FLUKE ®

TEST TOOLS CATALOGUE

FLUKE ®

CONTENTS

FLUKE ®

Safety, quality and performance: three words that sum up the benefits of our range of digital multimeters. Designed to help you do your job faster, more efficiently and with greater accuracy, this range contains a model for every budget and application.

Performance and accuracy for maximum industrial productivity

The Fluke 80 Series V have improved measurement functions, troubleshooting features, resolution and accuracy to solve more problems on motor drives, in-plant automation, power distribution, and electro-mechanical equipment.

The Fluke 87V has a unique function for accurate voltage and frequency measurements on adjustable speed motor drives and other electrically noisy equipment. A built-in thermometer conveniently allows you to take temperature readings without having to carry a separate instrument.

FLUKE 87V • REF 131TA8449

Battery life: Over 400 hours typical (alkaline)
Size: (H x W x D): 200 mm x 95 mm x 48 mm
Weight: 0,6 kg
Warranty: Lifetime

INCLUDED ACCESSORIES

TL175 test leads, AC172 alligator clips, yellow holster (H80M excl. TPAK), 80BK temperature probe, 9 V battery (installed), CD-ROM (user's manual and technical notes) and operator's guide.

RECOMMENDED ACCESSORIES

C25
REF 131TA8450
See page 46

i1010
REF 131TA8445
See page 16

TPAK
REF 131TA8446
See page 46

COMBO KIT

FLUKE 87V/E2
REF 131TA8451
Industrial Electrician Combo Kit
• Fluke 87V True RMS Multimeter
• TL224 SureGrip™ Silicone Test Lead Set
• TP38 Slim Reach Test Probe Set (insulated)
• AC220 SureGrip™ Alligator Clip Set
• TPAK Magnetic Hanger
• 80BK Integrated DMM Temperature Probe
• C35 Soft Meter Case

FEATURES

True RMS voltage and current for accurate measurements on non-linear signals	√
Bandwidth (voltage/current)	20 kHz
Digital display counts (default/selectable)	20000 / 6000
Selectable filter for accurate voltage and frequency measurements on motor drives	√
Large display with analog bargraph and two-level bright white backlight	√
Auto and manual ranging for maximum flexibility	√
Built-in thermometer lets you carry one less tool	√
Peak capture to record transients as fast as 250 µs	√
Relative mode to remove test lead resistance from low ohm measurements	√
Min-Max-Average recording with Min/Max Alert to capture variations automatically	√
AutoHOLD to capture stable readings avoiding noisy signals	√
Audible continuity, diode test and duty cycle	√
Input alert	√
"Classic" design with new removable holster with built-in test lead and probe storage	√
Improved selectable sleep mode for long battery life	√
Easy battery exchange without opening the complete case	√

SPECIFICATIONS

Functions	Maximum range	Maximum resolution	Accuracy
Voltage DC	1000 V	10 µV	±(0,05%+1)
Voltage AC	1000 V	10 µV	±(0,7%+2)
Current DC	10 A *	0,01 µA	±(0,2%+2)
Current AC	10 A *	0,01 µA	±(1,0%+2)
Resistance	50 MΩ	0,01 Ω	±(0,2%+1)
Conductance	60 nS	0,001 nS	±(1,0%+10)
Capacitance	9999 µF	0,01 nF	±(1,0%+2)
Frequency	> 200 kHz	0,01 Hz	±(0,005%+1)
Temperature	-200 to 1090 ºC	0,1 ºC	1,0%
80BK temperature probe	-40 to 260 ºC	-	2,2 ºC or 2%

* 20 A up to 30 seconds

FLUKE®

Versatile meters for field service or bench repair

These meters have the features needed to find most electrical, electromechanical and heating and ventilation problems.

They are simple to use and have significant improvements over Fluke's original 70 Series like True RMS, more measurement functions, conformance to the latest safety standards, and a much larger display that is easier to view.

FLUKE 175 • REF 131TA8447

Battery life: 200 hours typical (alkaline)
Size: (H x W x D): 190 mm x 85 mm x 45 mm
Weight: 0,42 kg
Warranty: Lifetime

INCLUDED ACCESSORIES

Test leads with 4 mm lantern tips, installed 9 V battery and users manual.

RECOMMENDED ACCESSORIES

C90
REF 131TA8448
See page 46

i1010
REF 131TA8445
See page 16

TLK220 EUR
REF 134TA8375
See page 43

FEATURES

True RMS measurements	AC
Digital display counts, updates 4 times per second	6000
Analog bargraph / 33 segments, updates 40 times per second	√
Auto and manual ranging	√
Display hold and AutoHOLD	√
Min-Max-Average recording mode with Min/Max Alert	√
Smoothing mode allows filtering of rapidly changing inputs	√
Audible continuity and diode test	√
Test lead alert	√
Unsafe voltage alert warns for voltages above 30 V	√
Low battery indication	√
Ergonomic case with integrated holster	√
Easy battery and fuse exchange without opening the complete case	√
Selectable sleep mode preserves battery life	√

SPECIFICATIONS

Functions	Maximum range	Maximum resolution	Accuracy
Voltage DC	1000 V	0,1 mV	±(0,15%+2)
Voltage AC	1000 V	0,1 mV	±(1,0%+3)
Current DC	10 A	0,01 mA	±(1,0%+3)
Current AC	10 A	0,01 mA	±(1,5%+3)
Resistance	50 MΩ	0,1 Ω	±(0,9%+1)
Capacitance	10000 µF	1 nF	±(1,2%+2)
Frequency	100 kHz	0,01 Hz	±(0,1%+1)
Temperature	-40 ºC/+400 ºC	0,1 ºC	-

Accuracies are best accuracies for each function.

Compact design for ergonomic one-handed operation

Fluke 115 Field Service Testing Multimeter

An everyday multimeter for technicians, the 115 is for electrical and electronic testing in field service, industrial, and applications where more than the basic functions simplify work.

FLUKE **115 • REF 126TA6025**

Battery life: 400 hours typical (alkaline)
Size: (H x W x D): 167 mm x 84 mm x 46 mm
Weight: 0,55 kg
Warranty: Three years

FEATURES

True RMS measurements	AC
Counts	6000
Backlight	√
Analog bargraph	√
Min/Max/Average to record signal fluctuations	√
Resistance, continuity	√
Frequency, capacitance, diode test	√
Display hold	√
Auto/manual ranging	√
Low battery indication	√
Compact case with removable holster	√

INCLUDED ACCESSORIES

Test leads with 4 mm lantern tips and protective cap, holster, installed 9 V battery and users manual.

RECOMMENDED ACCESSORIES

C50
REF 131TA8444
See page 46

TPAK
REF 131TA8446
See page 46

TL223-1
REF 140TA7507
See page 44

SPECIFICATIONS

Functions	Maximum range	Maximum resolution	Accuracy
Voltage DC	600 V	1 mV	±(0,5%+2)
Voltage AC	600 V	1 mV	±(1,0%+3)
Current DC	10 A	1 mA	±(1,0%+3)
Current AC	10 A	0,01 A	±(1,5%+3)
Resistance	40 MΩ (113: 60 KΩ)	0,1 Ω	±(0,9%+1)
Capacitance	10000 µF	1 nF	±(1,9%+2)
Frequency	50 kHz	0,01 Hz	±(0,1%+2)

Accuracies are best accuracies for each function.

Ultimate flexibility with removable display

Imagine the possibilities!
The 233 wireless remote DMM allows maintenance professionals to address an age-old problem: display positioning.

You struggled with:
- Twisting uncomfortably to read the display and keep the probes in place
- Wishing for a third hand while taking a measurement
- Running from one place to another to take a measurement

- Needing a second person to read the display, while you were flipping the switch
- Focusing on the display, while making sure the probes stayed in the right place

Now, your problems are over.

The new Fluke 233 can be used for even the most common meter measurements and is especially suited for those situations where display viewing is challenging.

FLUKE **233 • REF 135TA3042**

Battery life: 400 hours (AA-batteries)
Size (HxWxL): 53 mm x 93 mm x 193 mm
Weight: 0,604 kg
Warranty: Three years

INCLUDED ACCESSORIES

AA-batteries (installed), test leads with 4 mm lantern tips, AC175 alligator clips, 80BK-A temperature probe, CD-ROM, users manual

RECOMMENDED ACCESSORIES

AC285
REF 131TA8467
See page 45

TL220-1
REF 107TA1224
See page 44

TPAK
REF 131TA8446
See page 46

i1010
REF 131TA8445
See page 16

FEATURES

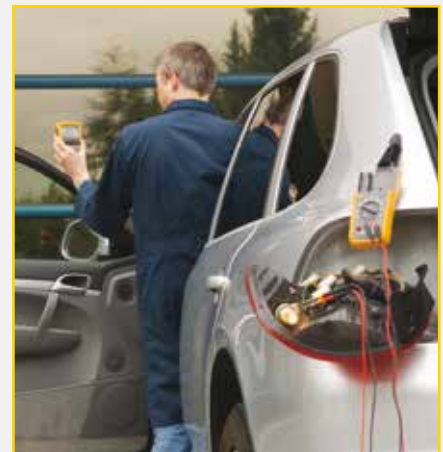| |
|---|
| True RMS AC voltage and current for accurate measurements on non-linear signals |
| Measure up to 1000 VAC and VDC |
| Measure up to 10 A (20 A for 30 seconds) |
| 10 000 µF capacitance range |
| Frequency to 50 kHz |
| Convenient built-in thermometer allows you to take temperature readings without having to carry a separate instrument |
| Resistance, continuity and diode test |
| Low power wireless technology allows the display to be carried up to 10 meters (33 ft) away from the point of measurement for added flexibility. No interference with measurements |
| The removable magnetic display can be conveniently mounted where it is easily seen |
| Take measurements without holding the meter to improve visual focus on probes and augment safe electrical measurements |
| Use as a conventional multimeter when the display is connected |
| Radio transmitter automatically turns off when the display is connected to the meter |
| Auto power off maximizes battery life |
| Min/Max and Average recording to capture variations automatically |
| Test continuity and diodes |
| Easy to read display with large digits and bright backlight |

SPECIFICATIONS

Voltage DC	Range: 0,1 mV to 1000 V
	Accuracy: 0,25% + 2
Voltage AC	Range: 0,1 mV to 1000 V
	Accuracy: 1,0% + 3
Current DC	Range: 1 mA to 10 A
	Accuracy: 1,0% + 3
Current AC	Range: 1 mA to 10 A
	Accuracy: 1,5% + 3
Resistance	Range : 0,1 Ω to 40 MΩ

KEY FEATURES AND BENEFITS

Counts	6000
Capacitance	1000 nF to 9999 µF
Frequency	0,1 Hz to 50,00 kHz 0,2
Temperature	-40 °C to +400 °C
Power	AA-batteries: three for main body; two for display
Battery life	400 hours
Wireless frequency	2,4 Ghz ISM Band 10 meter range
Safety rating	CAT IV 600 V, CAT III 1000 V
Basic features	AC True RMS Yes Ranging Auto/Manual
Display	Backlight
Data storage	Min/Max/Average
Other features	Battery type AA alkaline Removable display

88V/A // AUTOMOTIVE MULTIMETER

FLUKE ®

The right meter for auto-electrical diagnosis

Perhaps the most important tool you will use in trouble-shooting auto-electrical systems is the multimeter.

