

Measuring.  
Calibrating.  
Testing.

Measuring and calibration  
for use in Ex-hazardous areas.

**ecom**  
A PEPPERL+FUCHS BRAND



Your automation, our passion.

**f** PEPPERL+FUCHS



MEASURING & CALIBRATION

MEASURING | CALIBRATING | TESTING

SAFE - EASY TO OPERATE



Safety, quality and performance: three words that sum up the advantages of our product range. Our instruments are designed to help you carry out your work more quickly, efficiently and with greater precision.

A suitable device exists for each application. You can choose from a range of portable devices with numerous functions. These are high-precision instruments that can also record and display data.

## Guaranteed Precision :

ecom MEASURING AND CALIBRATION TECHNOLOGY

### PRECISION

This is our main priority where measuring and calibrating are concerned. We do not compromise on safety. This is also obvious with regard to safety.

### PRECISE DATA

Accurate equipment and precise data are the basis for every successful production process and the prerequisite for effective quality assurance.

Regular measurement and calibration is among the most important and most challenging tasks that companies have to perform.

### CAUTION

Working with caution is particularly important when working in hazardous areas e.g. in the chemical, petrochemical or other sectors involving potentially explosive gases and dusts. Testing with non-certified equipment would place workers at risk leading to, in the worst case scenario, insufficient explosion protection, placing the plant, machinery or people in danger.

### SAFE AND RELIABLE

ecom provides a wide range of safe and reliable mobile instruments for measuring and calibrating inside and outside hazardous areas. Ranging from the multimeter to devices for measuring temperature, pressure and rpm, plus pressure, current loop and process calibrators, ecom have got you covered.

### SAFETY





As varied as the possible applications may be, our devices all guarantee the same advantages: safe, easy to operate, powerful and ergonomically designed.




### CHOOSE YOUR MEASUREMENT DEVICE, CALIBRATOR OR TEST EQUIPMENT ACCORDING TO YOUR REQUIREMENTS

- Multimeter
- Infrared-Thermometer
- Loop Calibrator
- Magnet Probe
- Wall Clock

# 28II EX

ROBUST AND INTRINSICALLY SAFE

CERTIFICATION	
<b>ATEX</b> 	<ul style="list-style-type: none"> <li>II 2 G Ex ia IIC T4 Gb</li> <li>I M1 Ex ia I Ma</li> </ul>
<b>IECEX</b> 	<ul style="list-style-type: none"> <li>Ex ia IIC T4 Gb</li> <li>Ex ia I Ma</li> </ul>
<b>NEC/CEC</b> 	<ul style="list-style-type: none"> <li>Class I, Division 1, Groups A,B,C,D</li> <li>Class I Zone 1 AEx ia IIC T4</li> <li>Ex ia IIC T4</li> </ul>
<b>EAC</b> 	<ul style="list-style-type: none"> <li>P0 Ex ia I Ma X</li> <li>1Ex ia IIC T4 Gb X</li> <li>IP6X</li> </ul>

CERTIFICATION	
<b>PCEC</b> 	Ex ia IIC T4 Gb
<b>INMETRO</b> Segurança 	Ex ia IIC T4 Gb
<b>ANZEX</b> 	Ex ia I Ma



## WATER AND DUSTPROOF

The 28 II EX carries the most important Ex-certifications and is also tested for drops of up to 3 meters. Additionally it is waterproof and dustproof (IP67). Therefore, the 28 II EX DMM can survive the roughest treatment in the harshest environments.



## Multimeter FLUKE 28II EX FOR ZONE 1

### FEATURES & FUNCTIONS

- CAT III 1000 V/CAT IV 600 V
- Dustproof, waterproof (IP67)
- Measures up to 1000V / 10A (outside of the Ex-hazardous area)
- Min/Max/Avg and Peak capture
- Low pass filter for accurate measurements on variable speed motor drives
- Input alert
- 4½" digit display (20,000 counts) with backlight

### APPROVALS

The Fluke 28II EX combines a large number of worldwide approvals for use in potentially explosive environments – from ATEX to IECEx and NEC – meaning that it is no longer necessary to deploy and integrate different equipment on different continents.

