



ATEX, IECEx and MET (Class I, Division 1) Safety Instructions iCAM502



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

Country of Origin: United Kingdom

Document Number 401641 Revision 11. Part number A34-0025.

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How to Operate the Camera

For instructions on how to operate the camera, please see the iCAM502 Quick Start Guide which is included with the camera and is available for download from the Extronics website – www.extronics.com

Warranty

For full details of the Extronics warranty policy please go to the Company section of the website and download Terms and Conditions.

1 Safety Instructions

1.1 Storage of this Manual

Keep this user manual safe and in the vicinity of the device. All persons required to work with the device should be advised on where this manual is stored.

1.2 Special Conditions for Safe Use

1.2.1 ATEX, IECEx and MET

Taken from ITS09ATEX26868X Issue 6 (Amended January 2017) Section 15, IECExITS09.0027X Issue 6 (February 2017) and MET Report 93519 (August 2017)

The conditions of safe use relating to this product:

For Group II and MET applications only, the user shall not carry more than a maximum of two spare approved AA cells into the hazardous area. Precautions shall be taken to prevent short circuiting of un-protected battery terminals. Discharged cells shall be removed from the hazardous area.

For Group I applications:

- Duracell MN 1500 and Duracell Industrial ID 1500 are the only type of battery permitted.
- The changing of the batteries in the hazardous area and the transportation of spare batteries into the hazardous area is not permitted.

The temperature class for the equipment is determined by the type of batteries used:

- T4: Duracell MN 1500, Duracell Industrial ID 1500
- T3: Energizer E91, Panasonic LR6XWA (ATEX and IECEx Group II applications only)
See Table 1.

Please read this Safety Manual for battery types permitted (restrictions are applicable due to temperature rating). See Table 1.

The end user must not mix different types of cells from different manufacturers when used within equipment.

The USB port shall only be connected in the non-hazardous area.

If the camera is damaged in any way, it shall be removed from the hazardous area.

Conditions of manufacture relating to the product / routine test: None

1.3 List of Notes

The notes supplied in this chapter provide information on the following.

- Danger! / Warning!
 - Possible hazard to life or health.
- Caution
 - Possible damage to property.
- Important
 - Possible damage to enclosure, device or associated equipment.
- Information
 - Notes on the optimum use of the device

Warning! For ATEX / IECEx GROUP II applications, ONLY Duracell Plus MN1500, Duracell ID1500, Energizer E91 or Panasonic LR6XWA cells may be used with the iCAM502 (see Table 1).

Warning! For MET applications, ONLY Duracell Plus MN1500, Duracell ID1500 or Energizer E91 cells may be used with the iCAM502 (see Table 1).

Warning! For ATEX / IECEx GROUP I applications, ONLY Duracell Plus MN1500 and Duracell ID 1500 cells may be used with the iCAM502 (see Table 1).

Warning! For ATEX / IECEx GROUP II and MET applications ONLY, the user shall not carry more than a maximum of 2 spares of the approved cells listed above into the hazardous area. Precautions shall be taken to prevent short circuiting of un-protected cell terminals. Discharged cells shall be removed from the hazardous area.

Warning! For ATEX / IECEx GROUP I applications, the changing of cells in the hazardous area or the transportation of spare cells into the hazardous area is NOT PERMITTED.

Warning! NOTE THE DIFFERENT TEMPERATURE CLASSIFICATION of T3 / T3C when Energizer E91 or Panasonic LR6XWA cells are used (see Table 1).

Warning! The user shall NOT mix different cells in ANY application

Warning! For ATEX / IECEx GROUP II applications, note that the rated ambient temperature range of the equipment is from -20°C to 60°C.

Warning! For ATEX / IECEx GROUP I applications, note that the rated ambient temperature range of the equipment is from 0°C to 60°C.

Warning! For MET applications, note that the rated ambient temperature range of the equipment is from -20°C to 55°C.