Basic multimeters measure voltage, current and resistance, while automotive multimeters like the Fluke 88V have features that can check frequency, duty cycle, make diode tests and measure temperature, pressure and vacuum.
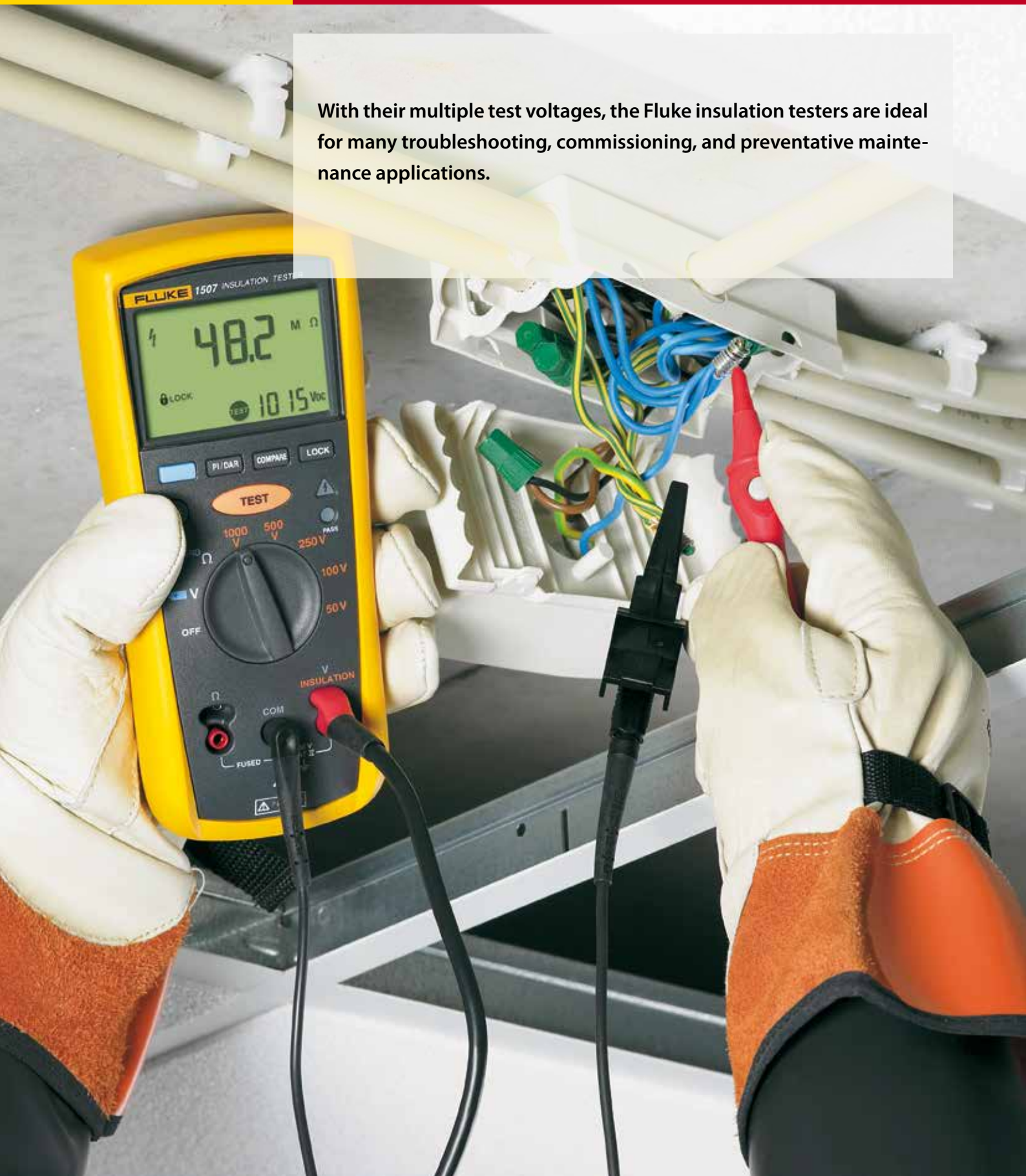
FLUKE **88V/A** • REF **129TA7684**

Battery life: Over 400 hours typical (alkaline)
Size: (H x W x D): 186 mm x 86 mm x 32 mm
Weight: 0,36 kg
Warranty: Lifetime

INCLUDED ACCESSORIES

H80M holster with TPAK meter hanging solution, TL224 SureGrip™ silicone test lead Set, TP74 test probe set, AC285 SureGrip™ large jaw alligator clip set, 80BK integrated temperature probe, RPM80 inductive pick-up probe, C800 hard case, user's manual + Quick Reference Guide

RECOMMENDED ACCESSORIES

TLK282-1
REF 131TA8462
See page 43

FEATURES

Continuity for detecting open and shorts	√
Frequency for pulsed DC and AC tests	√
Duty cycle to verify operation of feedback carburetors	√
Diode test for alternator testing	√
Built-in thermometer; thermocouple probe included	√
Min/Max/Average recording with Min/Max Alert	√
Peak capture to record transients as fast as 250 µs	√
Relative mode to remove test lead resistance from low ohm measurements	√
Millisecond pulse width measurements for fuel injectors	√
AutoHOLD to capture stable readings	√
Large display with bright, two-level backlight	√
Magnet hanger to attach meter to the vehicle	√
RPM80 Inductive pickup for both conventional and distributorless (DIS) ignitions	√
Hard meter case	√
Safety rating	CAT III 1000 V, CAT IV 600 V

SPECIFICATIONS

Function	Range	Resolution	Accuracy
Voltage DC	1000 V	0,1 mV	0,1%
Voltage AC	1000 V (5 kHz)	0,1 mV	0,5%
Current DC	10 A	0,1 µA	0,4%
Current AC	10 A	0,1 µA	1,2%
Resistance	50 MΩ	0,1 Ω	0,4%
Capacitance	10 mF	0,01 nF	1%
Frequency	200 kHz	0,01 Hz	0,005%
Temperature	1090 ºC	0,1 ºC	1%

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With their multiple test voltages, the Fluke insulation testers are ideal for many troubleshooting, commissioning, and preventative mainte-nance applications.

FLUKE 1507 // INSULATION TESTER

FLUKE ®

Truly portable insulation resistance tester

Whether you work on motors, generators, cables, or switch gear, the Fluke 1507 insulation resistance tester provides noise-free, reliable results. With advanced performance, the insulation tester is designed to be safe, simple to use and gimmick-free.

Additional features like the remote probe save both time and money when performing tests.

FLUKE **1507** • REF **144TA8800**

Size (HxWxL): 203 mm x 100 mm x 50 mm
Weight: 0,55 kg
Warranty: One year

FEATURES

User selectable test voltages for many applications.
Additional test voltages 50V, 100V, 250V, 500V, 1000V.
Repetitive or hard-to-reach testing is easy with the remote test probe.
Auto-discharge of capacitive voltage for added user protection.
Live circuit detection prevents insulation test if voltage > 30 V is detected for added user protection.
Save both time and money with Automatic calculation of polarization index and dielectric absorption ratio.
Auto Power off to save batteries.
Large display with backlight.
Continuity function (200 mA).
Compare function (pass/fail) for fast repetitive tests .

INCLUDED ACCESSORIES

TP165x remote test probe, TL224 SureGrip silicone test lead set, TP74 latern tip test probe set, alligator clips, holster and users manual.

RECOMMENDED ACCESSORIES

AC285	TLK225-1	T-PAK
REF 131TA8467	REF 131TA8471	REF 131TA8446
See page 45	See page 43	See page 46

SPECIFICATIONS

Insulation test range	0.01 MΩ to 10 GΩ
Test voltages	50 V, 100 V, 250 V, 500 V, 1000 V
Test voltage accuracy	+ 20 %, - 0 %
Insulation test current	1mA nominal
AC/DC voltage measurement	600 V (0.1 V resolution)
Resistance measurement range	0.01 Ω to 20 kΩ
Auto discharge	Discharge time < 0.5 second for C = 1 μF or less
Maximum capacitive load	Up to 1 μF
Open circuit test voltage	> 4 V , < 8 V
Short circuit current	> 200 mA
Storage temperature	-40 ℃ to 60 ℃
Operating temperature	-20 ℃ to 55 ℃
Drop test	1 meter
Battery life	insulation tests >1000 tests

CLAMP METERS

The ergonomic clamp meters feature wide-opening jaws for safe, fast, non-contact current measurements.

Where rugged meets reliable

The Fluke 365 is a rugged meter perfect for jobs where access to wires is difficult. The 365's thin, small jaw is detachable with a flexible lead, which makes gaining access to wires and viewing the display easier than ever.

