



# TKH Security EX3 PTZ Series 3rd Generation EX PTZ Camera 316L Instruction Manual

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## Product Information

### Specifications

- **Product Name:** TKH Security | Siqua EX3 PTZ Series
- **Model:** 3rd Generation EX PTZ Camera 316L
- **Material:** AISI 316L Stainless Steel
- **Features:** Belt-drive technology, PAN and TILT rotations, low power consumption
- **Compatible Modules:** Latest generation zoom module day/night and/or thermal imaging modules (TX3)

## Product Usage Instructions

### Installation Guidelines

- This product must only be installed by suitably trained personnel following the relevant code of practice (e.g., EN60079-14 or ABNT NBR IEC 60079-14).

### Models and Configurations

- The **EX3-PTZ** series offers various models for different applications:
- **EX3-PTZ(v)**: Single-head optical upright pan, tilt, and zoom camera
- **EX3-PTZ(v)T**: Single head thermal upright pan and tilt camera
- **EX3-PTZ(v)D**: Dual head optical + thermal upright pan, tilt, and zoom camera
- **EX3-PTZ(v)D-IR34**: Dual head optical upright pan, tilt, and zoom camera with IR illuminator

### Safety Symbols

- **WARNING:** Indicates a potentially dangerous situation that could lead to physical or mortal injuries. Read the instructions carefully.

- **ELECTRICAL HAZARD:** Indicates a potentially dangerous situation involving electricity risks. Read the instructions carefully.
- **EXPLOSION RISK:** Indicates a potentially dangerous situation involving an explosive atmosphere. Read the instructions carefully.

## Frequently Asked Questions (FAQ)

### Q: Can the EX3-PTZ series be used in Hazardous Areas?

- **A:** Yes, the EX3-PTZ series is specifically designed for Hazardous Area applications.

### Q: What should I do with old products?

- **A:** Do not mix old products with general waste. Take them to applicable collection points for proper treatment, recovery, and recycling according to your national legislation.
- **Note:** To ensure proper operation, please read this manual thoroughly before using the product and retain the information for future reference.
- Nothing from this publication may be copied, translated, reproduced, and/or published using printing, photocopying, or by any other means without the prior written permission of TKH Security.
- TKH Security reserves the right to modify the specifications stated in this manual.

## Brand names

- Any brand names mentioned in this manual are registered trademarks of their respective owners.

## Liability

- TKH Security accepts no liability for claims from third parties arising from improper use other than that stated in this manual.
- Although considerable care has been taken to ensure a correct and suitably comprehensive description of all relevant product components, this manual may nonetheless contain errors and inaccuracies.
- We invite you to offer your suggestions and comments by email via [info@tkhsecurity.com](mailto:info@tkhsecurity.com). Your feedback will help us to further improve our documentation.

## How to contact us

- If you have any comments or queries concerning any aspect related to the product, do not hesitate to contact:
- TKH Security B.V.
- Werner von Siemensstraat 7
- 2712 PN Zoetermeer
- The Netherlands <http://tkhsecurity.com>

## Introduction

- Preserve this manual as a reference for future needs.
- Used electrical, electronic, and stainless steel products should not be mixed with general waste. For proper treatment, recovery, and recycling of old products, take them to applicable collection points, per your national legislation and the Directives 2011/65/EU and 2012/19/EU.
- By disposing of these products correctly, you help to save valuable resources and prevent any potential negative effects on human health and the environment that could otherwise arise from inappropriate waste handling.
- For more information about the collection and recycling of old products, contact your local municipality or your waste disposal service. Penalties may be applicable for incorrect disposal of this waste, under national legislation.
- The manufacturer declines all liability for any consequence resulting from improper installation practices, tampering or improper uses of the product.
- The descriptions and illustrations contained in this manual are not binding. The manufacturer reserves the right to make any alterations deemed appropriate for the technical, manufacturing, and commercial improvement of the product while leaving the essential product features unchanged, at any time and without undertaking to update the present publication.
- The manufacturer declines all responsibility for any consequences resulting from improper use of the product, or use which is different from that expected and specified in the present documents.

## General information

### Description

- The EX3-PTZ series are AISI 316L Stainless Steel camera housings specifically designed for Hazardous Area applications. Built with belt-drive technology, EX3-PTZ allows PAN and TILT rotations with very low power consumption.
- The EX3-PTZ can be assembled with the latest generation zoom module day/night and/or thermal imaging modules (TX3).
- **Note:** This product must only be installed by suitably trained personnel per the relevant code of practice (e.g., EN60079-14 or ABNT NBR IEC 60079-14).
- These instructions are intended for their sole use.

### Models

- This manual contains instructions on the installation and use of the EX3-PTZ series. It covers the following models.
- **EX3-PTZ(v).** Single-head optical upright pan, tilt, and zoom camera
- **EX3-PTZ(v)T.** Single-head thermal upright pan and tilt camera
- **EX3-PTZ(v)D.** Dual head optical + thermal upright pan, tilt, and zoom camera
- **EX3-PTZ(v)D-IR34.** Dual head optical upright pan, tilt, and zoom camera with IR illuminator (v) determine the power supply voltage. (v) can be 24 for AC 24 V, 120 for AC 120 V, or 230 for AC 230 V

### Symbols used



## **WARNING**

- It indicates a potentially dangerous situation that, if ignored, could lead to physical or mortal injuries and/or damage to the unit. Read the provided instructions carefully.



## **ELECTRICAL HAZARD**

- It indicates a potentially dangerous situation involving electricity risks that could lead to physical or mortal injuries and/or damage to the unit. Read the provided instructions carefully.



## **EXPLOSION RISK**




- It indicates a potentially dangerous situation involving an explosive atmosphere that can be caused by flammable gases, mists, vapors, or combustible bags of dust.
- The effects of an explosion can be devastating in terms of lost lives, injuries, significant damage to property and environment, and to the business community. Read the provided instructions carefully.




## **OPTICAL RADIATION**

- It indicates a potentially dangerous situation due to the emission of visible light or infrared that could be harmful to the eyes. Read the provided instructions carefully.

**Before you continue**

	Before installation and operation, carefully read all instructions in this manual and heed all warnings.
	Use the original packaging to transport the unit. Disconnect the power supply before moving it. In case of returning the equipment, the original packaging must be used.
	Any change performed on the unit that is not previously approved by the manufacturer will void both the certification and the warranty. If this equipment is not utilized according to the instructions of this document, the protection of the equipment may be impaired and the certification may be void.
	Trying to manually force the wiper will result in damaging the device and will void the warranty.
	When leaving the unit unused for long periods, disconnect supply cables
	For security reasons, do not install the unit in the proximity of water containers, and never push objects or pour liquids into the unit. The unit can be safely used in damp environments or outdoors, as long as the glands are properly sealed.
	The internal transformer of the unit should never be used to power external devices.
	Connecting GND/Earth/PE to line or neutral will result in damaging the device and will void the warranty.
	No ventilation is needed for the unit, as it is completely sealed.
	Before performing any operation, turn off the power. The installation of the unit can be performed only by qualified personnel under the relevant code of practice (e.g., EN60079-14, ABNT NBR IEC 60079-14, etc) and with all the relevant local and national standards including but not limited to the use of special pipes, tapes, sealants, cables, and glands.
	All the electrical connections should be realized in a non-explosive atmosphere.

#### Only for EX3-PTZD IR34 with integrated IR LED illuminator:

-  The unit emits high-intensity IR light. Wear protective eyewear. Avoid direct eye and skin exposure. Please follow the safety precautions given in IEC 60825-1 and IEC 62471.

## Technical Data

### General & Mechanical

- **Construction:** AISI316L Stainless Steel
- **Finishing:** Electro-polished
- **Pan: Angle:** 360° (continuous rotation); Speed: 0 – 40°/second
- **Tilt: Angle:** 180° (±90°); Speed: 0 – 20°/second

### Electrical

- **Heater:** T[°C] ON=12±4°C, T[°C] OFF=20±3°C (thermostatically controlled)

### Power consumption:

- **EX3-PTZ(v)** 130W MAX
- **EX3-PTZ(v)D** 170W MAX
- **EX3-PTZ(v)D-IR34** 155W MAX

#### Supply voltage:

- **(v)** = 24 AC 24V ( $\pm 10\%$ )
- **(v)** = 120 AC 120V ( $\pm 10\%$ )
- **(v)** = 230 AC 230V ( $\pm 10\%$ )

#### Certifications

- **Weatherproof standard:** IP66/IP67/IP68/IP69
- **ATEX/UKEX Standards:** EN IEC 60079-0:2018; EN 60079-1:2014; EN 60079-31:2014
- **IECEx Standards:** IEC 60079-0:2017; IEC 60079-1:2014-06; IEC 60079-31:2013
- **INMETRO Standards** (TBD) ABNT NBR IEC 60079-0:2020;
- **CE compliant ABNT NBR IEC 60079-1:2016;** ABNT NBR IEC 60079-31:2022

#### Certificates

#### EX3-PTZ, EX3-PTZT and EX3-PTZD

- The 3rd generation explosion-proof camera stations have been designed and certified to the ATEX Directive 2014/34/EU, to the UKSI 2016:1107 (as amended by UKSI 2019:696) to the following:
- II 2 G Ex db IIC T6/5/4 Gb  $-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +60/75/80^{\circ}\text{C}$
- II 2 D Ex tb IIIC T85/100/135°C Db  $-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +60/75/80^{\circ}\text{C}$
- This product is designed for use with flammable gases and vapors covered by apparatus groups IIA, IIB and IIC with temperature classes T1 to T6 (environmental temperature up to  $60^{\circ}\text{C}$ ), with temperature classes T1 to T5 (environmental temperature up to  $75^{\circ}\text{C}$ ), with temperature classes T1 to T4 (environmental temperature up to  $80^{\circ}\text{C}$ ) and with flammable dust covered by apparatus groups IIIA, IIIB and IIIC with temperature  $T=85^{\circ}\text{C}$ .

