Operating Manual

iVID101

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Document Number **410735** (based on 334397_3.0) (See Last Page for Revision Details)

The Photograph on the front page shows the iVID101 Aluminium Enclosure.

For warranty information, refer to Terms and Conditions at http://www.extronics.com

Contents

1 Introduction

The iVID101 unit consists of a 12.1 TFT LCD display mounted inside an Ex d enclosure with a glass viewing window.

The unit can be connected to various types of video input signals including the iCAM100 video camera & also other types of CCTV cameras.

A 24VDC power output is available to power the iCAM100 camera or alternative types of equipment including other manufacturers CCTV cameras.

Further video options are available on request including external push buttons for pan, tilt & zoom, video multiplexing, full/quad screen functions. Other engineered solutions are available on request to meet your specific needs.

2 Safety Information and Notes

2.1 Special Conditions for Safe Use

None.

2.2 Storage of this Manual

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

2.3 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	**Do not open the enclosure while the immediate area is classed as hazardous or explosive.**

Important	**Read the manual completely and carefully before operation. Only the latest documentation is valid.**

Important	**Installation, maintenance and cleaning of the units must only be performed by persons trained and authorized for this purpose, insofar as they are familiar with the units.**

Important	**If it can be assumed that safe operation is no longer possible, switch off the unit and secure it against being used again.**

Important	**Modifications and conversions to the units are not permissible and will cause the Ex protection and the guarantee to become void. Extronics Ltd is not liable for any consequential damage.**

Important	**The technical data specified for hazardous areas comply with the values certified in the European Ex approval. The user bears the sole responsibility of examining the equipment with regard to its suitability for the intended application and environmental conditions. Extronics Ltd accepts no liability for any lack of suitability**

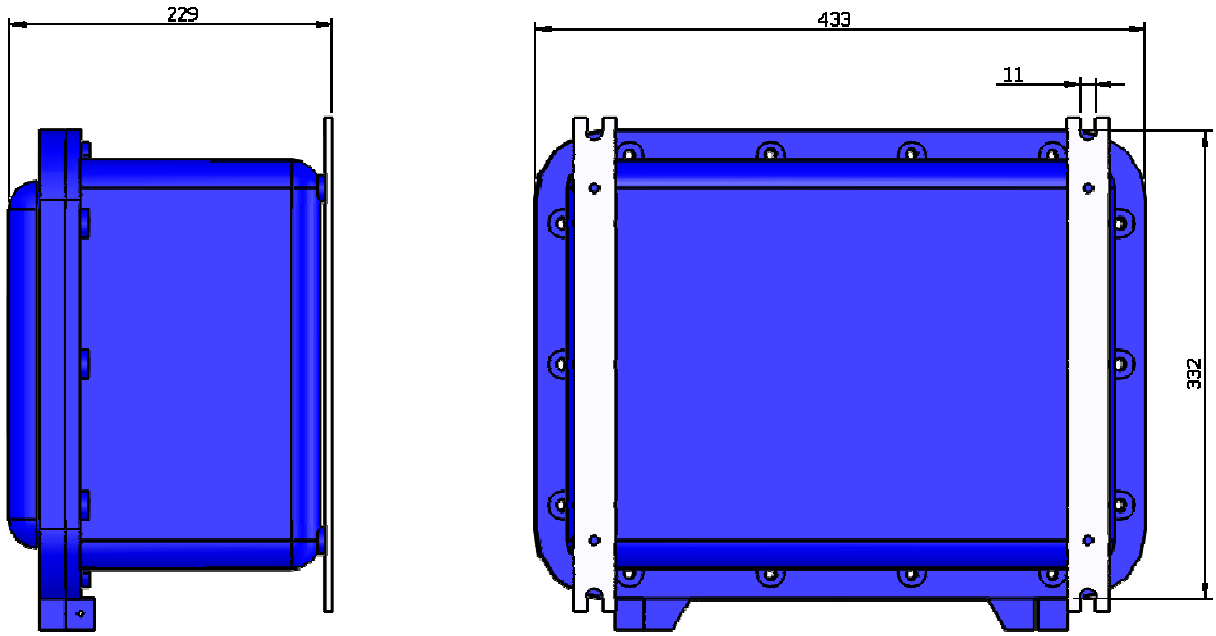
Important	**For installation, maintenance and cleaning of the units, it is important to observe the applicable standards and provisions concerned with explosion protection (EN 60079-14, EN 60079-0, EN 60079-1) as well as the Accident Prevention Regulations and codes of practice in your region.**

3 Installation and Setting-to-Work

3.1 Installation

The iVID101 is simple to install and can be secured directly to suitable surface using the mounting straps provided.

