ±1.0% + 4 Digit, 40MΩ ±2.0% + 4 Digit
Capacitance (F)	500nF/ 5μF/ 50μF/ 500μF/ 3000μF	±3.5% + 6 Digit
Frequency (Hz)	5Hz - 100kHz	±0.5% + 4 Digit
Display	3¾ Digits	4 000 Counts

Model Specification	
Power Source	1 x 3V Battery CR2032
Standard Accessories	Carry Pouch, Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance



TBM031 – TRMS 600A AC

- Jaw size: 30mm
 - AmpTip™
 - BeepLit™
 - Continuity and Diode tests
- Non-contact EF detection (NCV)
 - Crest MAX/MIN (PEAK Hold)
 - In-rush currents (5ms)

Feature	Parameter	Accuracy
AC Current (A)	60 – 600A	±1.0% + 5 Digit
DC Current (A)	600A	±1.5% + 5 Digit
AC Voltage (V)	600V	±1.5% + 5 Digit
DC Voltage (V)	600V	±1.0% + 5 Digit
Resistance (Ω)	600Ω, 6KΩ	±1.0% + 5 Digit
Display	3¾ Digits	6 000 Counts

Model Specification	
Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Test Leads, Carry Pouch
Certificates	EN61326-1



TBM175D - 600A AC

- Jaw size: 30mm
 - AmpTip™
 - Rotary selector switch
 - Dual display
- Non-contact EF detection (NCV)
 - VFD, V & Hz feature
 - DCμA - HVAC flame sensor via probe

Feature	Parameter	Accuracy
AC Current (A)	60 -6 00A	±1.5% + 5 Digit
DC Current (A)	200mA, 2A	±1.0% + 5 Digit
AC Voltage (V)	4/ 40/ 400/ 600V	±1.0% + 5 Digit
DC Voltage (V)	400mV/ 4/ 40/ 400/ 600V	±1.0% + 5 Digit
Temperature (°C)	-40 to +400°C	±1.0 + 1°C
Resistance (Ω)	600kΩ/ 6kΩ/ 60kΩ 600kΩ/ 60MΩ	±1.0% + 5 Digit, ±1.5% + 5 Digit
Capacitance (F)	5200nF/ 2500μF	2.0% + 4 Digit
Frequency (Hz)	10Hz - 1000kHz	0.5% + 4 Digit
Display	4¾ Digits	6 000 Counts

Model Specification	
Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Test Leads
Certificates	UL, IEC61010-1, EMC EN61326-1:2013, Certificate of Conformance



TBM072 - 600A AC

- Jaw size: 30mm
 - AmpTip™
 - Rotary selector switch
 - DCμA - HVAC flame sensor via probe
- Continuity test
 - Data Hold
 - Non-contact EF detection (NCV)
 - Large LCD display

Feature	Parameter	Accuracy
AC Current (A)	40/ 600A	±1.8% + 5 Digit
AC Voltage (V)	4/ 40/ 400/ 600V	4/ 40/ 400V ±1.5% + 5 Digit, 600V ±1.2% + 7 Digit
DC Voltage (V)	400mV/ 4/ 40/ 400/ 600V	±1.0% + 5 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ	±1.0% + 5 Digit
Frequency (Hz)	5Hz - 100kHz	±0.5% + 4 Digit
Display	3¾ Digits	6 000 Counts

Model Specification	
Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance



TBM076 - 600A AC

- Jaw size: 30mm
 - AmpTip™
 - 3-Phase rotation for mains and motor
 - Non-contact EF detection (NCV)
- DCμA - HVAC flame sensor via probe
 - Rotary selector switch
 - Continuity test
 - Data Hold

Feature	Parameter	Accuracy
AC Current (A)	40/ 600A	±1.8% + 5 Digit
DC Voltage (V)	400mV/ 4/ 40/ 400/ 600V	±1.0% + 5 Digit
AC Voltage (V)	4/ 40/ 400/ 600V	440/ 400V ±1.5% + 5 Digit, 600V ±1.2% + 7 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ	±1.0% + 5 Digit
Temperature (°C)	-40 to +400°C	±1.0% - 1°C
Frequency (Hz)	5Hz - 100kHz	±0.5% + 4 Digit
Capacitance (F)	200μF/ 2500μF	±2.0% + 4 Digit
Display	3¾ Digits	6 000 Counts

Model Specification	
Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, K-Type Temp Probe TBMTEMPPROBE
Certificates	UL, IEC61010-1, Certificate of Conformance



TBM086 - 1000A AC

- Jaw size: 51mm
- AmpTip™
- 3-Phase rotation for mains and motor
- DCµA - HVAC flame sensor via probe
- Non-Contact EF detection (NVC)
- Rotary selector switch
- Peak RMS 80ms in-rush current
- Backlight

Technical Overview

Feature	Parameter	Accuracy
AC Voltage (V)	600/ 1000V	±1.8% + 5 Digit
DC Voltage (V)	600/ 1000V	±0.8% + 5 Digit
AC Current (A)	60/ 600/ 1000A	4/ 40/ 400V ±1.5% + 5 Digit, 600V ±1.2% + 7 Digit
DC Current (A)	60/ 600/ 1000A	±1.0% + 5 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ	4k/ 40k/ 400kΩ ±0.6% + 4 Digit, 4mΩ ±1.0% + 4 Digit, 40mΩ ±2.0% + 4 Digit
Temperature (°C)	-40 to +400°C	±1.0% - 0.8°C, 100°C - 400°C ±1.0% - 1°C
Frequency (Hz)	5Hz - 100kHz	±0.5% + 4 Digit
Capacitance (F)	200µF/ 2500µF	±2.0% + 4 Digit
Display	3½ Digits	6 000 Counts



CAT III 1000V

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, K-Type Temp Probe TBMTEMPPROBE, Crocodile Clips
Certificates	UL, IEC61010-1, Certificate of Conformance, CE



T98 - 1000A AC

- Jaw size: 42mm
- Continuity test
- Data Hold
- Backlight
- Temperature

Technical Overview

Feature	Parameter	Accuracy
AC Current (A)	20/ 200/ 1000A	±2.0% + 5 Digit
AC Voltage (V)	750V	±1.0% + 5 Digit
DC Voltage (V)	1000V	±1.0% + 2 Digit
Resistance (Ω)	200/ 2000Ω	±1.0% + 3 Digit
Temperature (°C)	-40 to +750°C	±1.0% + 5 Digit
Display	3½ Digits	1 999 Counts



CAT II 1000V

CAT III 600V

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Carry Pouch, K-Type Temp Probe TBMTEMPPROBE
Certificates	IEC61010-1



T260D - 1000A AC

- Jaw size: 50mm
- Combination Clamp
- Diode test
- Continuity buzzer
- Data Hold

Technical Overview

Feature	Parameter	Accuracy
AC Current (A)	20/ 200/ 1000A	±2.5% + 5 Digit
AC Voltage (V)	200/ 750V	±1.0% + 5 Digit
DC Voltage (V)	200mV/ 2/ 20/ 200/ 1000V	±0.5% + 3 Digit
Resistance (Ω)	200Ω/ 2kΩ/ 20kΩ/ 200kΩ/ 20MΩ	±1.0% + 8 Digit
Frequency (Hz)	2kHz	±2.0% + 5 Digit
Temperature (°C)	0 to +750°C	
Insulation Test	2000MΩ	±4.0% + 2 Digit
Display		2 000 Counts

RoHS



CAT II 1000V

CAT III 600V

Model Specification

Power Source	1 x 9V Battery
Certificates	ETL, IEC61010-1, Certificate of Conformance

**TBM116 - 1000A AC**

- Jaw size: 45mm
- AutoCheck™
- Diode test
- Ghost-Voltage-Buster
- Continuity test
- Relative zero
- Data Hold
- EF Detection

Technical Overview

Feature	Parameter	Accuracy
AC Current (A)	400/ 1000A	±1.8% + 5 Digit
DC Voltage (V)	400mV/ 4/ 40/ 600V	±1.0% + 5 Digit
AC Voltage (V)	4/ 40/ 400/ 600V	±4/ 40/ 400V ±1.5% + 5 Digit, 600V ±1.2% + 7 Digit
Resistance (Ω)	400/ 4kΩ/ 40kΩ/ 400kΩ/ 40MΩ	4kΩ/ 40kΩ/ 400kΩ ±0.6% + 4 Digit, 4mΩ ±1.0% + 4 Digit, 40mΩ ±2.0% + 4 Digit
Display	3 ⁵ / ₆ Digits	6 000 Counts



CAT III 600V

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance

**TBM118 - 2000A AC**

- Jaw size: 45mm
- AutoCheck™
- EF detection
- Ghost-Voltage-buster
- Diode test
- Continuity test
- Relative zero
- Data Hold

Technical Overview

Feature	Parameter	Accuracy
AC Current (A)	400/ 2000A	±1.5% + 5 Digit
DC Voltage (V)	6/ 60/ 600V	±2.0% + 5 Digit
AC Voltage (V)	660/ 600V	±1.5% + 5 Digit
Resistance (Ω)	6/ 60kΩ/ 600kΩ/ 6MΩ	±1.2% + 4 Digit
Frequency (Hz)	10 - 50kHz	±0.5% + 4 Digit
Capacitance (F)	100nF/ 1000nF/ 10μF/ 100μF/ 2000μF	±3.5% + 5 Digit
Display	3 ⁵ / ₆ Digits	6 000 Counts



CAT III 300V

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance

**TBM135 - 1000A AC**

- Jaw size: 45mm
- Hi-Lo logging (sampling speed <50ms)
- 5400 Point logging
- Continuity test

Technical Overview

Feature	Parameter	Accuracy
AC Current (A)	40/ 400/ 1000A	±2.0% + 5 Digit
DC Voltage (V)	600V	±0.5% + 5 Digit
AC Voltage (V)	600V	±1.5% + 5 Digit
Resistance (Ω)	999.9Ω	±1.0% + 6 Digit
Temperature (°C)	-50 to +300°C	
Frequency (Hz)	5 - 500Hz	±0.5% + 4 Digit
Thd%-r	0.0%~99.9%	Fundamental 1% + 6 Digit 2~3 Harmonics 5% + 6 Digit 4~51 St Harmonics 2%
Display	3 ⁵ / ₆ Digits	6 000 Counts



CAT III 300V

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, K-Type Thermocouple
Optional Accessories	RS232 Cable and Software TBU13X, Adaptor (P16)
Certificates	UL, IEC61010-1, Certificate of Conformance



T77N - 100A AC

- Earth Leakage
- Data Hold
- Low pass filter with high stability 100Hz
- Autoranging
- Bar graph
- Frequency compare function
- Backlight

Technical Overview

Feature	Parameter	Accuracy
AC Current (A)	0.1mA/ 6mA	±1.0% + 8 Digit
	60A	±1.0% + 8 Digit
	100A	±2.0% + 10 Digit
Display	4 Digits	6 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch
Certificates	UL, IEC61010-1



CAT III 300V



TF3000 - 3000A AC

- Jaw size: 110mm
- Flexible jaw length: 54mm
- Sample rate (4 times/second)
- Data Hold
- Backlight

Technical Overview

Feature	Parameter	Accuracy
AC Current (A)	0.1A, 30A	±3.0% + 5 Digit
	300A	±3.0% + 5 Digit
	3000A	±3.0% + 5 Digit
Display	4 Digits	3 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch
Certificates	UL, IEC61010-1, Certificate of Conformance



CAT IV 600V
to ground



F3000U - 3000A AC TRMS Transducer Flexible Clamp

- Jaw size: 110mm
- Flexible jaw length: 254mm
- Backlit LCD
- Cable connection to JUPITER, NEPTUNE and MERCURY series

Technical Overview

Feature	Parameter	Accuracy
AC TRMS Current (A)	0.3 – 30A	±3.0% + 5mV Digit
	30 – 300A	±3.0% + 3mV Digit
	300 – 3000A	±3.0% + 3mV Digit
Display	4 Digit	3 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Alkaline Batteries
Standard Accessories	Banana Connectors, Cable Length 1m
Certificates	IP40, IEC/EN61010-1, IEC/EN61010-2-032



IP40

CAT IV 600V

CAT III 1000V
to ground



CAT III 300V

T223 - 100A AC/DC

- Jaw size: 12.5mm
- Concurrent reading
- Resistance
- Continuity test

Technical Overview

Feature	Parameter	Accuracy	Protection
DC Current (A)	1mA/ 10mA/ 10/ 100A	±2.0% + 10 Digit	150A RMS
AC Current (A)	1mA/ 10mA/ 10/ 100A	±2.0% + 10 Digit	150A RMS
DC Voltage (V)	100mV/ 600V	±0.08% + 2 Digit	660V RMS
AC Voltage (V)	100mV/ 600V	±2.0% + 3 Digit	660V RMS
Resistance (Ω)	1.10kΩ	±1.0% + 3 Digit	
Display		4 000 Counts	

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Test Leads



CAT III 600V

TBM061 - 400A AC/DC

- Jaw size: 30mm
- Diode test
- Continuity test
- Relative zero
- Auto power off

Technical Overview

Feature	Parameter	Accuracy
DC Current (A)	0.01/ 400A	±2.5% + 5 Digit
AC Current (A)	40.01/ 400A	±2.5% + 5 Digit
DC Voltage (V)	400mV/ 4/ 40/ 400/ 600V	±1.0% + 4 Digit
AC Voltage (V)	4/ 40/ 400/ 600V	4/ 40/ 400V ±1.0% + 4 Digit, 600V ±2.0% + 4 Digit
Resistance (Ω)	400/ 4kΩ/ 40kΩ/ 400kΩ/ 40MΩ	4kΩ/ 40kΩ/ 400kΩ ±0.6% + 4 Digit, 4MΩ ±1.0% + 4 Digit, 40MΩ ±2.0% + 4 Digit
Frequency (Hz)	1kHz - 100kHz	±2.0% + 4 Digit
Capacitance (F)	500nF/ 5μF/ 50μF/ 500μF/ 3000μF	±3.5% + 6 Digit
Display	3 ³ / ₄ Digits	4 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance



CAT III 600V

**TBM062 - 400A AC/DC**

- Jaw size: 30mm
- Diode test
- Continuity test
- Relative zero
- Auto power off
- Backlight

Technical Overview

Feature	Parameter	Accuracy
DC Current (A)	0.01/ 400A	±2.5% + 5 Digit
AC Current (A)	0.01/ 400A	±2.5% + 5 Digit
DC Voltage (V)	400mV/ 4/ 40/ 400/ 600V	±1.0% + 4 Digit
AC Voltage (V)	4/ 40/ 400/ 600V	±1.5% + 5 Digit
Resistance (Ω)	400/ 4kΩ/ 40kΩ/ 400kΩ/ 4MΩ/ 40MΩ	4kΩ/ 40kΩ/ 400kΩ ±0.6% + 4 Digit, 4MΩ ±1.0% + 4 Digit, 40MΩ ±2.0% + 4 Digit
Frequency (Hz)	1kHz - 100kHz	±2.0% + 4 Digit
Capacitance (F)	500nF/ 5μF/ 50μF/ 500μF/ 3000μF	±3.5% + 6 Digit
Display	3 ³ / ₄ Digits	4 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance



TBM037 – TRMS 600A AC/DC

- Jaw size: 26mm Hall-effect
- AmpTip™
- BeepLit™
- Continuity and Diode tests
- Non-contact EF detection (NCV)
- Crest max/min (Peak hold)
- In-rush currents (5ms)
- DCµA for HVAC flame sensors

Technical Overview

Feature	Parameter	Accuracy
AC Current (A)	60 – 600A	±1.0% + 5 Digit
DC Current (A)	60/ 600A	±1.0% + 5 Digit
DC Current (µA)	200µA/ 2000µA	±1.0% + 5 Digit
AC Voltage (V)	600V	±1.5% + 5 Digit
DC Voltage (V)	600V	±1.0% + 5 Digit
Frequency (Hz)	5Hz - 999.9Hz	Line-level AC V
Resistance (Ω)	600/ 6KΩ/ 60kΩ/ 600kΩ/ 6000kΩ	±1.0% + 5 Digit
Temperature (°C)	-40 to +400°C	±1.0% + 1°C
Capacitance (F)	200µF/ 2500µF	±2.0% + 4 Digit
Display	3½ Digits	6 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Test Leads, K-Type Thermocouple, Carry Pouch
Certificates	EN61326-1

CAT III 600V

CAT IV 300V



TBM079 - 600A AC/DC

- Jaw size: 35mm
- AmpTip™
- 3-Phase rotation for mains and motors
- Non-contact EF detection (NCV)
- Rotary selector switch
- Data Hold

Technical Overview

Feature	Parameter	Accuracy
DC Current (A)	60/ 600A	±2.0% + 5 Digit
AC Current (A)	40/ 600A	±1.8% + 5 Digit
DC Voltage (V)	400mV/ 4/ 40/ 400/ 600V	±1.0% + 5 Digit
AC Voltage (V)	4/ 40/ 400/ 600V	4/ 40/ 400V ±1.5% + 5 Digit, 600V ±1.2% + 7 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ	±0.6 - 2.0% + 4 Digit
Temperature (°C)	-40 to +400°C	±1.0% + 1°C
Frequency (Hz)	50Hz - 400Hz	±2.0% + 4 Digit
Capacitance (F)	200µF/ 2500µF	2.0% + 4 Digit
Display	3½ Digits	6 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Temp Probe TBMTEMPPROBE, Test Leads, Crocodile Clips
Certificates	UL, IEC61010-1, Certificate of Conformance

LIFETIME WARRANTY

CAT III 600V



T8056 - 1000A AC/DC

- Jaw size: 42mm
- Duty cycle
- Diode test
- Continuity test
- Auto power off
- Relative zero
- Data Hold

Technical Overview

Feature	Parameter	Accuracy
DC Current (A)	400/ 1000A	±3.0% + 3 Digit
AC Current (A)	400/ 1000A	±3.0% + 3 Digit
DC Voltage (V)	0.4/ 4/ 40/ 400/ 1000V	±0.7% + 1 Digit
AC Voltage (V)	4/ 40/ 400/ 700V	±0.8% + 10 Digit
Resistance (Ω)	400/ 4kΩ/ 40kΩ/ 400kΩ/ 4MΩ/ 40MΩ	±2.0% + 3 Digit
Temperature (°C)	-40 to +750°C	±1.0% + 6 Digit
Frequency (Hz)	40/ 400/ 4k/ 40k/ 100kHz	±2.0% + 1 Digit
Capacitance (F)	4nF/ 40nF/ 400nF/ 4µF/ 40µF	±4.0% + 10 Digit
Display	3¾ Digits	4 000 Counts

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Carry Case, Temp Probe TBMTEMPPROBE, Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance

CAT II 1000V

CAT III 600V



**TBM162 - 1000A AC/DC**

- Jaw size: 50mm
- MAX Hold
- Continuity test
- Diode test
- Large display
- Backlight

Technical Overview

Feature	Parameter	Accuracy
AC Current (A)	400/ 800A	400A, $\pm 2.0\%$ + 5 Digit, 800A, 5.0% + 30 Digit
DC Current (A)	400/ 1000A	$\pm 0.5\%$ + 3 Digit
AC Voltage (V)	600V	$\pm 2.0\%$ + 5 Digit
DC Voltage (V)	600V	$\pm 2.0\%$ + 5 Digit
Resistance (Ω)	400/ 4k Ω / 4M Ω / 40M Ω	$\pm 1.0\%$ + 4 Digit
Capacitance (F)	500nF/ 5 μ F/ 50 μ F/ 500 μ F 3000 μ F	$\pm 3.5\%$ + 6 Digit
Frequency (Hz)	15Hz - 1000Hz	2.0% + 5 Digit
Display	3 $\frac{3}{4}$ Digits	4 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Pouch, Test Leads
Certificates	UL, IEC61010-1, Certificate of Conformance

**TBM089 - 1000A AC/DC**

- Jaw size: 51mm
- 3-Phase rotation for mains and motors
- AmpTip™
- Non-contact EF detection (NCV)
- Rotary selector switch
- Continuity test
- Flashlight

Technical Overview

Feature	Parameter	Accuracy
DC Current (A)	60/ 600/ 1000A	$\pm 1.8\%$ + 5 Digit
AC Current (A)	60/ 600/ 1000A	$\pm 1.8\%$ + 5 Digit
DC Voltage (V)	600/ 1000V	$\pm 1.0\%$ + 5 Digit
AC Voltage (V)	600/ 1000V	$\pm 1.2\%$ + 7 Digit
Resistance (Ω)	600/ 6k Ω / 60k Ω	$\pm 1.0\%$ + 5 Digit
Temperature ($^{\circ}$ C)	-40 to +400 $^{\circ}$ C	$\pm 1.0\%$ + 0.8 $^{\circ}$ C
Frequency (Hz)	5Hz - 400kHz	$\pm 0.5\%$ + 4 Digit
Capacitance (F)	2500 μ F	$\pm 2.0\%$ + 4 Digit
Display	3 $\frac{3}{4}$ Digits	6 000 Counts

Model Specification

Power Source	2 x 1.5V AA Batteries
Standard Accessories	Carry Pouch, Temp Probe TBMTEMPPROBE , Test Leads, Crocodile Clips
Certificates	UL, IEC61010-1, Certificate of Conformance

**T2608 - 2000A DC/ 1500A AC**

- Jaw size: 57mm
- MIN/MAX Hold
- Data Hold/Peak Hold
- Auto power off
- Diode test
- Continuity test
- Bar graph

Technical Overview

Feature	Parameter	Accuracy
DC Current (A)	400/ 2000A	$\pm 1.5\%$ + 5 Digit
AC Current (A)	400/ 1500A	$\pm 1.5\%$ + 5 Digit
DC Voltage (V)	400mV/ 4/ 40/ 400/ 1000V	$\pm 0.5\%$ + 1 Digit
AC Voltage (V)	400mV/ 4/ 40/ 400/ 750V	$\pm 1.5\%$ + 4 Digit
Resistance (Ω)	400/ 4k Ω / 40k Ω / 400k Ω / 4M Ω / 40M Ω	$\pm 1.0\%$ + 4 Digit
Frequency (Hz)	10/ 1kHz/ 10kHz/ 100kHz/ 400kHz	$\pm 0.1\%$ + 4 Digit
Capacitance (F)	4nF/ 40nF/ 400nF/ 4 μ F/ 40 μ F	$\pm 1.0\%$ + 4 Digit
Display	3 $\frac{3}{4}$ Digits	4 000 Counts

Model Specification

Power Source	1 x 9V Battery
Certificates	UL, IEC61010-1, Certificate of Conformance



CAT IV 300V

CAT III 600V

T261 – TRMS 200A AC/DC

- Jaw size: 20mm
- 1mA Current resolution
- Built in LED backlight
- Autoranging
- Continuity and Diode tests
- Data Hold

Technical Overview

Feature	Parameter	Accuracy
AC/DC Current (mA)	4000mA	±2.0% + 5 Digit
AC/DC Current (A)	40/ 100/ 200A	±2.0% + 5 Digit
AC+DC Current (mA/A)	4000mA/ 40/ 200A	±2.5% + 5 Digit
AC Voltage (V)	6/ 60/ 600V	±1.2% + 5 Digit
DC Voltage (V)	6/ 60/ 600V	±1.0% + 2 Digit
AC+DC Voltage (V)	6/ 60/ 600V	±1.2% + 5 Digit
Resistance (Ω)	600/ 6KΩ/ 60kΩ/ 600kΩ	±1.0% + 3 Digit
Capacitance (F)	1μF/ 10μF/ 100μF/ 1000μF	±3.0% + 8 Digit
Display	3 1/2 Digits	6 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Test Leads, Carry Pouch
Certificates	EN61010



CAT IV 1000V

TBM195 - 2000A AC/DC

- Jaw size: 55mm
- Dual display
- Non-contact EF detection (NCV)
- VFD-V, VFD-Hz (Variable frequency drivers)
- Relative zero
- Data logging (PC-comm interface)
- AutoCheck™ LoZ
- Diode test
- Inrush crest

Technical Overview

Feature	Parameter	Accuracy
DC Current (A)	100/ 200/ 500/ 1000/ 2000A	±2.0% + 5 Digit
AC Current (A)	100/ 200/ 500/ 1000/ 2000A	±2.0% + 5 Digit
DC Voltage (V)	6/ 60/ 600/ 1000V	±1.2% + 5 Digit
AC Voltage (V)	6/ 60/ 600/ 1000V	±1.2% + 5 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ/ 6MΩ/ 40MΩ	±0.5% + 5 Digit
Capacitance (F)	60nF/ 6μF/ 60μF/ 600μF/ 2000μF	±2.0% + 5 Digit
Frequency (Hz)	10 - 1999Hz	Line-level AC A
Display	3 1/2 Digits	6 000 Counts (+ 1 999 Counts dual display)

