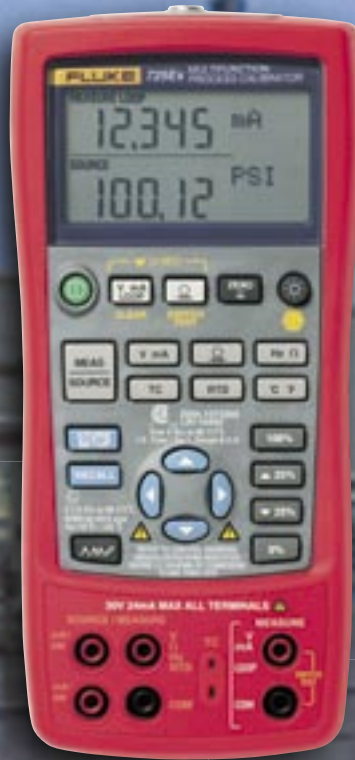# FLUKE ®

Fluke ATEX-certified test tools for use in hazardous environments

Intrinsically safe Multimeter and Process Calibrators

ATEX Compliant

Fluke intrinsically safe tools for tough measurement and calibration tasks

Intrinsic safety is a protection standard employed in potentially explosive atmospheres. Devices that are certified as "intrinsically safe" are designed to be unable to release sufficient energy, by either thermal or electrical means, to cause ignition of flammable material (gas, dust/particulates).

What is "Intrinsically Safe"?

Intrinsically safe standards apply to all equipment that can create one or more of a range of defined potential explosion sources:
- Electrical sparks
- Electrical arcs
- Flames
- Hot surfaces
- Static electricity
- Electromagnetic radiation
- Chemical reactions
- Mechanical impact
- Mechanical friction
- Compression ignition
- Acoustic energy
- Ionizing radiation

What is ATEX?

The primary intrinsically safe standard has been set in the European Union with the 9/94/EC Directive, commonly called ATEX ("Atmosphères Explosibles," French for explosive atmospheres). The stated goal of the guidelines is to "help ensure the free movement of products in the European Union" by "minimizing the number of safeguard clause applications, at least those originating from divergent interpretations The ATEX rules have been in place as a voluntary standard since 1 March 1996. The rules are mandatory on electrical and electronic equipment for use in environments subject to explosion hazard sold in the EU starting 1 July 2003. From this date onwards, all products sold for use in explosive atmospheres must have ATEX certification and carry the distinctive symbol: ⟨Ex⟩

The Fluke Ex (IS) product line

Fluke is among the first manufacturers to produce handheld test tools according to the latest ATEX standards. The Fluke line of intrinsically safe tools is designed to meet the needs of technicians working in and around hazardous areas:
- Install, maintain and troubleshoot equipment by using the new Fluke 87V Ex Digital Multimeter
- Maintain and calibrate sensors, transmitters and control loops with the line of Ex field calibrators

The tools are ideal for environments in petro-chemical plants, oil platforms, refineries and other locations subject to risk of explosion.

Apart from having the ATEX markings, the visual difference between a standard Fluke tool and the corresponding Ex version is the different grey body colour and a red, conductive holster designed specifically to eliminate the potential for electrical discharge.
Inside, the Fluke Ex tools have been reengineered to reduce energy avoiding generation of heat and electrical sparks. They are premium products designed for ultimate safety.

Making sense of ATEX certification

Fluke 707Ex is ATEX-compliant and is certified II 2 G EEx ia IIC T4— but what exactly does that mean? Here a brief explanation of the ATEX certification designations.

ATEX certification 707Ex	
⟨Ex⟩	The ATEX examination mark. This sign is required on all devices used in European hazardous areas.
II 2 G	The classification of zones. "II" designates the tool is approved for all non-mining areas. "2" represents the category of the device, in this case the device is rated for the second most hazardous areas. "G" designates atmosphere, in this case gas, vapors and mist.
EEx	Explosion protection based on European Ex-regaulations.
ia	The type of protection from explosion, in this case the energy in a device or connector has been reduced to a safe value. "ia" is the highest level of IS protection.
IIC	Gas Group. "IIC" indicates compatibility with the most dangerous gas group.
T4	Temperature class gives the user the maximum temperature of a surface that may be in contact to the Ex atmosphere under fault conditions. T4 is rated at 135°C.

Fluke 87V Ex
Intrinsically safe version of the world's most popular multimeter

With its high performance, accuracy and motor drive compatibility, the Fluke 87V is the most popular industrial multimeter around. Now Fluke has introduced a new intrinsically safe version – the 87V Ex – for measurements in and around hazardous areas.

The new Fluke 87V Ex has all the measurement and troubleshooting functions of the proven Fluke 87V. Unlike other ATEX-certified tools, it can be used both inside and outside the hazardous zone (ATEX Zones 1 & 2) without compromising performance or compliance. So there's no need to carry different tools for use in specific zones. It also has a built-in thermometer with TC probe, further reducing technicians' tool counts.

