

ExCam[®] SUFA4115

User Manual



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1 Introduction

The ExCam SUFA4115 is an ultra compact and robust sensor unit (type T08) which is manufactured by SAMCON Prozessleittechnik GmbH and can be used very flexibly for various applications. The main application is the usage within the hazardous areas of the chemical and/or petro-chemical industry, at offshore plants, and at biogas plants. The ExCam SUFA4115 is equipped with a varifocal lens.

The camera is suitable for the usage within the Ex zones 1, 2, 21, and 22 including the gas group IIC (all gases, steams, and fogs including acetylene, hydrogen, and carbon disulphide) and the dust group IIIC (conductive dusts and flammable fibrous material). The ExCam SUFA4115 is made for use with a Main Unit (ExConnection Rail FA54 or FA54 Main Unit). Due to the usage of high-quality PTFE sealings, not only the protection level IP68 is met but also the chemical resistance is maximized.

2 Connection options and required hardware

ExCam SUFA4115 is part of a modular camera. The ultra compact sensor unit needs a main unit (FA54 Main Unit or ExConnection Rail FA54; not included) for image processing and network connection. Such a main unit supports up to 4 sensor units simultaneously. Sensor unit and main unit could be placed separately.

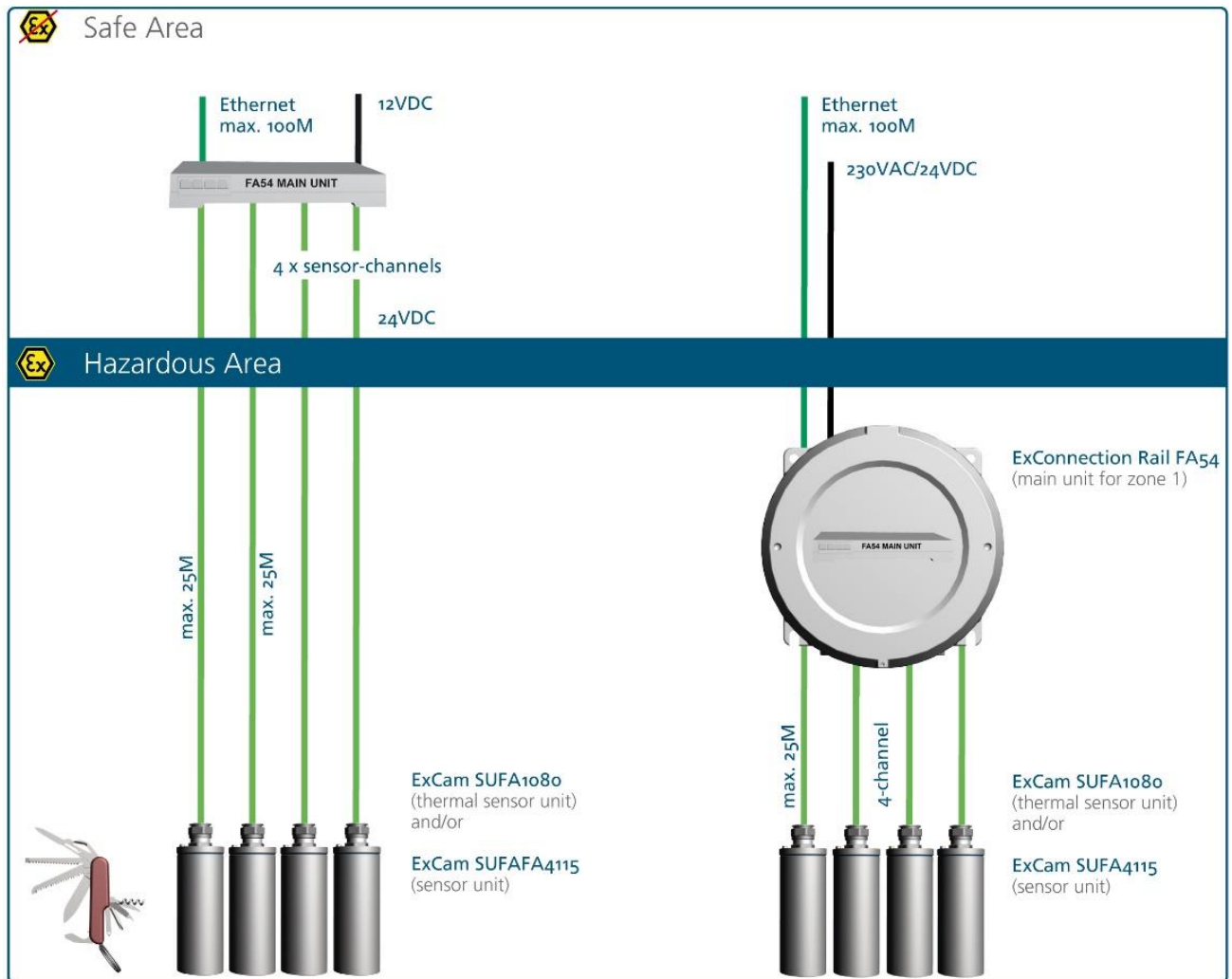




Figure 2-1 Connection options

3 Technical Data

3.1 Parameters of the explosion protection

Identification marks according to
Directive RL 2014/34/EU:

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

Explosion protection (gas):
Explosion protection (dust):

Ex db IIC T6 Gb
Ex tb IIIC T80°C Db

Protection level:

IP 68 (IEC/ EN 60529)

Transportation / storage temperature:
Ambient temperature (EX):

0°C ... +50°C
-20°C ... +50°C

Noticed body:

TÜV Rheinland (number 0035)

EU Type Examination:

TÜV 18 ATEX 8218 X (2020)

IECEX certificate:

IECEX TUR 18.0023X (2020)

Further certificates:

<https://www.samcon.eu/en/products/network/modular/excam-sufa4115/>



Attention!

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

3.2 Illustration of the model key

Ex product-name	Model versions				
1)	2) Type	3) Housing- combination	4) Temp.- range	5) Cable length [m]	6) Termination
ExCam SUFA4115	T08-	VA0.1.K1.BOR-	N.N-	005.N-	P-

Table 3-1 – Model key

Explanations:

- 1) ExCam SUFA4115 = Functional camera description of the ExCam Series (technical data / specification of the individual camera module)
- 2) **T08** = SAMCON Production type 08
- 3) **VA0.1.K1.BOR** = T07 Ex d housing (stainless steel 1.4404) with small diameter ($\varnothing_{VA}=48\text{mm}$)
VA0.1.K1.BOR = T07 VA0.x housing with maximum body length ($L_{VA0,1,R} = 127\text{mm}$)
VA0.1.K1.BOR = K1 cable gland flange (axial cable gland, standard)
VA0.1.K1.BOR = Borosilicate sight glass DIN7080 standard execution, for video cameras within visible spectral range and photographic infrared range (NIR), not suitable for thermographic applications (MIR/ FIR)
- 4) **N.N** = Normal ambient temperature range ($T_{amb} > -20^{\circ}\text{C}$)
N.N= No cooling system installed ($T_{amb} < +50^{\circ}\text{C}$)
- 5) **005.N** = Length of the connection line in meter at delivery. The standard cable length is 5 m, minimum / maximum cable length is: 25 [m]
005.N = Non armoured cable
- 6) **P** = Plug- termination
RJ-12 plug connector; shielded

3.3 Electrical parameters

Power supply of the Sensor Unit via ExConnection Rail FA54 or FA54 Main Unit:
 max. 1.2W@4VDC

3.4 System cable

Description:	Data transfer and power supply of the camera module
Jacket colour:	Green (GN), similar to RAL 6018
Outside diameter:	8.7 ± 0.3 mm
Bending radius:	8 x D _a when installed and 4 x D _a after installation
Temperature:	-25°C ... +80°C during installation -60°C ... +80°C fixed installed
Data line:	4 x 2 x AWG24/7 blank, CAT.6
Shielding:	Copper, tinned wire 0.10, optical cov. app. 80%
Outer jacket/ Properties:	PUR FHF, halogen-free, flame-retardant (EN 60332-1-2), EMV shielded, suitable for drag chains, (see www.samcon.eu)

Quicklink:

https://www.samcon.eu/fileadmin/documents/en/60-Assembling%26mounting/SKD04-T.flex_Datasheet.pdf

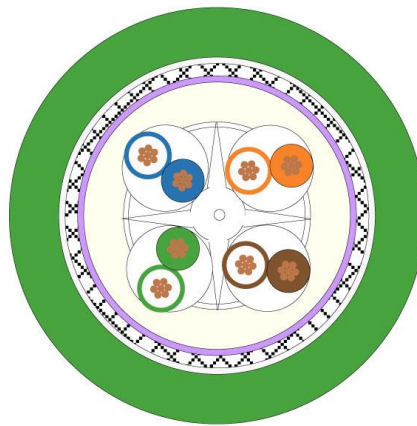


Figure 3-1 Sectional view of SKD04-T.flex



Attention!

For wiring and connection of the camera, DIN/EN/IEC 60079-14 has to be observed. Especially for cross zone installation, measures against zone entrainment have to be taken.