3.1.1 Dimensions



3.1.2 Fitting the cables

Feed the power or video input cable through the enclosure cable entries (see section 3.4.1)

Important	**Ensure that the correct type of gland is used and that it is fitted by suitably competent personnel as per the manufacturer's instructions.**

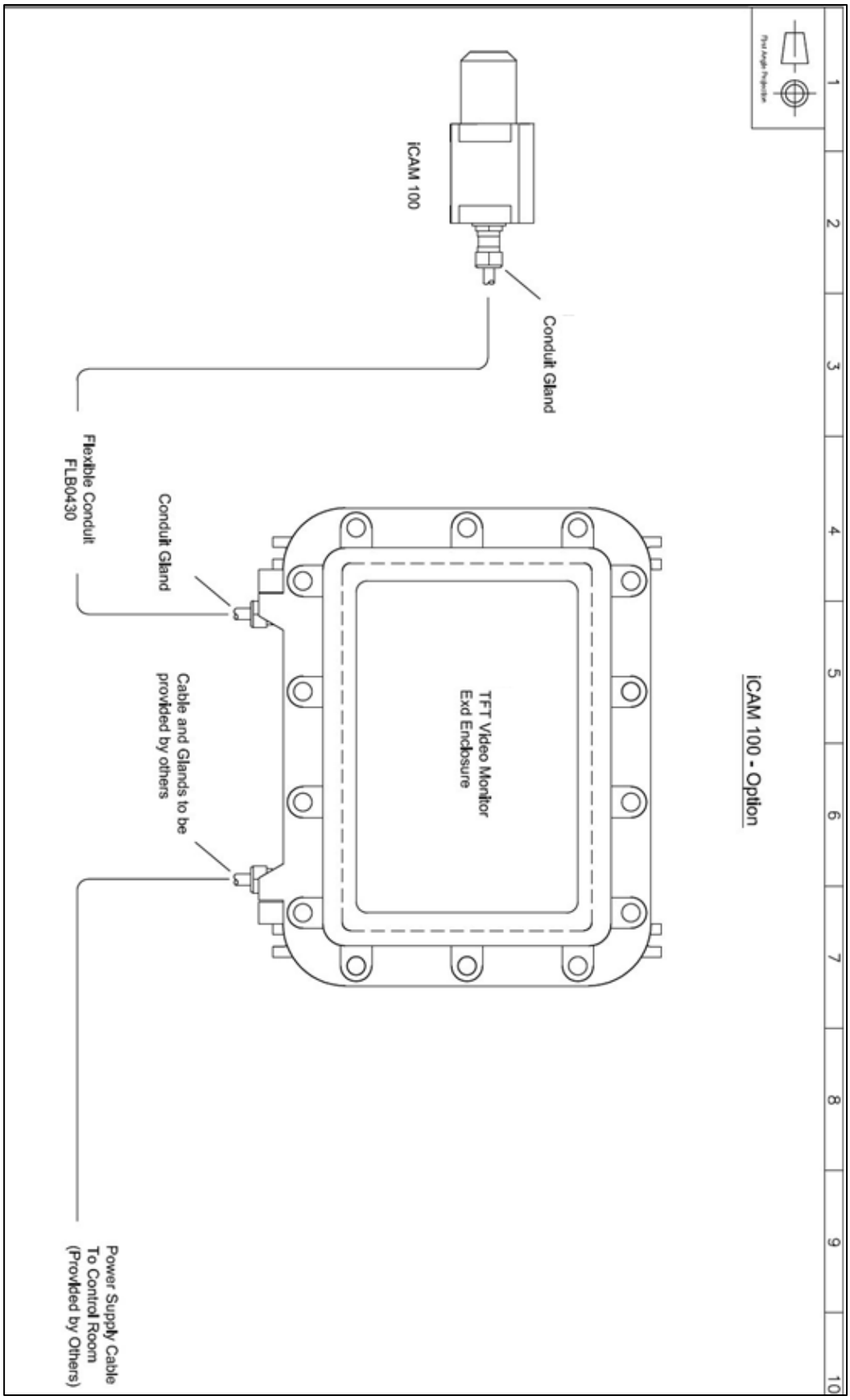
For the power / data cables strip back the insulation, attach suitable crimps and connect to the terminal blocks indicated in section 3.4.2

