

ExCam® Series

ATEX Installation Manual



Contents

| | | |
|-----------|--|-----------|
| 1 | Introduction | 5 |
| 2 | Overview of the device documentation | 6 |
| 3 | Technical data | 7 |
| 3.1 | Parameters of the explosion protection | 7 |
| 3.2 | Electrical parameters (camera) | 7 |
| 3.3 | Case heating (optional, depending on camera module) | 7 |
| 3.4 | Video-optical Data | 7 |
| 3.5 | Other technical data | 8 |
| 4 | Conformity of Standards | 9 |
| 5 | Conformity of Standards | 10 |
| 6 | Transportation and Storage | 10 |
| 7 | Model variations | 10 |
| 8 | Area of use | 11 |
| 9 | Use/ Characteristics | 11 |
| 10 | Installation | 12 |
| 10.1 | Assembly | 13 |
| 10.1.1 | Stainless steel casing (type T03-VA... und T03-VA2...) | 13 |
| 10.1.2 | Aluminum casing (type T03-AL...) | 14 |
| 10.2 | Opening and closing of the unit | 15 |
| 10.3 | Electrical connection | 16 |
| 11 | Starting up | 17 |
| 12 | Maintenance/ Modification | 17 |
| 13 | Reparation | 17 |
| 14 | Disposal/ Recycling | 17 |
| 15 | Certificates | 18 |
| 15.1 | EU – declaration of conformity | 18 |
| 15.2 | Manufacturer's declaration concerning the cable and cable entry points | 19 |
| 15.3 | EC-Type Examination Certificate TÜV 09 ATEX 7697 X | 20 |
| 16 | Drawings | 24 |
| 17 | Notes | 26 |

List of illustrations

| | |
|--|----|
| Figure 1-1 ExCam® T03-VA... und T03-AL..... | 5 |
| Figure 2-1 Overview of the device documentation..... | 6 |
| Figure 9-1 T03-VA on wall bracket | 13 |
| Figure 9-2 T03-VA on sight glass | 13 |
| Figure 9-3 T03-AL on wall bracket..... | 14 |
| Figure 9-4 T03-AL on sight glass..... | 14 |

History of revisions

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 Title: ATEX Installation manual „ExCam® T03“
 Doc.-Id. 090122-PT03BAU-DF-ATEX Installation Manual_en rev.13.doc
 Author: Daniel Fleischer
 Date of Creation: 22.01.2009

| Rev.-Index | Date | Name | Comment | Authorization of the ATEX Supervisor |
|------------|------------|---------------|---|--------------------------------------|
| 01 | 26.01.2009 | S.Seibert | Diverse Korrekturen | |
| 02 | 31.03.2009 | S.Seibert | Revision gemäß <u>090126-PT03BAU-SS-Besprechung zur Baumusterprüfung T03 TÜV Rheinland.doc</u> | |
| 03 | 28.05.2009 | S.Seibert | Revision gemäß Prüfbericht. Einbindung in Corporate Design | |
| 04 | 28.09.2009 | S.Seibert | Revision Anschlusschema | |
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| 09 | 18.07.2012 | R. Thoms | 14.2 Konformitätsbescheinigung aktualisiert 14.3 Baumusterprüfbescheinigung aktualisiert | |
| 10 | 21.11.2012 | T. Haberzettl | 10.5 ExCam HD | |
| 11 | 12.10.2013 | R. Thoms | - Umbenennung in ATEX Installationsanleitung - Betriebsanleitungen der Gerätetypen aus gegliedert. | |
| 12 | 31.10.2013 | S.Seibert | Revision | |
| 13 | 07.03.2017 | S.Seibert | Revising to Guideline 2014/34/EU | |

1 Introduction

The ExCam® Series (Type 03) was developed especially for the use in potentially explosive atmospheres, according to ATEX zone 1 and zone 2, as well as zone 21 and zone 22. With the help of the cameras of the ExCam® Series process flows or objects like tanks, containers, centrifuges etc. can be monitored without actually being on location. Even the supervision of activities and persons in the hazardous area is possible without problems and therefore also increases safety.



Figure 1-1 ExCam® T03-VA... und T03-AL...

The ExCam enables the user to monitor a potentially explosion risk zone from a non-explosion risk zone. Depending on the model (ExCam® miniZoom, ExCam® niteZoom, ExCam® vario...) it is possible to control the camera via commands. Example: For the ExCam® miniZoom the user can adjust the 10x motor zoom lens, the aperture and the focal lens individually in order to achieve an optimized adjustment to the ambient conditions. Consequently, also distant objects can be observed in full detail.

The ExCam® is available in three housing alternatives which will be described further in the following chapters.

