

# ExCam<sup>®</sup> IPM1137

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## User Manual



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## History of revisions

Product: ExCam® IPM1137  
 Title: User Manual for ExCam® IPM1137  
 Doc. -Id. 241029-PT08BA-SHe-ExCam IPM1137\_en\_rev.01.docx  
 Author: Sabine Heinz  
 Created on: 29.10.2024

Rev. Index	Date	Name	Comment	Approved by the ATEX Supervisor
0	29.10.2024	S.Heinz	Compilation of the document	
1	15.01.2025	E.Schneider	Change of variants (housing 2.2 changes to 2.1)	

# 1 Introduction

The ExCam IPM1137 is a cost-effective megapixel network camera for use in hazardous areas. The camera offers **5 MP resolution (2592 x 1944)**, a **powerful remote zoom focus lens** and a **Machine Learning Processing Unit (MLPU)**. It is approved according to Directive 2014/34/EU (ATEX), IECEx, INMETRO and EAC-Ex and more.

The explosion-proof housing is approved for ATEX group II for zones 1, 2 as well as 21 and 22 including explosion groups IIC / IIIC. For further approvals, please check our product page <https://www.samcon.eu/en/products/network/excam-ipm1137>




During the development of the ExCam IPM1137, great importance was placed to safety, mechanical precision and high-quality stainless steel.

## 2 Technical data

### 2.1 Explosion protection

Identification marks

acc. to Directive 2014/34/EU:

 II 2G (zone 1 and 2)  
 II 2D (zone 21 and 22)  
 I M2 <sup>1</sup>

Explosion protection (gas):

Ex db IIC T6 Gb<sup>2</sup>

Explosion protection (dust):

Ex tb IIIC T80°C Db

Explosion protection (mining):

Ex db I Mb

Protection class ExCam:

IP 68 (IEC /EN 60529)

Transport/storage temperature:

-40°C...+65°C (non-condensing)

Ambient temperature (EX):

-30°C...+50°C (Type...L.H)

-45°C...+50°C (Type...LL.H)

Named testing laboratory:

TÜV Rheinland (number 0035)

EU type approval certificate:

TÜV 18 ATEX 8218X (2018)

IECEx Certificate of Conformity:

TUR 18.0023X (2018)

EAC-Ex TUR Report:

TC RU C-DE.HA65.B.01652/22

IECEx Certificate of Conformity:

TUR 22.0076X (2022)

Other certificates see:

<https://www.samcon.eu/en/products/network/excam-ipm1137/>

<sup>1</sup> Mining approval only for variants with armoured cable and plug termination and variants with flipConnect

<sup>2</sup> The temperature class must be reduced to T5 for models with heating (...-LL.H-...).



## Attention!

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

## 2.2 Illustration of the model key

Ex product-name	Model variants					Article no.
1)	2) Type	3) Housing- combination	4) Temp.- range	5) Cable length [m]	6) Cable termin.	Link to digital type plate
ExCam IPM1137	T08-	VA2.1.K1.BOR-	L.H-	005.N-	P	<a href="#">22070443</a>
	T08-	VA2.1.K1.BOR-	L.H-	005.N-	T	<a href="#">22070572</a>
	T08-	VA2.3.K4.BOR3-	LL.H-	000.X-	X	<a href="#">22070444</a>
	T08-	VA2.3.K4.BOR5-	L.H-	000.X-	X	<a href="#">22070445</a>
	T08-	VA2.1.K1.BOR-	L.H-	005.A-	P	<a href="#">22070510</a>

Table 2-1 Model key

### Explanations:

- 1) **ExCam IPM1137** Functional camera description of the ExCam Series (technical data/ specification of the individual camera module)
- 2) **T08 =** SAMCON Production- Type 08
- 3) **VA2.1.K1.BOR =** T07 ex d housing (stainless steel 1.4404) with large diameter  $\varnothing_{VA2}=113\text{mm}$   
**VA2.1.K1.BOR =** T07 VA2.1 housing with short body length ( $L_R = 210\text{mm}$ )  
**VA2.3.K4.BOR =** T07 VA2.3 housing with maximum body length ( $L_R = 310\text{mm}$ )  
**VA2.1.K1.BOR =** K1 cable gland flange  
**VA2.3.K4.BORX=** K4 flipConnect flange  
**VA2.X.KX.BOR/BOR3=** Borosilicate sight glass DIN7080 (standard, for video cameras within visible spectral range:  $\lambda = 350 \dots 2000 \text{ [nm]}$  and photographic infrared range (NIR), not suitable for thermographic applications (MIR/ FIR)  
**VA2.3.K4.BOR5 =** Profil glass pane for cameras with wiper
- 4) **L.H=** High temperature ( $T_{\text{amb}} < +50^\circ\text{C}$ )  
**L.H=** Low temperatures ( $T_{\text{amb}} > -30^\circ\text{C}$ )  
**LL.H=** PTC heater installed ( $T_{\text{amb}} > -45^\circ\text{C}$ )
- 5) **005.X =** Length of the connection line in meter at delivery; 5m is the standard cable length, max. cable length is: 005...100 [m]  
**005.N =** Non-armoured cable  
**005.A =** Armoured cable  
**000.X =** Without connection cable
- 6) **P =** Plug- termination (standard)  
CAT6, RJ-45 network plug (heavy duty), AWG 26-22, contact assignment acc. To specification EIA/TIA-568B  
**T =** Terminal Box termination (*optional*)  
4 x PoE Mode A connection (camera PoE) (see electrical connection)  
**X =** Electrical connection via flipConnect

## 2.3 Electrical parameters of the camera

### Power supply of the camera (PoE) without heating, without wiper:

Voltage supply:	PoE+, IEEE 802.3af/802.3at type 1 class 3
Reference voltage:	+48 V DC (44...54 V DC)
Maximum power consumption:	7.2 W
Typical power consumption:	4.5 W

### Power supply of the camera (PoE) with heating:

Voltage supply:	PoE++, class 6
Maximum power consumption:	51.0 W
Typical power consumption:	35.5 W

### Power supply of the camera (PoE) with wiper:

Voltage supply:	PoE++, class 5
Maximum power consumption:	40.0 W
Typical power consumption:	8.0 W

## 2.4 Cables and glands

### 2.4.1 Connection cable for devices with flipConnect

Devices equipped with flipConnect are supplied without a cable tail or a cable gland, only with non-explosion-proof blanking plugs (nylon PA3200, red) for fitting a suitable explosion-proof cable kit.

