# Quick Installation

## MOBOTIX S74

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HEVCAdvance™ NDAA Compliant

BeyondHumanVision

MOBOTIX

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# Before You Start

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# Support

## MOBOTIX Support

If you need technical support, please contact your MOBOTIX dealer. If your dealer cannot resolve the issue, they will contact MOBOTIX Support on your behalf.

If you have internet access, visit the MOBOTIX Help Desk for additional information and software updates.

**www.mobotix.com > Services > Help Desk**.

## MOBOTIX eCampus

The MOBOTIX eCampus is a comprehensive e-learning platform that lets you access training content whenever and wherever you want. Simply open the site in your browser and select the desired training course.

**www.mobotix.com/ecampus-mobotix**.

## MOBOTIX Community

The MOBOTIX Community is another valuable source of information. MOBOTIX staff and other users share their knowledge and experience – and you can contribute too.

**community.mobotix.com**.

# Safety Notes

- This product must be installed by qualified personnel, and the installation must comply with all applicable local regulations.
- Do not use this product in potentially explosive atmospheres.
- Install this product in a well-ventilated location and do not block any ventilation openings.

- Do not use this product in dusty environments.
- Prevent moisture or water from entering the housing.
- Install this product as described in this document. An incorrect installation can damage the product!
- Do not replace the device batteries. Replacing a battery with an incorrect type may cause an explosion.
- External power supplies must comply with the Limited Power Source (LPS) requirements and have the same power specifications as the camera.
- To comply with the requirements of EN 50130-4 for the power supply of alarm systems in 24/7 operation, the use of an uninterruptible power supply (UPS) is highly recommended to ensure reliable operation during power interruptions.

# Legal Notes

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## Special Export Regulations!

Cameras with thermal image sensors ("thermal cameras") are subject to the special export regulations of the U.S. and including the ITAR (International Traffic in Arms Regulation):

- According to current U.S. export control regulations, including the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations (EAR), thermal imaging cameras, sensors, and related components may be subject to export restrictions or licensing requirements depending on their technical characteristics and classification.
- Exports, re-exports, or transfers to comprehensively embargoed or sanctioned destinations are generally prohibited unless authorized by the relevant U.S. authorities. As of now, this includes, in particular: Crimea, Donetsk and Luhansk regions of Ukraine, Cuba, Iran, North Korea, and Syria.
- In addition, exports to certain countries such as Russia and Belarus are subject to extensive restrictions and, for many controlled items, are effectively prohibited.
- Furthermore, exports to any persons, entities, or organizations listed on U.S. government restricted party lists are prohibited. These include, but are not limited to, the Denied Persons List (DPL), the Entity List, and the Specially Designated Nationals (SDN) List, as maintained by the U.S. Department of Commerce and the U.S. Department of the Treasury.

- All exports must be reviewed on a case-by-case basis to ensure compliance with applicable U.S. export control laws and regulations.
- Under no circumstances must the camera itself or its thermal image sensors be used in the design, the development or in the production of nuclear, biological or chemical weapons or in the weapons themselves.

## Legal Aspects of Video and Sound Recording

You must comply with all data protection regulations for video and sound monitoring when using MOBOTIX AG products. Depending on national laws and the installation location of the cameras, the recording of video and sound data may be subject to special documentation or it may be prohibited. All users of MOBOTIX products are therefore required to familiarize themselves with all applicable regulations and to comply with these laws. MOBOTIX AG is not liable for any illegal use of its products.

## Declaration of Conformity

The products of MOBOTIX AG are certified according to the applicable regulations of the EC and other countries. You can find the declarations of conformity for the products of MOBOTIX AG on www.mobotix.com under **Services > Download Center > Marketing & Documentation > Certificates & Declarations of Conformity**.

## RoHS Declaration

The products of MOBOTIX AG are in full compliance with European Unions Restrictions of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS Directive 2011/65/EU) as far as they are subject to these regulations (for the RoHS Declaration of MOBOTIX, please see www.mobotix.com, **Services > Download Center > Marketing & Documentation > Brochures & Guides > Certificates**).

## Disposal

Electrical and electronic products contain many valuable materials. For this reason, we recommend that you dispose of MOBOTIX products at the end of their service life in accordance with all legal requirements and regulations (or deposit these products at a municipal collection center). MOBOTIX products must not be disposed of in household waste! If the product contains a battery, please dispose of the battery separately (the corresponding product manuals contain specific directions if the product contains a battery).

## Disclaimer

MOBOTIX AG does not assume any responsibility for damages, which are the result of improper use or failure to comply to the manuals or the applicable rules and regulations. Our General Terms and Conditions apply. You can download the current version of the **General Terms and Conditions** from our website at www.mobotix.com by clicking on the corresponding link at the bottom of every page.

## FCC Disclaimer

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# Notes on System Security

To protect the camera against cybersecurity threats, the following security measures are enabled by default:

- Password must be changed when camera software is accessed for the first time.
- Public access is disabled.
- Intrusion detection is enabled.
- Timeout for grouping accesses from the same client into a single log entry is set to 60 minutes.
- IP addresses of offending HTTP clients are blocked.

The following measures are recommended after the installation has been completed:

**Camera Web Interface**

- **Admin Menu > Network Setup > Web Server**:
  - **Enable intrusion detection**: Enable notifications for repeated unsuccessful login attempts.
  - **Notification threshold**: Set the value as low as possible (for example, 5 minutes).

**MxManagementCenter**

- Menu View > Components View > Secure System:
  - **Enable encrypted HTTPS**: Disable all services that require unencrypted HTTP (for example, IP notify messages). Router settings may need to be adjusted when using remote access.
  - **User Management** (for all users):
    - **Force Complex Password**: Enabled
    - **Log out on Inactivity:** 5 minutes

For more information on this new feature, please read the «Cyber Protection Guide» on www.mobotix.com (under **Services > Download Center > Documentation > Brochures & Guides > Cyber Security**).

# Protective Measures

**WARNING!**
When laying cables indoors and outdoors, the current regulations for cable laying, lightning and fire protection must always be observed.

MOBOTIX cameras and devices are protected against the effects of minor over voltages by a number of measures. However, these measures cannot prevent larger surge voltages from causing damage to the camera. When installing the cameras outdoors, special attention should therefore be paid to lightning protection and the associated dangers for the building and network infrastructure.

In general, you should only have MOBOTIX cameras and devices installed by certified specialist companies that are familiar with the installation and safe operation of network devices and the underlying regulations for lightning and fire protection as well as the current technology for preventing damage from surge voltages.

## Notes on Cabling

- **Data cable:** Only double-shielded CAT5 cable or better (S/STP) may be used as data cable for the Ethernet interface.
- **Cable length:** The individual cable sections must not exceed the maximum permissible lengths in order to ensure perfect data transmission.
- **Avoidance of induction:** Data cables may only be laid parallel to power or high-voltage lines if the prescribed minimum distances are observed.

## Fire Protection

When laying cables for the power supply, the relevant country-specific regulations (e.g. VDE in Germany) and the fire protection regulations valid at the installation site must be observed.

## Lightning and Surge Protection

Measures should always be taken to protect this device from electrical surge damage.

**NOTE!**
Electrical surge protection is integrated in the S74 Network Slide-in Board with LSA terminal (see Installing the S74 Network Slide-in Board with LSA terminal, p. 47), which is available as an accessory.

Further information on how to avoid damage caused by lightning and over voltage is available from manufacturers of lightning and over voltage protection devices.

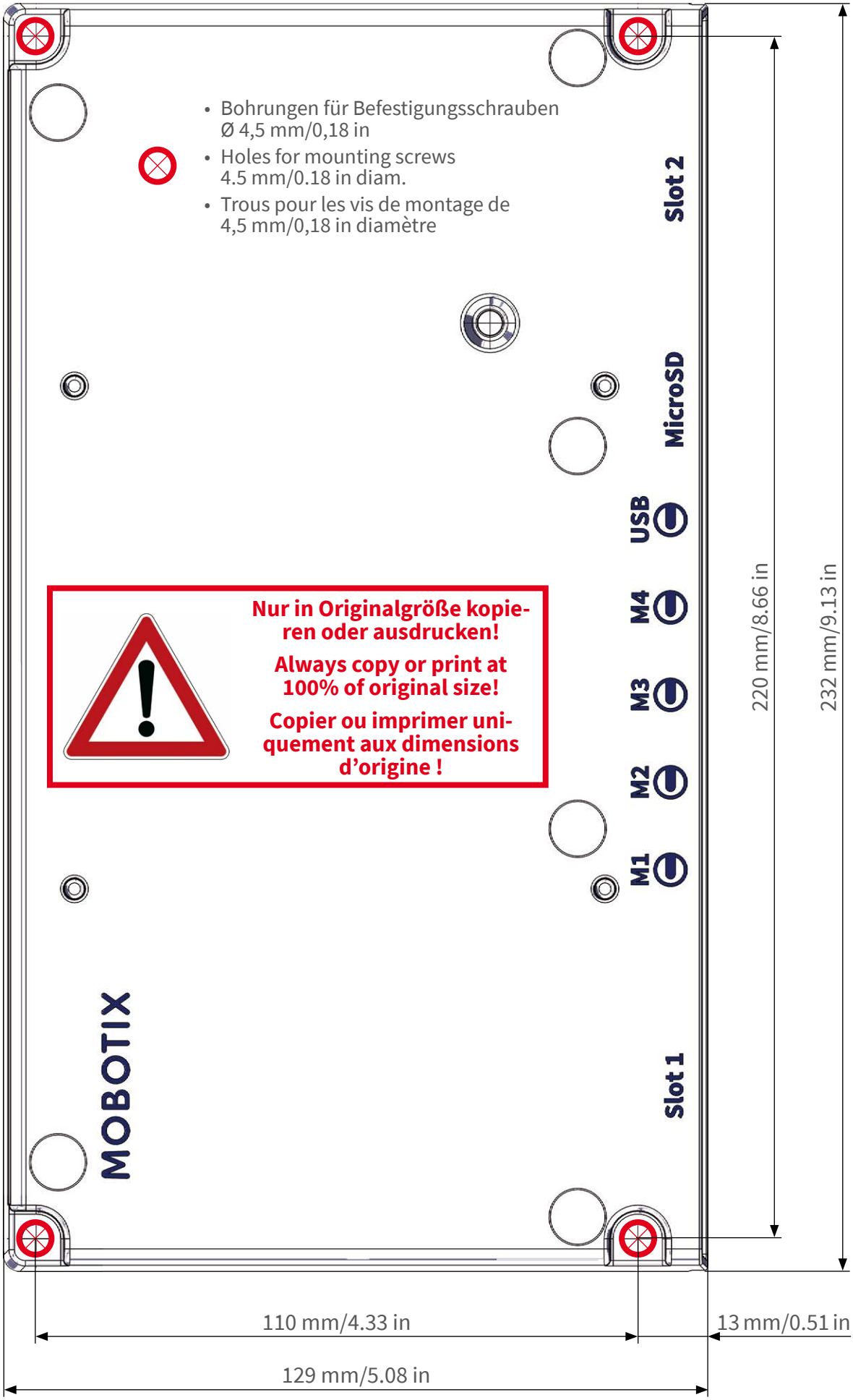
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# Drilling Template

Open this file in a PDF viewer (Adobe Reader or similar) and print the file **without scaling (original size)**.

**NOTE!**

Drilling template: **www.mobotix.com > Services > Download Center > Marketing & Documentation > Drilling Templates**.




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# Scope of Delivery

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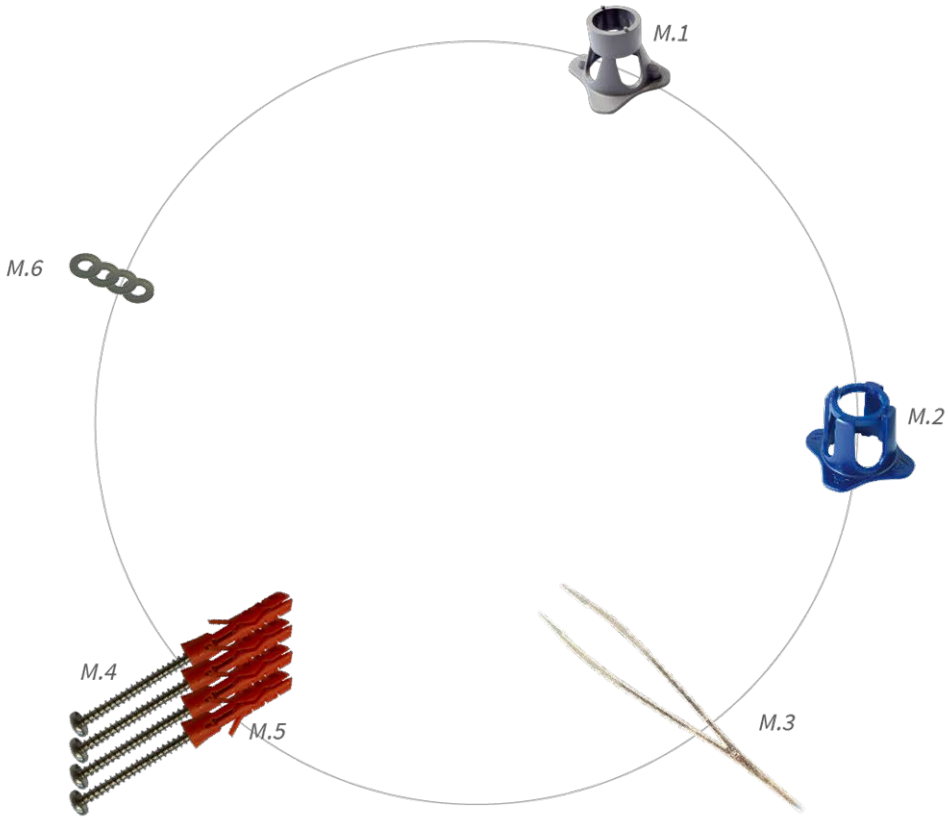
# MOBOTIX S74: Scope of Delivery




**Scope of delivery MOBOTIX S74 Body**

| Item | Count | Description |
|---|---|---|
| 1.0 | 1 | MOBOTIX S74, complete |
| 1.1 | 1 | Mounting supplies (see Mounting Supplies: Scope of Delivery, p. 15) |
| 1.2 | 1 | SD card 8 GB (installed) |
| 1.3 | 1 | Important Safety Information |

# Mounting Supplies: Scope of Delivery




**Scope of Delivery MOBOTIX S74 Mounting Supplies**

| Item | Count | Description |
|---|---|---|
| M.1 | 1 | Module wrench |
| M.2 | 1 | Lens wrench |
| M.3 | 1 | Tweezers |
| M.4 | 4 | Wood screw 4.5x60 mm |
| M.5 | 4 | Dowel S8 |
| M.6 | 4 | Washer |