Warning! Any connection to the iCAM502 USB port must NOT be made in a hazardous area.

Warning! If any damage to the iCAM502 is found which may invalidate the required safety minimum IP rating (IP54 for group I applications), (IP20 for group II), the iCAM502 shall be removed from the hazardous area.

Important Any repairs or replacement of parts **MUST** be performed by the manufacturer or its nominated sub-contractor or agent.

Important The iCAM502 contains no user serviceable parts. The main part of the enclosure must not be opened under any circumstances.

Application	Duracell MN1500	Duracell Industrial ID1500	Energizer E91	Panasonic LR6XWA
ATEX / IECEx GROUP II	OK, T4 at 60°C	OK, <u>T4</u> at 60°C	OK, <u>T3</u> at 60°C	OK, <u>T3</u> at 60°C
ATEX / IECEx GROUP I	OK, T4 at 60°C	OK, <u>T4</u> at 60°C	CANNOT BE USED	CANNOT BE USED
MET	OK, T4 at 55°C	OK, <u>T4</u> at 55°C	OK, <u>T3C</u> at 50°C	CANNOT BE USED

Table 1 iCAM502 cell usage table

2 User guide

2.1 Changing / installing the cells

To change or install the cells in the iCAM502 turn the screw as indicated below to remove the cover.



Use a coin to turn the screw anti-clockwise, the lid should then pop up.

To close it again, turn the coin clockwise, the screw should click into place once correctly seated.

Install the cells in the correct orientation (indicated on the enclosure) and close the lid again.

3 Structure and Function

3.1 Intended Purpose Usage

Important	Before setting the unit to work, read the technical documentation carefully.
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Important	The latest version of the technical documentation or the corresponding technical supplements is valid in each case.
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The iCAM502 is built using modern components and is extremely reliable in operation; however it must only be used for its intended purpose. Please note that the intended purpose also includes compliance with the instructions issued by the manufacturer for installation, setting up and service.

Any other use is regarded as conflicting with the intended purpose. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. The manufacturer is not liable for any subsequent damage resulting from such inadmissible use. The user bears the sole risk in such cases.

3.2 Transportation and Storage

All iCAM502 devices must be so transported and stored that they are not subjected to any excessive mechanical stresses.

3.3 Authorized Persons

Only persons trained for the purpose are authorized to handle the iCAM502; they must be familiar with the unit and must be aware of the regulation and provisions required for explosion protection as well as the relevant accident prevention regulations.

3.4 Cleaning and Maintenance

The iCAM502 and all its components require no maintenance. All work on the iCAM502 by personnel who are not expressly qualified for such activities will cause the Ex approval and the guarantee to become void.

3.5 Safety Precautions

Important	For the installation, maintenance and cleaning of the units, it is absolutely necessary to observe the applicable regulations and provisions concerned with explosion protection (EN 60079-0, EN 60079-14) as well as the Accident Prevention Regulations.
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3.6 Cleaning and Maintenance Intervals

The cleaning intervals depend on the environment where the system is installed.

3.7 Aggressive substances and environments

The iCAM502 is not designed to come into contact with aggressive substances or environments, please be aware that additional protection may be required.

3.8 Exposure to external stresses

The iCAM502 is not designed to be subjected to excessive stresses e.g. vibration, heat, impact. Additional protection is required to protect against these external stresses. The iCAM502 will require additional protection if it is used in a location where it may be subjected to damage.

The iCAM502 may be fitted with the optional antistatic rubber boot accessory supplied by Extronics. However, this does not guarantee any additional impact resistance, and due care must still be taken to avoid damage to the unit, and to inspect it before taking into a hazardous area.