Model Specification

Power Source	2 x 1.5V AA Batteries
Standard Accessories	Carry Pouch, Test Leads
Optional	TBU19X (P15)
Certificates	IEC61010-1, Certificate of Conformance



CAT IV 1000V



TBM197 - 2000A AC/DC

- Jaw size: 55mm
- AutoCheck™ LoZ
- Ghost-Voltage-Buster
- Dual display
- Non-contact EF detection (NCV)
- Data logging (PC-Comm interface)
- Inrush crest
- VFD-V, VFD-Hz (Variable frequency drivers)
- Diode test

1500V DC



Technical Overview

Feature	Parameter	Accuracy
DC Current (A)	100/ 200/ 500/ 1000/ 2000A	±2.0% + 5 Digit
AC Current (A)	100/ 200/ 500/ 1000/ 2000A	±2.0% + 5 Digit
DC Voltage (V)	6/ 60/ 600/ 1000/ 1500V	±1.4% + 7 Digit
AC Voltage (V)	6/ 60/ 600/ 1000V	±1.4% + 7 Digit
Resistance (Ω)	600/ 6kΩ/ 60kΩ/ 6MΩ/ 40MΩ	±0.5% + 5 Digit
Frequency (Hz)	10 - 1999Hz	Line-level AC A
Temperature (°C)	-50 to +1000°C	±0.3% + 4 Digit
Capacitance (F)	60nF/ 6μF/ 60μF/ 600μF/ 2000μF	±2.0% + 5 Digit
Display	3 1/2 Digits	6 000 Counts (+1999 Counts dual display)

Model Specification

Power Source	2 x 1.5V AA Batteries
Standard Accessories	Carry Pouch, K-Type Temp Probe TBMTEMPPROBE, Test Leads
Optional Accessories	TBU19X (P16)
Certificates	IEC61010-1, Certificate of Conformance

TBM157 - 1000A AC

- Jaw size: 45mm
- 3-Phase Power Clamp
- Total power factor
- Data logging
- 3-Wire, 4-wire unbalanced-load
- Peak inrush 65ms
- PC-Comm (Optical) Isolated PC interface

**Technical Overview**

Feature	Parameter	Accuracy
AC Current (A)	40/ 400/ 1000A	2.2% + 5 Digit
DC Voltage (V)	600V	0.5% + 5 Digit
AC Voltage (V)	600V	1.5% + 5 Digit
Resistance (Ω)	999.9 Ω	1.0% + 6 Digit
Frequency (Hz)	5 ~ 500Hz	0.5% + 4 Digit
Power	0.00 ~ 600kVA, 0.00 ~ 600kW 0.00 ~ 600kVAR	±4.0% + 10 Digit
THD%-F Total Harmonic Distortion	0% ~ 450%	Fundamental 1.5% + 6 Digit 2~51 Harmonics 2.5 - 10% + 6 Digit
Display	3 ¹ / ₂ Digits	6 000 Counts

Model Specification

Power Source	2 x 1.5V AAA Batteries
Standard Accessories	Carry Case, Test Leads
Optional Accessories	RS232 Cable and Software TBU13X , USB Adaptor (P16)
Certificates	UL, IEC61010-1, Certificate of Conformance

TR1000P – 3 Phase Power Clamp AC/DC 1000A

- Jaw size: 51mm
- Continuity and Diode test
- Non-contact EF detection (NCV)
- Active, Reactive and Apparent Power
- Harmonic measurement up to 49th Harmonic & THD%
- Power Factor
- Data hold Max/Min
- LPF Mode for VFD
- Bar graph scale
- Rotating Clamp Jaws
- Inrush/Peak Value Measurement (100ms)

**Technical Overview**

Feature	Parameter	Accuracy
AC Current (A)	0.1 – 1000A	±1.5% + 5 Digit
DC Current (A)	0.1 – 1000A	±1.5% + 5 Digit
AC Voltage (V)	0.1V - 1000V	±0.25% + 1 Digit
DC Voltage (V)	0.1V – 1000V	±0.25% + 1 Digit
Active Power (W)	1W – 1000/ 3000/ 1732kW	±2.0% + 5 Digit
Reactive Power (kVAr)	1W – 1000/3000/1732kVAr	±2.0% + 5 Digit
Apparent Power (kVA)	1W – 1000/3000/1732kVA	±2.0% + 5 Digit
Energy (kWh)	0.001kWh – 9999kWh	±3.0% + 5 Digit
Resistance (Ω)	9 999Ω	±0.4% + 1 Digit
Frequency (Hz)	1Hz – 100kHz	±0.5% + 1 Digit
Capacitance (F)	10f – 30μF	±1.0% + 3 Digit
Display	3 ¹ / ₂ Digits	3 000 Counts

Model Specification

Power Source	9V DC Battery
Standard Accessories	PT1000 Temperature Probe, Test Leads
Certificates	IP50, IEC 61010-1-2010



ELECTRIC SAFETY MEASUREMENTS	MACROG3	T419	T60	JUPITER	NEPTUNE
PAGE NO.	29	29	30	14	14
True RMS	•	•	•	•	•
Insulation with voltage 50, 100, 250, 500, 1000V DC	•	•	•		•
Continuity of protective conductors with 200mA/10A	•	•	•		250mA
Tripping time and current of RCDs type B, A, AC Standard, Selective and Delayed up to 1A	200mA	Only A, AC general and selective	200mA	Only A, AC 300mA	
Tripping time and current of earth leakage relays type B, A, AC Standard, Selective and Delayed up to 10A	RCDX10*		RCDX10*		
Non-trip earth resistance	•	•	•	•	
Earth resistance with rods	•		•		
Earth resistance with stakeless testing method	T2100*		T2100*		
Ground resistivity by 4-wire method	•		•		
Loop/Line impedance, Phase-Phase, Phase-Neutral, Phase-PE	•	•	•	•	
Loop/Line impedance Phase-Phase, Phase-Neutral, Phase-PE with high resolution (0.1mΩ) Index (PI)	TIMP57*	TIMP57*	TIMP57*		
Measurement of percentage voltage drop on the line	•		•		
Contact Voltage	•	•	•	•	•
Phase Sequence	•	•	•	•	•
Leakage current with optional clamp meter	•	•	•		•
Dielectric absorption ratio (DAR), Polarisation (Index PI)					•
POWER ANALYSIS					
Measurement of Voltage, Current, Active, Reactive, Apparent Power	(1)		•		
Measurement of Cosphi, Power Factor	(1)		•		
Voltage and current harmonics up to the 49th with calculation of THD%	25th		•	25th	25th
ADDITIONAL CHARACTERISTICS					
Automatic test (Ra, RCD, Insulation)		•	•		
Measurement of environmental parameters (°C, %Relative Humidity, Lux)	TIMP57*		HT52/05*		
Test with remote lead PR400	•	•	•		
Help on screen display	•	•	•		
Internal memory for measured data saving	•	•	•		
USB PC connection	•	•	•		
Integrated WiFi connection and compatibility with HTANALYSIS App	•		•		
Safety category	CAT III 240V	CAT III 240V	CAT III 300V	CAT IV 600V	CAT IV 600V
Reference standard for safety	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
IP Rating	50	50	50	40	40
Dimensions (mm) LxWxH	222 x 162 x 57	222 x 162 x 57	222 x 162 x 57	175 x 85 x 55	175 x 85 x 55
Weight (batteries included) Kg	1.2	1.2	1.2	420	420

* Optional accessories

(1) Single-phase or balanced three-phase system

MACROG3 – Compliance Single Phase**Advanced multifunction device for verification of domestic and industrial electric systems**

- All SANS10142 electrical safety verifications
- (23kA L-N) (40kA L-L)
- Earth resistance by voltammetric method with 2 or 3 poles in TT, TN and IT systems
- Ground resistivity with 4-wire method
- Measurement of electric parameters in single-phase installations (V, I, W, VAR, VA, PF)
- Test of RCDs type A, AC, B up to 1A
- Test earth leakage relays with test current up to 10A (with optional accessory RCDX10)
- Loop/Line impedance P-N, P-P, P-PE also with high resolution (0.1mΩ) with optional accessory TIMP57 (P45)
- Insulation resistance test with 50, 100, 250, 500, 1000V DC
- PSC/LOOP impedance tests P-P, P-N, P-PE
- Continuity of protective conductors with 200mA
- Phase Sequence and leakage currents verification
- Touch-screen colour display (320x240pxl)
- PC interface with optical USB and Wi-Fi
- 999 Memory locations, 3 levels of markers



%Rh

IP40**CAT IV 300V**(to ground),
max 415V between inputs**Technical Overview**

Feature	Parameter	Accuracy
DC Voltage (V)	100/ 250/ 500/ 1 000V	±5.0% +2 Digit
Voltage (RCD, LOOP, Phase sequence)	15 – 460V	±3.0% +2 Digit
AC TRMS Voltage (V)	15 – 459.9V	±1.0% +1 Digit
Frequency (Hz)	47 – 63.6Hz	±0.1% +1 Digit

Model Specification

Power Source	6 x 1.2V type AA rechargeable batteries or 6 x 1.5V type AA alkaline batteries
Standard Accessories Selection Guide (P70)	UNIVERSALKITG3 - 4 cables, 4 Crocodile clips, 3 test leads KITERRNE - 4 Earth rods and cables in soft carry bag PR400 - Remote switch probe PR400 - Stylus VAS07 - Rigid hard case TOPVIEW2006 - PC software and optical-USB connection cable
Optional Accessories Selection Guide (P70)	HT96U - Clamp transducer AC 1-100-1000A/1V, diameter 54mm TIMP57 - High resolution impedance measurement adapter T2100 - Earth ground clamp transducer for Stakeless measurements
Certificates	IP40, Calibration Certificate ISO9000, IEC/EN61557-1 Certificate of Conformance

T419 – Compliance Single Phase**Multifunction installation tester for electrical safety tests on domestic and industrial systems**

- (23kA L-N) (40kA L-L)
- Continuity of protective conductors with 200mA
- Insulation resistance test with 50, 100, 250, 500, 1000V DC
- Loop/Line impedance P-N, P-P, P-PE also with high resolution (0.1mΩ) with optional accessory TIMP57 (P45)
- Non-trip earth resistance
- Phase sequence rotation
- Memory storage of results
- Global Earth Resistance



TOPVIEW2006

**CAT II 240V****Technical Overview**

Feature	Parameter	Accuracy
DC Voltage (V)	50/ 100/ 250/ 500/ 1000	±5.0% +2 Digit
RCD Contact Voltage (V)	50/ 100V	±2.0% +2 Digit
RCF Loop Resistance (Ω)	0 – 2kΩ	±2.0% +2 Digit
Line/Loop Impedance	0.01 -199.9Ω 200 - 1999Ω (P PE)	±5.0% +3 Digit

Model Specification

Power Source	6 x 1.5V batteries type AA
Standard Accessories	Test Leads, Carry Case
Optional Accessories	TOPVIEW2006 Software, USB Cable (P70), TEARTHKIT Earthing Tester Kit (P66)
Certificates	IEC/EN61010-1, IEC/EN61557-1-2-3-4-6-7, Calibration Certificate ISO9000, Certificate of Conformance

T60 Compliance/3-Phase Network and Power Analyser

- Touch-screen colour display (320x240pxl)
- Optical/USB PC Connection
- Internal Memory
- Help online on the display



CAT III 350V

CAT IV 300V

(to ground)



PR400



KITERRNE



TOPVIEW2006



UNIVERSALKITG3



HTFLEX33E

Electrical Safety

- 362 Parameters over 2 months recording
- Real-time display of wave forms
- Earth resistance by voltammeteric method
- 4-Wire ground resistivity method
- RCD type testing, A, AC, B up to 10A
- Insulation resistance up to 1000V DC
- Advanced loop testing of MCBs
- Verification of phase sequence and leakage currents
- Continuity of protective conductors with 200mA
- Resistance of the earth rods with clamp
- Ground resistivity by 4-wire method
- Line/Loop, Phase-Phase, Phase-Neutral, Phase-PE impedance with high resolution (0.1 mΩ) with optional accessory TIMP57 (P45)
- Assumed short-circuit current
- Contact voltage
- Tripping time of General, Selective and Delayed RCDs
- Test current A, AC max 1A and type B max 300mA
- RCD tripping current (Ramp test)
- Phase sequence
- Measurement of percentage voltage drop on the lines
- Test with remote switch probe PR400

Mains Analysis

- Power factor
- Histograms of voltage/current harmonics and THD%
- Voltage anomalies (sags and swells)
- 9 Types of electric systems available:
- AC TRMS voltage in single-/3-phase up to 600V
- AC TRMS current in single-/3-phase systems up to 3000A
- Active, Reactive and Apparent Power/ Energy
- Cosphi and Power Factor
- Voltage, Current, DC Power
- Voltage dips and peaks on 20ms @50hz
- Voltage/current waveforms
- Histograms of voltage/current harmonics and THD%
- Voltage/current vector diagram
- Periodical recording with selectable PI
- Max number of simultaneously selectable quantities 632
- Voltage/current harmonic analysis up to the 49th
- Calculation and recording of voltage/current THD%

Model Specification

Power Source	6 x 1.2V (rechargeable) AA or 6 x 1.5V AA Batteries or 10W power supply
Standard Accessories	HTFLEX33E - 4pcs 3000A AC flexible clamp, diameter 174mm UNIVERSALKITG3 - Set of 4 cables, 4 Crocodile clips, 3 test leads KITERRNE - 4 earth rods and cables in soft carry bag PR400 - Remote switch probe PR400 - Stylus TOPVIEW2006 - PC software and optical-USB connection cable
Optional Accessories Selection Guide (P70)	HTFLEX35 - 3000A AC flexible clamp, diameter 274mm HT96U - Clamp transducer AC 1-100-1000A/1V, diameter 54mm HT4003 - Clamp transducer 400A AC, diameter 30mm HT4005N - Clamp transducer AC 0-5A, 0-100A diameter 20mm T2100 - Earth ground clamp transducer for Stakeless measurements
Certificates	IP40, EN61010-1, EN61326-1, EN61557-1-2-3-4-5-6-7-10, EN50160, EN60909-0, Calibration Certificate

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	100/ 250/ 500/ 1 000V	±5.0% +2 Digit
Voltage (RCD, Loop, Phase Sequence)	15 – 460V	±3.0% +2 Digit
Frequency (Hz)	47 – 63.3Hz	±0.1% +1 Digit
Continuity Test (Ω)	0.01 – 99.9Ω	±5.0% +3 Digit
Z Line (L-L, L-N, L-PE)	0 – 19999mΩ	±5.0% +1m Ω (TIMP57)
	0.01 – 199.9Ω	±5.0% +3 Digit
RCD Tripping Current		
AC, A	$I_{pN} = 10mA$	- 0%, +10% I_{pN}
	10mA < $I_{pN} \leq 650mA$	- 0%, +5% I_{pN}
B	30mA $\leq I_{pN} \leq 100mA$	- 0%, +5% I_{pN}
Earth Leakage Delay		
AC, A	30mA $\leq I_{pN} \leq 6.5mA$	- 0%, +5% I_{pN}
B	30mA $\leq I_{pN} \leq 1mA$	- 0%, +5% I_{pN}
RA – Non-Trip Earth Loop Impedance	Test voltage: 100 - 265V (Line-PE),	50/60Hz ± 5%
Ground Resistance: 3-Wire Method	0.01 – 49.99kΩ	±5.0% +3 Digit
Soil Resistivity: 4-Wire Method	Range (Ωm)	Resolution (Ωm)
	0.06 – 3.14M*	0.01- 0.01M
Phase Sequence Rotation: 1-Wire Method	Voltage range P-N, P-PE[V] 100 - 265	

* With distance d=10m, Distance "d" range

TCTCOMP – Compact Compliance Kit

- Kit supplied in a sturdy case with foam cut out to secure each instrument
- Refer to individual products for technical overview



Case Dimensions: 450(L) x 360(W) x 100(H)
Weight: 5.5kg

Code	Description	Page No
T1151	LIFETIME WARRANTY CAT III 500V SA DESIGNED SANS10142 1000V Digital Insulation Tester • Test Voltages (DC): 250/ 500/ 1000V	40
T1120	CAT II 300V Digital Earth Resistance Tester • Earth Resistance (Ω): 20Ω, 200Ω, 2kΩ	36
TEL2TLB	ELCB /Polarity Socket Tester • Rated Tripping Current: 10, 15, 20, 25, 30, 35mA • SANS164-2 plug socket compatible	49
JUPITER	IP40 CAT III 690V to ground and between inputs TRMS CE CAT IV 600V Multifunction Multimeter PSC/Loop Tester • Automatic detection of AC/ DC signals	14

TCTCDK Compact Digital Compliance Kit

- Kit supplied in a sturdy case with foam cut out to secure each instrument
- Refer to individual products for technical overview



Case Dimensions: 540(L) x 460(W) x 160(H)
Weight: 10.5kg

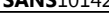
Code	Description	Page No
T1151	LIFETIME WARRANTY CAT III 500V SA DESIGNED SANS10142 1000V Digital Insulation Tester • Test Voltages (DC): 250/ 500/ 1000V	40
T1120	CAT II 300V Digital Earth Resistance Tester • Earth Resistance (Ω): 20Ω, 200Ω, 2kΩ	36
TEL2TLB	SA DESIGNED SANS10142 ELCB /Polarity Socket Tester • Rated Tripping Current: 10, 15, 20, 25, 30, 35mA • SANS164-2 plug socket compatible	49
T1825	LIFETIME WARRANTY CAT III 300V SA DESIGNED SANS10142 Loop/PSC Network Tester Analyser • Loop: 0 ~ 2000Ω • PSC: 0 ~ 6ka at 230v (L-N)	45
TBM031	CAT III 600V CAT IV 300V TRMS TRMS 600A AC Digital Clamp Meter • Display: 6 000 Counts • Jaw size: 30mm	19
T860	SA DESIGNED SANS10142 LIFETIME WARRANTY Phase Rotation and Motor Rotation • Operating Voltage: 100 - 600V AC	50
TCTCS	Case	
TCTCDKFM	Replacement Foam	

TCTDT Digital Compliance Kit

- Kit supplied in a sturdy case with foam cut out to secure each instrument
- Refer to individual products for technical overview



Case Dimensions: 540(L) x 460(W) x 160(H)
Weight: 11kg

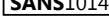
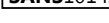
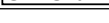
Code	Description	Page No
T1851	1000V Digital Insulation Tester • Test Voltages (V DC): 250V/ 500V/ 1000V  	40
T1820	Digital Tester • Earth Resistance (Ω): 20 Ω , 200 Ω , 2k Ω 	35
TEL2TLB	ELCB /Polarity Socket Tester • Rated Tripping Current: 10, 15, 20, 25, 30, 35mA • SANS164-2 plug socket compatible  	49
T1825	Loop/PSC Network Tester • Loop: 0 ~ 2000 Ω • PSC: 0 ~ 6kA at 230V (L-N) • Symbols: SA designed SANS 10142    	45
TBM031	TRMS 600A AC Digital Clamp Meter • Display: 6 000 Counts • Jaw size: 30mm  	19
T887	LCD Phase Rotation • Operating Voltage: 40 - 700V AC   	50
TCTCS	Case	
TCTCDKFM	Replacement Foam	

TCTRP Analogue Compliance Kit

- Kit supplied in a sturdy case with foam cut out to secure each instrument
- Refer to individual products for technical overview



Case Dimensions: 540(L) x 460(W) x 160(H)
Weight: 11.5kg

Code	Description	Page No
T1832	1000V Analogue Insulation Tester • Test Voltages (V DC): 250V/ 500V/ 1000V    	39
T1805	Analogue Earth Resistance Tester • Earth Resistance: 10, 100, 1.000 Ω 	34
TEL2TLB	ELCB /Polarity Socket Tester • Rated Tripping Current: 10, 15, 20, 25, 30, 35mA • SANS164-2 plug socket compatible  	49
T1825	Loop/PSC Tester • Loop: 0 ~ 2000 Ω • PSC: 0 ~ 6kA at 230V (L-N)   	45
TBM811	General Purpose Digital Multimeter • DC Voltage (V): 60mV/ 600mV/ 6/ 600/ 1000V • Display: 10 000 Counts 	11
T860	Phase Rotation and Motor Rotation • Operating Voltage: 100 - 600V AC   	50
TCTCS	Case	
TCTCDKFM	Replacement Foam	



FEATURES	T416	T1805	T1105	T1820	T1120	T2000
PAGE NO.	34	34	35	35	36	36
Earth Resistance Test (Ω)	50k	1k	1.2k	2k	2k	1k
Earth Resistance Test (V)	460	30	30	200	200	
Micro Processor Controlled	•					
Long Test		•	•	•	•	•
Auto Power Off (APO)	•					•
PC Connection	TOPVIEW2006 (USB Cable)* 62006					
Data Saving	•					•
On Display Help	•					
Backlight	•					•
Data Hold	•			•	•	•
Test Cables Resistance Compensation	•				•	
Ground Resisting 4 Wire	•					
Detection of Disturbances Currents	•					•
Taut Band Movement		•	•			
Battery Check	•	•	•	•	•	
Safety Category	CAT III $\leq$ 265V	CAT III $\leq$ 150V	CAT IV $\leq$ 30V	CAT II $\leq$ 300V	CAT III $\leq$ 200V	CAT III $\leq$ 150V
Lifetime Warranty				LIFETIME WARRANTY		
Dimensions (mm) LxWxH	222 x 162 x 57	170 x 165 x 92	175 x 85 x 75	170 x 165 x 92	175 x 85 x 75	293 x 90 x 66
Weight (g)	800	1000	600	1040	585	1320

*Optional accessory

T416 - Earth Resistance Tester

- 999 Memory locations
- Ground resistivity by 4-wire method
- Earth resistance with 2-wire, 3-wire and 4-wire voltammetric method
- Calculation of earth resistance average value with both 2- and 3- wires (RAVG)
- Calculation of resistivity average value (ρ_{AVG})
- Compensation of disturbance voltages
- Optical/USB interface with PC



CAT III 265V



KITTERNE

Technical Overview

Feature	Parameter	Accuracy
Range (2-, 3-wire)	0 – 499k Ω	$\pm 2.5\% + 2$ Digit
Measuring Frequency (Hz)	125Hz/ 75Hz/ 41.66Hz	± 1 Hz
Test Current (A)	≤ 12 mA AC	
Open Circuit Voltage	≤ 25 V AC TRMS	
Wave Form of Test Voltage	Sinusoidal	
Resistivity Measurement		
Ω m Range ρ (4-wire)	0.6 – 3.15M Ω	$\pm 2.0\% + 3$ Digit
Measuring Frequency (Hz)	125Hz / 75Hz/41.66Hz	± 1 Hz
Test Current (A)	≤ 10 mA	
Open Circuit Voltage	≤ 30 V	
Wave Form of Test Voltage	Sinusoidal	
Measurement of Disturbance voltage		
Range	500V	$\pm 2.0\% + 3$ Digit

Model Specification

Power Source	6 x 1.5V AA Batteries (about 500 tests)
Standard Accessories	KITTERNE - 4 Earth rods and cables in soft bag Lengths: (RD) - 13m, (BL) - 20m, (GR) - 6m, (BK) - 6m, Carry Case, Instruction manual, Test Leads, Crocodile Clips COGUK,
Optional Accessories Selection Guide (P70)	TOPVIEW2006 - Software and USB Cable VA500 - Hard Case
Certificates	UL, IEC61010-1, Calibration Certificate ISO9000. Certificate of Conformance

T1805 - Analogue Earth Resistance Tester

- Taut band movement
- 2- and 3-Wire tester
- Earth voltage
- 2mA without tripping
- Large display

Technical Overview

Feature	Parameter	Accuracy
Earth Resistance (Ω)	10/ 100/ 1000 Ω	$\pm 2.5\%$ of full scale
Earth Voltage (V)	30V AC (5k Ω /V)	$\pm 1.0\%$ of full scale
Measuring System	Resistance: (Constant current inverter 820Hz approx, 2mA) Voltage: rectifier type 0 - 30V AC, 40~500Hz	
Withstand Voltage	1.500V AC (1m)	$\pm 1.8\% + 4$ Digit

Model Specification

Power Source	8 x 1.5V AA Batteries
Standard Accessories	Test Leads (Lengths: (RD) - 1m and 15m, (YL) - 10m, (GR) - 5m, Earth Spikes, Shoulder Belt, TAL36 (P65)
Optional Accessories	T1805LEAD (P65)
Certificates	UL, IEC61010-1, Certificate of Conformance*

* Calibration performed with supplied test leads



CAT III 150V



CAT IV 300V



T1805LEAD

T1105 - Earth Resistance Tester

- Analogue display
- Safety voltage protection
- Compact design
- Battery Life Indicator
- 2mA earth resistance to test

