

FLUKE



Catalogue

FLUKE TEST TOOLS



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Increasing industrialisation led to a growing need for lift trucks and lift truck parts. Slowly but surely, TVH was growing into a global player, thanks to the success of the product and customer service, but also thanks to acquisitions.

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## CATALOGUES



Our catalogues give you information about the product groups, brands and makes in our range. The extensive and detailed information contains general product info, pictures, dimensions.

- [REF 21713862](#) Consumables & accessories
- REF 24369772 Attachments & handling equipment
- REF 25564923 Batteries, chargers & accessories
- REF 20177702 Brushes
- REF 21497415 Bulbs
- REF 15282597 Chains & accessories
- REF 10185471 Contactors & contacts
- [REF 21178582](#) Electronic accessories
- REF 20777844 Energic plus
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- REF 10727802 Exhaust systems
- REF 29793487 Fluke
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- REF 12594102 Labels & decals
- REF 22802499 LPG system parts
- REF 7872482 Mast rollers
- REF 26501928 Paint & accessories
- REF 7835233 Potentiometers & encoders
- REF 7083552 Relays
- REF 12726578 Replacement parts for Genie
- REF 15069637 Replacement parts for Haulotte
- REF 12613028 Replacement parts for JLG
- REF 20769251 Replacement parts for scrubbers & sweepers
- REF 24154086 Replacement parts for tail lifts
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- REF 27903004 Air conditioning
- REF 17857457 Beta, quality tools & workwear
- REF 14372877 Document & accessories holders
- REF 21735662 Drum handling & accessories
- REF 22835159 Force professional tools
- REF 24010825 Forks & accessories
- REF 21720627 Hardware special
- REF 21713854 Hydraulic power units
- REF 18178749 Jacks & supports
- REF 22775197 LED lights
- REF 21841408 Lubrication & accessories
- REF 20382686 Maintenance special
- REF 20778928 Mirrors
- REF 23942036 Oils & greases
- REF 17868205 Press special
- REF 18666614 Safety & ergonomics special
- REF 24261715 Seats & accessories
- REF 20963014 Skips, scoops & crane jibs
- REF 27693679 Summertime special
- REF 19550195 Twistlocks special
- REF 15372984 Tyres & accessories
- REF 18329658 Weighing special
- REF 21497051 Windshields & glazing
- REF 28809094 Winter products





## MYTOTALSOURCE

Visit our webshop  
where and when  
you want.

Forwarding price inquiries and orders is fast, easy and only one click away. 24/7 available.



### Receive your complete offer immediately

Use a TVH or OEM number to get price and availability. Even the reference on the part itself is often recognized in MyTotalSource.

### Place your order in just a few clicks

#### 4 easy steps to send your order:

1. Create your order basket
2. Change your order
3. View your order
4. Confirm your order

### Search online

- You have **machine or equipment details?**  
Use **MyPartsFinder** to find the spare part you need.
- You have the **technical details or specifications of a part?**  
Use **MyProductSearch** to find the spare part you need.
- Use our online **catalogues**.
- **Haven't found the reference you were looking for?**  
Fill out the technical sheet you can find in MyTotalSource ('Info & Promotions') or in this catalogue.
- **MyTVHLink:** work more efficiently by making an EDI-connection between your company software and TVH

**mytotalsource.tvh.com**



#### MyTotalSource app: place orders via your smartphone or table

The MyTotalSource app offers you the possibility to request offers, place orders, manage lists and scan bar codes of references from your smartphone.

#### How it works:

1. Download the MyTotalSource app, available for Android or iOS.
2. Log on to the mobile MyTotalSource app with your MyTotalSource login details.
3. Discover all the possibilities.

#### "Scan to order" system.

Scan the bar code with your smartphone or bluetooth scanner and get a price and availability to complete your offer/order.

If you have any questions, call or mail our help desk for free support: **T +32 56 43 48 66 · [ecommerce@tvh.com](mailto:ecommerce@tvh.com)**

**Request your login details now and benefit from the many advantages that MyTotalSource offers!**

# ELECTRONIC & RECONDITIONED PARTS



## ELECTRONIC PARTS

Our range includes printed circuit boards, electronic speed controllers, displays, chargers, contactors, joysticks, accelerators and directional switches.

Our electronics department is Europe's largest, best equipped and most diverse service centre for the repair of electronic parts for forklifts, aerial work platforms and industrial vehicles.

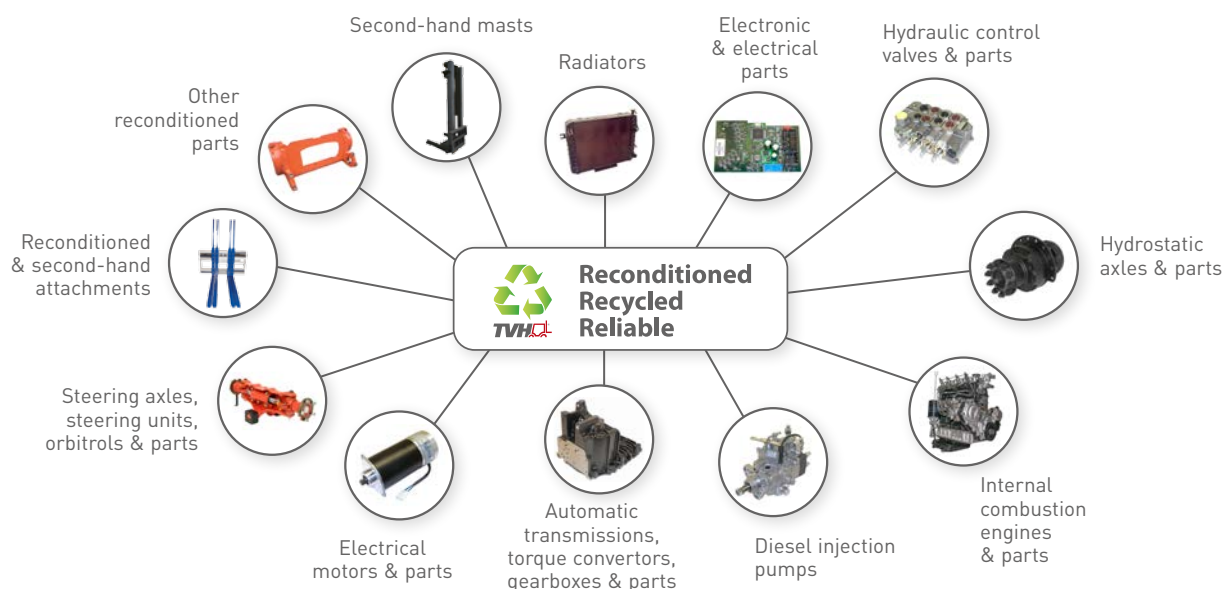


Find out more about our electronics department in our brochure (REF 20207048) or go to downloads on [www.tvh.com](http://www.tvh.com) to watch the movie.