Quicklink for suitable cables and cable glands:

<https://www.samcon.eu/fileadmin/documents/de/60-Montage%26Installation/flipConnect-Compatibility.pdf>

### 2.4.2 Connection cable Ex-d – Ex-e

Description: Data transfer and power supply of the camera module (compliant with DIN EN 60079-14)

#### System cable SKD02-T:

Outside diameter:	8.9 ± 0.3 mm
Bending radius:	8 x D <sub>a</sub> when installed and 4 x D <sub>a</sub> after relocation
Data line:	4 x 2 x AWG23/1 CAT.6
Properties:	PUR halogen-free, flame-retardant, UV-resistant, chemical resistance, shielded

Quick link:

[https://www.samcon.eu/fileadmin/documents/en/60-Assembling%26mounting/SKD02-T\\_Datasheet.pdf](https://www.samcon.eu/fileadmin/documents/en/60-Assembling%26mounting/SKD02-T_Datasheet.pdf)

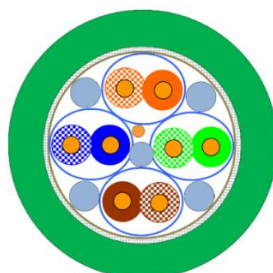


Figure 2-1 Sectional view of SKD02-T

### System cable ASKD02-T (for mining):

Outside diameter:	12.0 ± 0.4 mm
Bending radius:	20 x D <sub>a</sub> when installed and 10 x D <sub>a</sub> after relocation
Data line:	4 x 2 x AWG23/1 CAT.6
Properties:	PUR halogen-free, flame-retardant, UV-resistant, chemical resistance, shielded (see <a href="http://www.samcon.eu">www.samcon.eu</a> )

#### Quicklink:

[https://www.samcon.eu/fileadmin/documents/en/60-Assembling%26mounting/ASKD02-T\\_Datasheet.pdf](https://www.samcon.eu/fileadmin/documents/en/60-Assembling%26mounting/ASKD02-T_Datasheet.pdf)

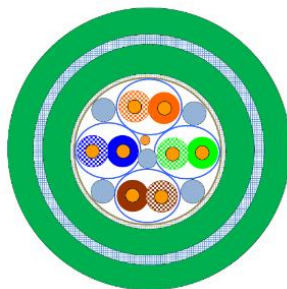


Figure 2-2 Sectional view of ASKD02-T

### 2.4.3 Cable glands PoE and protection hose

System cable SKD02-T → gland Capri ADE1F2 M20x1.5 Cap No.5 (7-12mm)

System cable ASKD02-T → gland Capri ADE4F Cap No.6

[Documentation ADE4F](#), [Declaration of Conformity](#), [Instruction Manual](#), [Datasheet](#)

## 2.5 Video-technical characteristics

We use the AXIS M1137 MkII Box Camera in a pressure-resistant enclosure. For details, please refer to the Product Documentation, video-technical data of AXIS®:

<https://www.axis.com/products/axis-m1137-mk-ii>



## 2.6 Other technical data

	Camera (Ex-d)	Terminal box (Ex-e)
Permissible ambient temperature	-30°C ... +50°C / -45°C ... +50°C (model key ...-LL.H-...)	-60°C ... +55°C
Protection class as per EN 60529/IEC 529	IP66/68 (Test conditions: 0.5h /8m and 24h/3m water column 5°C)	IP66
Housing material	stainless steel, mat. no. 1.4404	polyester resin
Weight	about 7 kg	about 1 kg
Dimensions	T07 VA2.2 D113mm x 260mm / T07 VA2.3 D113mm x 310mm	145mm x 145mm x 71mm

Table 2-2 Other technical data

### 3 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 devices! The devices 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“**

**Note:** Depending on the classification of hazard areas, a work approval must be obtained!



Using the devices 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.



The pre-installed RJ45 plug may only be connected in a safe area (non-Ex zone)!



Prior to the first use, you should test the camera corresponding to the instructions given in the chapter Commissioning.

Please observe the national safety regulations and regulations for prevention of accidents, as well as to the safety instructions given below in this User Manual!

## 4 Installation

For commissioning and operating the camera, the relevant national regulations, as well as the generally accepted rules of technology shall prevail. Before mounting the camera, thoroughly check it for any transport damage, especially on the housing and cable. Installation, electrical connection and the first start must only be carried out by qualified specialists.

### 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 network camera, 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!**


**Attention!**

Please pay attention to the national and local regulations for mounting heavy loads. In case of doubt, take appropriate security measures.

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

Quick link:

<https://www.samcon.eu/en/products/network/excam-ipm1137/>


**Optional mounting accessories**



Wall bracket WMB-...		<b>WALL MOUNT BRACKET WMB-VA2.1/2.2</b> Wall bracket for devices of T08-VA2.1 series Suitable for hanging the camera on walls. Material: stainless steel 1.4404 Load bearing: 25 kg Dimensions: 80 x 100 x 275 mm
Wall bracket WMB-...		<b>WALL MOUNT BRACKET WMB-VA2.3</b> Wall bracket for devices of T08-VA2.3 series Suitable for hanging the camera on walls. Material: stainless steel 1.4404 Load bearing: 45 kg Dimensions: 445 x 140 x 185 mm
Weather protec- tion roof WPR-...		<b>WEATHER PROTECTION ROOF WPR-VA2.1</b> Weathershield for cameras of the T08-VA21-Series
Weather protec- tion roof WPR-...		<b>WEATHER PROTECTION ROOF WPR-VA2.3</b> Weathershield for cameras of the T08-VA2.3-Series
Pole adapter PMB-...		<b>WALL MOUNT BRACKET PMB</b> Pole adapter for VA wall mount Material: stainless steel 1.4404 Suitable for pole diameters between 50 and 100 mm Load-bearing capacity: 50 kg Dimensions: 120 x 180 (x 130 bei Mast Ø 60 mm)

Table 4-1 Mounting accessories

## 5 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!



### Attention!

If possible, carry out initial commissioning when the outside temperature is positive to prevent condensation in the housing.

The ExCam® IPM1137 is supplied either with flipConnect or an electrical connection cable of the type SKD02-T/ASKD02-T (models \*...A-P\* for mining). The maximum transmission range from camera to the next active network interface is 100 meters and can be individually specified by the client. The user is NOT authorised to do electrical connection procedures inside the pressure-resistant enclosure.

