ExCam XPT Q6055

User Manual

SAMCON
Prozessleittechnik GmbH

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History of revisions

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1 Introduction

In the ExCam XPT Q6055 is a powerful IP dome camera of the latest generation, with 2-megapixel resolution at 1920x1080p points. It is certified by ATEX, IECEx and EAC-Ex.

This dome camera can endlessly rotate around its own axis. When tilted, it covers a 180° area, and the picture is automatically turned around. This is done with a high speed and precision.

The ExCam series is certified both in accordance with the European (ATEX) and international directive (IECEx). The explosion-protected housing is approved for the ATEX group II for zones 1, 2, 21 and 22 including the explosion groups IIC / IIIC. To see other approvals, please visit our website at www.samcon.eu

In designing the ExCam XPT Q6055, we attached a very high importance to safety, mechanical precision and high quality of 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)
Explosion protection (gas):	Ex d IIC T6 Gb
Explosion protection (dust):	Ex tb IIIC T80°C Db IP68
Protection class:	IP 68 (IEC /EN 60529)
Transport/storage temperature:	0°C…+40°C
Ambient temperature (EX)[1]:	-50°C…+60°C
Named testing laboratory:	TÜV Rheinland (number 0035)
EU type approval certificate:	TÜV 14 ATEX 7539 X
IECEx Certificate of Conformity:	IECEx TUR 14.0026X
EAC-Ex TUR Report:	RU C-DE.MI062.B.01921

2.2 Electrical parameters of the camera

24VDC Power input:

Permissible temperature range:	-50°C < T_{amb} < +60°C
Power supply:	24 VDC
Power consumption:	approx. 60W@-50°C (depends on the temperature)

PoE+ Power input:

Permissible temperature range:	-0°C < T_{amb} < +60°C
Power supply:	PoE, IEEE 802.3at class 4
Reference voltage:	48 VDC (44...54 VDC)
Maximum power consumption:	19 W
Typical power consumption:	13 W

[1] Explosion protection-relevant maximum ambient temperature range relevant to explosion protection, deviation from the functional temperature range, functional temperature range (MTBF)

2.3 Connection cable Ex-d - Ex-e (ASKDP03-T)

Description:	Data transfer and power supply of the camera module (compliant with DIN EN 60079-14),
Jacket colour:	green (GN), similar to RAL3001
Outside diameter:	17.00 ± 0.5 mm
Bending radius:	10 x Da when installed and 5 x Da after relocation
Data line:	4 x 2 x AWG22/1 CAT.6a
Performance elements:	3G1.5 (BK-BU-GN/YE)
Properties:	PUR halogen-free, flame-retardant, UV-resistant, chemical resistance, shielded (see www.samcon.eu)

Quick link:
https://www.samcon.eu/fileadmin/documents/en/60-Assembling&mounting/ASKDP03-T_Datasheet.pdf

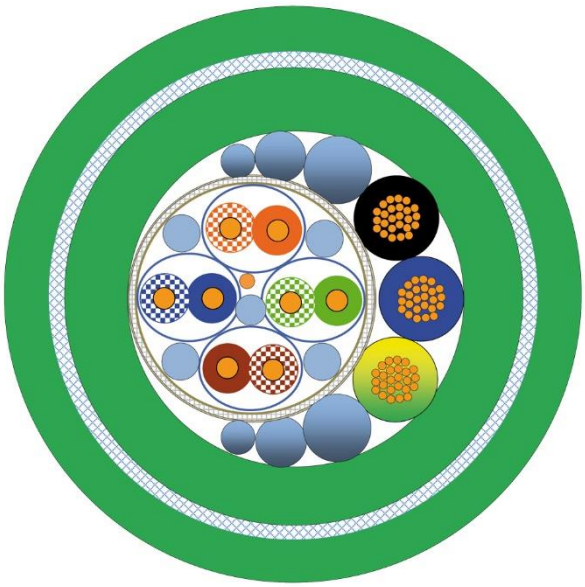


Fig. 2-1 Sectional view of ASKDP03-T

2.4 Video-technical characteristics

We use the AXIS Q6055 Dome 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-q6055

2.5 Other technical data

	Camera (Ex-d)	Terminal box (Ex-e)
Permissible ambient temperature	0°C … +60°C (for PoE+ power supply) -50°C … +60°C (at 24 VDC power supply)	-60°C … +55°C
Protection class as per EN 60529/IEC 529	IP68 (Test conditions: 24h/3m water column 5°C°	IP66
Housing material	- stainless steel, mat. no. 1.4404 - LEXAN	polyester resin
Weight	about 15 kg	about 1 kg
Dimensions	D195mm x 378mm	145mm x 145mm x 71mm

3 Safety Instructions

Please absolutely adhere to the directions for safety in the installation instructions for the T08 ExCam series!

Quick link:
https://www.samcon.eu/fileadmin/documents/en/20-Ex-Cameras-Analog/ExCam-Series-T08-EX-Installation-Manual.pdf

4 Assembly

Work preparation:

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

Attention!
Depending on classification of hazard areas, a work approval has to be obtained. 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 pay attention to the national security, installation and accident prevention regulations (e.g. DIN EN 60079-14) and the safety instructions given below 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!

ExCam® XPT Q6055 consists of a flame-proof camera housing (Ex-d) and a connection chamber of a high degree of safety (Ex-e). Both areas are separated by a reinforced 5 m line.
Mount the camera as high as possible, according to the desired field of view.
Install the connection chamber so that a good accessibility is provided, in order to facilitate electrical connection.

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/produkte/netzwerk/excam-xpt-q6055/

Option mounting accessories

Wall bracket WMB-...		**WALL MOUNT EXCAM XPT (01538-001)** Wall bracket for the T08-TNXCD series Suitable for hanging the camera on walls. The scope of delivery includes a protective cover for the wall bracket. The cover protects the cable and cable routing as required by 60079-14 and does not let the cable and cable glands be directly exposed to water splashes. Material: stainless steel 1.4404 Load bearing: 45 kg Dimensions: 460 x 140 x 220 mm
Pole adapter PMB-…		**POLE MOUNT EXCAM XPT (01539-001)** TNXCD pole adapter for wall mount Material: stainless steel 1.4404 Suitable for pole diameters between 110 and 150 mm Load-bearing capacity: 50 kg
Ceiling adapter CMB-…		**CEILING MOUNT EXCAM XPT** TNXCD pole adapter for ceiling mount Material: stainless steel 1.4404 Load-bearing capacity: 50 kg

5 Electrical connection

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

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

Attention!
The minimum length of the connecting cable must not be less than three meters! The connection cable must be protected!