**TOTAL SOURCE®**

## RECONDITIONED PARTS



We offer you a unique range of reconditioned parts, at the best price. Reconditioned parts are sold with the same warranty as for a new part, at a price that can be up to 50% cheaper!

Electric motors, internal combustion engines, print-boards, hydraulic pumps, transmissions, torque converters, radiators, steering axles, starters, alternators ... everything is in stock! TVH has invested in a wide range of test devices which allow us to pass stringent quality controls on various spare parts. The tests are designed in such a manner that a realistic work situation is generated during the tests.

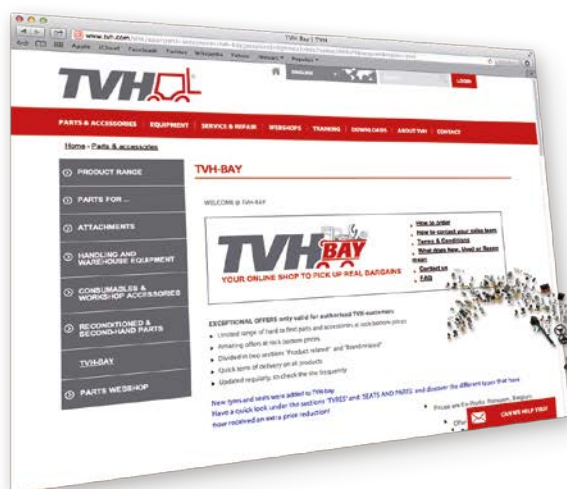
Buying one of our reconditioned parts is the perfect alternative to buying a new spare part. Ask for the availability and the conditions! You can buy a reconditioned part with or without the return of an old unit (service exchange parts).



Find out more about our reconditioned parts in our brochure (REF 29127412) or go to downloads on [www.tvh.com](http://www.tvh.com) to watch the movie.



## TVH-BAY



TVH's online outlet shop with more than 1000 new and second-hand products at rock-bottom prices! Available in 16 languages.

### The online shop to pick up real bargains

- Rock-bottom prices for a limited offer of hard-to-find parts and accessories
- A list of products per brand or product category
- A wide range of parts and accessories for lift trucks, handling equipment and related products
- All parts are available off the shelf, and can therefore be delivered quickly
- Frequently updated with new references

**Go to [www.tvh.com/tvhbay](http://www.tvh.com/tvhbay)**

## SECOND-HAND ATTACHMENTS



### More than 500 products in stock

TVH likes to invest in durability and pursues this as much as possible in its products. The range of second-hand attachments in original or completely revised condition is very extensive and varied: rotators, fork positioners, carpet booms, bale clamps, paper roll clamps ...

We have second-hand attachments in our range for Bolzoni, CAM System, Cascade, Kaup, Kooi, Meyer ...

Discover our full range on [www.tvh.com/tvhbay](http://www.tvh.com/tvhbay)

## SECOND-HAND EQUIPMENT

**TVH EQUIPMENT**

- Specialist in lift trucks and aerial work platforms with a permanent stock of 1500 lift trucks and 250 aerial work platforms
- Telehandlers and all-terrain trucks
- Masts and attachments

Find a daily updated stock list on our search engine  
[myequipmentfinder.tvh.com](http://myequipmentfinder.tvh.com)



## ELECTRIC WAREHOUSING

Electric pallet trucks (from 1,5-2 t)  
 and stackers (from 1-1,6 t)



Brochure  
 Climax  
**REF 27617387**

**Climax**

[www.climaxhandling.com](http://www.climaxhandling.com)

info@climaxhandling.com · T +32 56 43 41 19







1

NICE  
TO KNOW







## FLUKE SMARTVIEW™



### 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.

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) ...

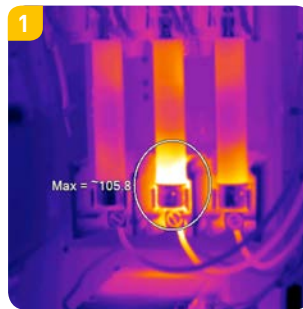
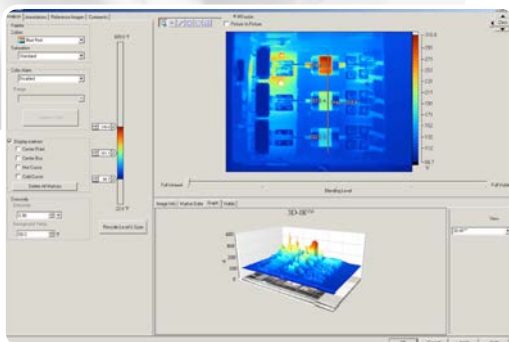
Also for the detection of defects in thermal engines, the thermal imagers become

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.

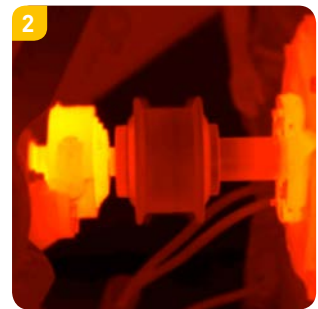
On top of that, the cooling capacity and flow of heat exchangers such as cooling radiators can efficiently be checked, as well as the operation of thermostats. Thermal images give a clear overview of the formation of hot spots in the motor, the gearbox, ...

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.

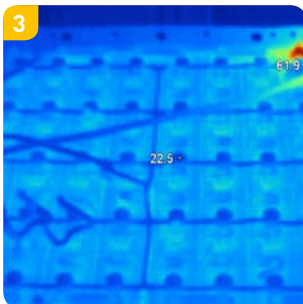
*Software is available via download at [www.Fluke.com/smartviewdownload](http://www.Fluke.com/smartviewdownload).*



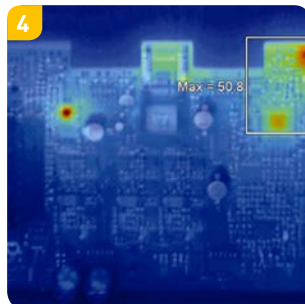
Overloaded fuses



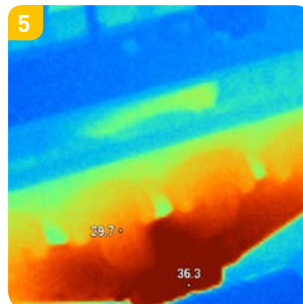
Overheated bearings



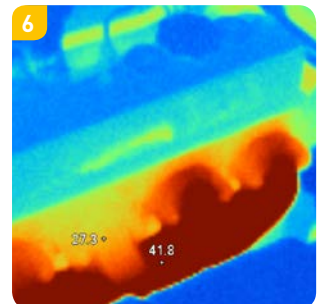
Bad connections in traction batteries



Badly soldered or faulty components on pcb's



Cylinder with insufficient combustion



Cylinder with insufficient combustion



## FLUKE CONNECT



### 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](http://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](http://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 SUREGRIP™



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.