3.5 Video-technical characteristics

We use the AXIS FA4115 Sensor Unit in a pressure-resistant enclosure. For details, please refer to the Product Documentation, video-technical data of AXIS®:

<https://www.axis.com/products/axis-fa4115>



3.6 Other technical data

	Sensor Unit (Ex-d)
Permissible ambient temperature	-20°C ... +50°C
Protection class as per EN 60529/IEC 529	IP68 (Test conditions: 0.5h/8m water column 5°C)
Housing material	stainless steel, mat. no. 1.4404
Weight	about 0.7 kg
Dimensions	D48mm x 127mm

Table 3-2 Other technical data

Housing material of the pressure resistant enclosure (Ex d / DIN EN 60079-1: 2014) according to **DIN EN 10027-2: 2015-07** (designation system for steel):

Housing material (standard)

MNo.: 1.4404 (X2CrNiMo17-12-2),
AISI 316L / V4A

Additional metallic and non-metallic materials of the T07-VA1.2.x.x ex-d housing:

Zincd spring steel MNo.: 1.0330, PTFE with glass microbeads (GYLON® Style 3504 blue), silicone-coating (Silcoset 105 incl. CureAgent 28), MVQ (silicone), thermos transfer foil made of polyester (acetone resistant), cable glands made of brass, nickel-plated (MsNi)

Sight glass material:

Borosilicate glass "Ildadur 10/ I-420"
 (DIN7080¹:2005-05)

Internal materials:

Optical and electronical components, div. thermoplastic plastics: polyamide (PA6.6/ PA2000) and polyoxymethylene (POM) isolators and supporting adapters, aluminum die cast, zincd (protection housing T08 aluminum universal

¹ Valid standards for translucent components in a pressure-tight housing: DIN7080:2005-05 „Round sight glasses made of borosilicate glass for compressive stress without limitation of the low temperature ranges“

adapter (EN AW-ALSi1MgMn), PTC-ceramics, PUR, etc.

Weight (without accessories): 3,000 g (with K1 cable flange)
 Weight of accessories: 800 g (wall mount bracket WMB-VA1.X)
 50 g (hinge attachment SCH-VA1.x)
 (further accessories upon request)

Dimensions housing (wxhxd): 48.0mm x 48.0mm x 127.0mm

Dimensions with accessories (WxHxD): 97.0mm x 193.0mm x 299.5mm

Fitting of the **flame proof gap** preventing the transmission of ignition (cylinder) (EX) of the T07-VA1.2.x.x housing:

Flange / body

Nominal diameter: **35 mm** (plain cylindrical)

Clearance fit: **H9 f7** (DIN ISO 286)

Tolerance: (-60...-30) µm ... (0...+46) µm

Smallest gap length > 10.5 mm

(according to DIN EN 60079-1)

Largest gap length < 0.15 mm

(according to DIN EN 60079-1)

Average surface finish: $R_a \approx 2.0 \mu\text{m}$

(DIN ISO 468) / $R_a \leq 6.3 \mu\text{m}$

(according to DIN EN 60079-1: 2014 [5.2.2])

Cable glands

1x **M20*1.5**_12 mm (ISO metrical fine thread acc. to DIN13-2), **Quality 6H** (medium or fine (acc. to. ISO 965-1 / ISO 965-3), supporting/
gripping threads ≥ 5 (acc. to the requirements of DIN EN 60079-1: 2014 [5.3] table 3 „cylindrical threads“)

Media resistance:

Exclusively checked upon request!

Generally: Corrosion as well as chemical highly resistant against a variety of fluid and gaseous components of the industrial area and suitable for offshore applications (see general specification of stainless steel MNo.:1.4404 / AISI316L), surface finish and modification of the Ex d housing², elastomer sealings of the cables, as well as the GYLON® flat seals of the housing flange, etc.)

² Protective coating, electro polishing, etc. ...

4 Safety Instructions

Please absolutely observe the installation instruction's safety directions of the T08 ExCam series!



Quick link:

<https://www.samcon.eu/fileadmin/documents/en/22-Ex-Network-Cameras/ExCam-Series-T08-EX-Installation-Manual-2020.pdf>

It is absolutely mandatory to adhere to the national safety regulations and regulations for prevention of accidents, as well as to the safety instructions given below in this User Manual!



Attention!

Cameras of type T08 ExCam are not suitable for use in zones 0 and 20. The ambient temperature, temperature class and explosion group written on the enclosure nameplate must be absolutely adhered to! The customer is not allowed to make any alterations of the camera! The camera must be operated in a proper and sound condition and only in the way intended.



Attention!

Repairs may only be carried out by using original parts from the manufacturer. Repairs which affect the explosion protection may only be carried out in accordance with the nationally applied regulations and exclusively by the manufacturer.



Attention!

Prior to installation, take external sources of heat or cold into account! The temperature ranges prescribed for storage, transport and operating must be adhered to!



Attention!

Adhere to the warnings given on the nameplate:

“WARNING – DO NOT OPEN IN HAZARD AREAS“



Using the camera in explosion-protected areas with regard to temperature and dust layers is defined in the respective national regulations.