FLUKE 365 • REF 139TA3118

Size: (H x W x D): 225 mm x 65 mm x 46 mm
Weight: 0,275 kg
Warranty: Three years

FEATURES

200 A AC and DC current measurement with detachable jaw
600 VAC and VDC voltage measurement
Detachable jaw makes accessing wires and viewing the display easier
Built-in flashlight/torch allows for easy illumination and identification of wires
CAT III 600 V
Compact design fits in your hand and can be used while wearing protective equipment
State of the art signal processing allows for use in noisy electrical environments while providing stable readings
Large, easy to read, backlight display automatically sets the correct measurement range so you do not need to change switch positions while taking a measurement

INCLUDED ACCESSORIES

Coated instruction card, safety information sheet, soft carrying case , test leads, 2 AA batteries

SPECIFICATIONS

Measure AC current	200 A
Measure AC voltage	600 V
Measure continuity	≤ 30 Ω
Measure DC current	200 A
Measure DC voltage	600 V
Measure resistance	6000 Ω
Work in poorly lit areas	Backlight
Measure non-linear loads	True RMS

RECOMMENDED ACCESSORIES

TL223-1
REF 140TA7507

Be ready for anything

With True rms AC voltage and current measurements, the Fluke 375 clamp meter can read up to 600 V and 600 A in both AC and DC modes, and is capable of frequency measurement up to 500 Hz.

Additionally, the 375 is compatible with the new iFlex flexible current probe (sold separately), which expands the measurement range to 2500 A AC (no DC).

FLUKE **375** • REF **138TA3969**

Size: (H x W x D): 248 mm x 85 mm x 45 mm
Weight: 0,375 kg
Warranty: Three years for electronics
One year for cable and clamp assembly

FEATURES

True RMS	√
Display backlight	√
Display hold	√
Low pass noise filter	√
Motor start-up current	√
Large jaw	√
Current AC/DC	√

INCLUDED ACCESSORIES

Soft carrying case, test leads, 2 AA alkaline batteries, coated instruction card and safety information sheet.

RECOMMENDED ACCESSORIES

i2500-10 inch iFlex (25 cm)
Flexible current probe
REF 138TA3971

i2500-18 inch iFlex (45 cm)
Flexible current probe
REF 138TA3972

AC285
REF 131TA8467
See page 45

TL223-1
REF 140TA7507
See page 44

SPECIFICATIONS

Functions	Range	Accuracy
Current AC	0-600,0 A	2% ± 5 digits
Current DC	0-600,0 A	2% ± 5 digits
Inrush	100 mS	
Voltage AC	0-600,0 V	1,5% ± 5 digits
Voltage DC	0-600,0 V	1% ± 5 digits
Resistance	60k Ω	1% ± 5 digits
Capacitance	1 µF to 1000 µF	1,9% ± 2 digits
Continuity		≤ 30 Ω

Size: (H x W x D): 280 mm x 88 mm x 50 mm
Weight: 0,540 kg
Warranty: Three years for electronics
One year for cable and clamp assembly

All the bells and whistles

The new Fluke 381 does everything you would expect from a clamp meter, and then lets you remove the display for even more flexibility. Now one technician can do jobs that used to require two people. Clamp the Fluke 381 around a conductor, remove the display and walk across the room to operate controls or remove protective equipment, all while watching real-time readings.

The new iFlex flexible current probe (included) expands the measurement range to 2500 A AC while providing increased display flexibility, ability to measure awkward sized conductors and improved wire acces.

FEATURES	
True RMS	√
Display backlight	√
Display hold	√
Low pass noise filter	√
Motor start-up current	√
Large jaw	√
Current AC/DC	√
Remote magnetic display (+/- 10 m)	√

INCLUDED ACCESSORIES

18-inch iFlex™ flexible current probe, soft carrying case, test leads, 2 AA alkaline batteries, coated instruction card and safety information sheet.

RECOMMENDED ACCESSORIES

SPECIFICATIONS

Functions	Range	Accuracy
Current AC	0-999,9 A	2% ± 5 digits
Current AC via Iflex	2500 A	3% ± 5 digits
Current DC	0-999,9 A	2% ± 5 digits
Inrush	100 mS	
Voltage AC	0-1000,0 V	1,5% ± 5 digits
Voltage DC	0-1000,0 V	1% ± 5 digits
Resistance	60k Ω	1% ± 5 digits
Continuity	≤ 30 Ω	
Frequency	5 Hz - 500 Hz	

i1010 • REF 131TA8445

i310S • REF 138TA4372

SPECIFICATIONS AC/DC MODELS

	I1010	I310S
Measurement type	Hall sensor	AC / DC
Nominal current range(s)	600 A AC / 1000 A DC	30/300 A AC RMS / 45/450 A DC
Continuous current range	1A – 600 A AC / 1A – 1000 A DC	100mA – 300 A AC RMS / 450 A DC
Highest current	1000 A	300 A AC RMS / 450 A DC
Lowest measurable current	0,5 A	100m A
Basic accuracy [1]	2% + 0,5 A	+/- 1% of reading
Useable frequency	DC to 10 kHz	DC to 20 kHz
Zero error adjustment	√	Manual
Max working voltage	600 V	300 V AC RMS / DC
Maximum conductor diameter	30 mm / 2 x 25 mm	19 mm
Output level(s)	1 mV/A	10/1 mV/A
Battery, battery life	9 V / 60 h	30 h
Output cable length	1,6 m	2 m
Shrouded banana plugs	√	
BNC-connector		√
BNC/banana adapter included		√
Safety	CAT III, 600V	CAT III, 300V

CURRENT CLAMP COMPATIBILITY CHART

	I1010	I310S
113/114/115/116/117	√	√
175/177/179	√	√
233	√	√
287/289	√	√
27II/28II	√	√
8845A/8846	√	√
8808A	√	√
77IV	√	√
83V/87V	√	√
88V	√	√
43B		√
430 series II		√
123/124	2	√
125	2	√
190 series II	2	√
1577/1587	√	√
715	1	
724	1	
725	1	
753/754	√	√
787	√	√
789	√	√

[1] Basic accuracy: % reading + floorspec

1) For DC only
2) Requires PM 9082 (REF 141TA2409)

Point, shoot, and measure the distance.
IT'S THAT EASY!

Measure 50 meters without moving at all

Put the Fluke 414D on your tool belt and reach beyond the common tape measure - up to 50 meters.

This professional-grade laser distance meter is fast and easy to use, improving accuracy and reducing measurement errors. You'll save time and money at every step. The most advanced laser technology for distance measurement.

FLUKE 414D • REF 140TA9089

Size: (H x W x D): 116 mm x 53 mm x 33 mm
Weight: 0,113 kg
Warranty: Three years

FEATURES

Simple one-button operation to instantly measure distance between two objects.	√
Bright laser for easy targeting even at longer distances.	√
Quick calculation of area (square feet/meters) and volume.	√
Easy addition and subtraction function.	√
Pythagoras calculation for determining distance indirectly from two other measurements.	√
Two-line display with display hold (until next button is pressed).	√
Minimum/maximum function.	√
Improved battery life from automatic shut-off feature.	√

INCLUDED ACCESSORIES

Two AAA batteries, users manual on CD (17 languages), quick reference guide, vinyl carrying pouch

SPECIFICATIONS

Range	50 m
Accuracy	+/- 2 mm
Memory	5 measurements
Battery life	Up to 3000 measurements
Automatic laser off	After 90 seconds
Automatic power off	After 180 seconds
Operating temperature	0°C to 40°C
Storage temperature	-25°C to 70°C
Maximum altitude	3000 m

FLUKE ®

The world's only light tester that performs all essential tests in seconds.

FLUKE ®

1000FLT // LAMP TESTER

FLUKE 1000FLT • REF 144TA3648

Size (HxLxW): 73,4 mm x 302,3 mm x 158,8 mm
Weight: 0,275 kg
Warranty: Three years

INCLUDED ACCESSORIES

4 AA alkaline batteries, H1000 holster, quick reference guide, warranty card

Perform 5 tests with 1 compact tool

The world's only fluorescent light tester that performs all essential tests in less than 30 seconds.

The most complete light tester incorporating all tests and functions needed to find root cause from a bad light, ballast and incoming line voltage.

Lamp test: Test bulb without removing from fixture

Ballast test:
Easily determine if ballast is working

Non-contact voltage test:
Quickly check for voltage presence

Pin continuity test:
Tests if filaments have continuity

Ballast-type test: Determine if ballast is electronic or magnetic without taking fixture apart – identify energy wasting ballasts

Allows clear observation of machinery in motion.

Premium, compact, rugged, the last stroboscope any technician will buy!

The Fluke 820-2 LED Strobo-scope can be used for checking the rotational speed of machin-ery without physical contact. Stroboscopes are simple, easy to use tools to stop motion for measurement and diagnostic purposes. They identify running speed of rotating equipment without stopping the operation.

The Fluke 820-2 LED Stroboscope is more than that, it allows clear observation of machinery in motion – all cyclic motion can be slowed or stopped visually in order to note performance, observe dynamic motion, measure speed, or photograph/video the action.

He also can be used as a strobe tachometer to measure the speed instead of using a laser tachometer. In order to use the stroboscope, you will need access to visibly see the object to measure and it needs to have some marking on it to use as a reference point.

No need to stick a piece of reflective tape like with a laser tachometer or make contact with a moving shaft.

FLUKE **820-2** • REF. **144TA7195**

Size: (H x W x D): 190 mm x 61 mm x 57 mm
Weight: 0,24 kg
Warranty: Two years

INCLUDED ACCESSORIES

Hard case, 3 AA alkaline batteries, Quick reference guide, users manual.

APPLICATIONS

- Rpm measurement and frequency investigation
- Slip measurement
- Belt driven machines – HVAC fans, pumps
- Roller bearings, shafts, gear teeth or other machine components
- Clutches and cogwheels
- Foundations – resonance vibrations
- Cable or piping wear or damage
- Mixing and dosage processes
- Variable frequency drive motors

FEATURES

High intensity 7-LED array—4,800 Lux @ 6,000 FPM/30cm.
High efficiency LED solid-state light source with uniform flash characteristics allow for higher flash rates — 30-300,000 FPM (flashes per minute).
Digital pulse width modulation for exceptionally sharp images at high speeds.
Rugged, durable design utilizes solid-state LEDs with no filaments, gases, hollow cavities, or glass. One meter drop.
Quartz-accuracy control system provides high accuracy — 0.02 % (± 1 digit).
Multi-line LCD display.
Check the rotating speed of machinery without physical contact or need for reflective tape.
Advance or retard flash timing for viewing gear teeth, cutting surfaces, repeats, or "drifting" equipment.
Simple push button operation with 2x and ÷2 buttons for easy adjustment.
Adjustable Flash Duration: - For most applications standard flash duration works without adjustment. - For high rpm or larger objects rotating with high surface speed, adjustable flash duration is needed. - For high speed applications, objects may move during the brief period of a single flash, resulting in a blurred image. By decreasing flash duration, objects have less time to move and the image will appear sharper.