Technical Overview

Feature	Parameter	Accuracy
Earth Resistance (Ω)	0-12 Ω / 0-120 Ω / 0-1200 Ω	$\pm 3.0\%$ of full scale
Earth Voltage (V)	30V AC (5k Ω /V)	$\pm 2.5\%$ of full scale
Measuring System	Earth resistance by Constant current inverter Hz approx, 2mA square signal	

Model Specification

Power Source	8 x 1.5V AA Batteries	
Standard Accessories	Test Leads (Lengths: ■ (RD) - 1m and 15m, ■ (YL) - 10m, ■ (GR) - 5m), Earth Spikes, Shoulder Strap	
Optional Accessories	T1805LEAD (P65)	
Certificates	UL, IEC61010-1, Certificate of Conformance*	



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CAT II 300V

LIFETIME WARRANTY

T1820 - Digital Earth Resistance Tester

- Earth voltage detection
- 2mA earth resistance to test
- 2- and 3-wire testing

Technical Overview

Feature	Parameter	Accuracy
Earth Resistance (Ω)	20/ 200/ 2k Ω	$\pm 2.0\% + 2$ Digit
Earth Voltage (V)	200V AC (40 - 500hz)	$\pm 1.0\% + 2$ Digit
Measuring System	Earth resistance by constant current inverter, 820Hz, 2mA Approx	
Over Voltage indication	1 (MSD)	
Display	3 $\frac{1}{2}$ Digits	2 000 Counts

Model Specification

Power Source	8 x 1.5V AA Batteries	
Standard Accessories	Test Leads (Lengths: ■ (RD) - 1m and 15m, ■ (YL) - 10m, ■ (GR) - 5m), Earth Spikes, Shoulder Belt TAL36 (P66)	
Certificates	UL, IEC61010-1, Certificate of Conformance*	

* Calibration performed with supplied test leads



CAT II 300V

T1120 - Digital Earth Resistance Tester

- Safety voltage protection
- Data Hold
- Low battery indicator
- 2mA Earth resistance test
- Compact design

Technical Overview

Feature	Parameter	Accuracy
Earth Resistance (Ω)	20, 200, 2k Ω	$\pm 2.0 \% + 2$ Digit
Earth Voltage (V)	0-200V AC	$\pm 1.0 \% + 2$ Digit
Measuring System	Earth resistance by Constant current inverter 820Hz approx, 2mA square signal	
Withstand Voltage	1.500V AC (one minute)	
Display	3 $\frac{1}{2}$ Digits	2 000 Counts

Model Specification

Power Source	8 x 1.5V AA Batteries
Standard Accessories	Test Leads (Lengths: ■ (RD) - 1m and 15m, ■ (YL) - 10m, ■ (GR) - 5m), Earth Spikes, Shoulder Strap, TAL36 (P66)
Certificates	UL, IEC61010-1, Certificate of Conformance*

T2000 - Earth Resistance Clamp

- Jaw size: 32mm
- Direct earth probes measurement
- Leakage current
- Alarm thresholds
- Current noise
- Data Hold
- 99 measurement storage locations



CAT III 150V

Technical Overview

Feature	Parameter	Accuracy
Resistance (Ω)	0.01 Ω ~0.999 Ω	$\pm 1.0\% + 0.01\Omega$
	0.1 Ω ~0.99 Ω	$\pm 1.0\% + 0.01$
	1 Ω ~49.9 Ω	$\pm 1.5\% + 0.1\Omega$
	5 Ω ~99.9 Ω	$\pm 2.0\% + 0.3\Omega$
	100 Ω ~199.9 Ω	$\pm 3.0\% + 1\Omega$
	200 Ω ~395 Ω	$\pm 6.0\% + 5\Omega$
	400 Ω ~590 Ω	$\pm 10\% + 10\Omega$
	600 Ω ~1000 Ω	$\pm 20\% + 20\Omega$
AC Current (A)	0A~80mA	$\pm 2.5\% + 1mA$
	80~650mA	$\pm 2.5\% + 2mA$
	650~999.5mA	$\pm 2.5\% + 0.003A$
	1~3.995mA	$\pm 2.5\% + 0.01A$
	4~20mA	$\pm 2.5\% + 0.05A$

Model Specification

Power Source	4 x 1.5V AAA Batteries
Standard Accessories	Resistive Test Loop, Carry Case
Certificates	UL, IEC61010-1, Certificate of Conformance

* Calibration performed with supplied test leads



FEATURES	TBM878	T1132	T1800	T1832	T1851	T1151	T10020C	NEPTUNE
PAGE NO.	13	39	39	39	40	40	41	13
Insulation Tester Voltage (V)	1000	1000	1000	1000	1000	1000	1000	1000
Insulation Resistance Ranges (Ω)	50V/55M 100V/110M 250V/275M 500V/550M 1000V/25G	250V/100M 500V/200M 1000V/400M	250V/100M 500V/200M 1000V/400M	250V/100M 500V/200M 1000V/400M	250V/200M 500V/200M 1000V/200M	250V/2G 500V/4G 1000V/200M	200M	0-1999
Micro Processor Controlled	•				•	•		•
Bar Graph	•					•		•
Counting Timer						•		
Long Test		•		•	•	•		
Autoranging	•					•		•
Auto Power Off (APO)	•					•		•
Auto Discharge		•	•	•	•	•	•	•
External Voltage Warning Indication		•		•		•		
Live Circuit Warning	•	•		•	•	•		
PI (Polarisation Index)						•		•
DAR (Dialectical Absorption Ratio)						•		•
Eeprom Calibration						•		
Data Hold	•					•		•
Auto Null		•		•		•		
Fuse Protection	•	•	•	•	•	•		
Mirror Scale		•		•				
Taut Band Movement		•	•	•				
AC Measurement (V)	1000	500	500	500	500	700	500	999.9
DC Measurement (V)	1000	•		•		950	500	999.9
Hand Free Testing Locker	•	•	•	•		•		
Battery Check		•	•	•		•		•
Continuity Test Range (Ω)	2/20	3/500	50	3/500	200/2000	1999	5k	5k Ω
Safety Category	CAT III 1000V	CAT III 500V	CAT III 500V	CAT III 500V	CAT III 600V	CAT III 600V		CAT IV 600V CAT III 1000V
Lifetime Warranty		LIFETIME WARRANTY		LIFETIME WARRANTY		LIFETIME WARRANTY		
Dimensions (mm) LxWxH	175 x 85 x 75	170 x 165 x 92	170 x 165 x 92	170 x 165 x 92	175 x 85 x 75	175 x 85 x 75	145 x 110 x 70	175 x 85 x 55
Weight (g)	635	655	1030	1030	1040	655	650	420



T5050C	TIN4D	TIN5D	TIN6D	TIN6A	TIN7D	TIN8D
41	41	42	42	42	43	43
5kv	5kv	10kv	10kv	10kv	10kv	15k
5G	500V/25G 1kV/50G 2.5kV/125G, 5kV/250G	1kV/50G 2.5kV/125G 5kV/250G 10kV/500G	500V/25G 1000V/50G 10kV/500G	5kV/200G 10kV/400G	500/25G 10kV/500G	500V/700G 15kV/2T
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500						
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5k						
178 x 122 x 126	330 x 260 x 150	330 x 260 x 150	330 x 260 x 150	330 x 260 x 150	330 x 260 x 150	430 x 324 x 127
2000	1800	1800	3600	1900	3600	6560



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CAT III 500V

T1132 - Analogue Insulation Continuity and Voltage Tester 1000V

- Safety voltmeter protection
- Live circuit indication
- Auto discharge
- AC voltage measurement
- Zero adjustment knob
- Voltage detector
- Battery test
- Mirror scale
- Lock
- Taut band movement

Technical Overview

Features	Parameter	Accuracy
Test Voltages (DC) and Measuring Range	250V (0 - 100MΩ)	± 3.0%
	500V (0 - 200MΩ)	
	1000V (0 - 400MΩ)	
AC Voltage (V)	0 to 600V	± 3.0%
Ohm Meter (Ω)	3 to 500Ω	

Model Specification

Power Source	8 x 1.5V AA Alkaline Batteries
Standard Accessories	Test Leads TAL24 (P63), Pouch, Shoulder Strap
Certificates	Certificate of Conformance



CAT III 500V

T1800 - Analogue Insulation Continuity Tester 1000V

- Heavy duty carry case
- Taut band movement
- Auto discharge
- Colour coded scale
- Live circuit indication
- AC Voltage measurement

Technical Overview

Feature	Parameter	Accuracy
Test Voltages (DC) and Measuring Range	250V (0 - 100MΩ),	± 5.0% of Indicated value
	500V (0 - 200MΩ),	
	1000V (0 - 400MΩ)	
Short Circuit Terminal Current	145mA DC Approx	
Output Voltage on Open Circuit	Rated test voltage + 10%	
Short Circuit Current (Max)	2mA DC	
Continuity Range	0 to 50Ω	
Open Circuit Terminal Voltage	445mV DC Approx	
AC Voltage (V)	0 to 500 V	2.5% of scale length

Model Specification

Power Source	8 x 1.5V AA Alkaline Batteries
Standard Accessories	Test Leads TAL24 (P63), Pouch, Shoulder Strap
Certificates	UL, IEC61010-1. Certificate of Conformance



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CAT III 500V

T1832 - Analogue Insulation Continuity and Voltage Tester 1000V

- Taut band movement
- Live circuit indication
- >200mA continuity short circuit current
- Auto discharge
- AC voltage measurement
- Rugged construction
- Nullifying of test leads
- Continuity buzzer
- Mirror scale

Technical Overview

Feature	Parameter	Accuracy
Test Voltages (DC) and Measuring Range	250V (0 - 100MΩ),	± 3.0% of Indicated value
	500V (0 - 200MΩ),	
	1000V (0 - 400MΩ)	
Short Circuit Terminal Current	210mA DC Approx	
Output Voltage on Open Circuit	Rated test voltage + 10%	
Short Circuit Current (Max)	1.3mA	
Continuity Ranges	0 - 3Ω and 0 - 500Ω	
Open Circuit Terminal Voltage	5V DC Approx	
AC Voltage (V)	0 - 600V	± 3.0% of scale length

Model Specification

Power Source	8 x 1.5V AA Alkaline Batteries
Standard Accessories	Test Leads TAL24 (P63), Pouch, Shoulder strap
Certificates	UL, IEC61010-1, Certificate of Conformance



CAT III 600V

T1851 - Digital Insulation Tester 1000V

- Continuity buzzer
- Live circuit warning
- 200mA continuity short circuit current
- AC voltage measurement
- Auto power off
- Auto discharge
- Live circuit indication

Technical Overview

Feature	Parameter	Accuracy
Test Voltages (DC) and Measuring Range	250V (0 - 200MΩ), 500V (0 - 200MΩ), 1000V (0 - 2000MΩ)	±1.5% + 5 Digit
Short Circuit Terminal Current	200mA DC Approx	
Output Voltage on Open Circuit	Rated test voltage + 10%	
Short Circuit Current (Max)	1mA	
Continuity Range	0-2kΩ	
Open Circuit Terminal Voltage	500V DC Approx	
AC Voltage (V)	0 - 500V	±1.5% + 3 Digit
Display	3 1/2 Digits	2 000 Counts

Model Specification

Power Source	8 x 1.5V AA Alkaline Batteries
Standard Accessories	Test Leads TAL24 (P63), Pouch, Shoulder Strap
Certificates	UL, IEC61010-1, Certificate of Conformance



T1151

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LIFETIME WARRANTY

CAT III 500V

T1151 / T11510LED – Digital Insulation Tester 1000V

- Safety voltmeter protection before each test
- Live circuit indication
- Auto discharge
- AC and DC voltage measurements
- OLED Display (Organic light-emitting diode - **T11510LED**)
- Polarisation Index*(PI)
- Dielectric absorption ratio* (DAR)
- Auto nulling of test leads and fuse
- Fuse protection

Technical Overview

Feature	Parameter	Accuracy
Test Voltages (DC) and Measuring Range	250V (2k-2GΩ), 500V (4k-4GΩ), 1000V (8k-8GΩ)	0.1MΩ to 4GΩ ± 3.0% 0.1MΩ to 8GΩ ± 5.0%
AC Voltage (V)	0 - 700V	±3%
DC Voltage (V)	0 - 950V	±3%
Continuity Range	0.01 to 1999Ω	
Continuity Short Circuit Current	>220mA	
Polarisation Index	Yes	R at 1min
Dielectric Absorption Ratio	Yes	R at 10min

Model Specification

Power Source	8 x 1.5V AA Alkaline Batteries
Standard Accessories	Test Leads TAL24 (P63), Pouch and Shoulder Strap
Certificates	Certificate of Conformance



* Polarisation Index (PI) and Dielectric Absorption Ratio (DAR) are useful to schedule maintenance. The user can keep record of the PI and DAR results and analyse these over time. Maintenance can be done according to analysis and down time can be scheduled thus same production time.



T11510LED

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LIFETIME WARRANTY



T10020C – Low Voltage Insulation Tester 1000V

- Self-powered – Hand crank
- 55mm logarithmic scale
- Self-lubricating moulded gears
- Robust moulded Poly Carbonate Case

Technical Overview

Feature	Parameter
Rated Voltage (V)	500/ 1000V
Continuity Measurement	0 -5k Ω
Insulation Resistance	100M Ω / 200M Ω
Accuracy	$\pm 5.0\%$ First effective range, ± 10.0 Second effective range
Dialectic test	Withstand 2KV AC (max)

Model Specification

Power Source	Self-powered – no battery required
Standard Accessories	Test Leads (1.5m)
Certificates	OS:2992



T5050C - Insulation Test 5000V

- Hand Crank
- Cross coil movement suitable for stringent fieldwork
- Built-in discharge facility for operator safety
- Accurate and stable reading using knife-edge pointer
- Improved AC brushless generator
- Guard terminal to eliminate surface leakage current

Technical Overview

Test Voltage (V)	5000V
Insulation Resistance (Ω)	5G Ω
Accuracy	$\pm 5.0\%$ Over First Effective Range $\pm 10\%$ Over 2nd Effective Range

Model Specification

Power Source	Mechanical winder
Standard Accessories	Case, T5010CS, Test Leads
Certificates	Certificate of Conformance



TIN4D - Insulation Tester 5KV

- Displays insulation (500, 1000, 2500, 5000V)
- Displays warning
- Fully protected crow bar
- Insulation test time interval up to 99s
- Autoranging
- 4 Insulation test voltages
- Display time

Technical Overview

Insulation Test Voltage	500V	1000V	2500V	5000V
Insulation Resistance (Ω)	0-30G Ω	0-60G Ω	0-125G Ω	0-250G Ω
Accuracy	$\pm 3.0\% + 2$ digit			
Output Current Limit (A)	50 μ A to 100 μ A			
Live Warning (V)	>500V			
Operating Temperature ($^{\circ}$ C)	0 to +40 $^{\circ}$ C			
Operating Humidity	85% Max Relative Humidity			

Model Specification

Power Source	8 x 1.5V C Alkaline Batteries
Standard Accessories	Carry Case, Test Leads TALTIN (P64)
Certificates	Certificate of Conformance





TIN5D - Insulation Tester 10kV

- 4 Insulation test voltages (1000, 2500, 5000, 10 000V)
- Autoranging on all ranges
- Displays insulation test time
- Displays warning
- Fully protected crow bar
- Insulation test time interval up to 99s

Technical Overview

Feature	Parameter			
Insulation Test Voltage (V)	1000V	2500V	5000V	10000V
Insulation Resistance (Ω)	0-60G Ω	0-125G Ω	0-250G Ω	0-500G Ω
Accuracy	$\pm 3.0\% + 2$ digit			
Output Current Limit (A)	50 μ A to 100 μ A			
Live Warning (V)	>500V			
Operating Temperature ($^{\circ}$ C)	0 to 40 $^{\circ}$ C			
Operating Humidity	85			

Model Specification

Power Source	8 x 1.5V C Alkaline Batteries
Standard Accessories	Carry Case, Test Leads TALTIN (P64)
Certificates	EN61010-1, Certificate of Conformance



TIN6D - Insulation Tester 10kV

- 20 Insulation test voltages (500V - 10kV)
- Silicone test leads
- Anti-skid/vibration absorbing enclosure
- Live circuit warning
- Auto discharge
- Insulation test time up to 99s
- Autoranging
- Auto off

Technical Overview

Feature	Parameter	Accuracy
Insulation Test Voltage (V)	500V - 10kV	$\pm 3.0\% + 1$ Digit
Measuring Range (Autoranging)	500V - 10kV 25G Ω - 500G Ω	
Output Power Limit (W)	1W	
Short Circuit Current (Max)	1.25mA	

Model Specification

Power Source	8 x 1.5V C Alkaline Batteries
Standard Accessories	Heavy Duty Carry Case, Test Leads TALTIN (P64)
Certificates	EN61010-1, Certificate of Conformance



TIN6A - Insulation Tester 5kV-10kV

- 2 Test voltages (5, 10kV)
- Live circuit warning
- Auto discharge
- Battery life indication
- Silicon test leads

Technical Overview

Feature	Parameter	Accuracy
Insulation Test Voltage (V)	5kV	10kV $\pm 5.0\%$ of scale length
Insulation Resistance (Ω)	0-200G Ω	0-400G Ω
Output Power Limit (A)	50 μ A to 100 μ A	
Live Warning	>500V AC	
Operating Temperature ($^{\circ}$ C)	0 to +40 $^{\circ}$ C	
Operating Humidity	85% Max Relative Humidity	

Model Specification

Power Source	6 x 1.5V C Alkaline Batteries
Standard Accessories	Heavy Duty Carry Case, Test Leads TALTIN (P64)
Certificates	Certificate of Conformance



TIN7D



TIN7DOLED

TIN7D / TIN7DOLED - Insulation Tester 10kV

- Polarisation index*
- Dielectric absorption ratio*
- Live circuit warning
- Auto discharge
- Insulation test time interval up to 10mins
- 20 Insulation test voltages
- Autoranging
- OLED display (organic light-emitting diode - **TIN7DOLED**)

Technical Overview

Feature	Parameter	Accuracy
Insulation Test Voltage (V)	500V, 10kV (20 x 500V increments)	± 5.0% + 1 Digit
Measuring Range (Ω)	0-250GΩ, 800kΩ-500GΩ	
Output Power Limit (W)	1W	
Short Circuit Current (Max)	1.25mA	
Dielectric Absorption Ratio	Yes	R at 1min
Polarisation Index	Yes	R at 1min

Model Specification

Power Source	8 x 1.5V C Alkaline Batteries
Standard Accessories	Test Leads TALTIN (P64), Heavy Duty Carry Case
Certificates	EN61010-1, EN61326-1. Certificate of Conformance



Polarisation Index (PI) and Dielectric Absorption Ratio (DAR) are useful to schedule maintenance. The user can keep record of the PI and DAR results and analyse these over time. Maintenance can be done according to analysis and down time can be scheduled thus same production time.

TIN8D – High Voltage Insulation Tester 15kV

- Test insulation resistance up to 30TΩ (30000GΩ)
- Short-circuit current up to 5mA
- Optical USB to RS-232 data transmission
- 30 Insulation test voltages
- Autoranging on all insulation ranges
- Backlight function
- Bar graph indicates test voltage, rise and decay
- 200 Measurement results can be saved in the memory and recalled on the display

Technical Overview

Feature	Parameter	Accuracy
Insulation Test DC Voltage (V)	500 – 15kV (500V increments)	±5.0%+5 Digit
Current (A)	0.5nA – 0.55mA	Depend on insulation resistance
AC Voltage (V)	30~ - 600V (50/60Hz)	±2.0% + 3 Digit
DC Voltage (V)	30 - 600V	±2.0% + 3 Digit
Insulation Resistance (Ω)	1000GΩ/0.5kV 1000GΩ at 0.5kV - 30TΩ at 15kV	±0.4% + 1 Digit
Short Circuit Current	up to 5mA	±0.5% + 1 Digit
PI	✓	
DAR	✓	
Display	3½ Digits	3 000 Counts

Model Specification

Power Source	14.8V Lithium Ion Rechargeable Battery (TIN8DBATT)
Standard Accessories	Test Leads with Crocodile Clips (TIN8DTLKT) (P66), Test Probe (TAL58) (P65), Data Transmission Cable and CD-Charger (TIN8DCHARGE), Instruction Manual, Test Report
Certificates	EN 61010-1, EN 61010-2-030, EN 61326-1



CAT IV 600V



Feature	T1825	JUPITER	TIMP57
PAGE NO.	45	14	45
Loop Impedance (L-N) (mΩ)		1-1999	0.1-1999
Loop Impedance (L-E) (mΩ)	1999	0.1-1999	0.1-1999
PSC Current (L-N)	6kA		400kA
PSC Current (L-E)			400kA
Voltage Measurement (V AC) (L-N)	50-280	690	190-460V
Voltage Measurement (V AC) (L-E)		690	190-460V
Operating Voltage (V AC)	230 ±20		220-415
Neutral Wire Resistance (Ω)		1999	0.1 - 2000
Live Wire Resistance (Ω)		1999	0.1 - 2000
TEST CURRENT - Loop/PSC/Load	11A ± 1A	100mA	202A
Auto Off	•	•	•
Autoranging	•	•	•
Wiring Check	•	•	
Resolution (mΩ)	10 (Loop)	0.1	0.1 (Zloop)
Thermal Protection	Electronic	Electronic	Electronic
Operating Temperature (°C)	-10 to +40	5 to +40	0 to +40
Operating Humidity	85%	<80%	85%
Lifetime Warranty	LIFETIME WARRANTY		
IP Rating		IP40	
Safety Category	CAT III 300V	CAT IV 600V CAT III 690V to earth between inputs	CAT III 240V to earth CAT III 415V between P1, C1, P2 and C2 inputs
Dimensions (mm) LxWxH	170 x 165 x 92	175 x 85 x 55	300 x 340 x 150
Weight (g)	970	420	4100

T1825 - PSC Loop Tester

- Load/No load tester
- Prospective short circuit current
- Volt drop test
- Microprocessor controlled
- Test up to 100A (6kA) circuit breakers
- Can test 3-Phase systems by testing each Line separately in relation to Neutral
- Scroll through results

**Technical Overview**

Feature	Parameter	Accuracy
Measuring :Loop :PSC	0 ~ 2000Ω	±2% (0.05 ~ 500Ω), ±3% (500Ω), ±15% (above 500Ω)
	0 ~ 6kA at 230V (L-n)	±12% + 5 Digit
Operating Voltage (V AC)	50 ~ 275V AC	50Hz only
Test Current - Loop/PSC/Load	11A (Load Voltage shown as at 16A)	±1A
Resolution (Ω)	0.01 (Loop)	
Thermal Protection	Electronic	
PSC Current	6kA at 230V AC	
(L-N) Max	±2% (0.05 ~ 500Ω), ±3% (500Ω), ±15% (above 500Ω)	
Operating Temperature (°C)	-10to +40°C	
Humidity	85% Max Relative Humidity	

Model Specification

Power Source	8 x 1.5V AA Alkaline Batteries
Standard Accessories	Carry Case, Strap, Leads TAL1825 (P64)
Certificates	UL, IEC61010-1, Certificate of Conformance

**T1MP57 – High Resolution Loop/Line Impedance**

- Line Loop Adaptor
- Test up to 400kA
- 4 wire high resolution Line impedance measurement
- Phase to Phase, Phase to Neutral, Phase to Protection Conductor PSC current calculation
- Phase to Phase, Phase to Neutral, Phase to Protection Conductor Impedance Measurement

Technical Overview

Technical Overview		
Range	Resolution	Accuracy
Z _{LINE} Z _{LOOP} Measurement		
0 - 199.9mΩ	0.1mΩ	±5.0% + 1mΩ
200 - 1999mΩ	1mΩ	
RLINE RLOOP, XLINE XLOOP Measurement		
0 - 199.9mΩ	0.1mΩ	±10.0% + 1mΩ
200 - 1999mΩ	1mΩ	
PSC Current (A)		Related to Z accuracy
0 - 1999A	1A	
2.0 - 9.9kA	0.1kA	
10 - 1999kA	1kA	
Voltage (V)		
190 - 460V	1V	±1.0% + 2 Digit
Frequency (Hz)		
47.5 - 52.5Hz	0.1Hz	±0.2Hz

Model Specification

Power Source	8 x 1.5V Alkaline Batteries
Standard Accessories	Test Cables (3m length, with Crocodile Clips), RS-232 Serial Cable, Carrying Bag
Certificates	EN60909-0, VDE 0413, EN61557-3

Instruments listed below are to be used in conjunction with the T1MP57 in order to do high line loop tests up to 400kA