2 Overview of the device documentation.

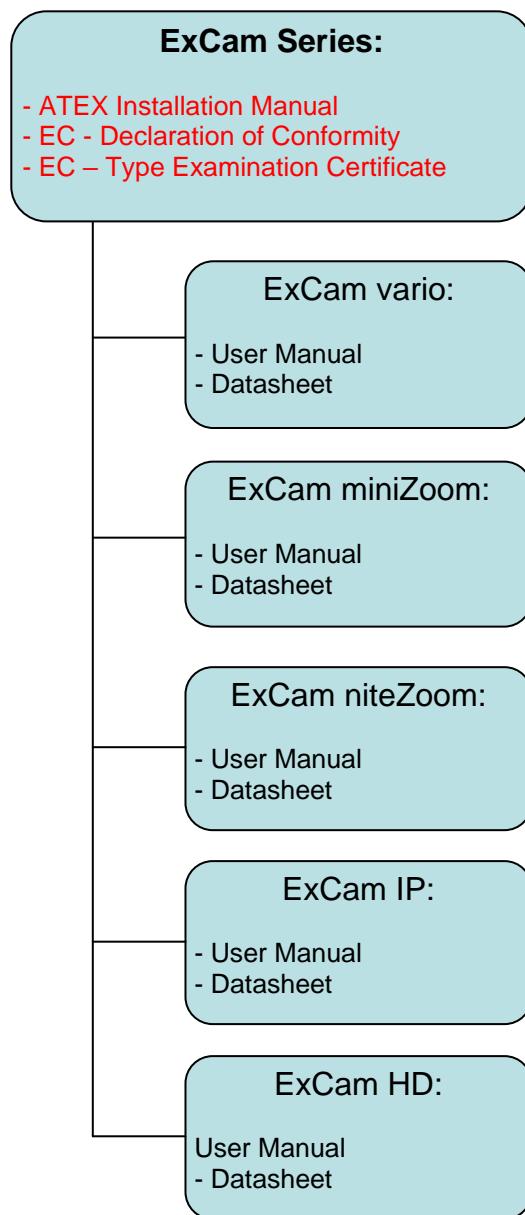


Figure 2-1 Overview of the device documentation

You can find the items marked "RED" in this document

3 Technical data

3.1 Parameters of the explosion protection

Identification marks according
to directive 94/9/EC:

 II 2G (Zone 1 und 2)
 II 2D (Zone 21 und 22)

Explosion protection (gas): Ex d IIC T6 Gb or

Ex d IIB T6 Gb

Explosion protection (dust): Ex t IIIC T80°C Db IP67

EC-Type Examination Certificate: TÜV 09 ATEX 7697 X

Inspection record: 194/Ex.697.00/09

3.2 Electrical parameters (camera)

| | |
|--|---|
| Supply voltage: | +12 V DC to +60 V DC (depending on the camera model) |
| Maximum power input for the flameproof enclosure: | |
| T03-VA... | 8,9 W |
| T03-AL... | 18 W |
| T03-VA2... | 20,3 W |

3.3 Case heating (optional, depending on camera module)

| | |
|--|--|
| Supply voltage: | +12 V DC to +25 V DC |
| Rated/ reference voltage: | +24 V DC at L+ (grey) 0 V DC at L- (white) |
| switching point of the temperature switch/ on: | ca. +5C° |
| switching point of the temperature switch/ off: | ca. +11C° |
| Maximum power consumption: | 15 W |
| Power input: | 1250 mA (depending on operation status and power supply) |

3.4 Video-optical Data

(see camera data sheet on www.SAMCON.eu)

3.5 Other technical data

| | |
|-------------------------------------|--|
| Permissible ambient temperature: | -20 C° - 50 C° (depending on camera module) |
| Protection classification | |
| EN 60529/IEC 529: | IP 67 rating |
| Material of casing: | die casted aluminium or stainless steel |
| Glass material: | Borosilicate glass |
| Weight: | 2100 g (stainless steel housing T03-VA) 1800 g (aluminium housing T03-AL) 5000 g (stainless steel housing T03-VA2) |
| Dimensions (L x D _{max}): | 128 mm x 77 mm (Stainless steel housing T03-VA without cable gland) 163mm x 98 mm (Aluminium housing T03-AL without cable gland) 210 mm x 113 mm (Stainless steel housing T03-VA2 without cable gland) |

Fitting of the flame proof gap preventing the transmission of ignition (cylinder)

| | |
|-------------|-----------------------|
| T03-VA...: | Diameter: 57 mm H8 f7 |
| T03-VA2...: | Diameter: 91 mm H8 f7 |

4 Conformity of Standards



Attention!