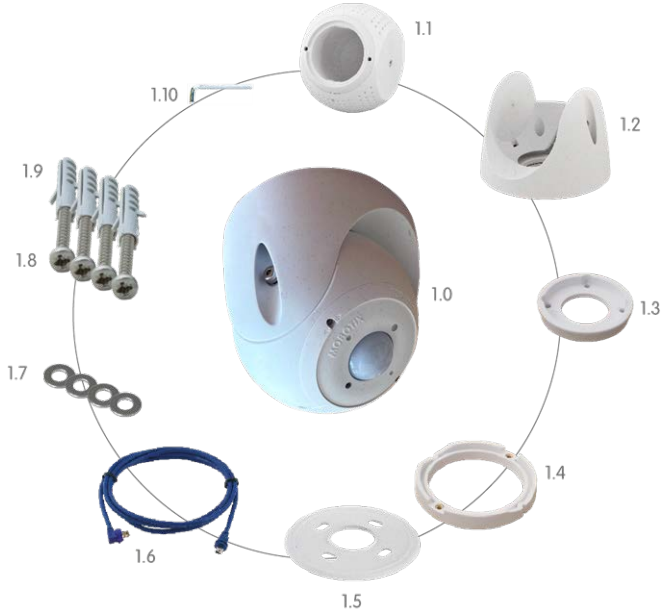
# PTMount: Scope of Delivery




**Scope of Delivery PTMount**

| Item | Count | Description |
|---|---|---|
| PM.1 | 1 | Sphere with rotating insert (installed) |
| PM.2 | 1 | Foot (installed) |
| PM.3 | 1 | Base plate (installed) |
| PM.4 | 1 | Swivel ring (installed) |
| PM.5 | 1 | Sealing |
| PM.6 | 4 | Washer Ø 4.3 mm, stainless steel |
| PM.7 | 4 | Wood screw 4x40 mm, stainless steel |
| PM.8 | 4 | Dowel S6 |
| PM.9 | 1 | Allen wrench 2.5 mm |

# PTMount Multisense: Scope of Delivery




**Scope of Delivery PTMount Multisense**

| Item | Count | Description |
|---|---|---|
| PM 1.0 | 1 | PTMount with Multisense module (completely pre-mounted) |
| PM 1.1 | 1 | Sphere with Multisense module (installed) |
| PM 1.2 | 1 | Foot (installed) |
| PM 1.3 | 1 | Base plate (installed) |
| PM 1.4 | 1 | Swivel ring (installed) |
| PM 1.5 | 1 | Sealing |
| PM 1.6 | 1 | Sensor cable 3 m/9.9 ft (installed) |
| PM 1.7 | 4 | Washer Ø 4.3 mm, stainless steel |
| PM 1.8 | 4 | Wood screw 4x40 mm, stainless steel |
| PM 1.9 | 4 | Dowel S6 |
| PM 1.10 | 1 | Allen wrench 2.5 mm |

# PTMount-Thermal: Scope of Delivery




**Scope of Delivery PTMount-Thermal**

| Item | Count | Description |
|---|---|---|
| PM-T.1 | 1 | Sphere with rotating Thermal/Thermal-TR sensor module (installed) |
| PM-T.2 | 1 | Foot (installed) |
| PM-T.3 | 1 | Base plate (installed) |
| PM-T.4 | 1 | Swivel ring (installed) |
| PM-T.5 | 1 | Sealing |
| PM-T.6 | 4 | Sensor cable 2 m/6.6 ft (installed) |
| PM-T.7 | 4 | Washer Ø 4.3 mm, stainless steel |
| PM-T.8 | 4 | Wood screw 4x40 mm, stainless steel |
| PM-T.9 | 1 | Dowel S6 |
| PM-T.10 | 1 | Allen wrench 2 mm |
| PM-T.11 | 1 | Allen wrench 2.5 mm |

# 4

# Technical Specifications

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# Hardware

| Feature | Properties |
|---|---|
| Image sensor (color or B&W sensor) | Up to 4K UHD 3840x2160, 16:9, 1/1,8“ |
| Light sensitivity | ■ Color sensor (day): 0,1 lx @ 1/60s; 0,005 lx @ 1s<br>■ BW sensor (night): 0,02 lx @ 1/60s; 0,001 lx @ 1s |
| Exposure control | Manual and automatic mode<br>1 s to 1/16,000 s |
| IK protection class | IK10 (housing) |
| IP / NEMA protection class | IP66 / NEMA 4X |
| Operating temperature range | -40 to 65 °C/-40 to 149 °F |
| Min. cold start temperature | -30 °C/-22 °F |
| Relative Humidity | 5 % to 95 %, non-condensing |
| Internal DVR Storage | Internal microSD card (SDHC/SDXC), 8 GB out-of-the-box, max. 2 TB. |
| I/Os | S74 IO Slide in Board, p. 30 required |
| Microphone/Speaker | S74 IO Slide in Board, p. 30 required |
| Passive infra-red sensor (PIR) | Available with functional module, max. 4.5 Watt (see Functional Modules, p. 29) |
| Infra-red illumination | Three functional modules for wide-angle, standard, and tele lenses |
| Range of infra-red illumination | Up to 30 m/100 ft (may be more depending on scene) |
| Max. power consumption | ■ Max. 25 W/521 mA at 48 VDC<br>■ Max. 25 W/1042 mA at 24 VDC |
| Electrical surge protection | S74 Network Slide-in Board with LSA terminal, p. 30 or S74 Network Slide-in Board with RJ45 and VDC power supply - A , p. 31 required |
| PoE standard | PoE Plus (802.3at-2009)/Class 4 (Network Slide-in Board required. See Interface Slide-in Boards, p. 30) |
| Interfaces | 4 sensor / functional modules<br>USB-C<br>2 Slots for slide in boards (Network, IOs etc.) |
| Mounting Options | Wall-mountable |
| Dimensions<br>(height x width x depth) | 36 x 232 x 110 mm |
| Weight without sensor modules | 1.130g |
| Housing | Aluminum, PBT-30GF |
| Standard accessories | See MOBOTIX S74: Scope of Delivery, p. 14 |
| Detailed technical documentation | **www.mobotix.com > Services > Download Center > Marketing & Documentation** |
| MTBF | 80,000 hours |

| Feature | Properties |
|---|---|
| Certificates | EN 50121-4, EN 55032, EN 55035, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 62368-1, EN 63000, AS/NZS CISPR32, 47 CFR Part 15b, NRTL |
| Protocols | DHCP (client and server), DNS, ICMP, IGMP v3, IPv4, IPv6, HTTP, HTTPS, FTP, FTPS, MQTT, NFS, NTP (client and server), RTP, RTCP, RTSP, SFTP, SIP (client and server), SMB/CIFS, SNMP, SMTP, SSL/TLS 1.3, TCP, UDP, VLAN, VPN, Zeroconf/mDNS |
| Manufacturer warranty | 5 years |

## Power Consumption

| System | Modules | Average Power Consumption | Max. Power Consumption |
|---|---|---|---|
| S74 - Body | Body only | ■ 8.1 W/169 mA at 48 VDC<br>■ 8.1 W/337 mA at 24 VDC | |
| S74 - Audio, no Video | Audio | ■ 8.1 W/169 mA at 48 VDC<br>■ 8.1 W/337 mA at 24 VDC | |
| S74 - 4K, 12MP, IR, WL, Audio | Audio: PCB + Module<br>M1: 4K Day/Night DN050<br>M2: IR 850nm wide-angle<br>M3: 12MP Day/Night DN016 | ■ 19.5 W/406 mA at 48 VDC<br>■ 19.5 W/813 mA at 24 VDC | |
| S74 - 4K, Thermal, IR, WL, Audio | Audio: PCB + Module<br>M1: 4K Day/Night DN050<br>M2: IR 850nm wide-angle<br>M3: Thermal Image Sensor 640R080<br>M4: White Light 5700K wide-angle | ■ 20.9 W/435 mA at 48 VDC<br>■ 20.9 W/871 mA at 24 VDC | ■ Max. 25 W/521 mA at 48 VDC<br>■ Max. 25 W/1042 mA at 24 VDC |
| S74 - Thermal, Multisense, WL, Audio | Audio: PCB + Module<br>M1: 4K Day/Night DN050<br>M2: Multisense<br>M3: Thermal Image Sensor 640R080<br>M4: White Light 5700K wide-angle | ■ 16.5 W/344 mA at 48 VDC<br>■ 16.5 W/688 mA at 24 VDC | |

# Image and Video Properties

| Feature | Properties |
|---|---|
| Available video codecs | ■ H.264, H.265<br>■ MxPEG+<br>■ MJPEG |
| Image resolutions | CIF 320x240, VGA 640x360, XGA 1024x576, HD 1280x720, FHD 1920x1080, QHD 2560x1440, 4K UHD 3840x2160 |
| Multi streaming | H.264, H.265 with triple streaming |
| Multicast stream via RTSP | Yes |
| Max. image resolution H.264 | ■ One sensor:<br>4K UHD 3840x2160 (8MP)<br>■ Both sensors (dual image):<br>2x 4K UHD 7680x2160 (16MP) |
| Max. frame rate | MxPEG: 20@4K, H.264: 30@4K, H.265: 30@4K |

# General Software Features

| Feature | Properties |
|---|---|
| WDR | Up to 120 dB |
| Software features | ■ H.264, H.265 Multistreaming<br>■ Multicast stream via RTSP<br>■ Digital pan, tilt, zoom/vPTZ (up to 8x zoom)<br>■ Genetec protocol integration<br>■ Programmable exposure zones<br>■ Snapshot recording (pre/post-alarm images)<br>■ Continuous recording<br>■ Event recording<br>■ Time-controlled flexible event logic<br>■ Weekly schedules for recordings and actions<br>■ Event video and image transfer via FTP and email<br>■ Playback and QuadView via web browser<br>■ Animated logos on the image<br>■ Master/Slave functionality<br>■ Privacy zone scheduling<br>■ Remote alarm notification (network message)<br>■ Programming interface (HTTP API)<br>■ MxMessageSystem |
| ONVIF compatibility | Profile G, S, T, (M with later firmware release) |

| Feature | Properties |
|---|---|
| Master/Slave functionality | Yes |
| Remote alarm notification | Email, network message (HTTP/HTTPS), SNMP, MxMessageSystem, MQTT |
| DVR/image storage management | ■ On internal microSD card<br>■ On external USB and NAS devices<br>■ Different streams for live image and recording<br>■ MxPEG+ only<br>■ MxFFS with buffered archive, pre- and post-alarm images, storage monitoring with error reporting |
| Camera and data security | User and group management, SSL connections, IP-based access control, IEEE 802.1X, intrusion detection, digital image signature |
| Firmware Tampering Detection | Digital Signature |

# Video Analysis

| Feature | Properties |
|---|---|
| Video motion detection | Yes |
| MxActivitySensor | Version 1.0, 2.1, 3.0 and object-based MxAnalytics AI |
| MxAnalytics | Yes |
| MOBOTIX App support | Yes |

# Video Management Software

| Feature | Properties |
|---|---|
| MOBOTIX HUB | Yes<br>**www.mobotix.com > Services > Download Center > Software Downloads** |
| MxManagementCenter | Yes (latest version recommended)<br>**www.mobotix.com > Services > Download Center > Software Downloads** |
| MOBOTIX LIVE App | Yes, available in Google Play Store (Android) and Apple App Store (iOS). |
| 3rd Party VMS Software | See ONVIF Profile S/G/T specification |

# Sensor Modules

## Dimensions of Sensor Modules

| | | |
|---|---|---|
| Height x Width | 58 x 42,5 (50 mm) | |
| Weight | Standard Sensor Modules | max. 150g |
| | Functional Modules | max. 150g |
| | Thermal Sensor Module B-Models | max. 380g |
| | Thermal Sensor Module C-Models | max. 220g |
| | PTMount Thermal | 890g |

## Supported Image Sensor Modules

| Sensor Module | Order Code |
|---|---|
| Sensor module with standard 45° lens | Mx-O-M7SA-8DN100* |
| | Mx-O-M7SA-8D100 |
| | Mx-O-M7SA-8N100* |
| | Mx-O-M7SA-4DN100 |
| Sensor module with tele lens 30° | Mx-O-M7SA-8DN150* |
| | Mx-O-M7SA-8D150 |
| | Mx-O-M7SA-8N150* |
| | Mx-O-M7SA-4DN150 |
| | Mx-O-M7SA-8L150 |
| Sensor module with tele lens 15° | Mx-O-M7SA-8DN280* |
| | Mx-O-M7SA-8D280 |
| | Mx-O-M7SA-8N280* |
| | Mx-O-M7SA-4DN280 |
| | Mx-O-M7SA-8L280 |
| Sensor module with tele lens 8° | Mx-O-M7SA-8D500 |
| | Mx-O-M7SA-8N500 |
| | Mx-O-M7SA-8L500 |

| Sensor Module | Order Code |
|---|---|
| Sensor module with wide angle lens 60° | Mx-O-M7SA-8DN080* |
| | Mx-O-M7SA-8D080 |
| | Mx-O-M7SA-8N080* |
| | Mx-O-M7SA-4DN080 |
| Sensor module with super wide angle lens 95° | Mx-O-M7SA-8DN050* |
| | Mx-O-M7SA-8D050 |
| | Mx-O-M7SA-8N050* |
| | Mx-O-M7SA-4DN050 |
| Sensor module with ultra wide angle lens 120° 4K | Mx-O-M7SA-8DN040* |
| | Mx-O-M7SA-8D040 |
| | Mx-O-M7SA-8N040* |
| | Mx-O-M7SA-4DN040 |
| | Mx-O-M7SA-8L040 |
| Sensor module with hemispheric lens 180° 12MP | Mx-O-M7SA-12DN016* |

*also available in black.

**NOTE!**
Please consider any lens-related restrictions. For example, license plate recognition is not possible with a hemispheric lens.

For a complete list of lenses for MOBOTIX cameras, please see the Lens Table document for MOBOTIX 7 models on **www.mobotix.com > Services > Download Center > Marketing & Documentation > Lens Table**.