2

# DIGITAL MULTIMETERS



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.





FLUKE 87V



Fluke 87V

REF 131TA8449

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

Included accessories

TL175 test leads, AC175 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 62



i1010

REF 131TA8445  
See page 22



TPAK

REF 131TA8446  
See page 62

Combo Kit



Fluke 87V/E2  
Industrial Electrician Combo Kit  
REF 131TA8451

- 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-A Integrated DMM Temperature Probe
- C35 Soft Meter Case

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.

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 °C	0,1 °C	1,0%
80BK temperature probe	-40 to 260 °C	-	2,2 °C or 2%

\* 20 A up to 30 seconds



## FLUKE 88V/A



## The right meter for auto-electrical diagnosis

Perhaps the most important tool you will use in troubleshooting 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 x 86 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 61

## 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 °C	0,1 °C	1%



FLUKE 115 FIELD SERVICE TESTING MULTIMETER



Fluke 115

REF 126TA6025

- **Battery life:** 400 hours typical (alkaline)
- **Size (H x W x D):** 167 x 84 x 46 mm
- **Weight:** 0,55 kg
- **Warranty:** 3 years

Compact design for ergonomic one-handed operation

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.

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 62



TPAK

REF 131TA8446

See page 62



TL223-1

REF 140TA7507

See page 60

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.



## FLUKE 175



## Fluke 175

REF 131TA8447

- **Battery life:** 200 hours typical (alkaline)
- **Size (H x W x D):** 190 x 85 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 62



i1010

REF 131TA8445

See page 22



TLK220 EUR

REF 134TA8375

See page 60

## Versatile meters for field service or bench repair

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

For professional technicians worldwide there is one preferred solution: the precision, reliability and ease of

use they find in Fluke 170 Series True RMS digital multimeters. This is the industry standard, with all the features you need to troubleshoot and repair so many problems in electrical and electronic systems.

## 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 °C/+400 °C	0,1 °C	-

Accuracies are best accuracies for each function.



FLUKE 233



**Fluke 233**  
REF 135TA3042

- **Battery life:** 400 hours (AA-batteries)
- **Size (H x W x D):** 53 x 93 x 193 mm
- **Weight:** 0,604 kg
- **Warranty:** 3 years

Included accessories

AA-batteries, 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 59



**TPAK**  
REF 131TA8446  
See page 62



**TL220-1**  
REF 107TA1224  
See page 60



**i1010**  
REF 131TA8445  
See page 22



**C35**  
REF 140TA7513  
See page 62

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.

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



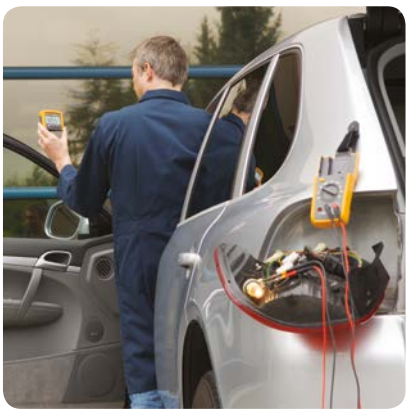


FLUKE 233



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 $\Omega$ to 40 M $\Omega$

Key Features and Benefits	
Counts	6000
Capacitance	1000 nF to 9999 $\mu$ F
Frequency	0,1 Hz to 50,00 kHz 0,2
Temperature	-40 $^{\circ}$ C to +400 $^{\circ}$ 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







FLUKE 279FC THERMAL MULTIMETER



**Fluke 279FC**  
**REF 161TA6154**

- **Size (H x W x D):** 216 mm x 57 mm x 94 mm
- **Weight:** 0,794 kg
- **Warranty:** 3 years

Included accessories

TL175 test leads, rechargeable lithium ion battery and charger.

Recommended accessories



**i2500-10**

**REF 138TA3971**

10 inch iFlex® flexible current probe



**i2500-18**

**REF 138TA3972**

18 inch iFlex® flexible current probe



**TPAK**

**REF 131TA8446**

Meter hanging solution – see page 62



**CXT1000**

**REF 147TA5771**

Extreme hard case – see page 63

Find. Repair. Validate. Report.

The 279 FC is a full-featured digital multimeter with integrated thermal imaging and is designed to increase your productivity and confidence.

The thermal multimeter helps you find, repair, validate and report many electrical issues quickly so that you are confident problems are solved.

Thermal imaging multimeters are a first-line troubleshooting tool for electrical equipment that can check hot spots on high-voltage equipment and transformers, detect

heating of fuses, wires, insulators, connectors, splices and switches.

Compatible with iFlex® (a flexible current clamp) to expand your measurement capabilities and get into tight, hard to reach spaces for current measurement (up to 2500 A AC).

Also with built-in Fluke Connect®, transmit results wirelessly to a smartphone and save time on reporting to validate work is complete.

Features

Full-featured multimeter with built-in thermal imager
15 measurement functions including: AC voltage with low-pass filter, DC voltage, Resistance, Continuity, Capacitance, Diode test, Min/Max/Avg, AC current (with iFlex), Frequency
Thermal imaging reveals many electrical issues quickly and safely, eliminating the need for time-consuming testing and validation
Two-in-one tool is designed to increase productivity. No need to go back to the truck or office to retrieve a shared camera or wait for the thermographer—do more in less time
iFlex expands your measurement capabilities get into tight, hard to reach spaces for current measurement (up to 2500 A AC)
Designed for durability, built to withstand a 3 m drop, double insulated with raised rubber holster for increased protection
Save measurements and images while communicating wirelessly with a smartphone up to 6.1 m away
Image resolution 80 x 60
Full-color 3.5"/8.89 cm LCD screen provides clean, crisp readings
Rechargeable lithium ion battery allows for a full work day (10+ hours) under normal conditions
Auto power off to save battery power
Easy to read display with large digits and bright backlight

# DIGITAL MULTIMETERS



## FLUKE 279FC THERMAL MULTIMETER



### Specifications

Voltage DC	Range: 0,001 mV to 1000 V
	Accuracy: 0,09% + 2
Voltage AC	Range: 0,1 mV to 1000 V
	Accuracy: 1,0% + 3
Current DC	Range: 600 mV to 0,1 mV
	Accuracy: 0,09% + 2
Current AC	Range: 999,9 A to 0,1 A
	Accuracy: 1,2% + 5