Cameras of type ExCam are not suitable for use in zone 0 and zone 20. The temperature class and explosion group as stated on the type plate is to be observed. Alterations are not permitted. The camera is to be operated in sound condition and in the way intended.



Attention!

Only original parts of SAMCON Prozessleittechnik GmbH may be used for reparation. Reparations concerning the explosion protection may only be carried out in accordance with the nationally applied regulations and by SAMCON Prozessleittechnik GmbH.



Attention!

External heat and/or cooling sources are to be taken into account during the setting up. The permissible temperature range has to be observed.



Attention!

The connecting cable has to have a minimum length of 1 meter. The connecting cable has to be laid shielded.



Attention!

The instructions on the type and instruction plates have to be observed!

Camera modules with autofocus:

„WARNING – MAY NOT BE OPENED WHILE ENERGIZED.“

Adjustable camera modules or lenses:

„WARNING – MAY NOT BE OPENED IN HAZARD AREAS.“

NOTE: Depending on classification of hazard areas a work permit/clearance has to be obtained. Prevent explosive atmospheres while assembling!

Before taking the camera into use, it has to be checked according to the instructions described in chapter 10.

Always follow the national security and accident prevention regulations as well as the security advices subsequently described in this user manual!

5 Conformity of Standards

The explosion protected cameras Type 03 meet the requirements of:

- Richtlinie 94/9/EG equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)
- DIN EN 60079-0:2009 „General requirements (Gas)“
- DIN EN 60079-1:2007 „Equipment protection by flameproof enclosures «d»“
- DIN EN 60079-31:2009 „Equipment dust ignition protection by enclosure «t»“

The camera also fulfils further requirements like the EG directive concerning electromagnetic compatibility (89/336/EWG). The cameras are developed, manufactured and tested state of the art.

6 Transportation and Storage

- Avoid impacts.
- Look out for possible damages to the packaging or camera.
- Store the camera in its original packaging and in a dry and weatherproof place until installation.
- Avoid extreme heat or cold sources.

7 Model variations

ExCam® cameras are available in different models with different camera modules. Depending on the product name and type designation code the exact variant can be obtained. Depending on the intended use, the cameras are fitted with

- Different camera modules
- Three different housings (VA, VA2, AL)
- Explosion group IIB and IIC
- variable lengths of camera cables (5-200 meters)
- Different connection variants (plugs and ferrules)
- a housing heating (depending on the product)

The product name is used to identify the intended usage of the camera. For example: ExCam® niteZoom is a zoom camera with autofocus and infrared cut filter. The type of camera determines the electronic and mechanical assembly of a camera (see chapter 9 for details). Depending on the installation conditions on the location of assembly the camera may come with a housing heating. Usage of cameras below freezing point is described in chapter 9 (installation). Heating of a housing is realised via the system cable.

A list of the different models and their explanation can be found in the device user manuals.

8 Area of use

The camera is suitable for use in potentially explosive atmospheres of zones 1 and 2 as well as zones 21 and 22 according to EN 60079-10. It can only be used in the appropriate certified type of protection and temperature class.



The instructions on the type and instruction plates have to be observed!

The materials used for the casing including the exterior metal components consist of premium raw materials, which guarantee corrosion protection and resistance to chemicals in „normal industrial atmospheres“ and when used in the intended way.



The ExCam miniZoom should only be used in surrounding temperatures of max. 50°C. External heat sources are to be avoided.

9 Use/ Characteristics

The explosion protected cameras of the ExCam[®] series are used for the surveillance of units and processes in potentially explosive interiors and exteriors. The instructions on the type and instruction plates have to be observed. Instructions layed down in points 3 and 4 have to be followed during the use of the camera.

Applications other than the ones described are not permissible without the written consent of SAMCON Prozessleittechnik GmbH.

10 Installation

The national regulations and accepted rules of technology are decisive for the installation and operation of the camera. Before installation, check the camera of possible damages to the casing and cables. Installation, electrical connection and start-up should only be carried out by qualified personnel.



Attention!

External heat and/ or cold sources should be taken into account during installation. The permissible temperature range should not be exceeded.



Attention!

The connecting cable has to have a minimum length of 1 meter. The connecting cable has to be laid shielded.

10.1 Assembly

10.1.1 Stainless steel casing (type T03-VA... und T03-VA2...))

The camera can be installed on swivels. (Accessoires)



Figure 9-1 T03-VA on wall bracket

With the help of hinge-joints the camera can be installed suitable for any case of application:

- on circular sightglass fittings to DIN 28120 / 28121 or similar
- on screwed sightglass fittings similar to DIN 11851
- on sightflow indicators

In order to monitor facilities, the camera can be mounted on swiveling holders.