MACROG3

T419

T60



CAT III 240V (to Earth)

CAT III 415V (between P1, C1, P2, C2 inputs)



FEATURES	TEL2SC	TEL28	T1812	TELE10L	TEL11/OLED	TEL2TLB
PAGE NO.	47	47	47	48	48	49
Rated Tripping Current (mA)	10-51	0-999	3-500	1-999	1-999	10, 15, 20, 25, 30, 35
Voltmeter (V AC) (L-E)		20 - 280	21 - 280	50-550	50-650	
Timer Resolution (mS)		1	1	10	1	5
Current Resolution (mA)		1		1	1	5
Data Hold		•	•	•	•	
Wiring check	•		•	•	•	•
Auto Off		•	•	•	•	
Thermal Protection		•	•	•	•	
Phase Angle or Phase-start-selection		0° and 180°	0° and 180°	0° and 180°	0° and 180°	
Phase Polarity Trip Indicator		•	•		•	
Maximum Trip Time (s)		99.9	3	99.99	99.99	
Operating Voltage (V AC) (L-E)	110-550	100-550	230	230 /380 /550	60-317 (525V System)	230
Operating Temperature (°C)	+7 to +55	-50 to +40	-5 to +45	0 to +40	0 to +40	0 to +40
Relative Humidity		80%	80%	80%	80%	80%
Fuse Protection	0.2A (Fast Blow)	1A	500mA	1A	1A (Slow Blow)	
Lifetime Warranty		LIFETIME WARRANTY	LIFETIME WARRANTY	LIFETIME WARRANTY	LIFETIME WARRANTY	
Safety Category	CAT III ⚡ 550V	CAT III ⚡ 450V	CAT III ⚡ 240V	CAT III ⚡ 550V	CAT III ⚡ 550V	CAT III ⚡ 230V
Dimensions (mm) LxHxW	170 x 165 x 92	170 x 165 x 92	170 x 165 x 92	330 x 260 x 150	330 x 260 x 160	80 x55 x 30
Weight (g)	970	1500	1020	3700	3850	400



TEL2SC - Analogue ELCB Tester/Polarity

- Taut band movement
- Wiring check
- Robust
- Meter (Taut Band)
- Two and three wire operation

Technical Overview

Feature	Parameter	Accuracy
ELCB current (A)	10mA - 50mA	5-50mA $\pm 3\%$ + 5 Digit 0.01A
Frequency of Operation	50 to 60Hz	
Voltage (L-E)	110-550V	1% (1mA)
Meter (Taut Band)		$\pm 1\%$ of full scale
Operating Voltage (V)	110-550V	16-550V AC at $\pm 15\%$
Operator Temperature	-5 to +55°C	
Fuse Protected	0.1A Fast Blow	

Model Specification

Power Source	No batteries required
Standard Accessories	Fuse, Test Leads
Certificates	Certificate of Conformance



LIFETIME WARRANTY



TEL28 - Industrial ELCB

- Microprocessor
- Direct read out of time/current
- Voltage measurement
- Suitable for industrial and mining
- Each phase tested separately on a 3-Phase system industrial, mining and domestic environments

Technical Overview

Feature	Parameter	Accuracy
Rated tripping current	1 to 999mA	± 1 mA
Resolution	1mA	
Operating Voltage (AC)	100 - 550V	50 - 50V AC 2% ± 1 V 350 - 550V AC
Maximum Trip Time	99.9 s (1mS resolution)	1mS ± 1 mS 5% ± 1 mS
Operating Temperature (°C)	-50 to +40°C	
Operating Humidity	80%	
Phase Angle Setting	0 and 180° selectable	

Model Specification

Power Source	8 x 1.5V AA Alkaline Batteries
Standard Accessories	Carry Case, Test Leads, Fuse
Certificates	Certificate of Conformance, EN 0081-1, EN 50082-1



LIFETIME WARRANTY



T1812 – ELCB / RCD / GFCI Tester

- Phase polarity trip indicator (referenced to Earth, positive or negative phase)
- Accurate digital readout of disconnection time
- Automatic data hold
- Zero crossing starts at 0° or 180°
- Disconnection phase polarity
- Polarity trip indicator (positive or negative phase)
- Frequency meter
- Wiring polarity indicator
- Measures voltage and frequency between line and earth before testing
- Percentage of voltage difference compared to nominal 230V AC
- Rotary switch selector

Technical Overview

Feature	Parameter	Accuracy
Rated Tripping Current	3mA/ 5mA/ 7mA/ 10mA/ 15mA/ 20mA/ 30mA/ 35mA/ 50mA/ 100mA/ 125mA/ 150mA/ 175mA/ 250mA/ 275mA/ 300mA/ 375mA/ 500mA	$\pm 5.0\%$ ± 1 mA
Voltmeter (L-E)	20 – 280V AC	$\pm 2.0\%$ ± 1 V AC
Max Trip Time	3secs (1mS resolution)	2% ± 2 mS
Operating Temperature	-5°C to +45°C	
Operating Humidity	80%	
Phase Angle Setting	0° or 180°	
Timer Resolution (ms)	1ms (Max time = 2.999s)	$\pm 2\%$ ± 2 ms

Model Specification

Power Source	8 x 1.5V AA Alkaline Batteries
Standard Accessories	Test Leads TAL1825 (P64)
Certificates	Certificate of Conformance, EN 61326-1



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LIFETIME WARRANTY

TELE10L – Industrial ELCB Tester

- Microprocessor controlled
- Pure resistive load
- Fully programmable (direct readout - time or current)
- Voltage measured during test

Technical Overview

Feature	Parameter	Accuracy
Rated Tripping Current (A)	3-999mA at 317V	±1.0% reading ±2 digits
Lowest Resolution Time (s)	10ms	
Lowest Resolution Current (A)	1mA	
Operating Voltage (V)	230-550V (designed 317V)	1.0% reading ±1 digit
Maximum Trip Time (s)	99.99 secs	
Maximum Trip Current (A)	999mA	
Operating Temperature (°C)	0 to +40°C	
Operating Humidity	80%	

Model Specification

Power Source	8 x 1.5V C Alkaline Batteries
Standard Accessories	Test Leads, Fuse
Certificates	Certificate of Conformance



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LIFETIME WARRANTY

TEL11

TEL11 / TEL11OLED – 3-Phase Industrial ELCB Tester

- Multi frequency
- Multi Voltage
- Industrial use
- 3-Phase presence
- 3-Phase rotation
- TEST for disconnection sensitivity
- TEST for disconnection time
- Select one of 3-Phase to earth to test ELCB
- Measure voltage phase to Earth
- Over temperature protection
- Phase polarity trip indicator
- Select start at 0°C and 180°C



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LIFETIME WARRANTY

TEL11OLED

Technical Overview

Feature	Parameter
Current Settings (A)	1 to 999mA AC
Phase-start-selection	0 and 180
AC Operating Voltage (L-E) (V)	110V AC to 550V AC
Timer Resolution	1mS (Max Time = 99.99s)
Current Resolution	1mA
Voltmeter Resolution	1V
Earth Leakage Constant Current IAC	5 to 999 (mA)
Ramping Current	5 to 999 (mA)
Sensitivity Disconnection Check	0 to 99s
Time Delay Disconnection Check(s)	0.001 - 99.999
Maximum Current Consumption	10mA (LCD) 100mA (OLED)
ELCB Voltage Measurement (L-E) (V AC)	10 to 550V
ELCB Tester Voltage Present (VELCB)	LED
ELCB Fuse (Slow Blow)	1.5A Slow Blow

Model Specification

Power Source	8 x 1.5V C Batteries Alkaline
Standard Accessories	Test Leads x 2 (terminate own plug)
Certificates	Certificate of Conformance



T4137 - Digital Milliohm Meter

- Four terminal measurement
- Large LCD display
- Robust lightweight case with O-ring seal
- Bonding tests
- Earth continuity testing

Technical Overview

Feature	Range	Accuracy
Resistance Ranges (Ω)	0 - 200m Ω in steps of 100 $\mu\Omega$	$\pm 0.5\% \pm 2$ digits
	0 - 2000m Ω in steps of 1m Ω	
	0 - 20 Ω in steps of 10m Ω	
	0 - 200 Ω in steps of 100m Ω	
Test Current (A)	1mA = 2000 Ω range	$\pm 1.0\%$
	10mA = 200 Ω range	
	100mA = 2000m Ω range	
Max Output Voltage (V)	20V	

Model Specification

Power Source	12V DC Battery, 8 x 1.5V C Alkaline Batteries
Standard Accessories	Test Leads
Certificates	Certificate of Conformance



TEL2TLB - ELCB Socket and Polarity Tester

- SANS164-2 (Type N) plug socket compatible
- Ready-board compatible
- LED wiring integrity indication
- Faulty Earth Detector (LCD)/Live on earth
- ELCB Tester (10-35mA)
- Includes SANS 164-1: 16 A - 3 PIN (Type M) adapter plug

Technical Overview

Feature	Parameter	Accuracy
Operating Voltage (V)	230V	$\pm 10.0\%$
Rated Tripping Current	10mA-35mA	
Quiescent Current (A)	6mA	

Model Specification

Power Source	No battery required
Standard Accessories	Test Leads (length (m)1.5)
Certificates	OS:2992



T890 - 3-Phase Detector (Non-contact)

- Clamps over wire insulation without contact on conductor
- Non-contact sensor clips
- Open phase and phase sequence
- Magnets on back of unit to mount on metal surfaces

Technical Overview

AC Operating Voltage (V)	150 to 1000V AC
Operating Frequency (Hz)	45 to 65Hz
Circuit Structure	Electronic
Operating Temperature ($^{\circ}\text{C}$)	-10 to +50 $^{\circ}\text{C}$
Humidity	80%
Current Consumption	15mA
Cable Length	Approx 800mm

Model Specification

Power Source	4 x 1.5 AA Batteries
Standard Accessories	Carry Pouch, Alligator clips ■ ■ ■
Certificates	UL, IEC61010-1, Certificate of Conformance



T855 - 3-Phase Rotation Indicator

- Fused test leads
- Rotating disc
- Colour coded red/white/blue
- Large crocodile clips
- Real motor behaviour

Technical Overview

AC Operating Voltage (V)	90 - 600V
Operating Frequency (Hz)	50/60Hz
Operating Temperature (°C)	-10 to +40°C
Humidity	80% Max Relative Humidity
Cable Length	1.1m each ■ ■ ■

Model Specification

Standard Accessories	Carry Pouch, Large Crocodile clips ■ ■ ■
Certificates	Certificate of Conformance



T860 - 3-Phase and Motor Rotation Indicator

- Test rotation of unconnected motors by turning shaft by hand
- Heavy duty crocodile clips
- Open phase identification
- Phase presence
- Colour coded: ■ ■ ■
- Clockwise or anti-clockwise indication

Technical Overview

AC Operating Voltage (V)	100 to 600V AC
Operating Frequency (Hz)	45 to 75Hz
Circuit Structure	Electronic
Operating Temperature (°C)	0°C to +50°C
Humidity	90% Max Relative Humidity
Power Consumption (Correct)	±14mA for motor rotation field test ±7mA for Phase rotation field indication

Model Specification

Power Source	9V Battery
Standard Accessories	Carry Pouch, Crocodile clips ■ ■ ■
Certificates	Certificate of Conformance



T887 - 3-Phase Rotation LCD Indicator

- Phase rotation and phase presence
- Colour coded ■ ■ ■
- Large crocodile clips
- No battery required

Technical Overview

AC Operating Voltage (V)	40 - 700V AC
Operating Frequency (Hz)	45 to 75Hz
Operating Temperature (°C)	-1°C to +55°C
Humidity	90% Max Relative Humidity
Cable Length	60cm each of ■ ■ ■

Model Specification

Power Source	No batteries required
Standard Accessories	Carry Pouch, Large Crocodile clips ■ ■ ■
Certificates	Certificate of Conformance



CAT IV 1000V

T70 - Phase Sequence Indicator and Voltage Detector

- Detection AC voltage
- Phase sequence and conformity test with 1-wire method
- With or without contact measurements
- LED Red and buzzer indication
- Practical pen clip
- Dimensions (mm): 160 (L) x 26 (W) x 20 (H)
- Weight (g): 48

Technical Overview

AC Operating Voltage (V)	100 to 1000V AC
Frequency	50 - 60Hz

Model Specification

Power Source	2x 1.5V AAA Alkaline Batteries
Certificate	IEC/EN61010-1



Incorrect phase sequence



Correct phase sequence

CE
IP40

CAT III 250V

Receiver: CAT III 600V

HT38 – Circuit Breaker Finder

- Max distance between transmitter and receiver 500m
- Indicates the reference switch with LED and sound
- Transmitter Dimensions (mm): 95 (L) x 60(W) x 30 (H)
- Transmitter Weight (g): 140
- Receiver Dimensions (mm): 195 (L) x 60(W) x 35 (H)
- Receiver Weight (g): 130

Technical Overview

Feature	Parameter
Signal Output Current (A)	<20mA
Voltage detection	<250VAC to ground

Model Specification

Power Source	230V AC (Transmitter), 1 x 9V Alkaline Battery (Receiver)
Certificates	IP40, EMC: IEC/EN61326, IEC/EN61010-1



T180 - Tone and Probe Kit

- With tone generator and amplifier probe
- Sensitivity control
- Crocodile clips and RJ11 connector
- Single or dual alternating tone
- Use on de-energised circuits

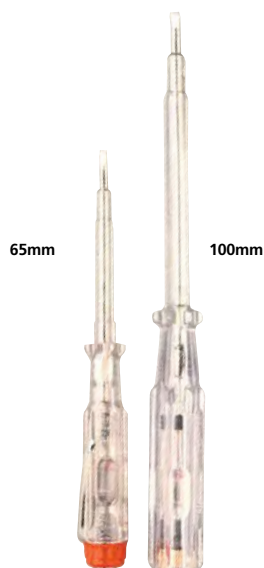
Technical Overview

	Waveform	Square Wave
Tone Generator	Frequency	±1.13kHz
	Amplitude	9V P-P
	Over voltage Protection	±100V
Amplifier Probe	Frequency Detection	1-12kHz
	Receiver distance	50-60cm
	Sensitivity Control	√

Model Specification

Power Source	Probe: 1 x 9V Battery, Tone: 1 x 9V Battery
Standard Accessories	Carry Pouch, Crocodile clips, RJ11 connector
Certificate	Certificate of Conformance

T45200/T45000 – Neon Screwdrivers



Code	Overall Length (mm)	Head (mm)	Width (mm)	Thickness (mm)
T45200	185	100	4	0.5
T45000	140	65	3	0.5

Technical Overview

Feature	Parameter
AC Operating Voltage (V)	120 - 250V

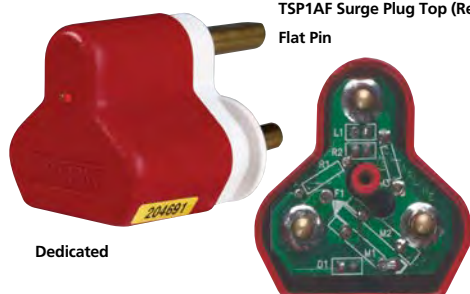
TSP1A Surge Plug Top (Green)



TSP1A/TSP1AF - Surge Plugs

- High surge handling capability
- Incorrect power socket wiring detection
- Economical secondary protection
- Thermal and over-current fusing
- Visual fault indication
- Differential and common mode protection
- 2 Year warranty

TSP1AF Surge Plug Top (Red)
Flat Pin



Dedicated

Technical Overview

Rated Voltage	230V/50Hz
Max Continuous Operating Voltage	275V AC
Max Continuous Current	16A
Max Surge Current (A)	8kA
Fusing (°C)	Integrated 104°C Thermal and 16A over current fuse
Temperature Range	-10°C to +70°C

Model Specification

Certificates	SANS 164-0 Approval
Standards Compliance	IEC 61643-1

TS500 - Non-Contact Voltage

- Non-contact EF detection (NCV)
- Audio/visual/vibration indication
- Polarity check
- Microwave leakage



Technical Overview

Voltage (V)	70 - 600V
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Model Specification

Power Source	4 x 1.5V LR44 Batteries
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CAT III 1000V

T475 - Volt/Current Tracer

- Detect current through concrete walls, shielded/armoured cable
- Adjustable sensitivity
- Non-contact EF detection (NCV)
- Non-contact current detection (NCC)
- Visual and audible

Technical Overview

Feature	Parameter
AC Voltage Detection (V)	5 ~1000V
Current Sensitivity (A)	>100mA
Frequency (Hz)	50 - 500Hz
Operating Temperature (°C)	+10 to +50°C
Operating Humidity	<80% RH

Model Specification

Power Source	4 x 1.5V LR44 Batteries
Certificates	IEC/EN61010-1
Dimensions (mm)	192(L) x 31(W) x 24(H)
Weight (g)	60



Receiver:

CAT IV 1000V

Transmitter:

CAT II 300V

T475S - Wire Tracer & Transmitter

- 3 in 1 Cable & wire tracer, Non-contact EF and current detection (NCV/NCC)
- Detect current through shielded/armoured cable (>1 – 5A)
- Audible and vibration indication
- Auto sensitivity with 6 LED sensitivity indication
- LED torch

Technical Overview

Feature	Parameter
AC Voltage Detection (V)	>25V single sheath wire
Current Sensitivity (A)	>0.5A single sheath wire
Frequency (Hz)	50 – 500Hz
Temperature (°C)	-10 to + 50°C
Operating Humidity	<80% RH

Model Specification

	Cable + Tracer	Transmitter
Power Source	2 x AAA Batteries	200-230V AC
Dimensions (mm)	178(L) x 28(W) x 22(H)	52(L) x 48(W) x 26(H)
Weight	40	55



IP65
CAT III 1000V

TVP1000 - Non-contact 1000V

- Vibration
- Flashing red LED
- Detects leaks in microwave ovens
- Automatic self-test when switched on

Technical Overview

Feature	Parameter
AC Voltage (V)	110 - 1000V
Frequency range	50 - 500Hz

Model Specification

Power Source	2 x AAA Batteries
Certificates	IP65, EN 61010
Dimensions (mm)	156(L)



TLVD15 - Non-Contact Voltage

- Voltage Detection EF detection (NCV)
- LED and tone indication
- Flashlight

Technical Overview

Voltage (V)	50 - 1000V AC
Frequency (Hz)	50 - 500Hz

Model Specification

Power Source	2 x AAA 1.5V Batteries
Certificates	EN:61010-1, EN:61326-1

CAT III 600V



TLVD17 - Non-Contact Voltage

- Direct non-contact EF and current detection (NCV)
- Sensitivity adjustable
- LED and tone indication
- Identifies live and neutral

Technical Overview

AC Voltage (V)	5 - 1000V
Frequency (Hz)	50 - 500Hz

Model Specification

Power Source	1 x 1.5V AAA Battery
Certificates	CE EN:61010-1, EN:61326-1

CAT IV 1000V



TLVD18 - Non-Contact Voltage

- Both direct non-contact EF and voltage detection (NCV)
- LED and tone indication
- Detect Voltage in lighting fixtures and circuit breakers
- Detect a break in a wire
- Flashlight
- Continuity test and basic driver function

Technical Overview

Direct Contact Voltage (V)	50 - 600V AC
Non-contact Voltage (V)	50 - 600V AC
Frequency (Hz)	50 - 500Hz
Operating Temperature (°C)	0 to +40°C
Operating Humidity	< 80% Relative Humidity
Altitude	Max 2000m

Model Specifications

Power Source	2 x 1.5V AAA Batteries
Certificates	EN 61010-1, EN 61326-1

CAT III 600V



WIBRETEST – Vibrating Voltage and Line Tester 750V

- Single phase (240V) and 3-phase (415V) voltage tests
- AC/DC
- DC range indicates polarity
- Probe pins spring loaded for protection and easy measurement
- Neon indicator for 'live' ■ ■
- Slip proof and oil resistant rubber grip, ribbed and padded for extra protection
- Vibration indication

Technical Overview

Feature	Parameter
DC voltage (V) ■ Scale	110 - 750V
AC voltage (V) ■ Scale	125 - 750V

Model Specification

Power Source	No Batteries Required
Certificates	IEC1010 CAT II for 1kVDC, AC IEEC61243-3 (CATIV 300V) , EN55022,
Weight (g)	55



WIBRE1000 - Voltage Tester 1000V

- Dust and waterproof
- AC/DC
- LED indicators
- Polarity
- Oil resistant

Technical Overview

Voltage Range (V)	110V/ 230V/ 380V/ 690V/ 1000V AC/DC
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Model Specification

Power Source	No Batteries Required
Certificates	IP65, IEC61243-3, DIN/VDE 0682-401



TBT69 - Voltage Tester 1000V

- Industrial
- Polarity LED indicators
- Electric field detection
- LCD display
- RCD (ELCB) tripping (30mA)
- Continuity
- Attached red probe with screw-on 4mm test tip
- Phase rotation

Technical Overview

Voltage Range (V)	6V/ 12V/ 24V/ 50V/ 120V/ 230V/ 400V/ 690V/ 1000V
Transient protection	8kV

Model Specification

Power Source	No Batteries Required
Certificates	IEC61010-1, IP65



IP64

CAT III 690V

CAT IV 600V

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TCVR2 - 2 Pole Voltage and Continuity Tester

- 2 Pole voltage tester with LED & LCD display
- Built in LED torch
- Self-proving
- Continuity Test
- Battery test
- Phase rotation test
- Weight: 216g
- Dimensions: 255 length 61mm width 33.5mm depth

Technical Overview

Feature	Parameter
AC Voltage Detection (V)	12 - 690V
Current Sensitivity (A)	>100mA
Frequency (Hz)	50 - 60Hz
Operating Temperature (°C)	+10 to +50°C
Operating Humidity	<80% RH

Model Specification

Power Source	2 x 1,5V AAA Batteries
Certificates	IEC/EN61010-1, EN61243-3:2014, EN 61010-2-33



IP65

CAT III 1000V

DUSPOLA - Analogue Plus 1000V

- Vibration
- Phase sequence
- LED indicators
- Solenoid movement
- Polarity test

Technical Overview

AC Voltage (V)	12 - 1000V
DC Voltage (V)	12 - 1000V

Model Specification

Power Source	No Batteries Required
Optional Accessories	DUSPOLA BAG
Certificates	IP65, 61243-3:2011-02



IP65

CAT III 1000V

DUSPOLE - Voltage Tester 1000V

- Expert
- Vibration
- Phase sequence
- Continuity with buzzer
- LED indicators
- Measuring point illumination
- Polarity test

Technical Overview

Voltage (V)	12 - 1000V AC
Voltage (V)	12 - 1000V DC

Model Specification

Power Source	2 x 1.5V AAA Batteries
Certificates	IP65, 61243-3:2011-02



IP66
CAT III 600V

TCV6 - Voltage Tester 415V

- Voltage tester
- Voltage indication with LED

Technical Overview

Voltage Range (V)	6/ 12/ 50/ 110/ 230/ 415V AC/DC
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Model Specification

Power Source	2 x 1.5V AAA Batteries
Certificates	IP66, IEC61010-1, 61243-3:2011-02



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LIFETIME WARRANTY

T175HP - Proximity Detector (Hi-Prox)

- Non-contact high voltage detector
- Ten switch-selectable voltage sensitivity ranges
- Lightweight
- Audible and visual indication of live voltage
- Rose adaptor
- Check high frequency radiation

Technical Overview

Voltage (V)	240V/ 3.3kV/ 6.6kV/ 11kV/ 22kV/ 33kV/ 66kV/ 132kV/ 275kV
Detection	Selection range is detected at approx. 25cm from the voltage 240V $\pm$ 10cm, 33kV $\pm$ 50cm
Self-Test	Selection
Indicators	Bright ■ LED and buzzer

Model Specification

Power Source	3 x 1.5V C Batteries
Standard Accessories	Carry Pouch
Certificates	Certificate of Conformance
Dimensions (mm)	260(H) x 98(W)
Weight (g)	503



T99FD -
Fuse disconnect included

Telescopic Link Stick - Ritz

VTT25F

- 6 Sections
- 7.78m (25ft) Length when extended
- Voltage range 1 to 132kV
- Rubber hook latch
- Base cap for better stability

Model Specification

Length Extended (m)	7.78m (25ft)
Standard Accessories	Heavy Duty Carry Bag
Certificates	Certificate of Conformance, ASTM F 1826-00 specification

VTT30F

- 7 Sections
- Suitable for voltage ranging 1 to 132kV
- Rubber hook latch
- Base cap for better stability

Model Specification

Length Extended (m)	9.18m (30ft)
Standard Accessories	Heavy Duty Carry Bag
Certificates	Certificate of Conformance, ASTM F 1826-00 specification