### Key Features and Benefits

Resistance	Range : 0,1 Ω to 50 MΩ	
	Accuracy: 0,5% + 1	
Continuity	Range : 600 Ω to 0,1 mV	
	Accuracy: Meter beeps at < 25 Ω, detects opens or shorts of 600 μs or longer	
Diode test	Range: 2,0 / 0,001 V	
	Accuracy: 1% + 2	
Capacitance	Range: 1 nF to 999 μs	
	Accuracy: 1,2% + 2	
Counts	6000	
Capacitance	1 nF to 9999 μF	
Frequency	Range: 99,99 Hz to 0,01 kHz ; 999,9 Hz / 0,1 Hz	
	Accuracy: 0,1% +1	
Min. / Max. recording accuracy	AC functions: 40 counts for changes > 900ms in duration	
	DC functions: 12 counts for changes > 350ms in duration	
Power	AA-batteries: three for main body; two for display	
Infrared camera temperature	Range	-10°C to 200°C
	Measurement resolution	0,1 °C
	Temperature measurement	yes, centerpoint
	Accuracy	± 5°C or ± 5%
	Emissivity	0,95 fixed
Image performance	Resolution	80 x 60
	Image capture frequency	8 Hz
	Detector type	Uncooled vanadium oxide
	Thermal sensitivity (NETD)	≤ 200 mK
	Infrared spectral band	7,5 μm to 14 μm
	Distance to spot	162:1
	Field of view	36 °(w) x 27 °(h)
	Focus mechanism	Fixed focus
Image presentation	Palette	Ironbow
	level and span	Auto
Image capture and data storage	Image capture	Image available for review before a save
	Storage medium	Internal memory stores up to 100 images
	Image transfer	Fluke Connect® / SmartView®
	Display size	8,9 cm (3.5 in) diagonal
Display (LCD)	Update rate	4/sec
	Volts, amps, ohms	6000 counts
	Frequency	10 000 counts
	Capacitance	1000 counts
Battery life	10 hours maximum	



3

# INSULATION METERS





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



## FLUKE 1507



### Fluke 1507

**REF 144TA8800**

- **Size (H x W x D):** 203 x 100 x 50 mm
- **Weight:** 0,55 kg
- **Warranty:** 1 year

#### 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**

**REF 131TA8467**

See page 59



**TLK225-1**

**REF 131TA8471**

See page 60



**T-PAK**

**REF 131TA8446**

See page 62

### 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.

#### Features

User selectable test voltages for many applications.
Additional test voltages 50 V, 100 V, 250 V, 500 V, 1000 V.
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.

#### 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 °C to 60 °C
Operating temperature	-20 °C to 55 °C
Drop test	1 meter
Battery life	insulation tests >1000 tests





## FLUKE 1507



### Fluke TPAK ToolPak™ Magnetic Meter Hanger

The Fluke TPAK ToolPak™ Magnetic Meter Hanger allows you to hang your meter on nails, hooks and many other objects so you can take your measurements hands-free. The kit includes powerful magnetic hanger, 9 inch hook and loop strap, a hook hanger and a general purpose hanger. Solves any hanging and positioning problem you may face. Attaches to most Fluke meters.

- Solves almost any hanging and positioning problem you may face
- The universal hanger allows you to hang your meter on nails, hooks and many other objects
- Compatible with many Fluke instruments
- One year warranty





4

# CLAMP METERS



# CLAMP METERS



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





FLUKE 365 / DETACHABLE JAW CLAMP METER



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 x 65 x 46 mm
- **Weight:** 0,275 kg
- **Warranty:** 3 years

Included accessories

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



Recommended accessories



TL223-1  
REF 140TA7507  
See page 60

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	

Specifications	
AC current	200 A
AC voltage	600 V
Continuity	≤ 30 Ω
DC current	200 A
DC voltage	600 V
Resistance	6000 Ω
Work in poorly lit areas	Backlight
Non-linear loads	True RMS



## FLUKE 375 FC / TRUE-RMS AC/DC CLAMP METER



High-performance clamp meter with wireless communication and logging capabilities.

The 375 FC true-rms clamp meter is compatible with the Fluke iFlex flexible current probe (sold separately), which expands the measurement range to 2500 A ac. The Fluke 375 FC is also part of the Fluke Connect® family of wireless test tools.

### Now you can:

- Log and trend measurements to pinpoint intermittent faults.
- Transmit results wirelessly via Fluke Connect® Measurements app.
- Create and send reports right from the field.
- Stay safely away from the arc flash zone through Bluetooth connectivity to Apple and Android devices.

## Fluke 375 FC

REF 151TA2265

- **Size (H x W x D):** 249 x 85 x 45 mm
- **Weight:** 0,395 kg
- **Warranty:** 3 years

### Included accessories

Soft carrying case, TL75 test leads, AA-batteries, coated instruction card, safety information sheet

### Recommended accessories



**i2500-18 inch  
iFlex (45 cm)**

Flexible  
current probe  
**REF 138TA3972**



**TL223-1**

**REF 140TA7507**

See page 60



**AC285**

**REF 131TA8467**

See page 59



**TPAK**

**REF 131TA8446**

See page 62

### Features

TRUE-RMS	✓
Backlight	✓
Auto ShutOff	✓
Display Hold	✓
Low pass filter	✓
Inrush	✓
Large jaw (34 mm)	✓
Current AC/DC	✓
Min, max, average, and inrush measurements	✓
Logging	✓
Fluke Connect®	✓

### Specifications

Functions	Range	Resolution	Accuracy
AC Current via jaw	600 A	0,1 A	2% ±5 digits 2,5% ±5 digits
AC Current via Flexible Current Probe	2500 A	0,1 A (≤ 600 A) 1 A (≤ 2500 A)	3% ±5 digits
DC Current	600 A	0,1 A	2% ±5 digits
AC Voltage	1000 V	0,1 V (≤ 600 V) 1 V (≤ 1000 V)	1,5% ±5 digits
DC Voltage	1000 V	0,1 V (≤ 600 V) 1 V (≤ 1000 V)	1% ±5 digits
mV DC	500 mV	0,1 mV	1% ±5 digits
Frequency via Jaw	5 Hz to 500 Hz	0,1 Hz	0,5% ±5 digits
Frequency via Flexible Current Probe	5 Hz to 500 Hz	0,1 Hz	0,5% ±5 digits
Resistance	60 kΩ	0,1 Ω (≤ 600 Ω) 1 Ω (≤ 6000 Ω) 10 Ω (≤ 60 kΩ)	1% ±5 digits
Capacitance	1000 μF	0,1 μF (≤ 100 μF) 1 μF (≤ 1000 μF)	1% ±4 digits



FLUKE 381 / REMOTE DISPLAY CLAMP METER



Fluke 381  
REF 138TA3970

- **Size (H x W x D):** 280 x 88 x 50 mm
- **Weight:** 0,540 kg
- **Warranty:** 3 years for electronics.

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



TL224  
SureGrip™  
silicone test  
lead set  
REF 129TA7685  
See page 57

All the bells and whistles

The 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 access.