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

The ExCam® XPT Q6055 is equipped with an electrical connection cable of type ASKDP03-T and a pre-assembled and pre-wired terminal box ExTB-3. The maximum transmission range from the 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 any electrical connection procedures inside the pressure-resistant enclosure.

5.1 Equipotential bonding/Grounding

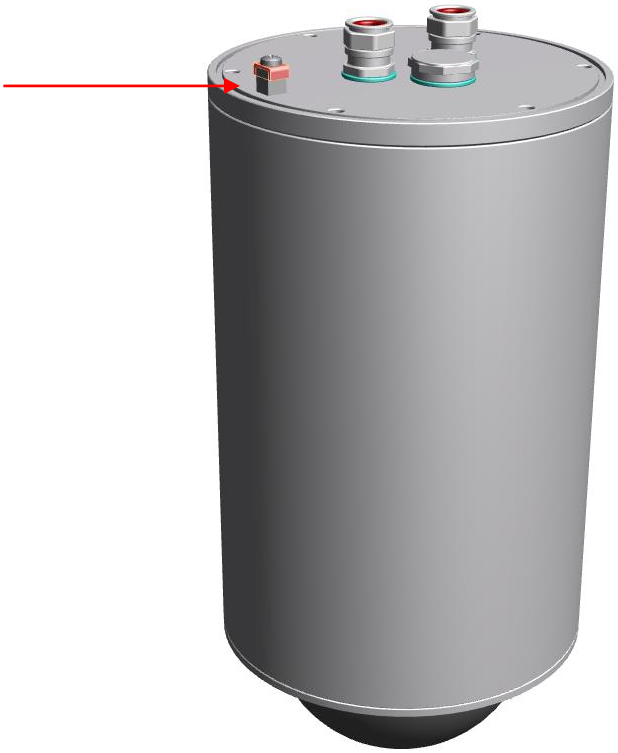


Fig. 5-1 ExCam XPT Q6055 equipotential bonding

Equipotential bonding/grounding of the camera body is absolutely necessary, in order to avoid static charges and 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 equipotential bonding should comply with the National Ground Rules (at least 4 mm^2).

Wiring table:

Potential	**Colour (IEC 60757)**	**Cross-section**	**Comment**
PA	GN/YE	4 mm^2 (rigid)	-

5.2 Connection work on the device (terminal box)

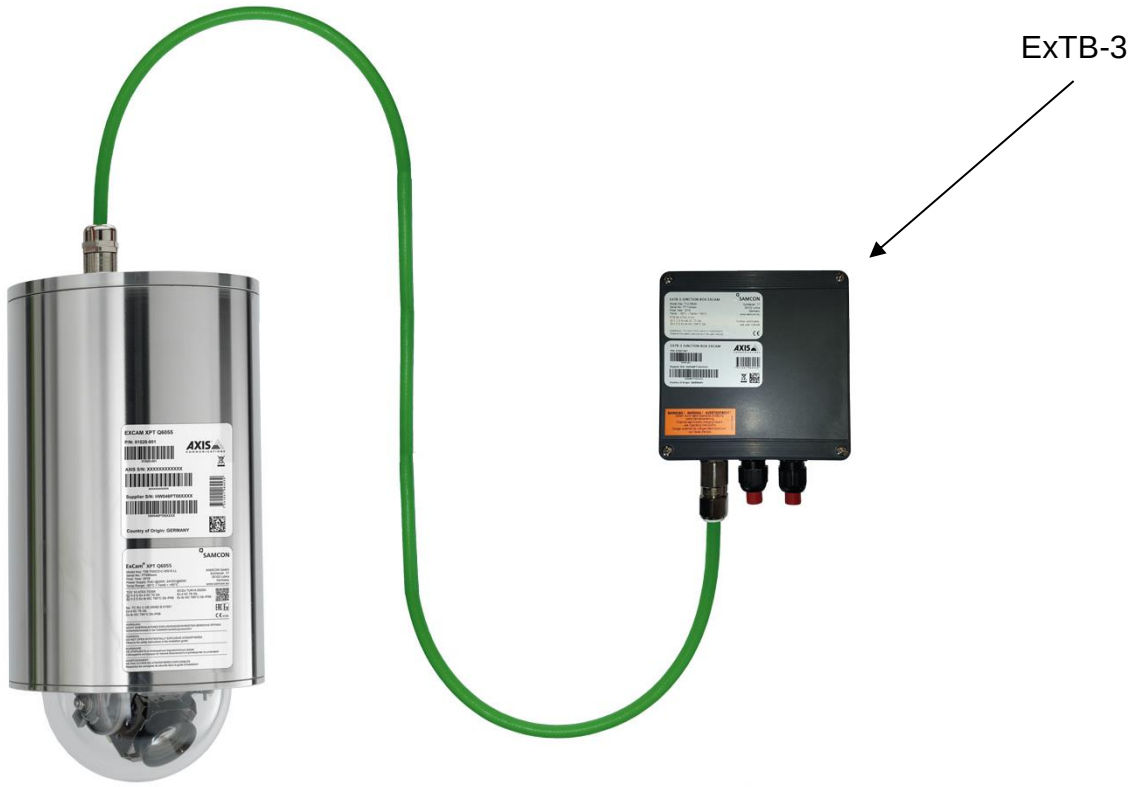


Fig. 5-2 Camera (Ex-d) and terminal box (Ex-e)

Attention!
Connect the device the electric mains exclusively via the box ExTB-3 terminal!

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 attached separate Usual Manual for the Ex-e connection chamber.