Telescopic Link Stick - Hastings

- Long reach, speed, convenience and safety
- High dielectric properties
- Triangular shape prevents twisting
- Removable sections to shorten stick

C4031601 (SH250)

- Voltage range 1 - 132kV
- Weight: 18.3kg



T99FD -
Fuse disconnect included

Model Specification

Length Extended (m)	7.62m (25ft)
Tip Diameter Retracted (m)	1.55m
Base Diameter (mm)	60mm
Standard Accessories	Heavy Duty Carry Bag (LSBAG)
Certificates	Calibration Certificate

CSH230 (SH230)

- Voltage range 1 - 132kV
- Weight: 22.6kg

Model Specification

Length Extended (m)	9m (30ft)
Tip Diameter Retracted (m)	1.60m
Base Diameter (mm)	67mm
Standard Accessories	Fuse Hook, Bag
Certificates	Calibration Certificate



Telescopic Link Sticks

- Triangular - shaped design keeps sections aligned during extension and retraction
- Withstands voltage rating of 100kV from 30cm for 5min
- Universal end fitting



T99FD -
Hook included

THS25F

Model Specification

Length Extended (m)	7.78m
Standard Accessories	Disconnected hook and carry bag
Sections	6
Certificates	IEC 62193

*12m available on request

THS30F

Model Specification

Length Extended (m)	9.18m
Standard Accessories	Disconnected hook and carry bag
Sections	7
Certificates	IEC 62193

TPC7/11/22/33/44K – High Voltage Testers

- High voltage phase comparators/live line tester/voltage detector
- Dual colour coded scale (% , V AC)
- Neon indicator lit when > 1200 AC
- Measure and test phase to earth and phase to phase
- High quality fibreglass wound rods
- Resistive measurement method
- Current is limited to Milliampere
- Grounded or ungrounded systems
- Lightweight, robust and compact
- High immunity to interference fields
- Silicone handles
- Specified by municipalities, mines and Eskom

Technical Overview

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 (s)	1 s				
Neon Threshold	1.2 kV				
Operating Temperature (°C)	-25 to +55°C				
Operating Humidity	20 to 96% RH				

Model Specifications

Power Source	No Batteries Required				
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
Standard Accessories	Carry Case				
Optional Accessories	90° Bend TPCAA90, Proving Unit T2713				
Certificates	IEC61481:200, IECSP8561481 (Excluding TPC44K)				



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



T2713 - Proving unit for TPC series (Optional Accessory)



WPC – High Voltage Testers

- Series high voltage wireless transmitter receiver phasing comparator
- WPC1000 - 11kV-33kV Voltage range
- WPC3000 - 44kV-132kV Voltage range
- Wireless distance up to 200 metres
- All weather use (indoor or outdoor)
- Conductor is energised or de-energised to detect and indicate the correct phase relationship between 2 energised lines nominal voltage and frequency
- IN phase or OUT of phase

Technical Overview

System Voltage (kV)	11 to 33kV		
Threshold Range (kV)	1.3kV		
Response Time (s)	< 1s		
Spark Protection	Detector will not be damaged as a result of spark discharge while making contact with the conductor under test		
Bridging Protection	Comparator and its accessories will not cause flashover between live parts of the installation or between live parts of the installation and earth/ground		
Current Consumption	45mA maximum		
Range	30m in air		
Visual Indicator	Transmitter - 2 x Red  LED's / Receiver - 1 x Red  LED + 1 x Green  LED		
Audible Indicator	Buzzer present when IN Phase is indicated - > 65dB (5 metres)		
	Length (mm)	Diameter (mm)	Material
Y Electrode	35	40	Stainless steel
Hook	100	40	Stainless steel

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Carry Case, Cleaning Kit, 2 x Rose Connector, 2 x Y Contact, 1 x Hook
Certificates	Certificate of Conformance IEC 61481, Calibration Certificate
Dimensions (mm)	180(L) x 100(Dia.)
Weight (g)	600



T1133HVD25E – High Voltage Contact Capacitor Detector

- Designed for multi-voltage sites
- Covers systems voltage from 11kV to 33kV
- Contact Capacitive High Voltage Detector
- Self-starting and automatically activated when the High Voltage is applied to the contact electrode
- Self-test built-in
- Use on sinusoidal (50 or 60Hz) High Voltage systems
- HV live or dead
- Bridging protection
- Spark protection
- Designed for Eskom

Technical Overview

System Voltage	11/33kV
Threshold Set within Range	2500V as per Eskom regulation
Response Time (s)	<1s
Auto-OFF	±3min
Battery Low	<7V
Threshold	2.5kV
Battery Current	<30mA
Green = Armed	Yes
Red = V Detected	Yes

Model Specification

Power Source	1 x 9V Alkaline Battery
Standard Accessories	Carry Case, Cleaning Kit, 1 x Rose Connector, 1 x Y Contact
Certificates	Certificate of Conformance IEC 61481, IEC 61243-1 above 1kV 50/60Hz, IP65
Dimensions (mm)	180(L) x 100(Dia.)
Weight (g)	600



HVD – High Voltage Detector

- HV live or dead



Technical Overview

ELECTRICAL	HVD13AC	HVD32AC	HVD33AC
System Voltage (kV)	6.6 to 132	11 to 33	44 to 132
Threshold Range (kV)	2.5kV	2.5kV	10kV
Spark Protection	Detector will not be damaged as a result of spark discharge while making contact with the conductor under test		
Bridging Protection	Detector and its accessories will not cause flashover between live parts of the installation or between live parts of the installation and earth/ground		
Current Consumption	30mA		
Test Button	Tests and ready for use		
Visual Indicator (2Hz)	Red lamp (voltage present), Green lamp (safe)		
Audible Indicator	Buzzer - 3.1kHz tone modulated at 2Hz - 70dB (1.5m)		

Model Specification for HVD and THVD

	Length (mm)	Diameter (mm)	Material
Y Electrode	35	40	Stainless steel
Power Source	1 x 9V Alkaline Battery		
Standard Accessories	Carry Case, Cleaning Kit, 1 x Rose Connector, 1 x Y Contact		
Certificates	Certificate of Conformance, IEC 61481, IEC 61243-1 above 1kV 50/60Hz, IP65		
Dimensions (mm)	180 (L) x 100 (Dia.)		
Weight (g)	600		

THVD – Automatic Contact Capacitive High Voltage Detector

- Self-starting and automatically activated when the High Voltage is applied to the contact electrode
- Use on sinusoidal (50 or 60Hz) high voltage systems
- Models are available to cover systems voltage from 6.6kV to 132kV
- HV live or dead
- Self-test built in
- Specified at Eskom, mines and municipalities



Technical Overview

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 - 4.4kV	3.3kV - 4.95kV	1.8kV - 2.7kV	6.6kV - 19.8kV	1.65kV - 14.6kV	4.4kV - 5.0kV
Response Time (s)	<1s	<1s	<1s	<1s	<1s	<1s
Auto-OFF	±3min	±3min	±3min	±3min	±3min	±3min
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
Ready = Green	Yes	Yes	Yes	Yes	Yes	Yes
V Present = Red	Yes	Yes	Yes	Yes	Yes	Yes

Model Specification for HVD and THVD

	Length (mm)	Diameter (mm)	Material
Y Electrode	35	40	Stainless steel
Power Source	1 x 9V Alkaline Battery		
Standard Accessories	Carry Case, Cleaning Kit, 1 x Rose Connector, 1 x Y Contact		
Certificates	Certificate of Conformance, IEC 61481, IEC 61243-1 above 1kV 50/60Hz, IP65		
Dimensions (mm)	180(L) x 100(Dia.)		
Weight (g)	600		



LIFETIME WARRANTY



Model Specification

	C.A.T4™	Genny4
Power Source	2 x LR20 (D) 1.5 V Alkaline Batteries (Compatible with D type NiMH rechargeable batteries)	4 x LR20 (D) 1.5 V Alkaline Batteries

IP54

CAT4PLUS - Cable, Pipe Locator and Avoidance

- C.A.T4™ Avoidance Mode™
- eCert™ – remote calibration validation
- Four functions, audio and visual indication and depth estimation in Genny mode
- Signal strength indicator
- Mode/clock face indicator
- USB data connection
- Genny4 transmits a specialised small diameter Locate frequency

Technical Overview

Locate Performance	Frequency	Sensitivity@ 1m	Conditions: Locating Depth Guide	
			Good	Poor
Power signals (P)	50 – 1.5 kHz	3mA	3	2
Radio signals (R)	15k – 30kHz	25µA	2	1
Genny4 signals (G)	32.768kHz ±20Hz 131.072kHz ±20Hz	5µA	4	2
Avoidance Mode (A)	P + R + G As above	As above	4	2

Feature	Parameter
Dynamic Range	120dB @ 10Hz
Dynamic Overload Protection	120dB @ 10Hz
Depth Accuracy	Line: 5% 0.1m to 3m Sonde: 5% 0.1m (On undistorted signal and with no adjacent signals)
Horizontal GPS Position Accuracy	3m CEP (Circular Error Probable) – Conditions and satellite dependent
Temperature (°C)	-20 to +50°C

RD7100 – Cable Route Tracer

- Excavation of buried utilities
- Simultaneous depth and current readout
- Dynamic overload protection
- Power filters™
- Trudepth™
- Automatic usage-logging with GPS positioning
- ECERT™ - Remote calibration without downtime
- 8kHz Fault Find
- Display: Monochrome LCD

Technical Overview

Feature	Parameter
Sensitivity	6E-15 Tesla 1 5µA at 1m (33kHz)
Dynamic range	140dB rms/v/Hz
Selectivity	120dB/Hz
Depth Measurement Precision	± 3%
Locate Accuracy	± 5% of depth
Active Locate Filter Bandwidth	± 3Hz, 0 < 1kHz ± 10Hz, ≥ 1kHz
Maximum Depth Readout (max)	Cable /Pipe: 30m Sonde: 19.5m Accuracy compromised at greater depths
Active Locate Frequencies	8kHz, 33kHz, 65kHz
Sonde Frequencies	33kHz
Operating Temperature (°C)	-20 to +50°C

Model Specification

Power Source	2 x D-Cell Alkaline Batteries
Standard Accessories (RD7100PL Reciever)	Soft Carry Bag, 100mm Transmitter Clamp, Connection Leads, Tx-5 Transmitter
Certificates	EN 61010-1:2010, IP65



IP65



RD8100 – Cable Route Tracer

- Unique arrangement of 5 antennas to optimize different tasks
- Enhanced self-test
- StrikeAlert™ in active and passive locating modes - shallow cables visual and audio warnings
- eCert™ - verify and certify calibration of your locator via internet
- CALSafe™ - Countdown to calibration certificate expiry date
- TruDepth™ - only when correctly orientated
- High sensitivity
- GPS and Usage-Logging
- iLOC - Bluetooth enabled transmitter to control power and frequency up to 450m away

Technical Overview

Locator

Feature	Parameter
Locate Frequencies	22
Sonde Frequencies	4
Passive Modes	5
4 kHz	4k+CD

Transmitter

Output Power (Max)	10W
Active Frequencies	36
Induction frequencies	8
Current Direction Frequencies	14
Induction field strength	1

Model Specification

	Locator	Transmitter
Power Source	Lithium-Ion Battery	Lithium-Ion Battery

T2550T – Handheld Cable Fault Locator

- Transmit and reflect of pulse signal principle - open, short, splice, taps, water ingress and impedance mismatches
- Max range 3km
- Auto power off
- Backlight
- Autoranging
- Automatic Pulse width
- Connectors: 2 x 4mm safety terminals



Technical Overview

Feature	Parameter	Accuracy
Measuring Range (m)	100/ 300/ 1000/ 3000m	0.9% of range
Variable Propagation Velocity Factor (PVF)	0.01-0.99	0.9%
Resolution	1% of range	
Output Impedance (Ω)	120 Ω	
Output Pulse	5V (nominal in open circuit)	
Operating Temperature (°C)	-20 to +70°C	

Model Specification

Power Source	6 x AA Batteries
Standard Accessories	2m Test Leads, Carry Pouch
Certificates	IP54, IEC61010-1, EN60950
Dimensions (mm)	210(L) x 100(W) x 50(H)
Weight (g)	550

T02AS

- Universal
- 10A
- Suitable for all testers with 4mm terminals
- Budget test lead set with probe and crocodile clips
- Silicon based



CAT IV 600V

CAT III 1000V

T8040LEAD

- Universal
- 10A
- Handles 125mm
- Length of leads 1.2m
- Suitable for all DMMs (P7-15)

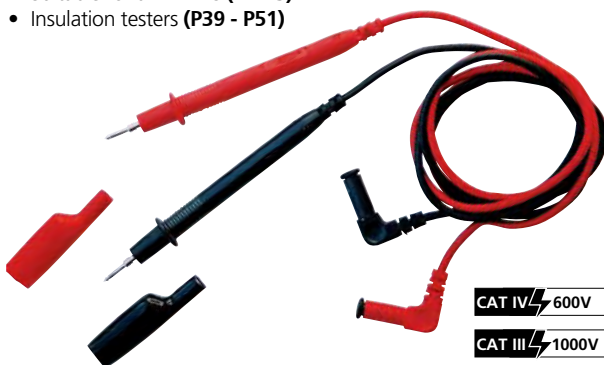


CAT IV 600V

CAT III 1000V

TAL24

- Universal
- 10A
- 2mm Probe tip
- PVC test leads
- C/W Screw on crocodile clips
- Length of leads 1.1m
- Suitable for all DMMs (P7-15)
- Insulation testers (P39 - P51)



CAT IV 600V

CAT III 1000V

TAL25

- Universal
- 4mm Probe tip
- PVC test leads
- C/W Slide on crocodile clips
- Suitable for all DMMs (P7-15)

**TALTBM**

- Silicone
- Ideal for **TBM Series** meters (P19-27)
- Certification: IEC61010-1



CAT IV 1000V

TAL35RBK

- Silicone
- Double insulated Silicone wire (1m)
- Spring-shrouded 4mm brass caged banana probe tips
- Shrouded right-angle connector
- Suitable for all DMMs (P7-15)
- Certification: IEC 1010



CAT III 1000V

TALTIN

- Double insulated silicone wire (1.2m)
- Used for TIN insulation testers

TIN4D - P41

TIN5D - P42

TIN6A - P42

TIN6D - P42

TIN7D - P43



TAL1825

- Accessories
- Short length to reduce resistance with loop test
- Used for loop testers

T1825 - P45

T1812 - P47



TELEL – ELCB Test Leads

- Cable with banana plugs ■ ■ ■
- Type N plug
- 16A/300V
- Length: 1.5m
- Banana diameter: 6mm



TEL4137

- PVC insulated wire (900mm) with connected straight input plugs (100mm silicon wire)
- Outside diameter: 4mm
- Certificates: EN61010-031:2002 + At:2008
- 3A

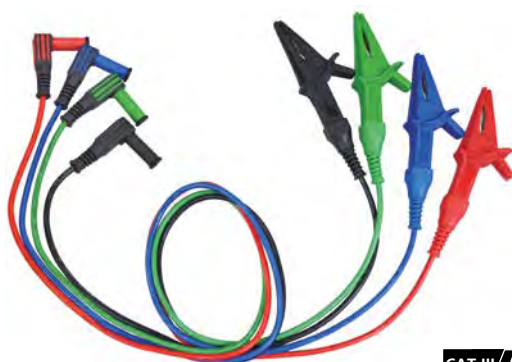


CAT III 150V

Colour	Length (m)
■ ■ ■ ■	1

TAL34B

- Wide grip crocodile clips with integral finger guards
- Right angle connectors
- 10A
- Length: 600mm
- Certificates: EN 61010-031-2002
- Used for **T4137P**



CAT III 600V

TAL30AG

- Wide grip crocodile clips with integral finger guard
- Large high tension spring mount: 35mm
- Double insulated silicon wire
- Safety straight input plug
- 10A
- Certificates: EN 61010-031-2002 + At:2008



CAT III 1000V

Colour	Length (m)
■	1

T1805LEAD – 4-Wire Earth Resistance Test Leads

- Terminal: 4mm brass banana plug
- Wire: PVC
- Outside diameter: 3.5mm
- Braided copper wires: 0.127mm
- Auxiliary earth spikes: 450mm



Colour	Length (m)
■	36
■	3
■	50
■	20

TAL30CRBK

- Accessories
- Wide grip crocodile clip with integral finger guard
- Compatible with 4mm male leads
- Suitable for use with **TAL35RBK** (P63) test leads



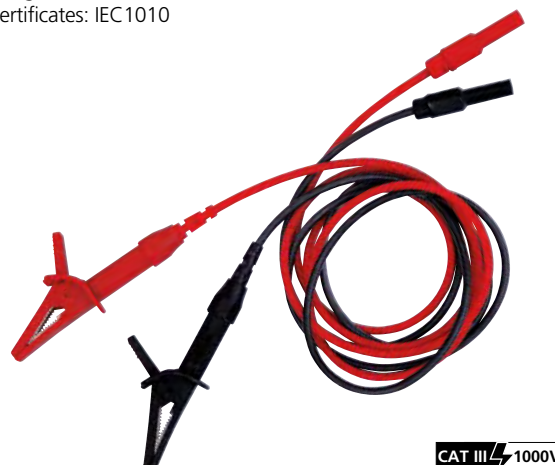
TAL38CRBK

- Accessories
- Wide grip crocodile clips with integral finger guard
- Suitable for all 4mm male leads
- Suitable for use with **TAL39RBK** (P63) test leads



TAL30ARBK

- Double insulated silicone wire (1m)
- Wide grip crocodile clips with integral finger guard
- Straight shroud terminations
- Certificates: IEC1010



CAT III 1000V

TAL39RBK

- Double insulated silicone wire (1.2m)
- Straight shroud terminations both sides



TAL58 – Earth Resistance Test Leads

- Large test probe handles with shroud 4mm brass caged banana plug tip
- Insulated silicone wire 2.5m
- Safety straight input plug connect with extra green guard
- **TIN8D – P43**



CAT I 15kV

TAL30HB

- Spring-shrouded 4mm brass caged banana probe tip
- Double insulated silicon wire
- Safety straight input plug
- Certificates: EN61010-031:2002 + At:2008
- 10A



CAT III 1000V

Colour	Length (m)
■	1

TAL23CA

(TEL11)

- Crocodile clip for 4mm banana plug
- 10A
- Certificates: IEC/EN61010-031



CAT III 1000V

CAT IV 600V

TAL36

- Wide grip crocodile clips with 35mm spring mouth
- PVC insulated wire
- All 3-wire Earth Resistance Testers

T1105 - P35

T1805 - P34

T1820 - P35

T1120 - P36



Colour	Length (m)
■	15
■	10
■	10
■	5

TAL36L – 3-Wire Earth Resistance Test Leads

- Wide grip crocodile clips with 35mm spring mouth
- PVC insulated wire



Colour	Length (m)
■	30
■	20
■	5

TEARTHKIT – Earthing Tester Kit

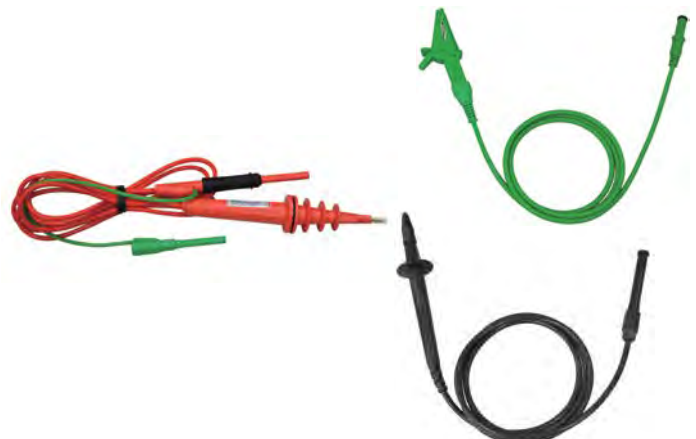
- Used for earthing testers
- T416 - P34
- MACROG3 - P29
- T60 - P30
- Length: Red - 250mm



Colour	Length (m)
■	20
■	4.5
■	25

TIN8DTLKT - TIN8D Cable Kit

- TAL58 - P65
- TAL30AG - P64
- TAL30HB - P66
- Pouch (47mm x 240mm x 138mm)



TKPS54BK /TKPS54RD

- Accessories
 - Flexible shaft with twin pointed gripping jaws
- Colour:
- (RD)
 - (BK)
- Compatible with 4mm male leads



TELEWR50F

- 4mm Brass banana plug
- Soft PVC insulated wire
- Braided copper wires: 0.254mm
- Outside diameter: 4mm



Colour	Length (m)
■	50
Accessories	Auxillary, Earth Bar, Crocodile Clip



MAIN MEASUREMENTS	SOLAR300N	T824	T78	TPQA820
PAGE NO.	74	69	69	69
AC/DC voltage in single-phase/three-phase systems	•	1000V	1000V	•
AC/DC current in single-phase/three-phase systems	•	3000A	3000A	•
Cosphi, Power Factor	•	•	•	•
Voltage unbalance (NEG%, ZERO%)	•	•	•	•
Active, reactive, apparent power/energy and DC power		•	•	•
Voltage and current harmonics up to the 49th with THD%	•	•	•	•
Voltage anomalies (dips, peaks) with 10ms resolution (at 50Hz)	•	•	•	•
Voltage fast transients (spikes) with 5µs resolution	•	•		
Electric motor starting current (INRUSH)	•	•		
Voltage flickers (Pst, Plt)	•	•		
Phase sequence	•	•	•	•
Neutral-Ground Voltage	•	•	•	
Neutral current	•	•	•	•
MEMORY AND RECORDING				
Max number of simultaneously selectable parameters		251	251	383
Recording with selectable integration period	5s-60min	1s-60min	1s-60min	5s-60min
Indicative memory duration (in days at Pl=10min at max number of parameters)	90 days	90 days	90 days	30 days
Indication of recording duration		•	•	• *
Internal memory capacity	15MB	50MB	15MB	8MB
External compact flash card		•	•	
Default and custom recording	•	•	•	
Saving instant sampled value		•	•	• *
REAL-TIME DISPLAY				
Summary table of main electric parameters	•	•	•	• *
Voltage/current waveforms	•	•	•	• *
Tables or histograms of Harmonics and THD%	•	•	•	• *
Voltage/current vector diagram	•	•	•	• *
ADDITIONAL CHARACTERISTICS				
Measurement with use of external CT and VT (with optional accessory HT903)		•	•	ACONBIN**
Touchscreen colour display	•	•	•	
Power supply: Rechargeable battery and charger	•	•	•	Auto power supplied
Auto Power Off (APO)	•	•	•	•
USB port for data download onto Pen Drive	•	•	•	Only PC
PC interface with software for Windows	•	USB	USB	WiFi/USB
Context help active on each screen		•	•	
Protection password on recording		•	•	
Safety category	CAT IV 600V	CAT IV 600V	CAT IV 600V	CAT IV 300V
Reference standard for power quality	EN50160	EN50160	EN50160	
Reference standard for safety	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
Dimensions (mm) LxWxH	235 x 165 x 75	235 x 165 x 75	235 x 165 x 75	255 x 200 x 115
Weight (batteries included) Kg	1	1	1	0.7

*Through App HTANALYSIS

Adapter **ACONBIN necessary



IP40

CAT IV 600V (Phase-Neutral)

CAT IV 1000V (Between inputs)

T824/T78 – 3-Phase Power Analyser

- Simultaneous measurement of power parameters on single-phase and 3-phase 3-wire and 4-wire systems
- 5 input channels for voltages and 4 input channels for currents
- Numerical and graphic display (waveforms)
- Voltage and current vector diagram
- Voltage and current harmonic analysis up to the 49th with THD%
- Recording of voltage anomalies (dips, peaks) with 10ms resolution
- Voltage unbalance (NEG%, ZERO%)
- Integration period selectable from 1s to 60min
- Pre-set and custom recordings
- High contrast colour touchscreen colour (TFT, 65536 colours, (320x240pxl))
- Memory extension with external compact flash card (15Mbytes)
- Possibility of connecting an external pen drive
- PC interface with USB port (USB 2.00)

T824 Only

- Flicker analysis in compliance with EN50160
- Recording of fast transients (spikes) with resolution 5µs
- Recording of motor starting currents with resolution 10ms (INRUSH)
- Setting different trigger thresholds to solve typical problems on installations (monitoring atmospheric charges, commutations of switching suppliers, disturbance frequencies, etc.)