This makes the multimeter a perfect example of portable, intrinsically safe measuring instruments – not least of all due to the numerous features unique to measuring devices in potentially explosive surroundings.



### EASY TO USE

- Backlit keypad for extra visibility in poor lit areas
- Large display digits and 2-level backlight
- Long battery life: 400 hours typical (without backlight)

### HANDLING BENEFITS

- Only one DMM is needed because of the safe and compact solution which allows safe measurement both inside and outside (max. 10A / 1000V) the Ex-hazardous area
- A separate battery compartment makes it easy to change batteries on fuses

### EXTREME RUGGEDNESS










- Completely sealed IP67 rated case
- Water and dustproof
- Meets IEC Overvoltage Electrical Safety Standard EN 61010-1:2001:CAT III 1000V and CAT IV 600V



# 28 II EX

CAN BE USED WORLDWIDE

## ACCESSORIES

ARTICLE NO.	PRODUCT DESCRIPTION	
481761	Replacement protection module 440mA f. 28 II EX	
484495 	Temperature sensor 80PK-27	
483770 	AC Clamp i400 (400A)	
482713 	Leather case with strap	
482770 	TL175 Twist Guard Test Leads	
	Various Calibration on Request	

## TECHNICAL DATA

Ambient temperature	Different temperature ranges for $T_{amb}$ are fixed by the type approved batteries.
Storage temperature	-40°C ... +60°C without batteries
Power supply	3 x AAA, type-proofed
Operating time	approx. 400 h
Dimensions	approx. 210 x 100 x 64 mm (with holster)
Weight	approx. 690 g
Protective rating	IP67

## STANDARD DELIVERY

- Fluke 28 II EX
- Ex-holster
- Alligator clips
- Test leads TL175
- Batteries
- Documentation
- CD-ROM

## SPECIFICATION

DC voltage	Range: Accuracy:	0.1 mV to 1000 V ± 0.05 % + 1
AC voltage	Range: Accuracy:	0.1 mV to 1000 V ± 0.7 % + 4
DC current	Range: Accuracy:	0.1 µA to 10 A ± 0.2 % + 4
AC current	Range: Accuracy:	0.1 µA to 10 A ± 1.0 % + 2
Resistance	Range: Accuracy:	0.1 Ω to 50 MΩ ± (0.2 % + 1)
Conductance	Range: Accuracy:	60.00 nS ± (1.0 % + 10)
Diode test	Range: Accuracy:	2.0 V ± (2.0 % + 1)
Duty cycle	Range: Accuracy:	0.0 % to 99.9 % Within ± (0.2 % per kHz + 0.1 %) for rise times < 1 µs
Display counts		6000 counts / 19.999 counts in high-resolution mode
Capacitance	Range: Accuracy:	10 nF to 9999 µF ± (1.0 % + 2)
Frequency	Range: Accuracy:	0.5 Hz to 199.99 kHz ± (0.005 % + 1)
Temperature	Range: Accuracy:	-200 °C to +1090 °C [-328 °F to +1994 °F] ± (1.0 % + 10) °C [± (1.0 % + 10) °F]

Error: % of reading + number of digits

## REMARKS

Measurement inside the Ex-hazardous area:




$U_i \leq 65V, I_i \leq 5A$




Measurement outside the Ex-hazardous area:

$U_i \leq 1000V, I_i \leq 10A$

# 568 EX

FOR HARSH ENVIRONMENTS

CERTIFICATION	
<b>ATEX</b> 	II 2 G Ex ia IIC T4 Gb
<b>IECEX</b> 	Ex ia IIC T4 Gb
<b>NEC</b> 	Class I, Division 1, Groups A-D, T4 Class I, Division 2, Groups A-D, T4 Class I, Zone 1, AEx ia IIC T4 Gb Class I, Zone 1, Ex ia IIC T4 Gb