### 5.1 Potential equalization

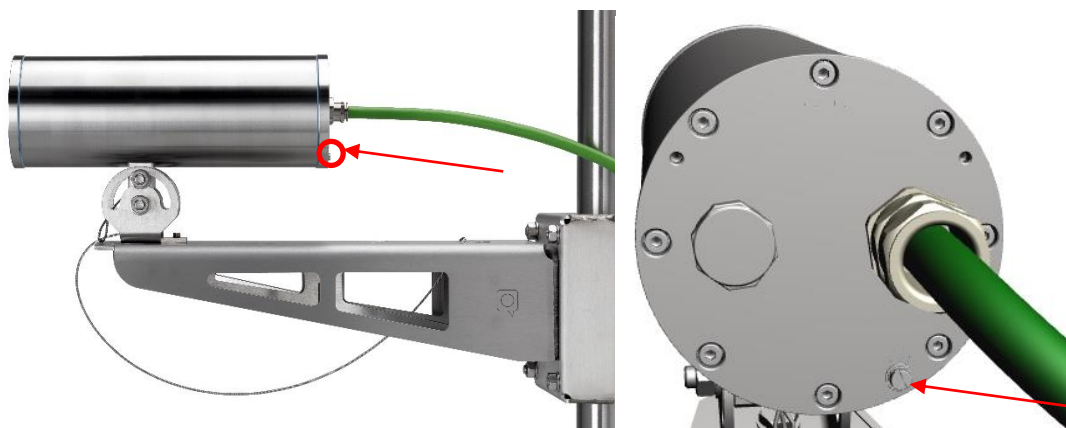


Figure 5-1 ExCam IPM1137 potential equalization

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 4mm<sup>2</sup>).

Wiring table:

Potential	Colour (IEC 60757)	Cross-section	Comment
PA	GN/YE	4 mm <sup>2</sup> (rigid)	Terminal: Slotted screw M4x0.7 (DIN 84) with washer Ø9mm (DIN 125A), Keep 3 Nm tightening torque!

Table 5-1 Potential equalization

## 5.2 Connection work at the device and fuses

### 5.2.1 Connection work at the device via flipConnect

We show the procedures of electrical connection via flipConnect in the following video tutorial: "Plug & Play Cable Connection via flipConnect"

<https://go.samcon.eu/flipconnect>

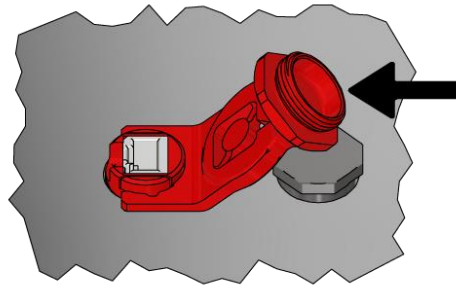
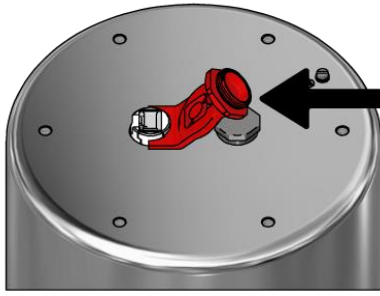


Figure 5-2 Connection via flipConnect

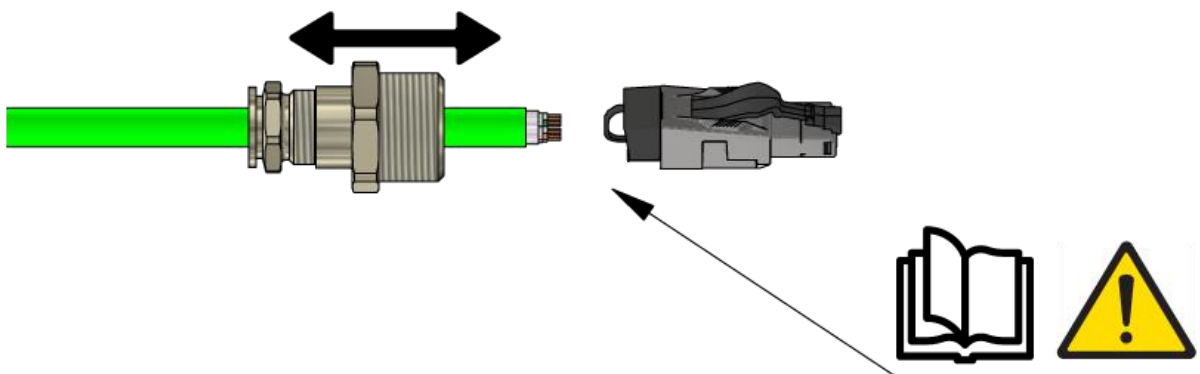
Unscrew the red blind plug (with integrated auxiliary tool) from the housing and **keep it save**.



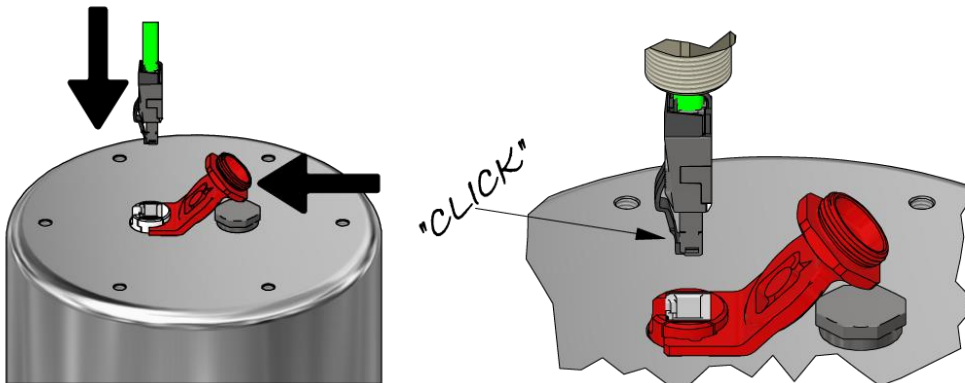
Fixate the RJ45 socket as shown in the figure below.



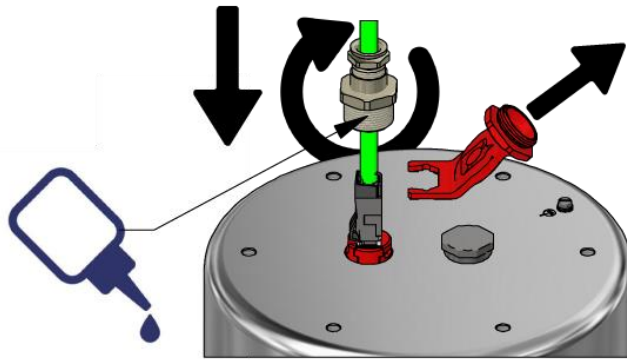
Choose a suitable cable and cable gland (e.g. the provided). Put the gland over the cable. Caution: the selected plug must be of the same length or shorter than the supplied one. Follow the respective instructions of the components.



