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**FLUKE®**

# Fluke 28II Ex

## Intrinsically Safe True-rms Digital Multimeter

### Technical Data

**Intrinsically Safe. Intrinsically Fluke.**

**The 28II Ex: the most rugged intrinsically safe digital multimeter in the world.**

Now there's one intrinsically safe digital multimeter you can use in Class 1, Div. 1 - Zone 1 and 2 (gas) Class 2, Div. 1 or Class III - Zone 21 (dust) areas. Whether you work in petroleum, chemical, or pharmaceutical environments, all the test and troubleshooting power you need is packed into the most rugged intrinsically safe (IS) DMM Fluke has ever built. The Fluke 28II Ex is also water-proof, dust-proof and drop-proof. You'll be equipped to handle any situation, inside and outside of hazardous zones, without compromising compliance or measurement performance.

#### **Intrinsically safe**

The new 28II Ex certification allows you to carry the most trusted name in DMM's into most Ex rated areas.

#### **Intrinsically rugged**

Tested for drops of up to 3 meters (10 feet), waterproof and dustproof (IEC60529, IP67), this completely sealed and extremely rugged DMM survives the roughest treatment in the harshest environments.

#### **Intrinsically reliable**

Like all Fluke DMMs, the 28II Ex delivers the accuracy and measurement performance you depend upon to succeed in your work, day after day.



## The 28II Ex: the most rugged and reliable intrinsically safe DMM in the world.

### Intrinsic safety and regulatory approvals

The 28II Ex carries Ex certifications from the world's leading certification bodies.

#### 28II Ex I.S. Certifications

##### USA

- Class I Zone 1 AEx ia IIC T4
- Class II Zone 21 AEx iaD T130°C

##### USA and Canada

- Class I, Division 1, Groups ABCD
- Class I, Division 2, Groups ABCD
- Class II, Division 1, Groups EFG
- Class III
- Ex ia IIC

#### 28II safety and regulatory compliance

- ISA-82.02.01
- CAN/CSA-C22.2 No. 61010-1-04 /UL61010-1:2004, and TUV 61010-1:2001
- CE

#### Classified to the following standards:

- Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division I, Hazardous (Classified) Locations (UL 913, Seventh Edition, Revised 2011/09/23)
- Standard for Explosive Atmospheres - Part 0 - General Requirements (UL 60079-0, Fifth Edition, Issued 2009/10/21)
- UL Standard for Safety Electrical Apparatus for Explosive Gas Atmospheres Part 11: Intrinsic Safety, 'i' (UL 60079-11, Third Edition, Revised 2011/05/05)
- Electrical Apparatus for Use in Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations - General Requirements (ISA 61241-0, Issued: 2006/07/13 (R2006))
- Electrical Apparatus For Use In Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations - Protection By Intrinsic Safety, 'id' (ISA 61241-11, Issued: 2007/01/29 (R2011))
- Non-Incendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions

- 1 and 2 Hazardous (Classified) Locations (ISA 12.12.01, Issue:2011/01/01)
- Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations; Consumer and Commercial Products; General Instruction No 1 (CSA C22.2 No. 157, Issue: 1992/01/01 (R2012))
- Electrical Apparatus for Explosive Gas Atmospheres Part 0: General Requirements (CSA C22.2 No. 60079-0, Issued: 2007/03/01)
- Electrical Apparatus for Explosive Gas Atmospheres Part 11: Intrinsic Safety "i" (CSA E60079-11, Issued: 2002/03/01 (R2011))
- Enclosures for Use in Class II Groups E, F, and G Hazardous Locations General Instruction No 1 (CSA C22.2 No. 25, 1966/09/01 (R2004))
- Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations; General Instruction No 1 (CSA C22.2 No. 213, Issue: 1987/03/01 (R2004))

### Extreme ruggedness

The Fluke 28II Ex is the most rugged IS DMM you can buy.

- A completely sealed, IP67 rated case
- Withstands drops up to 3 meters or 10 feet (with holster)
- Waterproof per IEC60529 IP6x
- Dustproof per IEC60529 IPx7
- Meets IEC Overvoltage Electrical Safety Standard No. 61010-1:2001
  - Measurement Category III, 1000 V, Pollution Degree 2
  - Measurement Category IV, 600 V, Pollution Degree 2
- Reversible holster for added protection of the display when not in use

### All the measurement functions of Fluke's most popular industrial DMMs.

One tool equips you with all the testing and troubleshooting power you need wherever you go—inside or outside the IS zones listed above. No need to carry different meters for different areas, or worry about crossing through an Ex-required zone with a non-Ex rated instrument.