Technical Overview

Feature	Parameter	Accuracy
AC/DC TRMS (V)	0 – 1000V	±0.5% + 2 Digit
DC/AC TRMS (Standard STD Transducer Clamp)	0 – 1000mV	±0.5% + 0.06%FS
AC TRMS Current (HTFLEX33E)	0 – 3000A	±0.5% + 0.06%FS
Frequency (Hz)	42.5 – 69Hz	±0.2% + 1 Digit
Power Factor (cosφ)	0.2 -1	1

Model Specification

Power Source	1x3.7V Rechargeable Li-ION Battery
Standard Accessories Selection Guide (P70)	HTFLEX33E: Flex Clamp 3000A, Diameter 174mm KIT800: 5 x Cables and Crocodile Clips PT400: Touch-Screen Pen TOPVIEW2007 Windows Software and USB Cable VA500: Rigid Carrying Case
Certificates	IP40, IEC/EN61010-1, Calibration Certificate



IP65

CAT IV 300V (AC to ground, max 460V between Inputs)

TPQA820 – 3-Phase without Neutral

- AC TRMS voltage in single-/3-phase systems
- AC TRMS current in single-/3-phase systems
- Active, reactive and apparent power/energy
- Cosphi and Power Factor
- Voltage dips and peaks on 10ms
- Voltage unbalance (NEG%, ZERO%) only
- Voltage/current waveforms
- Maximum number of simultaneously recorded quantities, 383
- Calculation and recording of voltage/current THD%

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (V)	10 – 265V	±0.7% + 0.4V
AC TRMS Voltage (V)	10 – 460V	±1.0% + 0.2V
DC TRMS(External STD Transducer Clamp)	5 – 999.9mV	±0.7% + 0.6mV
AC TRMS Current (STD External Transducer Clamp)	5 – 999.9mV	±0.5% + 0.6mV
Frequency (Hz)	42.5 – 65Hz	0.2% + 0.1Hz

Model Specification

Power Source	Rechargeable Li-ION Battery
Standard Accessories Selection Guide (P70)	KITMPPACW - 4 x Measuring Cables KITMPPACC - 4 x Crocodile Clips HTFLEX33L - Flex 1000A AC Clamp, Diameter 174mm TOPVIEW2007 - Windows Software and USB Cable
Certificates	IP40, IEC/EN61010-1, Calibration Certificate



Code	Image	Description	MACROG3	T419	T60	T824	T78	TPQA820
PAGE NO.			29	29	30	69	69	69
TOPVIEW2007 TOPVIEW2006		Windows software, USB cable	TOPVIEW 2006	TOPVIEW 2006		TOPVIEW 2007	TOPVIEW 2007	TOPVIEW 2007
BORSA2051		Soft carry bag	•	o		o	o	
A0055		External power supply AC/DC				•	•	
KITMPPACC		AC - 4 Crocodile clips						•
KITMPPACW		AC - 4 Cables (2m)						•
TKIT800		5 Cables (black, red, green, blue, brown) with crocodile clips				•	•	
606-IECN		Connector with magnetic terminal				o	o	•
ACONBIN		Adapter for connection standard clamps						o
HTFLEX33E		Flex 3000A AC clamp, max diameter of cable 174mm				•	•	
HTFLEX33L		Flex 1000A AC clamp, diameter 174mm						•
HTFLEX35		Flex 3000A AC clamp, max diameter of cable 274mm				o	o	o Max 1000 AC
HT96U		Standard AC clamp 1-100-1000A/1V, diameter 54mm	o	o		o	o	o ACONBIN
HP30D1		Standard DC clamp 1000A/1V, diameter 83mm	o			o	o	o ACONBIN
HT4005K		Standard AC 200A/1V clamp, diameter 40mm	o	o		o	o	o ACONBIN
HT4005N		Transducer AC 5A-100A/1V				o	o	o ACONBIN
TIMP57		Loop/Line adaptor	o	o				
T2100		Earth clamp	o		o			
PR400		Remote lead for test activation	•	o				
HT52		Temperature/humidity probe	o		o			
HT53		Illuminance measurement probe	o		o			
RCDX10		Accessory for industrial RCDS	o		o			

o ACONBIN necessary

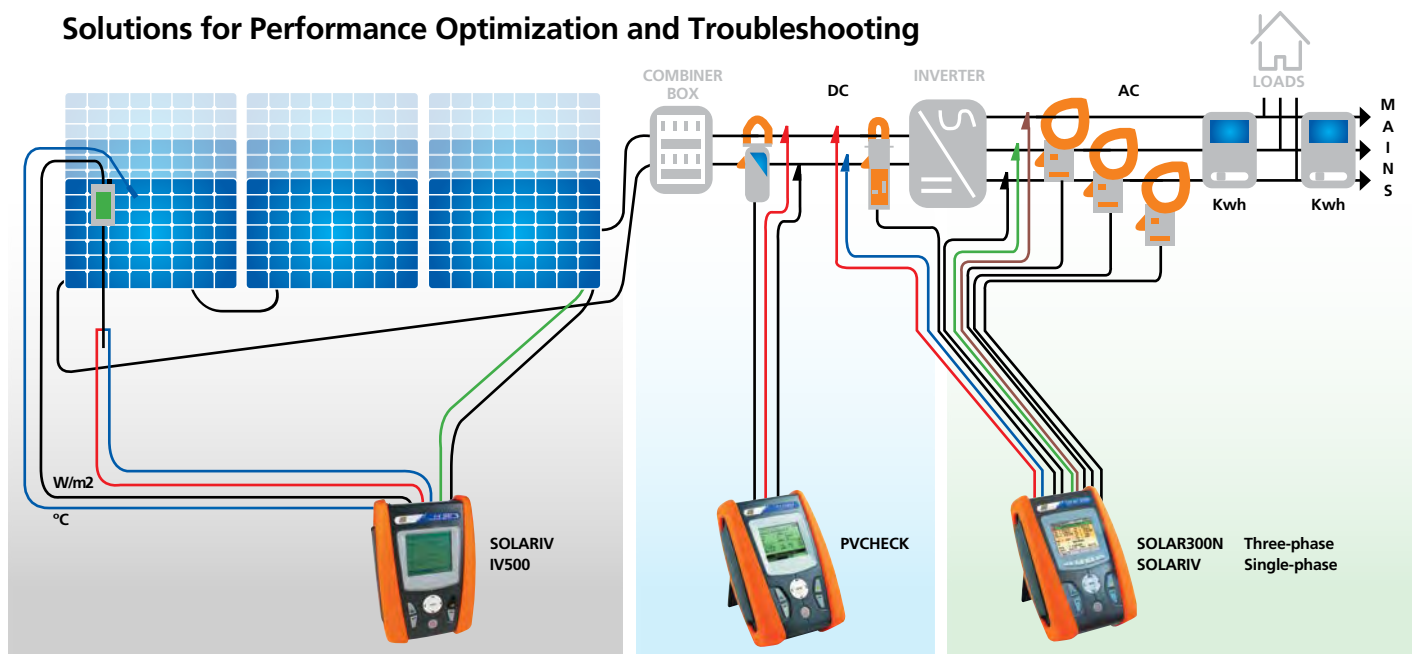


MAINTENANCE AND EFFICIENCY OF THE PHOTOVOLTAIC SYSTEM	SOLARIV	IV500	SOLAR300N	PVCHECK
PAGE NO.	74	75	76	77
Continuity of protective conductors with 200mA				•
Insulation measurement with test voltage 250, 500, 1000V DC with no service interruption				•
I-V Curve measurement on single module or string	•			
VOC and ISC measurement on single module or string	•			•
Single- and 3-Phase efficiency measurement	1MPPT		1MPPT	
DC side efficiency of the photovoltaic field			•	•
Use of remote unit SOLAR02 with USB \ RF connection	RF	USB	RF	RF
Measurement of irradiation with reference cell	•	•	•	•
Temperature of cell and environment	•	•	•	•
POWER QUALITY ANALYSIS				
AC/DC voltage in single-/3-phase systems		•	•	DC
AC/DC current in single-/3-phase systems			•	DC
Cosphi, Power Factor			•	
Voltage unbalance (NEG%, ZERO%)			•	
Power/Energy: Active P, Reactive Q, Apparent S	Only active P		•	Only active P
Voltage and current harmonics up to the 49 th with THD%			•	
Voltage anomalies (dips, peaks) with 10ms resolution (at 50Hz)			•	
Voltage fast transients (spikes) with 5µs resolution (200kHz)			•	
Electric motor starting current (INRUSH)			•	
Voltage flickers (Pst, Plt)			•	
Phase sequence			•	
Neutral-Ground Voltage			•	
Neutral current			•	
MEMORY AND RECORDING				
Internal memory capacity	249 curves I-V 8 days@ PI =10min	249 curves I-V	15MB 90 days@ PI =10min	999 Locations
Recording with selectable integration period	5s-60min		5s-60min	5s-60min
Indicative memory duration(in days at PI=10min at max number of parameters)	8		90	
Indication of recording duration for power quality analysis				•
Internal memory extension with compact flash card				•
Default and custom recordings			•	
REAL-TIME DISPLAY				
Summary table of main electric parameters	•	•	•	•
Voltage/current waveforms			•	
Tables or histograms of Harmonics and THD%			•	
Voltage/current vector diagram			•	



ADDITIONAL CHARACTERISTICS	SOLARIV	IV500	SOLAR300N	PVCHECK
Measuring range of I-V Curve / IVCK	1500V/10A 1000V/15A	1500V/10A 1000V/15A		1000V/15A only VOC and ISC
Measuring range for efficiency measurement	1000V DC/ 265V AC		1000V AC-DC 3000A	
Touchscreen colour display			•	
LCD display with backlight	•	•		•
USB port for data download onto Pen Drive			•	
PC interface with software for Windows	•	•	•	•
Integrated WiFi interface	•	•		
Custom management of internal PV module database	•	•		•
Power supply: Rechargeable battery, charger			•	
Indication of recording duration for efficiency measurement	•		•	
On display help	•	•	•	•
Safety category				
Reference standard for safety	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
Reference standard for Power Quality Analysis			EN50160	
Dimensions (mm) LxWxH	235 x 165 x 75	235 x 165 x 75	235 x 165 x 75	235 x 165 x 75
Weight (batteries included) kg	1.2	1.2	1	1.2

Solutions for Performance Optimization and Troubleshooting



Troubleshooting

Possibly during the operation of a system, some modules may jeopardise the performance of the whole system. When system efficiency is lower than expected, it is necessary to detect the defective modules so that they can be replaced.

Suggested solution: Measure the I-V curve with devices IV500 (P75) or SOLARIV (P74) (DC voltage up to 1500V)

Commissioning Tests

When operating a photovoltaic system, it is necessary to certify its safety according to IEC62446.

Suggested solution: PVCHECK (P77) is recommended to perform these verifications

Performance

For effective maintenance programmes, Performance Recording and monitoring is necessary to identify losses quickly and efficiently.

Suggested solution: SOLAR300N (P76) or SOLARIV (P74) are ideal for recording utilisation over time as well as performance checks of an inverter.



ACCESSORY		Description	SOLARIV	IV500	SOLAR300N	PVCHECK
PAGE NO.			74	75	76	77
TOPVIEW2006		PC Windows software + USB/ optical cable (C2006) for TOPVIEW2006 (C2007) for TOPVIEW2007	TOPVIEW2006	TOPVIEW2006	TOPVIEW2007	TOPVIEW2006
TOPVIEW2007						
PT300N		PT1000 probe for PV module temperature	•		•	○
SOLAR02		Irradiation and temperature remote unit	•	○	•	○
KITGSC4		4 Cables, 4 crocodile clips	•	•		•
TKIT800		5 Cables, 5 crocodile clips			•	
KITPVMC3 - KITPCMC3		2 Adapters with connectors MC3	KITPVMC3	KITPVMC3		KITPCMC3
KITPVMC4 - KITPCMC4		2 adapters with connectors MC4	KITPVMC4	KITPVMC4		KITPVMC4
A0055		AC/DC battery charger 230V 50/60Hz			•	
PT400		Touch-screen pen			•	
HT304N		Irradiation measurement sensor	•	•	•	○
M304		Mechanical inclinometer	•	•		○
HT4004N		Standard 10-100A DC clamp, diameter 32mm	•		•	
HT4005K		Standard 200A AC clamp, diameter 40mm	•		•	
C2007		TYPE A/B 1.5m USB cable			•	
C2006		USB cable with optional adapter	•	•		•
HT97U		Standard 10-100-1000A AC clamp, diameter 54mm	○		○	
HTFLEX33E		Flex 3000A AC clamp, diameter 174mm			○	
HP30D1		1000A DC clamp, diameter 83mm	○		○	
HP30C3		3000A AC clamp, diameter 70mm	○		○	
HP30C2		200-2000A AC clamp, diameter 70mm	○		○	
606IECN		Magnetic connectors for voltage measurement	○	○	○	○
BORSA2051		Soft carrying bag				•
VA500		Rigid carrying case	•	•	•	
KITKELVIN		Test lead kit	○	○	○	

○ Optional



CAT II 1000V DC

CAT III 300V AC to ground (Max 1500V among inputs P1, P2, C1, c2)



SOLARIV – I-V Curve Tracer Up To 1500V DC

- Measurement of PV module/string output voltage, 1500V
- Measurement of PV module/string output current, 15A
- Resolution (spots) of I-V curve in Standard or Capacitive mode, 128
- Measurement of Voc-Isc-Pmax-Vmpp-Impp-Fill Factor
- Measurement of cell temperature through external feeler
- Measurement of irradiance [W/m²] through reference cell
- Measurement of DC and rated power at module/string output
- Detection of I-V curve through remote unit SOLAR-02
- Measurement of resistance of series Rs of panels • Max/Min
- Direct comparison with reference conditions (STC - 1000W/m², 25°C)
- Internal database for managing up to 30 PV modules (30.000 modules by software)
- DC/AC TRMS single-phase voltage
- DC/AC TRMS single-phase current
- Single-phase DC power / AC active power
- Solar irradiance [W/m²] with reference cell HT304N
- Panel and environmental temperature through probes
- Remote unit SOLAR02 with RF connection
- Display of environmental data in real time
- Use of compensation relationships Cells/ Environment on Pdc
- Parameter recording of a PV system with 5s to 60min programmable IP



Model Specification

Power Source	6x1.5V AA Alkaline Batteries
Standard Accessories Selection Guide (P73)	SOLAR02 - Irradiation and Temperature Remote KITGSC4 - 4 x Cables & 4 x Crocodile Clips KITPVMC3 - 2 x Adapters with Connectors MC3 KITPVMC4 - 2 x Adapters with Connectors MC4 HT4005K - Standard 200A AC clamp, diameter 40mm HT4004N - Standard 10-100A DC Clamp, Diameter 32mm HT304N - Sensor for Irradiation Measurement PT300N - PT1000 Probe for PV Modules M304 - Mechanical inclinometer TOPVIEW2006 - Windows Software & Optical/USB C2006 Cable VA500 - Rigid Case
Certificates	IEC/EN61010-1, Calibration Certificate

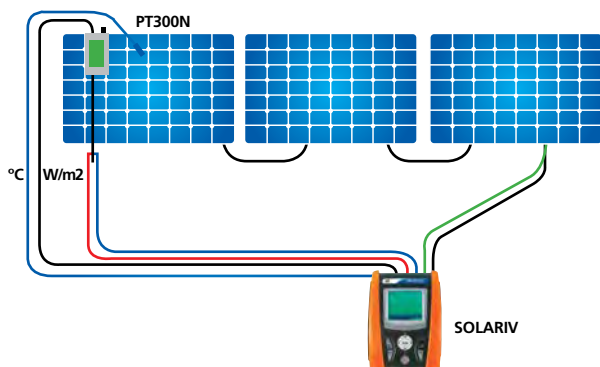
Technical Overview

Certifier of Single Phase PV Installation

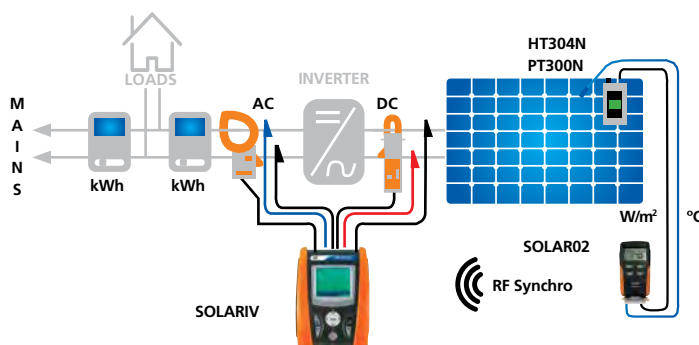
Feature	Parameter	Accuracy
DC Voltage (V)	15 – 1500V	±0.5% + 2 Digit
AC TRMS Voltage (V)	10 – 265V	±0.5% + 2 Digit
DC Current (External Transducer Clamp(mV))	-1100 - 1100mV	±0.5% + 0.6mV
AC TRMS Current (External Transducer Clamp (mv))	1 – 1200mV	±0.5% + 0.6mV
DC Power (1<FS<1000)	0 – 9999kA	±0.7% + 3 Digit (I _{meas} < 10%FS)
AC Single Phase (1<FS<100)	0 – 9999kA	±0.7% + 3 Digit (I _{meas} < 10%FS)
Frequency (Hz)	47.5 – 63Hz	0.2% + 1.0Hz
Irradiance (Reference Cell)	1 – 65mV	±1.0% + 5 Digit
Temperature (External Probe PT1000)	-20 to +100°C	±1.0% + 1°C

I-V Curve and IVCK Measurements

Feature	Parameter	Accuracy
I-V, IVCK: VDC Voltage @ OPC	15 – 1499.9V	±0.5% + 2 Digit
I-V, IVCK: IDC Current @ OPC	10 – 15A	±1.0% + 2 Digit
I-V: DC Power @ OPC (Vmpp >30V, Impp >2A)	50 – 99 999W	±1.0% + 6 Digit
I-V, IVCK: VDC Voltage (@ STC)	5 – 999.9V	±4.0% + 2 Digit
I-V: IDC Current (@ STC)	10 – 99A	±4.0% + 2 Digit
I-V: DC Power @ STC (Vmpp >30V, Impp >2A)	50 – 99 999W	±5.0% + 1 Digit



Measuring of curve IV with environmental sensors



Measuring single-phase efficiency with remote environmental sensors



CAT II ⚡ 1000V DC

CAT III ⚡ 300V AC to ground (Max 1500V among inputs P1, P2, C1, c2)



IV500 - I-V Curve Tracer Up To 1500V DC

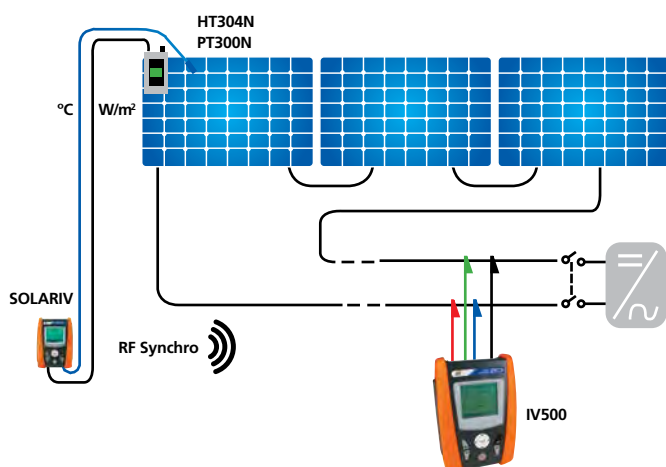
- Measurement of PV module/string output voltage, 1500V
- Measurement of PV module/string output current, 15A
- Resolution (spots) of I-V curve in Standard or Capacitive mode, 128
- Measurement of Voc-Isc-Pmax-Vmpp-Imp-Impp-Fill Factor
- Measurement of cell temperature through external feeler
- Measurement of irradiation [W/m²] through reference cell
- Measurement of DC and rated power at module/string output
- Detection of I-V curve through remote unit SOLAR02
- Measurement of resistance of series Rs of panels • Max/Min
- Direct comparison with reference conditions (STC - 1000W/m², 25°C)
- Internal database for managing up to 30 PV modules (30.000 modules by software)
- DC/AC TRMS single-phase voltage
- DC/AC TRMS single-phase current
- Single-phase DC power / AC active power
- Solar irradiation [W/m²] with reference cell HT304N
- Panel and environmental temperature through probes
- Remote unit SOLAR02 with RF connection
- Display of environmental data in real time
- Use of compensation relationships Cells/ Environment on Pdc

Technical Overview

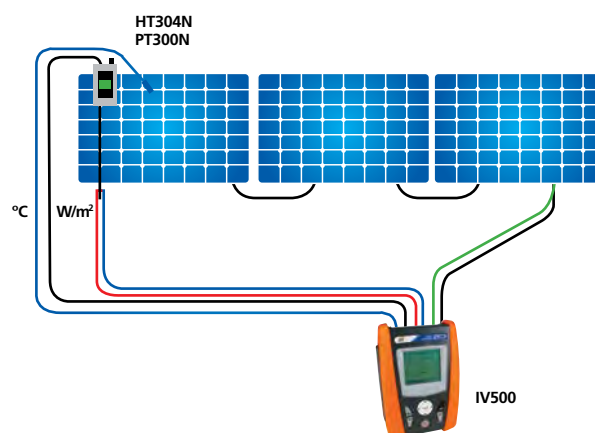
Feature	Parameter	Accuracy
I-V, IVCK: VDC Voltage @ OPC	15 – 1499.9V	±0.5% + 2 Digit
I-V, IVCK: IDC Current @ OPC	10 – 15A	±1.0% + 2 Digit
I-V: DC Power @ OPC (Vmpp >30V, Imp >2A)	50 – 99 999W	±1.0% + 6 Digit
I-V, IVCK: VDC Voltage (@ STC)	5 – 999.9V	±4.0% + 2 Digit
I-V: IDC Current (@ STC)	0.1 – 99A	±4.0% + 2 Digit
I-V: DC Power @ STC (Vmpp >30V, Imp >2A)	50 – 99 999W	±5.0% + 1 Digit
Irradiance (Reference Cell)	1 – 100mV	±1.0% + 5 Digit
Temperature (Auxiliary PT1000 probe)	-20 to +100°C	±1.0% + 1°C

Model Specification

Power Source	6x1.5V AA Alkaline Batteries
Standard Accessories Selection Guide (P73)	KITGSC4 - :4 x Cables and 4 x Crocodile Clips KITPVMC3 - 2 x Adapters with Connectors MC3 KITPVMC4 - :2 x Adapters with Connectors MC4 HT304N - Sensor for Irradiance Measurement M304 - Mechanical inclinometer TOPVIEW2006 - Windows Software & Optical/USB C2006 Cable VA500 - Rigid Case
Certificates	IP40 , IEC/EN61010-1, Calibration Certificate



* Measuring a IV curve via remote synchronisation of irradiation and temperature



Measuring of curve IV with environmental sensors



CAT IV 600V to ground, (Max 1000V between inputs)



SOLAR300N – Photovoltaic Installation Certifier and Network Analyser

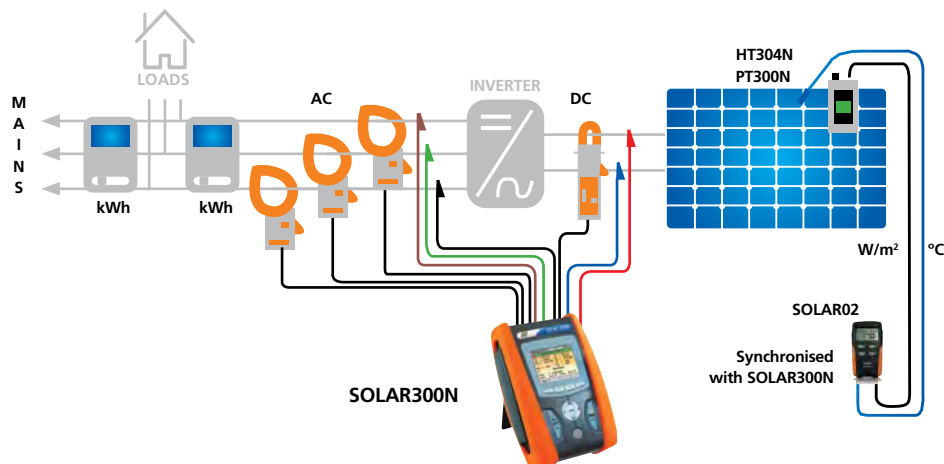
- DC/AC TRMS voltage (single-phase and 3-phase)
- DC/AC TRMS current (single-phase and 3-phase)
- DC/AC active power (single-phase and three-phase)
- Power factor cos ϕ (single-phase and 3-phase)
- Solar irradiation
- Panel and environmental temperature
- Display of testing result (OK/NOT OK)
- Remote unit SOLAR02 for measuring irradiation and temperature
- Periodic recording of power parameters with programmable PI
- Recording of voltage and current harmonics (up to the 49th)
- Recording of voltage anomalies (dips, peaks) with resolution 10ms
- Flicker analysis according to EN50160
- Recording of Inrush Currents with resolution 10ms
- Recording of voltage spikes with resolution 5 μ s