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)	✓

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	



## FLUKE I1010 & I310S CURRENT CLAMP



### Fluke i1010

REF 131TA8445



### Fluke 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 <sup>1)</sup>	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

<sup>1)</sup> Basic accuracy: % reading + floorspec

#### 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) For DC only

2) Requires PM 9082 (REF 141TA2409)





5

LASER  
DISTANCE  
METERS



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



FLUKE 414D



**Fluke 414D**  
**REF 140TA9089**

- **Size (H x W x D):** 116 x 53 x 33 mm
- **Weight:** 0,113 kg
- **Warranty:** 3 years

Included accessories

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

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.

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.	✓

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 414D







6

# FLUORESCENT LIGHT TESTERS

# FLUORESCENT LIGHT TESTERS



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





FLUKE 1000FLT



Fluke 1000FLT

REF 144TA3648

- **Size (H x W x D):** 215 x 30 x 65 mm
- **Weight:** 0,275 kg
- **Warranty:** 3 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.

Features	
Test in less than 30 seconds	✓
Drop-tested – 2 meter	✓
Bright indicator	✓
Rugged	✓
Auto power off	✓

Specifications	
Lamp test max output	3000 V peak
Ballast test	20 kHz
Ballast type discriminator	≤3m distance
Pin continuity test	< 1 kΩ
NCV (VoltAlert™)	85 to 400 V AC
	45 a 67 Hz
	≤10 cm (4 in) distance
Operating temperature	-10 °C to +50 °C
Storage temperature	-40 °C to +60 °C
Relative humidity	85% maximum
Battery life	40 hours
Low battery indicator	Power button light blinks when power is low

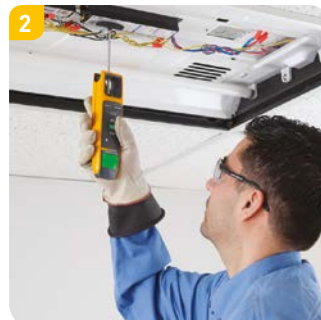


## FLUKE 1000FLT

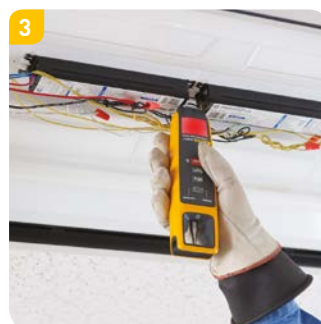
5 tests with 1 compact tool



*Lamp test: Test bulb without removing from fixture*



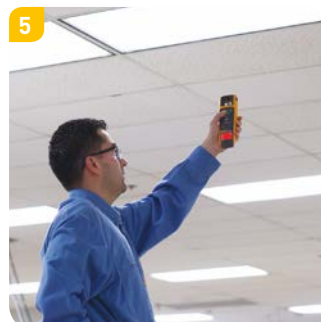
*Ballast test: Easily determine if ballast is working*



*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*





7

LED-  
STROBOSCOPE



Allows clear observation  
of machinery in motion.



## FLUKE 820-2



### Fluke 820-2

REF 144TA7195

- **Size (H x W x D):** 190 x 61 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

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

The Fluke 820-2 LED Stroboscope can be used for checking the rotational speed of machinery 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.

#### 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: <ul style="list-style-type: none"><li>- For most applications standard flash duration works without adjustment.</li><li>- For high rpm or larger objects rotating with high surface speed, adjustable flash duration is needed.</li><li>- 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.</li></ul>



## FLUKE 820-2



### 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 $\mu$ s or degrees
Delay	Adjustable in $\mu$ s 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 $\mu$ s connection
Environmental 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





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## DIGITAL THERMOMETERS



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 / MULTIPURPOSE THERMOMETER



### Fluke 561

**REF 131TA8454**

- **Battery life:** 12 hours (alkaline)
- **Size (H x W x D):** 177 x 164 x 52 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**

**REF 131TA8455**

See page 62

### 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% of 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®	Yes, with a temperature range of 0 ° to 100 °C and accuracy of ± 2,2 °C
Measurement guide	Yes



## FLUKE 62 MAX+ / INFRARED THERMOMETER



## Fluke 62 MAX+

**REF 140TA7499**

- **Size (H x W x D):** 175 x 85 x 75 mm
- **Weight:** 0,26 kg
- **Warranty:** 3 years

### Included accessories

Carbon clip

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





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## 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.



## FLUKE VT04



### Fluke VT04

**REF 141TA7634**

- **Battery life:** 8 hours
- **Size (H x W x D):** 210 x 75 x 55 mm
- **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

### 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 troubleshooting camera with infrared heat map.

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.

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.

# VISUAL IR-THERMOMETERS



## FLUKE VT04

### Key features of a visual IR thermometer

#### Breakthrough affordability

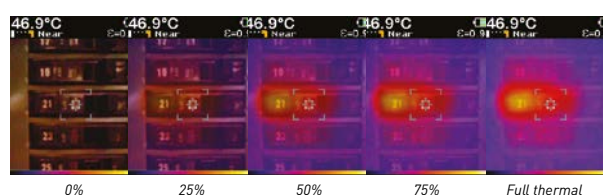
Half the cost of infrared cameras that require training and software.

#### 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.



#### 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 Nice to know)

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,  $\leq 23$  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.



### Specifications

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 $\mu$ m to 14 $\mu$ m
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





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# 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 TIS10-20



### Fluke TIS10

**REF 147TA5767**

- **Size (H x W x D):** 267 x 101 x 145 mm
- **Weight:** 0,720 kg
- **Warranty:** Two years

#### Included accessories

AC power adapter, lithium ion smart battery, USB cable, soft transport bag, quick reference guide and safety sheet. Software is available via download at [www.Fluke.com/smartviewdownload](http://www.Fluke.com/smartviewdownload)

#### Recommended accessories



**FLK-TI-SBP3**  
**REF 140TA8977**

Extra  
rechargeable  
battery



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

Vehicle charger



**FLK-TI-SBC3**  
**REF 140TA8976**

Charging base

(\*) 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 TIS20

**REF 147TA5768**

- **Size (H x W x D):** 267 x 101 x 145 mm
- **Weight:** 0,720 kg
- **Warranty:** Two years

## An imager for every application

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. Get detailed images in an affordable thermal imager that's rugged and reliable.

They come standard with Fluke Connect™ (see pag. 47), the world's largest system of connected test and measurement tools.

Analyze all your IR-images with the Fluke SmartView™ software (see pag. 45).

Securely store and manage your images, free WiFi upload to Fluke Cloud™ storage.