#### EX3-PTZD-IR34

- The explosion-proof PTZ camera stations with integrated IR LED illuminators have been designed and certified to the ATEX Directive 2014/34/EU, to the UKSI 2016:1107 (as amended by UKSI 2019:696) to the following:
- II 2 G Ex db IIC T5/4 Gb  $-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +40/60^{\circ}\text{C}$
- II 2 D Ex tb IIIC T100/135°C Db  $-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +40/60^{\circ}\text{C}$
- This version of the product is designed for use with flammable gas and vapors covered by apparatus groups IIA, IIB, and IIC with temperature classes T1 to T5 (environmental temperature up to  $40^{\circ}\text{C}$ ) and with temperature classes T1 to T4 (environmental temperature up to  $60^{\circ}\text{C}$ ) and with flammable dust covered by apparatus groups IIIA, IIIB, and IIIC with temperature  $T=100^{\circ}\text{C}$ .

#### Special conditions for safe use

- Do not damage, modify, or repair the flame-paths.
- The mechanical and physical properties of the fasteners used for the covers shall be A4-70 according to EN-ISO 3506-1
- The temperature at the cable entry can reach 25°C higher than the ambient operating temperature. Select suitable cables and glands that meet the requirements for max 105°C ambient temperature.
- For fixed installation – part of the enclosure may be capable of generating electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
- The camera must be installed in an area of low risk of impact.
- The power dissipated within the camera housing shall not exceed 25 W (or 40 W in case of redundant thermal protection set to open no higher than 35 °C).
- The motor housing enclosures must be fitted with suitable thermal limiting devices as defined on the associated drawings.
- When a fiber optical cable is used on the equipment it shall be suitably protected against mechanical damage external to the equipment (wire armored cable, fitted in conduit, within a cable tray, etc) under IEC/EN 60079-14
- The cross-sectional area occupied by the internal equipment within the camera housing shall not exceed 60%.
- When coin cells are fitted, the equipment must be marked for limited use at -40°C.

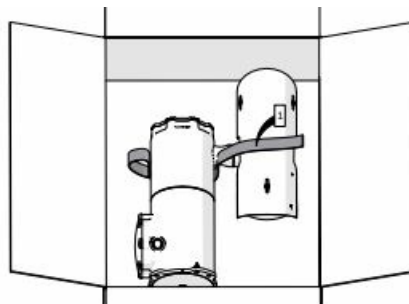
## Unpacking

### Contents in the box

- The camera comes in a sturdy carton box with the following contents.
- Explosion-proof camera station
- A hard copy of this manual
- Washing nozzle brackets kit (versions with wiper only)

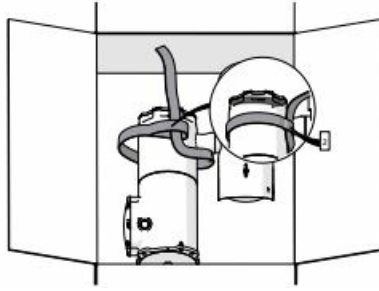
### Unpack

- If the package or the contents appear to be damaged, notify the shipper immediately.
- Check that all parts listed above are included.
- Use suitable lifting equipment that complies with all applicable (local) standards. The unit must be harnessed with a suitable anchor strap (minimum capacity: 500kg, minimum length: 2m)

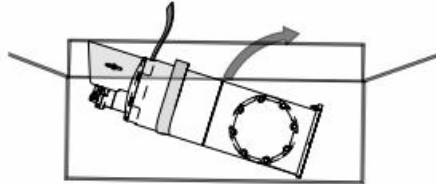


1. Pass the anchor strap (1) under the unit

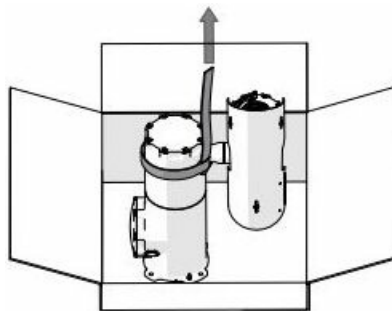
2. Pass the strap through the end of loop and tighten (2).



3. Pull the strap to tilt the unit in the vertical position while still in the box



4. Lift the PTZ out of the box. Be careful of any sudden movements of the unit while lifting.



## Installation

### Before you begin

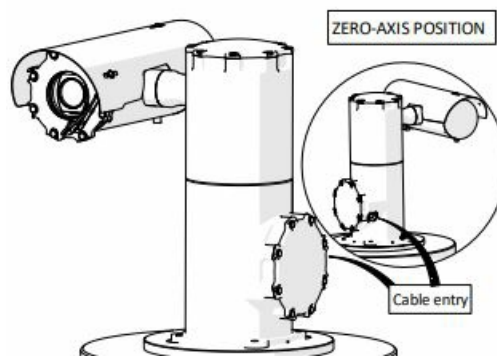
- Proper stainless steel tools should be carefully chosen and used during installation to fasten the unit to the surfaces, according to the local requirements.
- The unit cannot be installed horizontally.
- Make sure that the installation surface can support at least four times the weight of the unit in normal operating conditions. Where the equipment may be exposed to excessive external stresses (e.g., vibration, heat, impact), then the equipment must be protected by additional means of protection. Additional protection may be required if the equipment is to be installed in locations where it may be subject to damage.
- It is not advised to use automatic tools (such as drill drivers) for tightening/loosening the screws, it may result in damaged threads.
- Use caution when lifting and (dis)assembling the unit. It is recommended that non-slip protective gloves be worn during installation. The unit could bear sharp edges
- Electrical connections (such as plugs and cords) must be protected from potentially hazardous environmental factors (e.g., foot traffic, hitting objects).
- Earth ground attachment point is a stud M5-0.8 x20 A4-70 ISO 4762 with dual nut and dual serrated washer.
- During installation, it is important to connect the Earth stud to an appropriate grounding location using a (minimum) 6 mm<sup>2</sup> / 10 AWG copper stranded wire.
- Make sure that the unit case is properly earthed, connecting all the earth ground studs.
- An all-pole mains switch with an opening distance between the contacts of at least 3 mm (1/8") in each pole must be incorporated into the electrical installation.

- The switch must be equipped with protection against the fault current towards the ground (differential) and the overcurrent (magnetothermal, maximum 15 A). It must be very quickly recognizable and readily accessible
- Recommended fuse for 115 Vac / 230 Vac: 2 A Delayed Fuse T (Time delay) or equivalent resettable devices. Recommended fuse for 24 Vac: 4 A Delayed Fuse T (Time delay) or equivalent resettable devices.
- For connection to the main power supply use suitably insulated multipolar cable having minimum 3×1,5 mm<sup>2</sup>. The yellow/green PE wire must be longer than the others.
- Connecting GND/Earth/PE to line or neutral will result in damaging the device and will void the warranty.
- Fasten all the cables inside the housing with cable ties or other fixing means to avoid electrical contact with surrounding parts in case the wire gets loose. Route all the cables avoiding contact with the wiper shaft and motor.
- Do not connect the unit to a supply circuit unless the installation is completed. Check before assembling the position of the O-ring seals in their groove.
- Do not damage, modify, or repair the flame-paths.
- The temperature at the cable entry can get 25°C higher than the ambient operating temperature. Select cable and gland that meets the requirement of the higher temperature.
- All external cables used shall meet the requirements stated in IEC/EN/ABNT NBR IEC 60079-14. Unprotected optical fiber cable shall be suitably protected using a conduit that meets the requirements stated in IEC/EN/ABNT NBR IEC 60079-14
- The mechanical and physical properties of the fasteners used for the covers shall be A4-70 according to EN-ISO 3506-1

## Mounting the camera

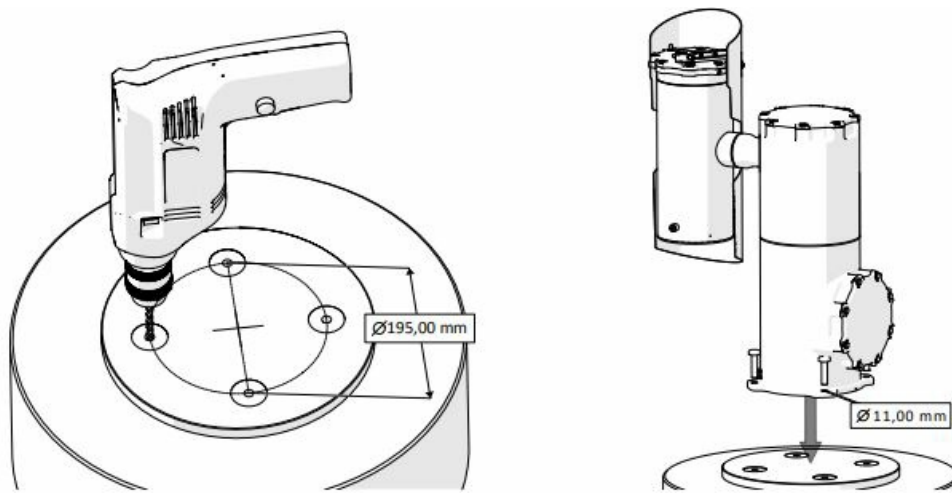
### Zero Axis position

- Upon each start-up, the unit will perform a “zero-axis” calibration. The “Zero-axis” position is with a side flange on the left (cable entry on the back) and camera(s) facing forward.
- The unit should be installed with the cable gland facing the opposite direction to the zone to be monitored