Figure 9-2 T03-VA on sight glass

The camera can be mounted horizontally or vertically.

10.1.2 Aluminum casing (type T03-AL...)

The camera can be installed on swivels. (Accessories)



Figure 9-3 T03-AL on wall bracket

Thanks to the 3 different fastening systems (rotatable base, fastening bracket, adapter flange), the camera can be mounted for any case of application on:

- circular sightglass fittings to DIN 28120 / 28121 or similar
- sightflow indicators
- screwed sightglass fittings similar to DIN 11851(screwed dairy sightglass fittings)



Figure 9-4 T03-AL on sight glass

10.2 Opening and closing of the unit



Attention! Observe all warnings on camera labels:

Camera modules with autofocus:

„WARNING – MAY NOT BE OPENED WHILE ENERGIZED.“

Adjustable camera modules or lenses:

„WARNING – MAY NOT BE OPENED IN HAZARD AREAS.“

NOTE: Depending on classification of hazard areas a work permit/clearance has to be obtained. Prevent explosive atmospheres while assembling!

The ExCam ® miniZoom, niteZoom and IP may only be opened and closed by authorized SAMCON personnel.

When attaching the glass flange, make sure it fits properly into the camera casing. Make sure all foreign objects are removed from the unit before. In order to safe-guard the necessary minimum degree of protection, the glass flange has to be inserted as far as it will go into the camera casing and has to be fastened with the cover screws. Make sure that the screws are fastened tightly.



Attention!

Excessive tightening can damage the camera.

10.3 Electrical connection

**Attention!**

The electrical connection of the device may only be carried out by qualified personnel.

ExCam® devices with analog-signal-transmission are supplied with an electrical connection cable of the type SKAxx (System cable analog). The length of the cable is max. 200m and can be determined by the customer. The ExCam is manufactured and delivered as an unconnected cable end device (Pigtail) with the desired cable length, so that electrical works inside the explosion proof housing of the camera on part of the user are not permissible. The end of the camera connection cable is stripped and fitted with conductor sleeves.

The electrical connection for IP-based ExCam devices are realised with the system cable of the type SKD01 (4x2x0,34mm²). The length of the cable is max. 100m and can be determined by the customer.

The electrical connection and commissioning must be undertaken in accordance with national regulations, and only by authorized personnel.

Please note the electrical connection specifications of the device user manual!

**Attention!**

The housing of the ExCam® series must be earthed via the PA connection (earthing screw).

**Attention!**

The heating has to be fused externally.

When taking the camera into use at temperatures below 0°C, make sure to switch it on with a time delay. The casing has to be warmed up by the heating before the camera can be switched on. This can be done by an external time relay.

11 Starting up

Before taking the device into use, the examinations layed down in the individual national regulations have to be carried out. Furthermore, the correct function and installation of the device has to be checked in accordance with this user manual and other applicable regulations.

Improper installation and use of the camera can result in the loss of warranty.

The functional “Starting Up” of each device is described in the corresponding user manual.

12 Maintenance/ Modification

The applicable regulations for the maintenance and servicing of electrical devices in potentially explosive atmospheres must be followed.

The necessary maintenance intervals depend on the operating condition and have to be individually determined by the user. Especially parts on which the type of protection depends are to be examined as part of the maintenance (e.g. sound condition of the casing, the seals and the cable entry points). Repair works should be carried out when the need for them is recognised during maintenance.

13 Reparation

Reparations must only be carried out with original parts of SAMCON Prozessleittechnik GmbH. Damaged pressure-resistant casing should be replaced completely. In case of doubt, send the part in question back to SAMCON Prozessleittechnik GmbH.

Reparations concerning the explosion protection must only be carried out in accordance with nationally applied regulations by SAMCON Prozessleittechnik GmbH or a qualified electrical technician authorised by SAMCON Prozessleittechnik GmbH.

Rebuilding of or alterations to the devices are not permitted.

14 Disposal/ Recycling

When disposing of the device, nationally applicable regulations must be observed.

This Document is subject to alterations and additions.