3.2 Setting-to-work

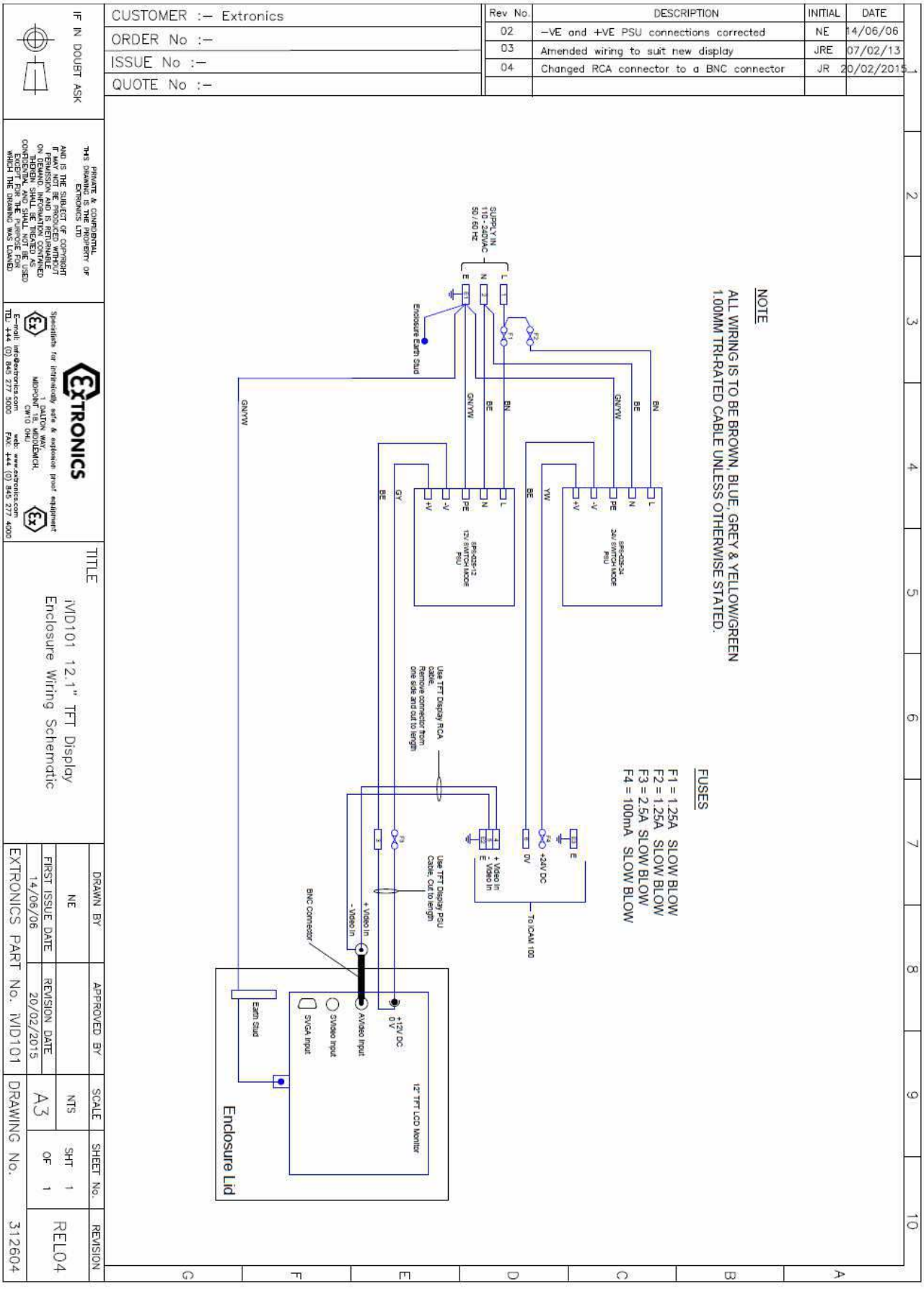
The iVID101 is set up so that the correct channel is displayed upon applying power. The display will automatically turn on when power is applied. If video is present, no further action is required after power up to display picture.

3.3 iCAM100 Option

The following diagram shows the iVID101 connected to the iCAM100 as an overview.