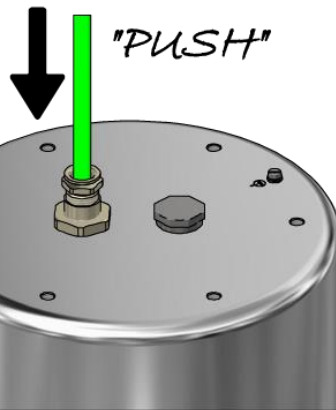
Plug in the RJ45 plug with the cable pigtail into the socket until the lock engages.



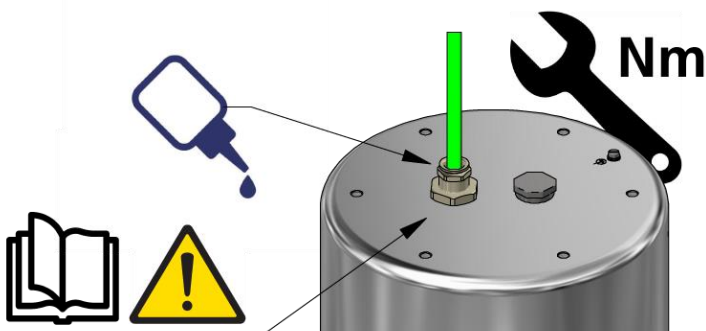
Remove the auxiliary tool and apply glue to the gland's inner thread. Then screw the gland into the housing. Attention, the cable is still movable and the gland's outer ring open.



Push the cable down.



Fasten the cable gland's outer ring. Use Loctite and refer to the operating instructions of the selected gland in order to observe the appropriate fastening torques.



Done.



**Attention!**

**Use appropriate RJ45 plug! Pay attention to shielding, cross-section and outer diameter of the cable!**

## 5.2.2 Connection work at the device without flipConnect

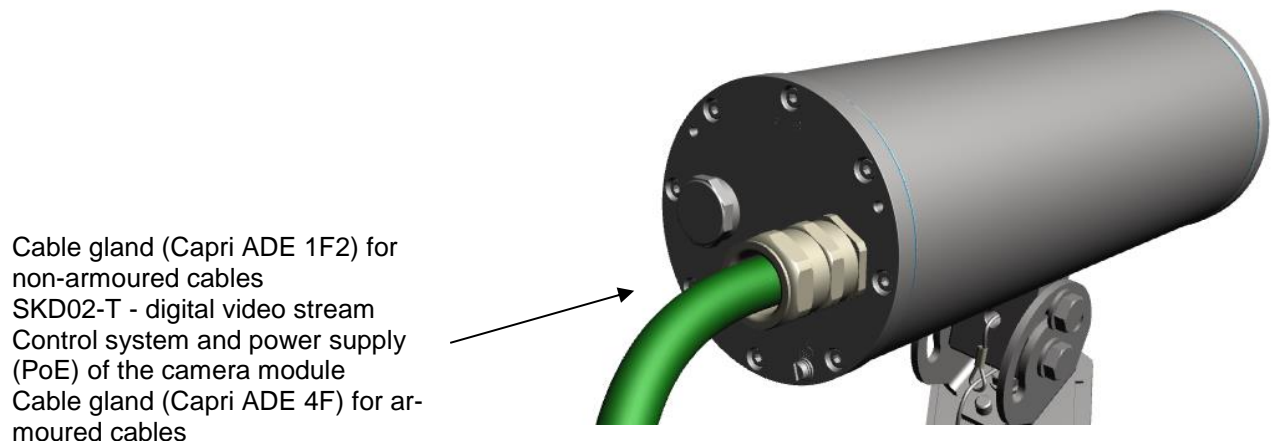


Figure 5-3 Cable gland (KLE) and supply line

The green system cable is intended for communication and data transfer to the connected network devices and, at the same time, for voltage supply (PoE) to the camera. To ensure the power supply of ExCam IPM1137 (*Powered Device/ PD*), it is necessary to make sure that the power-over-Ethernet provider (*Power Sourcing Equipment/ PSE*) on the connection side (for example PoE Midspan PoE injector, switch, etc.) fulfils the specification IEEE 802.3af and 802.3at type 1 Class 3 (*"classification current: 26-30 mA @48VDC, max. feed-in power (power source equipment): 15.4 W, maximum offtake (power device): 6.49 - 12.95 W"*) or Class 6 (models with heater), or Class5 (models with wiper). Make sure there is sufficient power on the switch (power sourcing equipment) depending on the model variant used. The data transfer of the ExCam IPM1137 series is done via a 100 Mbit/s Ethernet connection (100BASE-TX).

The figures 5.4 and 5.5 illustrate the potential cable terminations of the ExCam IPM1137. Possible terminations are: terminal box or plug.

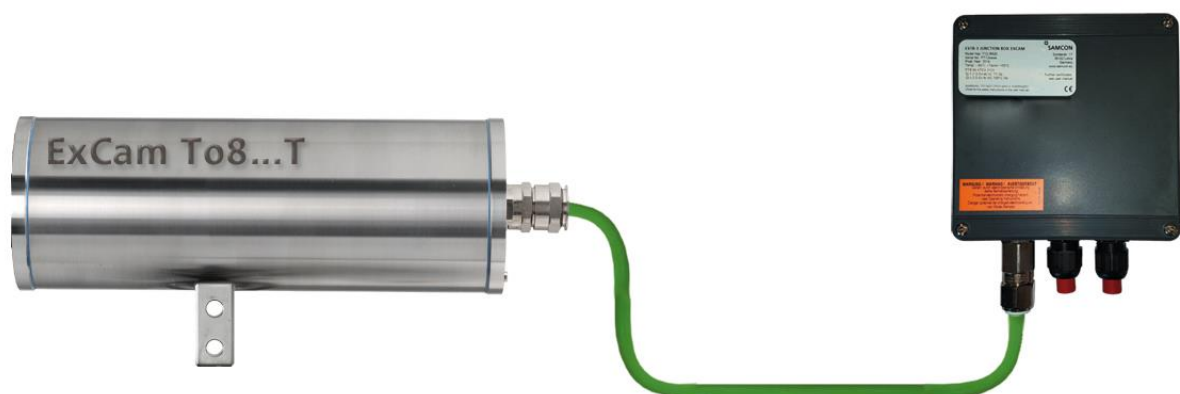


Figure 5-4 ExCam IPM1137 T08-VA2.1.KX.BOR-L.H-xxx.N-I





Figure 5-5. ExCam IPM1137 T08-VA2.1.K1.BOR-L.H-005.N-P



**Attention!**  
**Never open the Ex-e terminal box under voltage!**



**Attention!**  
**Adhere to the international installation regulations for connection chambers with increased safety (Ex-e).**