15 Certificates

15.1 EU – declaration of conformity

EG/EU - Konformitätserklärung

EC/EU – Declaration of Conformity / CE/UE – Déclaration de Conformité

Der Hersteller / The manufacturer / Le fabricant



**Schillerstraße 17
35102 Lohra-Altenvers**

erklärt in alleiniger Verantwortung, dass sein Produkt
declares under his sole responsibility, that his product
déclare sous sa seule responsabilité, que son produit

ExCam® T03...

gekennzeichnet mit / marked with / marqué avec

Ex II 2 G Ex d II* T6 Gb
 Ex II 2 D Ex t IIIC T80°C Db IP67

bescheinigt mit EG-Baumusterprüfungsberechtigung
certified by EC type examination certificate
ayant fait l'objet de l'attestation CE de type

TÜV 09 ATEX 7697 X

auf das sich diese Erklärung bezieht, mit der/den folgenden Richtlinien, Normen oder normativen Dokumenten
 übereinstimmt:

referred to by this declaration is in conformity with the following directives, standards or normative documents:

auquel se rapporte la présente déclaration, est conforme aux directives, normes ou aux documents normatifs suivants:

| ATEX Richtlinie/ ATEX Directive/ Directive ATEX | | Normen / Standards / Normes |
|---|--------------------------|--|
| Bis/Until/Jusque 2016-04-19 | Ab/From/De 2016-04-20 | EN 60079-0:2009 EN 60079-1:2007 EN 60079-31:2009 |
| 94 / 9 / EG | 2014/34/EU | |
| 94 / 9 / CE | 2014/34/EU | |
| 94 / 9 / EC | 2014/34/UE | |



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 Datum: 2017.03.07 08:05:54 +01'00'

Dipl.-Ing. Steffen Seibert
 Geschäftsführer

Lohra-Altenvers, den / the / le 07.03.2017

15.2 Manufacturer's declaration concerning the cable and cable entry points

Herstellererklärung

Declaration of manufacturer / Déclaration de fabricant

Der Hersteller / The manufacturer / Le fabricant



**Schillerstraße 17
35102 Lohra-Altenvers**

erklärt in alleiniger Verantwortung, dass die verwendeten **Kabel und Kabelleitungseinführungen** für sein Produkt

*declares under his sole responsibility, that **Cable and Cable Glands** for his product
déclare sous sa seule responsabilité, que les **câbles et le entrées du câbles** pour son produit*

ExCam® To3

gekennzeichnet mit / marked with / marqué avec

 II 2 G Ex d II* T6 Gb
 II 2 D Ex t IIIC T80°C Db IP67

bescheinigt mit EG-Baumusterprüfungsberechtigung
*certified by EC type examination certificate
ayant fait l'objet de l'attestation CE de type*

TÜV 09 ATEX 7697 X

auf das sich diese Erklärung bezieht, mit der/den folgenden Normen oder normativen Dokumenten

übereinstimmt:

*referred to by this declaration is in conformity with the following standards or normative documents:
auquel se rapporte la présente déclaration, est conforme aux normes ou aux documents normatifs suivants:*

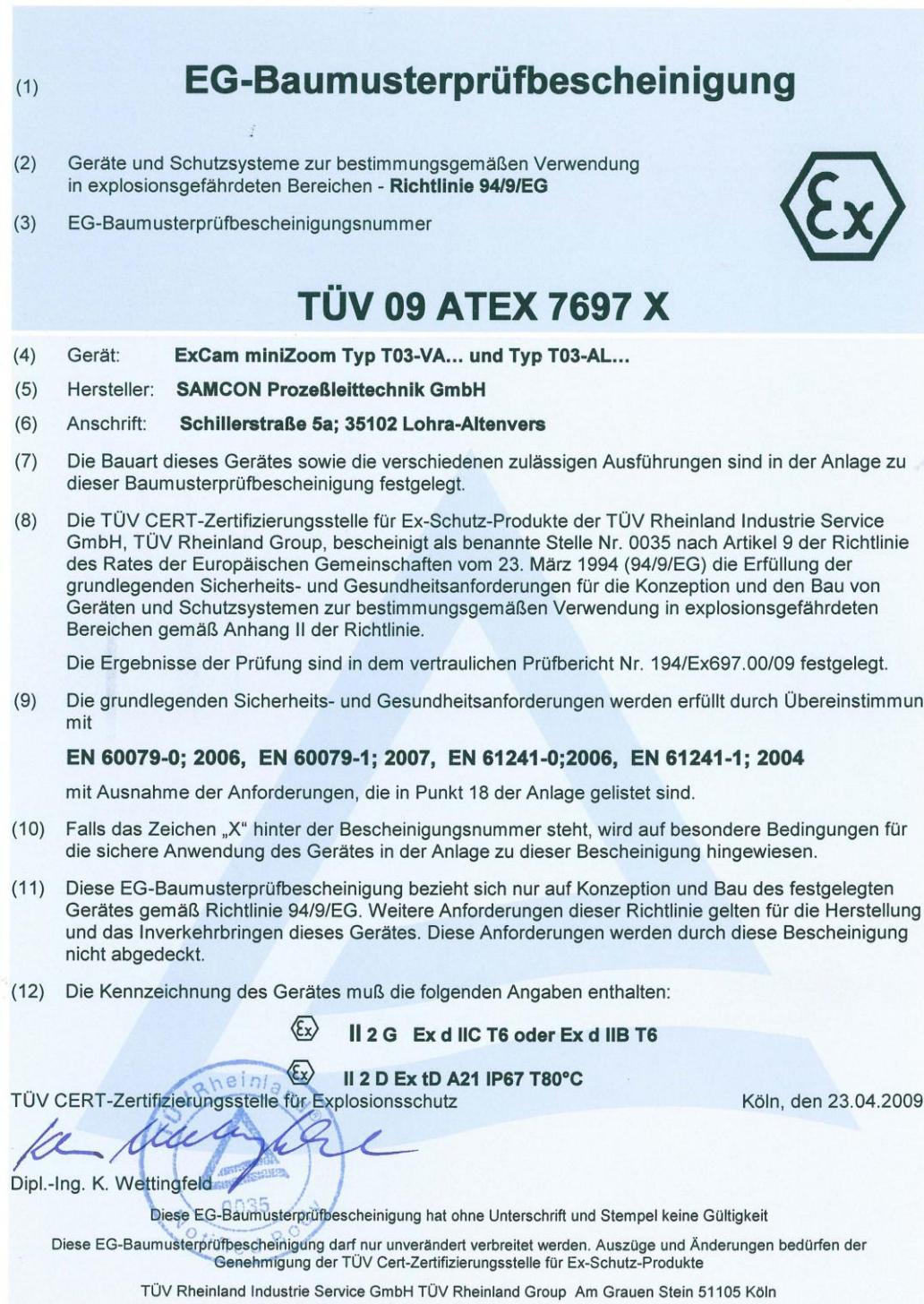
**DIN EN 60079-14:2014
IEC 60079-14:2013**