## Supported Thermal Sensor Modules

| Sensor Module | Order Code |
|---|---|
| CIF Thermal 45° x 35° | MX-O-M7SB-336TS100 |
| CIF Thermal 25° x 19° | Mx-O-M7SB-336TS150 |
| CIF Thermal 17° x 13° | Mx-O-M7SB-336TS280 |
| CIF Thermal Radiometry 45° x 35° | Mx-O-M7SB-336RS100 |
| CIF Thermal Radiometry 25° x 19°, | Mx-O-M7SB-336RS150 |
| CIF Thermal Radiometry 17° x 13° | Mx-O-M7SB-336RS280 |
| CIF Thermal Radiometry 9.3° x 7.1° | Mx-O-M7SB-336RS500 (BTO) |
| ECO CIF Thermal 105°x75° | Mx-O-M7SA-320T040 |
| ECO CIF Thermal 56°x42° | Mx-O-M7SA-320T080 |
| VGA Thermal 90° x 69° | Mx-O-M7SB-640TS050 |

| Sensor Module | Order Code |
|---|---|
| VGA Thermal 69° x 56° | Mx-O-M7SB-640TS080 |
| VGA Thermal 45° x 37° | Mx-O-M7SB-640TS100 |
| VGA Thermal 32° x 26° | Mx-O-M7SB-640TS150 |
| VGA Thermal Radiometry 90° x 69° | Mx-O-M7SB-640RS050 |
| VGA Thermal Radiometry 69° x 56° | Mx-O-M7SB-640RS080 |
| VGA Thermal Radiometry 45° x 37° | Mx-O-M7SB-640RS100 |
| VGA Thermal Radiometry 32° x 26° | Mx-O-M7SB-640RS150 |
| VGA Thermal Radiometry 18° x 14° | Mx-O-M7SB-640RS280 (BTO) |

The **Thermal Radiometry (TR)** variants can automatically trigger alarms if the temperature exceeds or falls below defined limits. This is crucial for the detection of fire or heat sources. Up to 20 different temperature events can be configured simultaneously in TR windows or covering the full sensor image over a temperature range of High Sensitivity: –40 to 170 °C/–40 to 320 °F; Low Sensitivity: -40 to 550 °C/–40 to 1022 °F.

The **Thermal (non-TR)** variants only measure in the center of the image (Thermal spot, 2x2 pixel).

## Features Thermal Image Sensors – B Models

| Feature | Properties |
|---|---|
| Thermal sensitivity | Typ. 50 mK |
| Thermal image sensor | Uncooled microbolometer,<br>CIF: 336 x 256 px / VGA: 640 x 480 px |
| IR range | 7.5 to 13.5 µm |
| Temperature measurement range (adjustable) | ■ High Sensitivity: -40 to 170°C/–40 to 320°F<br>■ Low Sensitivity: –40 to 550°C/–40 to 1022°F<br><br>Default: Automatic (switches between High and Low depending on highest temperatures in FoV) |
| Dimensions | 336/640 px: 48.5x48 mm/48.5x70 mm; 170 g without front plate / 265 g with front plate |
| Dimensions | ■ PT Mount Thermal 336/640 px: 98.5 mm x 106 mm diam; 620 g (including PT Mount)<br>■ Sensor module alone: 73 mm (+4.4 mm front glass) x 57 mm diam (63 mm front glass); 310 g |
| Max. image size | Can be scaled up to 3072 x 2048 (6MP), automatically scaled to size of MX sensor module |
| Max. frame rate | 9 fps (fast version 25/30 fps on request) |
| Pixel pitch | 17 µm |

| Feature | Properties | |
|---|---|---|
| Field of view | *Sensor Module* | *FoV* |
| | 336R/T100 | 45° x 35°; 2.27 mrad; focal length 7.5 mm, f/1.25 |
| | 336R/T150 | 25° x 19°; 1.31 mrad; focal length 13 mm, f/1.25 |
| | 640R/T050 | 90° x 69°; 2.27 mrad; focal length 7.5 mm, f/1.4 |
| | 640R/T100 | 45° x 37°; 1.31 mrad; focal length 13 mm, f/1.25 |
| | 640R/T150 | 32° x 26°; 0.90 mrad; focal length 19 mm, f/1.25 |
| Operating temperature range | -40 to 65 °C/-40 to 149 °F | |
| Relative Humidity | 5 % to 95 %, non-condensing | |
| Power consumption | max. 1.2 W | |
| MTBF | 80,000 hours | |
| IP rating | IP67 | |
| IK rating | IK04 | |
| Material | PBT-30GF (housing); Germanium (lens) | |

# Features Thermal Image Sensors – C Models

| Feature | Properties | |
|---|---|---|
| Thermal sensitivity | Typ. 30 mK | |
| IR range | 7.5 to 13.5µm | |
| Temperature measurement range (adjustable) | ■ High Sensitivity: –40 to 150°C/–40 to 302°F<br>■ Low Sensitivity: –40 to 350°C/–40 to 662°F<br><br>Default: Automatic (switches between High and Low depending on highest temperatures in FoV) | |
| Dimensions | ■ PT Mount Thermal 336/640 px: 98.5 x 106 mm diam., 620 g (including PT Mount)<br>■ Sensor module alone: 73 mm (+4.4 mm front glass) x 57 mm diam. (63 mm front glass), 310 g | |
| Max. image size | Can be scaled up to 3072 x 2048 (6MP), automatically scaled to size of MX sensor module | |
| Max. frame rate | 30 fps | |
| Pixel pitch | 12 µm | |
| Field of view | *Sensor Module* | *FoV (H x V)* |
| | 320R100 | 50° x 40°; focal length 9.2 mm; f/1.0 |
| | 320T280 | 12° x 9.6°; focal length 18 mm; f/1.0 |
| | 640R050 | 95° x 76°; focal length 4.9 mm; f/1.1 |
| | 640R100 | 50° x 40°; focal length 9.2 mm; f/1.0 |
| | 640T280 | 18° x 14.4°; focal length 24.9 mm; f/1.0 |
| Operating temperature range | -40 to 65 °C/-40 to 149 °F | |
| Relative Humidity | 5 % to 95 %, non-condensing | |
| Power consumption | 1.5 W | |

| Feature | Properties |
|---|---|
| MTBF | 80,000 hours |
| IP rating | IP67 |
| IK rating | IK04 |
| Material | PBT-30GF (housing); Germanium (lens) |

## Features Thermal Image Sensors - ECO Models

| Feature | Properties |
|---|---|
| Thermal sensitivity | Typ. 65 mK, IR range 7.8 to 14 µm |
| Temperature measurement range | -40 to 330°C/ –40 to 626 °F |
| Field of view | ■ T040: 105 x 75°; 5.23mrad, focal length 2.2mm, f/1.05<br>■ T080: 56 x 42°; 3.00mrad, focal length 4.0mm, f/1.00<br>■ T150: 24 x 18°; 1.32mrad, focal length 9.1mm, f/1.00 |
| Thermal image sensor | Uncooled microbolometer,<br>CIF 320x240 |
| Dimensions | 58 x 42.5 mm (dia. 50 mm), 65g |
| Pixel pitch | 12µm |
| Max. image size | Can be scaled up to 3072 x 2048 (6MP) (6MP), automatically scaled to size of MX Sensor module |
| Max. frame rate | 9 fps (when displaying an Mx Sensor module and a thermal sensor module, the overall frame rate of the camera is reduced to 9 fps) |
| Operating temperature range | -40 to 65 °C/-40 to 149 °F |
| Relative Humidity | 5 % to 95 %, non-condensing |
| Power consumption | 600mW |
| IP rating | IP66 |
| IK rating | IK04 |
| Material | PBT-30GF (housing); Chalcogenide (lens) |
| Software (included) | Video management software MxManagementCenter |

# Functional Modules

| Functional Module | Order Code | Remark |
|---|---|---|
| Audio module | Mx-F-S7A-INT01 | Via S74 IO Slide in Board |
| MultiSense module | Mx-F-MSA | With PIR sensor, temperature sensor, illumination sensor |
| IR Light modules | Mx-F-IRA-W | For Super Wide-Angle Lens Sensor Modules 95° |
| | Mx-F-IRA-S | For Standard & Wide-Angle Lens Sensor Modules 45° and 60° |

| Functional Module | Order Code | Remark |
|---|---|---|
| | Mx-F-IRA-T | For Tele Lens Sensor Modules 15° and 30°<br>Power consumption IR Light Modules:<br>4.2 W at 100% brightness. |
| White Light Modules | Mx-F-WLA-W | For Super Wide-Angle Lens Sensor Modules 95° |
| | Mx-F-WLA-S | For Standard & Wide-Angle Lens Sensor Modules 45° and 60° |
| | Mx-F-WLA-T | For Tele Lens Sensor Modules 15° and 30°<br>Power consumption White Light Modules:<br>3.2 W at 100% brightness. |

# Interface Slide-in Boards

## S74 Network Slide-in Board with RJ45 socket

| | |
|---|---|
| Order Code | Mx-F-S7A-RJ45 |
| Power Supply | PoE Plus (802.3at-2009)/Class 4 |
| Network | RJ45 / Ethernet 1000Base-T |

## S74 Network Slide-in Board with LSA terminal

| | |
|---|---|
| Order Code | Mx-F-S7A-LSA |
| Power Supply | PoE Plus (802.3at-2009)/Class 4 |
| Network | LSA / Ethernet 1000Base-T |
| Overvoltage Protection | max. 4 kV on the PoE network cabling |

## S74 IO Slide in Board

| | |
|---|---|
| Order Code | Mx-F-S7A-INT01 |

| Terminal | Remark |
|---|---|
| Line Out | Headphones with 20mW @ 16 Ohm or 32 Ohm.<br>Audio inputs as a Line Out function to 10k Ohm impedance of receiver. Audio level while connected to 10k Ohm equals -10dbV |
| Line In | Standard Line In: (0dB) Vrms=1V |

| Terminal | Remark |
|---|---|
| SPK | 0.9W at any 8 Ohm speaker.<br>MOBOTIX Audio module: 0.9W at 8 Ohm |
| MIC | Passive microphone to connect (for best results). R_Bias for the microphone is 2.2 kOhm (included on the camera). Microphone impedance < 2.2 kOhm, Operating voltage of the microphone is 2V.<br>Sensitivity of the MOBOTIX Audio Module: -35 +/-4dB (0dB = 1V/pa, 1kHz) |
| Allowed cable dimensions for cables connected to the PCB terminals | *Conductor cross section*<br>AWG: 20 - 26<br>Rigid: 0.14mm$^2$ - 0.5mm$^2$<br>Flexible: 0.14mm$^2$ - 0.5mm$^2$<br>Flexible with ferrule: 0.25mm$^2$ - 0.34mm$^2$ |
| Input | **S74-A**<br>requires pull-up resistor and external power supply (10mA / max 30 Vrms AC / max. 50V DC)<br>Output may be loaded with max. 50mA<br>max. length for cables: depends on loop impedance of the connected cable.<br>**S74-B**<br>Dry contact, form A (max 30 Vrms AC / max, 50V DC/ 60 W/ 2A DC) |
| Output | requires pull-up resistor and external power supply (10mA / max 30 Vrms AC / max. 50V DC)<br>Output may be loaded with max. 50mA<br>max. length for cables: depends on loop impedance of the connected cable. |

# S74 Network Slide-in Board with RJ45 and VDC power supply - A

| | |
|---|---|
| Order Code | Mx-F-S7A-RJ45-VDC |
| Power Supply | 12-24 V DC only - recommended 2.5-1.5A |
| Network | RJ45 / Ethernet 1000Base-T |

**Allowed cable dimensions for cables connected to the PCB terminals**

| | |
|---|---|
| AWG | 26 - 20 |
| Rigid | 0.14mm$^2$ - 0.5mm$^2$ |
| Flexible | 0.14mm$^2$ - 0.5mm$^2$ |
| Flexible with ferrule | 0.25mm$^2$ - 0.34mm$^2$ |

## S74 Network Slide-in Board with RJ45 and VDC power supply - B

| | |
|---|---|
| Order Code | Mx-F-S7B-RJ45-VDC |
| Power Supply | 12-24 V DC only - recommended 2.5-1.5A |
| Network | RJ45 / Ethernet 1000Base-T |

**Allowed cable dimensions for cables connected to the PCB terminals**

| | |
|---|---|
| AWG | 26 - 14 |
| Rigid | 0.14mm$^2$ - 2.5mm$^2$ |
| Flexible | 0.14mm$^2$ - 1.5mm$^2$ |
| Flexible with ferrule | 0.25mm$^2$ - 1.5mm$^2$ |

# Dimensions

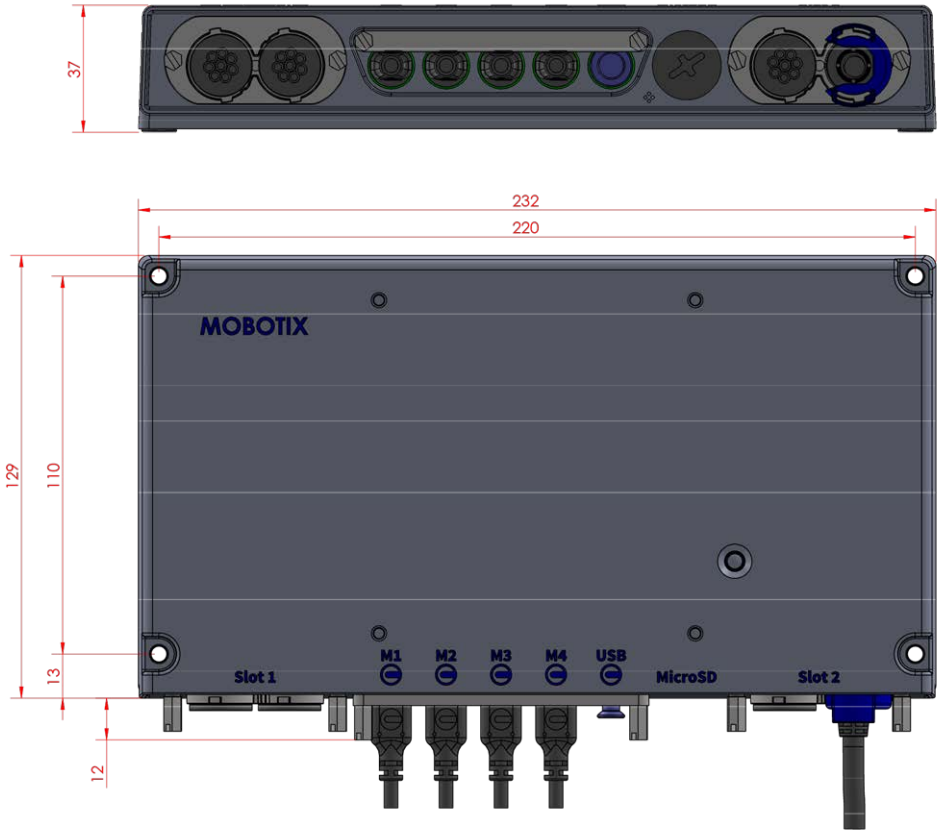



**Fig. 1: MOBOTIX S74: All measurements in mm**

**NOTE!**

Drilling template: **www.mobotix.com > Services > Download Center > Marketing & Documentation > Drilling Templates**.