Video Tutorial:

Observe our video tutorial:

“SAMCON 01 Installation and Wiring Connection to ExTB-3”
https://www.youtube.com/watch?v=lqd5fsS7MsM

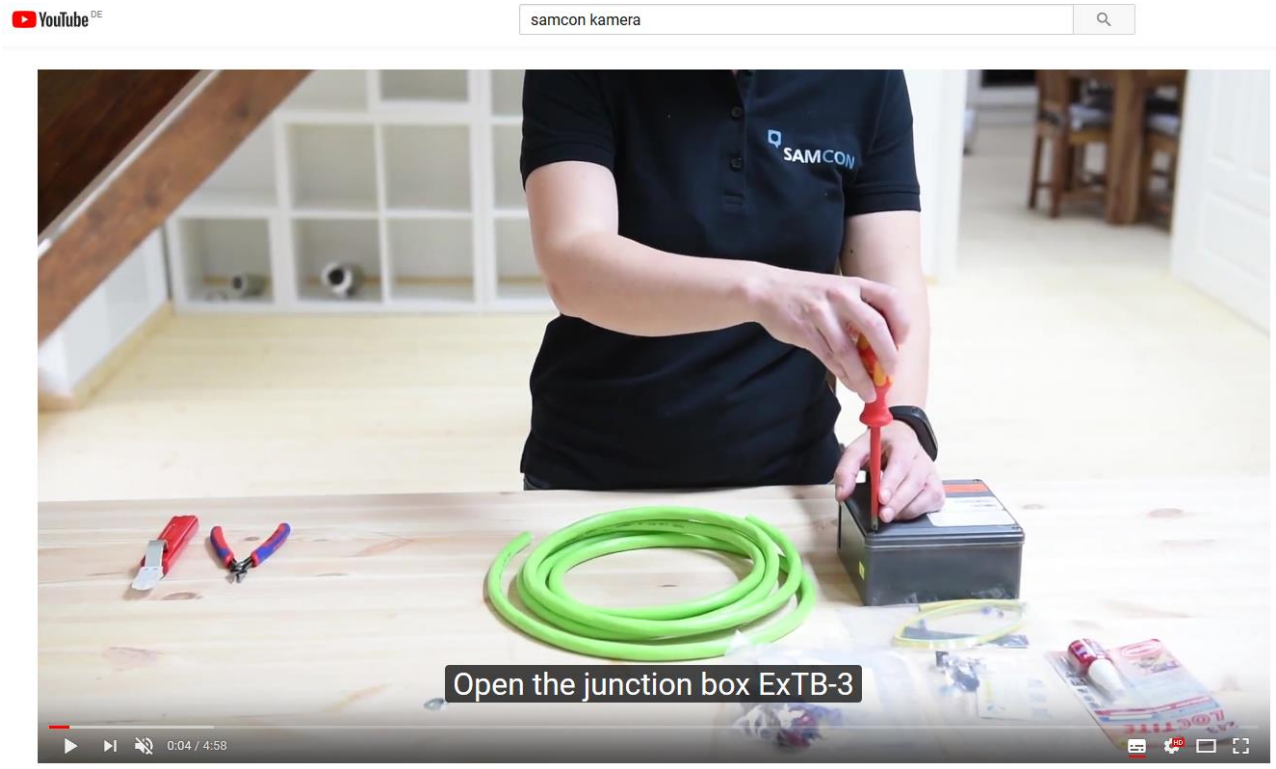


Fig. 5-3 Video Tutorial ExTB-3

The pin assignment of the ASKDP03-T is executed in accordance with the standard EIA/TIA-568B for 100BaseTX and 24VDC, as follows:

Camera (Ex-d) (T568B)	**Colour ASKDP03-T** (IEC60757)	**Terminal ExTB-3**	**Cross-sectional surface**	**Comment**
Reinforcement	YE / GN	PE	2.5 mm²	Flex
Tx+	WH / OG	1	0.32 mm²	Solid conductor
Tx-	OG	2	0.32 mm²	Solid conductor
Rx+	WH / GN	3	0.32 mm²	Solid conductor
(PoE +48 VDC)	BU	4	0.32 mm²	Solid conductor
(PoE +48 VDC)	WH / BU	5	0.32 mm²	Solid conductor
Rx-	GN	6	0.32 mm²	Solid conductor
(PoE GND)	WH / BN	7	0.32 mm²	Solid conductor
(PoE GND)	BN	8	0.32 mm²	Solid conductor
GND/SHD	YE / GN	PE	2.5 mm²	Flex
L+	BK	9	1.5 mm²	L+ 24VDC
L-	BU	10	1.5 mm²	L- 24VDC
PE	YE / GN	PE	1.5 mm²	PE