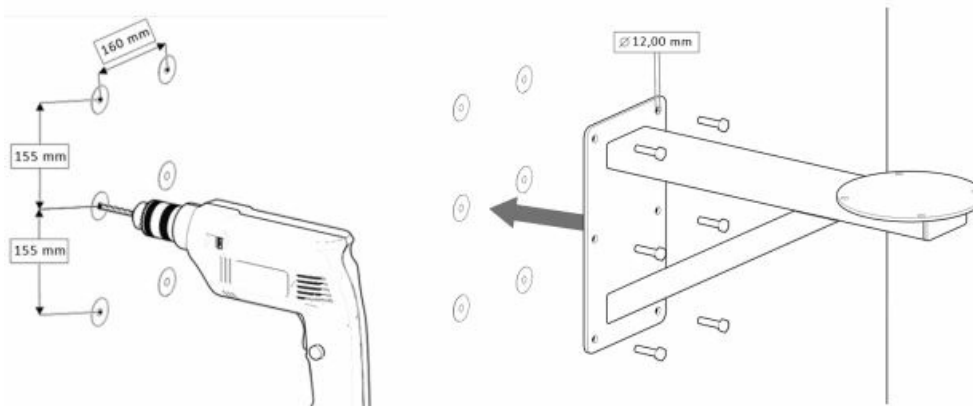
### Flat surface or pole-top mount

- Mount the EX3-PTZ on a flat surface that can support the unit or the top flange of a pole top. Choose the proper fasteners for the surface.
- The screws must be tightened with suitable torque by authorized and qualified personnel only. See the appendix for drawings of the mounting pattern and the camera's physical dimensions

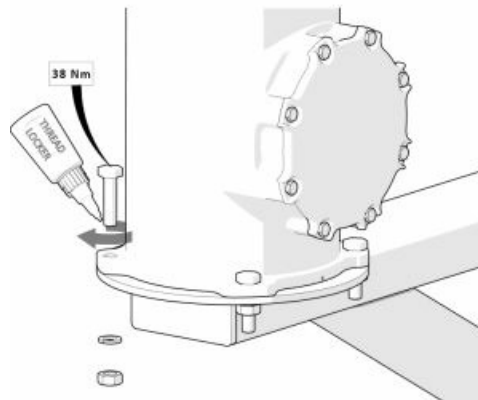


## Wall-mount

- To mount the EX3-PTZ camera to a horizontal wall an EX-PTZ WM01 must be used. Choose the proper fasteners for the surface.
- The screws must be tightened with suitable torque by authorized and qualified personnel only. See the appendix for drawings of the camera's physical dimensions.



- To install the PTZ to the bracket, 4x M10 screws, 4x lock Washer and 4x nuts (provided with the EX-PTZ WM01) must be used.
- Check that all the threads are clean. When fixing the screws use thread locking compound (e.g., Loctite) and allow an appropriate rest period. Screws must be tightened to 38Nm with an adequate torque wrench



## Installing the camera

- Any action performed on the unit which is not described in this manual may damage the camera.

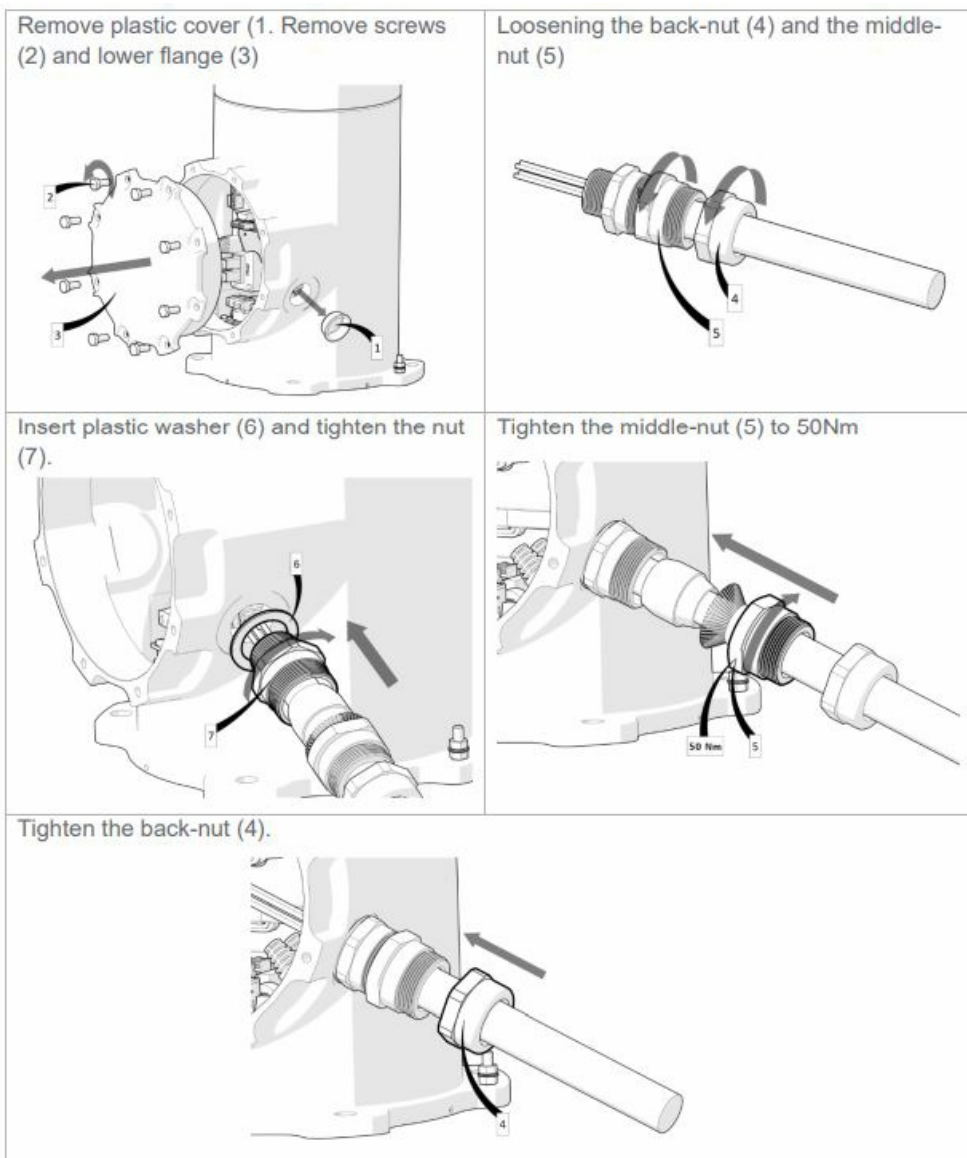
- Check the supply voltage marked on the label. Incorrect power supply voltage may damage the unit. Do not overload the terminal connection, as it may cause fire or electrical shock hazards.
- Make sure that the camera is disconnected from the power. An accessible mains switch must be installed to switch off the power. Wait at least 5 min before opening the camera
- An all-pole mains switch with an opening distance between the contacts of at least 3 mm (1/8") in each pole must be incorporated into the electrical installation.
- The switch must be equipped with protection against the fault current towards the ground (differential) and the overcurrent (magnetothermal, maximum 15 A). It must be very quickly recognizable and readily accessible
- Open only the covers pointed out in this installation manual. Other covers should be opened only by the manufacturer.
- Make sure the threads of the unit are free of dirt and debris. A minimum of 10mm depth and 5 threads of engagement must be maintained for all threaded holes
- Make sure the camera is tightly closed when operating or energized.
- Do not connect the unit to a supply circuit unless the installation is completed. Check before assembling the position of the O-ring seals in their groove.

### **Installation of armored composite cable (INT3)**

- The armored composite cables from TKH Security are pre-fitted with the proper Ex d barrier gland on each side for ease of installation.

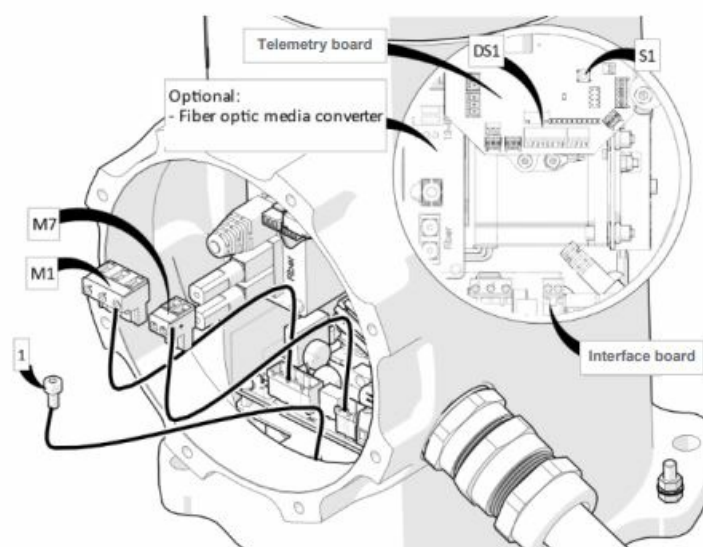
### **The following trails are available:**

- **INT3-RJ5**, 5-meter armored composite cable for Fast Ethernet
- **INT3-RJ10**, 10-meter armored composite cable for Fast Ethernet
- **INT3-SM5**, 5-meter armored composite cable with SM fiber
- **INT3-SM10**, 10-meter armored composite cable with SM fiber
- **INT3-MM5**, 5-meter armored composite cable with MM fiber
- **INT3-MM10**, 10-meter armored composite cable with MM fiber
- If the composite cable tail isn't provided by TKH Security, please check the correct cable gland thread dimension.
- To maintain the certification requirements and the IP rating of the unit, use only cables, cable glands, blind stops, and adapters that are suitably certified and rated for the associated ambient range.
- Plastic caps are used to close cable entries during shipment, remove them, and close off any unused cable entries with an appropriate certified blind stop.