## PTMount – Dimensions

**NOTE!**

Drilling template: **www.mobotix.com > Services > Download Center > Marketing & Documentation > Drilling Templates**.

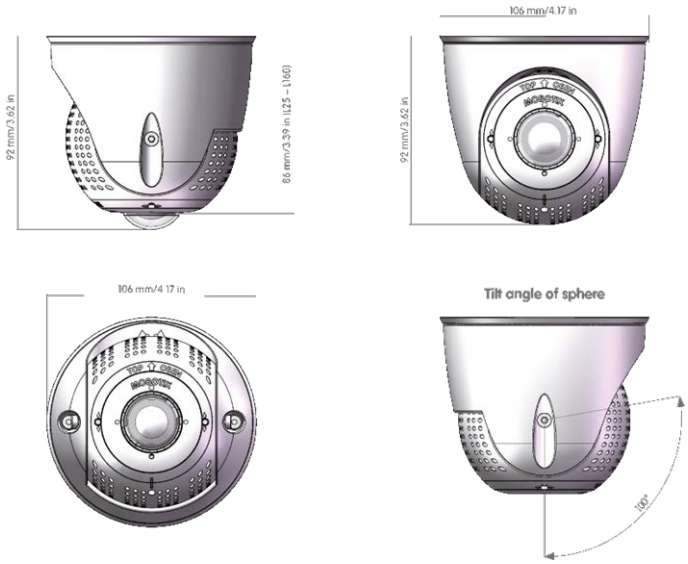



**Fig. 2: PTMount**

## PTMount-Thermal – Dimensions

**NOTE!**

Drilling template: **www.mobotix.com > Services > Download Center > Marketing & Documentation > Drilling Templates**.

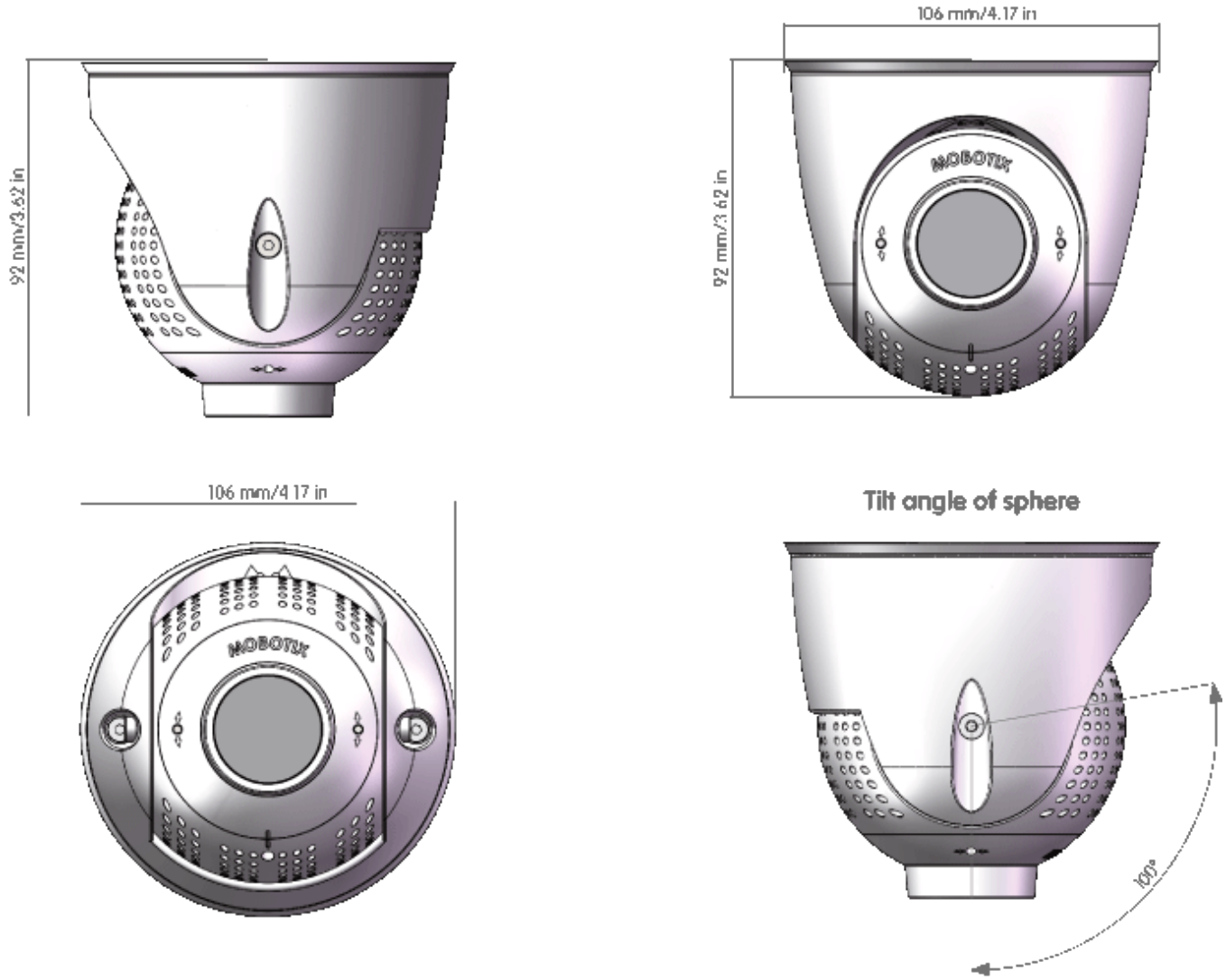



**Fig. 3: PTMount-Thermal**

5

# Mounting

This section contains the following information:


**Before Mounting the Camera** ..... **36**

**Installing Sensor Modules** ..... **37**

Preparing the Sensor Modules ..... 38

Installing Sensor Module without Mounts ..... 38

Installing Sensor Module with PTMount ..... 39

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**Installing Slide-in Boards** ..... **46**

Installing the S74 Network Slide-in Board with RJ45 socket ..... 46

Installing the S74 Network Slide-in Board with LSA terminal ..... 47

Installing the S74 Network Slide-in Board with RJ45 and VDC power supply ..... 52

Installing the S74 IO Slide in Board ..... 54

**Mounting the Camera** ..... **59**

**Connecting Module Cables to the Camera** ..... **60**

Sensor Module Combinations ..... 62

**Connecting the Camera to the Network** ..... **63**

# Before Mounting the Camera

Before mounting the MOBOTIX S74, the following questions should be answered:

- Where and how will the camera be mounted?
- Where and how will the sensor modules be mounted?
- How is the mounting surface level?
- Which other mounting options are available?
- Which accessories might be needed?
- How is the camera connected to the network and how is the power supplied?
- How are the connections furnished from the building?
- What cabling considerations are necessary?

**CAUTION!**

- Install only on a flat surface! Unevenness must not exceed 0.5 mm/0.02 in!
- Only use genuine MOBOTIX patch cables to guarantee the weatherproofness!

**NOTE!**
Before mounting the camera

- Determine the optimal installation position and ensure that the field of view is not obstructed. After installation, you can fine-tune the image.
- Ensure that a PoE power supply compliant with PoE (802.3af-2003), Class 3 is available at the installation location .

If you have questions, please ask your MOBOTIX partner directly or contact the MOBOTIX support under **www.mobotix.com > Services > Help Desk**.

## Protective Measures

**WARNING!**
When laying cables indoors and outdoors, the current regulations for cable laying, lightning and fire protection must always be observed.

MOBOTIX cameras and devices are protected against the effects of minor over voltages by a number of measures. However, these measures cannot prevent larger surge voltages from causing damage to the camera. When installing the cameras outdoors, special attention should therefore be paid to lightning protection and the associated dangers for the building and network infrastructure.

In general, you should only have MOBOTIX cameras and devices installed by certified specialist companies that are familiar with the installation and safe operation of network devices and the underlying regulations for lightning and fire protection as well as the current technology for preventing damage from surge voltages.

### Notes on Cabling

- **Data cable:** Only double-shielded CAT5 cable or better (S/STP) may be used as data cable for the Ethernet interface.
- **Cable length:** The individual cable sections must not exceed the maximum permissible lengths in order to ensure perfect data transmission.
- **Avoidance of induction:** Data cables may only be laid parallel to power or high-voltage lines if the prescribed minimum distances are observed.

### Fire Protection

When laying cables for the power supply, the relevant country-specific regulations (e.g. VDE in Germany) and the fire protection regulations valid at the installation site must be observed.

### Lightning and Surge Protection

Measures should always be taken to protect this device from electrical surge damage.

**NOTE!**
Electrical surge protection is integrated in the S74 Network Slide-in Board with LSA terminal (see Installing the S74 Network Slide-in Board with LSA terminal, p. 47), which is available as an accessory.

Further information on how to avoid damage caused by lightning and over voltage is available from manufacturers of lightning and over voltage protection devices.

# Installing Sensor Modules

**WARNING!**

- Always power down the camera before installing or replacing sensor modules.

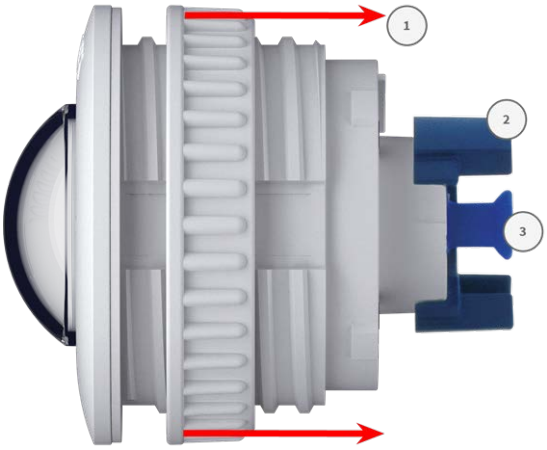
  Unplugging or connecting sensor modules of a powered-on camera can irreparably damage the sensor modules and the camera!

- When installing the sensor modules, make sure that the sensor module cables are not damaged or bent sharply.

**CAUTION!**
When installing the sensor modules, make sure that the sensor module cables are not damaged or bent sharply!

# Preparing the Sensor Modules

Remove the plastic nut ① from the sensor modules, remove the bayonet catch ② by rotating it counter-clockwise, then remove the blue rubber plug ③ .

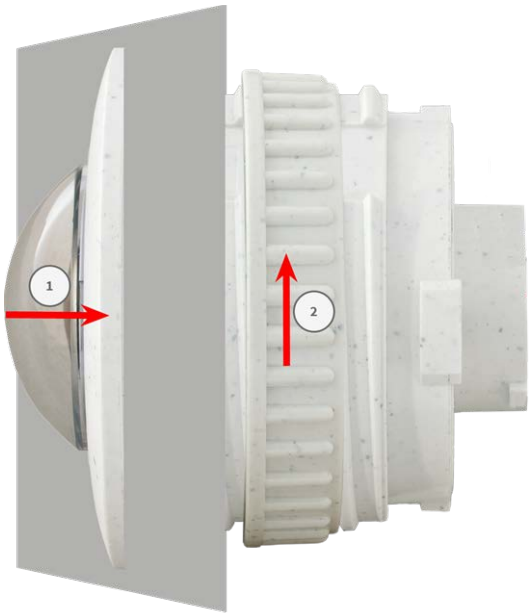



**Proceed by Installing the Sensor Modules**

- Installing Sensor Module without Mounts, p. 38
- Installing Sensor Module with PTMount, p. 39
- Installing Sensor Module PTMount-Thermal, p. 44

# Installing Sensor Module without Mounts

1. **Mount the sensor module:** Insert sensor module into hole (43 mm) ① and tighten the plastic nut ② to keep the sensor module safely in place




2. **Connect the sensor module cable:** Push the plug of each sensor module cable **firmly** into the connector at the back of the module until the connector is fully inserted into its seat.



**CAUTION!**
The lug of the plug must point to the inside of the sensor module when plugged in. If the module cable is not plugged in correctly, the sensor will not be recognized by the camera.

3. **Lock sensor module cable:** Apply the blue bayonet catch onto the connector of the sensor module as shown and turn it clockwise until it gently snaps shut.



4. Repeat steps 1 to 4 to add additional sensor modules, respectively.

## Installing Sensor Module with PTMount

**CAUTION!**
The PTMount was developed for wall or ceiling mounting. When mounting on the floor, make sure that there is no cavity inside the PTMount where water could collect.

1. Using the 2.5 mm Allen wrench, remove the two screws that hold the foot onto the swivel ring.



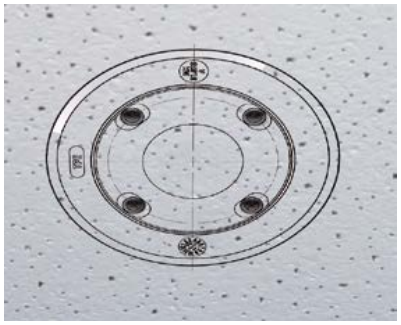
2. Remove swivel ring and base plate.



3. Make sure that there is enough space for installing the PTMount and that you can access it from the rear later on. The surface should be even and smooth so that the sealing lies flat on the surface.



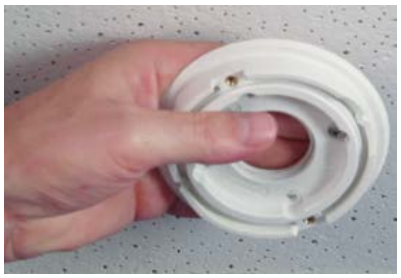
4. Drill the holes for the base plate using the drilling template and insert the dowels PTMount: Scope of Delivery, p. 16.



5. In the center of the drilling template, drill another hole into the wall or faceplate for the sensor module cable. The hole should have a diameter between 15 and 35 mm.



6. Hold the sealing, the swivel ring and the base plate as shown in the figure.



7. Attach the base plate using the supplied wood screws and washers.



8. When tightening the screws, make sure that you can still rotate the swivel ring by hand.



9. Guide the sensor cable through the sealing, the swivel ring, the base plate and through the mounting surface to the camera.

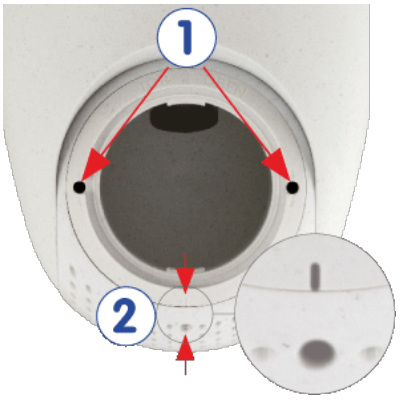


10. Guide the sensor cable from the back into the foot and the sphere.

11. Use the two screws to affix the foot and sphere assembly to the swivel ring and make sure that the foot can still be rotated.