When installing the ExCam, adhere to the requirements of the EN/IEC 60079-14.

5 Installation

For the sensor unit's installation and operation, the relevant national regulations, as well as the generally accepted rules of technology shall prevail. Before mounting the device, thoroughly check it for any transportation damages, especially at the housing and cable. Installation, electrical connection, and the first commissioning must only be carried out by qualified personnel.

Work preparation:



Attention!

Prepare your work carefully and in accordance with the relevant regulations.



Attention!

Depending on classification of hazard areas, it is imperative to obtain a work approval first!

When you open the pressure-resistant enclosure under voltage, it is absolutely necessary to prevent potentially explosive atmosphere!

To ensure the best image quality delivered by the sensor unit, plan the installation site carefully (consider light conditions, object distance or size, angle and minimum object distance to the focus).

- Use appropriate tools and aids.
- When working, ensure a safe stand.
- Make sure that any static charge is avoided.



Attention!

Please observe the national security, installation and accident prevention regulations (e.g. DIN EN 60079-14) and the safety instructions in this User Manual, as well as the ones in the Installation Guidelines!



Attention!

Adhere to the provisions of the IECEx, ATEX and EX installation instructions for mounting and starting up!

The ExCam SUFA4115 consists of a flame-proof sensor housing (T08 Ex-d). The sensor unit is equipped with a flexible cable (5 to 25 m). Mount the sensor unit according to the desired field of view. Install the (extra) main unit so that a good accessibility is provided, in order to facilitate electrical connection. Connect the sensor unit with a suitable main unit.

Drawings for drill hole patterns and further information can be viewed on our product page:

Quick link:

<https://www.samcon.eu/en/products/network/modular/excam-sufa4115/>



Optional mounting accessories

<p>Wall bracket WMB-...</p>		<p>WALL MOUNT EXCAM VA1.x Wall bracket for devices of T08-VA0-series Suitable for hanging the camera on walls. Material: stainless steel 1.4404 Weight: 0.68 kg Dimensions: 80 x 100 x 205 mm</p>
<p>Pole adapter PMB-...</p>		<p>POLE MOUNT EXCAM VA1.x (-) Pole adapter for VA wall mount Material: stainless steel 1.4404 Suitable for pole diameters between 50 and 105 mm Load-bearing capacity: 45 kg Dimensions: 120x180x130 at masts of Ø 60 mm)</p>
<p>Hinge attachment SCH-...</p>		<p>Hinge attachment SCH-VAx.x Hinge attachment for easy mounting on round sight glasses acc. to DIN 28120/28121 or similar for VA Material: stainless steel AISI 316L/1.4404 Weight: ca. 0.04 kg Dimensions WxHxD [mm]: 29.2x40x73.1</p>

Table 5-1 Mounting accessories

6 Electrical connection



Attention!

The electrical connection of the equipment may only be carried out by qualified and skilled personnel!



Attention!

It is absolutely necessary to ground the ExCam® series' housing via the PA connection.



Attention!

Please observe the national security, installation and accident prevention regulations (e.g. DIN EN 60079-14) and the safety instructions in this User Manual, as well as the ones in the Installation Guidelines!

The delivered ExCam® SUFA4115 is equipped with an electrical connection cable of the type SKD04-T.flex. The maximum transmission range from the sensor unit to the main unit is 25 meters. The user is NOT authorised to do electrical connection procedures inside the pressure-resistant enclosure.

6.1 Potential equalization

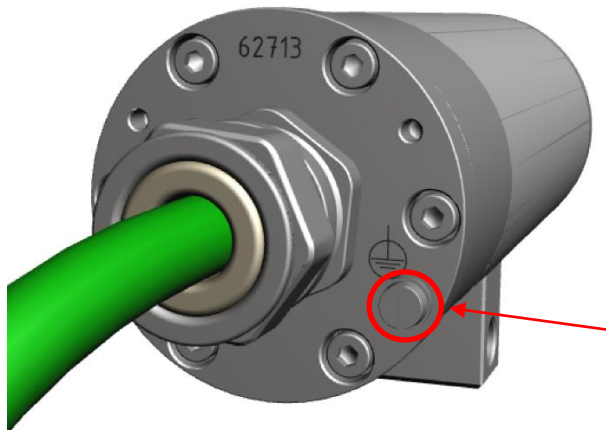


Figure 6-1 ExCam SUFA4115 Potential equalization

Potential equalization/grounding of the camera housing is absolutely necessary, in order to avoid static charges and thus the formation of sparks. For this purpose, a screw terminal is provided at the rear side, at the bottom (right) (see Figure 5-1). The cross-section of the potential equalization should comply with the National Ground Rules (at least 4mm²).

Wiring table:

Potential	Colour (IEC 60757)	Cross-section	Comment
PA	GN/YE	4 mm ² (rigid)	Terminal: Slotted screw M3x0.5 (DIN 84) with washer Ø9mm (DIN 125A), Keep 1.2 Nm tightening torque!