Technical Overview

Feature	Parameter	Accuracy
DC Voltage – PV systems	15 – 1000V	$\pm 0.5\% + 2$ Digit
AC TRMS Voltage – P-N / P-PE / P-P – PV Systems Single/3- Phase	0 – 1000V	$\pm 0.5\% + 2$ Digit
DC/AC TRMS Voltage – P-N / P-PE / P-P – PV Systems Single/3- Phase	0 – 1000V	$\pm 0.5\% + 2$ Digit
AC Voltage Anomalies – Phase-Neutral Single Phase	0 – 600V	$\pm 1.0\% + 2$ Digit
AC Voltage Anomalies – Phase-Phase 3-Phase	0 – 1000V	$\pm 1.0\% + 2$ Digit
AC Current with FLEX Transducer – NPV Systems	0 – 3000A	$\pm 0.5\% + 0.24\%FS$
AC Inrush Current	Dependent on clamp	$\pm 0.5\% + 0.24\%FS$
Frequency	42.5 – 69Hz	$\pm 0.2\% + 1$ Digit
Power factor (cos ϕ) – Single Phase / 3-Phase	0.2 - 1	1
Irradiance (SOLAR-01)	0 – 120mV	$\pm 1.0\% + 5$ Digit
Irradiance (SOLAR-02)	0 – 1400W/m ²	$\pm 1.0\% + INT$ (1000*0.1/K)
Temperature (SOLAR-01)	0 to +100°C	$\pm 1.0\% + 2$ Digit
Temperature (SOLAR-02)	-20 to +100°C	$\pm 1.0\% + 1^\circ C$

Model Specification

Power Source	Rechargeable Li-ION Battery
Standard Accessories Selection Guide (P73)	SOLAR02 - Irradiation and Temperature Remote KIT800 - 5 x Cables and 5 Crocodile Clips HT4005K - Standard 200A AC Clamp, Diameter 40mm HT4004N - Standard 10-100A DC Clamp, Diameter 32mm HT304N - Sensor for Irradiation Measurement PT300N - PT1000 Probe for PV Modules Temperature PT400 - Touch-Screen Pen TOPVIEW2007 - Windows Software & USB C2007 Cable VA500 - Rigid Case
Certificates	IP50, IEC/EN61010-1, Calibration Certificate

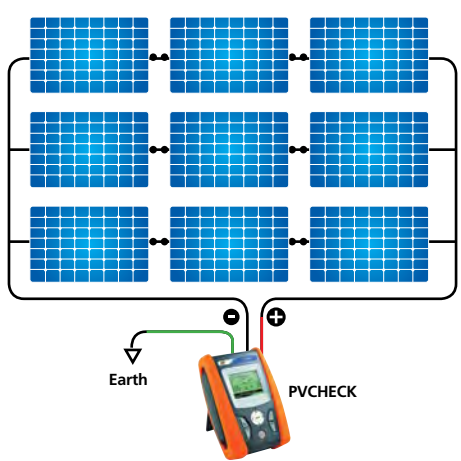


Connection diagram 3-Phase System



PVCHECK PRO

CAT III 300V to ground (Max 1000V DC among inputs P, N, E, C)



"Whole photovoltaic field" insulation measurement method

PVCHECK/ PVCHECKPRO

- Continuity of protective conductors with test current 200mA
- Insulation measurement with test voltage 250,500 and 1000VDC
- Open-circuit voltage (VOC) measurement up to 1000V DC
- Short-circuit current (ISC) measurement up to 15A DC
- DC voltage - DC current - DC power measurement
- Use of compensation relationships Cells/Environment on Pdc
- Internal database for managing up to 30 PV modules (30.000 modules by software)
- Test measurement of string operation
- Result for every measurement OK/NO
- Internal memory and optical USB output for PC connection (256kBytes)
- LCD display, 128x128pxl, with backlight

Technical Overview
Performance Test

Feature	Parameter	Accuracy
DC Voltage (V)	5 – 999.9V	±1.0% + 2 Digit
DC Current (Mean External Clamp (mV))	0 – 1000V	±0.5% + 0.6mV Digit
DC Current (FS DC clamp [A])	1<FS≤1000	0.05 – 5A
DC Power (Vmeas > 150V)	1<FS≤1000	±1.5% +3 Digit (Imeas < 10%FS)

Functionality Test

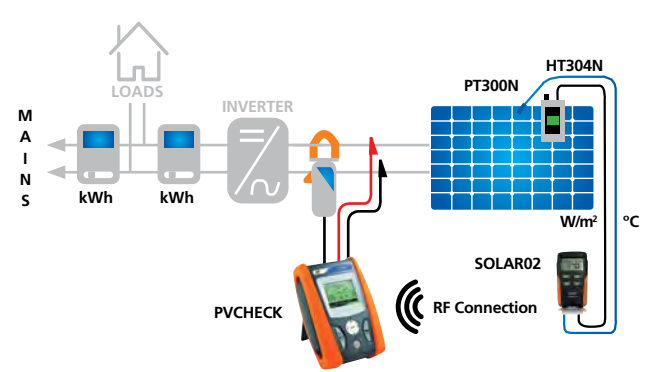
Feature	Parameter	Accuracy
DC Voltage @ OPC (V)	5 – 999V	±1.0% + 2 Digit
DC Current @ OPC (A)	0.1 – 15A	±1.0% + 2 Digit
DC Voltage @ STC (V)	5 - 999	±4.0% + 2 Digit
DC Current @ STC (A)	0.1 – 15A	±4.0% + 2 Digit
Irradiance (Mean HT304N) (mV)	1 – 40mV	±1.0% + 0.1mV
Temperature (Mean PT300N) (°C)	-20 to +100°C	±1.0% + 1°C

Safety Test

Feature	Parameter	Accuracy
Continuity Test (LOWΩ)	0 – 199Ω	±2.0% + 2 Digit
Insulation Test (MΩ) – Mode TIMER	25/ 500/ 1000V 0.01 – 199MΩ	±5.0% + 5 Digit

Model Specification

Power Source	6x1.5V AA Alkaline Batteries
Standard Accessories Selection Guide (P73)	KITGSC4 - 4 x Cables and 4 Crocodile Clips KITPCMC3 - 2 x Adapters with MC3 Connectors KITPCMC4 - 2 x Adapters with MC4 Connectors HT4004 - Standard 10-100A DC clamp, diameter 30mm TOPVIEW2006 - Windows Software and USB C2007 Cable BORSA2051 - Soft Carrying Bag
Optional Accessories Selection Guide (P73)	PT300N - PT1000 Probe for PV Modules Temperature SOLAR02 - Irradiation and Temperature Remote HT304N - Sensor for Irradiation Measurement M304 - Mechanical inclinometer
Certificates	IEC/EN61010-1, Calibration Certificate



Measuring efficiency of photovoltaic field



T8051 – Process Calibrator 4-20mA / 0-10V

- Generation of output voltage signal with amplitude up to 10V DC
- Generation of output current signal with amplitude up to 24mA DC
- Current measurement under percentage format (4-20mA)
- Adjustment selector with high sensitivity
- Up to 3 available automatic ramp selection
- Backlight
- Simulation of external transducer

Technical Overview

Feature	Parameter	Accuracy
DC Voltage (Generated and Measured)		
Range	0.01mV - 10V	±0.02% + 4 Digit
Resolution	0.01mV - 0.001V	
Protection	30V DC	
Slower linear ramp	from 0% 100% 0% in 40s	
Faster Linear ramp	from 0% 100% 0% in 15s	
Step ramp	from 0% 100% 0% in steps of 25% with ramps of 5s each	
DC Current (Generated and Measured)		
Range	0.001mA - 24mA	±0.02% + 4 Digit
Percentage	-25% - 125%	
Resolution	0.001mA	
Protection	30mA DC	



Model Specification

Power Source	Lithium-Ion Rechargeable Battery, External Adapter
Standard Accessories	Test Leads, Crocodile Clips, Protection Rubber Holster, Carrying Case
Certificates	CE, IEC61010-1

T123 – Process Calibrator

- Only for sourcing and not for input voltages
- 6 Digit display
- Backlight
- 30V p-p maximum voltage between output and earth

Technical Overview

Output	Measuring Range	Output Range	Resolution	Accuracy	Remark	
DC (V)	100mV	10 to 110mV	1μV	0.02 + 0.01	Max ouput current:0.5mA Max ouput current: 2mA Max ouput current: 5mA	
	1000mV	100 to 1100mV	10μV			
	10V	1 to 11V	0.1mV			
DC (A)	20mA	0.000mA to 22.000mA	1μA	0.02 + 0.02	Max load 1kΩ at 20mA	
Resistance (Ω)	400Ω	0Ω - 400Ω	0.01Ω	0.02 + 0.02	Current 0.5 to 3mA Current 0.05 to 0.3mA Current 0.01mA	
	4kΩ	0kΩ - 4kΩ	0.1Ω	0.05 + 0.025		
	40kΩ	0kΩ - 40kΩ	1Ω	0.1 + 0.1		
Temperature (°C)	R	-0 to 1767°C	1°C	1.5°C	ITS-90 temperature scale: Accuracy does not include error of internal temperature compensation caused by a sensor	
	S	-0 to 1767°C	1°C	1.5°C		
	B	600 to 1820°C	1°C	1.5°C		
	E	-200 to 1000°C	0.1°C	0.6°C		
	K	-200 to 1372°C	0.1°C	0.6°C		
	J	-200 to 1200°C	0.1°C	0.6°C		
	T	-250 to 400°C	0.1°C	0.6°C		
RTD	N	-200 to 1300°C	0.1°C	1.0°C	Temperature scale ITS-90. Current varies from 0.5 to 3mA. Does not include lead resistance	
	PT100-385	-200 to 800°C	0.1°C	0.3°C		
	PT200-385	-200 to 630°C	0.1°C	0.8°C		
	PT500-385	-200 to 630°C	0.1°C	0.4°C		
Frequency (Hz)	PT1000-385	-200 to 630°C	0.1°C	0.2°C	Output voltage 1 to 11Vp-p Amplitude accuracy 5% + 0.5V Max load > 100kΩ Duty cycle 50%	
	100Hz	1 - 110Hz	0.01Hz	2 count		
	1kHz	0.1 - 1.1kHz	1Hz			
	10kHz	1 - 11kHz	0.1kHz			
Pulse (Hz)	100kHz	10 - 110kHz	2kHz	2 count		
	100Hz	1 - 100000 cycles	1 cycle			2 count
Switch	1kHz	1 - 100000 cycles		5 count	Max open/close voltage 28V and 50mA	
	10kHz	1 - 100000 cycles				

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Test Leads, Fuse
Certificates	IEC:1010
Dimensions (mm)	205 x 75 x 4
Weight (g)	500



**CBTL - Circuit Buddy 6 to 50V**

- Volt Test Light
- Automotive industry
- Test for current on wiring, fuses etc.
- Safe and easy to use, especially when piercing wire
- Use of LED's instead of globes reduces the risk of damage to electronics



VOLTAGE RANGE 6-50V
 **WARNING**
 Not for use on circuits exceeding 50 Volts

**CBSPK - Circuit Buddy Safety Probe Kit**

(To be used with a digital multimeter)

- Automotive industry
- Used with a standard multimeter e.g: TBM805
- Easy and safe to pierce wires



VOLTAGE RANGE 0-50V
 **WARNING**
 Not for use on circuits exceeding 50 Volts.
 When using a multimeter, voltages from 0-50V can be measured. 5A MAX Rating.



T185 – LAN Tester

- LED Display
- Network cable testing (RJ45)
- Test any un-energised wire or cable
- Auto and manual scan function
- Lock status function
- Verify cable continuity, open, short circuit and miss-wired
- Buzzer sound warning for wire status

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	RJ45 Cable, Case
Certificates	Certificate of Conformance
Dimensions (mm) LxWxH	132x55x39
Weight (g)	148



Not suitable for PoE CAT cables carrying voltage



T5012 – Carcheck

- DC only
- Polarity (LED display)
- 3 - 48V

Technical Overview

Feature	Parameter
DC Voltage (V)	3-48V

Model Specification

Power Source	No Battery Required
--------------	---------------------



LIFETIME WARRANTY

T6236 – Digital Tachometer

- Photo/contact
- Removable contact head
- Backlight
- Memory Last/Max/Min value

Technical Overview

Feature	Parameter	Accuracy
Measurement and Range	Photo: 2.5 - 99.000 RPM Contact: 0.5 - 19999 RPM Surface Speeda (m/min): 0.01 - 99.99 m/min	±0.05% + 1 Digit
Resolution RPM M/Min	0.1 (0.5 - 999.9 RPM) 0.01 (0.05 - 99.99 m/min)	
Display	5 Digits, 18mm LCD	

Model Specification

Power Source	4 x 1.5V AA Batteries	
Standard Accessories	Reflecting Tape Marks (600mm), RPM Adaptor (cone), RPM Adaptor (Funnel)	
Dimensions (mm) LxWxH	210 x 74 x 37	
Weight (g)	200	



TAS35C
Surface Speed Test Wheel



TMTL35A
Metal Shaft of Cone



TAS35B
RPM Adaptor (Funnel)



TAS35A
RPM Adaptor (Cone)

T2238 – Digital Tachometer

- Photo/contact
- Microprocessor based
- High accuracy
- Variable LCD contrast
- Holds last reading/recalls max and min

Technical Overview

Technical Overview		
Feature	Parameter	Accuracy
Measurement and Range	Photo: 5 - 99.999 RPM	± 0.05% + 1 Digit
	Contact: 0.5 to 19.999 RPM	
	Surface Speed (m/min): m/min: 0.05 - 1999.9 m/min	
Resolution RPM M/Min	0.1 (0.5 - 999.9 RPM)	
	1 RPM (≥1000 m/min), 0.01 m/min (< 100 m/min.)	
Display	5 Digits, 18mm LCD	

Model Specification

Power Source	4 x 1.5V AA Batteries	
Standard Accessories	Carry Case, Reflecting Tape Marks (600mm), RPM Adaptor (cone)	
Dimensions (mm)	195(H) x 61(W) x 39(H)	
Weight (g)	280	



T8202 – Vibration Meter

- Magnetic probe
- Sensing probe
- MIN/MAX memory

Technical Overview

Feature	Parameter	Accuracy
Velocity	0.5 ~199.9mm/s	±5%+2 Digit at 23 ±5°C
Acceleration	0.5 ~199.9m/s²	
Frequency (Hz)	10Hz ~1kHz	
Sampling Time	Approx. 1s	
Temperature (°C)	0 to +50°C	
Operation Humidity	< 80% Relative Humidity	

Model Specification

Power Source	4 x 1.5V AA Batteries	
Standard Accessories	Cables with plugs, Sensing Probe, Magnetic Base, Carrying Case, Vibration Probe	
Certificate	Certificate of Conformance	
Dimensions (mm)	180(L) x 72(W) x 32(H)	
Weight (g)	Meter: 230, Probe: 165	

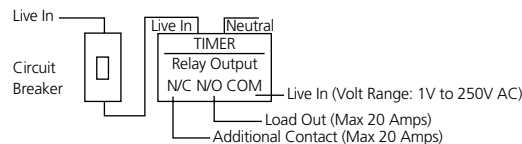
TDDT7 – 7 Day Digital Timer (Relay Contacts)

- Rated Voltage: 220 - 240V AC (50 - 60 Hz)
- Relay contacts for various voltage ranges
- Max 20A (3500 Watts) - resistive load (geysers, underfloor heating, lights)
- Max 10A - inductive load (pool pump, aircon)
- Day/Weekly 18 programmable settings
- Din rail mounting
- 3 Year backup battery
- LCD displays real time hour/minute - on/auto/off



Mounts on both
Din rail and mini rail

Wiring diagram



Certificates	IEC 60669-1, IEC 60669-2-2, IEC 60730-2-7, IEC 60730-1, RCC Certificate
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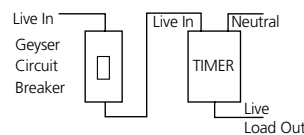
TDDGT – 7 Day Digital Geyser Timer (Internal Relay)

- Rated Voltage: 220 - 240V AC (50 - 60 Hz)
- Max 20A (3500 Watts) - resistive load (geysers, underfloor heating, lights)
- Max 10A - inductive load (pool pump, aircon)
- Day/Weekly 18 programmable settings
- Din rail mounting
- 3 Year backup battery
- LCD displays real time hour/minute - on/auto/off
- Power disconnect battery indication



Mounts on both
Din rail and mini rail

Wiring diagram



Certificates	IEC 60669-1, IEC 60669-2-2, IEC 60730-2-7, IEC 60730-1, RCC Certificate
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TDT7 – Digital 3 Pin Socket

- Ideal for household use
- Backup rechargeable battery
- 8 Group programmable
- 3500 Watt / 16 Amps



Certificates	IEC 60730
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TMT2 – 24 Hour Mechanical 3 Pin Socket

- Ideal for household use
- User friendly
- 15 Minute increment adjustment
- 3500 Watt / 16 Amps

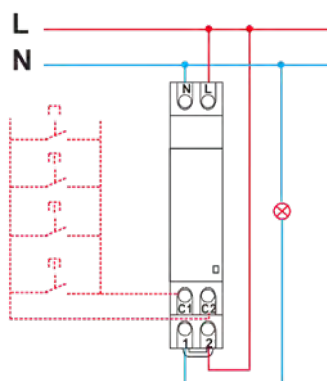


Certificates	IEC 60730
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TMDT2 - 24 Hour Mechanical Din Rail Timer

- 15 Day battery back-up
- Ideal for household use in DBs
- 15 Minute increment
- adjustment
- 3500 Watt / 16 Amps



N — L 100-240VAC
1 — 2 16A 250VAC(COSφ=1)

TWST – WIFI Smart Timer

- Contact configuration: 1NO (SPST-NO)
- DIN Rail mounting 35mm (EN 60715)
- Schedule 100 On/Off programs per week or one day
- Count down time, 1min to 23 hours 59mins
- Disconnected from network, timer retains all programs via Mobile App
- Memory function - contact is in close state, after power failure, contacts still keep close state
- Can be controlled by external buttons

Technical Overview

Feature	Parameter
Rated AC Voltage (V)	100-240V/ 50-60Hz
Rated AC Current: (A)	16A 250V (COS Ø =1)
Wi-Fi Frequency	2.4GHz
Operating Temperature (°C)	-10 to +60°C

Model Specification

Power Source	Mains, Lithium Back-up Battery Reserve (3 Years)
Dimensions (mm)	86(L) x 17.5(W) x 64(H)



TWSTM – WIFI Smart Timer

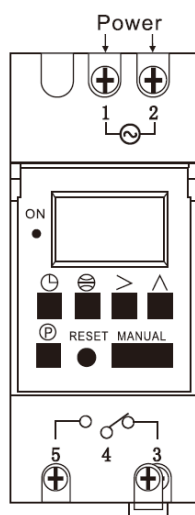
- Contact configuration: 1NO (SPST-NO)
- DIN Rail mounting 35mm (EN 60715)
- Schedule 100 On/Off programs per week or one day
- Count down time, 1min to 23 hours 59mins
- Disconnected from network, timer retains all programs via Mobile App
- Memory function – contact is in close state, after power failure, contacts still keep close state
- Can be controlled by external buttons

Technical Overview

Feature	Parameter
Rated AC Voltage (V)	100-240V/ 50/60Hz
Rated AC Current: (A)	16A 250V (COSØ =1)
Wi-Fi Frequency	2.4GHz
Operating Temperature (°C)	-10 to +60°C

Model Specification

Power Source	Mains, Lithium Back-up Battery Reserve (3 years)
Dimensions (mm)	86(L) x 17.5(W) x 64(H)



TDTASTRO – Astronomical Timer Relay

Automatically adjust the set time along with seasonal variation and when sun sets or rises

- Contact configuration: 1NO (SPST-NO)
- DIN Rail mounting 35mm (EN 60715)
- 8 sets of On/Off programs
- Set program to revise

functions according to latitude variation.

- Minimum interval 1min
- Count down time, 1min to 23 hours 59mins
- Auto time error correction $\pm 30\text{sec}$, weekly.
- Memory function – contact is in close state, after power failure, contacts still keep close state

Technical Overview

Feature	Parameter
Rated AC Voltage (V)	180-250V/ 50/60Hz
Rated AC Current: (A)	16A 250V (COS $\phi = 1$) / 2000W
Hysteresis	< 2sec/day
Operating Temperature ($^{\circ}\text{C}$)	-10 to $+60^{\circ}\text{C}$

Model Specification

Power Source	Mains, Lithium Back-up Battery Reserve (3 Years)
Dimensions (mm)	86(L) x 17.5(W) x 64(H)

TEMS100 – Energy Meter Single Phase

- Designed to measure single phase two wire AC active energy
- High stability and overload capability
- Low power loss
- Bi-directional total active energy, reverse active energy measure in the total active energy
- Energy data can store in memory chip more than 15 years after power off
- 35mm DIN rail installation
- LCD Display
- Warm-up time 10s
- Connection mode - direct

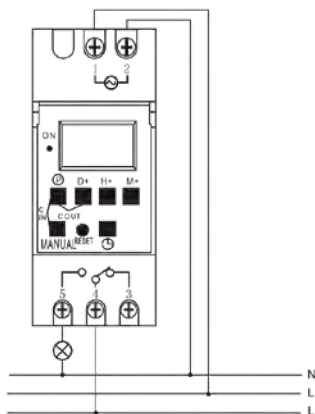


Technical Overview

Feature	Parameter	Accuracy
Rated Voltage (V)	220V-230V	0.5%
Working Voltage range	0.80-1.2Un	
Impulse Voltage	6kV 1.2 μs waveform	
AC voltage withstand	4000V/25mA for 60 sec	
Start current	0.004Ib	
Over current withstand	30I _{max} for 0.01s	
Rated Current (A)	10(100)A	0.5%
Temperature ($^{\circ}\text{C}$)	-25 to $+55^{\circ}\text{C}$	
Relative Humidity	0 to 95%, non-condensing	
Frequency	50Hz or 60Hz $\pm 10\%$	0.5%
Power consumption	<1W/10VA	1.0%
Constant	1000 ± 0.001 imp/kWh	
Pulse output	Passive pulse, pulse width is 80 $\pm 5\text{ms}$ 5-27VDC, Max current input 27mA DC	

Model Specification

Certification	DIN 43880, IEC62053-21, IEC62052-11
Dimensions (mm)	100(L) x 36(M) x 65(H)
Weight (g)	± 130



TDDT7M – 7 Day Digital Timer Transferable Memory

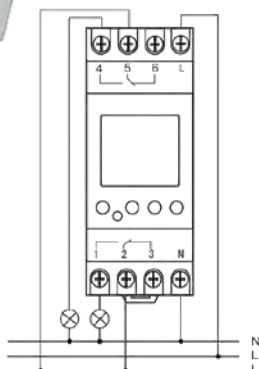
- DIN Rail installation
- LCD display, Day/week programme
- 21 ON/OFF programmes
- Memory card (sold separately)
- Backlight (when connected to power)

Technical Overview

Feature	Parameter
AC Voltage Rating (V)	220V
AC Voltage Limit (V)	180 - 250V
Frequency (Hz)	50 - 60Hz
Switching Contact	1 change-over switch
Switching Capacity at 250V AC, $\cos \phi = 1$	16A
Switching Capacity at 250V AC, $\cos \phi = 0.6$	10A
Incandescent / Halogen Lamp Load	2300W
Energy Saving Lamps Guide	22 x 7W, 15 x 11W, 16 x 15W, 16 x 20W, 14 x 23W
Shortest Switching Times	1 minute (pulse/cycle 1s)
Power Consumption	5VA (max)
Temperature (°C)	-10 to +45°C

Model Specification

Power Reserve	Lithium Battery - 3 Years
Optional Accessories	Memory Card TDDT7MCARD
Dimensions (mm)	36(W) - 2 modules
Weight (g)	±150



TDDT72L – 7-Day Digital Timer Dual Relay Contact

- 2 Channels
- 44 Memory locations (22) ON/OFF programmes
- Pulse programme: 44 memory locations
- Large LCD display

Technical Overview

Feature	Parameter
Operating Voltage (V)	12 – 240V AC/DC
Voltage Rating (V)	24 – 240V AC/DC
Voltage Limit (V)	11 – 240V AC/DC
Frequency (Hz)	50 – 60Hz
Switching Contact	2 Change over switch
Switching Capacity at 250V AC, $\cos \phi = 1$	16A
Switching Capacity at 250V AC, $\cos \phi = 0.6$	10A
Incandescent/Halogen Lamp Load	2300W
Energy Saving Lamps	22 x 7W / 18x11W/ 16x15W/ 16x20W/ 14x23W
Shortest Switching Times	1min (pulse/ cycle 1s)
Time Accuracy	±2s/day @ 25°C
Power Consumption (Max)	5VA
Temperature (°C)	-10 to +45°C

