



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

Certificate No.: **IECEx SIR 14.0031X**

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Certificate history:

Status: **Current**

Issue No: 7

[Issue 6 \(2022-02-07\)](#)

[Issue 5 \(2019-05-17\)](#)

[Issue 4 \(2019-04-18\)](#)

[Issue 3 \(2017-06-30\)](#)

[Issue 2 \(2016-12-16\)](#)

[Issue 1 \(2016-06-17\)](#)

[Issue 0 \(2014-12-05\)](#)

Date of Issue: 2023-02-14

Applicant: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton LU2 8DL
United Kingdom

Equipment: **Gecma COM module RT**

Optional accessory:

Type of Protection: **Encapsulation "mb", Intrinsically Safe "ib" and 'op is'**

Marking: Refer to the Annexe

Approved for issue on behalf of the IECEx
Certification Body:

Michelle Halliwell

Position:

Director Operations, UK & Industrial Europe

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

CSA Group Testing UK Ltd
Unit 6, Hawarden Industrial Park
Hawarden, Deeside CH5 3US
United Kingdom





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Date of issue: 2023-02-14

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Manufacturer: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton LU2 8DL
United Kingdom

Manufacturing
locations: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton LU2 8DL
United Kingdom

S.C. Cooper Industries Romania
S.R.L
Zona Industrială Vest, Str. III, Nr. 12
310510 Arad
Romania

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

IEC 60079-18:2017 Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

IEC 60079-28:2015 Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

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:

GB/SIR/ExTR14.0131/00
GB/SIR/ExTR17.0115/00
GB/SIR/ExTR22.0001/00

GB/SIR/ExTR16.0105/00
GB/SIR/ExTR19.0103/00
GB/SIR/ExTR23.0041/00

GB/SIR/ExTR16.0322/00
GB/SIR/ExTR19.0133/00

Quality Assessment Reports:

DE/BVS/QAR11.0006/11

GB/BAS/QAR07.0017/10



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Gecma COM Module RT receives its power from a Gecma PSU Module (IECEx SIR 14.0030X, Sira 14ATEX5061X) and also connects to a Gecma Display Module (IECEx SIR 14.0032X, Sira 14ATEX5063X). The Gecma COM Module RT also has outputs for connection to suitably-certified devices, e.g. keyboard, pointing device.

The Gecma COM Module RT contains a motherboard and three daughter boards, fully encapsulated within an aluminium alloy enclosure. The only unencapsulated parts are the intrinsically safe terminals, which have entity parameters shown in the Annexe.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The Gecma COM module RT shall only be powered from a Gecma PSU Module, IECEx SIR 14.0030X.
2. The LVDS connector shall only be connected to a Gecma Display Module, IECEx SIR 14.0032X.
3. The Gecma COM module RT shall be housed in an enclosure that provides protection against damage to the cables and additionally protects the exposed casting compound at the filling hole from impact and direct exposure to ultra-violet light.
4. The enclosure is manufactured from aluminium alloy. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.
5. The intrinsically safe circuit is not isolated from the enclosure; this shall be considered during installation.
6. When the 'Gecma COM module RT – Copper' is connected to another device via an Ethernet cable, the two devices at each end of the Ethernet cable shall be connected to the same equipotential earth.
7. The installation of the low temperature version of the COM Module RT (ambient temperature range of -40°C to +75°C) shall ensure that apertures that are in the top of enclosure are not exposed to moisture.



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Date of issue: 2023-02-14

Issue No: 7

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

This issue, Issue 7, recognises the following change; refer to the certificate Annexe to view a comprehensive history:

- 1.To permit a number of updates to the equipment namely changes to KVM board model fitted, repositioning and removal of unused RS232 internal wiring; re-routing of thermal cut-off assembly to align with position of KVM board.
- 2.Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-0:2011 Edition 6 was replaced by IEC 60079-0:2017 Edition 7.
- 3.Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-18:2014 Edition 4 was replaced by IEC 60079-18:2014 Edition 4 + Amd1:2017.

Annex:

[IECEx SIR 14.0031X Issue 7 Annexe_1.pdf](#)

Annexe to: IECEx SIR 14.0031X Issue 7

Applicant: Eaton Electric Limited

Apparatus: Gecma COM module RT



Marking:

Fibre	Class I fibre universal:	Copper
Ex mb[ib] op is IIC T4 Gb	Ex mb[ib] IIC T4 Gb	Ex mb[ib] IIC T4 Gb
Ta = -30°C to + 75°C	Ta = -30°C to +75°C	Ta = -30°C to +75°C
Ta = -40°C to + 75°C*	Ta = -40°C to +75°C*	Ta = -40°C to +75°C*
* Low Temperature Version		

The Gecma COM Module RT contains a motherboard and daughter boards, fully encapsulated within an aluminium alloy enclosure. The only unencapsulated parts are the intrinsically safe terminals, which have the entity parameters shown below.