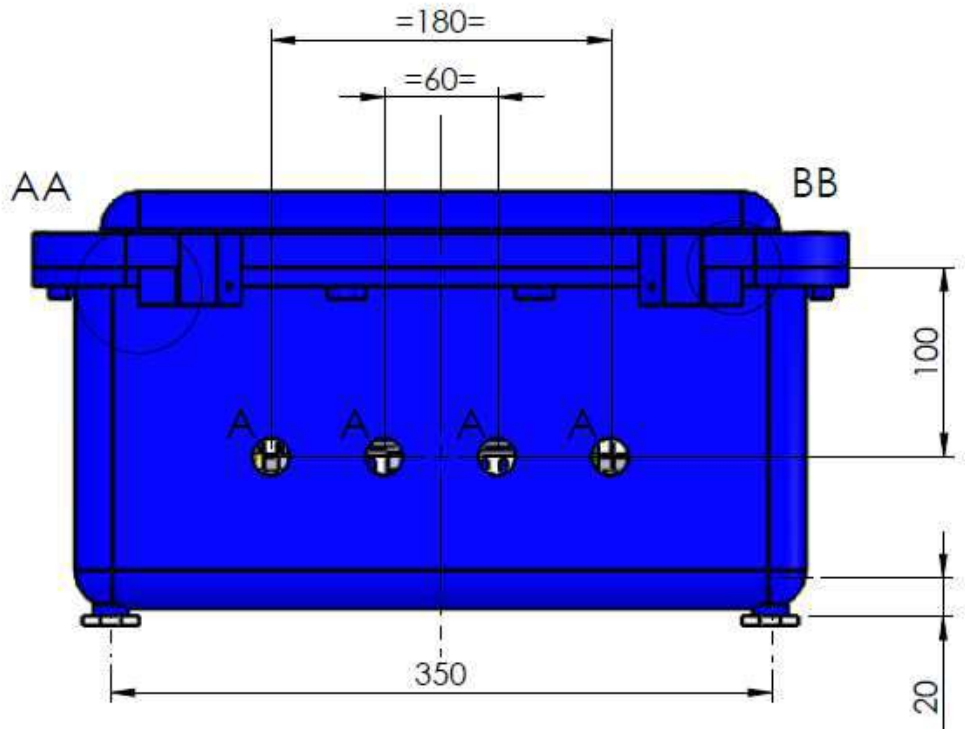
3.4 Wiring Schematics



3.5 Connecting the cables

3.5.1 Cable Gland Entry

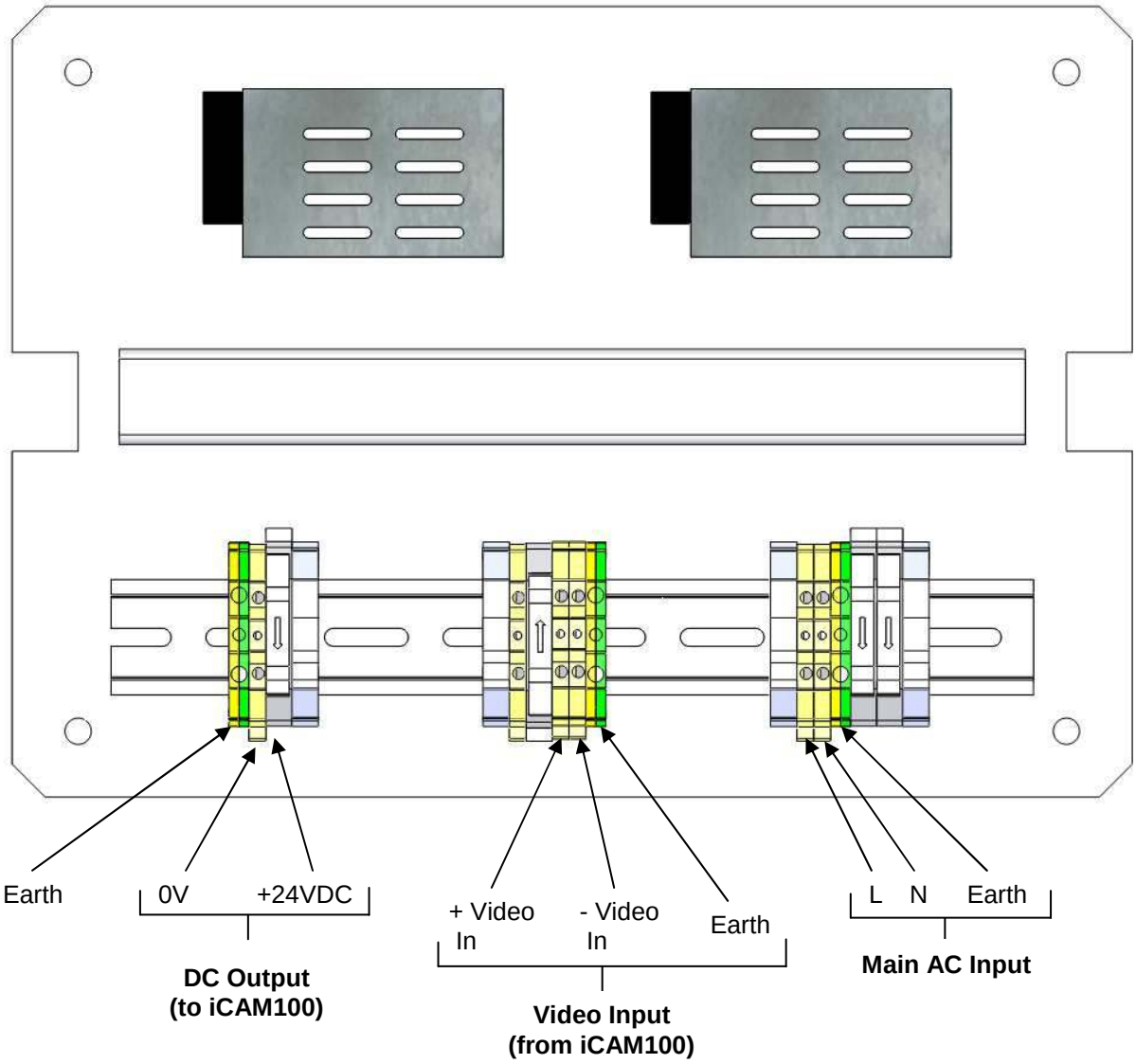
Cable entries must be made by appropriately certified Ex'd' IIB / IIC cable glands via the cable entries shown below:



Each cable entry is M20 type. No other type of cable gland entry is permitted. Any unused entries must be sealed using an appropriately certified Ex'd' IIB / IIC stopping plug.