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Dipl.-Ing. Steffen Seibert
Geschäftsführer

Lohra-Altenvers, den / the / le 07.03.2017

15.3 EC-Type Examination Certificate TÜV 09 ATEX 7697 X



1. Ergänzung

gemäß Richtlinie 94/9/EG Anhang III Ziffer 6

zur

EG-Baumusterprüfbescheinigung TÜV 09 ATEX 7697 X

Gerät: ExCam **Typ:** T03-VA... und T03-AL

Hersteller: SAMCON Prozeßleitechnik GmbH
Anschrift: Schillerstrasse 5a 35102 Lohra-Altenvers

Beschreibung der Ergänzungen und Änderungen

Das Gerät wird von ExCam miniZoom in ExCam umbenannt.

Die zulässige Umgebungstemperatur ist für alle Typen: - 20 °C bis + 50 °C.
Die besondere Bedingung, dass die Umgebungstemperatur vom Einbau einer Heizung abhängt, entfällt.

Die weiteren Daten der EG-Baumusterprüfbescheinigung bleiben unverändert.

Prüfbericht- Nr.: 557/Ex 697.01/11

Besondere Bedingungen / Special conditions for safe use

Siehe „Beschreibung der Ergänzungen und Änderungen“.

Sicherheitsrelevante Informationen / Safety-relevant information

Es gelten die im Grundschein aufgeführten Bedingungen.

TÜV Rheinland Zertifizierungsstelle für Ex - Produkte

Köln, 10. Mai 2011

Dipl.-Ing. Heinz Farke

Diese Ergänzung zur EG-Baumusterprüfbescheinigung hat ohne Unterschrift und Stempel keine Gültigkeit.

Diese Ergänzung zur EG-Baumusterprüfbescheinigung darf nur unverändert verbreitet werden.
Auszüge und Änderungen bedürfen der Genehmigung der TÜV Rheinland Zertifizierungsstelle für Ex-Schutz-Produkte

TÜV Rheinland Industrie Service GmbH Am Grauen Stein 51105 Köln
Tel.: +49 (0) 221 806-0 Fax. + 49 (0) 221 806 114

Seite 1 / 1

www.tuv.com

 **TÜVRheinland®**
Genau. Richtig.

2. Ergänzung

gemäß Richtlinie 94/9/EG Anhang III Ziffer 6

zur

EG-Baumusterprüfbescheinigung TÜV 09 ATEX 7697 X

Gerät: ExCam **Typ T03-VA... / Typ T03-AL... / Typ T03-VA2**

Hersteller: SAMCON Prozeßleittechnik GmbH
Anschrift: Schillerstrasse 5a 35102 Lohra-Altenvers

Beschreibung der Ergänzungen und Änderungen

Das Gerät wird um das Model T03-VA2... erweitert.