## FLUKE TIS10-20



Specifications		
Specifications	TIS10	TIS20
Temperature measurement range	-20 °C to +250 °C	-20 °C to +350 °C
Temperature measurement accuracy	+/- 2 °C or 2% (at 25 °C nominal, whichever is greater)	
Field of view	35,7° X 26,8°	
Spatial resolution	7,8 mRad	5,2 mRad
Wireless connectivity	Yes	
Fluke connect™ App compatible	Yes (where available)	
Focus system	Fixed focus, minimum focus distance 0,45 m	
Resolution	80 x 60	120 x 90
Distance-to-Spot	128:1	193:1
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	3 presets (0%, 50%, 100%)
Infrared spectral band	7,5 µm to 14 µm	
Frame rate	9 Hz	
Center-point temperature measurement	Yes	
Spot temperature	Yes	
User-definable spot markers	No	1
Standard palettes	Blue-Red, Ironbow, Grayscale	Blue-Red, Ironbow, Grayscale, Amber, High-contrast, Hot metal
Ruggedized display	3,5 inch (landscape) 320 x 240 LCD	
Build-in digital camera	5MP	
Level and span control	Smooth auto and manual scaling	
On-screen emissivity correction	Yes	
On-screen reflected background temp.compensation	Yes	
Laser pointer	Yes	
Ergonomic design for one-handed use	Yes	
Extensive SD memory system	Internal 4GB memory	
Memory review	Thumbnail review	
Software	SmartView® software – full analysis and reporting software and Fluke Connect™	
Export file formats with SmartView®	BMP, DIB, GIF, JPE, JFIF, JPEG, JPG, PNG, TIF and TIFF	
Image capture, review, save mechanism	One-handed image capture, review and save capability	
Instant upload	Upload captured images to Fluke Connect server with the use of a Wifi connection	
Field replaceable battery	One Lithium-Ion	
Battery life	4+ hours (each)	
Drop test	2 meter	
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	





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# SCOPEMETERS



The compact ScopeMeter® 123B, is the rugged oscilloscope solution for industrial electrical and electro-mechanical equipment troubleshooting and maintenance applications. It's a truly integrated test tool, with oscilloscope, multimeter and high-speed recorder in one easy-to-use instrument. The ScopeMeter® 123B also integrates with Fluke Connect® mobile app and FlukeView® for ScopeMeter® software to enable further collaboration, data analysis and archiving of critical test information.



## FLUKE 123B



Simplified testing, more insight and faster electro-mechanical troubleshooting

The 123B Industrial ScopeMeter® Test Tools include innovative functions designed to help technicians troubleshoot faster and get the answers they need to keep their systems up and running.

Display waveforms with Connect and View™ trigger and setup technology

and automatically view related numerical measurements using Fluke IntellaSet™ technology, all without making manual measurement adjustments.

With Recorder Event Detect capabilities, elusive intermittent events are captured and logged for easy viewing and analysis.

## Fluke 123B

**REF 159TA9861**

- **Size (H x W x D):** 259 mm x 55 mm x 132 mm
- **Weight:** 1,4 kg
- **Warranty:** 3 years

### Included accessories

Li-Ion battery pack, charger/power adapter, 2 shielded test leads with ground leads, black test lead, red and blue hook clips, banana to BNC adapter, and WiFi USB adapter.

### Recommended accessories



**STL120-IV**  
**REF 159TA9864**  
Shielded test lead set 600V



**BB120-II**  
**REF 161TA6152**  
Set of 2 banana to BNC adapter



**VPS41**  
**REF 161TA6153**  
Voltage probe set 40Mhz 600V



**C120B**  
**REF 159TA9863**  
Soft carrying case



**SCC120B**  
**REF 159TA9862**  
Accessory kit



**OC4USB**  
**REF 159TA9865**  
USB interface cable



**i1010**  
**REF 131TA8445**  
See page 22



**i310s**  
**REF 138TA4372**  
See page 22

### Features

Dual-input digital oscilloscope and multimeter
40 MHz or 20 MHz oscilloscope bandwidth
Two 5 000-count true-rms digital multimeters
Connect-and-View™ trigger simplicity for hands-off operation
IntellaSet™ technology automatically and intelligently adjusts numerical readout based on the measured signal
Dual-input waveform and meter reading recorder for trending data over extended periods
Recorder Event Detect captures elusive intermittent signals on repetitive waveforms up to 4 kHz
Shielded test leads for oscilloscope, resistance and continuity measurements
Resistance, continuity, diode and capacitance meter measurements
Power measurements (W, VA, VAR, PF, DPF, Hz)
Voltage, current and power harmonics
Check Industrial networks with BusHealth physical layer tests against defined reference levels
Save or recall data and instrument setups
Store instrument setups defined by a test sequence for routine maintenance or most often used test procedures
External optically isolated USB interface to transfer, archive and analyze scope or meter data
Optional WiFi adapter connected to internal USB port to wirelessly transfer information to the PC, laptop or Fluke Connect® mobile app
FlukeView® ScopeMeter® Software for Windows®
Rugged design to withstand 3g Vibration, 30g shock, and rated IP51 according to EN/IEC60529
Highest safety rating in the industry: safety rated for CAT IV 600 V
Li-Ion rechargeable battery, seven-hours operation (with four-hour charge time)



## FLUKE 123B



### Specifications

#### Oscilloscope mode

Vertical		
Frequency response – DC coupled	Without probes and test leads (with BB120)	DC to 20 MHz (-3 dB)
	with STL120-IV 1:1 shielded test leads	DC to 12.5 MHz (-3 dB) / DC to 20 MHz (-6 dB)
	with VP41 10:1 Probe	DC to 20MHz (-3 dB)
Frequency response – AC coupled	without probes and test leads	<10 Hz (-3 dB)
	with STL120-IV 1:1 shielded test leads	<10 Hz (-3 dB)
	with VP41 10:1 Probe	<10 Hz (-3 dB)
Rise time, excluding probes, test leads	123B <17.5 ns	
Input impedance	without probes and test leads	1 MΩ//20 pF
	with BB120	1 MΩ//24 pF
	with STL120-IV 1:1 shielded test leads	1 MΩ//230 pF
	with VP41 10:1 Probe	5 MΩ//15.5 pF
Sensitivity	5 mV to 200 V/div	
Analog bandwidth limiter	10 kHz	
Max. input voltage A and B	direct, with test leads, or with VP41 Probe	600 Vrms CAT IV, 750 Vrms maximum voltage.
	with BB120	600 Vrms
Max. floating voltage, from any terminal to ground	600 Vrms CAT IV, 750 Vrms up to 400Hz	
Horizontal		
Scope modes	Normal, Single, Roll	
Ranges	Equivalent sampling	20 ns to 500 ns/div,
	Real time sampling	1 μs to 5 s/div
	Single (real time)	1 μs to 5 s/div
	Roll (real time)	1s to 60 s/div
Sampling rate (for both channels simultaneously)	Equivalent sampling (repetitive signals)	up to 4 GS/s
	Real time sampling 1 μs to 60 s/div	40 MS/s
Trigger		
Screen update	Free run, on trigger	
Source	A, B	
Sensitivity A and B	@ DC to 5 MHz	0.5 divisions or 5 mV
	@ 40 MHz	4 divisions
Slope	Positive, negative	
Advanced scope functions		
Auto set (Connect-and-View™)	Continuous fully automatic adjustments of amplitude, time base, trigger levels, trigger gap, and hold-off. Manual override by user adjustment of amplitude, time base, or trigger level.	
Input A and input B		
DC Voltage (VDC)		
Ranges	500 mV, 5 V, 50 V, 500 V, 750 V	
Accuracy	± (0.5 % +5 counts)	
Common mode rejection	>100 dB @ dc, >60 dB @ 50, 60, or 400 Hz	
Full scale reading	5000 counts, reading is independent of any signal crest factor.	