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Ui	12 V	0	0	0	0	0	0	4.935 V	3.3 V
Ii	-	-	-	-	-	-	-	3.275 A	1.778 A
Pi	-	-	-	-	-	-	-	3.927 W	1.467 W
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	0.24 µF
Li	0	0	0	0	0	0	0	0	0
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	5.5 V	5.5 V	4.935 V	2.94 V
Io	26 mA	972 mA	972 mA	972 mA	972 mA	267 mA	126 mA	3.266 A	1.584 A
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	613 mW	264 mW	3.917 W	1.165 W
Co	37 µF	57.9 µF	57.9 µF	57.9 µF	57.9 µF	58 µF	58 µF	100 µH	99 µF
Lo	52 mH	37 µH	37 µH	37 µH	37 µH	498 µH	2239 µH	3.3 µH	3.1 µH
Lo/Ro									13.5 µH/Ω

Note: All outputs shall be assessed as separate intrinsically safe circuits

Conditions Of Manufacture

- In accordance with IEC 60079-18:2014 clause 9.1, each manufactured unit shall be subjected to a visual inspection. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition and failure of adhesion or softening.

Details of Certificate Changes (for issues 1 and above):

Issue 1 – this Issue introduced the following changes:

- Introduction of the “Gecma RT COM Module – Copper” model, with a copper Ethernet interface as an alternative to the optical interface, with the introduction of a new certification code Ex mb[ib] IIC T4 Gb and the addition of entity parameters to the product description.
- Amendment to a Specific Condition of Use relating to the external enclosure and the introduction of a new Specific Condition of Use relating to equipotential earthing.
- Corrections to drawing CI6812-621 were recognised.

Annexe to: IECEx SIR 14.0031X Issue 7

Applicant: Eaton Electric Limited

Apparatus: Gecma COM module RT



Issue 2 – this Issue introduced the following changes:

1. Change of manufacturer's name from Measurement Technology Limited to Eaton Electric Limited.
2. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-18:2009 and IEC 60079-28:2006 were replaced by IEC 60079-18:2014 and IEC 60079-28:2015; the Condition of Manufacture is revised accordingly.

Issue 3 – this Issue introduced the following changes:

1. Change of alternative manufacturer's name from 'Gecma Components GmbH' to 'Gecma Components electronic GmbH'
2. Increase in the resistance at the external keyboard port with a corresponding change to the entity parameters; updates to entity parameters at the USB and external pointing device ports as follows:

Original entity parameters:

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Ui	12 V	0	0	0	0	0	0	4.935 V	3.3 V
Ii	-	-	-	-	-	-	-	3.275 A	1.778 A
Pi	-	-	-	-	-	-	-	3.927 W	1.467 W
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	0.24 μ F
Li	0	0	0	0	0	0	0	0	0
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	5.5 V	5.5 V	4.935 V	2.94 V
Io	26 mA	972 mA	972 mA	972 mA	972 mA	267 mA	126 mA	3.266 A	1.584 A
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	613 mW	264 mW	3.917 W	1.165 W
Co	37 μ F	57.9 μ F	57.9 μ F	57.9 μ F	57.9 μ F	58 μ F	58 μ F	100 μ H	99 μ F
Lo	52 mH	37 μ H	37 μ H	37 μ H	37 μ H	498 μ H	2239 μ H	3.3 μ H	3.1 μ H
Lo/Ro									13.5 μ H/ Ω

Amended entity parameters (italics):

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Ui	12 V	0	0	0	0	0	0	4.935 V	3.3 V
Ii	-	-	-	-	-	-	-	3.275 A	1.778 A
Pi	-	-	-	-	-	-	-	3.927 W	1.467 W
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	0.24 μ F
Li	0	0	0	0	0	0	0	0	0
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	5.355 V	5.355 V	4.935 V	2.94 V
Io	26 mA	972 mA	972 mA	972 mA	972 mA	248 mA	126 mA	3.266 A	1.584 A
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	567 mW	264 mW	3.917 W	1.165 W
Co	37 μ F	64.9 μ F	64.9 μ F	64.9 μ F	64.9 μ F	65 μ F	65 μ F	100 μ H	99 μ F
Lo	52 mH	37 μ H	37 μ H	37 μ H	37 μ H	578 μ H	2239 μ H	3.3 μ H	3.1 μ H
Lo/Ro									13.5 μ H/ Ω