Dadurch ändern sich die technischen Daten der 3 Modellvarianten wie folgt:

Typ T03-VA

Versorgungsspannung: 12V Dc bis 60V DC
P max bei Tamb +50°C 8,9 W

Typ T03-VA2

Versorgungsspannung: 12V Dc bis 60V DC
P max bei Tamb +50°C 20,3 W

Typ T03-AL

Versorgungsspannung: 12V Dc bis 60V DC
P max bei Tamb +50°C 18 W

Ein Normenupdate auf die EN 60079-0:2009 EN 60079-1:2007 und EN 60079-31:2009 hat stattgefunden. Die Änderung der Kennzeichnung ergibt sich wie folgt:

II 2 G Ex d IIC T6 Gb oder II 2 G Ex d IIB T6 Gb
II 2 D Ex t IIIC T80°C Db IP65

Die weiteren Daten der EG-Baumusterprüfbescheinigung und der 1. Ergänzung bleiben unverändert.

Prüfbericht- Nr.: 557/Ex 697.02/12

Diese Ergänzung zur EG-Baumusterprüfbescheinigung hat ohne Unterschrift und Stempel keine Gültigkeit.

Diese Ergänzung zur EG-Baumusterprüfbescheinigung darf nur unverändert verbreitet werden.

Auszüge und Änderungen bedürfen der Genehmigung der TÜV Rheinland Zertifizierungsstelle für Ex-Schutz-Produkte

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Besondere Bedingungen / Special conditions for safe use

Siehe „Beschreibung der Ergänzungen und Änderungen“.

Sicherheitsrelevante Informationen / Safety-relevant information

Es gelten die im Grundschein aufgeführten Bedingungen.

TÜV Rheinland Zertifizierungsstelle für Ex - Produkte

Köln, 06 Juni 2012

Dipl.-Ing. Klaus Peter Graffi



Diese Ergänzung zur EG-Baumusterprüfung hat ohne Unterschrift und Stempel keine Gültigkeit.

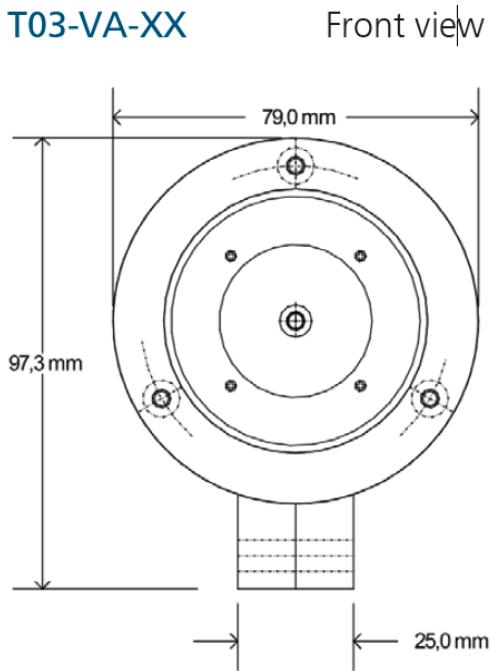
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Auszüge und Änderungen bedürfen der Genehmigung der TÜV Rheinland Zertifizierungsstelle für Ex-Schutz-Produkte

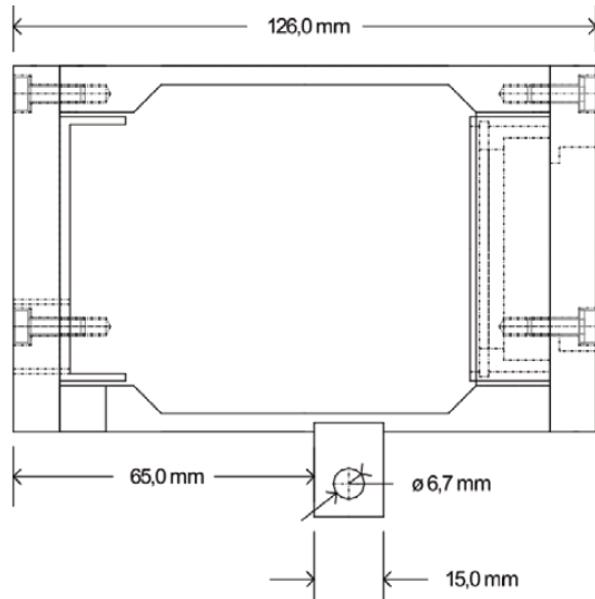
TÜV Rheinland Industrie Service GmbH Am Grauen Stein 51105 Köln
Tel. +49 (0) 221 806-0 Fax. +49 (0) 221 806 114