## Electrical wiring

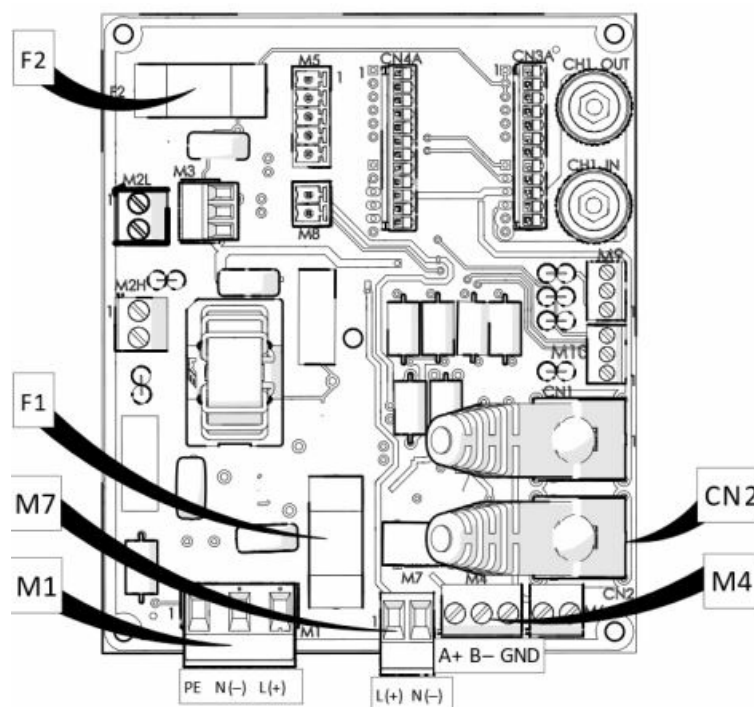
- If necessary, remove the locking screw (1) and slide out the PCB to have better access to the other terminal blocks. M1 and M7 terminal blocks can be removed from the PCB to perform electrical connections.



ID	Name	Notes
DIS1	RS485 settings	<b>Do not change settings.</b>
		Used for setting the unit address and baud rate of the camera station. PIN 1-6: PTZ Address ID (Default on address 1)
		PIN 7-8: <u>DIS1-7</u> <u>DIS1-8</u> <u>Baud rate</u>
		OFF              OFF              2400 (Default)
		OFF              ON              9600
		ON              OFF              19200
		ON              ON              57600
S1	Reset button	<p>Push 15 seconds to reset to default settings.</p> <p><b>CAUTION:</b> this operation will reset all the existing presets and the PAN/TILT axis limits.</p>

- Each plug-in connector is different in shape and/or color to avoid any wrong connection.
- The connections should be performed according to the table below.

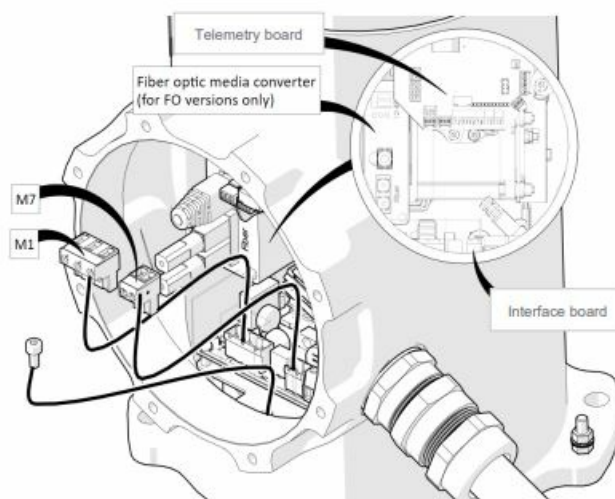
ID	Name	Notes
<b>M1</b>	Supply voltage	Depending on the model. Please refer to the marking plate supply voltage information.
<b>M4</b>	Data input (RS485)	Not applicable
<b>M7</b>	Washer control	AC 24 V output. Designed to activate washer systems. The activation lasts 5 seconds.
<b>CN2</b>	RJ45 Fast Ethernet	Signal out for the camera. Use shielded or unshielded cable according to the needs.



Fuse name	Fuse value
F1	8 A HT 250 VAC 5×20
F2	10 A HT 250 VAC 5×20

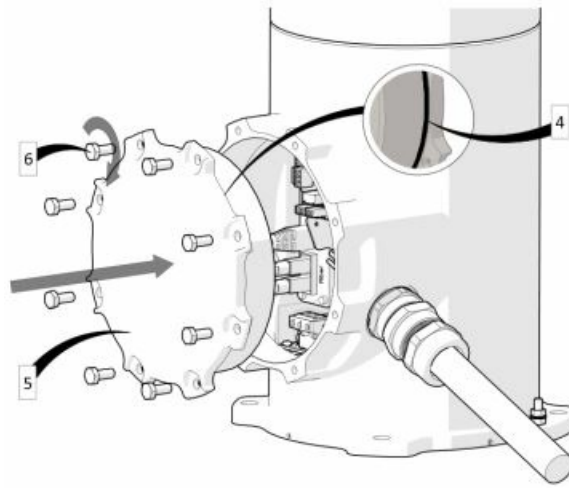
#### For fiber optic versions only (INT3-SM, INT3-MM)

- The direct-to-fiber versions of the EX3-PTZ cameras are fitted with a media converter in the base of the unit.
- Connect both optical fiber pigtails from the armored to the media converter.
- The converter is fitted with two SC connectors.



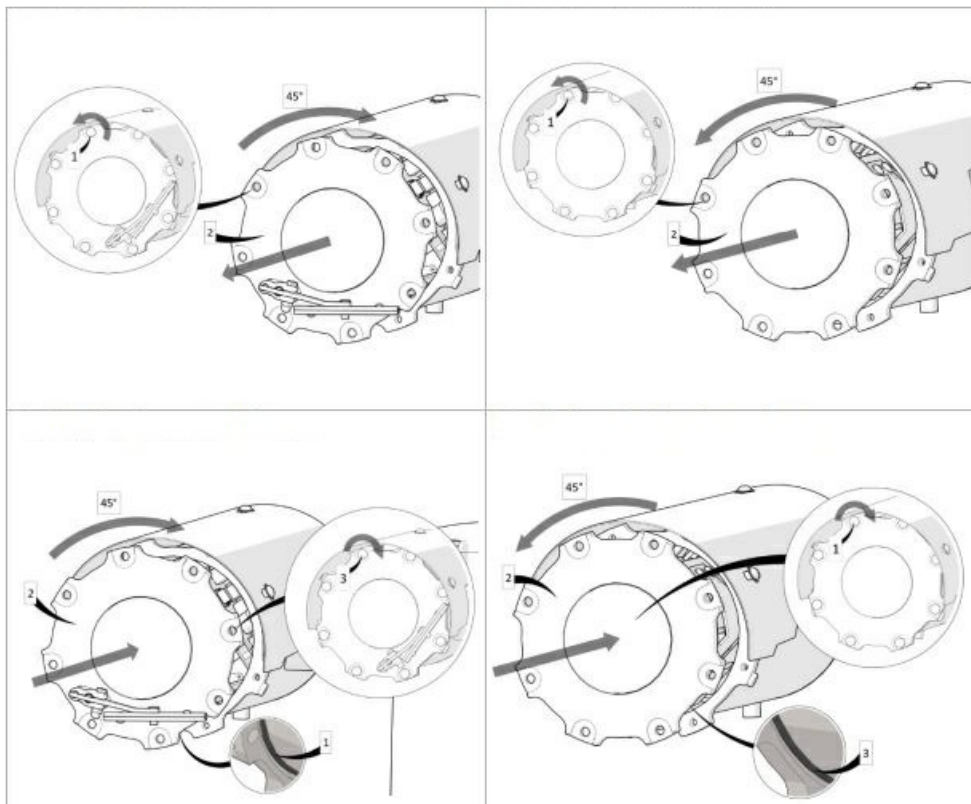
#### Closing the camera base

- Check if the O-Ring gasket (4) is in its groove before proceeding. Assemble the rear flange (5) in the PTZ and tight the screws (6) to 11Nm

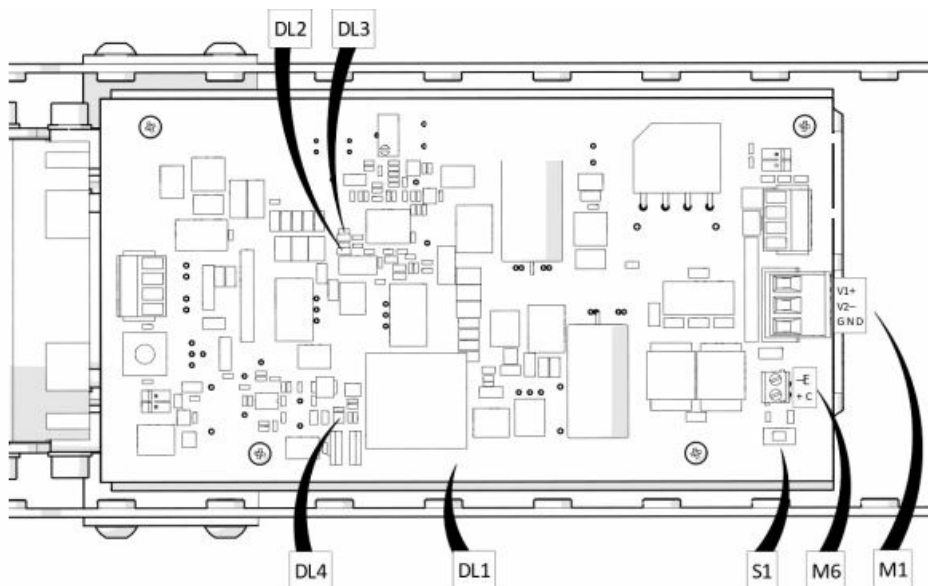


## Opening and closing camera house

- To access the IP camera or IR illuminator follow these instructions to open the camera house.
- **A. Opening:** Remove screws (1) from the window flange of the camera housing (2). Rotate the flange 45° clockwise while sliding it out. In the case of an IR illuminator, the camera flange has to be rotated 45° counterclockwise
- **B. Closing:** Slide the camera assembly (2) in the camera housing while rotating it 45° clockwise. Tight the screws (1) to 11Nm. In the case of an IR-illuminator rotate 45° counter-clockwise Check if the O-Ring gasket (3) is inside its groove before proceeding
- **A:** Access the IP camera
- **A:** Access the IR-Illuminator
- **B:** Closing the camera house
- **B:** Closing the Illuminator house