3.5.2 Terminating the cables

Connect the cables to the correct terminals as shown below:



4 Intended Purpose Usage

Important	**Before setting the units to work, read the technical documentation carefully.**

Important	**The latest version of the technical documentation or the corresponding technical supplements is valid in each case.**

The iVID101 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. The manufacturer is not liable for any subsequent damage resulting from such inadmissible use. The user bears the sole risk in such cases.

4.1 Transportation and Storage

All iVID101 devices must be so transported and stored that they are not subjected to any excessive mechanical stresses.

4.2 Authorized Persons

Only persons trained for the purpose are authorized to handle the iVID101; 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.

4.3 Cleaning and Maintenance

The iVID101 and all its components require no maintenance. All work on the iVID101 by personnel who are not expressly qualified for such activities will cause the Ex approval and the guarantee to become void.

4.4 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 60079-14) as well as the Accident Prevention Regulations.**

4.5 Cleaning and Maintenance Intervals

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

4.6 Aggressive substances and environments

The iVID101 is not designed to come into contact with aggressive substances or environments, please be aware that additional protection may be required.

4.7 Exposure to external stresses

The iVID101 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 iVID101 will require additional protection if it is installed in a location where it may be subjected to damage.

5 LCD Specification

NM-FXNS1205

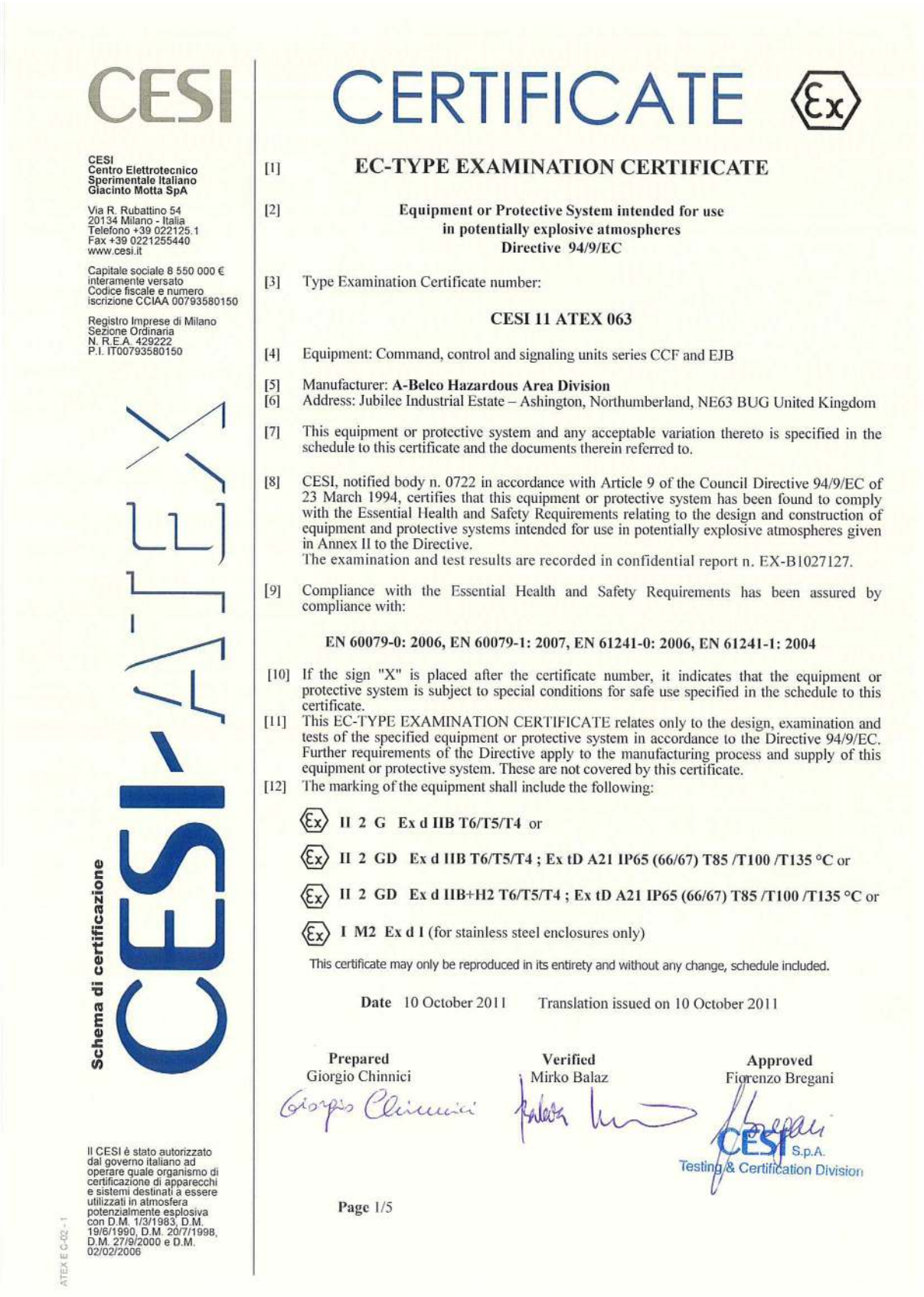
LCD Specification	
Viewable Size	12 Inch
Active Area	245.76x184.32
Pixels	0.24
Resolution	1024x768
Contrast Ratio	700:1
Brightness	400 cd/m²
View Angle	Right 80° Left 80° UP 80° Down 80°
Signal Input	S-Video/BNC/RCA/VGA
Audio	2W x2
Response Time	35ms
Support OS.	Windows
Power Input	AC 110/240V
Power Consumption	40 W Typ.
Dimensions(mm)	339.5*269.5*46mm
Weight	3.2kg