CERTIFICATION	
<b>PCEC</b> 	Ex ia IIC T4 Gb
<b>INMETRO</b> Segurança 	Ex ia IIC T4 Gb
<b>TR CU</b> 	1Ex ia (op is Ga) IIC T4 Gb X



## QUICK AND EASY

This intrinsically safe Fluke 568 EX infrared thermometer is the ideal companion for taking complex measurements in hazardous areas easily and efficiently. Due to the ergonomic and rugged design, even in harsh environments the 568 EX is the ideal device. The thermometer can be used to capture and recall up to 99 values at one time. The adjustable emissivity feature allows you to take readings from a range of different materials during your round thanks to the integrated material table.

## Infrared-Thermometer FLUKE 568 EX FOR ZONE 1

TECHNICAL DATA	
Ambient temperature	0 °C ... +50 °C (+32°F ... +122°F)
Infrared temperature range	-40 °C...+800 °C (-104 °F...+1472 °F)
Display resolution	0.1 °C / 0.1 °F
Infrared response time	<500 ms
Distance to measurement spot size (D:S)	50:1
Storage	Up to 99 points with time and date
Accuracy	>0 °C +/-1 °C or 1 %, whichever is greater
Emissivity adjustment	Digitally from 0.1 to 1.00 by 0.01
Min/Max/Avg/Dif	Yes
Laser sighting	Single-point laser
Power supply	2x AAA, type approved
Battery life	4 h (continuous operation)
Dimensions	175 x 166 x 55 mm
Weight	Approx. 365 g (12.87 oz)

## FEATURES & FUNCTIONS

- Precise measurements with accuracy
- Easily measure hard-to-reach objects
- Measurements from Zone 1 into Zone 0
- Measurements of moving materials
- Easy emissivity adjustment
- Data logging up to 99 points
- 6 languages available

## STANDARD DELIVERY

- Fluke 568 EX
- Batteries
- Leather case
- Carrying case
- Documentation
- K-type thermocouple

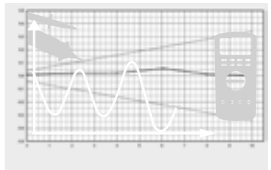


## APPROVALS

The Fluke 568 EX combines a large number of worldwide approvals for use in potentially explosive environments – from ATEX to IECEx and NEC – meaning that it is no longer necessary to deploy and integrate different equipment on different continents.

This makes the thermometer a perfect example of portable, intrinsically safe measuring instruments – not least of all due to the numerous features unique to measurement devices in potentially explosive areas.



## ACCESSORIES

ARTICLE NO.	PRODUCT DESCRIPTION
	WKS-Calibration 
	DAkS-Calibration
483690 	Leather grip LH568 

# EX-MP4 a

## FOR QUICK TEMPERATURE MEASUREMENTS

The intrinsically-safe non-contact temperature measuring equipment Ex-MP4 a is a robust yet exceedingly handy and easy to use instrument for temperature measuring in ex-hazardous areas.

### FEATURES

- Measuring range: up to +400 °C
- High accuracy
- Measurements from Zone 1 into Zone 0
- Simple operation
- Quick response time
- Laser target sighting

### SCOPE OF DELIVERY

- Ex-MP4 a
- Battery
- Leather handle
- Wrist strap
- Documentation

### EX DATA



Ⓜ II 2 G Ex ia op is IIC T4



### ACCESSORIES

ARTICLE NO.	PRODUCT DESCRIPTION
482959	Leather handle
312962	WKS-Calibration

## Non-Contact Temperature Meter Ex-MP4 a FOR ZONE 1

### The benefits of non-contact-measurement

#### Moving objects

- increased safety when determining the temperature of fast moving objects
- no antennas mean that frictional heat cannot affect the measurement
- no mark or blemish is left on the object being measured

#### Response time

- fast and accurate. Pyrometers respond to emitted energy and are around 20 to 1000 times quicker than traditional direct contact thermometers.