## IR LED illuminator (PTZ D-IR only)



Connector	Name	Notes
M1	AC/DC Power supply Input	AC 24V
M6	Inputs	Dry contact/Open collector (NPN) input for IR LED activation ( Example: external camera output)
S1	Test	Used for manual IR LED activation test.
LED	Color	Indication
DL1	Green	is ON when the board is correctly powered
DL2	Yellow	is ON when the IR LEDs are interrupted (open-led)
DL3	Red	is ON when the IR LEDs are not activated or when they are in short-circuit.
DL4	Yellow	is ON when the IR LEDs are in the activation phase during its hysteresis delay

## Grounding

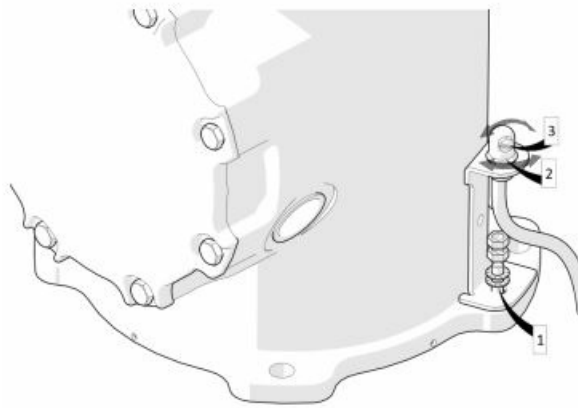
Connect the earth cable to the PTZ base, under the nuts and screws (1), with the M5 eyelet terminal.



## Installing the washer nozzle

- Fix the nozzle bracket on the PTZ with the provided nuts and washers (1).

- Connect the earth cable to the PTZ base, between the nozzle bracket and screws (1), with the M5 eyelet terminal.
- Adjust the horizontal position of the nozzle, use the screwdriver slot (3) on the nozzle to adjust the tilt position



## Maintain the unit

- Please read and be familiar with the following instructions before servicing the unit.
- Ensure proper operating condition of the unit performing safety checks upon completion of maintenance.
- Disconnect the unit from the supply circuit before cleaning. Do not use caustic or abrasive cleaning products.
- Use only original replacement parts from TKH Security.
- Inspection and maintenance of the equipment must be carried out under the applicable standards (i.e. EN 60079-17).
- Repair of the equipment must be carried out under the applicable standards (i.e. EN 60079-19)
- Disconnect the unit from the supply circuit and report to qualified service personnel whenever any damage or deformation to the equipment has been detected.
- Do not use equipment that looks worn or old.

## Inspections

- This equipment has been designed to fit in harsh environments requiring little or no maintenance. The suggested inspection interval is six months, but extremely harsh environments may require more frequent inspection and maintenance checks. On each inspection, check the O-ring seals and the window wiper blade integrity. Replace them when necessary.

## Routine activities

- Regularly perform the following routine activities:

## Clean the glass

- Use water or a liquid detergent that will not generate a hazardous situation.
- Clean the germanium window
- Remove the protective guard, unscrewing the screws using a no-sparking hex wrench. Use water or a liquid detergent that will not generate a hazardous situation.
- Be careful not to scratch the carbon coating. Do not use ethyl alcohol, solvents, hydrogenated hydrocarbons,

strong acids, or alkalis. This will irreparably damage the germanium window.

- Once the cleaning, properly reassemble the protective guard.
- Clean the unit
- The layer of filth upon the unit should never exceed 5 mm thickness. Use a dry or damp cloth. Do not use compressed air to clean the unit.
- Check electrical connections
- Check cables and electrical connections for integrity and tightness. Replace worn cable(s) or tighten loose connections.
- Check mounting accessories
- Check mounting bolts and screws for integrity and tightness. Replace or tighten any damaged/loose mounting hardware.

### Extraordinary maintenance

- Any intervention that is not listed in the Routine activities list must be done in the absence of a potentially explosive atmosphere. Any repair or part replacement must be done by or under the supervision of TKH Security. Use only original spare parts.
- The manufacturer declines all liability for any damage resulting from tampering, use of non-original spare parts and service carried out without following the directives of the present manual.
- If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.
- Aggressive substances: acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.
- Suitable precautions: regular checks as part of routine inspections or establishing from the material's datasheet that it is resistant to specific chemicals.

### Fuse replacement

- If necessary, replace the fuses F1 or F2 on the interface board (see section "Electrical wiring")

#### The following fuse values are used:

Fuse name	Fuse value
F1	8 A HT 250 VAC 5×20
F2	10 A HT 250 VAC 5×20

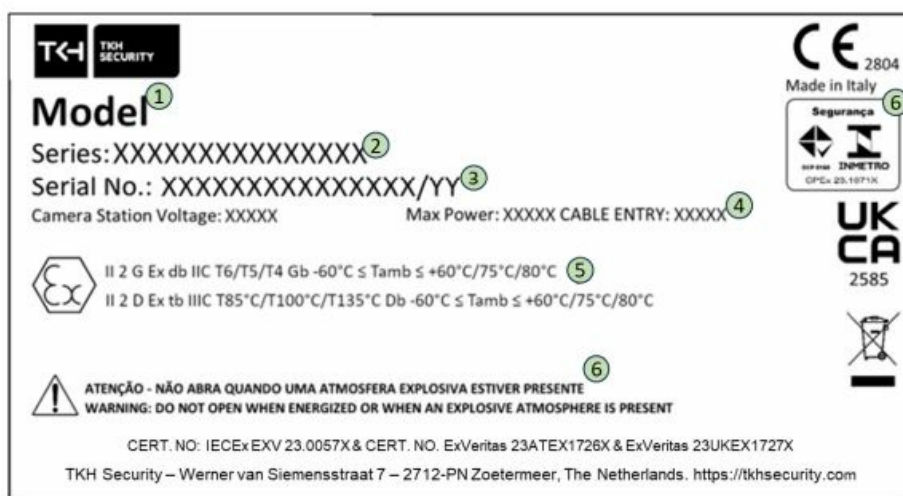
- All the fuses must be ceramic T type (time lag) with a breaking capacity of 1500 A.
- Different supply voltages can be supplied and may require different fuse values. In such cases, please contact TKH Security.

### Technical Data

<b>Mechanical</b>	
Construction	AISI316L Stainless Steel
Finish	Electro-polished
Pan	Angle: 350° (+/- 175° or continuous rotation); Speed: up to 40°/second peak; Torque: 80 Nm
Tilt	Angle: 180° (+/- 90°); Speed: up to 20°/second peak; Torque: 107 Nm
Maximum load	25 kg
Cable entries	M25x1.5
<b>Electrical</b>	
Thermostatically controlled heater	T[°C] ON = 12 ± 4 °C, T[°C] OFF = 20 ± 3 °C
Supply voltage	24 V~ 50/60 Hz, 115 V~ 50/60 Hz, 230 V~ 50/60 Hz
Power consumption	95 W Max (120 W Max for EX PTZ D)
<b>Certifications EX PTZ and EX PTZ D</b>	
Weatherproof standard	IP66, IP68 (3m, 30min) and IP69, Nema-4x
Rating	Ex II 2 G Ex db IIC T6/5/4 Gb EX II 2 D Ex tb IIIC T85/100/135°C Db -60°C ≤ Tamb ≤ +60/75/80°C
ATEX Standards	EN 60079-0:2018; EN 60079-1:2014; EN 60079-28:2015; EN 60079-31:2014
IECEx Standards	IEC 60079-0:2017; IEC 60079-1:2014-06; IEC 60079-31:2013
INMETRO	ABNT NBR IEC 60079-0; ABNT NBR IEC 60079-1; ABNT NBR IEC 60079-31
UKEX	UKSI 2016:1107 (as amended by UKSI 2019:696) Schedule 3A, Part 1
Compliance	CE, UKCA, (INMETRO is pending)

<b>Certifications EX PTZ D-IR</b>	
Weatherproof standard	IP66, IP68 (3m, 30min) and IP69, Nema-4x
Rating	Ex II 2 G Ex db IIC T5/4 Gb Ex II 2 D Ex tb IIIC T100/135°C Db
ATEX Standards	EN 60079-0:2018; EN 60079-1:2014; EN 60079-28:2015; EN 60079-31:2014 -60°C ≤ Tamb ≤ +40/60°C
IECEx Standards	IEC 60079-0:2017; IEC 60079-1:2014-06; IEC 60079-31:2013
INMETRO (pending)	ABNT NBR IEC 60079-0; ABNT NBR IEC 60079-1; ABNT NBR IEC 60079-31
UKEX	UKSI 2016:1107 (as amended by UKSI 2019:696) Schedule 3A, Part 1
Compliance	CE, UKCA, (INMETRO pending)

## EX Marking plate



Every unit must carry a marking plate similar to the one above.

- Model:** Certification model name of the unit.
- Series:** Sales part number of the unit.