6 Technical Data

Certificate Number	CESI 11 ATEX 063
Certification Type	ATEX II 2 GD Ex d IIB+H2 T6 *(Tmax 85ºC)*
Dimensions	Enclosure 432 x 332 x 229 mm (w x h x d) Enclosure Window 300 x 200 mm (w x d)
IP Rating	IP66
Ambient Temperature	0ºC to +40ºC
Enclosure Material	LM6 epoxy painted marine grade aluminium
Maximum Resolution	1024 x 768
Display Area	246 x 184.5 mm (w + h)
Video Input	PAL/NTSC (BNC), VGA
Display Colours	262k
Cable Entries	Four M20 entries as standard, other options & cable glands are available on request
Power Supply	Input 90 - 263VAC, 50/60 Hz. 24VDC, 1.1A output available to power the iCAM100 or other equipment.
Approximate Weight	24Kg

7 Certification

7.1 ATEX Certificate



CESI

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iscrizione CCIAA 00793580150

Registro Imprese di Milano
Sezione Ordinaria
N. R.E.A. 429222
P.I. IT00793580150

CESI-ATEX

Schema di certificazione

Il CESI è stato autorizzato dal governo italiano ad operare quale organismo di certificazione di apparecchi e sistemi destinati a essere utilizzati in atmosfera potenzialmente esplosiva con D.M. 1/3/1983, D.M. 19/6/1990, D.M. 20/7/1998, D.M. 27/9/2000 e D.M. 02/02/2006

ATEX E C-02 - 1

CERTIFICATE

[1] **EC-TYPE EXAMINATION CERTIFICATE**

[2] **Equipment or Protective System intended for use in potentially explosive atmospheres Directive 94/9/EC**

[3] Type Examination Certificate number:

CESI 11 ATEX 063

[4] Equipment: Command, control and signaling units series CCF and EJB

[5] Manufacturer: **A-Belco Hazardous Area Division**
[6] Address: Jubilee Industrial Estate – Ashington, Northumberland, NE63 BUG United Kingdom

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] CESI, notified body n. 0722 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report n. EX-B1027127.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0: 2006, EN 60079-1: 2007, EN 61241-0: 2006, EN 61241-1: 2004

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

[12] The marking of the equipment shall include the following:

Ex **II 2 G Ex d IIB T6/T5/T4** or

Ex **II 2 GD Ex d IIB T6/T5/T4 ; Ex tD A21 IP65 (66/67) T85 /T100 /T135 °C** or

Ex **II 2 GD Ex d IIB+H2 T6/T5/T4 ; Ex tD A21 IP65 (66/67) T85 /T100 /T135 °C** or

Ex **I M2 Ex d I** (for stainless steel enclosures only)

This certificate may only be reproduced in its entirety and without any change, schedule included.

Date 10 October 2011 Translation issued on 10 October 2011

Prepared	**Verified**	**Approved**
Giorgio Chinnici	Mirko Balaz	Fiorenzo Bregani

CESI S.p.A.
Testing & Certification Division

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[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 11 ATEX 063**