12. Loosen the two fastening screws of the insert ① , then rotate the insert so that the small bar opposite of the **TOP/OBEN** label points to the hole of the grub screw ② .




13. Secure the insert against rotating by tightening the two fastening screws using the 2.5 mm Allen wrench.

14. Attach the sensor module cable to the sensor module (turn blue bayonet catch to the left and remove, pull out the plug, connect the sensor cable, apply bayonet catch and lock by turning to the right).



15. Push the sensor module into the PTMount so that the arrow on the backside of the sensor module points to the left vs. the **TOP/OBEN** lettering.




16. Using the module wrench lock the sensor module by turning it 90 degrees to the right.



17. Secure the sensor module by tightening the grub screw using the 2.5 mm Allen wrench. The grub screw locks the sensor module within the insert and prevents inadvertent unlocking of the sensor module.




18. Adjust the sensor module temporarily by pointing it into the desired viewing direction.




19. Make sure that the **TOP/OBEN** label on the insert is pointing upwards. If this is not the case, loosen the two fastening screws using the 2.5 mm Allen wrench and rotate the insert.



# Installing Sensor Module PTMount-Thermal

1. Using the 2.5 mm Allen wrench, remove the two screws that hold the foot onto the swivel ring.

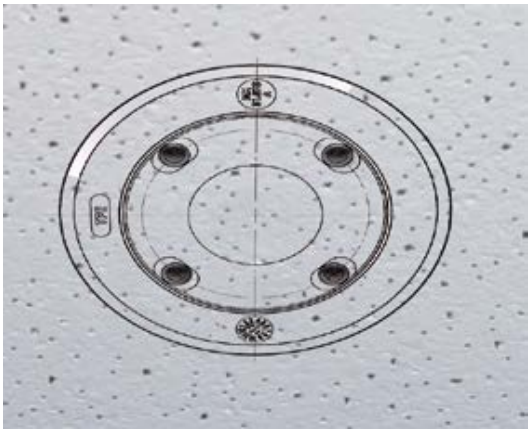


2. Remove swivel ring and base plate.



3. Make sure that there is enough space for installing the PTMount-Thermal and that you can access it from the rear later on. The surface should be even and smooth so that the sealing lies flat on the surface.

4. Use the base plate as drilling template, drill the holes for the base plate and insert the dowels PTMount-Thermal: Scope of Delivery, p. 18.



5. In the center of the drilling template, drill another hole into the wall or faceplate for the sensor module cable. The hole should have a diameter between 15 and 35 mm.



6. Attach the base plate and the swivel ring using the supplied wood screws and washers.

   When tightening the screws, make sure that you can still rotate the swivel ring by hand.



7. Guide the sensor cable through the swivel ring and the base plate.





e
 the two screws to affix the foot and sphere assembly to the swivel ring and make sure that the foot can still be rotated.

9. Adjust the sensor module temporarily by pointing it into the desired viewing direction.

10. Make sure that the **MOBOTIX** label on the insert is pointing upwards. If this is not the case, loosen the two fastening screws with the 2 mm Allen wrench and rotate the insert. Lightly tighten the two fastening screws.





# Installing Slide-in Boards

**WARNING!**
Make sure the power supply to the camera is disconnected before installing or replacing slide in board.

## Installing the S74 Network Slide-in Board with RJ45 socket

The S74 Network Slide-in Board with RJ45 socket is required to connect the camera to the network and to supply power via PoE. The S74 Network Slide-in Board with RJ45 socket is not part of the scope of delivery (see Scope of Delivery, p. 13) and must be ordered separately.



**CAUTION!**
The S74 Network Slide-in Board with RJ45 socket may only be installed in slot 2 of the camera!

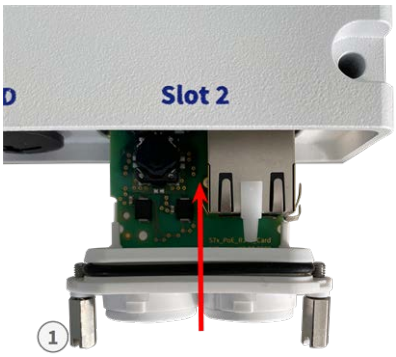
**CAUTION!**
**Do not connect to the network at this stage!**
Since the camera must not run without sensor modules, the network connection will be established only **after** mounting the camera and connecting the sensor modules.

## Procedure

1. **Remove cover from slot 2 of the camera:** Use a screwdriver to loosen both bolt screws ① and then pull out the plastic cover.




2. **Connect the S74 Network Slide-in Board with RJ45 socket:** Position the interface board on the guide rails in the slide-in slot and push it in with slight pressure until it clicks into the socket. Then fix the board with the screw bolts ① .




**CAUTION!**
**Do not connect the network cable at this stage!** Since the camera must not run without sensor modules, the network connection will be established only **after** mounting the camera and connecting the sensor modules.

# Installing the S74 Network Slide-in Board with LSA terminal

The S74 Network Slide-in Board with LSA terminal is required to connect the camera to the network, to supply power via PoE and to protect the camera from electrical surge. The S74 Network Slide-in Board with LSA terminal is not part of the scope of delivery (see Scope of Delivery, p. 13) and must be ordered separately.



**CAUTION!**
The S74 Network Slide-in Board with LSA terminal may only be installed in slot 2 of the camera!

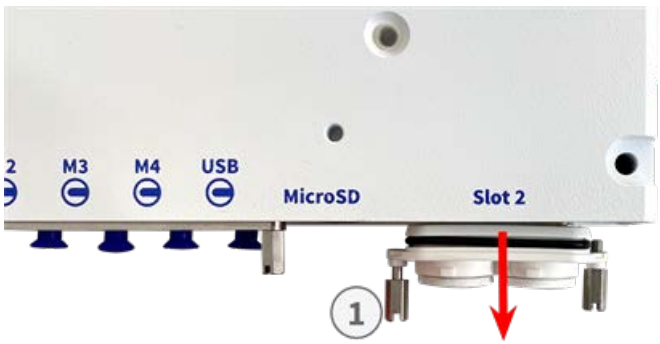
**CAUTION!**
**Do not connect to the network at this stage!**
Since the camera must not run without sensor modules, the network connection will be established only **after** mounting the camera and connecting the sensor modules.

## Prepare S74 Network Slide-in Board with LSA terminal and cable

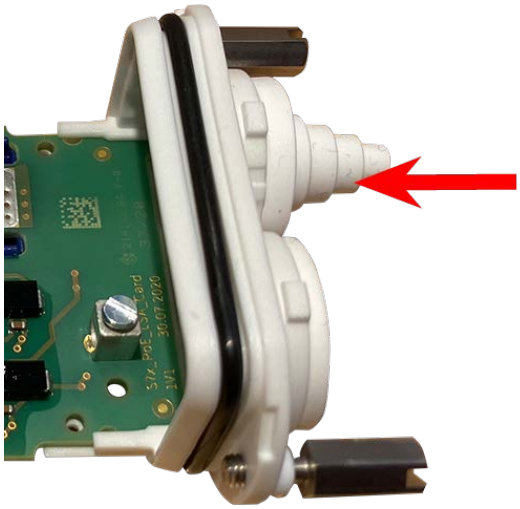
**NOTE!**
You will need an LSA+/Krone tool for this procedure:




1. **Remove cover from slot 2 of the camera:** Use a screwdriver to loosen both bolt screws ① and then pull out the plastic cover.



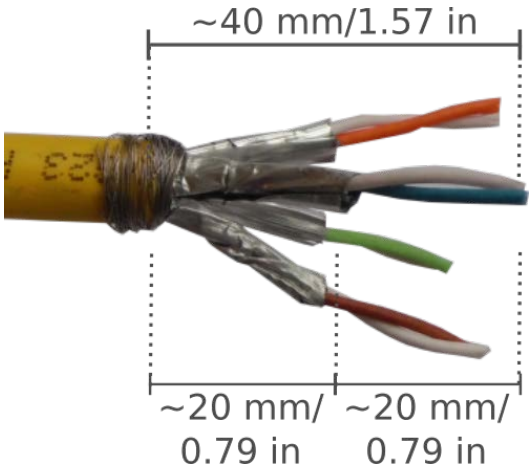
2. Cut off two steps of the of the white plug in the cover of the interface board ① .



3. Insert the network cable into the white rubber plug:

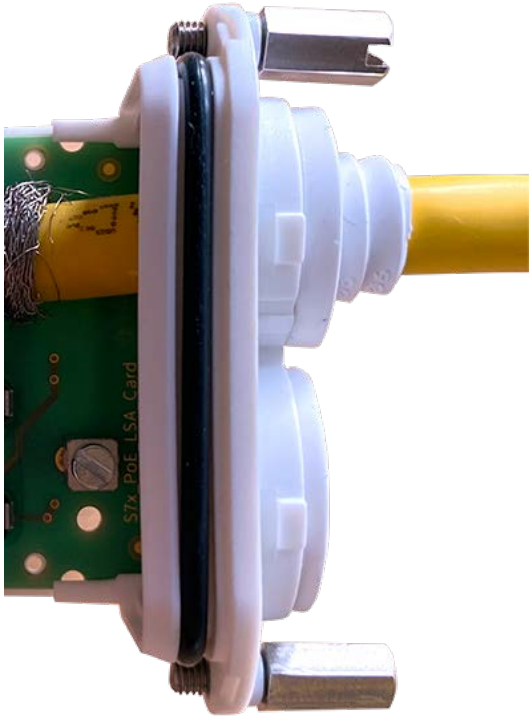


4. Remove the insulation from the network cable as shown below:

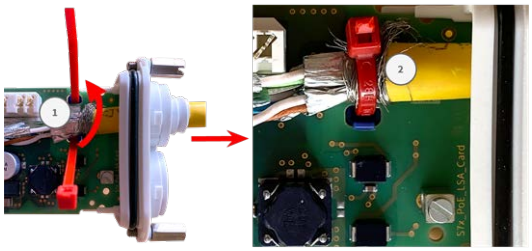


## Attach the Network Cable to the S74 Network Slide-in Board with LSA terminal

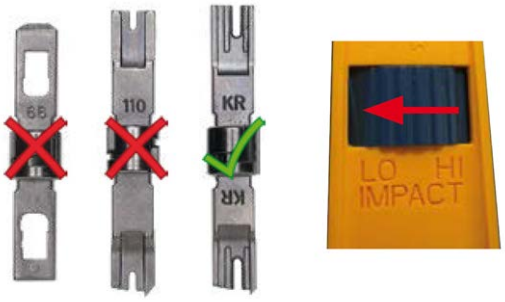
1. Insert the network cable into the interface board and make sure the rubber plug is properly seated all around the opening:




2. Insert the cable tie into the blue guides ① , tie down the network cable ② onto the copper-colored ground plate and cut off the protruding part of the cable tie:




3. Prepare the LSA+/Krone tool:




**CAUTION!**
Always use the proper LSA+/Krone blade and **set the tool to LOW impact**.

4. Connect the wires of the network cable using the LSA+/Krone tool according to the color code sticker inside the box:



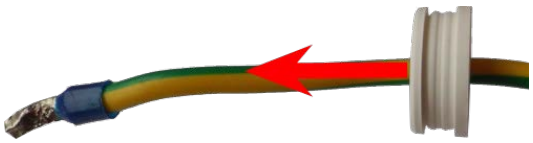
**CAUTION!**
Remove all clipped wire ends to prevent short circuits.

## Attach the Ground Wire to the S74 Network Slide-in Board with LSA terminal

**WARNING!**
For surge protection it is strongly recommended to attach the ground wire!

The maximum length of the ground wire should be 1 m/3.28 ft to the ground potential (e.g. a potential equalization rail, a grounded pole or a grounding rod).

1. Insert the ground wire into the white single-wire rubber plug:



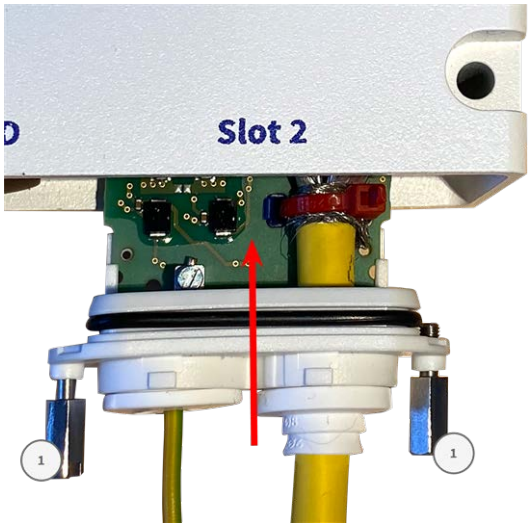
2. Insert the ground wire into the opening of the board and make sure the rubber plug is properly seated all around the opening:

3. Loosen the screw of the ground wire terminal ① , insert the ground wire and properly fasten the screw of the terminal:




## Connect the S74 Network Slide-in Board with LSA terminal with the camera

1. Position the interface board on the guide rails in the slide-in slot and push it in with slight pressure until it clicks into the socket. Then fix the board with the screw bolts ① .




**CAUTION!**
**Do not connect to the network at this stage!**
Since the camera must not run without sensor modules, the network connection will be established only **after** mounting the camera and connecting the sensor modules.

# Installing the S74 Network Slide-in Board with RJ45 and VDC power supply

The S74 Network Slide-in Board with RJ45 and VDC power supply is designed for powering the camera from an external power source and connecting it to the network. The board is not part of the scope of delivery (see Scope of Delivery, p. 13) and must be ordered separately.



**CAUTION!**
The S74 Network Slide-in Board with RJ45 and VDC power supply may only be installed in slot 2 of the camera!

**CAUTION!**
**Do not connect to the network at this stage!**
Since the camera must not run without sensor modules, the network connection will be established only **after** mounting the camera and connecting the sensor modules.

## Procedure

1. **Remove cover from slot 2 of the camera:** Use a screwdriver to loosen both bolt screws ① and then pull out the plastic cover.




2. Insert the power cable into the white single-wire rubber plug.



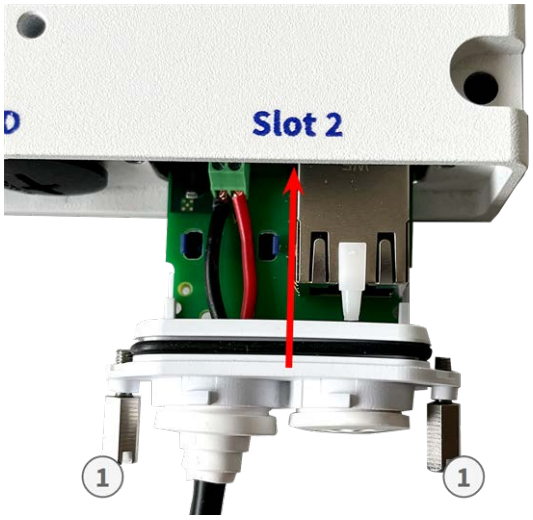
3. Insert the power cable into the opening of the board and make sure the rubber plug is properly seated all around the opening.

