

Certificate of Conformity

Ex EQUIPMENT

Certificate No.: **ANZEx 24.3004X**

Current Issue: 0

Date of Issue: 2024-06-17

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

Equipment: **Intrinsically Safe TRUE RMS MULTIMETER Fluke 28 II EX**

Type of Explosion Protection: Intrinsic Safety

Explosion Protection Marking: Ex ia IIC T4 Gb
Ex ia I Ma

*This certificate is granted subject to the requirements as set out in
Joint Accreditation System of Australia and New Zealand Publications
ANZEx System Rules 2020 & ANZEx Certified Equipment Scheme Rules 2021*

Signed for and on behalf of issuing body



Name & Position

Ujen Singh - Quality & Certification Manager

This certificate is not transferable and remains the property of the issuing body.

The status of this certificate can be confirmed through the database located at www.anzex.com.au

Certificate issued by:

TestSafe Australia
919 Londonderry Road, Londonderry NSW 2753 Australia

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

Manufacturing Location(s): **ECOM Instruments GmbH**
Industriestrasse 2
97959 Assamstadt
Germany

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 Ed 7 Explosive atmospheres Part 0: Equipment—General requirements

IEC 60079-11:2011 Ed 6 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

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

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Schedule

Equipment Description:

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 explosive atmospheres.

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

Accessory	Type
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.

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Electrical Data
Power Supply

Primary cells AAA / LR03

Type:

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
V/Ohm – COM

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

Maximum values:

$U_o = 9.54 \text{ V}$

$I_o = 3.7 \text{ mA}$

$P_o =$ negligibly low

$R_i = 2.47 \text{ k}\Omega$

Characteristic linear

$L_i =$ negligibly low

$C_i =$ 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/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 considered.

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mA/μA – COM

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

The maximum permissible external inductances L_o and capacitances C_o are listed below. The simultaneous occurrence of capacitances and inductances has been considered.

L_o/mH	1000	100	5	1	0.5	0.005
$C_o/\text{μF}$	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).

Electrical Ratings/Parameters

The unit is powered by 3x AAA Alkaline battery, refer Electrical Data above for more details.

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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. 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.

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Register of Issues and Variations

includes the current issue

Issue 0 dated 2024-06-17

Test & Assessment Reports relevant for this issue:

TR No. & Issuing CBs: DE/PTB/ExTR11.0087/00, 01, 02, 03, 04 & 05 – PTB

QAR No. & Issuing CB: DE/PTB/QAR06.0008/20 – PTB

File Reference: 2024/006153

Manufacturer's Documents/Drawings associated with this issue:

Document/ Drawing Number	Pages / Sheets	Document/ Drawing Title	Revision	Date
MAIN				
700003AD16A	1 of 1	* Stackup	00G	2011-03-22
700003BA04A	1 of 1	* Mainboard Mounting Top	02G	2014-05-06
700003BB04A	1 of 1	* Mainboard Mounting Bottom	02G	2014-05-06
700003SL04A	4	* BOM Main	00G	2021-10-19
700003SP04A	3	* SCHEMATIC MAIN	00G	2021-10-19
700003YA04A	1 of 1	* Mainboard Layout Top	02G	2014-04-28
700003YB04A	1 of 1	* Mainboard Layout Bottom	02G	2014-05-06
700003YC04A	1 of 1	* Mainboard Layer 2	02G	2014-04-28
700003YD04A	1 of 1	* Mainboard Layer 3	02G	2014-05-05
700003YE04A	1 of 1	* Mainboard Layer 4	02G	2014-05-05
700003YF04A	1 of 1	* Mainboard Layer 5	02G	2014-05-06
VOLTS CLAMPS				
700003BA02A	1 of 1	* VOLTS CLAMP Mounting Top	01G	2011-12-07
700003BB02A	1 of 1	* VOLTS CLAMP Mounting Bottom	00G	2011-07-20
700003SL02A	1 of 1	* BOM VOLTS CLAMPS	00G	2021-10-19
700003SP02A	1 of 1	* SCHEMATIC, VOLTS CLAMPS	00G	2021-10-19
700003YA02A	1 of 1	* VOLTS CLAMP Layout Top	01G	2011-12-07
700003YB02A	1 of 1	* VOLTS CLAMP Layout Bottom	01G	2011-12-07
AMPS CLAMPS				
700003BA03A	1 of 1	* AMPS CLAMP Mounting Top	00G	2011-07-20

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700003SL03A	1 of 1	* BOM AMPS CLAMPS	00G	2021-10-19
700003SP03A	1 of 1	* SCHEMATIC, AMPS CLAMPS BOARD	00G	2021-10-19
700003YA03A	1 of 1	* AMPS CLAMP Layout Top	00G	2011-07-20
700003YB03A	1 of 1	* AMPS CLAMP Layout Bottom	00G	2011-07-20
Description				
16-1672TE-00	41	* Description	---	2024-06-05
16-1672TE-09	3	* Ex – Data ANZEx (Safety Instructions)	---	2024-06-05
16-1672TE-10	1 of 1	* Type Label	---	2024-05-23
700003AZ06A	1 of 1	* Assembly	01G	2010-03-29
700003AZ07A	1 of 1	* Encapsulation areas	03G	2016-07-12
700003EX03A	3	* Associated documents	17G	2023-03-30

Note: An * is included before the title of documents that are new or revised.