3. **Serial No.:** TKH Security serial number followed by the year of manufacturing.
4. **Cable entry:** Thread size of the cable entry/entries (optional). See the section “Models” below.
5. **Marking:** see chapter “Certificates”
6. **INMETRO** certificate is pending

## Models

- PTZ units/camera stations EX3-PTZ(n)(a)
- **EX3-PTZ:** Pan & Tilt unit/PTZ camera station
- **(n)** Fitted number of brackets/housings
- **(n)= 0:** one bracket
- **(n)= 1:** one camera housing
- **(n)= 2:** two camera housings
- **(n)= 3:** one camera housing and one bracket
- **(n)= 4:** two brackets

### (a) Cable entries

- **(a)= A:** 2x M20
- **(a)= B:** 2x 3/4"
- **(a)= C:** 2x M25
- **(a)= D:** 1x M20
- **(a)= E:** 1x 3/4"
- **(a)= F:** 1x M25
- **(a)= G:** 1x M20 + 1x M25

### Camera stations EX3-FIX(a)(n)(b)(c)(d)

- **EX3-FIX:** Camera housing
- **(a)** Fitted camera housing
- **(a)= C:** P&T camera housing (blank cover)
- **(a)= F:** Fixed camera housing
- **(a)= H:** P&T camera housing with rear cover

### (n) Housing version

- **(n)= 0:** Camera version
- **(n)= 1:** IR spotlight version
- **(n)= 2:** WIFI version
- **(b):** Window version.
- **(b)= 0:** glass window without wiper
- **(b)= 1:** glass window with wiper
- **(b)= 2:** germanium window
- **(b)= 3:** germanium window without protective guard

- **(b)**= 4: sapphire window
- **(b)**= 5: sapphire window (tilted)

**(c): cable entries (only for the F and H versions).**

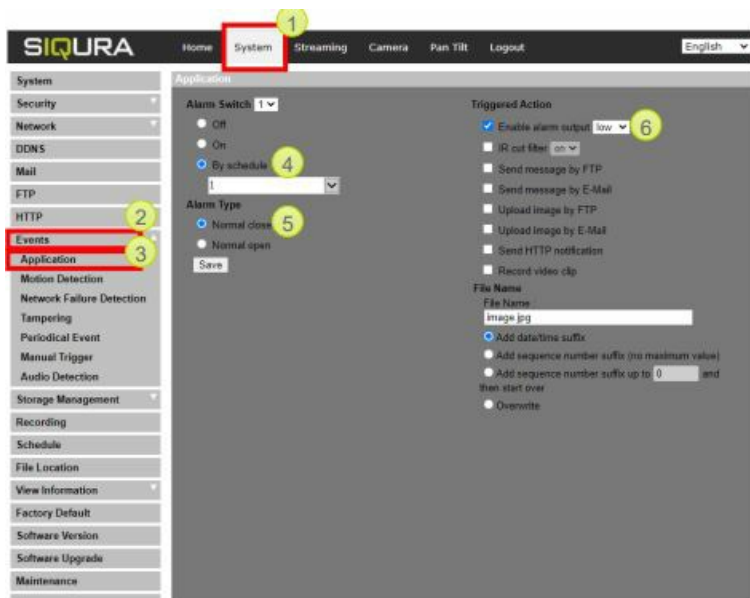
- **(c) = A:** 2x M20
- **(c) = B:** 2x 3/4"
- **(c) = C:** 2x M25
- **(c) = D:** 1x M20
- **(c) = E:** 1x 3/4"
- **(c) = F:** 1x M25
- **(c) = G:** 1x M20 + 1x M25
- **(c) = H:** 1x M20 + 1x 3/4"
- **(c) = I:** 1x M25 + 1x 3/4"
- **(c) = J:** 3x M20
- **(c) = N:** 3x 3/4"
- **(c) = O:** 3x M25
- **(c) = P:** 4x M20
- **(c) = Q:** 4x 3/4"
- **(c) = R:** 4x M25
- **(c) = T:** up to 4 entries with different threads

**(d) housing length**

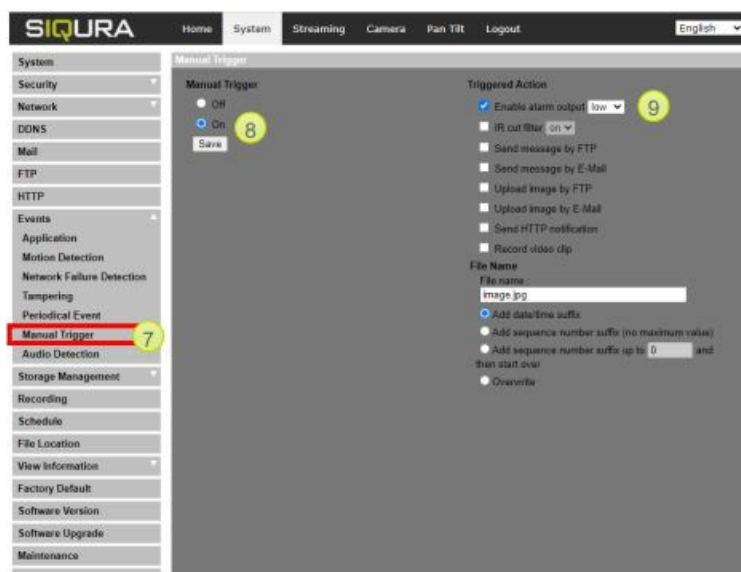
- **(d)**= **S:** short
- **(d)**= **M:** medium
- **(d)**= **L:** long

## **Sync IR with D/N mode**

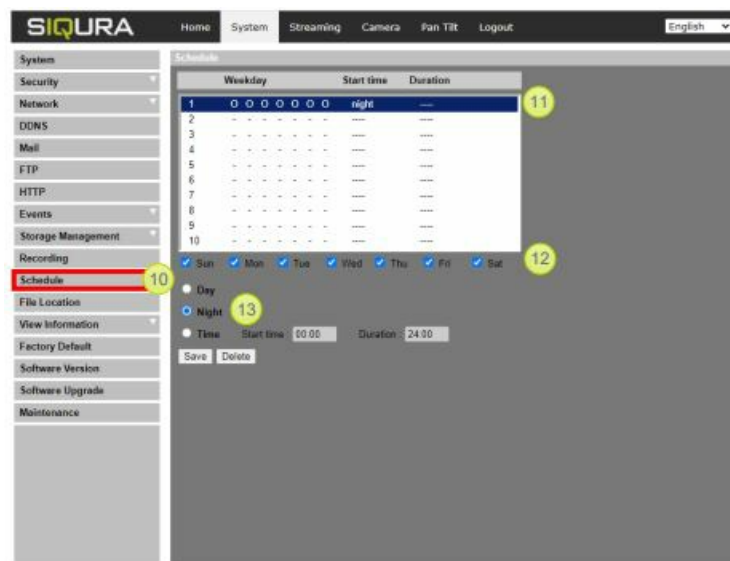
1. Open the web interface; click on the "System" tab and open [Events] > [Application]. Check the boxes as shown below:



2. Click the [Manual Trigger] page and again take over the settings as shown in the screenshot below:



3. Click on the [Scheduling] page and take over the following settings:



With these settings, the Alarm contact output is synchronized with the Day/Night mode of the camera. The Alarm output of the optical camera must be connected to M6 of the IR control board to switch on/off the IR Illumina

## EU Certificates



## EU Declaration of Conformity

TKH Security  
Werner von Siemensstraat 7  
2712 PN, Zoetermeer  
The Netherlands

Our Brands: FinQ | Protect | Park Assist | ParkEyes | Siqua | VDG  
Installations in over 80 countries

