



(1) **EU-TYPE-EXAMINATION CERTIFICATE**  
(Translation)

(2) Equipment or Protective Systems Intended for Use in  
Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

**PTB 11 ATEX 2028 X**

**Issue: 01**

(4) Product: Intrinsically Safe True RMS Multimeter Typ Fluke 28 II EX

(5) Manufacturer: ecom instruments GmbH

(6) Address: Industriestraße 2, 97959 Assamstadt, Germany

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 17-26153.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 60079-0:2012+A11:2013, EN 60079-11:2012, EN 50303:2000**

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

 **II 2 G Ex ia IIC T4 Gb**  
 **I M1 Ex ia I Ma**

Konformitätsbewertungsstelle, Sektor Explosionsschutz  
On behalf of PTB

Braunschweig, March 10, 2017

Dr.-Ing. F. Lienesch  
Regierungsdirektor



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EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

(13)

## SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 11 ATEX 2028 X, Issue: 01**

(15) Description of Product

The FLUKE 28 II EX is a "TRUE RMS MULTIMETER" for measuring voltage, current, resistance and capacitance within (and outside) of potentially explosive atmospheres. It can be used as a category 2-equipment in gas hazardous areas of Group II and as a category 1-equipment in a firedamp environment of Group I.

The FLUKE 28 II EX is operated with the following accessories:

accessory	type
test leads	TL175
thermocouple	80BK-A
alligator clips	AC 172, AC 175
AC current clamp	i400
temperature measuring probe	80PK-27

For the relationship between the permissible ambient temperature and the used primary cells reference is made to the following table:

Ambient temperature	Primary Cell
-15 °C... +50 °C	Eveready Energizer, No. E92 Varta Max Tech, No. 4703 Rayovac, Alkaline AAA (U.S. type)
-10 °C... +50 °C	Varta Industrial Alkaline, No. 4003
-15 °C... +45 °C	Panasonic Alkaline Power LR03 Panasonic Pro Power LR03

**SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 2028 X, Issue: 01**

Electrical data

Supply

Primary cells: 3 alkaline AAA cells  
 Types:  
 1. Eveready Energizer, No. E92  
 2. Varta Max Tech, No. 4703  
 3. Varta Industrial Alkaline, No. 4003  
 4. Rayovac, Alkaline AAA (U.S. type)  
 5. Panasonic, Alkaline Power LR03  
 6. Panasonic, Pro Power LR03

Measuring circuits

In type of protection Intrinsic Safety Ex ia IIC  
 resp. Ex ia I

connections  
 V/Ohm - COM

Max. values:

$U_o = 9.54 \text{ V}$   
 $I_o = 3.7 \text{ mA}$   
 $P_o = \text{negligibly low}$   
 $R_i = 2.47 \text{ K}\Omega$   
 Linear characteristic  
 $L_i = \text{negligibly low}$   
 $C_i = \text{negligibly low}$

The max. permissible external inductance  $L_o$  and capacitance  $C_o$  are listed below. For this the simultaneous occurrence of capacitance and inductance are taken into account.

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

or

For connection to a certified intrinsically safe circuit.

$U_i \leq 65 \text{ V}$

The rules for interconnection of intrinsically safe circuits have to be taken into account.

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mA/ $\mu$ A-COM

$U_o = 1.95 \text{ V}$   
 $I_o = 9.7 \text{ }\mu\text{A}$   
 $P_o = \text{negligibly low}$   
 $L_i = \text{negligibly low}$   
 $C_i = \text{negligibly low}$

The max. permissible external inductance  $L_o$  and capacitance  $C_o$  are listed below. For this the simultaneous occurrence of capacitance and inductance are taken into account.

$L_o/\text{mH}$	1000	100	5	1	0.5	0.005
$C_o/\mu\text{F}$	0	14	19	25	30	1000

or

For connection to a certified intrinsically safe circuit.

$U_i \leq 65 \text{ V}$

The rules for interconnection of intrinsically safe circuits have to be taken into account.

A-COM

$U_o = 0 \text{ V}$   
 $I_o = 0 \text{ mA}$   
 $P_o = 0 \text{ mW}$   
 $L_i = \text{negligibly low}$   
 $C_i = \text{negligibly low}$

For connection to a certified intrinsically safe circuit.

$U_i \leq 65 \text{ V}$

$I_i \leq 5 \text{ A}$

The rules for interconnection of intrinsically safe circuits have to be taken into account.

Outside the explosion hazardous area, the intrinsically safe Fluke 28 II Ex True-RMS Multimeter may be operated with their nominal values ( $U_i \leq 1000\text{V}$  and  $I_i \leq 10\text{A}$ , see also the instructions).

The primary cells may be only changed outside the hazardous area (note the label).

Changes to the EC - Type Examination Certificate:

The changes concern the changed test specification with the application as a Category 2 equipment in the Group II hazardous area and as Category 1 equipment in the firedamp environment of Group I, the labeling, the "Special Conditions" and changes in the list of primary cells to be used in the "Electrical Data", as well as minor changes to the internal design.

(16) Test Report PTB Ex17-26153

**SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 2028 X, Issue: 01**

(17) Specific conditions of use

1. The permissible max. ambient temperature range is: -15 °C... +50 °C and depends on the used primary cells (see Safety Instructions).
2. The device may be used only with the provided (red) Ex-holster in the explosion hazardous area.
3. The device must not be opened in the hazardous area.
4. The primary cells may only be changed outside the hazardous area (note the label and safety instructions).
5. Use only the fuses which are checked for the Fluke 28 II EX (see safety instructions).
6. After each measurement of a non-intrinsically safe circuit, the Fluke 28 II EX must be off for at least 3 minutes before it is put again in a hazardous area.
7. For applications requiring Group I equipment, the permanent contact of the Fluke 28 II EX with oils, hydraulic fluids or greases is to avoid. A fixed installation of the Fluke 28 II EX is not permitted.


(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz  
On behalf of PTB:

Braunschweig, March 10, 2017

  
Dr.-Ing. F. Lienesch  
Regierungsdirektor