SPECIFICATIONS

Flash frequency	
Range	30 to 300,000 FPM 0.5 to 5000 HZ
Accuracy	0.02 %
Resolution	30 to 999 FPM = 0.1 1000 to 300,000 = 1 0.5 Hz to 999 Hz = 0.1 1000 Hz to 5000 Hz = 1
Frequency setting	FPM or Hz
Flash pulse	
Duration	Adjustable in µs or degrees
Delay	Adjustable in µs or degrees

Light	
Color	Approx 6500 K
Emission output	4,800 lx @ 6000 FPM at 30 cm
External trigger	
Method	Connector to externally control trigger
High level	3 V to 32 V
Low level	<1 V
Minimum pulse width	50 µs connection

Environmetal specifications	
Operating temperature	0°C to +45°C
Storage temperature	-10°C to +50°C
Operating humidity	Non-condensing (<10°C) 90% RH (10°C to 30°C) 75% RH (30°C to 40°C) 45% RH (40°C to 50°C)
Absorption/corrosion	30°C, 95% RH, 5 day
Operating altitude	2,000 m
Storage altitude	12,000 m
Vibration	MIL-PRF-28800F Class 2
Impact resistance	1 m drop

FLUKE ®

For troubleshooting systems where temperature is a critical aspect, our digital thermometers provide you with laboratory accuracy wherever you need it. We offer a choice of non-contact infrared and laser thermometers that allow you to safely measure hard-to-reach, electrically live or particularly hot targets.

FLUKE **561 • REF 131TA8454**

Battery life: 12 hours (alkaline)
Size (HxLxW): 176,9 mm x 163,6 mm x 51,8 mm
Weight: 0,34 kg
Warranty: Two years

The Fluke 561 includes everything you need for immediate inspections.

INCLUDED ACCESSORIES

Thermocouple K-type Velcro® pipe probe, hand carrying case, 2 AA batteries and user manual with measurement guide.

RECOMMENDED ACCESSORIES

H6

Combined infrared and contact thermometer

The Fluke 561 combines the temperature measurement functions that industrial, electrical, and HVAC/R professionals need, all in one tool. It measures both IR and contact temperature, replacing several other test tools. It is fast, efficient, and easy to use, saving you valuable time and effort. With the Fluke 561, you can take contact and ambient temperatures in the way that is best for you. Use the IR thermometer to measure hot, moving, electrically energized, and hard-to-reach objects instantly. Check motors, insulation, breakers, radiant heating, pipes, corroded connections and wires. Plus, scan ducts and other hard-to-reach objects from the floor—leave your ladder in the truck. You can use the Fluke 561's handy Velcro® pipe probe or, plug in any industry standard, K-type mini-connector thermocouple probe you already own.

• IR thermometer for quick measurements up close or at a distance.
• Single-point laser sighting
• Easy emissivity adjustment for measuring pipes and ducts more accurately.
• Includes a Velcro® pipe probe for superheat and sub-cooling as well as other surface contact measurements.
• Also compatible with all standard miniconnector K-type thermocouples.
• MIN, MAX and DIF temperature readings.
• Lightweight (only 340 g) and portable.
• Includes measurement guide.

FEATURES

Temperature range	-40 ° to 550 °C
Display resolution	0,1 ° of reading
D:S (Distance to spot size)	12:1
Easy emissivity selector	Adjustable with three settings: low (0,3), medium (0,7), high (0,95)
Display accuracy (Assumes ambient operating temperature of 23 ° to 25° C)	± 1,0% of reading or ± 1 °C, whichever is greater; below 0 °C, ± 1 °C, ± 1 °/1 °
Response time	500 ms (95% or reading)
Repeatability	± 0,5% of reading or ± 1 °C, whichever is greater
Spectral focus	8 µm to 14 µm
Laser sighting	Single-point laser
Laser shutoff	Laser turns off above ambient temperature of 40 °C
Laser power	Class 2 (II) operation; output ‹ 1 mW, wavelength 630 nm to 670 nm
Relative humidity	10% to 90% RH non-condensing, at < 30 °C
Power	2 AA batteries (alkaline or NiCD)
Display hold	7 seconds
Backlight display	Yes, LCD with dual temperatures (current and MAX/MIN/DIF/KTC), low battery, F/C indicator, and Scan/Hold options
Operating temperature	0 ° to 50 °C
Storage temperature	-20 ° to 65 °C
MAX, MIN, DIF temperatures	Yes
Thermocouple type K mini-adapter input	Yes, compatible with industry standard type K probes with mini-connector
Thermocouple type K Velcro® pipe probe	Yes, with a temperature range of 0 ° to 100 °C and accuracy of ± 2,2 °C
Measurement guide	Yes

FLUKE®

FLUKE 62 MAX+ • REF 140TA7499

Size: (H x W x D): 175 mm x 85 mm x 75 mm
Weight: 0,26 kg
Warranty: Three years

Takes the heat and the dust, water and 3-meter drop

Temperature is often the first indication of potential problems in electrical and mechanical applications.

But how can you easily determine if an electrical panel has a hot spot, a motor is overheating or an HVAC system is inefficient? The answer is with an infrared thermometer. With handheld, non-contact IR thermometers, you can instantly measure equipment temperatures in hard-to-reach or hazardous areas.

And with early detection of abnormal temperatures comes early correction of problems!

Features:

- Dust and water-resistant: IP54 rated for dust and water resistance.
- Rugged: 3-meter drop tested.
- Ergonomically designed: completely redesigned for a more comfortable hand fit.
- Small in size: small and lightweight, clips to your tool belt or belt loop or easily fits into your tool box.
- Distance to spot: precise laser technology makes for more accurate and repeatable measurements.
- Dual lasers: the 62 MAX+ has dual rotating lasers to help you identify the area to be measured. The measurement area is the spot between the dots.
- Large backlit display: large screen makes data easier to read, even in dark areas.
- Min/Max/Avg/Dif: displays the minimum, maximum or average temperature, or the difference between two measurements.
- Alarm: Hi and Lo alarms for rapid display of measurements outside the limits.
- Power: powered by a single, standard AA battery.

SPECIFICATIONS

Temperature range	-30 °C to 650 °C (-22 °F to 1202 °F)
Accuracy	± 1 °C or ± 1,0% of reading ± 2,0 at -10 °C to 0 °C ± 3,0 at -30 °C to -10 °C
Response time	<300 ms (95% of reading) Spectral response: 8 to 14 microns Emissivity: 0,10 to 1,00
Optical resolution	12:1 (calculated at 90% energy)
Display resolution	0.1 °C (0.2 °F)
Repeatability of readings	± 0,5% of reading or < ± 0,5 °C (1 °F) whichever is greater
Power	AA battery

VISUAL IR-THERMOMETERS

This tool uses an infrared heat map for troubleshooting, bridging the gap between low-cost IR thermometers and higher priced thermal imagers.

See beyond temperature!

The VT04 is as convenient as a spot thermometer, insightful as a thermal imager, with the visual context of a digital camera. It combines the convenience of a spot thermometer with the visual advantage of a thermal imager creating a brand new tool category – a trouble-shooting camera with infrared heat map.

You can detect and capture issues instantaneously with digital and thermal blended images, pinpoint hot and cold spots with temperature markers. Also Hi/Lo temperature alarm and automatically capture images after a userselected temperature alarm has been triggered.

Document problems efficiently with SmartView® professional reporting software! (see pag. 34) The VT04 is the missing link – the ultimate in between tool for those times when a single spot temperature reading isn't enough and a high-resolution thermal image is more than you need, or can afford.

FLUKE VT04 • REF 141TA7634

Battery life: 8 hours
Size: (H x W x D): 210mm x 75 mm x 55mm
Weight: 0,35 kg
Warranty: Two years

INCLUDED ACCESSORIES

Hard Case, hand strap, Micro-SD card and adapter, SmartView® software on CD, Lithium Ion batteries and Micro USB Charger/Power Supply, Printed Quick Start Guide in English,Spanish, German, French and Simplified Chinese Simplified, others on CD. Users manual on CD (21 languages).

RECOMMENDED ACCESSORIES

VT04-BATTERY
REF 141TA7681
Extra rechargeable battery for VT04

VT04-CHARGER
REF 141TA7683
Extra charger and adapters for VT04

Key features of a Visual IR Thermometer

Breakthrough affordability
Half the cost of infrared cameras that require training and software.

Built-in digital camera
Every Fluke Visual IR thermometer has a built-in digital camera.

Exclusive thermal heat map blending overlay
Blend digital and thermal images to instantly show the exact location of the issue. Blend between 0 %, 25 %, 50 %, 75 %, and Full Thermal with one button.

| 0% | 25% | 50% | 75% | Full thermal |
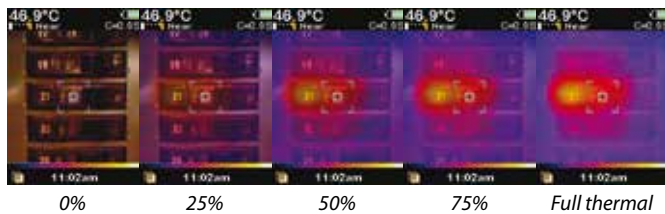
No training required
Fully automatic with built-in intelligence.

True pocket size design
Forty percent smaller than entry-level infrared cameras.

SmartView® reporting software – see pag. 34
Store up to 10,000 images per Gb on included SD card and make professional reports on included professional software.

Hot and cold spot trackers
Automatically identifies hottest and coldest spots within field of view.
When you see a hot or cold spot, you can save the image with the temperature reading and pinpoint the exact location using the blending between full thermal to full visual.

NEAR/FAR feature
The NEAR/FAR is exclusive to Fluke Visual IR Thermometers and allows the user to take simultaneous visual images with the thermal heat map images that are accurately aligned close in, ≤ 23 cm, with the NEAR feature, as well as beyond with the FAR feature. No other product can boast this NEAR visual and thermal heat map alignment feature that allows you to get close-in and document the exact location of the issue.

