

# Manual Supplement

Manual Title: 28 II Ex Users  
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This supplement contains information necessary to ensure the accuracy of the above manual. This manual is distributed as an electronic manual on the following CD-ROM:

CD Title:	28 II Ex
CD Rev. & Date:	11/2011
CD PN:	3945765

## **Change #1, 60849 & 60854**

On page 1, replace the second paragraph with:

The Product is designed for operation in potentially explosive areas of Zone 1, 2, 21, 22, and M1 as specified in Directive 1999/92/EC and 94/9/EC (ATEX). There can be dangerous consequences if you do not follow these instructions.

On page 7, replace the entire page with:

**Ex-Certification Data**

- Ex-Type certificate no: PTB 11 ATEX 2028 X  
IECEX PTB 11.0080X
- Ex-Designation: ATEX: II 2G Ex ia IIC T4 Gb  
II 2D Ex ia IIIC T130 °C Db  
I M1 Ex ia I Ma  
IECEX: Ex ia IIC T4 Gb  
Ex ia IIIC T130 °C Db  
Ex ia I Ma
- CE: CE0102
- Operating Temperature: -15 °C to 50 °C
- Storage Temperature: -40 °C to +60 °C
- Batteries: 3 AAA Alkaline batteries, NEDA 24A IEC LR03. Table 7 shows the approved batteries for this Product.

For connections to intrinsically-safe circuits, observe these Product connections:

Voltage – measurement input  $U_i = 65 \text{ V}$ :

$U_0 = 9.54 \text{ V}$   
 $C_i = \text{negligible}$   
 $I_0 = 3.7 \text{ mA}$      $I_i = \text{negligible}$   
 $L_i = \text{negligible}$

$P_0 = \text{negligible}$      $R_i = 2.47\text{K}$

Lo/Co						
Lo/mH	1000	100	2	0.5	0.1	0.01
Co/ $\mu\text{F}$	0	0.61	1	1.4	2.1	3.6

Current – measurement input  $I_i = 5 \text{ A}$ :

$U_0 = 0 \text{ V}$              $U_i = 65 \text{ V}$   
 $C_0 = 1000 \mu\text{F}$      $C_i = \text{negligible}$   
 $I_0 = 0 \text{ mA}$   
 $L_0 = 1000 \text{ mH}$      $L_i = \text{negligible}$   
 $P_0 = 0 \text{ mW}$

mA/ $\mu\text{A}$  Jack

$U_0 = 1.95 \text{ V}$              $U_i = 65 \text{ V}$   
 $C_i = \text{negligible}$   
 $I_0 = 9.7 \mu\text{A}$              $I_i = \text{Internally limited by a } 440 \text{ mA fuse}$   
 $L_i = \text{negligible}$   
 $P_0 = \text{negligible}$


<b>Lo/Co</b>						
Lo/mH	1000	100	5	1	0.5	0.005
Co/ $\mu$ F	0	14	19	25	30	1000

For measurements on protected electric circuits:

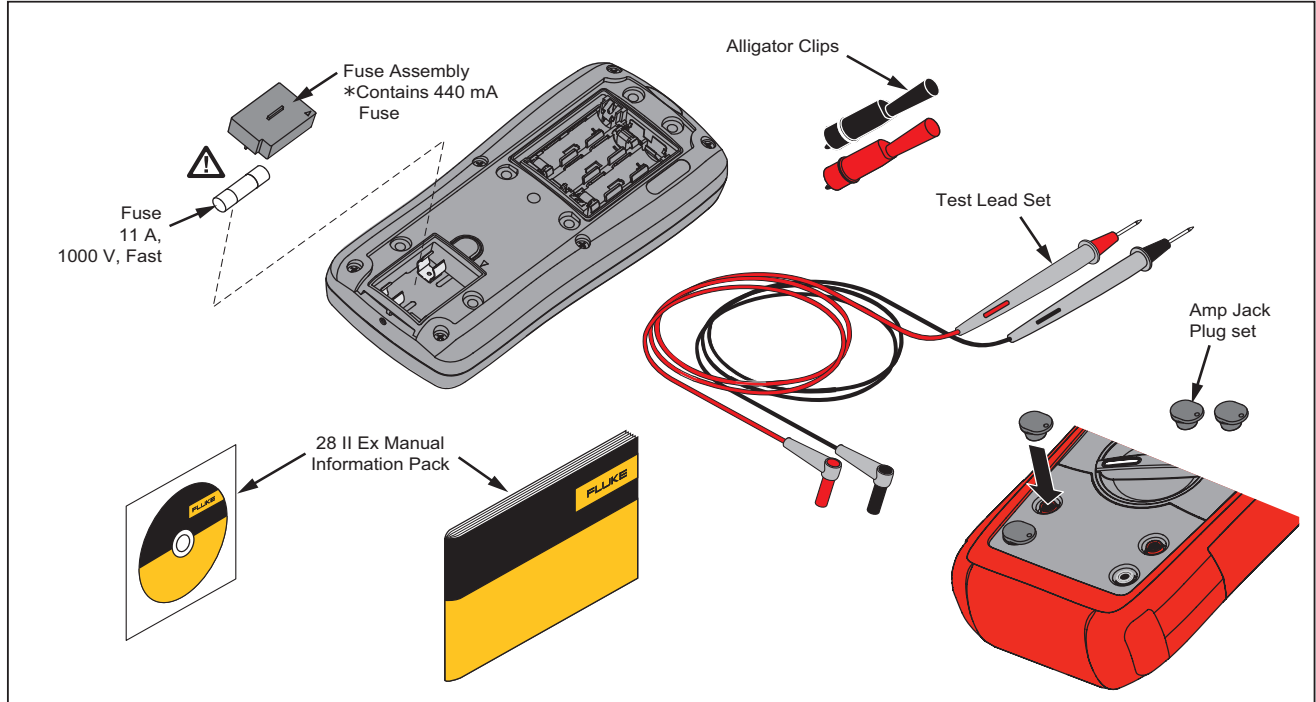
- Approved for Zones 2 and 1, device group II, explosion group IIC (explosive gases, vapors and mist), temperature class T4.
- Approved for Zones 21 and 22, device group II, explosion group IIIC, conducting and non-conducting dust, fibers, and flyings.
- Approved for use in mines. Device group I, explosion group I, methane, and coal dust.