Table 6-1 Potential equalization

6.2 Connection work at the device (terminal box) and fuses

The sensor unit has to be used together with a main unit (ExConnection Rail FA54 or FA54 Main Unit).

Power supply for the sensor unit

Voltage supply:	via a main unit
Maximum power consumption:	1.2W@4VDC
Typical power consumption:	0.5 W

The figures 5.2 and 5.3 illustrate the potential connection-variants of the ExCam SUFA4115. Possible connection variants are sensor unit connected to an ExConnection Rail FA54 (purchased separately) or sensor unit with RJ12 plug and main unit FA54 (purchased separately) for safe areas.

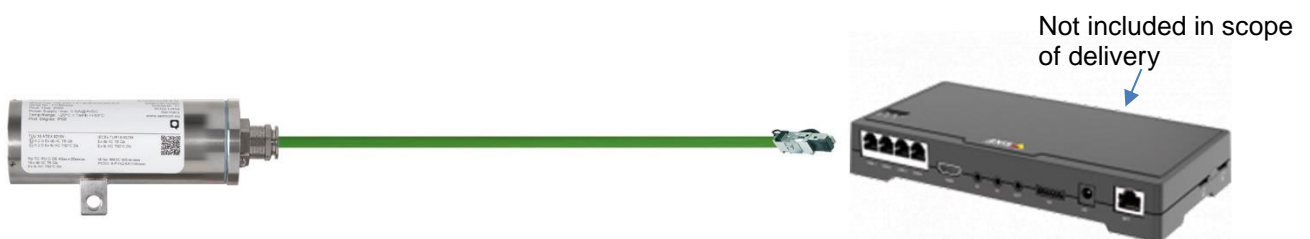


Figure 6-2 ExCam SUFA4115 T08-VA0.1.K1.BOR-N.N-xxx.N-P with FA54 Main Unit



Figure 6-3 ExCam SUFA4115 T08-VA0.1.K1.BOR-N.N-xxx.N-P with ExCR FA54

6.2.1 Direct routing into safe area

At the cable end of the sensor unit's cable there is a RJ12 plug. The plug (Fig. 5-2) has to be connected to the Main Unit (FA54, without pressure tight casing).

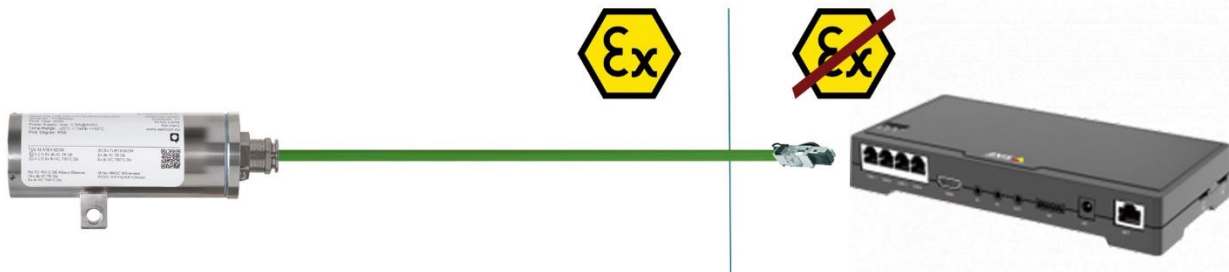
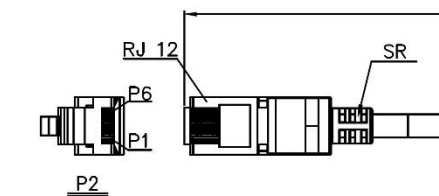


Figure 6-4 ExCam SUFA4115 → safe area

When connecting the sensor unit directly to the Main Unit situated in the safe area, the power supply as well as the network signal has also to be placed in the safe area. It is suggested connecting the Sensor Unit with the Main Unit prior to powering the Main Unit. If the Sensor Unit will be unplugged and then re-connected, it is possible that the Main Unit needs to be rebooted. The maximum cable length is 25 m. The cable is not longitudinal tight. Please observe the requirements of DIN/EN/IEC 60079-14 (Appendix E).