Tab. 5-4. Wire assignment of terminal box ExTB-3

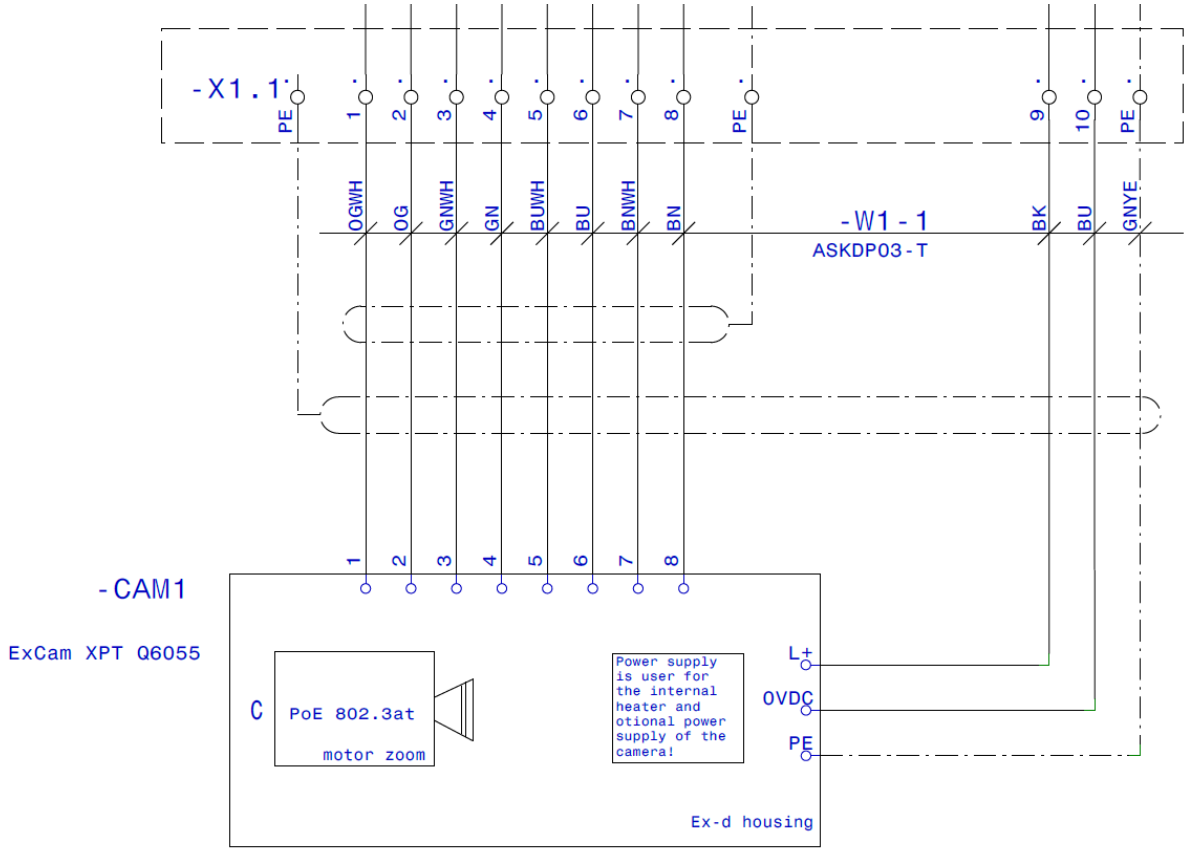


Fig. 5-5 Sample circuit of terminal box ExTB-3

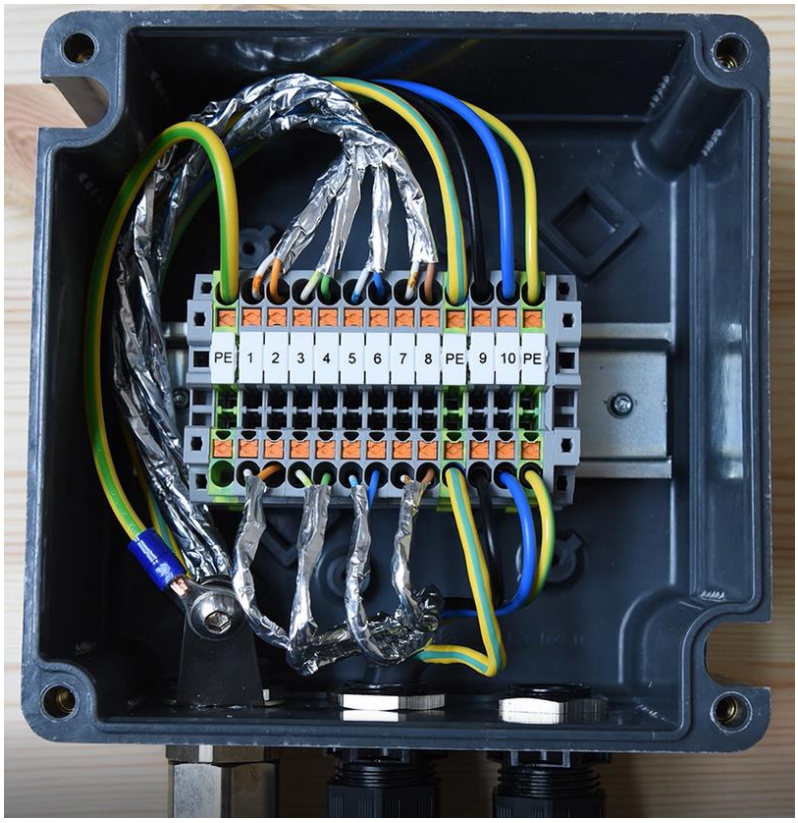


Fig. 5-6 Photo of the occupied terminal box ExTB-3

Attention!
Perform the foiling up to about 10mm to the terminals, in order to prevent alien crosstalk. Make sure that the foiling cannot cause any short circuit of the data couples!

Attention!
Bring the twisted pair composite approximately 10mm close to the terminals, in order to ensure the immunity to disturbance.

Attention!
Use only terminals approved by SAMCON.

Attention!
Finally, check your network installation by per Class-D Link Test.

5.3 External connection and protection

There are several options of assigning the ExTB-3 terminal box in a safe area:

5.3.1 Direct routing from the ExTB-3 into the safe area

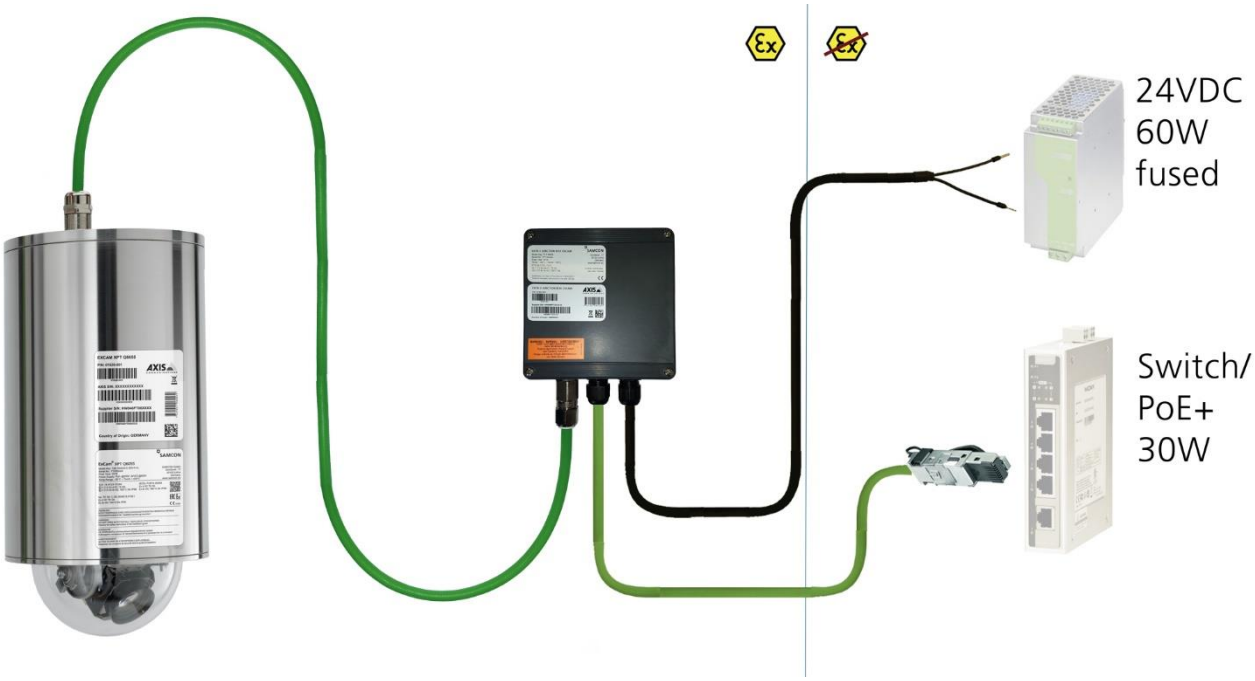


Fig 5-7 ExTB-3 -> Safe area

In the case of direct routing from ExTB-3 into the safe area, the power supply and the voltage signal is led from the safe area to the terminal box. Please observe the terminal box assignment, as described above.

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.

5.3.2 Routing via ExConnection Rail (optional accessories)

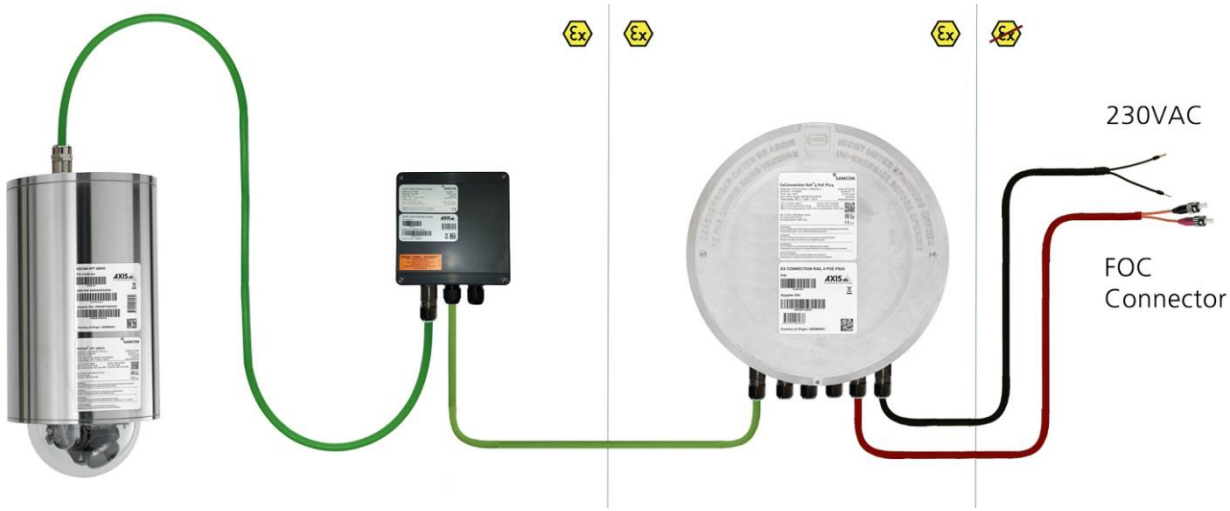


Fig. 5-8 ExTB-3 -> ExConnection Rail

In the case of routing the ExTB-3 into a larger ExConnection Rail, larger installation distances can be managed.

Note:
In explosive areas ExConnection Rail (optional accessories) acts as PoE+ switch, media converters from copper to fibre-optic cable, as well as a power supply to the cameras.

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.

5.3.3 Appropriate cables & cable entries

To ensure the device safety, you should correctly select the right cables, wires and cable glands.

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.

To see non-binding configuration and planning guidelines, please visit:

https://www.samcon.eu/fileadmin/documents/en/99-Knowledgecenter/Cable-Gland-selection-for-Ex-d-enclosures.pdf

In particular for installations which require a suitable barrier gland, make sure that you handle them correctly and adhere to the rules and notes given in the respective mounting instructions.

We show the essential procedures in the following video tutorial:

Video Tutorial:

Observe our video tutorial:

“SAMCON 02 Installation Ex d gland”
https://www.youtube.com/watch?v=U1nap29TEFY

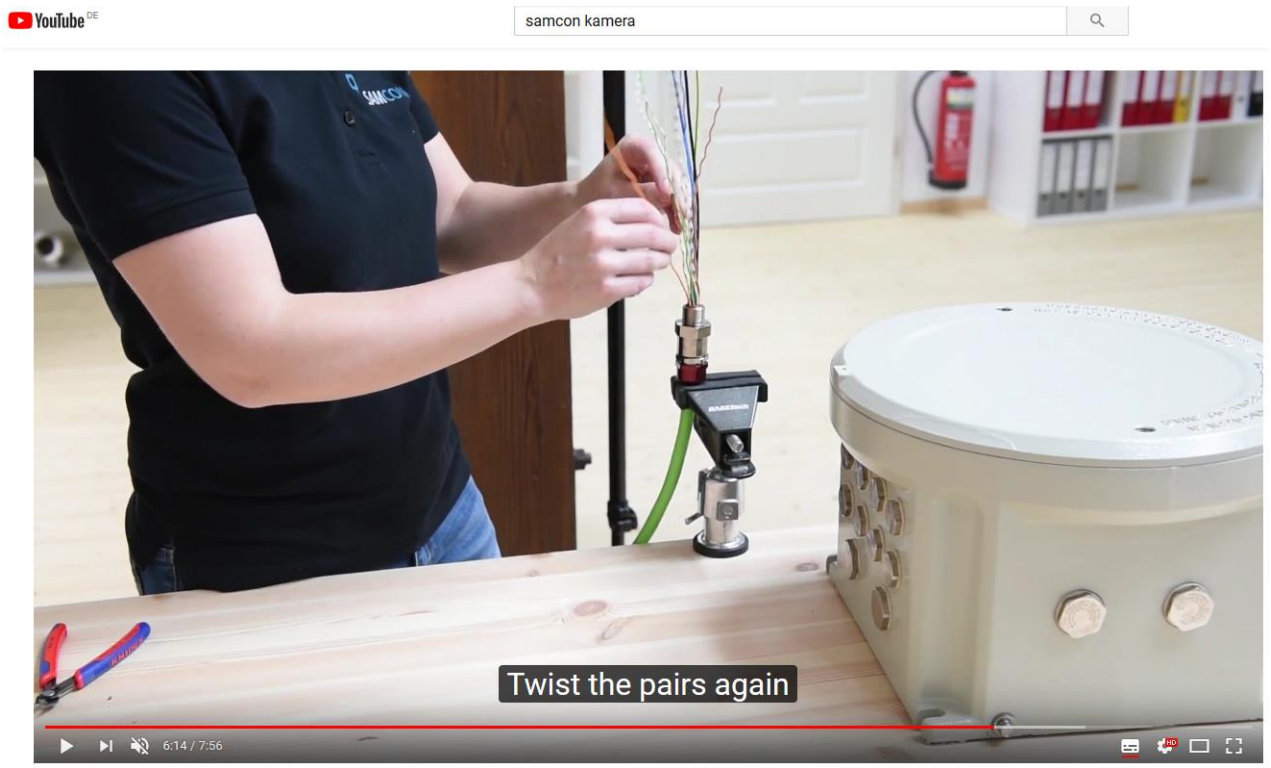


Fig. 5-9 Barrier gland

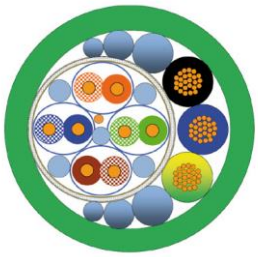
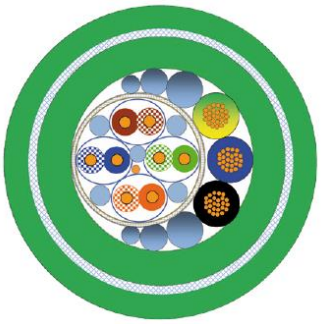
5.3.4 Cable kits - "plug and play" connection packages

As an option, there are various cable kits for different cables are available in different lengths. The connection packages include everything you need for a professional system installation:

- ✓ 10/25/95 m SKDP03-T system cable, digital (a)
- ✓ 1 x barrier gland with sealing compound (b)
- ✓ 5 ml of Loctite thread locking (c)
- ✓ 1 x CAT6 RJ45 industrial connectors (5.5 - 10.5 mm) (d)
- ✓ Heat-shrinkable tube 40 cm, yellow-green (e)
- ✓ Heat-shrinkable tube 10 cm, black (e)
- ✓ 8 x cable end sleeves (e)
- ✓ 1 x documentation

Fig. 5-10 Cable kit – plug & play connection package

Connection packages available:

Length	Non-armoured cable SKDP03-T	Armoured cable ASKDP03-T
		
10 meters	**SKDP03-T CABLE EXCAM 10M (01540-001)** This cable set includes: 10 meters SKDP03-T system cable, digital 1 x barrier gland Ex-d 5 ml Loctite 243 screw locking 1 x CAT6 RJ45 industrial plug 1 x documentation	**ASKDP03-T CABLE EXCAM 10M (01543-001)** This cable set includes: 10 meters ASKDP03-T system cable, digital 1 x bolted connection Ex-d 1 x bolted connection Ex-e 5 ml Loctite 243 screw locking 1 x CAT6 RJ45 industrial plug 1 x documentation
25 meters	**SKDP03-T CABLE EXCAM 25M (01541-001)** This cable set includes: 25 meters SKDP03-T system cable, digital 1 x barrier gland Ex-d 5 ml Loctite 243 screw locking 1 x CAT6 RJ45 industrial plug 1 x documentation	**ASKDP03-T CABLE EXCAM 25M (01545-001)** This cable set includes: 25 meters ASKDP03-T system cable, digital 1 x bolted connection Ex-d 1 x bolted connection Ex-e 5 ml Loctite 243 screw locking 1 x CAT6 RJ45 industrial plug 1 x documentation
95 meters	**SKDP03-T CABLE EXCAM 95M (01542-001)** This cable set includes: 95 meters SKDP03-T system cable, digital 1 x barrier gland Ex-d 5 ml Loctite 243 screw locking 1 x CAT6 RJ45 industrial plug 1 x documentation	**ASKDP03-T CABLE EXCAM 95M (01542-001)** This cable set includes: 95 meters ASKDP03-T system cable, digital 1 x bolted connection Ex-d 1 x bolted connection Ex-e 5 ml Loctite 243 screw locking 1 x CAT6 RJ45 industrial plug 1 x documentation

Tab. 5-11 Available cable kits

5.3.5 Fusing

PoE+ power supply requires no fuses.

The power supply fusing depends on the cable cross-section and length.

Attention!
Recommendation for fusing relates to 60W@24VDC at 100meters 1.5 mm²

Attention!
When the heating switches on, there are high current peaks! Use slow-blow fuses.

Attention!
Please pay attention to the national and international regulations regarding selectivity and line protection.

Potential/ Wire no.	**Colour** (IEC60757)	**Conductor**	**Voltage**	**Maximum power consumption/fusing:**
L+ / 1	BK	1.5mm², stranded wire	+24 VDC	60 W of continuous power Fine-wire fuse (L+) 6000 mA -T- slow-blow (high inrush load!)
L- / 2	BU	1.5Mm2,², stranded wire	0 VDC / GND	
PE	YE/GN	1.5Mm2,², stranded wire	PE	

Tab. 5-12 Recommendation for fusing

5.3.6 Plug assignment (RJ45)

The data transfer of the ExCam XPT Q6055 series uses a 100 Mbit/s Ethernet connection (100BASE-TX).

If the cable termination uses a plug, (figure 5.3) it has to be plugged into the associated slot of the network device. 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 the appropriate RJ45 plug! Check shielding, cross-section and the outside diameter of the cable!

Attention!
It is imperative to ensure a correct assignment of the individual wires according to the EIA/TIA-568B"

Attention!
Finally, check your network installation by per Class-D Link Test.