4. Loosen the screws of the power terminal ① , insert the wires of the cable and properly fasten the screws of the terminal.




**CAUTION!**
Ensure the correct polarity!

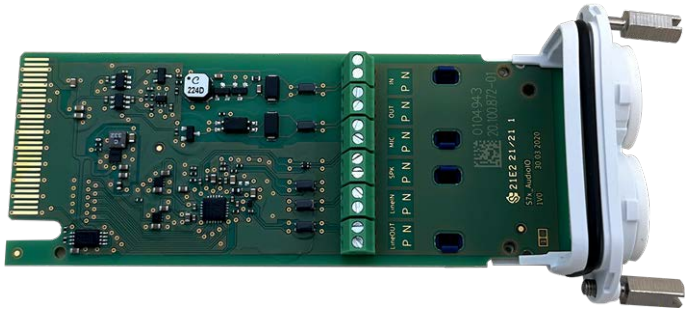
5. Position the interface board on the guide rails in the slide-in slot and push it in with slight pressure until it clicks into the socket. Then fix the board with the screw bolts ① .




**CAUTION!**
**Do not connect to the network at this stage!**
Since the camera must not run without sensor modules, the network connection will be established only **after** mounting the camera and connecting the sensor modules.

## Installing the S74 IO Slide in Board

The S74 IO Slide in Board is designed for powering the camera from an external power source and connecting it to the network. The board is not part of the scope of delivery (see Scope of Delivery, p. 13) and must be ordered separately.



**CAUTION!**
The S74 IO Slide in Board may only be installed in slot 1 of the camera!

**CAUTION!**
**Do not connect to the network at this stage!**
Since the camera must not run without sensor modules, the network connection will be established only **after** mounting the camera and connecting the sensor modules.

**CAUTION!**
Observe the technical specifications of the connector boxes (see S74 IO Slide in Board, p. 30).

## Procedure

1. **Remove cover from slot 1 of the camera:** Use a screwdriver to loosen both bolt screws ① and then pull out the plastic cover.

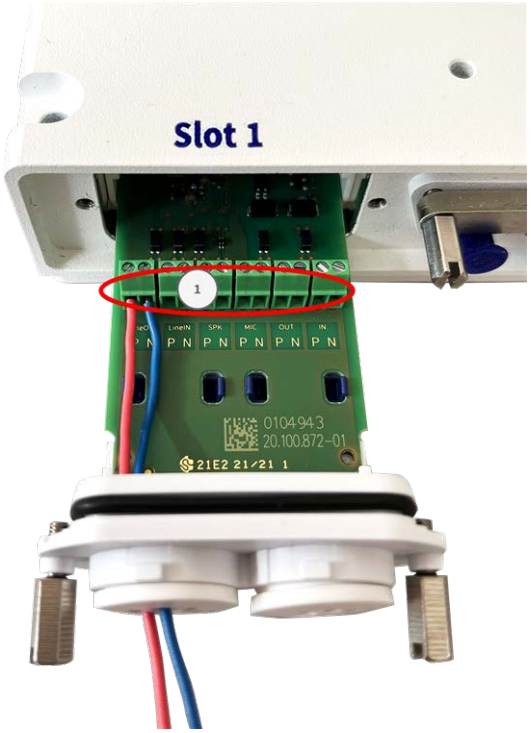
   Insert the I/O device cables into the white single-wire rubber plug:





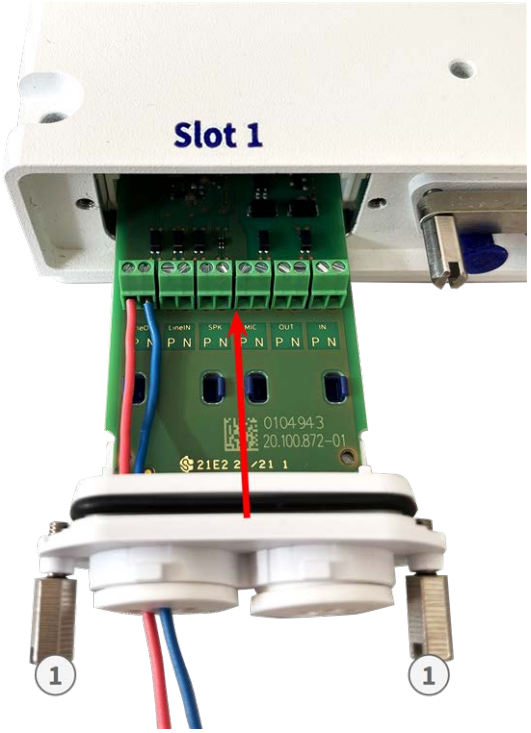

2. Insert the I/O device cables into the opening of the board and make sure the rubber plug is properly seated all around the opening.

3. Loosen the screws of the related I/O device terminal ① , insert the wires of the cable and properly fasten the screws of the terminal:




**CAUTION!**
Ensure the correct polarity!

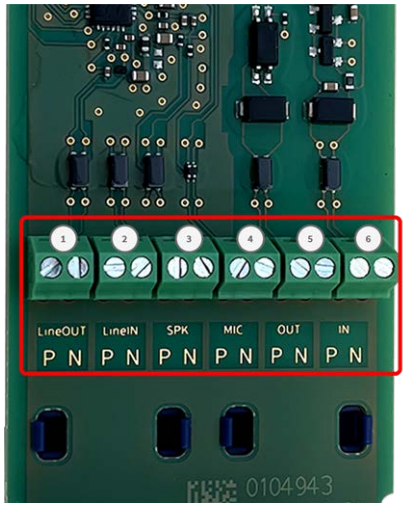
4. Position the interface board on the guide rails in the slide-in slot and push it in with slight pressure until it clicks into the socket. Then fix the board with the screw bolts ① .



**CAUTION!**
**Do not connect to the network at this stage!**
Since the camera must not run without sensor modules, the network connection will be established only **after** mounting the camera and connecting the sensor modules.

## Terminal Connectors

All I/O connections to the camera can be made on the S74 IO Slide in Board which is not part of the part of scope of delivery of the camera.




**Allowed cable dimensions for cables connected to the PCB terminals**

| | |
|---|---|
| AWG | 20 - 26 |
| Rigid | 0.14mm$^2$ - 0.5mm$^2$ |
| Flexible | 0.14mm$^2$ - 0.5mm$^2$ |
| Flexible with ferrule | 0.25mm$^2$ - 0.34mm$^2$ |

| Terminal | Remark |
|---|---|
| Line Out | Headphones with 20mW @ 16 Ohm or 32 Ohm.<br>Audio inputs as a Line Out function to 10k Ohm impedance of receiver. Audio level while connected to 10k Ohm equals -10dbV |
| Line In | Standard Line In: (0dB) Vrms=1V |
| SPK | 0.9W at any 8 Ohm speaker. |
| MIC | Passive microphone to connect (for best results). R_Bias for the microphone is 2.2 kOhm (included on the camera). Microphone impedance < 2.2 kOhm, Operating voltage of the microphone is 2V. |
| IN | ■ Contact Closure (no galvanic isolation necessary) or up to 50V AC/DC<br>■ max. length for cables: 50m |
| OUT | ■ requires pull-up resistor and external power supply (10mA / max. 50V DC - no AC)<br>■ Output may be loaded with max. 50mA<br>■ max. length for cables: depends on loop impedance of the connected cable. |

## Example: switching an LED light using the P7 outputs

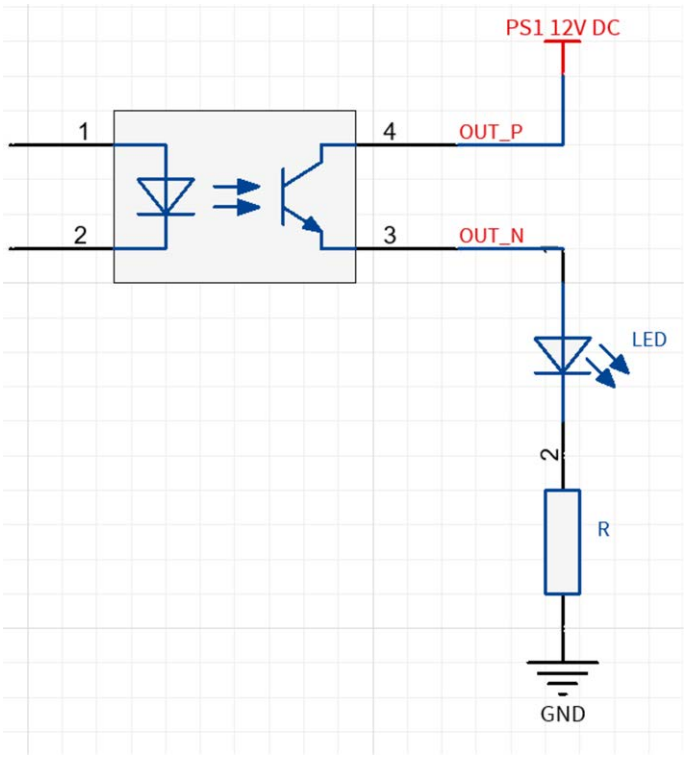
The outputs in the S74 interface board are using an optocoupler with an open collector.

- The outputs will require the use of an external DC power supply up to 50 volts.
- The optimal output current of the optocouple output is around 10mA.
- The maximum limit of the output current is 50mA.
- This must be maintained by an external pull-up resistor.

**NOTE!**
They outputs are not capable of dry connect closure or direct use with AC power

The example shows a simple low voltage low current application such as switching an LED light using the P7 outputs.

The value of the pullup resistor depends on the forward voltage of the LED at the specific current you want to run through it.




**EXAMPLE:**

- Amperage through LED: 10mA
- LED Forward Voltage @ 10mA: 2 V
- Power supply: 12V DC
- Resistor value = (12V – 2V) / 10mA = 1 kΩ

**NOTE!**
For further examples take a look at the MOBOTIX Online Community: https://community.mobotix.com/

## Connecting the Audio Cable Mx-A-S7A-AUCBL05-AN

The cable is designed for connecting the MOBOTIX 7 Audio Module to the Audio IO of the S74 IO Slide in Board. The cable is not part of the scope of delivery (see Delivered Parts and Dimensions) and must be ordered separately.



**Fig. 4: Audio cable with two wire pairs**

Connect the cable to the S74 IO Slide in Board (see Installing the S74 IO Slide in Board, p. 54) according to the following table:

| Wire color | Terminal (Signal) |
|---|---|
| Blue | MIC P |
| Red / White | MIC N |
| Yellow | SPK P |
| White | SPK N |

# Mounting the Camera

You can mount the S74 to any even surface.

Before mounting the MOBOTIX S74 and sensor modules, determine the ideal positions and make sure that the filed of view is not obstructed in any way. Once the modules have been mounted, you can fine-tune the image. If the monitored area changes or the camera has to be installed in a different location, you can exchange the sensor modules.

Before mounting the camera, make sure that a network connection with power supply according to the PoE Plus (802.3at-2009) standard is available at the mounting position (see Connecting the Camera to the Network, p. 63).

**NOTE!**

Drilling template: **www.mobotix.com > Services > Download Center > Marketing & Documentation > Drilling Templates**.

**NOTE!**
Do not use the dowels if the installation surface is wood. Only use the screws to fasten the mounting plate directly on the surface. In order to facilitate screwing in wood, the positions should first be pre-drilled using a 2 mm drill bit, for example (drilling depth just slightly less than screw length).

## Step by Step

1. **Drill the holes:** Mark the holes for drilling using the drilling template (see Drilling Template, p. 11). When drilling, use an 8 mm drill bit and drill holes with at least 60 mm/1.2 in depth.
2. Fully push the dowels M.5, p. 15 into the holes you drilled.
3. **Install the mounting plate:** Place the Camera over the drilled holes (1) and use the four screws M.4, p. 15 with one washer M.6, p. 15 each and the Phillips screwdriver to mount the plate to the wall.




**CAUTION!**
Install on flat surface only.

# Connecting Module Cables to the Camera

**WARNING!**

- Always power down the camera before installing or replacing sensor modules.

  Unplugging or connecting sensor modules of a powered-on camera can irreparably damage the sensor modules and the camera!

- When installing the sensor modules, make sure that the sensor module cables are not damaged or bent sharply.

Up to 4 sensor modules can be connected to the camera. Additionally a USB-C interface is available.

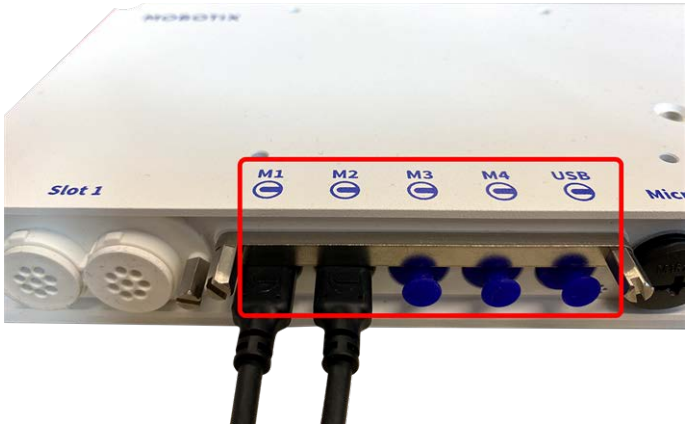
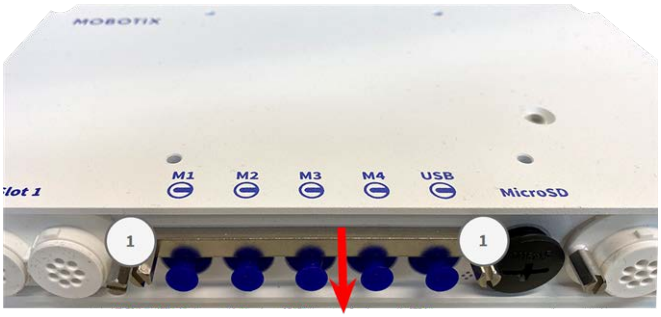