Near Mode   Far Mode

FLUKE ®

SPECIFICATIONS

	VT04
Temperature	
Temperature measurement range	-10 °C to +250 °C
Temperature measurement accuracy	+/- 2 °C or +/- 2 %
On-screen emissivity correction	Yes
On-screen reflected background temperature compensation	Yes
Hi-Lo temperature alarms	Yes
Image Performance	
Built-in digital camera	Yes
Image capture frequency	8 Hz
Detector type	Uncooled pyroelectric ceramic
Infrared spectral band	6.5 µm to 14 µm
Field of view	28° x 28°
Focus mechanism	Fixed focus
Image Presentation	
View options	Blending of the visual and the infrared from full infrared to full visual in 25% steps
Focus options—exclusive user selectable NEAR/FAR options	NEAR > 23 cm / FAR < 23 cm
Palettes	Ironbow, Rainbow, Rainbow High Contrast, Grayscale (white hot),Grayscale (Black hot) and Hot Metal
Image optics system	PyroBlend™ Plus optic 4x sharper image than VT02
Level and span	Auto
Hot Spot and Cold Spot tracking	Yes
Image Capture and data storage	
Time-lapse image capture	Yes
Auto-monitor alarm	Yes
Image capture	Image will freeze allowing review before saving
Storage medium	Micro SD card stores up to 10 000 images
Memory review	Scroll through all saved images and view on-screen
General	
Battery type	Li-Ion rechargeable
Power saving	Power down after 10 minutes of inactivity
Training	No training required
Ergonomics	Slim pocket-sized design
Software	SmartView® (see pag. 34) analysis and reporting software, included

VT04 Electrical Combo Kit

- Fluke VT04 Visual IR Thermometer
- Fluke 376 Clamp meter
- Fluke 117 Digital Multimeter

VT04E-KIT • **REF 141TA7682**

THERMAL IMAGERS

Temperature changes can indicate problems in many everyday applications and a thermal imager makes it quick and easy to visually check surface temperatures. Problems can often be discovered before contact measurements even need to be made. Fluke offers a complete range of handheld thermal imagers for both industrial and building diagnostic applications.

FLUKE TI90
REF 144TA3650

FLUKE TI95
REF 144TA3651

FLUKE TI100
REF 140TA7524

FLUKE TI105
REF 140TA8750

Thermal imagers for every budget

A Fluke thermal imager can save you time and money by finding potential problems before they become costly failures.
With the innovative features and functionalities of the Fluke thermal imagers, you can perform infrared inspections faster and more efficiently and thoroughly document problem areas for additional follow-up.

Wireless with superior image quality, easy-to-use and rugged, designed for your next thermal inspection.

They come standard with Fluke Connect™ *(see pag. 36), the world's largest system of connected test and measure-ment tools.

Find problems with IR-Fusion® technology (TI95 and TI105) (see pag. 33) and analyze all your IR-images with the Fluke SmartView™ software (see pag. 34).

FLUKE TI90 • REF 144TA3650

FLUKE TI95 • REF 144TA3651

FLUKE TI100 • REF 140TA7524

FLUKE TI105 • REF 140TA8750

Size: (H x W x D): 284 mm x 86 mm x 135 mm
Weight: 0,726 kg
Warranty: Two years

(*) Fluke connect™ works with WIFI and some countries require special WIFI radio compliance certification.

Countries with WIFI – radio license:
Australia, Austria, Belgium, Bulgaria, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States

Please contact us if your country is not listed above.

INCLUDED ACCESSORIES

AC power adapter, lithium ion smart battery, USB cable, SD memory card, soft transport bag (TI90 and TI95), hard carrying case (TI105 and Ti100), adjustable hand strap (except Ti90), printed users manual in English, Spanish, French, German and Simplified Chinese, others on CD, SmartView® software and warranty registration card.

RECOMMENDED ACCESSORIES

FLK-TI-SBP3
REF 140TA8977
Extra rechargeable battery

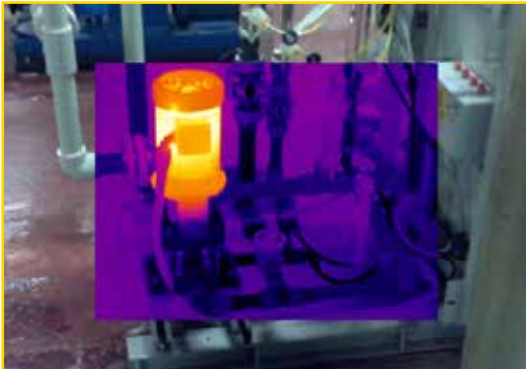**TI-CAR CHARGER**
REF 140TA8978
Vehicle charger

FLK-TI-SBC3
REF 140TA8976
Charging base

SPECIFICATIONS

Specifications	TI90	TI95	TI100	TI105
Temperature measurement range	-20 °C to +250 °C			
Temperature measurement accuracy	+/- 2 °C or 2% (at 25 °C nominal, whichever is greater)			
Field of view	19,5 °H x 26 °V	26 °H x 26 °V	22,5 °H x 31 °V	22,5 °H x 31 °V
Spatial resolution	5,6 mRad		3,39 mRad	
Wireless connectivity	Yes			
Fluke connect™ App compatible	Yes, with included wireless SD card (where available)			
CNX™ Wireless System	No		Yes	
Focus system	Fixed focus 46 cm and beyond		Fixed focus 122 cm and beyond	
Resolution	80 x 60 (4800 pixels)	80 x 80 (6400 pixels)	160 x 120 (19200 pixels)	
Thermal sensitivity (NETD)	≤ 0,15 °C at 30 °C target temp. (150mK)	≤ 0,10 °C at 30 °C target temp. (100mK)		
Fast auto toggle between manual and auto modes	Yes			
Fast auto-rescale in manual mode	Yes			
Minimum span (in manual mode)	2,5 °C			
Minimum span (in auto mode)	5 °C			
AutoBlend™ mode	No			Yes
IR-Fusion® technology	Full infrared only	Full infrared, PIP 46 cm and beyond	Full infrared only	Full infrared, PIP 1,2 m to 4,6 m, Full visible
Infrared spectral band	9 µm to 15 µm (long wave)		7,5 µm to 14 µm (long wave)	
Frame rate	9 Hz only		9 Hz or 30 Hz versions	
Center-point temperature measurement	Yes			
Spot markers	No	Hot and cold spot markers	No	3 user definable spot markers on camera and in SmartView® software
Standard palettes	Blue-Red, Ironbow, Grayscale	Blue-Red, Ironbow, Grayscale, Amber, High-contrast, Hot metal	Blue-Red, Ironbow, Grayscale, Amber	Blue-Red, Ironbow, Grayscale, Amber, High-contrast, Hot metal, Grayscale inverted
Ruggedized display	3,5 inch diagonal (portrait format)			
Build-in digital camera	2 megapixel industrial performance		IR only	2 megapixel industrial-grade
Level and span control	Smooth auto and manual scaling			
Emissivity correction	Yes			
On-screen reflected back-ground temp.compensation	Yes			
Laser pointer	No		Yes	
Torch	No			Yes
Extensive SD memory system	Removable 8 GB SD memory card and 8 GB wireless SD card, direct download via USB-to-PC connection			
Memory review	Thumbnail view navigation and review selection			
Software	SmartView® software, Fluke Connect™ and SmartView® Mobile App – full analysis and reporting software			
Export file formats with SmartView®	BMP, DIB, GIF, JPE, JFIF, JPEG, JPG, PNG, TIF and TIFF			
Field replaceable battery	One Lithium-Ion			
Battery life	4+ hours (each)			
Power saving	User selectable sleep and power off modes			
Drop test	2 meter			
Ingress protection (IP) rating	IP54			
Operating temperature range	-10 °C to +50 °C			
Relative humidity	Operating and storage 10 % to 95 % - Non-condensing			
Storage temperature range	-20 °C to +50 °C			
Recommended calibration cycle	2 years			
User manuals	Czech, English, Finnish, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Traditional Chinese, Turkish, Dutch and Hungarian			

IR-fusion® technology

See things both ways

In order to communicate critical information, just infrared thermal images are no longer enough. With patented Fluke IR-Fusion® technology, for the first time in the industry, you can combine both digital and infrared thermal images for better clarity. This allows you to easily see, document, and address problems uncovered through your thermal imaging work. Fluke's unique technology provides pixel-for-pixel alignment of the digital and infrared thermal images, allowing you unlimited options in optimizing your on-camera and off-camera analysis.

Fluke thermal imagers with IR-Fusion technology may have different on-camera viewing capabilities – all views are available in **SmartView®** (see pag. 34) software.

Additional power/ability is obtained by using these images in SmartView software. Capture and annotate hundreds of corresponding digital and infrared thermal images in the field and quickly import them into the SmartView software solution. The images can then be optimized for maximum communication value-adjusting imagery within IR-Fusion technology's multiple display modes—perform sophisticated analysis, and produce professional reports quickly and easily. The comprehensive reporting tools in SmartView software are fully customizable.
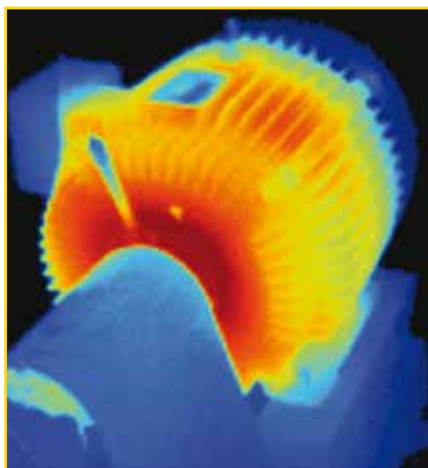
Full infrared: Displays a full screen infrared view for maximum infrared detail.

Picture-in-picture: Maintains a frame of reference by placing an IR window within a digital image.

Full-visible: Displays a digital photographic image, as you would get from a digital camera.