## FLUKE 123B

### Specifications

Peak		
Modes	Max peak, Min peak, or pk-to-pk	
Ranges	500 mV, 5 V, 50 V, 500 V, 2200 V	
Accuracy	Accuracy Max peak or Min peak	5 % of full scale
	Accuracy Peak-to-Peak	10 % of full scale
Full scale reading	500 counts	
Frequency (Hz)		
Ranges	1 Hz, 10 Hz, 100 Hz, 1 kHz, 10 kHz, 100 kHz, 1 MHz, 10 MHz, and 50 MHz	
Frequency range	15 Hz [1 Hz] to 50 MHz in continuous autose	
Accuracy @1 Hz to 1 MHz	± [0.5 % +2 counts]	
Full scale reading	10 000 counts	
RPM		
Max reading	50.00 kRPM	
Accuracy	± [0.5 % +2 counts]	
Duty cycle		
Range	2 % to 98 %	
Frequency range	15 Hz [1 Hz] to 30 MHz in continuous autose	
Duty cycle		
Range	2 % to 98 %	
Frequency range	15 Hz [1 Hz] to 30 MHz in continuous autose	
Pulse width (PULSE)		
Frequency range	15 Hz [1 Hz] to 30 MHz in continuous autose	
Full scale reading	1000 counts	
Amperes (AMP)		
With current clamp	Ranges	same as V dc, V ac, V ac+dc, or PEAK
	Scale Factors	0.1 mV/A, 1 mV/A, 10 mV/A, 100 mV/A, 400 mV/A, 1 V/A, 10 mV/ mA
	Accuracy	same as V dc, V ac, V ac+dc, or PEAK (add current clamp uncertainty)
Temperature (TEMP) with optional temperature probe		
Range	200 °C/div [200 °F/div]	
Scale factor	1 mV/°C and 1 mV/°F	
Accuracy	as V dc (add temp. probe uncertainty)	
Decibel (dB)		
0 dBV	1 V	
0 dBm (600 Ω /50 Ω)	1 mW referenced to 600 Ω or 50 Ω	
dB on	V dc, V ac, or Vac+dc	
Full scale reading	1000 counts	
Crest factor (CREST)		
Range	1 to 10	
Full scale reading	90 counts	
Phase		
Modes	A to B, B to A	
Range	A to B, B to A	
Resolution	1 degree	

### Specifications

VPWM		
Purpose	to measure on pulse width modulated signals, like motor drive inverter outputs	
Principle	readings show the effective voltage based on the average value of samples over a whole number of periods of the fundamental frequency	
Accuracy	as Vrms for sinewave signals	
Input A to common		
Ohm (Ω)		
Range	500 Ω , 5 kΩ, 50 kΩ, 500 kΩ, 5 MΩ, 30 MΩ	
Accuracy	± (0.6 % + 5 counts) 50 Ω ±(2 % + 20 counts)	
Full scale reading	50 Ω to 5 MΩ - 5000 counts, 30 MΩ - 3000 counts	
Measurement current	0.5 mA to 50 nA, decreases with increasing ranges	
Open circuit voltage	<4 V	
Continuity (Cont)		
Beep	<(30 Ω ± 5 Ω) in 50 Ω range	
Measurement current	0.5 mA	
Open circuit voltage	≥1 ms	
Diode		
Measurement voltage	@0.5 mA	>2.8 V
	@open circuit	<4 V
Measurement current	0.5 mA	
Polarity	+ on input A, - on COM	
Ohm (Ω)		
Ranges	50 nF, 500 nF, 5 μF, 50 μF, 500 μF	
Full scale reading	5000 counts	
Measurement current	500 nA to 0.5 mA, increases with increasing ranges	
Input A to common		
Zero set	Set actual value to reference	
AutoHold (on A)	Captures and freezes a stable measurement result. Beeps when stable. AutoHold works on the main meter reading, with thresholds of 1 Vpp for AC signals and 100 mV for DC signals.	
Fixed decimal point	Activated by using attenuation keys.	
Recorder		
The recorder captures meter readings in Meter Recorder mode or continuously captures waveform samples in Scope Recorder mode. The results are displayed as Chart recorder display that plots a graph of min and max values of Meter measurements over time or as a waveform recorder display that plots all the captured samples		
Meter readings		
Measurement Speed	Maximum 2 measurements/s	
Record Size (min, max, average)	2 M readings for 1 channel	
Recorded Time Span	2 weeks	
Maximum number of events	1024	
Waveform records		
Maximum sample rate	400 K sample/s	
Size Internal memory	400 M samples Recorded Time	
Span internal memory	15 minutes at 500 μs/div	11 hours at 20 ms/div
Record Size SD card	1.5 G samples	
Recorded Time Span SD card	11 hours at 500 μs/div	14 days at 20 ms/div
Maximum number of events	64	



## FLUKE 123B

### Specifications

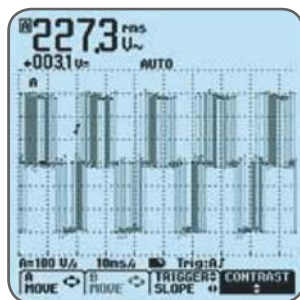
Miscellaneous		
Display	Type	5.7-inch color active matrix TFT
	Resolution	640 x 480 pixels
Waveform display	Vertical	10 div of 40 pixels
	Horizontal	12 div of 40 pixels
Power	Operating time	7 hours with 50 % backlight brightness
	Charging time	4 hours with test tool off, 7 hours with test tool on
Memory	Internal memory can store 20 data sets (screen waveform and setup)	Micro SD card slot with optional SD card (max size of 32 GB)
	Interface	USB to PC/laptop
		OC4USB optically isolated USB adapter/cable, (optional), using FlukeView® software for Windows®.
	Optional WiFi adapter	Fast transfer of screen copies (bitmaps), settings and data to PC/laptop, tablet, smartphone, etc. A USB port is provided for attaching the WiFi dongle. Do not use the USB port with a cable for safety reasons.