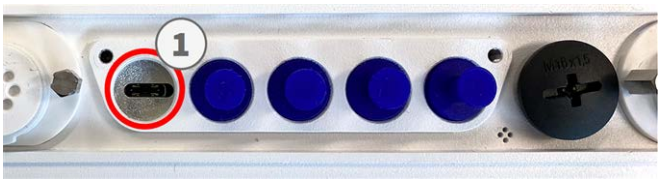

**Fig. 5: 4 Module Connector Ports and 1 USB-C interface**

## Step by Step

1. Use a screwdriver to loosen both bolt screws ① and then pull of the module latch.




2. Remove the blue rubber plug ① from the module connector.

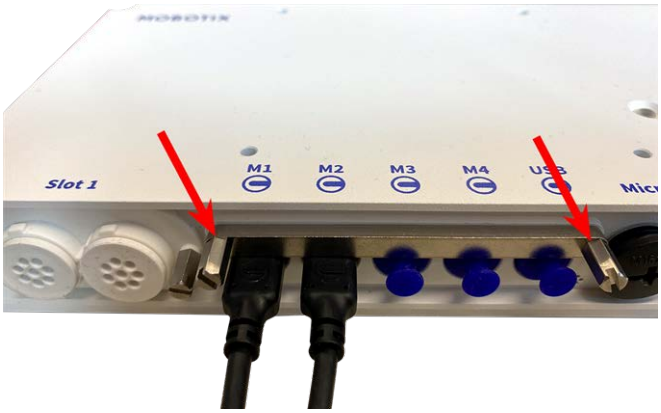



3. Plug the module cable into the module connector ① so that the small lug ② plug fits into the module connector.




**CAUTION!**
If the module cable is not plugged in correctly, the sensor is not recognized by the camera.

4. Fasten the module latch by fastening the two bolt screws shown below.

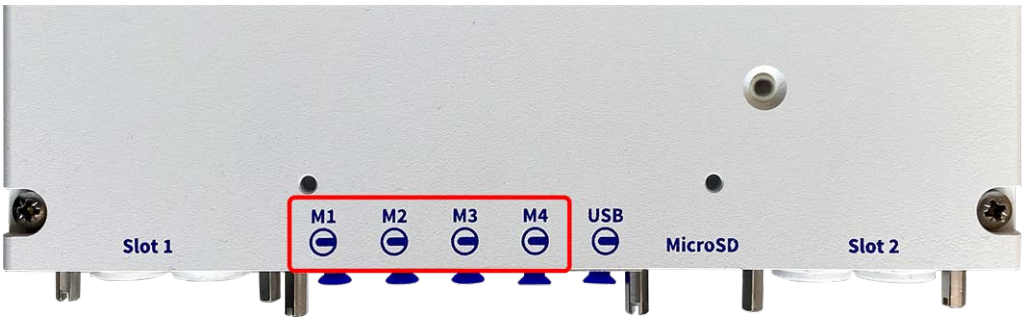



5. Repeat steps 1 to 5 to connect additional modules.

## Sensor Module Combinations

**CAUTION!**

- A maximum of two optical modules can be used.
- One thermal module can be used instead of one **optical** module.
- A maximum of two functional modules can be used.




You can use the following combinations of sensor modules, thermal, and functional modules on the MOBOTIX S74:

| | Module Connectors | | | | |
|---|---|---|---|---|---|
| **Module** | **M1** | **M2** | **M3** | **M4** | **Comments** |
| **Optical Sensor Modules** | | | | | |
| all optical modules | yes | yes | no | no | |
| **Thermal Sensor Modules** | | | | | |
| all **A**-Variants | no | no | yes | no | e.g. Mx-O-M7S**A**-640R050 |
| all **B**-Variants | yes | yes | yes | no | e.g. Mx-O-M7S**B**-640R050 |
| **IR & White Light Modules** | | | | | |
| all IR & white light modules | yes | yes | yes | yes | |
| **Other Functional Modules** | | | | | |

| Module Connectors | | | | | |
|---|---|---|---|---|---|
| **Module** | **M1** | **M2** | **M3** | **M4** | **Comments** |
| Mx-F-MSA | yes* | yes* | yes | yes* | MultiSense module<br>* on M1 & M2 without noise detection |
| Mx-F-Audio | no | no | no | no | Speaker/Microphone; not applicable on MOBOTIX S74 use the **S74 IO Slide-in Board** instead |

# Connecting the Camera to the Network

Network and power supply of the camera are established via an S74 Network Slide-in Board with RJ45 socket (see Installing the S74 Network Slide-in Board with RJ45 socket, p. 46) or an S74 Network Slide-in Board with LSA terminal (see Installing the S74 Network Slide-in Board with LSA terminal, p. 47). A PoE switch provides the camera's power supply.



## Connecting the S74 Network Slide-in Board with RJ45 socket

1. Remove the white rubber plug from the RJ45 network connector.
2. Plug the network cable of the camera into the network connector firmly until the blue sealing ring clicks into place.



## Connecting the S74 Network Slide-in Board with LSA terminal

Plug the network cable of the camera into a PoE network connector of the network switch.

# 6

# Operating the Camera

This section contains the following information:


**Getting Started** ..... **66**

LED states ..... 66

**Boot Options of the Camera** ..... **66**

**Initial Camera Setup** ..... **68**

Check the Preconditions ..... 68

Access the Camera ..... 68

Find the "Real" IP Address of the Camera ..... 71

Network Settings on the Camera in MxMC ..... 72

**Focusing the TELE 15° Sensor Module** ..... **73**

# Getting Started

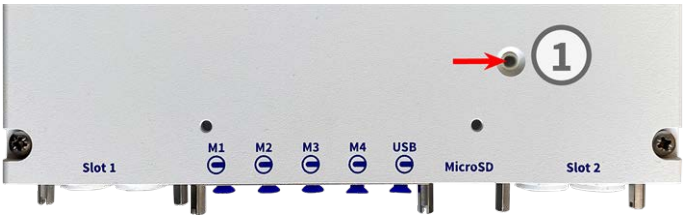
You can use the MOBOTIX S74 with any current browser – or with MxManagementCenter.

You can download MxManagementCenter free-of-charge from **www.mobotix.com > Services > Download Center > Software Downloads**.

1. **Connect the camera to the network.** The network cable will also provide power to the camera(see Connecting the Camera to the Network, p. 63).
2. **Establish a connection to the camera and adjust the network settings if required:** By factory default, MOBOTIX cameras are booting as DHCP client with an additional fixed IP address in the 10.x.x.x range (e.g., 10.16.0.128). Local computer networks usually have IP addresses in the 172 or 192 ranges. Depending on whether a DHCP server is present on the local network or if the network has been set up to use fixed IP addresses, there are several possibilities for establishing a connection to the camera and to change its network settings as described in Initial Camera Setup, p. 68.
3. **Configure camera:** You can use the user interface of the camera in a browser or in MxManagementCenter.

## LED states

Camera LED on top of the camera body displays the following states by default:




| LED status | Meaning |
|---|---|
| green steady on | normal operation |
| green steady flashing | technical error or misconfiguration |

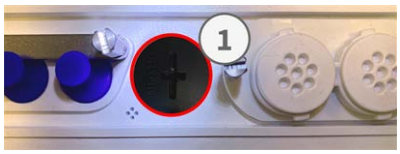
# Boot Options of the Camera

By default, the camera starts as DHCP client and automatically tries to get an IP address from a DHCP server. To start the camera in a mode different from the default mode, you can activate the boot menu of the camera.

**NOTE!**
Pressing the key of the camera will let the camera announce the current IP address of the camera on the speaker (if a speaker is attached to the camera).

**CAUTION!**
When opening the camera, do not insert any objects into the housing. This could damage the camera!

1. Disconnect the camera's power supply.
2. Remove the black cover screw ① with a screwdriver.




3. Take a suitable tool for operating the boot menu (e.g. the enclosed tweezers M.3, p. 15), **but do not use a paper clip or pointed objects!**
4. Reconnect the power supply of the camera.
5. **Activate the boot menu:** The LED at the top of the camera housing lights up 5 to 10 seconds after establishing the power supply and will stay on for 10 seconds. Press the reset key ② with the tool. The camera enters the boot menu, ready for selecting one of the boot options. The LED will flash once. The flash signal will be repeated every second.




> **NOTE!**
> The number of flashes corresponds to the current boot option.

6. **Switch the boot option:** Briefly press the reset button(< 1 sec). After the last boot option, the camera returns to the first boot option (LED flashes once).
7. **Select a boot option:** Press the key longer (> 2 sec). The camera confirms the selection by flashing the LED rapidly for 3 seconds. After 20 sec, the camera will play a sound according to the table below.

| LED Flashes | Boot Option | Meaning | Audio Confirmation |
|---|---|---|---|
| 1x | •/• | This option is not supported on this camera model. | •/• |
| 2x | Factory Defaults | Starts the camera with factory defaults (factory default IP address, users and passwords will not be reset). | **Boing** |
| 3x | Automatic IP Address | Starts the camera as DHCP client and tries to obtain an IP address from a DHCP server. If a DHCP server cannot be found or no IP address can be obtained, the camera starts with its factory default address. | **Boing-Boing** |
| 4x | Backup Operating System | Starts the camera with the recovery system, e.g., in order to recover from a failed update of the camera software. | **Alarm Sound** |

8. Close the SD card housing.

> **NOTE!**
>
> **Starting the Camera With Factory Defaults or an Automatic IP Address (DHCP)**
>
> The configurations loaded when using the boot options 2 and 3 will not be automatically saved to the camera's flash memory. Upon starting the camera the next time, the camera will use the last configuration it stored. You can store the configuration in the camera's flash memory using the **Admin Menu > Store** command.

**CAUTION!**

- Note that you can restore specific parts of the camera configuration afterward by using "Restore" to re-apply the settings still stored in the camera.
- As opposed to resetting the camera using **Admin Menu > Reset configuration to factory defaults**, the user information will not be reset if the camera is booted using the factory defaults.
- When starting the camera with DHCP support (option 2), make sure that the network has a properly functioning DHCP server. If this is not the case, the camera cannot obtain a valid IP address and will fall back to its last IP address.
- You should also make sure that the cameras always get the same IP addresses by mapping the MAC addresses of the cameras to the desired IP addresses.

# Initial Camera Setup

## Check the Preconditions

- Is the camera running (check camera power LED)?
- Is the camera accessible using my current network connection?
- Do I have the necessary information for successfully running the camera on the network?
  - IP address of NTP (*Network Time Protocol*) server.
  - IP address of network gateway (if required).

## Access the Camera

1. Start your web browser.
2. Access the camera using its zeroconf address:
   - Look for the factory IP address such as `10.x.y.z` on the sticker on the camera body or the packaging.
   - Enter this address in the address bar of your browser using the following syntax: `mx10-x-y-z.local`.

     **EXAMPLE:**
     Taking a factory IP address of `10.32.24.129` as an example, you would enter `mx10-32-24-129.local` in the address bar of your browser.

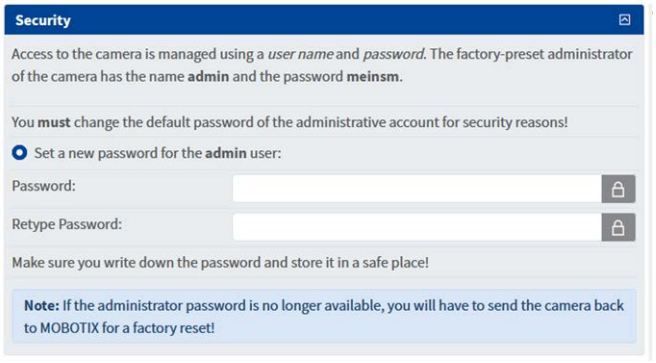
   - Click on **Admin Menu** and enter the default access credentials (`admin`/`meinsm`).

3. In the **Quick Installation** dialog, select your language, then click on >.




4. Continue clicking on > and do not change any settings until you reach the **Security** dialog.

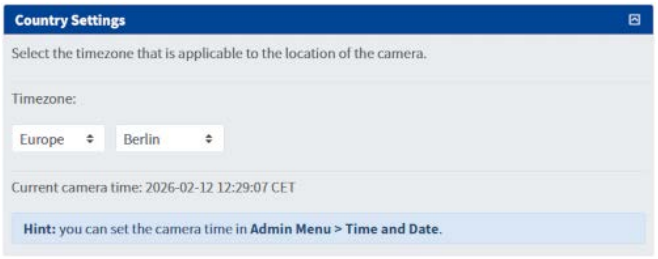
   Set a password for the admin user of the camera. Make sure you keep the password in a safe place.



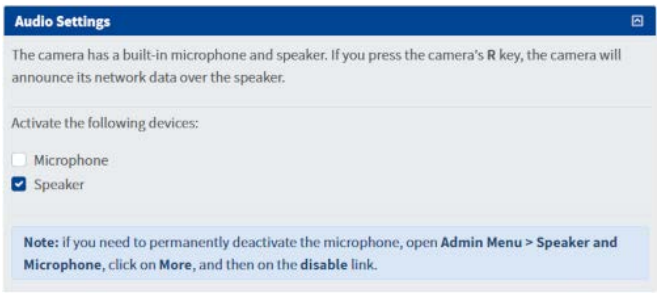

**NOTE!**
Make sure to record the new password in the system documentation!

5. Continue clicking on > and do not change any settings until you reach the **Country Settings** dialog.

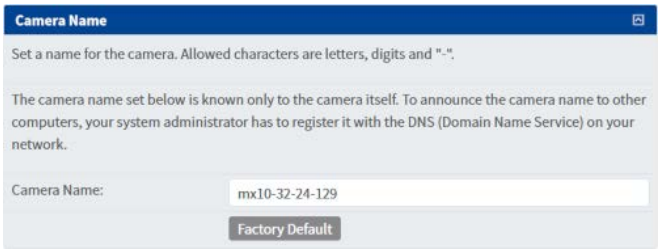
   Check the time zone and adjust it, if necessary.



6. Click on > and in the **Audio Settings** dialog, activate the devices that are available for this camera.



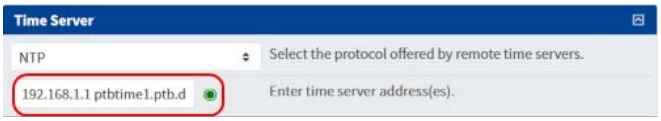

7. Click on > and in the **Camera Name** dialog, enter a descriptive camera name.




> **NOTE!**
> Make sure to record this camera name in the system documentation!

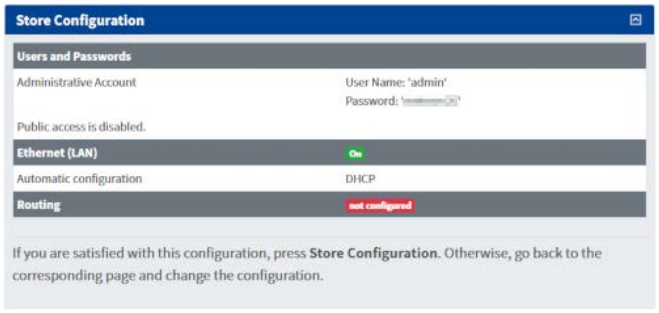
8. Continue clicking on > and do not change any settings until you reach the **Time Server** dialog.