Observe our video tutorial:

“SAMCON 03 Mounting and installing the RJ45 jack to SAMCON cables”
https://www.youtube.com/watch?v=LOJ_7drrn4E&feature=youtu.be

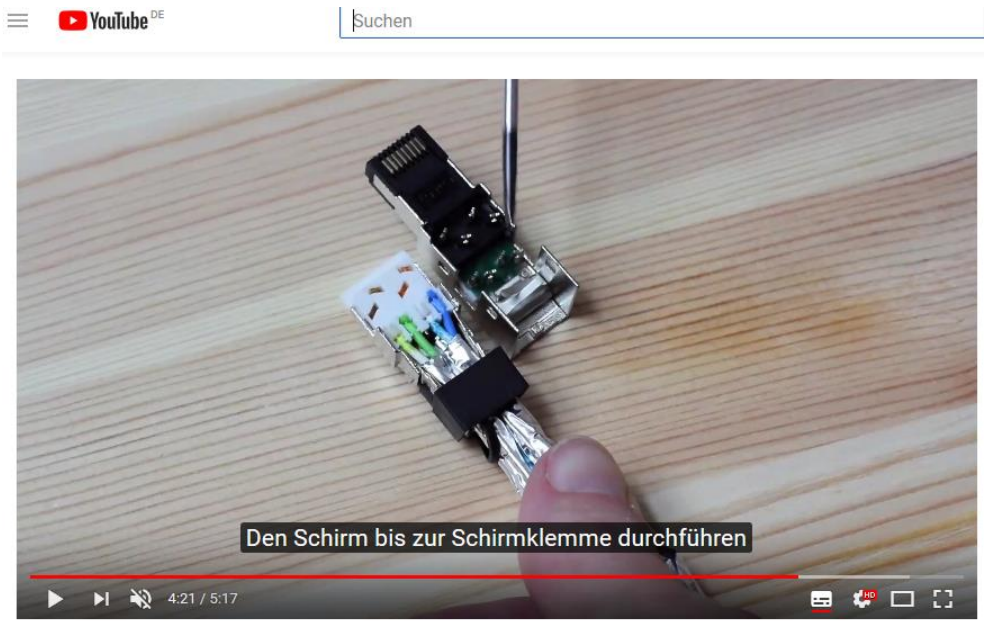


Fig. 5-13 Plug assignment RJ45

5.3.7 Tests prior to switching on voltage

Attention!
Prior to commissioning, all tests as indicated by the national regulations have to be executed. Furthermore, the correct function and installation of the device has to be checked in accordance with this user manual and other applicable regulations.

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

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

6 Opening the pressure-resistant housing

To open the TNXCD housing, you need a special tool. The customer should not open it. If you think that the housing has to be opened for unforeseeable reasons, please contact our support tem at first (Support@samcon.eu).
Always adhere to the explosion-relevant rules:

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

Note: Depending on classification of hazard areas, a work approval has to be obtained.
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!
Heed that you do not damage the thread surface of the flame-proof gap.

Attention!
Heed that you do not damage the housing seals. Keep them clean!

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://www.axis.com/products/axis-q6055

At delivery, the ExCam XPT Q6055 is set to the applicable net frequency (50Hz or 60Hz). If the camera is used at a location with a differing net frequency, a flickering of the picture might be noticeable, particularly in surroundings with fluorescent tubes. In such a case, the applicable settings have to be carried out within 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:

http://www.axis.com/techsup/cam_servers/tech_notes/browsers.htm

7.2 Assigning the IP address

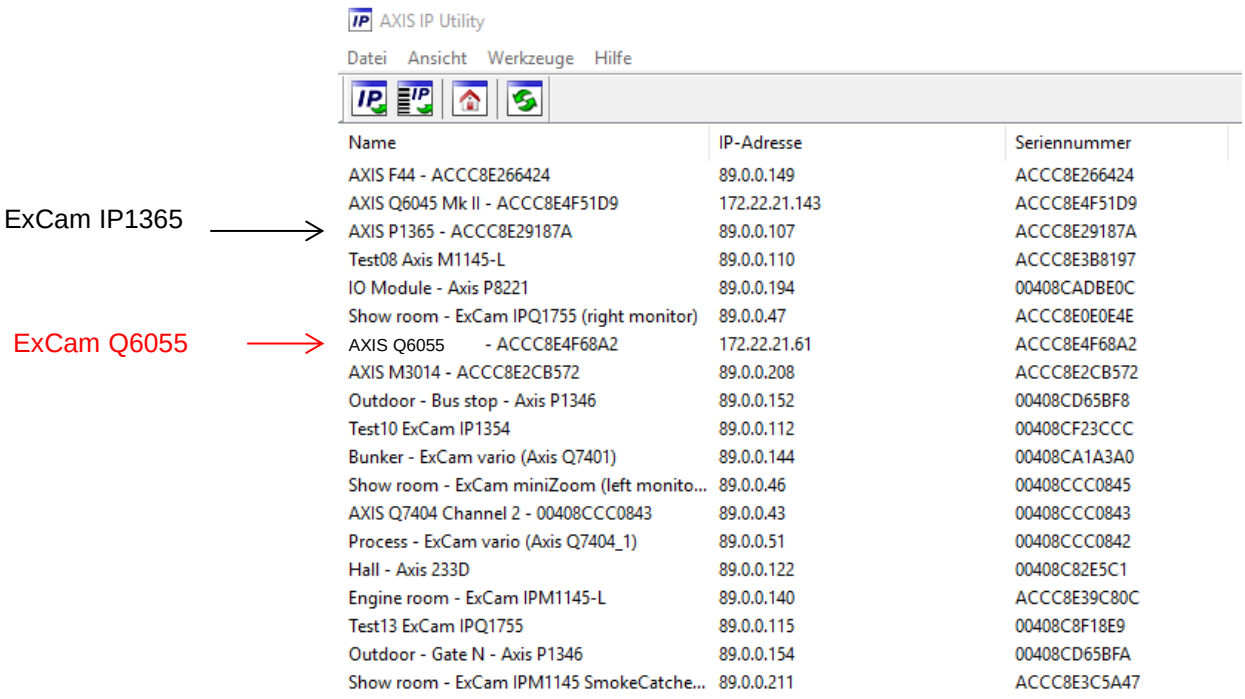
The ExCam XPT Q6055 is intended for use in an Ethernet network and requires an IP address to access and control it. In the most today’s networks, a DHCP server is integrated. This server automatically assigns an IP address.

If there is no DHCP server available in the network, the ExCam IP’s default address 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.