[15] **Description of equipment**

Command, control and signalling units series CCF… and EJB…
The enclosures of these units are made in aluminium or in stainless steel (see documentation annexed to this certificate).
The various items of the code indicate the size of the enclosure (from 1 to 7), constructional modifications, the type of material used, the presence of glass windows.
The complete codes of all the units subject of this certificate are reported in the documentation annexed to this certificate.
The enclosures of the command, control and signalling units are subject of the certificate of component CESI 00 ATEX 036 U. All the constructional details of the enclosures are reported in the drawings annexed to this certificate of component.
The types of electrical and electronic components installed inside the command, control and signalling units are reported in the annexed documentation together with their electrical characteristics.
On the enclosures of the CCF and EJB units, accessories and windows as indicated in the certificate of component CESI 00 ATEX 036 U and type M-0…command and signalling operators as indicated in the certificate of component CESI 01 ATEX 025 U can be installed.
The execution I M2 Ex d I refers to stainless steel enclosures only.
The enclosures series CCF and EJB are made in two different versions as regards the degree of protection IP:
enclosures with silicone grease placed between the body and the cover: IP 65
enclosures with sealing gasket placed between the body and the cover: IP 66/67
According to the protection adopted the units series CCF and EJB can have the following marking (together with the code relevant to the maximum surface temperature):

II 2 G	Ex d IIB		enclosures protected only against flammable gases
II 2 GD	Ex d IIB	IP 65	enclosures with silicone grease
II 2 GD	Ex d IIB	IP 66/67	enclosures with sealing gasket without command and signalling operators
II 2 GD	Ex d IIB	IP 66	enclosures with sealing gasket with command and signalling operators type M-0.

Electrical characteristics

Rated voltage	24 ÷ 1000 V a.c.	12 ÷ 250 V d.c.
Rated frequency	50 ÷ 60 Hz	----
Max. current in fuses and contacts	650 A	650 A
Ambient temperature	-20 ÷ +40 °C; -20 ÷ +55 °C; -50 ÷ +40 °C; -50 ÷ +55 °C	
Maximum lamp power	5 W for ambient temperature – 20 ÷ + 40 °C 3 W for ambient temperature – 20 ÷ + 55 °C	
Temperature class of the units:	T6, T5, T4 as a function of the enclosure dimension, ambient temperature and power dissipated inside the enclosure	

The maximum power which can be dissipated inside the enclosure and the maximum current on contacts and fuses are a function of enclosure size, of the temperature class and of the ambient temperature as specified in details in the documentation annexed to this certificate.
The service temperature of windows and of signal and control operators type M-0… shall not exceed 100 °C.
For any enclosure type the minimum distance of 20 mm between the installed components and the internal enclosure walls must be respected.

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[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 11 ATEX 063**

Detailed description

Ambient temperature
The constructions of group II can be realized for minimum ambient temperature of – 50 °C.
All the components and the equipment used inside the Ex-d enclosures shall be suitable for the minimum service temperature.
In particular:

Installation of batteries inside the boxes	Ta min. = - 30 °C
Installation of motors inverter inside the boxes	Ta min. = - 15 °C
Installation of surge protective devices inside the boxes	Ta min. = - 25 °C
Use of sealed cable glands for fiber optic cables	Ta min. = - 50 °C
Installation of power transformers inside the boxes	Ta min. = - 50 °C
Installation of radio frequency sources inside the boxes	Ta min. = - 50 °C

The electrical characteristics of the components installable on the boxes are reported in details in the documentation annexed to this extension.

Boxes with batteries
On boxes series EJB… can be installed batteries having 1.5 Ah or less for supply memory restore of electronics devices.
Batteries type G-0309 4 o 7 Ah and related inverter are admitted for supply the emergency fluorescent lamps.

Boxes with inverter
On boxes series EJB-4, EJB-45, EJB-5, EJB-6 and EJB-7 depending of the max. ambient temperature (+ 40 °C or + 55 °C), inverters can be installed with the max. admitted dissipated power from 73W (for enclosures EJB-4) to 232 W (for enclosures EJB-7), as well as reported in the annexed documentation.

Boxes with surge protective devices
On boxes can be installed surge protective devices type PRD or similar, up to 65kA of max. protection, in any case, the minimum distance of 20 mm between the installed surge protective device and the internal enclosure walls must be respected.

Boxes with fiber optic cables
The boxes are suitable for the installation of special sealed cable glands for incoming and outcoming of multi-fiber optical cable. The sealed cable glands must be ATEX certified.
Single optical fiber cables are forbidden.
The limits of optical power and irradiance admitted for the optical cables are:

35 mW and 5 mW/m2	for class temperature T4
15 mW and 5 mW/m2	for class temperature T6

Boxes with power transformer
Boxes are suitable for installation of single-phase or three-phase power transformer having the maximum dissipated power (W) lower or equal to the values indicated on the certificate.
The only box type EJB-7 is suitable for installation of three-phase power transformer with max. power 15 kA.

Boxes with radiofrequency sources
Boxes are suitable for installation of radio frequency sources for continuous and pulses signal transmission in the range of frequencies from 9kHz and 60GHz.
The antennas can be installed inside or outside of the boxes.
For the outside installation, the antennas must be realized in compliance with one of the protection mode indicated in the EN 60079-0 standard or installed outside the dangerous zone
The operating limits of radiofrequency sources are reported in the annexed documentation to this extension.