6.2.2 Plug assignments (RJ12) of the sensor unit

If the cable of the Sensor Unit needs to be shortened (the cable must not be extended), the plug needs to be disassembled professionally. When re-mounting the plug it is mandatory to observe the correct pin assignment according to EIA/TIA-568B (q.v. tab.5.2). Usually two strands of the same color code (IEC60757) are connected. The pin assignment of the SKD04-T.flex is as follows:



WIRE CONNECTION TABLE			
P1	SIGNAL NAME	WIRE COLOR	P2
1	VCC	Blue/Whitie	5
5	GROUND	Blue	6
2	-DATA	Brown/Whitie	2
3	+DATA	Brown	1
Shell	Drian wire	--	Shell

WIRE CONNECTION TABLE			
P2	CODE	WIRE COLOR	SIGNAL
1	Brown	BN	+ DATA
2	Brown White	BN / WH	- DATA
3	-	-	-
4	-	-	-
5	Blue White	BU / WH	VCC
6	Blue	BU	Ground
SH	Shield	Shield	Drian wire

Table 6-2 Pin assignment of the RJ12 plug (SKD04-T.flex)

It is necessary to make sure that the cable shield is grounded on side of the terminal block!

6.2.3 Connection to an ExConnection Rail / Routing into Ex-d

In a first step the Sensor Unit has to be connected to an ExConnection Rail. The Main Unit FA54 is placed in the Ex-d housing.

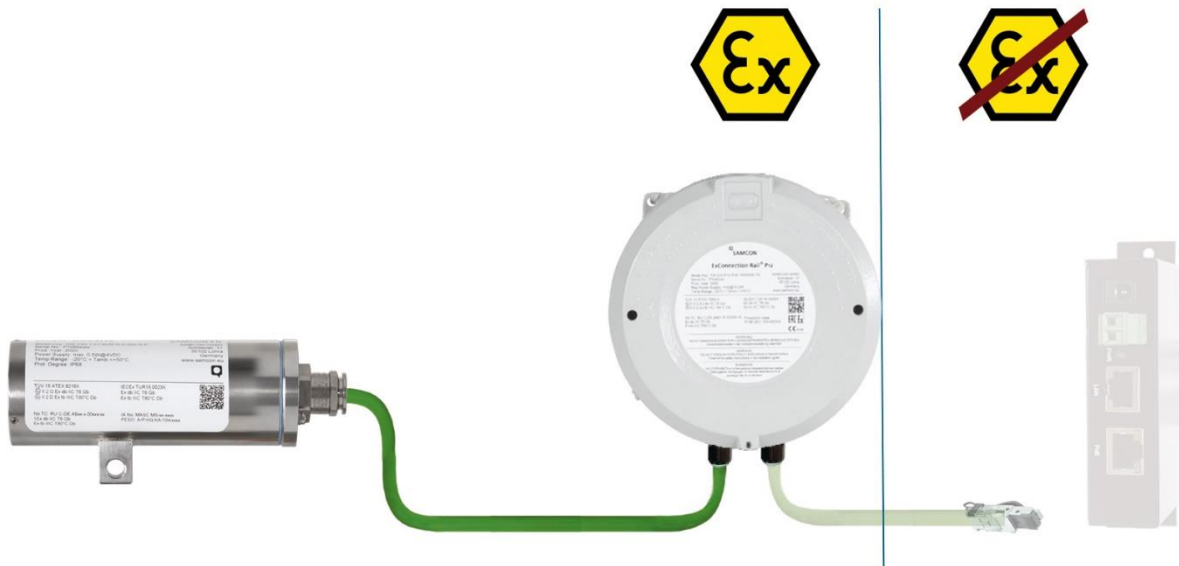


Figure 6-5 ExCam SUFA4115→ExConnection Rail

Please observe the mounting instructions of the cable gland:
 The torque of the enclosed cable gland is 20 Nm.

https://www.samcon.eu/fileadmin/documents/de/80-Anzeigen%26Bedienen/KLE_ADE1F2_Mounting_Instructions.pdf



Attention!
 Finally, check your network installation with a Class-D Link Test.



Attention!
 Cables and wires must comply with the requirements of the IEC 60079-0/1 & 14.



Attention!
 The supply line must have a sufficient cross-section. The cable protection must comply with national and international regulations.

6.2.4 Appropriate cables & cable entries

An integral part of the device safety is the correct selection of the cables, wires and cable entries.



Attention!

Cables and wires must comply with the requirements of the IEC 60079-0/1 & 14.



Attention!

The supply line must have a sufficient cross-section. The cable protection must comply with national and international regulations.

For non-binding configuration and planning guidelines, please visit our website:



6.2.5 Tests prior to switching on voltage



Attention!

Prior to starting the device, perform all tests as indicated by the national regulations. Furthermore, check the correct function and installation of the device in accordance with this User Manual and other applicable regulations.



Attention!

Incorrect installation or operation of the camera may lead to a loss of warranty!



Attention!

Do not switch on the camera at temperatures below 0°C!

7 Working inside the housing (Ex-d)

The customer may open the housing only if it is absolutely necessary. Possible reason for this is only to change the focus.

7.1 Preparation for work:



Attention!

Prepare your work carefully and in accordance with the relevant regulations.



Attention!

Depending on classification of hazard areas, it is imperative to obtain a work approval first!