In case 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 XPT Q6055 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 XPT Q6055 is "AXIS Q6055" (see Figure 6.1). MAC address and serial number for clear device identification are also detected and displayed.



Name	IP-Adresse	Seriennummer
AXIS F44 - ACCC8E266424	89.0.0.149	ACCC8E266424
AXIS Q6045 Mk II - ACCC8E4F51D9	172.22.21.143	ACCC8E4F51D9
AXIS P1365 - ACCC8E29187A	89.0.0.107	ACCC8E29187A
Test08 Axis M1145-L	89.0.0.110	ACCC8E3B8197
IO Module - Axis P8221	89.0.0.194	00408CADBE0C
Show room - ExCam IPQ1755 (right monitor)	89.0.0.47	ACCC8E0E0E4E
AXIS Q6055 - ACCC8E4F68A2	172.22.21.61	ACCC8E4F68A2
AXIS M3014 - ACCC8E2CB572	89.0.0.208	ACCC8E2CB572
Outdoor - Bus stop - Axis P1346	89.0.0.152	00408CD65BF8
Test10 ExCam IP1354	89.0.0.112	00408CF23CCC
Bunker - ExCam vario (Axis Q7401)	89.0.0.144	00408CA1A3A0
Show room - ExCam miniZoom (left monito...	89.0.0.46	00408CCC0845
AXIS Q7404 Channel 2 - 00408CCC0843	89.0.0.43	00408CCC0843
Process - ExCam vario (Axis Q7404_1)	89.0.0.51	00408CCC0842
Hall - Axis 233D	89.0.0.122	00408C82E5C1
Engine room - ExCam IPM1145-L	89.0.0.140	ACCC8E39C80C
Test13 ExCam IPQ1755	89.0.0.115	00408C8F18E9
Outdoor - Gate N - Axis P1346	89.0.0.154	00408CD65BFA
Show room - ExCam IPM1145 SmokeCatche...	89.0.0.211	ACCC8E3C5A47

Fig. 6-1 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**

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.

9 Reparation

Reparations must 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 affecting the explosion protection must only be carried out in accordance with nationally applicable regulations - by SAMCON Prozessleittechnik GmbH or by an electrician specially authorised by SAMCON Prozessleittechnik GmbH.
Rebuilding of or alterations to the devices are not permitted!

10 Disposal/ Recycling

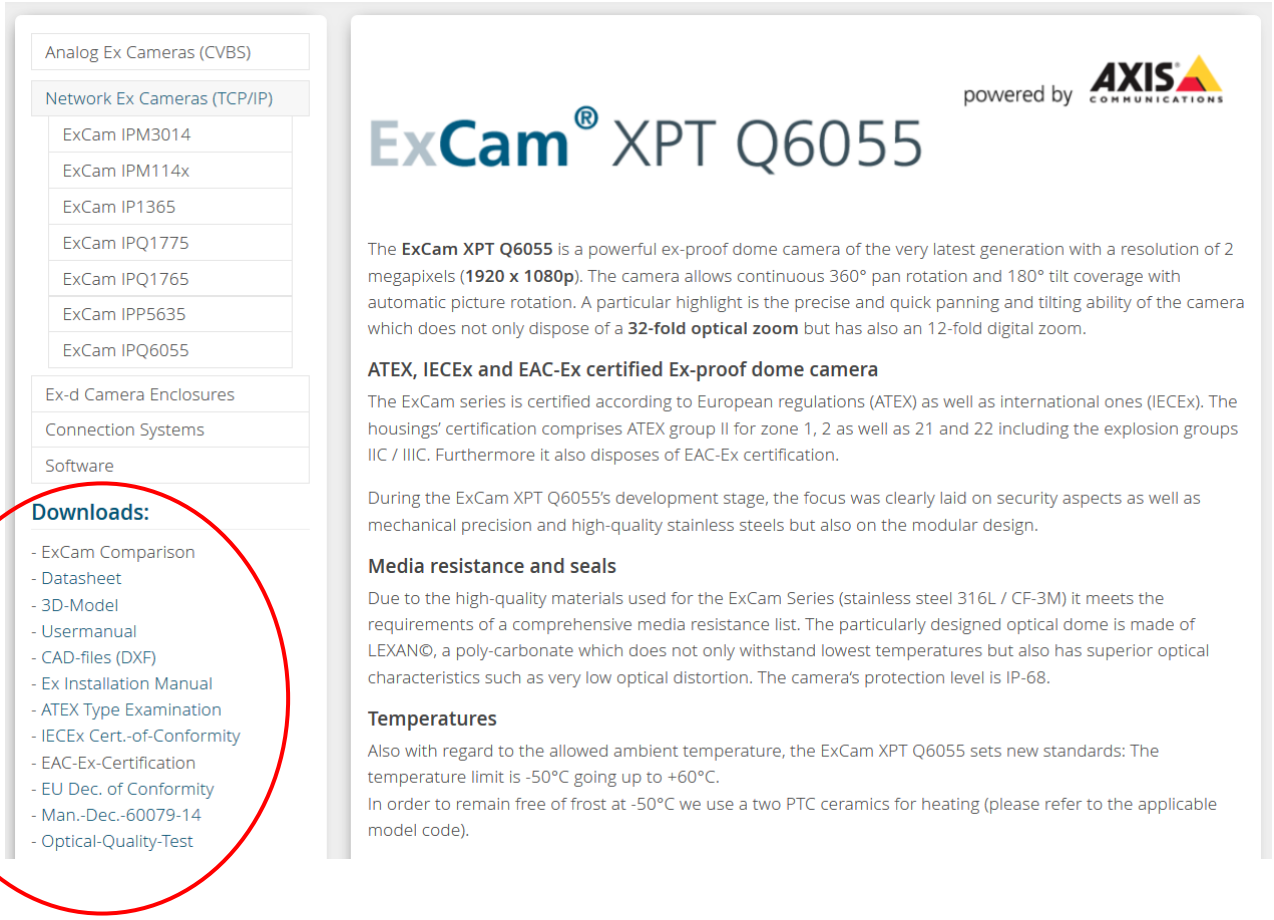
When disposing of the device, nationally applicable regulations must be observed.

This Document is subject to alterations and additions.

11 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/excam-xpt-q6055/



If you wish additional technical information, please contact us at:
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