



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	<b>IECEX PTB 11.0080X</b>	Page 1 of 4	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 6	Issue 5 (2022-10-30)
Date of Issue:	2023-10-05		Issue 4 (2022-01-27)
Applicant:	<b>ECOM Instruments GmbH</b> Industriestrasse 2 97959 Assamstadt Germany		Issue 3 (2021-12-13)
Equipment:	<b>Intrinsically Safe TRUE RMS MULTIMETER Fluke 28 II EX</b>		Issue 2 (2016-12-09)
Optional accessory:			Issue 1 (2012-02-27)
Type of Protection:	<b>Equipment for explosive atmospheres - General Requirements, Intrinsic Safety</b>		Issue 0 (2011-11-17)
Marking:	Ex ia IIC T4 Gb Ex ia I Ma		

Approved for issue on behalf of the IECEx  
Certification Body:

**Dr.-Ing. Martin Thedens**

Position:

**Head of Department "Explosion Protection in Sensor Technology  
and Instrumentation"**

Signature:  
(for printed version)

Date:  
(for printed version)

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Certificate issued by:

**Physikalisch-Technische Bundesanstalt (PTB)**  
Bundesallee 100  
38116 Braunschweig  
Germany





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Manufacturer: **ECOM Instruments GmbH**  
Industriestrasse 2  
97959 Assamstadt  
**Germany**

Manufacturing  
locations: **ECOM Instruments GmbH**  
Industriestrasse 2  
97959 Assamstadt  
**Germany**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[DE/PTB/ExTR11.0087/04](#)

[DE/PTB/ExTR11.0087/05](#)

Quality Assessment Report:

[DE/PTB/QAR06.0008/16](#)



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**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

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 an EPL Gb equipment in gas hazardous areas of Group II and as an EPL Ga equipment in a firedamp environment of Group I.

Further details see annex.

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

Further details see annex.



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Alternate material for the window implemented.

**Annex:**

[Annex to IECEx PTB 11.0080\\_issue 6.pdf](#)



Applicant: ECOM Instruments GmbH  
Industriestraße 2  
97959 Assamstadt, Germany

Electrical Apparatus: Intrinsically Safe True RMS Multimeter Fluke 28 II Ex

Description of equipment

The FLUKE 28 II EX is a "TRUE RMS MULTIMETER" for measuring voltage, current, resistance and capacitance inside (and outside) potentially explosive atmospheres. It can be used as Category 2 equipment in Group II gas explosive atmospheres and as Category 1 equipment in Group I explosive atmospheres.

The FLUKE 28 II EX may operate there with the accessories listed below.

Accessory	Type
Test Test Leads	TL175
Bead Temperature Probe	80BK-A
Alligator clips	AC 172, AC 175
AC current clamp	i400
Temperature Probe	80PK-27

The dependence of the maximum permissible ambient temperature on the primary cells used is shown in the following table:

Ambient temperature range	Primary Cell AAA / LR03
-15°C... +50°C	Eveready Energizer, No. E92 Energizer Industrial EN92 Panasonic Powerline LR03AD* Varta Industrial Pro No.4003 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 Panasonic Pro Power

\* Marking of the battery shows LR03 only



Electrical data  
Supply

- Primary cells AAA / LR03  
Typen:
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
  6. Panasonic Pro Power
  7. Varta Industrial Pro No.4003
  8. Panasonic Powerline LR03AD \*
  9. Energizer Industrial EN92

\* Marking of the battery shows LR03 only

Measuring circuits  
Connections

In type of protection intrinsic safety Ex ia IIC resp. Ex ia I  
Maximum values:

V/Ohm - COM

$U_o = 9.54 \text{ V}$   
 $I_o = 3.7 \text{ mA}$   
 $P_o = \text{negligibly low}$   
 $R_i = 2.47 \text{ k}\Omega$   
 Characteristic linear  
 $L_i = \text{negligibly low}$   
 $C_i = \text{negligibly low}$   
 The maximum permissible external inductances  $L_o$  and capacitances  $C_o$  are listed below. The simultaneous occurrence of capacitances and inductances has been considered.

$L_o/\text{mH}$	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 must be taken into account.



mA/ $\mu$ A-COM

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

The maximum permissible external inductances  $L_o$  and capacitances  $C_o$  are listed below. The simultaneous occurrence of capacitances and inductances was considered here.

$L_o/\text{mH}$	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 must be considered

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 must be considered

Outside the potentially explosive atmosphere, the Intrinsically Safe TRUE RMS Multimeters Type Fluke 28 II EX may be operated with their nominal data ( $U_n \leq 1000\text{V}$  and  $I_n \leq 10\text{A}$ ) (see also operating instructions).

#### Special conditions for safe use

1. The permissible max. ambient temperature range is:  $-15^\circ\text{C} \dots +50^\circ\text{C}$  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).



Attachment to Certificate  
IECEX PTB 11.0080 X issue No.: 6



6. The device must be turned off for at least 3 minutes after the measurement of a non I.S. circuit before the unit can be brought into the ex-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.
8. The product shall be protected against high static charge generating processes.