**Attention!**  
**Adhere to the separate Usual Manual for the Ex-e connection chamber attached in the annex.**

#### Video Tutorial:

Please view our video tutorial:

“SAMCON 01 Wiring the cable SKDP03-T to the junction box ExTB-3”

<https://go.samcon.eu/v01>



Figure 5-6 Video Tutorial ExTB-3



The pin assignment of the SKD02-T is executed in accordance with the standard EIA/TIA-568B for 100BaseTX and 24VDC, as follows:

Camera (Ex-d) (T568B)	Colour SKD02-T (IEC60757)	Terminal ExTB-2	Cross-sectional surface	Comment
Tx+	WH / OG	1	0.26 mm <sup>2</sup>	Solid conductor
Tx-	OG	2	0.26 mm <sup>2</sup>	Solid conductor
Rx+	WH / GN	3	0.26 mm <sup>2</sup>	Solid conductor
Rx-	GN	4	0.26 mm <sup>2</sup>	Solid conductor
(PoE +48 VDC)	WH / BU	5	0.26 mm <sup>2</sup>	Solid conductor
(PoE +48 VDC)	BU	6	0.26 mm <sup>2</sup>	Solid conductor
(PoE GND)	WH / BN	7	0.26 mm <sup>2</sup>	Solid conductor
(PoE GND)	BN	8	0.26 mm <sup>2</sup>	Solid conductor
GND/SHD	YE / GN	PE	2.5 mm <sup>2</sup>	Flex

Tab. 5-2. Wire assignment of terminal box ExTB-2

The pin assignment of the ASKD02-T is executed in accordance with the standard EIA/TIA-568B for 100BaseTX and 24VDC, as follows:

Camera (Ex-d) (T568B)	Colour ASKD02-T (IEC60757)	Terminal ExTB-2	Cross-sectional surface	Comment
<b>Reinforcement</b>	YE / GN	PE	2.5 mm <sup>2</sup>	Flex
Tx+	WH / OG	1	0.26 mm <sup>2</sup>	Solid conductor
Tx-	OG	2	0.26 mm <sup>2</sup>	Solid conductor
Rx+	WH / GN	3	0.26 mm <sup>2</sup>	Solid conductor
Rx-	GN	4	0.26 mm <sup>2</sup>	Solid conductor
(PoE +48 VDC)	WH / BU	5	0.26 mm <sup>2</sup>	Solid conductor
(PoE +48 VDC)	BU	6	0.26 mm <sup>2</sup>	Solid conductor
(PoE GND)	WH / BN	7	0.26 mm <sup>2</sup>	Solid conductor
(PoE GND)	BN	8	0.26 mm <sup>2</sup>	Solid conductor
GND/SHD	YE / GN	PE	2.5 mm <sup>2</sup>	Flex

Tab. 5-3 Wire assignment of terminal box ExTB-2 (ASKD02-T)

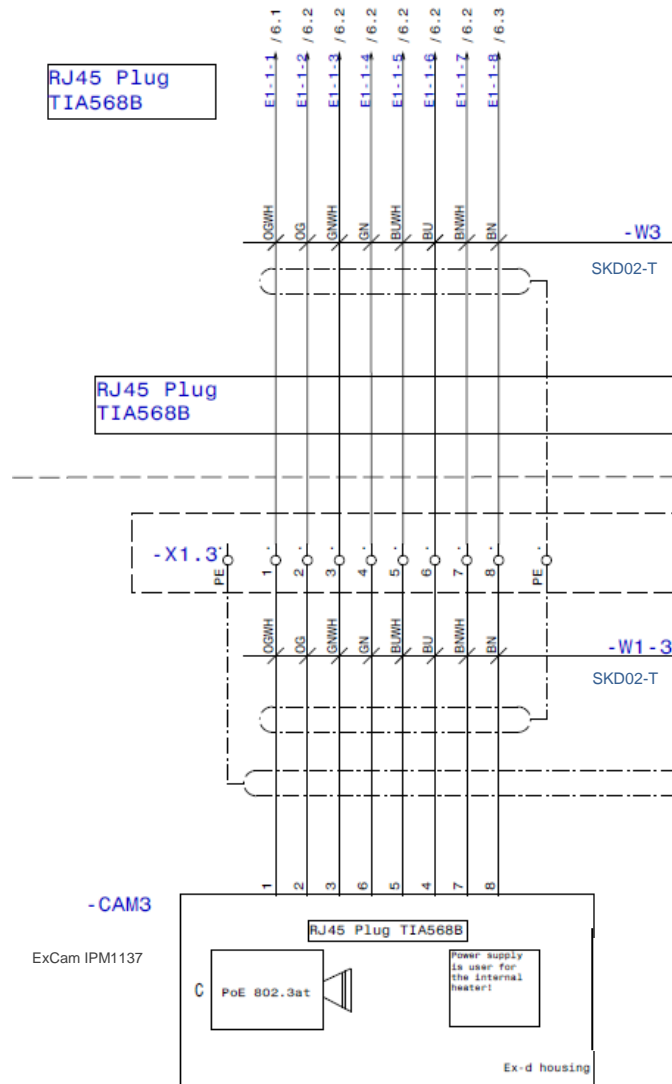


Figure 5-7 Sample circuit of terminal box ExTB-2

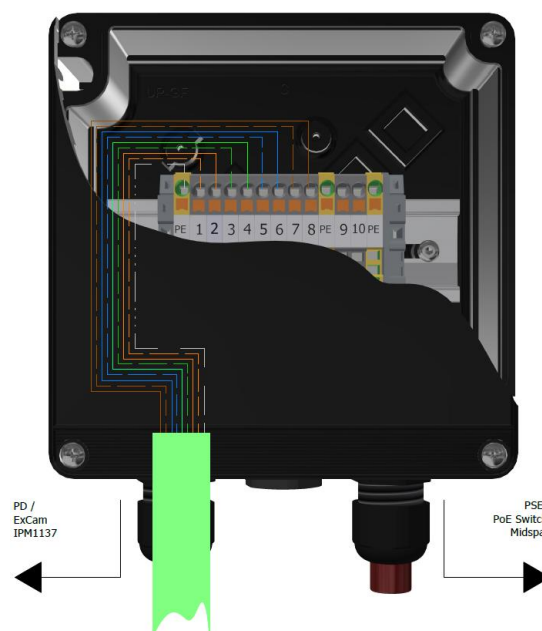


Figure 5-8 Photo of the wired terminal box ExTB-2

**Attention!**

Introduce the foiling up to about 15 mm close to the terminals, in order to prevent alien crosstalk. Make sure that the foiling cannot cause any short circuit of the data pairs!