#### Low maintenance and non invasive

- the temperature of the object being measured is not affected by the procedure

- non contact of the detector means no wear and tear.
- no fixing or fastening points required on either the object or equipment.

#### Hard to reach objects and moving materials

- the optics of the pyrometer are aimed at the object to be measured and with the laser sighting it is possible for both small and distant objects to be targeted
- hazardous and aggressive materials can be safely measured - and without fear of damaging the equipment
- the compact size of the pyrometer allows it to be used in even the most awkward positions, with only a clear line of sight to the target area being required
- voltage carrying objects can be measured without any danger
- with direct contact measurement, poor heat conduction or heat capacity of the object can prevent insufficient heat flow to a measuring device

### TECHNICAL DATA

Operating temperature	0 °C ...+50 °C
Storage temperature (without battery)	-20 °C ...+65 °C
Temperature range	-18 °C ...+400 °C
Display resolution	0.2 °C
Target sighting	Laser (class 2)
Accuracy (at 23°C)	-18 °C ... -1 °C ± 3 °C -1 °C ... +400 °C ± 2 % (of reading) or ±2 °C, - whichever is greater
Repeatability	± 2 % of reading or ± 2 °C - whichever is greater
Response time	500 msec
Emissivity	0.95 preset
Optics D/L	= 1/8
Spectral response	7-18 µm
Relative humidity	10 to 95% r. H. at 30 °C (non-condensing)
Power supply	1x IEC 6LR61, type approved
Dimensions	~ 152 x 101 x 38 mm
Weight	~ 200 g

# 707Ex

## FOR TESTING CURRENT LOOPS

### CERTIFICATION



II 2 G Ex ia IIC T4



N.I. Class 1 Div. 2 Groups A-D

### PRACTICAL

The fast, one-handed tool for loop checks in Ex zones. The 707Ex is a loop calibrator for use in ex-hazardous areas classified as Zone 1.

### TECHNICAL DATA

Ambient temperature	-10 °C to +50 °C
Storage temperature	-30 °C to +60 °C
Maximum voltage	28 Volt
Relative humidity	95 % (0 °C to +30 °C); 75 % (+30 °C to +40 °C); 45 % (-40 °C to +50 °C)
Power supply	1x 6LR61, type approved
Operating time	18 hours typical, at 12 mA
Dimensions (HxWxD)	164 x 75 x 47 mm (with holster)
Weight	350 g (with holster)

ZONE 1 / CLASS I DIV. 2



## Loop Calibrator FLUKE 707Ex FOR ZONE 1

### FEATURES & FUNCTIONS

- Large display and simple, quick click push rotary button for easy one-handed operation.
- Simultaneous mA and % readout for quick, easy, interpretation of readings.
- mA accuracy of 0.015 %
- 1 µA resolution for mA source, simulate and measure.
- Push button with 25 % steps for fast, easy linearity checks.
- 0-100 % "span check" for fast confirmation of zero and span.
- Internal loop supply, so you can power and read a transmitter at the same time.
- Measures up to 28 V dc.
- 0-20 mA or 4-20 mA default start up modes.
- HART® compatible resistance is connected in series with the loop supply for compatibility with HART® communicators.

### STANDARD DELIVERY

- 707Ex
- Ex-Holster
- Safety designed test leads
- Alligator test clips
- Battery
- CD-ROM
- Documentation

### SUMMARY SPECIFICATIONS (18 °C TO 28 °C)

Function	Range	Resolution	Accuracy
Measure voltage	0 to 28 V	0.001 V	±(0.015 % v. MW. +2 Digits)
Measure mA	0 to 24 mA	0.001 mA	±(0.015 % v. MW. +2 Digits)
Source mA <sup>1</sup>	0 to 24 mA	0.001 mA	±(0.015 % v. MW. +2 Digits)
Simulate mA <sup>2</sup>	0 to 24 mA	0.001 mA	±(0.015 % v. MW. +2 Digits)
Loop supply	24 V	n. z.	24 V ± 1 V DC