On page 43, replace Table 10 with:

**Table 10. Replacement Parts**

Description	Qty.	Fluke Part or Model Number
Fuse, 11 A, 1000 V, FAST	1	803293
28 II Ex Fuse Assembly	1	4016494
Alligator Clip, Black	1	AC172 or AC175
Alligator Clip, Red	1	
Test Lead Set	1	TL175
28 II Ex Manual Information Pack (Includes Users Manual, CD & Getting Started Manual)	1	4013990
Fluke Input Cap, Amp Jack Plugs for DMM's (10 packs)	1	4145825
<p> To ensure safety, use exact replacement only.</p>		

On page 44, replace Figure 12 with:



grt11.eps

Figure 12. Replacement Parts

On page 45, Replace Table 11 with:

**Table 11. Accessories**

Item	Description
AC172 or AC175	Alligator Clips
TL175	Silicone test lead set with probes
Amp Jack Plug Set	2 Pack for DMM's
I400	⚠ AC Current Clamp <sup>[1]</sup>
80PK-27	⚠ Temperature Probe <sup>[2]</sup>
<p>All accessories in this table are approved for use in explosive hazardous environments. Fluke accessories are available from an authorized Fluke distributor.</p> <p>[1] ⚠ <b>Warning</b> - To prevent personal injury or property damage, do not use this accessory in hazardous areas where dust is moved, transported, or conveyed.</p> <p>[2] ⚠ <b>Warning</b> - To prevent personal injury or property damage, do not use this accessory in dust hazardous areas.</p>	

On page 46, under **Temperature** replace Storage with:

Storage      -40 °C to +85 °C (without battery)  
                  -40 °C to +60 °C (with battery)

## Change #2, 62942

On page 53, replace **Duty Cycle (Vdc and mVdc)** with:

### **Duty Cycle (Vdc and mVdc)**

Range	Accuracy
0.0 % to 99.9 % <sup>[1]</sup>	Within ± (0.2 % per kHz + 0.1 %) for rise times <1 μs. <sup>[2]</sup>
[1] 0.5 Hz to 200 kHz, pulse width >2 μs. Pulse width range is determined by the frequency by the frequency of the signal.	
[2] For 6 V dc range accuracy is unspecified.	

On page 54, under **MIN MAX Recording** change:

From:

250 μs (peak) <sup>[1]</sup>	Specified accuracy ±100 counts for changes >250 μs in duration (add ±100 counts for readings over 6000 counts) (add ±100 counts for readings in Low Pass mode)
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To:



250 μs (peak) <sup>[1]</sup>	Specified accuracy ±200 counts for changes >250 μs in duration (add ±100 counts for readings over 6000 counts) (add ±100 counts for readings in Low Pass mode)
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### Change #3, 65782

On page 2, under **Safety Information** remove The Product complies with: and all the bullets.

On page 8, in the **Symbols** table, remove CAT III, CAT IV and CSA C1 and add:

	Conforms to relevant North American Safety Standards
	Conforms to relevant South Korean EMC Standards
CAT II	Measurement Category II is applicable to test and measuring circuits connected directly to utilization points (socket outlets and similar points) of the low-voltage MAINS installation.
CAT III	Measurement Category III is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation.
CAT IV	Measurement Category IV is applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation.

On page 47, replace **Electromagnetic Compatibility** and **IP Rating** with the following, and remove **Shock, Safety Compliance** and **Certifications** and add:

- IP Rating** ..... IEC 60529: IP67 (Non-operating)
- Safety** ..... IEC 61010-1: 600 V CAT IV / 1000 V CAT III, Pollution Degree 2
- Electromagnetic Environment**..... IEC 61326-1: Portable
- Electromagnetic Compatibility** ..... In an RF field of 3 V/M, accuracy = specified accuracy +20 counts, except 600 µA dc range total accuracy = specified accuracy +60 counts. Temperature not specified  
 Applies to use in Korea only, Class A Equipment (Industrial Broadcasting & Communication Equipment) <sup>[1]</sup>

- [1] This product meets requirements for industrial (Class A) electromagnetic wave equipment and the seller or user should take notice of it. This equipment is intended for use in business environments and is not to be used in homes.