**Attention!**

Bring the twisted pair composite up to about 10 mm close to the terminals, in order to ensure interference immunity.

**Attention!**

Use only terminals approved by SAMCON.

**Attention!**

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

### 5.2.3 Appropriate cables & cable entries

Devices equipped with flipConnect are supplied without a cable tail or a cable gland, only with non-explosion-proof blanking plugs (nylon PA3200, red) for fitting a suitable explosion-proof cable kit.

Quicklink for suitable cables and cable glands:

<https://www.samcon.eu/fileadmin/documents/de/60-Montage%26Installation/flipConnect-Compatibility.pdf>

An essential component of system safety is the correct selection of cables, wires and cable entries.

**Attention!**

Cables and wires must comply with the requirements of the IEC 60079-0/1/7 & 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:

Perhaps our video will help you:

"Cables for flameproof devices in potentially explosive atmospheres"

<http://go.samcon.eu/video-cable-ex>





Figure 5-9 Ex-d cable selection

Particularly for installations requiring a suitable barrier gland, make sure that you handle them correctly and observe the rules and notes given in the respective mounting and assembly instructions.

#### 5.2.4 Plug assignments (RJ45)

The data transfer of the ExCam IPM1137 uses a 100 Mbit/s Ethernet connection (100BASE-TX).

If the cable termination uses a plug, the latter should be plugged into the RJ45 PoE slot of the network device (PSE). Prior to connecting it to the camera, the network device (PSE) can already be supplied with power, hence there is no „power ON“ priority which has to be observed.



#### **Attention!**

**Use appropriate RJ45 plugs! Check the cable shielding, cross-section and the outside diameter!**



#### **Attention!**

**It is imperative to ensure a correct routing of the individual wires according to the EIA/TIA-568B"**



#### **Attention!**

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

Detailed instructions on how to connect a RJ45 plug are available in our video tutorial: "SAMCON 03 Mounting and installing the RJ45 jack to SAMCON cables" <https://go.samcon.eu/v03>



Figure 5-10 Plug assignment, RJ45

### 5.2.5 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!

## 6 Working inside the housings (Ex-d)

The customer may open the camera housing only if it is absolutely necessary. Only exchanging the SD memory card or a hardware reset are reasons for this.

### 6.1 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!**

### 6.2 Opening the camera housing

If the ExCam IPM1137 is equipped with a weather protection roof this has to be removed prior to starting your work! To do so, loosen the 4x12mm button head screws M4\*0.7 at the front and rear sides of the bracket holders (Figure 6-1).

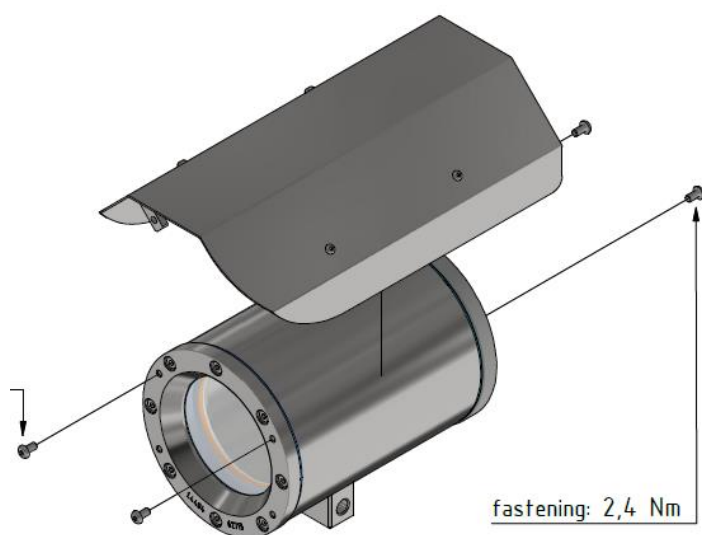


Figure 6-1 Removing the weather protection roof

For variants with wiper:



**Attention!**

**Make sure that the wiper is in the center position!**

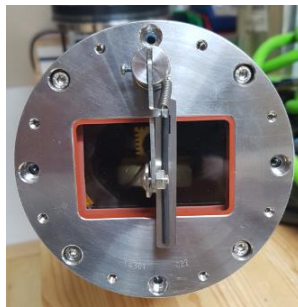


Figure 6-2 Wiper in center position

To open the stainless-steel housing (T07 VA2.X.x.x) of ExCam IPM1137, loosen the eight 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 (see Figure 6-2). Caution: do not touch the screw threads with your skin or clothes! On the threads, there is LOCTITE® 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.

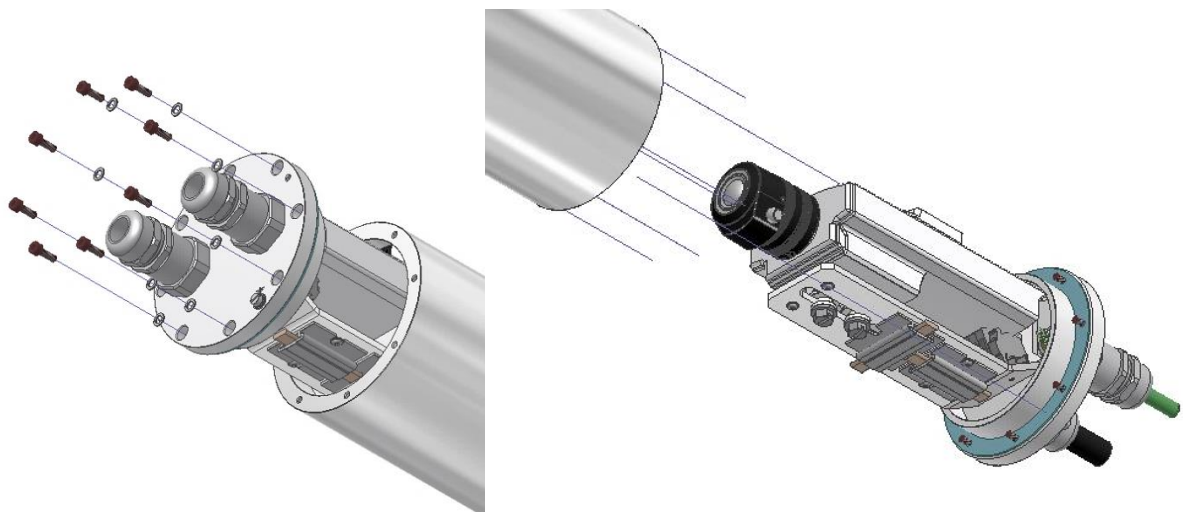


Figure 6-3 Opening the ExCam IPM1137 (similar illustration)

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 the camera module and optics, as well as the temperature control, and (if applicable) auxiliary relays and terminal block 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!