FULL-INFRARED

PICTURE-IN-PICTURE

FULL-VISIBLE
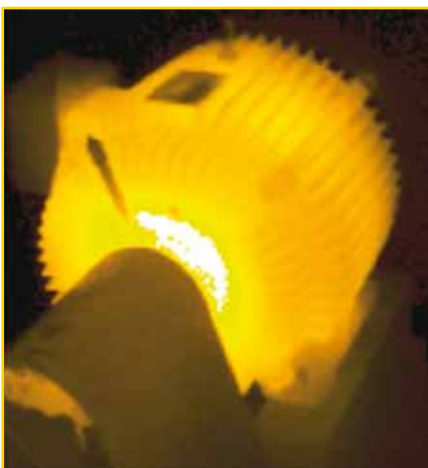
FULL IR AMBER
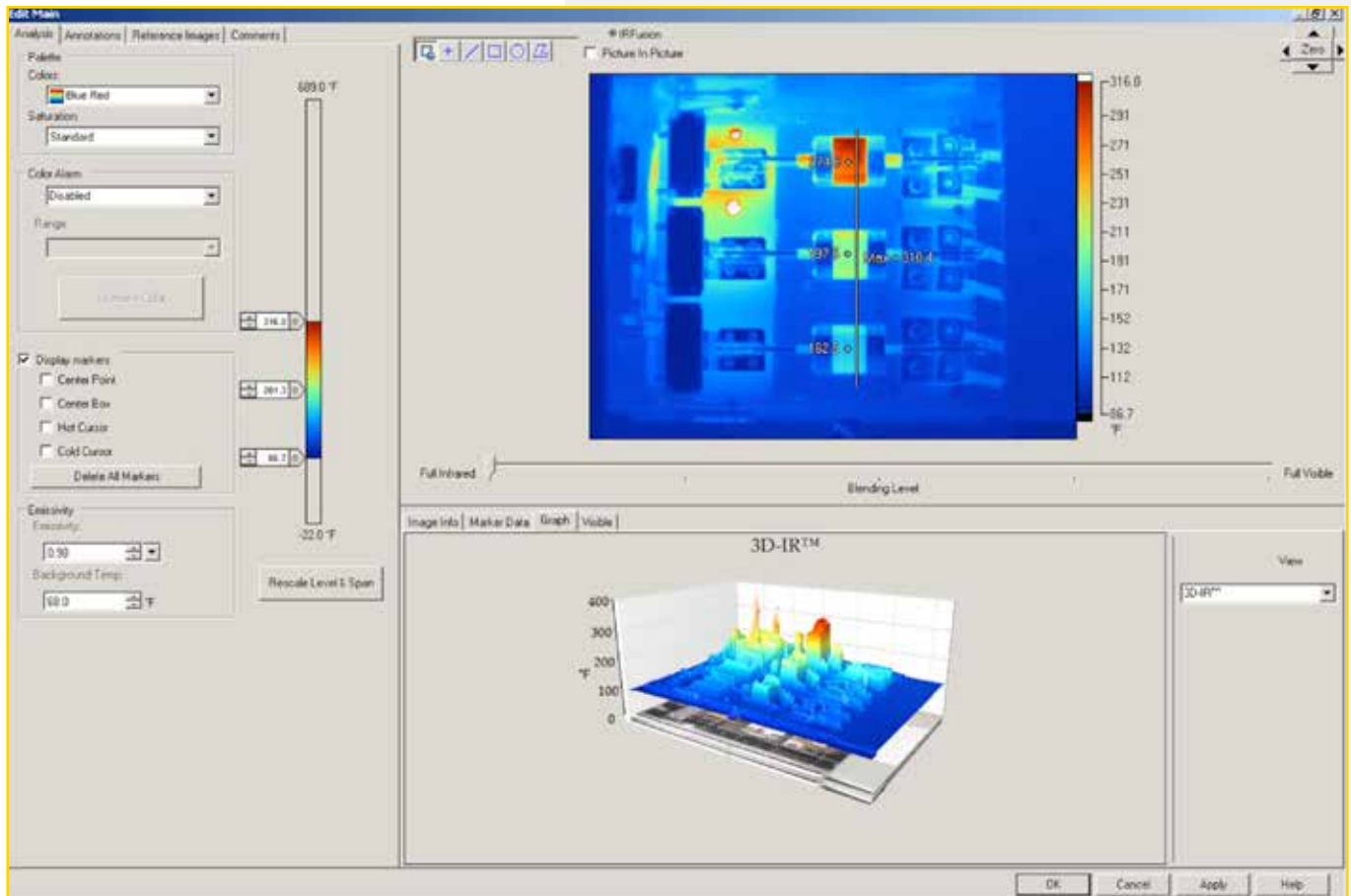

FULL IR BLUE-RED

FULL IR GRAYSCALE

Fluke SmartView™ software

This powerful software is a modular suite of tools that annotates, views, edits and analyzes IR-images.

It also generates fully customizable and professional-looking reports in a few easy steps.

Fluke SmartView™ software

To detect defects and to carry out preventative maintenance in and on electric machines, the thermal imager has become an essential tool.

It enables you to detect problems that are quite difficult to find. Short circuits or bad connections in cable looms, overloaded fuses (see picture 1) or a bad connection in a relay, overheated electric motors or bearings (see picture 2), bad connections in traction batteries (see picture 3), badly soldered or faulty components on pcb's (see picture 4) ...

Also for the detection of defects in thermal engines, the thermal imagers become even more important.

Their added value is the detection of defects in the heating process. The cylinder with an insufficient combustion (see picture 5 & 6) can easily be found.
On top of that, the cooling capacity and flow of heat exchangers such as cooling radiators can efficiently be checked, as well as the operation of thermostats. Thermal images give a clear overview of the formation of hot spots in the motor, the gearbox, ...

Thermal imagers can also be used for multiple other applications, such as detecting cold spots or insulation problems in buildings or to detect inflammation or tumours within animals.
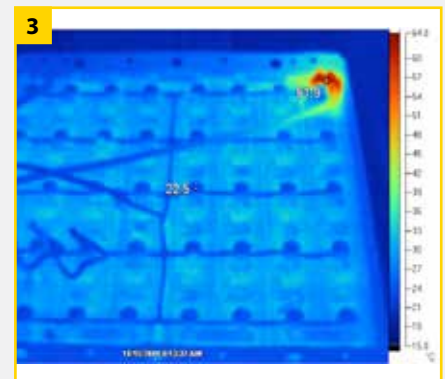
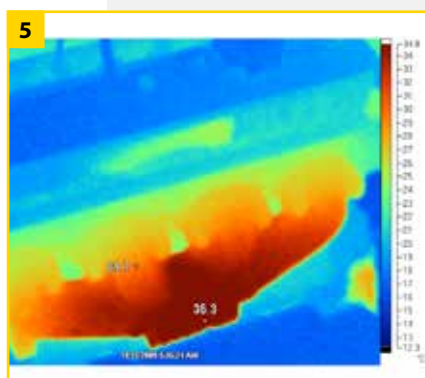The number of applications is countless.

1

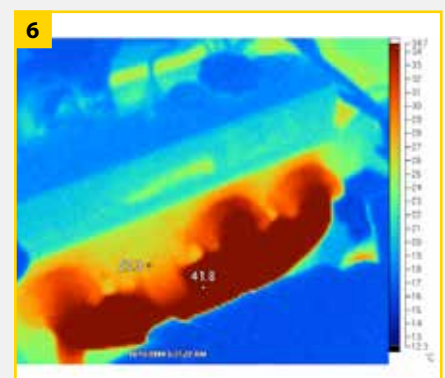*Overloaded fuses*

2

Overheated bearings

3

Bad connections in traction batteries

4

Badly soldered or faulty components on pcb's

5

Cylinder with insufficient combustion

6

Cylinder with insufficient combustion

35

Fluke Connect™ *

See it. Save it. Share it. All the facts, right in the field.

Fluke Connect™ is the best way to stay in contact with your team without leaving the field. Get started saving time and increasing productivity now.

Fluke Connect™ works with over 20 different Fluke test tools and allows you to identify and diagnose problems quickly and confidently, while securely sharing your data when you want, with who you want.

Fluke Connect™

Introducing Fluke Connect™
www.tvh.com/flukeconnect/intro

The fastest way to stay in contact with your team without leaving the field.

Want to know more about Fluke Connect™? Have a look!

See how it works
www.tvh.com/flukeconnect/see

In this video, learn how to use the free Fluke Connect™ app and over 20 wirelessly connectable tools to share live video, graph and trend data and record live measurements.
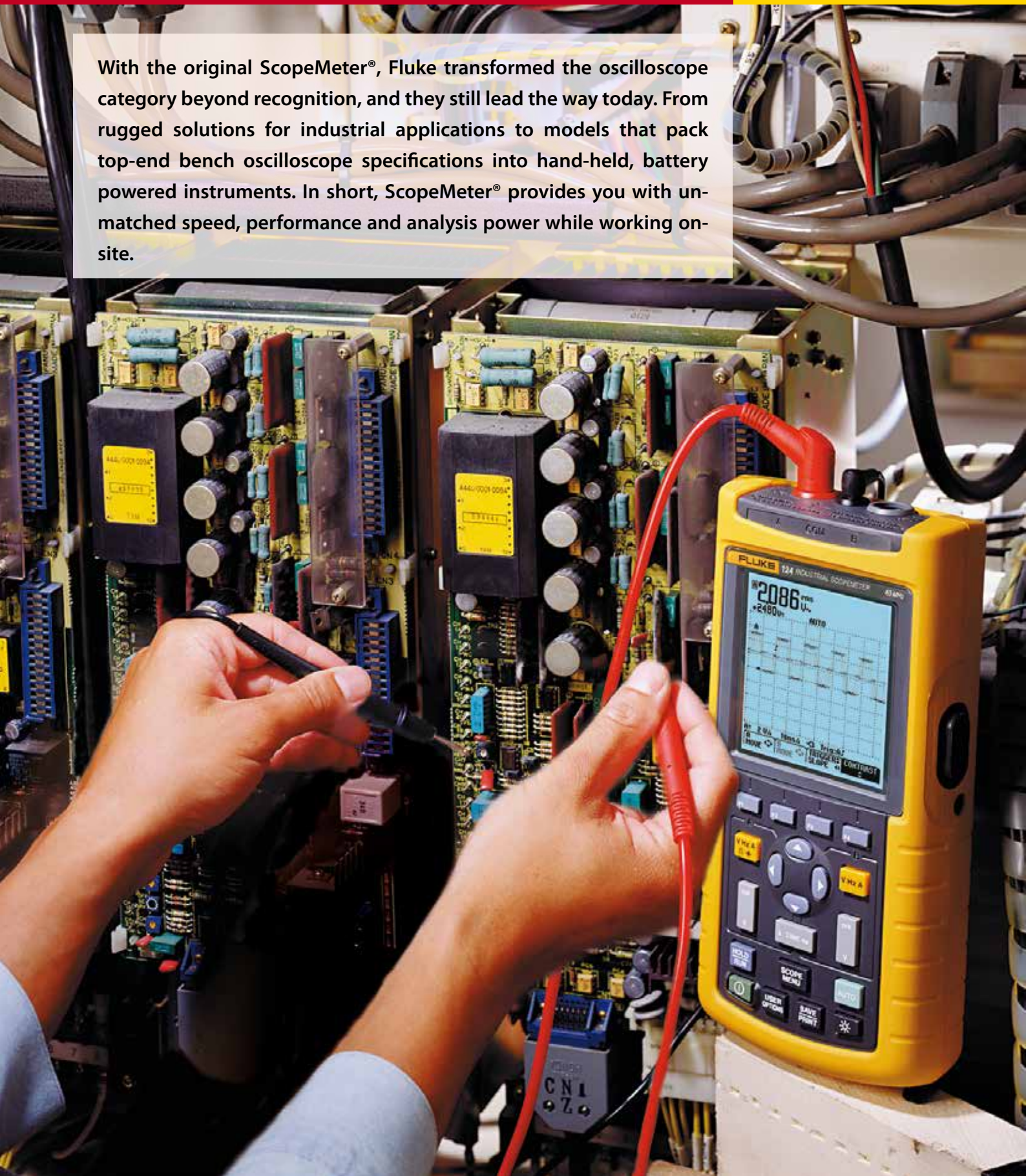
(*) Fluke connect™ works with WIFI and some countries require special WIFI radio compliance certification.