Model Specification

Power Reserve	3 Years (Lithium Battery)
Dimensions (mm)	93 x 36
Weight (g)	±170



FEATURE	T3004	T8000	T500K	T502KJ	TIR9PEN	T111	T306	T151	T685
PAGE NO.	88	89	89	90	90	90	91	91	91
Temperature Range (°C)	-27 to 60°C	-100 to 1300°C	-200 to 1372°C	-200 to 1370°C	-33 to 500°C	-30 to +550°C	-50 to 700°C	-30 to 650°C	-50 to 1000°C
Probe/Sensor Type	Semi-conductor	K	K	K, J	IR	IR	IR	IR	IR
Single/Dual Input		Single	Single	Dual					
Data Hold	•	•	•	•	•	•	•	•	•
MIN/MAX Display	•	•	•	•	•	•	•	•	•
Resolution	0.1°C	0.1°C	0.1°C	0.1°C	0.1°C	0.5 / 1°C (Auto)	0.1°C	0.1°C	0.1°C
Backlight			•	•	•	•	•	•	•
High/Low Setting				•		•	•	•	
Auto Power Off (APO)	•	•	•	•	•	•	•	•	•
Temperature Accuracy (°C)	±0.8°C	0.1°C	±0.1% to 2°C	±0.05% to ±0.7°C	±2°C or ±2%		±1.5°C to ±3°C	±1.5°C to ±2°C	±2°C to ±3°C or ±2%
Dimensions (mm) LxWxH	240 x 34 x 34	156 x 60 x 33	160 x 83 x 38	160 x 83 x 38	150 x 25 x 27	148 x 105 x 42	172 x 110 x 50	185 x 54 x 104	127 x 200 x 47
Weight (g)	180	160	240	240	74	157	225	300	330

Temperature Probe (Type K) - Selection Guide

Range °C	-50	-20	0	100	200	300	900	1000	1100	1200	1300	1400
TP01												
TP02A												
TP03												
TP04												
TP04L												

* Refer to Instruments for full technical data



TP01 Bead probe



TP02A General purpose liquid probe



TP04 Surface contact probe



TP04L Surface contact probe



T630 – Digital Luxmeter

- 0-200 000 Lux
- Data hold
- MAX Hold
- Backlight

Technical Overview

Feature	Parameter	Accuracy
LCD Display	3 1/2 Digit LCD	
Range	20, 200, 2000, 20000, 200000 Lux	±3% + 10 Digit
Resolution	0.01 Lux	
Over-range	OL display	
Sampling Time	2.5 times/s	
Sensor Material	Silicon Photodiode	
Operating Temperature (°C)	0 to +50°C	
Operating Humidity	< 70% Relative Humidity	

Model Specification

Power Source	4 x 1.5 AAA Batteries
Standard Accessories	Carry Pouch
Certificates	Certificate of Conformance
Dimensions (mm)	170(H) x 44(W) x 40(H)
Weight (g)	220



T531 – LED Light Meter

- Removable probe for easy access
- Cosine and colour corrected measurements
- 2s Response time
- “-OL-” display
- MIN/MAX/AVG
- Auto power off

Technical Overview

Feature	Parameter	Accuracy
Measuring Range (lx)	0 – 199.9, 1999, 19990, 199900lx	±3.0% + 5 Digits (standard A light source)
Angle of deviation : Cosine	10° 30° 60° 80°	±1% ±2% ±5% ±20%
Temperature (°C)	0 to +40°C	±0.1% (above 25°C)

Model Specification

Power Source	2 x AA Batteries
Standard Accessories	Carry Case
Dimensions (mm)	169(L) x 63(W) x 37(H)
Weight (g)	210



T325 – Sound Level Tester

- Type 2 sound level meter
- Wide range
- Sampling rate 2s
- Bar graph
- MIN/MAX Hold
- Frequency weighting A/C
- Over range indications

Technical Overview

Feature	Parameter	Accuracy
Display	3.5 Digit with bar graph	
Function	Fast (125ms) Slow (1000ms)	
Measurement Range	30dB to 130dB	±1.5dB at 94dB of 1kHz
Level Ranges	Low 30dB to 80dB, Med 50dB to 100dB, Hi 80dB to 130dB	
Display Update	2.5s	
Microphone	1/4inch (ECM)	
Output Impedance	Approx 100Ω	
Operation Humidity	90% Relative Humidity	
Operation Temperature (°C)	0 to +40°C	

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	Screw Driver, Instruction Manual, Carry Case, Wind Shield
Certificates	Certificate of Conformance
Dimensions (mm)	240(L) x 62(W) x 39(H)
Weight (g)	224

LIFETIME WARRANTY



T3004 – Humidity/Temperature Meter

- Data hold
- MIN/MAX Hold
- REL function
- Auto power off

Technical Overview

Feature	Parameter	Accuracy
Altitude	Up to 2000	
Temperature (°C)	-20 to +60°C	±0.8°C
Humidity	0% ~ 100% Relative Humidity	±3% Relative Humidity
Resolution Temperature	0.1°C	
Resolution Humidity	0.1% Relative Humidity	
Response Time Humidity	180s	
Response Time Temperature	10s	
Operation Temperature	0°C to 40°C	
Operation Humidity	<80% Relative Humidity	
Sampling Rate	2.5 times per second	
Calibration	Internal calibration	



%Rh

Model Specification

Power Source	1 x 9V Battery
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T522 – Hygro Thermometer Wireless Data Logger

- Measures K-, J-, T-, N-, R-, S- Type Thermocouples
- Interchangeable digital probe
- DEW Point and wet bulb measurement
- Recall function up to 100 sets of manually saved data
- MIN/MAX/AVG

Technical Overview

Feature	Parameter	Accuracy
Temperature (°C): Probe	-20 to +50°C (0-100%RH)	±2.5%RH; ±0.8°C
Temperature (°C): Thermocouple	-200 to +1370°C	±1.0% + 0.7°C
Temperature (°C)	0 to +50°C	



dB

Model Specification

Power Source	4 x 1.5V AAA Batteries
Standard Accessories	Carry Case, Micro USB Cable, K-Type Bead Probe, BT-01 Bluetooth Adapter
Dimensions (mm)	187(L) x 75(W) x 29(H)
Weight (g)	210

**T4201 – Anemometer**

- Low friction
- Ball bearing design
- Data hold
- 4 Different speed units

Technical Overview

Measurement	Range	Resolution
Meters per Second (m/s)	0.4 – 30.0	0.1
Kilometers per Hour (km/h)	1.4 – 108.0	0.1
Knots	0.8 – 58.3	0.1
Display	18mm LCD, 3 1/2 Digits	
Accuracy	±(2% + 1 Digit) ≤ 25 m/s	
Temperature (°C)	0 to +50°C	
Dimensions	Sensor Head: Round 72mm Dia.	
Operating Humidity	Max 90% Relative Humidity, (0 to +35°C)	

Model Specification

Power Source	1 x 9V Battery
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**T8000 – Anemometer/Hygro/Lux/Temp**

- Display LCD
- Auto power off

Technical Overview

Feature	Parameter	Accuracy
AIR VELOCITY		
Metres Per Second (m/s)	0.4 to 30.0 m/s	
Kilometers Per Hour (Km/h)	1.4 to 108.0 km/h	
Knots	0.8 to 58.3 Knots	
Temperature	-100 to 1300°C	0.1°C
Light Intensity	0.2, 200, 1800, 20000 Lux	
Humidity	10 to 95%Rh	0.1%Relative Humidity
Resolution Metres Per Second (m/s)	0.1 m/s	
Resolution Kilometers Per Hour (Km/h)	0.1 km/h	
Resolution Knots	0.1 Knots	
Operating Temperature	0 to 50 °C	
Operation Humidity	80% Relative Humidity Max	
LIGHT INTENSITY		
0, 2, 200 Lux	1 Lux	
1800 to 20.000 Lux	10 Lux	



%Rh

Model Specification

Power Source	1 x 9V Battery
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**T500K – Thermometer: K-Type**

- 0.1°C resolution
- Hold function
- Max hold
- Backlight
- Relative zero button

Technical Overview

Feature	Parameter	Accuracy
Temperature (°C)	-200 to +1372°C	-200 to +1372°C, ±0.1% + 2°C -60 to +1372°C, 0.1% + 1°C Accuracy specification does not include probe accuracy
Resolution	0.1°C	

Model Specification

Power Source	4 x 1.5V AAA Batteries
Standard Accessories	Bead Probe



**T502KJ – Thermometer K- and J-Type**

- Data hold
- Programmable
- Temp1/Temp2 dual display
- High/low limit mode
- Relative mode
- Backlight

Technical Overview

Feature	Parameter	Accuracy
Temperature (°C)	Type K: -200 to +1370°C	-50 to +1370°C, ± 0.05%, + 0.7°C
	Type J: -200 to +1050°C	-200 to -50°C, 0.05% + 0.3°C
Resolution	0.1°C	Accuracy specification does not include probe accuracy

Model Specification

Power Source	4 x 1.5V AAA Batteries
Standard Accessories	2 x Bead Probe

**TIR9PEN – 9:1 Infrared Thermometer**

- Hold, Max/Min display
- Circular laser
- Compact size
- LCD backlight

Technical Overview

Feature	Parameter	Accuracy
Temperature Range (°C)	-33 to +500°C	±2% or 2°C
Resolution	-9.99 to +199.9°C	0.1°C
Response Time	1.0s	
Wavelength	8 - 14µm	

Model Specification

Power Source	1 x 1.5 AA Battery
Certification	CE, RoHS

**T111 – Non-Contact Thermometer**

- Auto power off
- Laser pointer
- MIN/MAX Record
- Settable Hi/Lo limits with beep
- Backlight
- Data hold
- Emissivity Adjustable
- Distance and spot D:S (Field of view) 10:1

Technical Overview

Feature	Parameter	Accuracy
Temperature (°C)	-3 to +550°C	± 2°C for -30°C - 100°C, ± 2% for 101°C - 550°C
Resolution	0.5 / 1°C (Auto)	
Response Time	0.25s	
Emissivity Adj.	0,1 to 1	
Co-efficient	±0,2°C	
Operating Temperature (°C)	0 to 50°C	

Model Specifications

Power Source	1 x 9V Battery
Dimensions (mm)	148(L) x 105(W) x 42(H)
Weight (g)	157





Emissivity - is how infrared is emitted off a particular surface e.g. black is 1 and a very shiny surface like chrome, glass is around 0.3

T306 - Non-contact Thermometer

- Laser pointer
- Emissivity adjustable
- Distance and spot D:S (Field of view) 12:1
- MIN/MAX/AVG
- High/Low temperature alarm setting

Technical Overview

Feature	Parameter	Accuracy
Temperature (°C)	-50 to +700°C	0°C - 700°C ±1.5°C
Resolution	0.1°C	
Response Time	0.5s	
Spectral Response	8 to 14µm Nominal	
Emissivity Adj.	0.1 - 1	
Operating Humidity	10 - 95% Relative Humidity	

Model Specification

Power Source	1 x 9V Battery
Standard Accessories	2 x Bead Probe



T151 – 4-in-1 Non-contact IR Thermometer

- UV refrigerant leak detector
- Distance and spot size indicator
- Coaxial laser in circle with scale indication of distance and measured temperature area
- D:S (Field of view) 15:1
- High and low alarms for measurements outside the limit
- Drop proof up to 1.2m

Technical Overview

Feature	Parameter	Accuracy
Temperature (°C)	-30 to +650°C	≥-10°C to < 0°C ±2°C, ≥0°C: ±1.5%
Resolution	0.1°C	
Response Time	< 300ms	
Spectral Response	8 to 14 µm Nominal	
Emissivity Adj.	0.1 to 1	
Co-efficient	±0.1°C	

Model Specification

Power Source	3 x AA Batteries
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Emissivity - is how infrared is emitted off a particular surface e.g. black is 1 and a very shiny surface like chrome, glass is around 0.3

T685 - High Temperature / Non-Contact Thermometer

- Laser pointer
- Dual display
- Emissivity adjustable
- 10 Point memory
- Distance and spot D:S (Field of View) 30:1

Technical Overview

Feature	Parameter	Accuracy
Temperature (°C)	-50 to +1000°C	±3°C from -50 to -20°C ±2°C from -20 to +100°C ±2% from +100 to +1000°C
Resolution	0.1°C	
Response Time	0.5s	
Repeatability	±1°C	
Emissivity Adj.	0.1 - 1.0	
Operating Temperature	0 to 50°C 10 - 90% Relative Humidity	

Model Specification

Power Source	1 x 9V Battery
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FEATURE	THT45	TG301	THT60	TPK80	MERCURY	THTA1	THT33	HOTFINDS	D300
PAGE	93	93	94	94	14	96	95	95	96
CHARACTERISTICS OF IR IMAGE									
IR Sensor Resolution (Pixels)	80 x 80	128 x 128 32 x 32 (Interpolation)	160 x 120	80 x 80	80 x 80	220 x 160	80 x 80	384 x 288	384 x 288
Temperature Range	-20 to +350°C	-30 to +650°C	-20 to +400°C	-20 to +160°C	-20 to +260°C	-20 to +300°C	-20 to +380°C	-20 to +600°C	-20 to +600°C
Thermal Image Sensitivity	< 0.1°C at 30°C	150mK (0.1°C)	≤ 0.8°C at 30°C	≤ 0.1°C at 30°C	≤ 0.1°C at 30°C	0.08°C	< 0.1°C at 30°C	≤ 0.05°C at 30°C	± 0.05°C at 30°C
Spectrum Range	8 - 14µm	8 - 14µm	8 - 14µm		8 - 14µm	8 - 14µm	8 - 14µm	8 - 14µm	8 - 14µm
Type of IR Sensor	UFPA	IR-EX™ (Integrated IR Array with CMOS Sensor)	UFPA		UFPA	UFPA	UFPA	UFPA	CCD & UFPA
Frequency	50Hz	8Hz	50Hz		50Hz	9Hz	50Hz	50Hz	50Hz
CHARACTERISTICS OF IR AND INTEGRATED OPTICS									
Field of view	17° x 17°	33° x 33°	29.8° x 22.6°	20° x 20°	21° x 21°	35° x 26°	21° x 21°	24° x 18°	24° x 18°
Focal length of standard lens	9mm		7.5mm	Fixed	7.5mm	FIXED	7.5mm	MANUAL	MOTORISED
Interchangeable Optics			•						
FUNCTIONS									
Bluetooth					•		•		•
Laser	•	Circular	•		•			•	•
Colour Palettes	4 Standard	3 Standard	8 Standard, 10 Custom Colours		4 Standard	5	6	6	6
Saved Image Format	JPG, MPEG4	Bitmap (BMP)	JPG, MPEG4		BMP	JPG	BMP	JPG	JPG
Touch Screen			•	•			•	•	
IP Rating	IP50	IP50	IP65	IP54	IP65	IP50	IP54	IP54	IP54
Shock/Vibrations Resistance	25G/2G	50G/2.5G	25G/2G	25G/2G				25G/2G	25G/2G
Hot/Cold Spot	Auto			Auto	3 Cursors	3 Markers	3 Cursors	8 Movable spots	Auto
Dimensions (mm) LxWxH	224 x 77 x 96	185 x 54 x 104	243 x 103 x 160	175 x 102 x 36	190 x 75 x 55	125 x 80 x 24	180 x 60 x 75	215 x 80 x 219	
Weight (g)	500	300	920	415	555	130	260	600	900

THT45 - Thermal IR Camera

- 80 x 80 Pixels
- PiP function
- Automatic detection of hot and cold spots
- Built-in laser pointer and illuminator
- 3 Cursors: central, Min, Max
- Data saved to JPEG and MPEG4

**Technical Overview**

Feature	Parameter
Temperature Range	-20°C to 350°C
Thermal Sensitivity	<0.1°C at 30°C
Spectral Range	8 to 14µm
Image Frequency	50Hz
Digital Zoom	1x to 32x
IR Resolution	80 x 80 pixels
Colour Palette	4 Standard
Integrated Photo Camera	640 x 48pxl
Thermal Imaging Sensitivity	150mK
Thermal imaging Detector	IR UFPA
Field Of View	17° x 17°

Model Specification

Power Source	Lithium-Ion Rechargeable Battery, Battery Charger
Standard Accessories	Focal Lens 9mm, Universal Plugs, Micro SD Card 8GB, USB Cable, Video Cable, Earphone set, Carry Bag, Wrist Strap, THTLink Windows Software, Quick Reference Guide
Certification	ISO9000

**TG301 - Thermal IR Camera**

- 128 x 128 Pixels
- UV refrigerant detection
- 30:1 distance to spot ratio
- Bright flashlight
- Circular laser
- 1.2m Drop proof

**Technical Overview**

Feature	Parameter
Temperature Range	-30 to +650°C
Display	1.77" Colour TFT with 128 (H) x 160 (V) pixels
Accuracy (Calibration geometry with ambient temperature 23°C ±2°C)	≥0°C: ±1.5°C or ±1.5°C of reading, whichever is greater
Response Time (95%)	<125ms (8Hz)
Spectral Response	8 - 14µm
Emissivity	0.10 - 1.00
Temperature Coefficient	±0.1°C/°C or ±0.1%
Measurement Resolution	0.1°C
Repeatability (% of reading)	±8% or ±1.0°C, whichever is greater
Thermal Imaging detector	IR-EX™ Technology (Integrated IR Array Sensor with CMOS Sensor)
IR Resolution	16.384 pxl (128 x 128 pxl)
Field of View (H x V)	33° x 33°
Thermal Imaging Sensitivity	150mK
Colour Palettes	3 (Grey Scale, Hot Iron and Rainbow)
Save Image Format	Bitmap (BMP) Image with Temperature and Emmissivity
Battery Life	12 hours with laser and backlight on

**Model Specification**

Power Source	3 x AA IEC LR06 Batteries
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THT60 - Thermal IR Camera

- 160 x 120 Pixels
- Touch screen 3.5" TFT
- Micro-SD card and USB interface to PC
- 8 Standard + 10 custom colour palette
- Built in laser pointer and illuminator
- PiP function
- PAL/NTSC video out



Technical Overview

Feature	Parameter
Temperature Range	-20 to +400°C
Thermal Sensitivity	<0.08°C at 30°C
Field of View (FOV)	29.8° x 22.6° (lens 7.5mm)
Spectral Range	8 to 14µm
IR Resolution	160 x 120 pixels
Colour Palettes	8 Standard, 10 Custom Colours
Thermal Image Sensitivity	80mK at 30°, 50Hz
Digital Zoom	1x to 20x
Save File Format	JPEG, MPEG4
Integrated Photo Camera	640 x 480pxl
Image Frequency	50Hz
Thermal Image Detector	IR UFPA

Model Specification

Power Source	2 x 7.4V Lithium-Ion Rechargeable Batteries, AC/DC Adapter and Universal Plugs, Charger
Standard Accessories	7.5mm Lens and Protection Cover, 4GB Micro SD Card, Card Reader, USB Cable, RCA Video Output Cable, Rubber Support for LCD Hood, and Tripod, Earphone Set, THTLink Software, Hard Carry Case
Optional Lenses	RL1160-11mm, RL2260-22mm and RL3360-33mm
Certification	ISO9000

TPK80 - Thermal Imager

- 80 x 80 Pixels
- Integrates tablet and thermal camera technology
- Communicate in real time, live image and video transmission
- Android, Open Source and expandable
- Built in memory
- IP54



Technical Overview

Feature	Parameter
Temperature (°C)	-20 to +160°C
Measurement Accuracy	±2°C or ±2%
Thermal Sensitivity	≤0.1°C at 30°C
Display	5.5" Capacitive touch screen
Field of View	20° x 20° / 0.5m
Visible Pixels	High Definition CCD, 8 Mega Pixel
Detector Resolution	80 x 80pxl
Focus	Fixed
Image Mode	IR, CCD
Measurement Functions	1 Moveable spots, auto hot/cold spot capture, isothermal analysis, circle analysis, rectangular analysis

HOTFINDS – Infrared Camera

- 384 x 288 Resolution High Performance IR Camera
- Duo Vision display mode IR/CCD
- 50Hz dynamic real-time graphical output
- 9 movable spots, auto hot/cold spot, 1 line profile, 2 areas boxes, isotherm
- 5M Pixel High definition CCD
- Dual Control—Keypad & Touch

**Technical Overview**

Feature	Parameter	Accuracy
Temperature (°C)	-20 to +600°C (Up to 1500°C, Optional)	+2.0% ±2.0 °C
Thermal Sensitivity	0.05°C@30°C	
Field of View (FOV)	24° x18°/0.15m	
Spectral Range	8-14µm	
IR Resolution	384 x 288pxl	
Display	3.5" Capacitive Touch screen	
Operating Temperature	-20°C to +50°C	
Correction	Emissivity, ambient temperature, distance, relative humidity	
Image Frequency (Hz)	9Hz	
Focus	Manual	
Palette	6 (Iron, iron inverted, rainbow, feather, grey, grey inverted)	
Image Storage	16GB removable TF card	
Video Output	NTSC (60Hz)/PAL (50Hz)	

Model Specification

Power Source	1 x 3.7V Rechargeable Li-ion Battery
Standard Accessories	USB
Certificates	IP54

**THT33 – Infrared Camera**

- Built-in illuminator – white light LED

**Technical Overview**

Feature	Parameter	Accuracy
Temperature (°C)	-20 to +380°C	±2.0% or ±2.0°C
Thermal Sensitivity	<0.1°C @ 30°C	±1.0% + 0.7°C
Field of View (FOV)	21° x 21° (7.5mm lens)	
D:S Ratio	74:1	
Spectral Range	8 - 14µm	
IR Resolution	80 x 80pxl	
Display	2.8" TFT Colour	
Humidity	<80%RH	
Image Frequency (Hz)	50Hz	
Emissivity	0.1 – 1.0	
Focus	Automatic	
Colour Palette	5 (Iron, rainbow, grey, grey inverted, feather)	
Image Storage	Internal memory – max 20 locations	

Model Specification

Power Source	1 x 3.7 Rechargeable Li-ion Battery
Standard Accessories	Carry Case, Micro USB Cable
Certificates	IP54



D300 – Thermal Imager

- Duo Vision Plus overlays CCD and IR images giving a detailed and clear image
- 5MP High Definition Camera
- ISO density alarm (visual feedback)
- 3 Imaging modes Infrared (IR), Digital (CCD) and Duo Vision Plus
- Laser Range Finder
- Motorised lens auto focus
- Thermal Video Recording
- Analogue Video output
- JPG file format (Thermal/Visual)
- USB real time transmission
- Dimensions (mm): 25(H)
- Weight (g): 850



Technical Overview

Feature	Parameter	Accuracy
Temperature (°C)	-20 to +600°C	±2.0% or ±2.0°C
Thermal Sensitivity	≤0.05°C@30°C	
Field of View (FOV)	24° x 18°	
Spectral Range	7.5 to 14µm	
IR Resolution	384x288pxl	
Display	3.5" capacitive Touch	
Operating Temperature	-20°C to +50°C	
Measurement range (m)	0.05 to 30	
Measurement mode	8 movable spots, auto hot/cold spot, profile, 2 area boxes, isotherm, line	
Correction	Emissivity, ambient temperature, distance, relative humidity, reflected temperature	
Focus	Motorised/Manual/Auto	
Palette	Iron, Iron inverted, Rainbow, Feather, Grey and Grey inverted.	
Image Storage	Built in – 16GB	



Model Specification

Power Source	1 x 3.7 Rechargeable Li-ion Battery
Standard Accessories	Carry Case, USB Cable Type-C
Certificates	Calibration Certificate, IP54

THTA1 – Thermal Imaging Camera

- USB Micro-B transfer to and from PC (Android and IOS)



Technical Overview

Feature	Parameter	Accuracy
Temperature (°C)	-200 to +1370°C	±2.0% Digit ±2.0°C
Thermal Sensitivity	0.08°C	±1.0% + 0.7°C
Field of View (FOV)	35 x 26	
IR Resolution	220 x 160pxl (total 3520pxl)	
Display	3.5" Colour	
Humidity	<90%RH	
Image Frequency (Hz)	9Hz	
Emissivity	0.1 – 1.0	
Focus	Fixed	
Palette	4 (Iron, rainbow, black, white)	
Image Storage	8Gb	

Model Specification

Power Source	1 x 3.7 Rechargeable Li-ion Battery
Dimensions (mm)	125(L) x 80(W) x 24(H)
Weight (g)	130