4 Technical Data

Certification Number	ITS09ATEX26868X, IECEx ITS 09.0027X
ATEX Certification	II 1 G Ex ia IIB T4/T3 Ga, II 2 G Ex ia IIC T4/T3 Gb, -20°C ≤Ta≤ +60°C I M1 Ex ia I Ma 0°C ≤Ta≤ +60°C
IECEX Certification	Ex ia IIB T4/T3 Ga, II 2 G Ex ia IIC T4/T3 Gb, -20°C ≤Ta≤ +60°C Ex ia I Ma 0°C ≤Ta≤ +60°C
MET Certification	Class I, Div 1 Group A-D T4/T3C (USA and Canada)
Compliance	EMC: EN 55022 1998 class B, EN 55024 1999 LV: EN 60950 2002 FCC: FCC: Class A device, compliance through verification route
Dimensions	132mm x 32mm x 22mm (5.20" x 1.26" x 0.87")
IP Rating	IP65 / NEMA3R
Operating Temperature	ATEX / IECEx Group II -20°C to +60°C / Group I 0°C to +60°C / MET -20°C to +50/55°C
Weight	Approx 200g including batteries
Housing	Injection moulded antistatic plastic housing, supplied with antistatic silicone rubber boot for additional shock protection
Relative humidity	95% RH non condensing
Power	2 x Alkaline AA batteries, refer to this Safety Manual (Table 1) for details on range of approved batteries. Batteries may not be carried or changed in Group I hazardous areas.
Memory	On board 1Gbyte NAND Flash (holds approx 5,000 JPEG images without any audio recording and additional 960Kbytes per min for audio)
Image	3.1 Mega-Pixel (2048 x 1536 resolution)
Lens	Autofocus lens, effective focal length 3.39mm, F2.8, 68° diagonal field of view
Focal Distance	5cm to infinity
View Finder	Two element optical view finder
Power Modes	Operate and auto power-down (after 3 mins)
Battery Life	Up to 600 shots without flash and up to 100 shots with flash taken one after the other. 170 shots as per the CIPA DC-002 standard (mixed mode shots with and without flash) Note it is very difficult to be precise about exact numbers as there are many factors that can influence this such as the ambient temperature, how long the camera is powered up, number of voice recordings made and the number and length of time it is connected to a PC for transferring picture and voice data.
Connectivity	USB 1.1 via mini-USB socket for use in the safe area only. Certified for direct connection to a PC without requiring an external protection barrier
OS Support	PTP imaging device in Windows XP/Vista/7 and most versions of Linux. USB firmware upgrade utility for Windows XP/Vista/7/10 only.
Flash	4 LED flash giving 131 lux.seconds of energy at 67ms exposure
Audio recording format	wav
Image format	jpeg
Time and Date	Time and date stamping of stored images and filenames Time and date set via Picture Transfer Protocol (PTP) automatically

5 EU Declaration of Conformity



EU Declaration of Conformity

Extronics Ltd, 1 Dalton Way, Midpoint 18, Middlewich, Cheshire CW10 0HU, UK

Equipment Type: **iCAM502**

This declaration is issued under the sole responsibility of the manufacturer

Directive 2014/34/EU Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)

Provisions of the directive fulfilled by the equipment:

- ⊕ **II 1 G Ex ia IIB T3/T4 Ga** $-20^{\circ}\text{C} \leq \text{Ta} \leq +60^{\circ}\text{C}$
- ⊕ **II 2 G Ex ia IIC T4/T3 Gb** $-20^{\circ}\text{C} \leq \text{Ta} \leq +60^{\circ}\text{C}$
- ⊕ **I M1 Ex ia I Ma** $0^{\circ}\text{C} \leq \text{Ta} \leq +60^{\circ}\text{C}$

Notified Body INTERTEK ITALIA S.p.A 2575 performed EU-Type Examination and issued the EU-Type Examination certificate.

EU-Type Examination Certificate: 09ATEX 26868X
Dated 31st October 2019

Notified Body for Production: ExVeritas 2804

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation.