**Attention!**

**Pay attention not to damage the surface of the drill hole and the shaft (fitting) of the flame-proof gap.**



**Attention!**

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

### 6.3 Removing / inserting a SD memory card

#### Note:

The ExCam IPM1137 has a slot for a micro SDHC memory card (card not included). Saved video files can be played and deleted via the web interface. They are also available in a download list. Moreover, the videos available in the memory card can also be accessed via FTP server in the network.

If the memory card has to be replaced by the user, it should be, as far as possible, empty and pre-formatted with an ext4 or vFAT file system.



**When touching electrical components, observe potential equalization (grounding of the body): carry electrostatic-discharge clothes, a PE wristband etc.!**



## 6.4 Hardware Reset

To set all the parameters of the ExCam IPM1137 (including the IP address) to default values, you should run a hardware reset.

The parameters can be reset via the web interface or manually. If the camera placed in the network can no longer be reached or its state is uncontrollable, the reset should be performed manually. To do so, proceed as follows:

1. Disconnect the camera installation module (Axis M1137 MKII) from the power supply.
2. Press and hold the control button (see the illustration below) and, at the same time, connect the system to the voltage supply (PoE).
3. Hold the control button pressed for about 30 seconds.
4. Release the control button. After about a minute, the AXIS M1137 MKII will return to factory defaults. If there is a DHCP server in the network, the IP address will be the following: 192.168.0.90 (subnet masking 255.255.255.0).
5. IP address and password can be redefined. If the hardware reset is not satisfactory or the network camera shows serious conflicts or does not work as usual (errors in the browser visualisation, frozen images, control commands no longer processed, slowing down of the system, etc.), it may be necessary to re-install the current firmware, or to install an update (see Chapter 7).

## 6.5 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.

The cable and power-supply flange is fixed by 8 cylinder-head screws M4\*0.7 (ISO metric right-turning) with 12 mm thread length (DIN 912/ ISO 4762, grade 6g). Materials of bolted connections are identical to the pressure-resistant stainless steel housing (standard material no. 1.4404 AISI316L). 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.**



### **ATTENTION!**

**Insert the flange to reach the end position, in order to ensure ignition protection and the protection level (IP) of 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 **3 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 3 Nm torque - crosswise and evenly! Use Loctite.**

## 7 Network access and visualization

The most important procedures of the first starting up the camera are described below. The configuration menu of the web surface allows an intuitive navigation and offers several configuration possibilities. For detailed documentation and information how to use the web Interface, please see the User Manual for Axis or visit the following website:

<https://help.axis.com/axis-m1137-mk-ii>  
[M11 Mk II Series - User manual \(axis.com\)](https://www.axis.com/support/m1137-mk-ii)

The delivered ExCam IPM1137 is set to the applicable net frequency (50Hz or 60Hz). If the camera is used at a location with a differing net frequency, the image might start to flicker, particularly in surroundings with fluorescent tubes. In such a case, the applicable settings have to be carried out inside the menu "System Options>Advanced>Plain Config".

User: root  
Password: root

### 7.1 Browser Support

A list of the currently supported web browsers, operating systems, required add-ons, etc. can be viewed at:

<https://help.axis.com/access-your-device>  
<https://www.axis.com/support>

### 7.2 Assigning the IP address

The ExCam IPM1137 is intended for use in an Ethernet network and requires an IP address to access and control it. In the most today's networks, a DHCP server is integrated. This server automatically assigns an IP address.

If there is no DHCP server available in the network, the IP default address of ExCam IPM1137 is "**192.168.0.90**" (**subnet masking 255.255.255.0**).

With the "AXIS IP Utility", it is possible to determine the IP address under Windows; the included USB stick contains this application.

<https://www.axis.com/support/tools/axis-ip-utility>



**If it is not possible to assign the IP address, it might be necessary to change the firewall settings!**

The "AXIS IP Utility" tool automatically recognizes all ExCam devices and visualises them in the device list. It can also be used to manually assign a static IP address. For this purpose, the ExCam IPM1137 network camera has to be installed in the same physical network segment (physical subnet) as the computer on which the AXIS IP Utility is running. The network signature of ExCam IPM1137 is "AXIS M1137 MkII" (see Figure 7-1). MAC address and serial number for clear device identification are also detected and displayed.

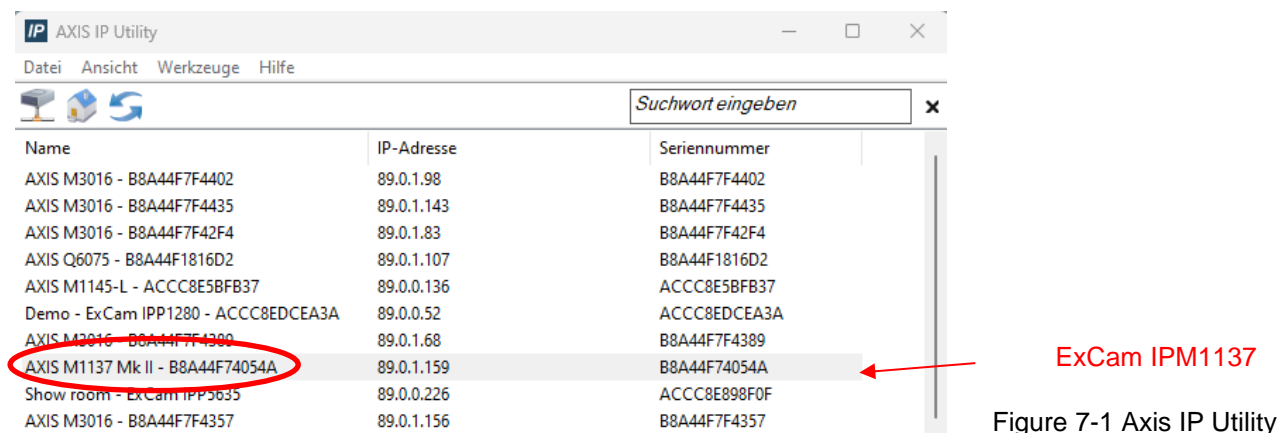


Figure 7-1 Axis IP Utility

### 7.3 Password/ Identification

The following user name is set at the factory: **root**

The following password is set at the factory: **root**

### 7.4 How to start the wiper

The ExCam IPM1137 is equipped with a wiper. The wiper can be started via a button in the lower right corner of the web interface (see Figure 7-2).