Annexe to: IECEx SIR 14.0031X Issue 7

Applicant: Eaton Electric Limited

Apparatus: Gecma COM module RT



Issue 4 – this Issue introduced the following changes:

1. Increase in the maximum ambient temperature of the module to +75°C to give a new ambient temperature range of -30°C to +75°C.
2. The introduction of a new low temperature version of the module that had a temperature range of -40°C to +75°C.
3. Changes to the design that include removal of a p.c.b. assembly and replacement of an existing p.c.b. assembly with a different version of this p.c.b. assembly.
4. Introduction of a new 'MTL Gecma RT COM module – Class I fibre universal' version of module that has optical outputs that complies with Class 1 limits in accordance with IEC 60825-1 and as such is not marked 'op is'.

Issue 5 – this Issue introduced the following changes:

1. Change of Ethernet barrier resistor values (for MTL Gecma RT COM module – copper) - reduced from 15Ω to 5.6Ω in COM module.
2. Updated drawing (CI6820-621) as a result of the change above.
3. Updated marking label (CI6812-625) due to the removal of the low temperature option for copper version.
4. As a result of the change above, change to the entity parameters as follows (**bold**):

Original entity parameters:

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Ui	12 V	0	0	0	0	0	0	4.935 V	3.3 V
Ii	-	-	-	-	-	-	-	3.275 A	1.778 A
Pi	-	-	-	-	-	-	-	3.927 W	1.467 W
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	0.24 μF
Li	0	0	0	0	0	0	0	0	0
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	5.5 V	5.5 V	4.935 V	2.94 V
Io	26 mA	972 mA	972 mA	972 mA	972 mA	267 mA	126 mA	3.266 A	1.584 A
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	613 mW	264 mW	3.917 W	1.165 W
Co	37 μF	57.9 μF	57.9 μF	57.9 μF	57.9 μF	58 μF	58 μF	100 μH	99 μF
Lo	52 mH	37 μH	37 μH	37 μH	37 μH	498 μH	2239 μH	3.3 μH	3.1 μH
Lo/Ro									13.5 μH/Ω

Amended entity parameters:

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Ui	12 V	0	0	0	0	0	0	4.935 V	3.3 V
Ii	-	-	-	-	-	-	-	3.275 A	2.986 A
Pi	-	-	-	-	-	-	-	3.927 W	2.463 W
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	0.24 μF
Li	0	0	0	0	0	0	0	0	0
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	5.5 V	5.5 V	4.935 V	2.94 V
Io	26 mA	972 mA	972 mA	972 mA	972 mA	267 mA	126 mA	3.266 A	2.66 A
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	613 mW	264 mW	3.917 W	1.955 W
Co	37 μF	57.9 μF	57.9 μF	57.9 μF	57.9 μF	58 μF	58 μF	100 μH	99 μF
Lo	52 mH	37 μH	37 μH	37 μH	37 μH	498 μH	2239 μH	3.3 μH	1.12 μH
Lo/Ro									8.07 μH/Ω

Date: 14 February 2023

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Annexe to: IECEx SIR 14.0031X Issue 7
Applicant: Eaton Electric Limited
Apparatus: Gecma COM module RT



Issue 6 – this Issue introduced the following changes:

1. The following manufacturing location was recognised: S.C. Cooper Industries Romania S.R.L, Zona Industrială Vest, Str. III Nr. 12, 310510 Arad, Romania.
2. Administrative changes to certification label drawing.
3. The following Additional manufacturing location was removed from the certificate: Gecma Components GmbH, Heinrich-Hertz-Strasse 12, 50170, Kerpen, Germany.
4. The reference to 'Gecma PSM Module' in the Specific Conditions of Use was amended to 'Gecma PSU Module' to correct a typographical error.

Issue 7 – this Issue introduced the following changes:

1. To permit a number of updates to the equipment namely changes to KVM board model fitted, repositioning and removal of unused RS232 internal wiring; re-routing of thermal cut-off assembly to align with position of KVM board.
2. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-0:2011 Edition 6 was replaced by IEC 60079-0:2017 Edition 7.
3. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-18:2014 Edition 4 was replaced by IEC 60079-18:2014 Edition 4 + Amd1:2017.