If you adjust the camera yourself or open the pressure-resistant enclosure (Ex-d) under voltage, it is absolutely imperative to prevent potentially explosive atmosphere!

7.2 Opening the pressure-resistant housing



WARNING – MAY NOT BE OPENED IN HAZARD AREAS

Note: Depending on classification of hazard areas, it is imperative to obtain a work approval first!

Even after switching on the power supply, it is absolutely imperative to avoid potentially explosive atmosphere when opening the camera housing. Opening the housing requires disassembly and working in a safe (i.e. non-explosive!) area.



Attention!

Pay attention not to damage the thread surface of the flame-proof gap.



Attention!

Pay attention not to damage the housing seals. Keep them clean!

Opening the sensor unit's housing is only permitted to change the focus. Afterwards, the housing has to be closed explosion-proof again! The steps below have to be followed very carefully.

Attention:

For opening the ExCam SUFA4115's pressure-resistant stainless steel housing T07 VA0.1.K1.BOR, it is mandatory to follow the step-by-step instructions as stated in the T08 Ex installation manual!

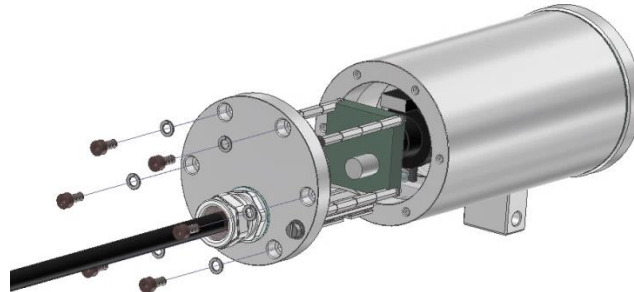


Figure 7-1 – Opening the ExCam SUFA4115 (Fig. similar)

Loosen the six M3 cylinder-head hexagon screws (DIN 912/ ISO 4762) together with their spring rings (DIN 127A) on the rear side of the cable and power supply flange. Caution: do not touch the screw threads with your skin or clothes! On the threads, there is LOC-TITE® 243™ (chemical basis is dimethacrylate ester) applied to prevent the bolted connection from unintentional loosening because of impacts and vibrations and to seal them tightly. It is not permitted for the customer to open the front-side sight glass flange! There is no need of such an action.

Carefully pull out the cable and supply flange to the rear, as straight as possible. Because of negative pressure, it may be difficult to remove the flange. The cylindrical clearance fit (H8f7 - DIN ISO 286) of the camera body and flange may not be tilted! Risk of damage to the flame-proof gap (DIN EN 60079-1:2012)!

Attention: The mounting adapter with camera modul and the optics are fixed on the cable and supply flange. Dealing with these components, too, you have to work very carefully and precisely in order to avoid canting and damage to the in-built components! Caution: do not touch the cylindrical fit surface with your skin or clothes! On the surface, there is oil lubricating paste to protect the surface against fretting corrosion and mechanical stresses.

When you open the housing, pay attention that you do not damage the GYLON® flat seal (blue, RAL5012) and do not make it dirty! The flat gasket is loosely attached to the cable and power supply flange. It is fixed only by the bolted connections!

Pull out the camera carefully and pay attention not to clamp the cables.

7.3 Closing of the pressure-resistant housing

For closing the housing, proceed in reverse order as when opening. Use exclusively original screws included in the supply.

Check whether the threaded holes are undamaged and clean. Before closing, it is also absolutely imperative to check the flame-proof gap (circular cylindrical fit).



Attention!

If any mechanical damages occurred to the fitting gap, it is no longer allowed to use the housing!



Attention!

Do not lock-in any foreign objects in the housing.

Dismantled screw locks (spring washers DIN 127A) must be used again.

The GYLON® gasket must be used in undamaged condition, according to the flange hole pattern, and placed between the flange and the hull. The lateral position of the flat surface / contact surface is arbitrary.

If, when closing the housing, you see that the surface of the fitting gap is dirty or insufficiently lubricated, clean it with a clean cloth and de-grease it with a suitable cleaning agent. Then re-grease it with lubricant suitable for this specific application (e.g., Molykote® P-40 gel for standard applications or special grease OKS 403 in the event of heavy seawater influence).

The screwed connections of flange and body components must always be tightened *crosswise* to a torque of **1.2 Nm**! Do not tighten the screw too strongly! It can cause rupture of the cylinder head or over-stretching the threads, and thus to impairment of the pressure resistance or ignition protection class



Cylinder-head bolts for explosion-proof connection of the camera body with the flange component must always be tightened at a 1.2 Nm torque - crosswise and evenly!

8 Maintenance / Modification

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

The required maintenance intervals are specific to the individual devices. The operating company has to determine these intervals depending on the application parameters. The maintenance tasks especially include examination of parts on which the ignition protection depends (e.g., proper condition of the casing, seals and cable entry points). If maintenance measures are necessary they have to be initiated and/or executed.