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[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 11 ATEX 063**

Cable entries
The accessories used for cable entries and for closing unused apertures shall be separately certified:
For II 2GD units the accessories must be certified in compliance with the EN 60079-0, EN 60079-1, EN 61241-0, EN 61241-1
For II 2G and I M2 units the accessories must be certified in compliance with the EN 60079-0 and EN 60079-1, standards.
In both cases the degree of protection IP6X, declared by the manufacturer on the label, must be ensured in compliance to the EN 60529 Standard

Warning label
For boxes with capacitors: " After de-energizing. Wait 10 minutes before opening "
For boxes with temperature class T4: " Use cables suitable for a temperature of 100 °C"
For boxes with temperature class T5: " Use cables suitable for a temperature of 90 °C"
For boxes with batteries or cells: "Warning – Do not open when an explosive gas atmosphere is present"

[16] **Report n.** EX-B1027127

Routine tests
The manufacturer shall carry out the routine tests prescribed at paragraph 27 of 60079-0: 2006 standard, at paragraph 16 of the EN 60079-1: 2007 standard and paragraph 24 of EN 61241-0: 2006 standard.
The routine overpressure test shall be carried out on empty enclosure with the static method (paragraph 15.1.3.1 of EN 60079-1 standard), at:
- 13.7 bar on all Ex-d enclosures of group II for minimum ambient temperature until –50 °C;
- 11.9 bar on Ex-d enclosures size 1÷5 for minimum ambient temperature until –20 °C
- 11.5 bar on Ex-d enclosures size 6 for minimum ambient temperature until –20 °C
- 10.0 bar on Ex-d enclosures size 7 for minimum ambient temperature until –20 °C

Descriptive documents (prot. EX-B1027133)

- Technical Note n. A4-4105 (2 pag.)	rev. 0	dated	17 july 2000
- Technical Note n. A4-4418 (3 pag.)	rev. 0	dated	18 march 2003
- Technical Note n. A4-4736 (1 pag.)	rev. 0	dated	02 july 2003
- Technical Note n. A4-4974 (2 pag.)	rev. 0	dated	21 march 2007
- Technical Note n. A4-5190 (7 pag.)	rev. 0	dated	16 february 2009
- Drawing A1-4100 (1 pag.)	rev. 2	dated	21 march 2007
- Drawing A4-4129 (1 pag.)	rev. 0	dated	26 june 2000
- Drawing A1-4417 (1 pag.)	rev. 1	dated	21 march 2007
- Drawing A1-4503 (1 pag.)	rev. 0	dated	02 july 2003
- Drawing A3-5390 (6 pag.)	rev. 0	dated	16 february 2009
- Drawing A1-5274 (1 pag.)	rev. 0	dated	16 february 2009
- Drawing A3-5422 (1 pag.)	rev. 0	dated	09 february 2010
- Marking label CED3793 (1 pag.)	rev. 2	dated	28 september 2011
- Marking label CED3797 (1 pag.)	rev. 0	dated	28 september 2011
- CE Declaration of Conformity CED3801 (1 pag.)		dated	06 october 2011
- Safety Instructions (9 pag.)	rev. 0	dated	06 october 2011

One copy of all documents is kept in CESI files.

CESI

[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 11 ATEX 063**

[17] **Special conditions for safe use**
None.

[18] **Essential Health and Safety Requirements**
Assured by compliance with the Standards.

7.2 EC Declaration of Conformity

Hazardous Area Specialists

EC Declaration of Conformity

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

Declare under sole responsibility that the product;

iVID101 Zone 1 12.1" TFT Display enclosure

To which this declaration relates is in accordance with the provision of the following directives

94/9/EC Equipment and protective systems intended for use in potentially explosive atmospheres.

2004/108/EC CE Marking for Electromagnetic Compatibility Directive

EC type Examination Certificate	**CESI 11 ATEX 063**
Provisions of Directive fulfilled by the equipment	**II 2 GD Ex d IIB+H2 T6**
Notified Body for EC Type Examination	**CESI, 0722, Cesi S.p.a, Milano, Italy**
Notified Body for production	**Intertek, 1712, ITS, Chester UK (Pre February 09)** **SIRA, 0518, Sira, Chester UK (Post February 09)**

And is in conformity with the following standards or other nominative documents

EN60079-0:2006	Electrical apparatus for explosive gas atmospheres - General requirements
EN60079-1:2007	Electrical apparatus for explosive gas atmospheres - Flameproof enclosures 'd'
EN61241-0:2006	Electrical apparatus for use in the presence of combustible dust - General requirements
EN61241-1:2004	Electrical apparatus for use in the presence of combustible dust - Protection by enclosures "tD"

Signed

Date : 12/02/2013

Nick Saunders
Operations and Engineering Manager

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8 Manual Revision

Revision	Description	Date	By
01	First release	20/02/15	JR/AR
1.1	Change in text to the main description	25/03/2015	JR
1.2	Change of text to part number on page 2	02/04/2015	JR