- ATEX safety rating ⟨Ex⟩ II 2 G Eex ia IIC T4
- All the measurement and troubleshooting functions of the proven Fluke 87V
- Use both inside and outside the hazardous zone (ATEX Zones 1 & 2) without compromising performance or compliance
- EN61010-1 CAT III 1000V/CAT IV 600V electrical safety rating
- Large display with bright, 2-level backlight for easy reading
- Measure up to 1000V, 10A and 200 kHz plus duty cycle, resistance, continuity, diode and capacitance to 10,000 µF
- True rms voltage and current for accurate measurements of non-linear signals
- Min/Max, Average, Peak capture and Relative modes
- Built-in thermometer with TC probe: reduces your tool count
- $4\frac{1}{2}$-digit mode for precise measurements (20,000 counts)
- Filter for accurate voltage and frequency measurements on motor drives
- Easy to use with direct, quick access to all functions without the need to go through deep menus.

Fluke 725Ex
Intrinsically safe Multifunction Process Calibrator

The new Fluke 725Ex intrinsically safe Multifunction Process Calibrator is powerful yet easy-to-use. Combined with the new Fluke 700PEx Pressure Modules, the 725Ex is able to calibrate almost any process instrument likely to need service in any area where explosive gases may be present. The Fluke 725Ex is a powerful new intrinsically safe multifunction calibration solution that offers:

- ATEX safety rating ⟨Ex⟩ II IG EEx ia IIB 171°C
- Measure, source or simulate volts DC, mA, RTDs, thermocouples, frequency and ohms
- 2-channel simultaneous source and measure capability for calibration of transmitters
- Internal loop supply to power transmitters
- Store frequently-used test setups for later re-use
- Pressure measurement to 200 bar and pressure switch test using any of the 8 Fluke 700PEx Pressure Modules
- Pressure switch test function to capture set, reset and deadband values
- Compact size and light weight
- Simple pushbutton user interface
- Rugged and reliable for use in tough field and on site conditions

Fluke 707Ex
Fast, one-handed tool for loop checks

The Fluke 707Ex is the ideal, stand alone tool for calibration and maintenance of 4 to 20 mA control loops. It provides 24V loop power while measuring mA, and lets you measure and source/simulate mA with 1 µA resolution.

- ATEX safety rating ⟨Ex⟩ II 2G EEx ia IIC T4
- 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%, superior to other loop calibrators
- Pushbutton with 25% steps for fast, easy linearity checks
- 0 and 100% 'span check' for fast confirmation of zero and span
- 1 µA resolution for mA source/simulate and measure
- Selectable slow ramp, fast ramp and step ramp provides smooth outputs for valve slewing and loop functional tests
- Internal loop supply so you can power and read a transmitter at the same time without carrying a DMM
- Measures V dc to 28V
- Single, easily changed 9V battery
- 0-20 mA or 4-20 mA default start-up modes
- Innovative output adjustment dial with 1 µA and 100 µA resolution
- HART® compatible resistance connected in series with the loop supply for operation with HART communicators

Fluke 718Ex
Self-contained Pressure Calibrator

The Fluke 718Ex offers a convenient, self contained solution for pressure measurements and calibration. With its internal pressure sensor and pump, it's ready for immediate, stand alone use. The pressure range can easily be extended to up to 200 bar with any of the 8 Fluke 700PEx Pressure Modules.

• ATEX safety rating ⟨Ex⟩ II IG EEx ia IIC T4
• Built-in pressure/vacuum hand pump, with vernier and bleed valve
• Pressure measurement to 200 bar using any of the 8 intrinsically safe Fluke 700PEx Pressure Modules
• Pressure measurement to 0.05% of full span using an internal pressure sensor
• Pressure switch test function
• Compact size and light weight
• Wide range of selectable pressure measurement units
• Current measurement with 0.02% accuracy and 0.001 mA resolution
• Min/Max hold functions
• Simple pushbutton user interface
• Rugged and reliable for use in tough field and on site conditions

Fluke 700Ex
Pressure Modules

These intrinsically safe pressure modules for use with the Fluke 725Ex Multifunctional Process Calibrator and Fluke 718Ex Pressure Calibrator cover the most commonly used pressure calibration ranges from 0–25 mbar and 0–200 bar. There's a choice of 8 gage, differential and absolute modules.

• ATEX safety rating ⟨Ex⟩ II 1G EEx ia IIC T4
• Very high accuracy up to 0.025%
• Gage modules have 1 pressure fitting and measure process pressure relative to atmospheric
• Differential modules have 2 pressure fittings and measure the difference between the applied pressures
• Convenient setup with 1 m cable between the pressure module and calibrator
• Rugged cases protect the modules in tough working environments

For more information about the Fluke 87V Ex DMM and the Fluke Ex certified process calibrators, contact your authorized Fluke distributor.

FLUKE ®

Fluke. *Keeping your world up and running.*

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