Temperature Coefficient, -10 to +18 °C, +28 to +55 °C: ± 0.005 % of range per °C;

<sup>1</sup> Max load, 700 Ohms at 20 mA

<sup>2</sup> Max applied voltage for simulation, 28 V



# Magnet-Ex12

HIGHLY  
SENSITIVE TIP FOR TESTING

## CERTIFICATION



Ⓜ II 2 G Ex ia IIC T4



Class I, Division 1, Groups A,B,C,D T6  
Class I, Zone 0, AEx ia IIC T6

## STANDARD DELIVERY

- Magnet-Ex 12
- Batteries
- Documentation

## FEATURES & FUNCTIONS

- Highly sensitive probe point
- No contact with test object required
- Resistant to dirt
- Optical indication
- Built-in test magnet for testing Magnet-Ex 12 and for battery check

## Magnet Probe Magnet-Ex12 FOR ZONE 1

### DETECTING MAGNETIC FIELDS

Magnet-Ex 12 is a pencil sized magnet probe, designed to detect magnetic fields in hazardous areas. Within seconds it is possible to detect whether or not a solenoid valve is electrically activated.

Connection to electronic circuitry or opening of terminal boxes is rendered unnecessary.

The highly sensitive probe point of the Magnet-Ex 12 only needs to be brought near the coil of a solenoid valve, if a magnetic field is detected, the test tip illuminates red. In the same manner tests can be carried out on flowmeters or any other equipment that is working magnetically, even when located in hazardous areas.

The Magnet-Ex 12 comes with an integral test magnet that is securely fitted in such a way that it cannot be easily lost. Using this magnet, tests can be carried out to establish the working state of both unit and batteries.

After any check the Magnet-Ex 12 will automatically switch off if it is no longer being used. This ensures a long battery life.

The clip attached to the instrument's side secures it from accidental loss and allows the maintenance engineer to easily carry it at all times.



### TECHNICAL DATA

Ambient temperature	-20 °C ... +50 °C
Storage temperature	-40 °C ... +60 °C
Magnetic field types	alternating, direct and permanent fields
Detection	non-contact detection
Indication	optical, built-in LED
Power supply	2 x LR03 (AAA) according to IEC, type approved
Casing material	metal (probe point: plastic)
Dimensions	150 x 18 mm (L x Ø)
Weight	approx. 60 g (batteries included)
IP protection class	IP 54



# Ex-Time 40

EASY  
SETTING AND ADJUSTMENT

## CERTIFICATION



II 2 G Ex ia IIC T4



I.S. Class I Division 1 Groups A-D T4

## FEATURES & FUNCTIONS

- Quartz movement
- Robust metal casing
- Simple daylight saving



## Wall Clock Ex-Time 40 FOR ZONE 1

### WITH QUARTZ MOVEMENT

The intrinsically safe wall clock, Ex-Time 40, is driven by a Quartz accurate movement, powered by a LR 14 (C) type battery.

When necessary, e. g. for summer to winter time, adjustments can be quickly and simply made.

### STANDARD DELIVERY

- Ex-Time 40
- Battery
- Documentation

TECHNICAL DATA	
Ambient temperature	0 °C ... +50 °C
Storage temperature	0 °C ... +50 °C
Clock Movement	Quartz
Accuracy	-5/+15 Seconds/month
Power Supply	1 x LR 14 according to IEC (type approved)
Operating time	1 year
Dimensions	400 x 60 mm
Weight	approx. 2.0 kg

# Your automation, our passion.

## Explosion Protection

- Intrinsic Safety Barriers
- Signal Conditioners
- FieldConnex® Fieldbus
- Remote I/O Systems
- Electrical Ex Equipment
- Purge and Pressurization
- Industrial HMI
- Mobile Computing and Communications
- HART Interface Solutions
- Surge Protection
- Wireless Solutions
- Level Measurement

## Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Fieldbus Modules
- AS-Interface
- Identification Systems
- Displays and Signal Processing
- Connectivity