- 4-1/2 digit mode for precise measurements (20,000 counts)
- True-rms ac voltage and current for accurate measurement on nonlinear signals
- Measures up to 1000V and 10A ac and dc (note that Ex zones require reduced measurements)
- Low pass filter ensures accurate voltage and frequency measurements on variable speed motor drives (VSDs)
- Frequency to 200 kHz and % duty cycle to help you diagnose VSDs and switching power supplies
- Resistance, continuity and diode test
- 10,000 µF capacitance range for components and motor caps
- Conductance measurements for high resistance or leakage tests
- Min/Max/Avg and Peak capture to record transients and variations automatically
- Relative mode to remove test lead interference on resistance measurements
- Auto and manual ranging for maximum flexibility
- Input Alert protects you by chirping and flashing “Lead” when leads are plugged into the wrong inputs

**Easy to use**

Important extras keep you productive in sub-optimal conditions.

- Backlit keypad buttons provide extra visibility in poorly lit areas, even when you’re wearing full PPE
- Large display digits and 2-level bright white backlight also increases visibility
- Long battery life—400 hours typical without backlight (Alkaline)
- Optional magnetic hanger for easy setup and viewing while freeing your hands for other tasks

**Easy to service in the field**

Access to the separate battery compartment makes it easy to change batteries or fuses without jeopardizing instrument calibration.

**Basic accuracy specifications**

Accuracy specifications are shown as ± (% of reading + number of digits)

<b>DC voltage</b>	Range: 0.1 mV to 1000 V Accuracy: ± 0.05 % + 1
<b>AC voltage</b>	Range: 0.1 mV to 1000 V Accuracy: ± 0.7 % + 4
<b>DC current</b>	Range: 0.1 µA to 10 A Accuracy: ± 0.2 % + 4
<b>AC current</b>	Range: 0.1 µA to 10 A Accuracy: ± 1.0 % + 2
<b>Resistance</b>	Range: 0.1 Ω to 50 MΩ Accuracy: ± (0.2 % + 1)
<b>Conductance</b>	Range: 60.00 nS Accuracy: ± (1.0 % + 10)
<b>Diode Test</b>	Range: 2.0 V Accuracy: ± (2.0 % + 1)
<b>Duty Cycle</b>	Range: 0.0 % to 99.9 % Accuracy: Within ± (0.2 % per kHz + 0.1 %) for rise times < 1 µs
<b>Display counts</b>	6000 counts/19,999 counts in high-resolution mode
<b>Capacitance</b>	Range: 10 nF to 9999 µF Accuracy: ± (1.0 % + 2)
<b>Frequency</b>	Range: 0.5 Hz to 199.99 kHz Accuracy: ± (0.005 % + 1)
<b>Temperature</b>	Range: -200 °C to +1090 °C (-328 °F to +1994 °F) Accuracy: ± (1.0 % + 10) °C [± (1.0 % + 10) °F]

**General specifications**

<b>Power</b>	Three AAA batteries Battery life: 400 hours
<b>Display</b>	LCD, with backlight
<b>Data storage</b>	Peak transient capture 250 µS Min/Max/Avg, Reading hold
<b>External protection</b>	Rubber holster
<b>Warranty</b>	Three years
<b>Size (HxWxL) with holster</b>	6.35 cm x 10.0 cm x 19.81 cm (2.5 in x 3.93 in x 7.8 in)
<b>Weight with holster</b>	698.5 g (1.54 lb)

**Safety specifications**

Safety certifications	ATEX 	II 2 G Ex ia IIC T4 Gb II 2 D Ex ia IIIC T130 °C Db I M1 Ex ia I Ma
	NEC-500, NEC-505 	USA Class I Zone 1 AEx ia IIC T4 Class II Zone 21 AEx iaD T130°C  USA and Canada Class I, Division 1, Groups ABCD Class I, Division 2, Groups ABCD Class II, Division 1, Groups EFG Class III Ex ia IIC  Temperature Class T4
	IEC Ex 	Ex ia IIC T4 Gb Ex ia IIIC T130 °C Db Ex ia I Ma
	GOST 	R Ex (pending) Ex ia IIC T4 Gb X Ex ia IIIC T130°C Db X (IP6X) Ex ia I Ma X
	ANZEx <b>ANZEx</b>	Ex ia I Ma (pending)
	PCEC 	中国石油和化学工业防爆信息网 (pending) China's Explosion-Proof Information Net for Petrol and Chemical Industry Ex ia IIC T4 Gb Ex ia IIIC T130°C DB
		IEx (pending) Ex ia IIC T4 Gb
Overvoltage protection	Measurement Category III, 1000V, Pollution Degree 2 Measurement Category IV, 600V, Pollution Degree 2	
IP rating	IP67	

**Ordering information**

**Fluke 28II Ex** Intrinsically Safe True-rms Multimeter



**Fluke.** *The Most Trusted Tools in the World.*

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