### Product identification SA3 models

Description:	Analog or digital network, surveillance cameras. SA3 camera series including support equipment: washer systems, Cable entries, mounting brackets and sun shields. * Safe Area, SA3 camera models in 316L stainless steel housings intended for use in - non-Ex- locations (explosion protection not required)																																																			
Brand:	SIQURA or TKH Security																																																			
Series	SA3-FIX, SA3-PTZ (Safe Area) camera series																																																			
SA3 models:	<table><tr><td>SA3-FIX24</td><td>3rd Gen SA FIX Camera 316L, 24VAC</td></tr><tr><td>SA3-FIX120</td><td>3rd Gen SA FIX Camera 316L, 120VAC</td></tr><tr><td>SA3-FIX230</td><td>3rd Gen SA FIX Camera 316L, 230VAC</td></tr><tr><td>SA3-FIX24W</td><td>3rd Gen SA FIX Camera 316L with wiper, 24VAC</td></tr><tr><td>SA3-FIX120W</td><td>3rd Gen SA FIX Camera 316L with wiper, 120VAC</td></tr><tr><td>SA3-FIX230W</td><td>3rd Gen SA FIX Camera 316L with wiper, 230VAC</td></tr><tr><td>SA3-FIX24T</td><td>3rd Gen SA thermal FIX Camera 316L, 24VAC</td></tr><tr><td>SA3-FIX120T</td><td>3rd Gen SA thermal FIX Camera 316L, 120VAC</td></tr><tr><td>SA3-FIX230T</td><td>3rd Gen SA thermal FIX Camera 316L, 230VAC</td></tr><tr><td>SA3-FIX24-IR15</td><td>3rd Gen SA 15° IR-illuminator, 24VAC</td></tr><tr><td>SA3-FIX120-IR15</td><td>3rd Gen SA 15° IR-illuminator, 120VAC</td></tr><tr><td>SA3-FIX230-IR15</td><td>3rd Gen SA 15° IR-illuminator, 230VAC</td></tr><tr><td>SA3-FIX24-IR34</td><td>3rd Gen SA 34° IR-illuminator, 24VAC</td></tr><tr><td>SA3-FIX120-IR34</td><td>3rd Gen SA 34° IR-illuminator, 120VAC</td></tr><tr><td>SA3-FIX230-IR34</td><td>3rd Gen SA 34° IR-illuminator, 230VAC</td></tr><tr><td>SA3-PTZ24L</td><td>3rd Gen SA PTZ Camera 316L, 24VAC (Large)</td></tr><tr><td>SA3-PTZ120L</td><td>3rd Gen SA PTZ Camera 316L, 120VAC (Large)</td></tr><tr><td>SA3-PTZ230L</td><td>3rd Gen SA PTZ Camera 316L, 230VAC (Large)</td></tr><tr><td>SA3-PTZ24T</td><td>3rd Gen SA thermal PTZ Camera 316L, 24VAC</td></tr><tr><td>SA3-PTZ120T</td><td>3rd Gen SA thermal PTZ Camera 316L, 120VAC</td></tr><tr><td>SA3-PTZ230T</td><td>3rd Gen SA thermal PTZ Camera 316L, 230VAC</td></tr><tr><td>SA3-PTZ230T-E</td><td>3rd Gen SA thermal PTZ Camera 316L, 230VAC, Empty</td></tr><tr><td>SA3-PTZ24D-IR34</td><td>3rd Gen SA PTZ Camera 316L with 34° IR-illuminator, 24VAC</td></tr><tr><td>SA3-PTZ120D-IR34</td><td>3rd Gen SA PTZ Camera 316L with 34° IR-illuminator, 120VAC</td></tr><tr><td>SA3-PTZ230D-IR34</td><td>3rd Gen SA PTZ Camera 316L with 34° IR-illuminator, 230VAC</td></tr></table>		SA3-FIX24	3rd Gen SA FIX Camera 316L, 24VAC	SA3-FIX120	3rd Gen SA FIX Camera 316L, 120VAC	SA3-FIX230	3rd Gen SA FIX Camera 316L, 230VAC	SA3-FIX24W	3rd Gen SA FIX Camera 316L with wiper, 24VAC	SA3-FIX120W	3rd Gen SA FIX Camera 316L with wiper, 120VAC	SA3-FIX230W	3rd Gen SA FIX Camera 316L with wiper, 230VAC	SA3-FIX24T	3rd Gen SA thermal FIX Camera 316L, 24VAC	SA3-FIX120T	3rd Gen SA thermal FIX Camera 316L, 120VAC	SA3-FIX230T	3rd Gen SA thermal FIX Camera 316L, 230VAC	SA3-FIX24-IR15	3rd Gen SA 15° IR-illuminator, 24VAC	SA3-FIX120-IR15	3rd Gen SA 15° IR-illuminator, 120VAC	SA3-FIX230-IR15	3rd Gen SA 15° IR-illuminator, 230VAC	SA3-FIX24-IR34	3rd Gen SA 34° IR-illuminator, 24VAC	SA3-FIX120-IR34	3rd Gen SA 34° IR-illuminator, 120VAC	SA3-FIX230-IR34	3rd Gen SA 34° IR-illuminator, 230VAC	SA3-PTZ24L	3rd Gen SA PTZ Camera 316L, 24VAC (Large)	SA3-PTZ120L	3rd Gen SA PTZ Camera 316L, 120VAC (Large)	SA3-PTZ230L	3rd Gen SA PTZ Camera 316L, 230VAC (Large)	SA3-PTZ24T	3rd Gen SA thermal PTZ Camera 316L, 24VAC	SA3-PTZ120T	3rd Gen SA thermal PTZ Camera 316L, 120VAC	SA3-PTZ230T	3rd Gen SA thermal PTZ Camera 316L, 230VAC	SA3-PTZ230T-E	3rd Gen SA thermal PTZ Camera 316L, 230VAC, Empty	SA3-PTZ24D-IR34	3rd Gen SA PTZ Camera 316L with 34° IR-illuminator, 24VAC	SA3-PTZ120D-IR34	3rd Gen SA PTZ Camera 316L with 34° IR-illuminator, 120VAC	SA3-PTZ230D-IR34	3rd Gen SA PTZ Camera 316L with 34° IR-illuminator, 230VAC
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SA3-PTZ230D-IR34	3rd Gen SA PTZ Camera 316L with 34° IR-illuminator, 230VAC																																																			

### Integrated cameras and cable entries



Integrated camera options	<ul style="list-style-type: none"> <li>Optical and Dual cameras will have a BC822v2H3(-AS), BC840v2-M04(-AS), BC840v3-M04(-AS) or BC980H2(-AS) integrated optical camera. The BC model names may have suffixes for lens, image or mechanical properties.</li> <li>Thermal and Dual cameras will have a TC, TC3 or TCR1 integrated thermal camera. The TC / TC3 / TCR1 model names have suffixes indicating resolution, speed, focal distance, or firmware.</li> </ul>
Camera interface / Cable entries	<p>Cameras will have one of the following interfaces:</p> <ul style="list-style-type: none"> <li>INT3-RJ, INT3-RJ5, INT3-RJ5-IN, INT3-RJ10, INT3-RJ10-IN,</li> <li>INT-SM, INT-SM5, INT-SM5-IN, INT-SM10, INT-SM10-IN,</li> <li>INT-MM, INT-MM5, INT-MM5-IN, INT-MM10, INT-MM10-IN,</li> </ul> <p>RJ = Fast Ethernet interface, SM and MM = fiber optic interface, -IN = Inmetro</p>



## Product identification EX3 models

Description:	Analog or digital network, surveillance cameras. EX3 camera series including support equipment: washer systems, Ex cable entries, mounting brackets and sun shields. • Explosion protected, EX camera models in 316L stainless steel housings intended for use in potentially explosive atmosphere, according ATEX / IECEx / UKEX	
Brand:	<b>SIQURA or TKH Security</b>	
Series	<b>EX3-FIX, EX3-PTZ (Explosion proof) camera series</b>	
EX models:	EX3-FIX24-E EX3-FIX24 EX3-FIX120 EX3-FIX230 EX3-FIX24W EX3-FIX120W EX3-FIX230W EX3-FIX24T EX3-FIX120T EX3-FIX230T EX3-FIX24-IR15 EX3-FIX120-IR15 EX3-FIX230-IR15 EX3-FIX24-IR34 EX3-FIX120-IR34 EX3-FIX230-IR34 EX3-PTZ24 EX3-PTZ120 EX3-PTZ230 EX3-PTZ24T EX3-PTZ120T EX3-PTZ230T EX3-PTZ24D EX3-PTZ120D EX3-PTZ230D EX3-PTZ24D-IR34 EX3-PTZ120D-IR34 EX3-PTZ230D-IR34	3rd Gen EX FIX Camera 316L, 24VAC, Empty 3rd Gen EX FIX Camera 316L, 24VAC 3rd Gen EX FIX Camera 316L, 120VAC 3rd Gen EX FIX Camera 316L, 230VAC 3rd Gen EX FIX Camera 316L with wiper, 24VAC 3rd Gen EX FIX Camera 316L with wiper, 120VAC 3rd Gen EX FIX Camera 316L with wiper, 230VAC 3rd Gen EX thermal FIX Camera 316L, 24VAC 3rd Gen EX thermal FIX Camera 316L, 120VAC 3rd Gen EX thermal FIX Camera 316L, 230VAC 3rd Gen EX 15° IR-illuminator, 24VAC 3rd Gen EX 15° IR-illuminator, 120VAC 3rd Gen EX 15° IR-illuminator, 230VAC 3rd Gen EX 34° IR-illuminator, 24VAC 3rd Gen EX 34° IR-illuminator, 120VAC 3rd Gen EX 34° IR-illuminator, 230VAC 3rd Gen EX PTZ Camera 316L, 24VAC 3rd Gen EX PTZ Camera 316L, 120VAC 3rd Gen EX PTZ Camera 316L, 230VAC 3rd Gen EX thermal PTZ Camera 316L, 24VAC 3rd Gen EX thermal PTZ Camera 316L, 120VAC 3rd Gen EX thermal PTZ Camera 316L, 230VAC 3rd Gen EX dual spectrum PTZ Camera 316L, 24VAC 3rd Gen EX dual spectrum PTZ Camera 316L, 120VAC 3rd Gen EX dual spectrum PTZ Camera 316L, 230VAC 3rd Gen EX PTZ Camera 316L with 34° IR-illuminator, 24VAC 3rd Gen EX PTZ Camera 316L with 34° IR-illuminator, 120VAC 3rd Gen EX PTZ Camera 316L with 34° IR-illuminator, 230VAC

## Ratings and product markings

Marking for EX models, ATEX / IECEx:	  <b>2804</b>	
EX model markings:	Refer to ExVeritas certificates for additional markings of housing models: EX3-FIX series and EX3-PTZ series.	
EX...IR spotlight model markings:	Different markings apply for the EX3-PTZ230D-IR and EX3-PTZ24D-IR spotlights. Temperature class +40°C or +60°C, see actual product marking plate for details.	
EX-Washer markings:	Washers have a different marking, Ex d or Ex e, Temperature Class and IP protection rating. See datasheets or actual product marking plate for details.	
Laser safety:	Equipment with optional fiber optic interface will not be marked, due to the exception for Class 1 optical radiation sources in EN/IEC 60079-28 (edition2, 2015)	
Power ratings:	The power dissipated within the camera housing shall not exceed 25W	



The object of this declaration is in conformity with the relevant EU harmonisation legislation

LVD: 2014/35/EU,	RoHS: 2011/65/EU + 2015/863/EU,
EMC Directive 2014/30/EU,	REACH Regulation (EC) 1907/2006,
ATEX Directive 2014/34/EU (ATEX 114)	WEEE: 2012/19/EU

Reference to ATEX / IECEx certificates and standards

ATEX:	Ex equipment is approved by Notified Body number: 2804 ExVeritas ApS, Severinsmindevej 6, 4420 Regstrup, Denmark ATEX certificate No: ExVeritas 23ATEX1726X Issue 0 (2023)
IECEx:	Ex equipment is approved by ExVeritas Limited, Wrexham, LL 139UZ, UK Certificate No: IECEx EXV 23.0057X Issue No. 0 (2023) (database: <a href="http://www.iecex.com">www.iecex.com</a> )
EN Standards:	EN 60079-0:2018 - Explosive atmospheres - Part 0: Equipment - General requirements EN 60079-1:2014 - Ex. Atm. - Part 1: Equipment protection by flameproof enclosures "d" EN 60079-31:2014 - Ex. atm. - Part 31: Equipm. dust ignition protection by enclosure "t"
IEC Standards:	IEC 60079-0:2017, IEC 60079-1:2014, IEC 60079-31:2013