Countries with WIFI – radio license:
Australia, Austria, Belgium, Bulgaria, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States

Please contact us if your country is not listed above.

FLUKE ®

With the original ScopeMeter®, Fluke transformed the oscilloscope category beyond recognition, and they still lead the way today. From rugged solutions for industrial applications to models that pack top-end bench oscilloscope specifications into hand-held, battery powered instruments. In short, ScopeMeter® provides you with unmatched speed, performance and analysis power while working on-site.

Three-in-one simplicity

The compact ScopeMeter® 120 series is the rugged solution for industrial troubleshooting and installation applications. It is a truly integrated test tool, with oscilloscope, multimeter and "paperless" recorder in one affordable, easy-to-use instrument. Find fast answers to problems in machinery, instrumentation, control and power systems.
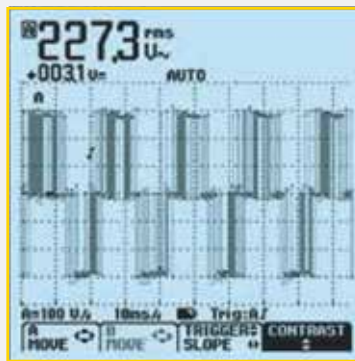
- Dual-input 20 MHz digital oscilloscope
- Two 5 000 counts True RMS digital multimeters
- A dual-input TrendPlot™ recorder
- Connect-and-View™ trigger simplicity for hands-off operation
- Shielded test leads for oscilloscope, resistance and continuity measurements
- Up to 7 hours battery operation
- 600 V CAT III safety certified
- Optically isolated interface for PC and printer connection (optional)
- Rugged, compact case

Connect-and-View™ triggering for an instant, stable display
Scope users know how difficult triggering can be. Wrong settings show unstable and sometimes wrong results. Fluke's unique Connect-and-View recognizes signal patterns, and automatically sets up correct triggering. It provides a stable, reliable and repeatable display of virtually any signal - including motordrive and control signals - without touching a button. Signal changes are instantly recognized and settings adjusted for - once again - a stable display.

Use TrendPlot™ to help find intermittences fast
The toughest faults to find are those that happen only once in a while: intermittences. They can be caused by bad connections, dust, dirt, corrosion or simply broken wiring or connectors. You may not be around to see it – your Fluke ScopeMeter® will. In this "paperless recorder" mode, you can plot the minimum and maximum peak values and average over time – up to 16 days.

Connect-and-View captures even the most complex motor drive signals.

FLUKE 123 • REF 131TA8457

Battery life: 7 hours (alkaline)
Size: (H x W x D): 232 mm x 115 mm x 50 mm
Weight: 1,2 kg
Warranty: Three years

INCLUDED ACCESSORIES
PM 8907 line adapter/charger, STL120-III shielded test leads set (1 red, 1 grey) including hook clips, BB120 shielded BNC adapter, BP120MH NiMH battery pack, TL175 Safe-guard testlead, Getting Started booklet, user's manual (CD-ROM)

RECOMMENDED ACCESSORIES

SCC120
REF 131TA8459
See page 43

C125
REF 131TA8460
See page 46

SCC128
REF 131TA8458
See page 43

KIT
123/S
REF 134TA8727

Industrial ScopeMeter® (20MHz)
(REF 131TA8457)
+ SCC120 kit (REF 131TA8459)

38

FLUKE ®

A reduced testing complexity, simplified workflow and intuitive user interface provide a new level of ease-of-use in battery testing.

More battery tests. Less time. Results you can trust.

The new Fluke BT521 Battery Analyzer is an ideal test tool for maintenance, troubleshooting and performance testing of individual stationary batteries and battery banks used in critical battery back-up applications. The intuitive user interface, compact design and rugged construction ensure optimum performance, test results and reliability.

Covering a broad range of battery test functions, ranging from DC voltage and resistance tests to full condition testing using an automated string function testing and the test probe integrated infrared temperature measurement system.
The Fluke BT521 Battery Analyzer is designed for measurements on stationary batteries including GEL, AGM (Absorbed Glass MAT) and float open cells.

FLUKE **BT521 • REF 144TA7196**

Size (HxLxW): 220 mm x 103 mm x 58 mm
Weight: 0,85 kg
Warranty: Three years

INCLUDED ACCESSORIES

Zero Ohm calibration resistor, 4-wire test pin (set), TL175 TwistGuard test leads with adapter, L300 attachable LED flashlight (2pcs.), BTL10 basic test lead (set), BTL21 intelligent test probe set and extender with temperature sensor, BTL-A voltage/current probe adapter, I410 AC/DC current clamp, BP500 7.4V 3000mAh Lithium-ion battery, BC500 AC charger, standard mini-b USB cable, shoulder strap, belt strap, magnetic hanging strap, FlukeView Battery Analyzer (CD) containing USB driver and manuals in all languages, soft carrying case, spare fuse (2 pcs.), paper battery tags (100 pcs.).

FEATURES

Key measurements: Battery resistance, DC and AC voltage, DC and AC current, ripple voltage, frequency and battery temperature.
Sequence measurement mode: automatic or manual sequence testing of battery strings with automatic measurement storage including voltage, resistance and temperature (with Intelligent Probe).
Comprehensive logging: all measured values are automatically captured during testing and can be reviewed on the instrument before downloading for on the-go analysis.
Optimized user interface: quick, guided setup ensures you're capturing the right data every time, and the combined visual and audio feedback cues reduce the risk of measurement confusion.
Advanced analytical PC software: Battery Management Software delivers professional results through a straightforward Windows® interface, check the health of the system at a glance using set limits, maintain your library of battery test studies.
Ergonomic Test leads: rugged coaxial two pole kelvin test pins with remote SAVE button reduce test time and increase efficiency.
Test Probe extenders: Long reach probes for double stacked cells.
Intelligent Test Probe Set – includes integrated LCD display, verbal audio feedback, infrared temperature measurement, and captures voltage readings and temperature logging.
Multiple-functionality: covers all IEEE recommended battery test measurements, includes automated discharge testing function.
Wireless communication: for data download and remote display while measuring (Apple app).
Battery Life: 7.4V 3000mAh Lithium-ion battery for more than eight hours continuous operation.
Easy storage and carrying: convenient magnetic hanging strap with shoulder strap for simple daily use and innovative 'hands-free' carrying harness enables complete portability to reduce fatigue when measuring and maintaining long battery strings.
USB Port: for fast data download to supplied Data Analysis and Report Management application software.
Highest safety rating in the industry: 600 VAC CAT III, 1,000 VDC CAT II rated for safe measurements all around the battery power supply equipment.

FLUKE ®

SPECIFICATIONS

FUNCTIONS	Range	Resolution	Accuracy
Battery resistance	3 mΩ	0.001 mΩ	1 % + 8
	30 mΩ	0.01 mΩ	0.8 % + 6
	300 mΩ	0.1 mΩ	0.8 % + 6
	3000 mΩ	1 mΩ	0.8 % + 6
Vdc	6 V	0.001 V	0.09 % + 5
	60 V	0.01 V	0.09 % + 5
	600 V	0.1 V	0.09 % + 5
	1000 V	1 V	0.09 % + 5
Vac (45 Hz to 500 Hz with 800 Hz filter)	600 V	0.1 V	2 % + 10
Frequency (displayed with Vac and Aac)	500 Hz	0.1 Hz	0.5 % + 8
AC voltage ripple (20 KHz Max)	600 mV	0.1 mV	3 % + 20
	6000 mV	1 mV	3 % + 10
Adc/Aac (with accessory Fluke i410)	400 A	1 A	3,5 % + 2
Temperature	0 °C to 60 °C	1 °C	2 °C
Meter mode	999 records for each measurement position with time stamp		
Sequence mode	Up to 100 profiles and 100 profile templates with time stamp		

ENVIRONMENT	
Operating temperature	0 °C to 40 °C
Storage temperature	-20 °C to 50 °C
Lithium-ion battery charging temperature	0 °C to 40 °C
Operating humidity	Non-condensing (10 °C)
	<=80 % RH (at 10 °C to 30 °C)
	<=75 % RH (at 30 °C to 40 °C)
Operating altitude	Sea level to 2000 meters
Storage altitude	Sea level to 12 000 meters
Drop test requirements	1 meter
IP rating	IP40
Radio	FCC Class A
Vibration requirements	MIL-PRF-28800F: Class 2

GENERAL ACCESSORIES

The best test tools deserve accessories designed and manufactured to the same high quality and safety standards. So we also provide a comprehensive range of test leads, probes and clips, current clamps, temperature accessories and dedicated electronic and automotive accessories. And to protect your valuable instrument, choose a rugged tailor-made Fluke holster or case.