Harmonised Standards used:

EN 60079-26:2007	Electrical apparatus for potentially explosive gas atmospheres – Equipment with equipment protection level (EPL) Ga (A review against EN60079-26:2015 , which is harmonised, shows no significant changes relevant to this equipment so EN 60079-26:2007 continues to represent "State of the Art")
EN 50303:2000	Group I, Category M1 equipment intended to remain functional in atmospheres endangered by firedamp and/or coal dust

Other Standards and Specifications used:

EN 60079-0:2009	Electrical apparatus for potentially explosive gas atmospheres – General requirements (A review against EN60079-0:2012/A11:2013 , which is harmonised, shows no significant changes relevant to this equipment so EN 60079-0:2009 continues to represent "State of the Art")
EN 60079-11:2007	Electrical apparatus for potentially explosive gas atmospheres – Equipment protection by intrinsic safety 'i' (A review against EN60079-11:2012 , which is harmonised, shows no significant changes relevant to this equipment so EN 60079-11:2007 continues to represent "State of the Art")





Directive 2014/30/EU EMC Directive

Tested to EC Directive 2004/108/EC, Test Date: 29th January 2010

Standards used:

EN55022:2006 (+A1:2007)	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement (A review against EN55022:2010 , which is harmonised, shows no significant changes relevant to this equipment so EN55022:2006 (+A1:2007) continues to represent "State of the Art")
EN55024:1998 (+A2:2003)	Information technology equipment - Immunity characteristics - Limits and methods of measurement (A review against EN55024:2010 , which is harmonised, shows no significant changes relevant to this equipment so EN55024:1998 (+A2:2003) continues to represent "State of the Art").

The low voltage essential objectives have been satisfied by compliance with

EN 60950-1:2006	Information Technology Equipment - Safety General Requirements
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Directive 2011/65/EU Restriction of the use of certain hazardous substances (RoHS)
Compliant

For and on behalf of Extronics Ltd, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.

Signed:

Nick Saunders
Operations Director
Date: 10th January 2020

X120340(4)



6 MET Approvals Certificate



MET Laboratories, Inc.

Safety Certification - EMI - Telecom - Environmental Simulation - NEBS
914 WEST PATAPSCO AVENUE • BALTIMORE, MARYLAND 21230-3432 • PHONE (410) 949-1802 • FAX (410) 354-3313

August 11, 2017

Extronics Ltd.
1 Dalton Way
Midpoint 18, Middlewich
Cheshire, CW10 0HU

Subject: Extronics Intrinsically Safe Digital Camera, model iCAM502
Listing Number E113811; MET Project Number 93519

- Safety Standards:
- UL61010-1/CSA C22.2 No. 61010-1, Third Edition: Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
 - UL61010-1/CSA C22.2 No. 61010-1, Third Edition: Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
 - UL 60079-11 Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety ‘i’, Sixth Edition
 - CAN/CSA-C22.2 No. 60079-0:15 Explosive atmospheres - Part 0: Equipment - General requirements, Sixth Edition
 - CAN/CSA-C22.2 No. 60079-11:14 Explosive atmospheres – Part 11: Equipment protection by intrinsic safety ‘i’, Sixth Edition

Dear Sir/Madam:

Congratulations on successfully completing the MET Certification process for the Extronics Intrinsically Safe Digital Camera, model iCAM502. Extronics Ltd. may begin to apply the MET Mark on the previously identified product at this time in accordance with the MET Mark Utilization Agreement or the MET Applicant Contract. The report covering the above stated product is forthcoming.

Thank you for the opportunity to perform this service for Extronics Ltd. We look forward to future opportunities with your company.

Sincerely,

MET LABORATORIES, INC.

Rick Cooper
Director,
Safety Business Line



The Nation's First Nationally Recognized Testing Laboratory
MET Laboratories, Inc. is accredited by OSHA and the Standards Council of Canada.

NRTL

Canadian Certification has been granted under a System 3 program as defined in ISO/IEC 17067.