16 Drawings

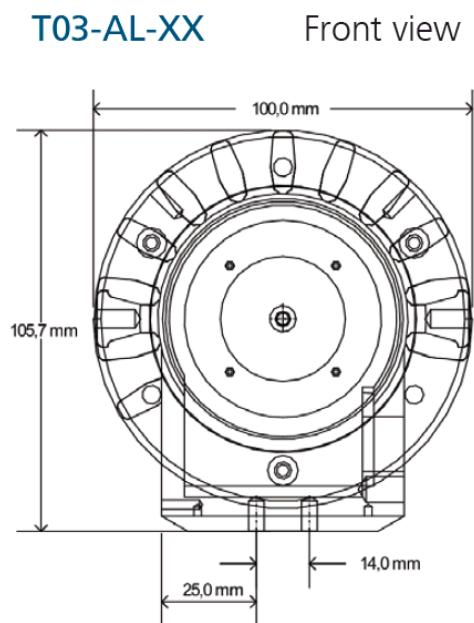
T03-VA-XX



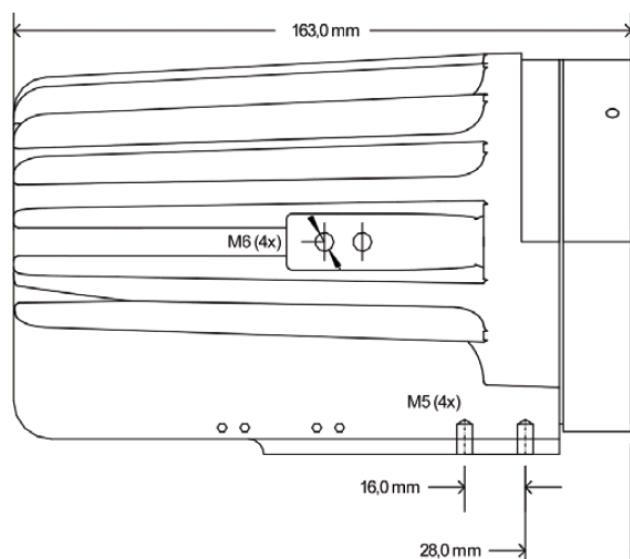
Side view from left



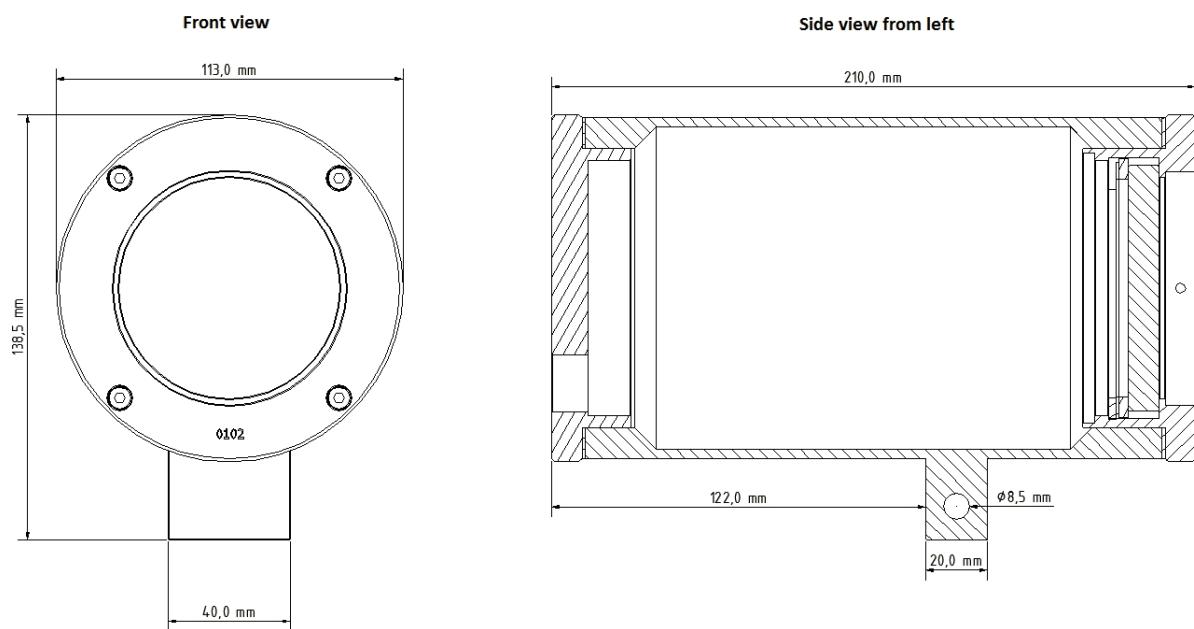
T03-AL-XX



Side view from left



T03-VA2-XX



17 Notes



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