### 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.*



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# BATTERY ANALYSERS



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





FLUKE BT521



Fluke BT521

REF 144TA7196

- **Size (H x W x D):** 220 x 103 x 58 mm
- **Weight:** 0,85 kg
- **Warranty:** 3 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.).



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.

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 3000 mAh 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.

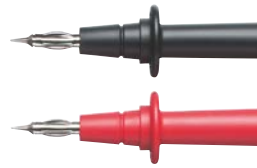


## FLUKE BT521



## 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		



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## 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.



## TL75-1 HARD POINT™ TEST LEAD SET



### REF 112TA4865

- 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

## TL76 ALL-IN-ONE TEST LEAD SET



### REF 131TA8463

- 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

## TL175 / TL175E TWISTGUARD™ TEST LEADS



### REF 139TA3155

- Patented TwistGuard™ extendable test leads with adjustable length test tips. Probe tips can change from 19 mm to 4 mm.
- New WearGuard™ lead wire wear indication. Each test lead is covered by two layers of silicone insulation, inner contrasting color is exposed when the leads are nicked, scuffed, or otherwise damaged and in need of replacement
- Double insulated silicone leads withstand high temperatures and remain flexible in cold temperatures.
- Extra-heavy duty strain relief on both probe-end and plug-end, tested beyond 30 000 bends without failure.
- Universal input plugs are 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 TwistGuard™ test leads

### REF 151TA1584

Includes removable 4 mm lantern tips that thread onto the lead tip.

## TL224 SUREGRIP™ SILICONE TEST LEAD SET



### REF 129TA7685

- 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

# GENERAL ACCESSORIES



## TP74 LANTERN TIP TEST PROBE SET



### **REF 131TA8464**

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

## TP80 ELECTRONIC TEST PROBE SET



### **REF 134TA8376**

- 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

## TP220-1 SUREGRIP™ TEST PROBE SET



### **REF 112TA4863**

- 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

## AC220 SUREGRIP™ ALLIGATOR CLIP SET



### **REF 112TA4864**

- 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

## AC283 SUREGRIP™ PINCER CLIP SET



### **REF 131TA8466**

- 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



## AC280 SUREGRIP™ HOOK CLIP SET



### REF 131TA8465

- 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

## AC285 SUREGRIP™ LARGE JAW ALLIGATOR CLIP SET



### REF 131TA8467

- 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

## AC89 HEAVY DUTY INSULATION PIERCING TEST CLIP



### REF 131TA8468

- 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

## AC175 ALLIGATOR CLIP SET



### REF 131TA8469

- 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

## AC288 SUREGRIP™ TERMINAL BLOCK PROBE



### REF 147TA5770

- Retractable probe tip designed for increased safety, while providing flexibility to reach deep connection points
- 11.5 cm (4.5 in) insulated, flexible shaft
- 1 mm diameter probe tip extends out to 8.4 mm (0.33 in) length
- Retractable probe tip is made with stainless steel
- Recommended for use with the Fluke TL224, TL222 or TL221 test leads
- CAT III 1000 V, CAT IV 600 V
- Operating temperature: -20 °C to +55 °C [-4 °F to +131 °F], 90 % RH

# GENERAL ACCESSORIES



## TL220-1 SUREGRIP™ INDUSTRIAL TEST LEAD KIT



### **REF 107TA1224**

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

## TL223-1 SUREGRIP™ ELECTRICAL TEST LEAD KIT



### **REF 140TA7507**

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

## TL81A DELUXE ELECTRONIC TEST LEAD KIT



### **REF 131TA8461**

- 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

## TLK220 EUR SUREGRIP™ ACCESSORY KIT



### **REF 134TA8375**

- 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

## TLK225-1 SUREGRIP™ MASTER ACCESSORY KIT



### **REF 131TA8471**

- 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





## TLK282-1 SUREGRIP™ DELUXE AUTOMOTIVE TEST LEAD KIT



### **REF 131TA8462 / 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



## 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**  
**REF 131TA8450**  
218 x 128 x 64 mm



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



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



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



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

## C550 TOOL BAG



### **REF 131TA8470**

- 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 x 513 x 231 mm

## H6 INFRARED THERMOMETER HOLSTER



### **REF 131TA8455**

- Durable nylon construction protects your thermometer while keeping it within reach
- Cuff hook attachment closure provide quick access and a secure closure
- Extra accessory pocket for storing temperature probe
- Snap-open loop attaches easily to your belt
- 302 x 178 x 57 mm

## TOOLPAK (TPAK)



### **REF 131TA8446**

#### **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



## CXT1000 EXTREME HARD CASE



### REF 147TA5771

- Fits everything including accessories, thermal imagers, multimeters, clamp meters, and many other Fluke tools.
- Virtually indestructible, the extreme hard case has innovative features for unmatched strength and durability
- Offers maximum protection for your Fluke tools and accessories against high impact, vibration or shock
- O-ring sealed, waterproof up to a depth of 3 meters
- Airtight, and built to withstand the most extreme conditions
- Great for airline travel with an automatic pressure equalization valve for changes in atmospheric pressure
- Spring-release patent pending latches lock in place
- Lock holders are great for use with pad locks for added security
- Customizable, 2-piece sheeted foam offers an extremely tailored, custom fit for your Fluke tools and accessories
- Stackable, finger groove on each side for easy pick up and carry
- Lifetime warranty on the case shell
- 343 x 465 x 178 mm

## CASES & HOLSTERS COMPATIBILITY CHART

	C25	C35	C50	C90	C125	H6	CXT1000	ToolPak
113/114/115/116/117	✓	✓	✓				✓	✓
175/177/179	✓	✓		✓			✓	✓
233		✓					✓	✓
3000FC DMM	✓	✓			✓		✓	✓
287/289							✓	✓
27II/28II		✓					✓	✓
77IV	✓	✓		✓			✓	✓
83V/87V/88V	✓	✓			✓		✓	✓
T90/T110/T130/T150							✓	
TIS 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						✓	✓	
705/707		✓					✓	
712/714/715/717	✓	✓					✓	✓
718/719					✓		✓	
724/725/726	✓				✓		✓	✓
753/754							✓	
787	✓				✓		✓	✓
789	✓	✓			✓		✓	✓









NOTES

Handwriting practice area with horizontal dotted lines.



NOTES

Handwriting practice area with 30 horizontal dotted lines.



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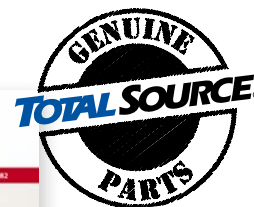


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## Consumables & accessories

**REF 21713862**

Personal equipment and safety, industrial vehicle repair, maintenance parts and accessories, workshop consumables and accessories, warehouse accessories, on the field.

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**REF 21178582**

An overview of the references for camera systems, measuring equipment, speed limiter systems, access control systems ...



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