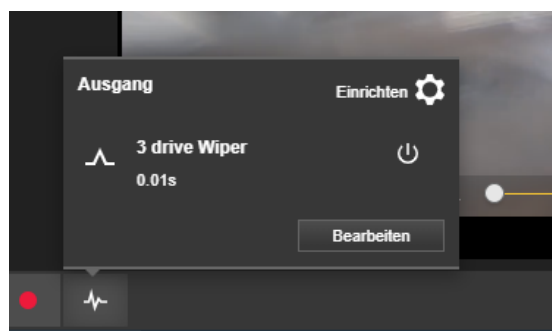






Figure 7-2 User interface to operate the wiper


The factory settings of the wiper are pre-set to wipe 3 times in a row. To repeat the cleaning cycle, press the wiper button again. If for any reason the wiper does not function properly, an error warning appears in the upper-left corner of the interface and the wiper automatically attempts to restart every 30 seconds.

The start button for the wiper can be activated or deactivated.





#### E/A-Ports

**Port**  
 Name  
 Wiper

 Steuerung der Live-Ansicht
 ☒

**Port**  
 Name  
 wiper status

Aktueller Status: Stromkreis geschlossen

Figure 7-3 Turning the wiper on

Intermittent wiper controls can be configured via CGI command by the video management system. If you have any questions, please write to [support@samcon.eu](mailto:support@samcon.eu).

## 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.

### 8.1 Repair and correction

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.

### 8.2 Replacement of the wiper lip

In the scope of the camera delivery, 2 spare lips are included. When the wiper lip becomes worn, it must be replaced by a new one. For this purpose, it is necessary to remove the wiper. Simply pull out the wiper lip upwards and insert the new one.

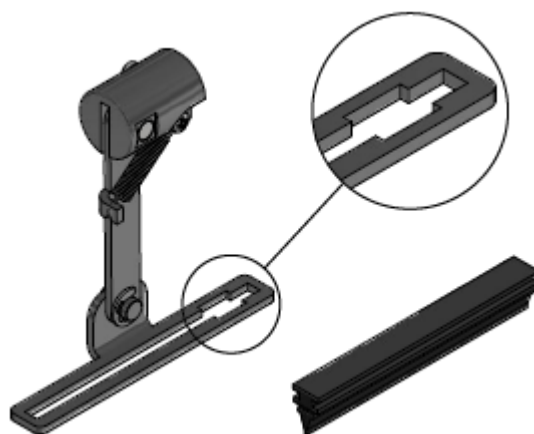


Figure 8-1 How to replace the wiper lip

## 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, certificates and further documentation

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/excam-ipm1137/>

ExCam IPM3016 *EOL*
ExCam miniTube IP
ExCam microTube IP
ExCam IPM1137
ExCam IPM1137-LE
ExCam IPM2036
ExCam IPP1275
ExCam IPP1377
ExCam IPQ1656 (DLPU)
ExCam IPQ1715
ExCam IPQ1785
ExCam IPP3827 (panorama)
ExCam IPQ3628 (PTRZ)
ExCam IPP5555 MKII
ExCam IPQ6075
ExCam IPQ6075-MKII
ExCam IPP1280 (thermal)
ExCam Xi80 (thermal)
ExCam Xi410 (thermal)
Modular Ex Cameras
coolJacket
Robust Cameras (non-ex)
Your individual Camera (BTO)
Ex Luminaires
Robust Luminaires
Ex-d Camera Enclosures
Connection Systems
Cables for Ex-Areas
Mounting Systems
Wash and Wipe Equipment
Software
<b>Downloads:</b>
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- <a href="#">Datasheet</a>
- <a href="#">3D-Model (pdf)</a>
- <a href="#">3D-Model (stp)</a>
- <a href="#">Usermanual</a>
- <a href="#">Drawing</a>
- <a href="#">CAD-files (DXF)</a>
- <a href="#">IR-Tests</a>

### ExCam® IPM1137

#### 5 MP resolution meets a powerful remote zoom varifocus lens and MLPU

The ExCam IPM1137 is a cost effective megapixel network camera, particularly suitable for use in hazardous areas. Besides **5 MP resolution (2592 x 1944)** it offers **a powerful remote zoom varifocus lens and a Machine Learning Processing Unit (MLPU)**. It is approved according to Directive 2014/34/EU (ATEX), IECEx and EAC-Ex. These and other available approvals can be found in the download area.

#### Features.

- Broad Certification Landscape for Hazardous Areas (ATEX, IECEx & more)
- Zone 1/21, Gas Group IIC, Temperature Class T5
- 100% Reflection-Free Camera - Light Combination
- Single-Cable-Solution (PoE / 24VDC)
- Versions with Visible or Infrared Light
- Protection Level of IP66/68 (IEC 60529)
- High Resolution: 2592x1944 (5 MP bei 25/30 fps)
- Powerful Remote Zoom Lens (3-15x)
- Light Control via Camera (Web Server)
- Lightfinder and WDR Technologies
- Object Analytics thanks to Machine Learning Processing Unit (MLPU)
- [Extensive Accessories](#)

#### Explosion-proof IP camera with ATEX, IECEx and EAC-Ex approval

The ExCam series is certified within the framework of the European (ATEX) as well as the International directive (IECEx). The explosion-proof housing is approved for ATEX group II for zones 1, 2, 21 and 22 including explosion groups IIC / IIC. Furthermore, it now also has the EAC-Ex approval. During the development of the ExCam IPM1137, great importance was attached to safety, mechanical precision and high-quality stainless steel. In addition, a modular structure was at the forefront of the development. With regard to the technical characteristics, we have gone to the limits of what is feasible: in areas such as media resistance and ambient temperature, we are setting standards with the ExCam series.

#### Outstanding Images as a basis for reliable analysis

A high image quality is of crucial importance in order to clearly capture a process and to be able to clearly identify the persons or objects involved. The highest image quality is the prerequisite for reliable analysis. Thanks to its resolution of 1944 p at 30 frames per second and thanks to Lightfinder and WDR, the ExCam IPM1137 provides a reliable basis for powerful analysis functions.

#### Remote zoom & vario focus

The ExCam IPM1137 offers a powerful remote zoom varifocus lens. Thanks to this you can control zoom remote.

#### Lightfinder and Forensic WDR

Lightfinder and WDR are responsible for good image quality despite weak light. Lightfinder ensures realistic and saturated colors even of moving objects even in low light. Forensic WDR compensates for differences in brightness in a scene, i.e. sharp images despite a high-contrast scene.

#### Artificial Intelligence and camera? Clear!

Cameras have long ceased to be used for purely imaging surveillance. Due to the constantly improving

If you wish additional technical information, please contact us at: [support@samcon.eu](mailto:support@samcon.eu)



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