ELECTRONIC TEST LEADS, PROBES & CLIPS

TLK220 EUR SureGrip™ accessory kit

- AC220 SureGrip™ alligator clip set
- AC285 SureGrip™ large jaw alligator clip set
- TP74 slim reach test probe set (4 mm)
- TL224 SureGrip™ silicone test lead set
- Large zippered soft case with moveable divider

REF 134TA8375

TLK225-1 SureGrip™ master accessory kit

- AC220 SureGrip™ alligator clip set
- AC280 SureGrip™ hook clip set
- AC283 SureGrip™ pincer clip set
- AC285 SureGrip™ large jaw alligator clip set
- TP238 SureGrip™ insulated test probe set
- TL224 SureGrip™ silicone test lead set
- 6-pocket storage pouch

REF 131TA8471

TL81A deluxe electronic test lead kit

- One pair (red, black) each 1 meter long silicone test lead set, alligator clip and probe tip extender
- One pair (red, black) each modular 1 meter long silicone test lead, test probe, hook-style and pinch style clip, alligator clip, IC probe tip adapter and spade lugs
- Quadfold soft carrying case
- CAT II 300 V. UL listed

REF 131TA8461

TLK282-1 SureGrip™ deluxe automotive test lead kit

Kit contains:
- TP81 insulation piercing clip set
- TP40 automotive back probe pins (five)
- TL224 SureGrip™ silicone test lead set
- TP238 SureGrip™ insulated test probe set
- AC220 Suregrip™ alligator clip set
- AC285 Suregrip™ large jaw alligator clip set
- AC280 Suregrip™ hook clip set
- Soft case

REF 131TA8462

SCC120 automotive accessory kit

- FlukeView software + OC4USB cable + carrying case

Accessories Package, including:
- FlukeView software for Windows. English, French and German language
- OC4USB optically isolated adapter/cable
- ScopeMeter® 120 series hard carrying case (black)
- One BB120 adapter
- Dimensions case: (W x H x D) 40 cm x 34 cm x 12 cm

REF 131TA8459

SCC128 automotive accessory kit

This kit provides a host of accessories that allow you to easily and quickly take measurements on automotive electronic systems using a 120 or 190 series ScopeMeter®.

REF 131TA8458

TL75-1 Hard Point™ test lead set

- One pair (red, black) comfort grip probes with PVC insulated test leads with right-angle shrouded banana plugs
- Recommended for general purpose measurements
- CAT II 1000 V, 10 A rating. UL listed

REF 112TA4865

TL76 all-in-one test lead set

- One pair (red, black) 1,5 meter long silicone test leads with right-angle shrouded banana plug
- Lantern tip (removable) for use with European wall sockets (4 mm Ø)
- Lantern tip can be removed for easy access to terminal blocks (2 mm Ø)
- Removable, insulated IC caps allow probing on closely spaced leads and compliance with GS38.
- Cat IV 600 V, CAT III 1000 V, 10 A rating. UL listed

REF 131TA8463

ELECTRONIC TEST LEADS, PROBES & CLIPS

TL175 TwistGuard™ test leads

- One pair (red, black) extendable test leads with adjustable length test tips for use in changing measurment situations. The probe tip length can change from 19 mm to 4 mm
- Double insulated silicone leads that withstands high temperatures and remain flexible in cold temperatures
- Extra-heavy strain relief on both probe-end and plug-end, testing beyond 30 000 bends without failure
- Universal input plugs compatible with all instruments that accept standard 4 mm shrouded banana plugs
- CAT II 1000 V, CAT III 1000 V, CAT IV 600 V, 10 A max., Pollution Degree 2
- TL175E includes removable 4 mm lantern tips for versatility

**REF_139TA3155**

TL220-1 SureGrip™ industrial test lead kit

- AC220 SureGrip™ alligator clip set
- TP220 SureGrip™ insulated test probe set
- TL224 SureGrip™ silicone test lead set (right to right)

REF_107TA1224

TL223-1 SureGrip™ electrical test lead kit

- AC220 SureGrip™ alligator clip set
- TP238 SureGrip™ insulated test probe set
- TL224 SureGrip™ silicone test lead set (straight to right)
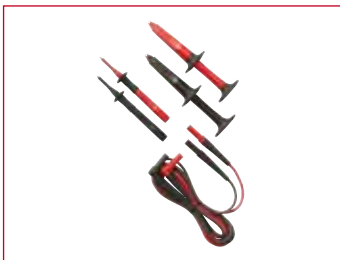
REF_140TA7507

TL224 SureGrip™ silicone test lead set

- DMM test leads (red, black) with safety shrouded, standard diameter banana plugs
- Right-angle connector on one end and straight connector on the other
- Reinforced strain relief
- 1,5 meter silicone-insulated wire resists heat & cold
- CAT IV 600 V, CAT III 1000 V, 10 A rating, UL listed

REF_129TA7685

SureGrip™ accessories are designed to improve steadiness in slippery hands. Rubber overmolded surfaces and fingerhugging curves give the user a comfortable, reliable grip on the accessory so they can focus on taking an accurate measurement.

TP220-1 SureGrip™ test probe set

- One pair (red, black) of Industrial test probes
- Sharp, 12 mm stainless steel tip provides reliable contact
- Flexible finger barrier improves grip
- Recommended for use with TL222 and TL224 test leads
- CAT II 1000 V, 10 A rating, UL listed

REF_112TA4863

TP74 lantern tip test probe set

- One pair (red, black)
- Tips include banana-style spring contacts with nickel-plated brass ends
- CAT III 1000 V, 10 A rating, UL listed

REF_131TA8464

TP80 electronic test probe set

- Recommended for use with TL222 and TL224
- One pair (red, black)
- IC insulated cap prevents shortening of IC legs for probing high density components or boards
- CAT III 1000 V, 10 A rating, UL listed

REF_134TA8376

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GENERAL ACCESSORIES FLUKE®

ELECTRONIC TEST LEADS, PROBES & CLIPS

AC220 SureGrip™ alligator clip set

- One pair (red, black) of small, insulated, nickel plated jaws
- Blunt tip grabs round screw heads up to 9,5 mm
- Recommended for use with TL222 and TL224 test leads
- CAT IV 600 V, CAT III 1000 V, 10 A rating, UL listed

REF 112TA4864

AC280 SureGrip™ hook clip set

- One pair (red, black) of nickel plated clips
- Profile narrows to 5,6 mm at tip, hook opening 6,4 mm at front, 2 mm at base
- Recommended for use with TL222 and TL224 test leads
- CAT IV 600 V, CAT III 1000 V, 3 A rating, UL listed

REF 131TA8465

AC283 SureGrip™ pincer clip set

- One pair (red, black) of nickel plated pincers open to 5 mm
- 114 mm flexible insulated shaft
- Recommended for use with TL222 and TL224 test leads
- CAT IV 600 V, CAT III 1000 V, 1 A rating, UL listed

REF 131TA8466

AC285 SureGrip™ large jaw alligator clip set

- One pair (red, black) of large alligator clips with nickel-plated steel jaws
- Multi-purpose tooth pattern grips anything from fine gauge wire to a 20 mm bolt
- Recommended for use with TL222 and TL224 test leads
- CAT IV 600 V; CAT III 1000 V, 10 A rating, UL listed

REF 131TA8467

AC89 heavy duty insulation piercing test clip

- Single probe pierces 0,25 to 1,5 mm insulated wire
- Small pin allows self-healing of the insulation
- CAT IV 600V, CAT III 1000 V, 5 A rating, UL listed

REF 131TA8468

AC175 alligator clip set

- Slide-on alligator clips (red, black) compatible with TL71, TL75, TL175 and TP175
- Insulated alligator clip jaws provide 8 mm opening with flexible boots
- CAT III 1000 V, CAT IV 600 V, 10 A rating

REF 131TA8469

CASES AND HOLSTERS

Soft cases

Zippered carrying cases protect your meter. Most cases come with belt loops so your meter is stored conveniently on your tool belt.

C25 - 218 mm x 128 mm x 64 mm
REF 131TA8450

C35 - 220 mm x 140 mm x 65 mm
REF 140TA7513

C50 - 192 mm x 90 mm x 38 mm
REF 131TA8444

C90 - 205 mm x 90 mm x 72 mm
REF 131TA8448

C125 - 192 mm x 141 mm x 58 mm
REF 131TA8460

H6 infrared thermometer holster

- Durable nylon holster
- For Fluke 63, 66 and 68 Infrared Thermometers
- 302 mm x 178 mm x 57 mm

REF 131TA8455

C550 tool bag

- Steel reinforced frame
- Rugged ballistic cloth with heavy-duty hardware
- Large zippered storage compartment with 25 pockets
- Weather-resistant
- Carry all your tools to the job
- 333 mm x 513 mm x 231 mm

REF 131TA8470

ToolPak (TPAK)

The meter hanging solution
- Kit includes: universal hanger clips (2), hook & loop straps (2 lengths) and strong magnet
- Combine components to meet most hanging needs

REF 131TA8446

CASES & HOLSTERS COMPATIBILITY CHART

	C25	C35	C50	C90	C125	H6	ToolPak
113/114/115/116/117	√	√	√				√
175/177/179	√	√		√			√
233		√					√
287/289							√
27II/28II		√					√
77IV	√	√		√			√
83V/87V/88V	√	√			√		√
T5							
T100 series							
323/324/325							
333/334/335/336/337/902							
353/355							
1503/1507/1577/1587	√	√			√		√
9040/9062	√						
1735/1740 series							
430 series II							
43B/120 series					√		
190 series II							
922	√	√		√	√		√
971	√						
51/52/53/54 II	√	√	√				√
561						√	
566/568						√	
572-2							
61							
63						√	
705/707		√					
712/714/715/717	√	√					√
718					√		
724/725/726	√				√		√
753/754							
787	√				√		√
789	√	√			√		√