Repairs may only be carried out with original parts of SAMCON Prozessleittechnik GmbH. Damaged pressure-resistant housings have to 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 by an authorised electrical technician authorised by SAMCON Prozessleittechnik GmbH. Rebuilding of or alterations to the devices are not permitted.

9 Disposal / Recycling

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

This Document is subject to alterations and additions.

10 Drawings & 3D models

All drawings, 3D models, certificates and other information are available in the download area of the product page on our website:

<https://www.samcon.eu/en/products/network/modular/excam-sufa4115/>

Netzwerk Ex Kameras (TCP/IP) ExCam IPM3016 ExCam IPM114x coolJacket ExCam IPQ1645 ExCam IPQ1785 ExCam IPP5655 ExCam IPQ6075 ExCam IPP1275 ExCam IPP1280 (thermal) Modulare Ex Kameras ExCam SUFA4115 Robuste Kameras (Nicht Ex) Ex-d Kamera Leergehäuse Anschlusssysteme Kabel für den Ex-Bereich Montagesysteme Wasch- und Reinigungssysteme Software	<h2>ExCam[®] SUFA4115</h2> <p>Bei der ExCam SUFA4115 handelt es sich um eine ultrakompakte Sensoreinheit für den Einsatz im explosionsgefährdeten Bereich. Sie bietet HDTV-Auflösung (1920 x 1080 mit 100/120 Bildern/s) und ein leistungsstarkes Varifokal-Objektiv. Die ExCam SUFA4115 bietet zahlreiche Analysefunktionen zur intelligenten Entscheidungsfindung. Die ExCam SUFA4115 ist Teil einer modularen Ex-Netzwerkamera und zur Verwendung mit einer Haupteinheit ExConnection Rail FA54 vorgesehen. Die ExCam-Reihe ist sowohl im Rahmen der europäischen (ATEX) als auch der internationalen Richtlinie (IECEX) zertifiziert. Diese Zulassungen und weitere Dokumentation finden Sie im Downloadbereich.</p> <p>Funktions Highlights.</p> <ul style="list-style-type: none"> ● Zertifizierung für explosionsgefährdete Bereiche ● Ultrakompakt und leicht ● Ein-Kabel-Lösung ● Schutzart IP68 (IEC 60529) ● Hohe Auflösung: 1920x1080 (HDTV 1080p) ● Varifokal-Objektiv ● Forensic-WDR Technologie <p>Explosionssgeschützte IP-Kamera mit ATEX- & IECEX-Zulassung</p> <p>Die ExCam-Reihe ist sowohl im Rahmen der europäischen (ATEX) als auch der internationalen Richtlinie (IECEX) zertifiziert. Das ex-geschützte Gehäuse ist für die ATEX Gruppe II für die Zonen 1, 2 sowie 21 und 22 einschließlich der Explosionsgruppen IIC / IIIC zugelassen.</p> <p>Bei der Entwicklung der ExCam SUFA4115 wurde sehr hoher Wert auf Sicherheit sowie mechanische Präzision und hochwertige Edelstähle gelegt. Zudem stand ein modularer Aufbau im Vordergrund der Entwicklung.</p> <p>Hinsichtlich der technischen Kennwerte sind wir an die Grenzen des Machbaren gegangen: In Bereichen, wie z.B. der Medienbeständigkeit und der Umgebungstemperatur setzen wir mit der ExCam-Reihe Maßstäbe.</p> <p>Medienbeständigkeit und Dichtungen</p> <p>Die ExCam-Reihe ist dank Ihrer hochwertigen Materialien beständig gegen sehr viele Medien! Die speziell konstruierten GYLON-Flachdichtungen (PTFE) machen die Kamera nicht nur wasserdicht (IP68), sondern auch beständig gegen eine Vielzahl von Chemikalien. Das äußerst robuste, kratz- und schlagfeste Borosilikatglas der Frontscheibe reiht sich nahtlos ein in die Liste hochwertiger Materialien.</p>
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Downloads:

- [Datenblatt](#)
- [Datenblatt coolJacket](#)
- [3D-Modell](#)
- [Betriebsanleitung](#)
- [CAD-Dateien \(DXF\)](#)
- [Ex-Inst.-Anleitung](#)
- [ATEX-Prüfschein](#)
- [IECEX-Prüfschein](#)
- [EAC-Ex-Prüfschein](#)
- [IA-Zertifikat](#)
- [EU-Konf.-Erklärung](#)

If you wish additional technical information, please contact us at: support@samcon.eu

11 Certificates and further documentation

Certificates and further documentation are available in the download area at the product website:

<https://www.samcon.eu/en/products/network/modular/excam-sufa4115/>



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