Reference to harmonised and non-harmonised standards

Safety:	TKH Security B.V. The Netherlands
Standards:	EN 62368-1:2014/AC:2015 - Audio/video, ICT equipment - Part 1: Safety requirements
EMC:	TKH Security B.V. The Netherlands
Standards:	EN 61000-6-4:2007+A1:2011 - Generic, Emission, Industrial. (Class A) EN 55032:2015/A11:2020 - Emission, (Class A) EN 61000-3-2:2014 - Limits for harmonic current emissions EN 61000-3-3:2013 - Voltage fluctuations and flicker EN 61000-6-2:2005+AC:2005 - Generic, Immunity, Industrial EN 50130-4:2011+A1:2014 - Alarm systems

Year of affixing the CE mark: 2024

This declaration of conformity is issued under the sole responsibility of the manufacturer:

Name:	TKH Security B.V.
Address:	Werner von Siemensstraat 7, 2712 PN, The Netherlands

Signed for and on behalf of TKH Security:

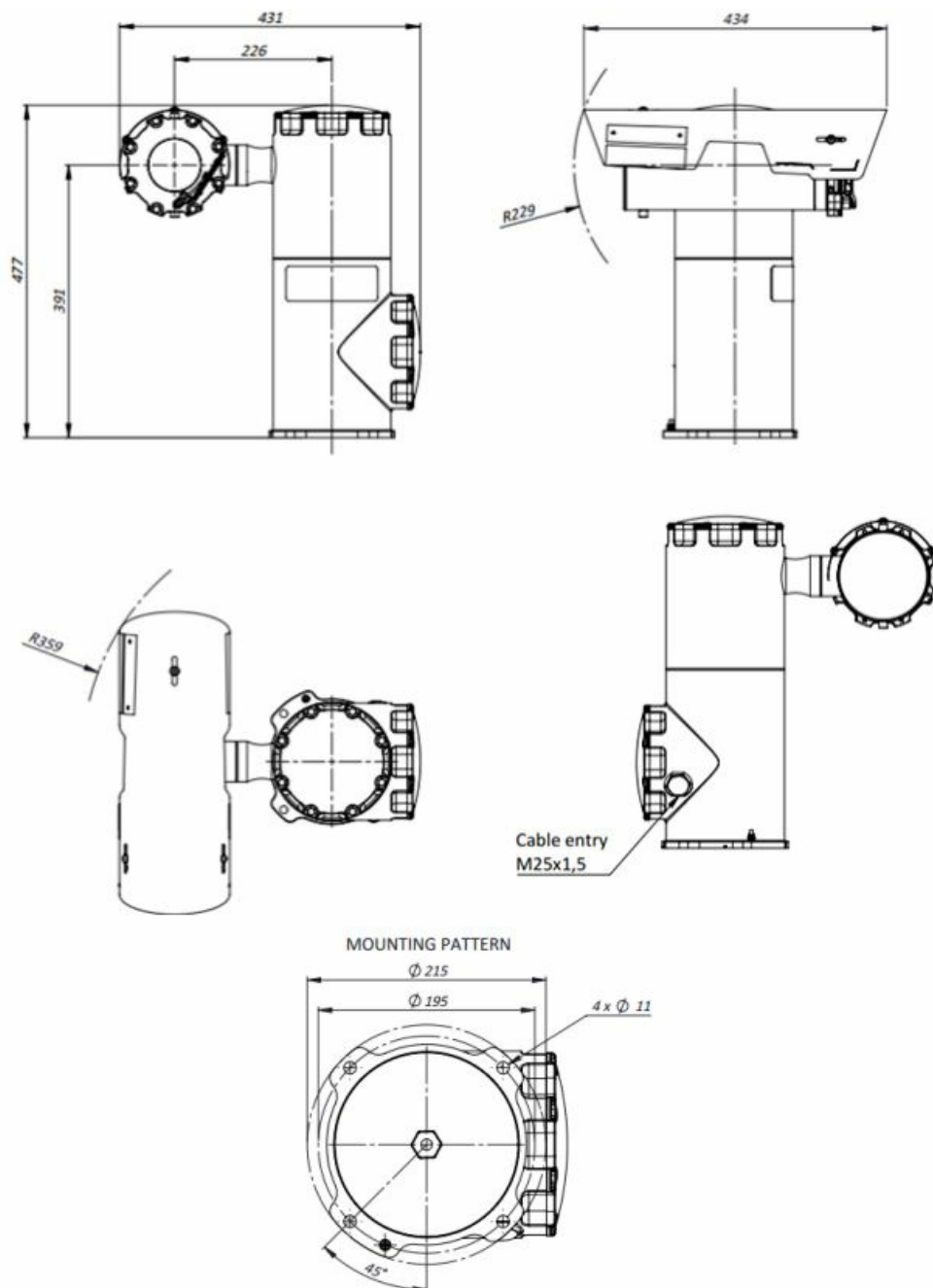
Date:	2024-02-06
Name:	W.D. Hermelink 
Title:	Product Certification Engineer

Doc ID: EX3- and SA3-Cameras - EU Declaration of Conformity - Rev. A - 2024-02-06.docx

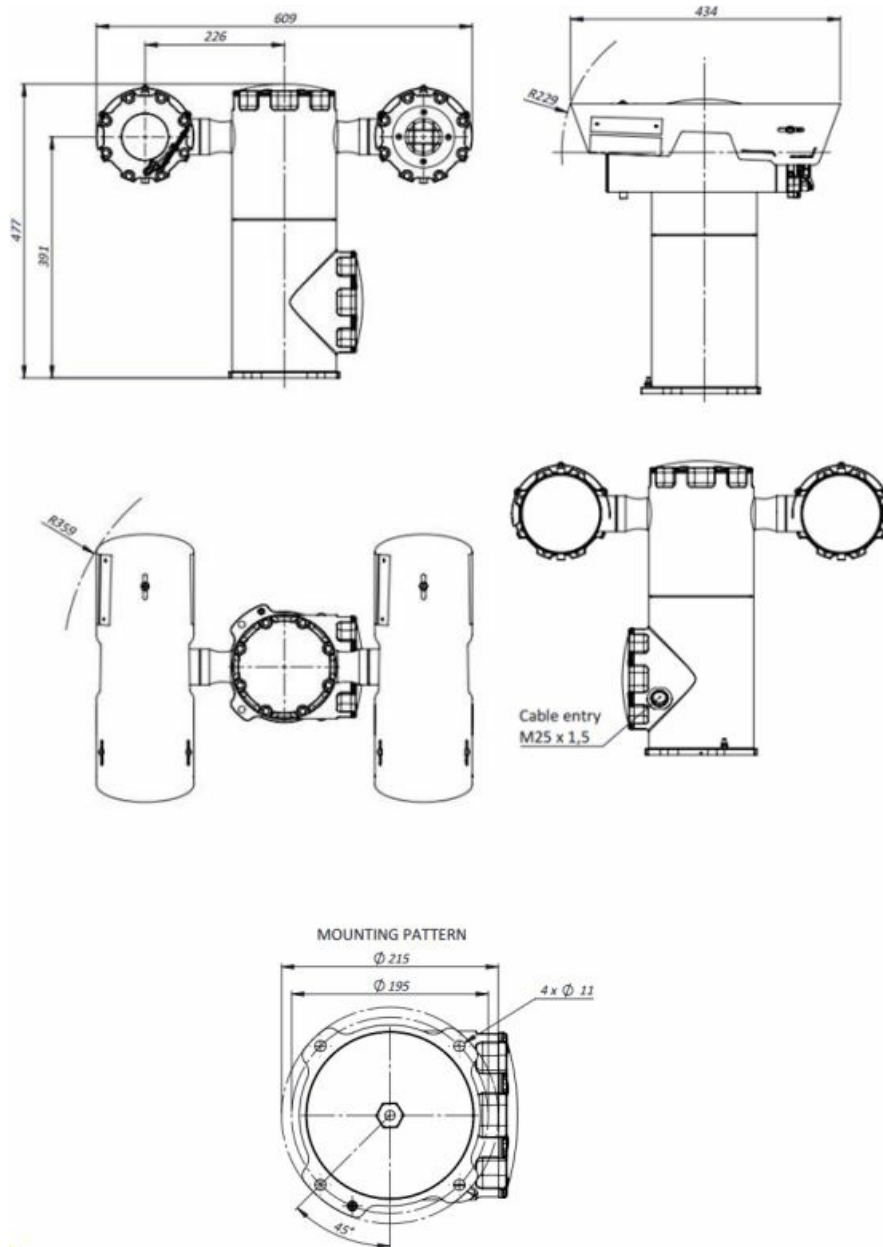


## Appendix: Technical drawings

### EX3-PTZ and EX3-PTZ T




**EX3-PTZD and EX3-PTZD-IR**



[tkhsecurity.com](http://tkhsecurity.com)

## Documents / Resources

	<p><b><a href="#">TKH Security EX3 PTZ Series 3rd Generation EX PTZ Camera 316L</a></b> [pdf] Instruction Manual  EX3 PTZ Series 3rd Generation EX PTZ Camera 316L, EX3 PTZ, Series 3rd Generation EX PT  Z Camera 316L, Generation EX PTZ Camera 316L, PTZ Camera 316L</p>
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## References

- [TKH Security - Home – TKH Security](#)

- [> TKH Security - Home – TKH Security](#)
- [User Manual](#)

**Manuals+, Privacy Policy**

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