   Enter the IP address of your network time servers as provided by your network administrator (e.g. `192.168.1.1 ptbtime1.ptb.de`; use spaces to separate multiple addresses).

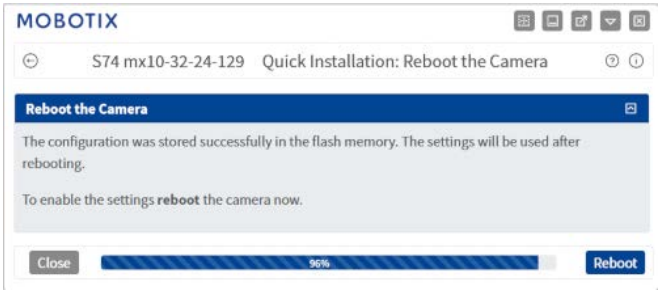



   If the time server is working properly, the LED to the right of the field turns green. A red LED indicates that the server does not work properly.

9. Click on > and review the information in the **Store Configuration** dialog. If everything is correct, print the page and include it in the system documentation.



10. Click on **Store Configuration** and then on **Reboot**.



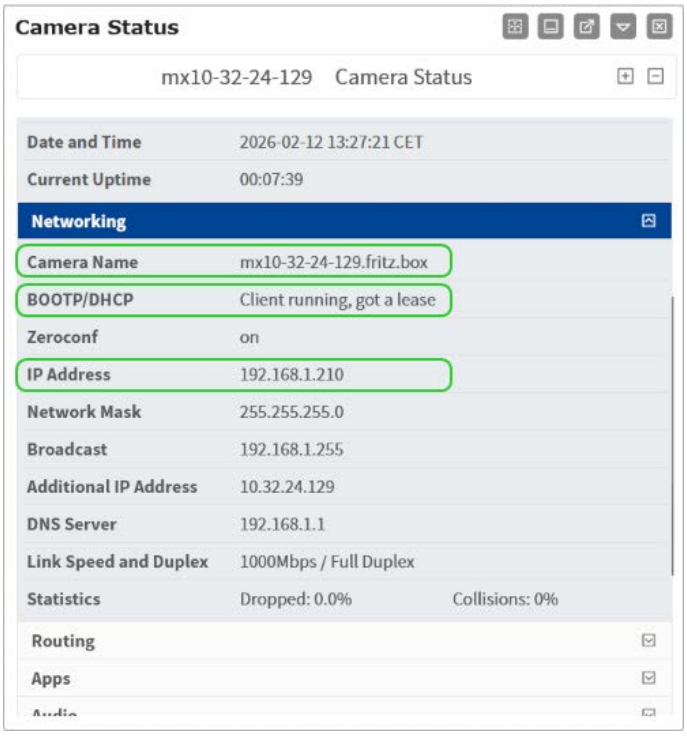

11. Enter the new password you entered in the **Security** dialog when prompted by the camera.

    The camera will now reboot; once it is working again, you will see its live image.

## Find the "Real" IP Address of the Camera

Since you are still using the `mx10-32-24-129.local` zeroconf address, you need to find out the actual IP address of the camera.

1. Click on the **Show Camera Status** icon ⓘ.
2. In the **Camera Status** dialog, click on **Networking**.
   - The **Camera Name** entry shows the camera's current fully qualified domain name.
   - The **BOOTP/DHCP** status *Client running, got a lease* shows that the camera properly received an IP address.
   - The **IP Address** entry shows the camera's current address.
3. You can use either the **Camera Name** (e.g. `mx10-32-24-129.fritz.box`) or the IP address (e.g. `192.168.1.210`) to access the camera from now on.
4. Open a new browser tab and enter the address (e.g. `mx10-32-24-129.fritz.box` or `192.168.1.210`), then enter the access credentials (`admin/<your new password>`).



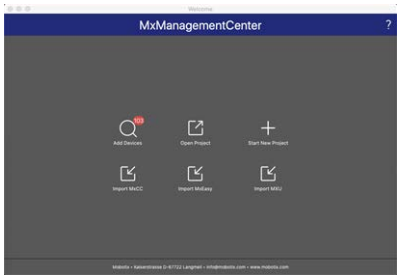

**NOTE!**
Make sure to record this address in the system documentation together with the camera name!

# Network Settings on the Camera in MxMC

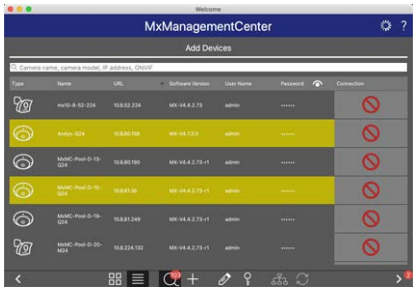
MxManagementCenter is a video management software for setting up and using the entire video surveillance system that provides a range of functions for different tasks and user groups. You can download the newest release of MxManagementCenter from the MOBOTIX website (www.mobotix.com > Services > Download Center > Software Downloads, MxManagementCenter section).

When starting MxManagementCenter for the first time, the configuration wizard opens and automatically starts searching for MOBOTIX cameras. The number of found cameras is shown as a counter next to the **Add Devices** icon. This number is updated automatically if the number of MOBOTIX cameras on the network has changed (i.e., by connecting new/disconnecting existing cameras).

1. Click on **Add Devices**. The cameras are displayed either in a list or as tiles. Use the List and Tile buttons to change the display mode.




The application automatically monitors and displays the operating status of all cameras using corresponding icons.




**EXAMPLE:**

- The camera is not in the same subnet as the computer.
- The user name and password of the camera are not known.

**NOTE!**
Using the Bonjour service (en.wikipedia.org/wiki/Bonjour_(software)), the application finds not only MOBOTIX cameras on the same subnet, but also in other subnets. Normally, you would not be able to establish any connection to cameras in a different network or subnet.

**NOTE!**
This is the case, for example, if you are integrating cameras into a network without DHCP server (i.e. with fixed IP addresses) and the IP address range is different from the 10.x.x.x range supported by the cameras in addition to DHCP.
MxManagementCenter can automatically configure such a camera so that it is "integrated" into your existing network.

2. Select the camera you want to set up and click on **Edit Network Settings** at the bottom of the program window. The **Change Network Settings for Selected Devices** dialog opens.




3. Enter the IP address and the subnet mask of the selected camera.

**NOTE!**
The IP addresses of the other cameras are automatically incremented by 1.

4. Click on **Apply** to apply the settings.

**NOTE!**
For more information on this feature, please read the MxManagementCenter online help or the Tutorial (see www.mobotix.com > Services > Download Center > Documentation > Brochures & Guides > Tutorials).

# Focusing the TELE 15° Sensor Module

Once the camera has been mounted, the **TELE 15° sensor module** should be checked for proper sharpness. You will need the **lens wrench M.2** and the **module wrench M.1** that are part of the Mounting Supplies: Scope of Delivery, p. 15.

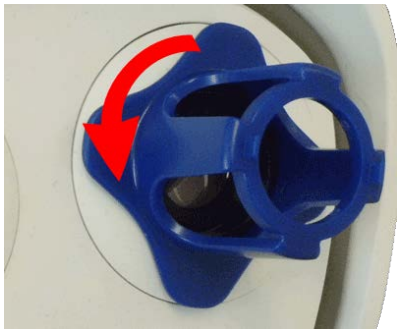



**CAUTION!**
When adjusting the image focus or the field of view of the camera, always make sure that you can see the live image of the camera on your monitor.

To correct image sharpness, you can also make use of the visual **focusing aid** of the camera (see the **Camera Reference Manual**, section **The Live View of the MOBOTIX Camera**).

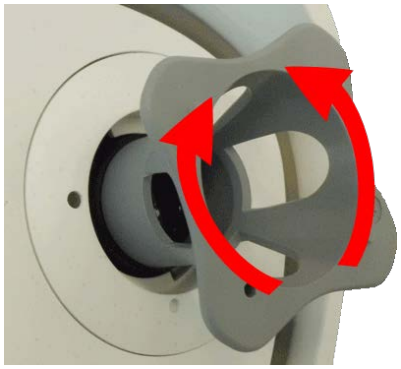
1. Show the live image of the camera on your monitor.
2. Insert the lens wrench into the notches of the sensor module.

3. Turn the wrench counter-clockwise until it stops.



4. Rotate the wrench to the left until the lens protection glass slides out of the sensor module.

5. Insert the module wrench (with its two small pins) into the holes of the lens and cautiously turn to the left and to the right. Adjust the image sharpness according to the live image on the computer monitor:



**CAUTION!**
Never apply force when turning the lens and never screw the lens too deep into the thread since this could damage the image sensor! If in doubt, keep turning the lens counter-clockwise, then turn clockwise to focus the lens.

6. If required, clean the inside of the lens protection glass with a clean, lint-free cloth.



7. Set the lens protection glass onto the notches of the lens wrench and position the protection glass with its two prongs over the corresponding receptacles of the sensor module:





8. Using the lens wrench, press the lens protection glass firmly into the sensor module, until the glass fits flush with the sensor module housing.



9. Turn the lens protection glass clockwise using the lens wrench until it locks in place.
10. If required, clean the outside of the lens protection glass with a clean, lint-free cloth.

**CAUTION!**
After adjusting the focus, make sure that the sensor module is aligned properly and that it is locked in place (use the module wrench to turn the sensor module clockwise until it stops).

7

# Camera Software in the Browser

This section contains the following information:


**Access the Camera in the Web Browser** ..... **78**

**Basic Settings** ..... **78**

**Configuring Sensor Modules** ..... **79**

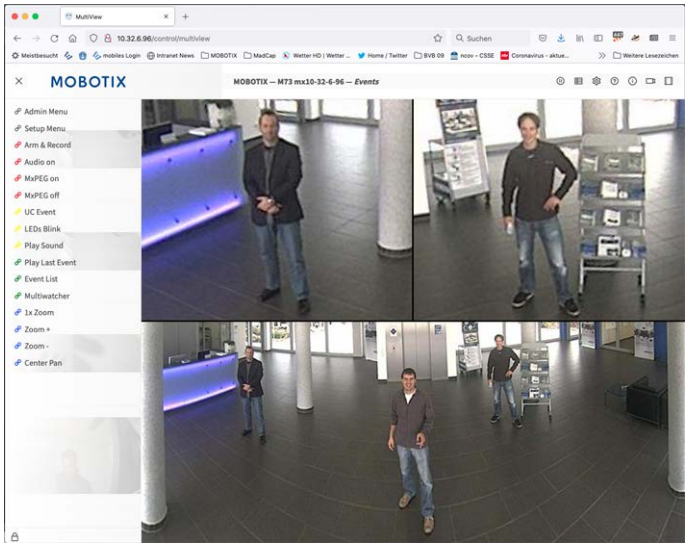
The integrated software of the MOBOTIX S74 features a multitude of functions, such as video motion detection, long-term recording, alarm messaging and video IP telephony. Especially remarkable are the AI-based analytics features and the possibility to install third-party apps on the camera. Thanks to the virtual PTZ features, you can continuously zoom into or out of the live image using either the mouse wheel or a joystick.

When recording images or video sequences, you can choose to store either the visible image area of the live image or the full sensor image. This also allows examining the parts of an image or video that had not been visible in the real-time image section on display at the time of the recording.

Instead of using a web browser, you can also download the free MxManagementCenter from the MOBOTIX website (www.mobotix.com > Support), which allows displaying multiple cameras on one monitor, allows for comfortably searching and evaluating the alarm video clips with audio and provides alerting features. For mobile iOS and Android devices, the free-of-charge MOBOTIX MOBOTIX LIVE App is available.

# Access the Camera in the Web Browser

Once the power and network connection of the MOBOTIX have been established, you can access the interface of the camera software in a web browser.




- Enter the camera's IP address in the address field of a web browser.

**NOTE!**
You can find the IP address of the camera, for example, in the camera housing or on the sticker on the packaging.

# Basic Settings

**NOTE!**
You must change the password when logging in for the first time.

**CAUTION!**
Make sure that you store information on user names and passwords in a secure place.

If you loose the administrator password and cannot access the Administration menu, the password can only be reset at the factory. This service is subject to a service charge.

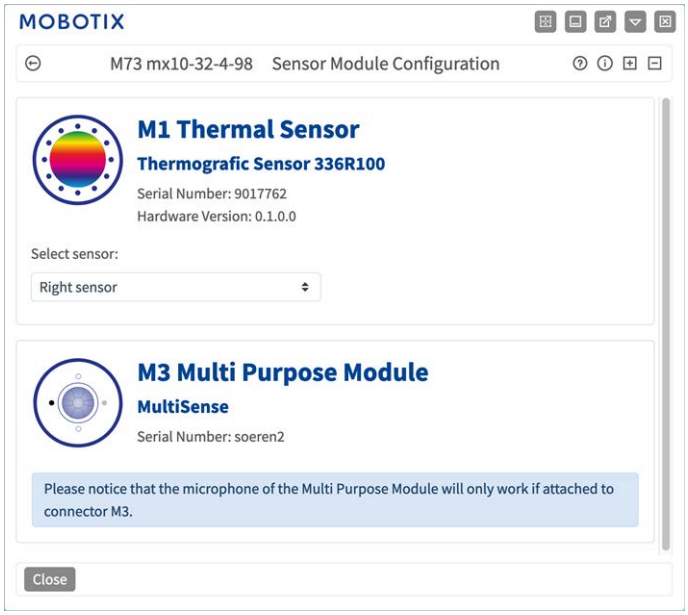
The Quick Installation Wizard will appear automatically when accessing the Administration Menu for the first time. It provides an easy method to adjust the basic camera settings to the current application scenario. For security reasons, it is highly recommended to change the default administrator password after the camera has been configured properly.

**Administering the camera**: You can modify the camera configuration in the Administration Menu or the Setup Menu:

- **Admin Menu:** This menu contains the basic configuration dialogs of the camera (e.g. passwords, interfaces, software update).
- **Setup Menu:** This menu contains the dialogs for configuring the image, event and recording parameters. Some of these settings can be changed using the corresponding Quick Controls in the Live screen.

**NOTE!**
For more information, consult the Reference Manual of the camera (see **www.mobotix.com > Services > Download Center > Marketing & Documentation > User Manuals**.

# Configuring Sensor Modules




Using different combinations of sensor modules of the MOBOTIX S74 will have an influence on the display modes and configuration variants that are available.

An MOBOTIX S74 will automatically check and verify the installed sensor modules upon its first start and at every reboot thereafter (e.g., focal length, Day or Night variant). Please note the following:

- A Thermal Sensor Module , must be attached to connector **M1 (Thermal Sensor)**.
- If only one sensor module is attached, the camera will behave like a mono camera (i.e., there is no automatic Day/Night switching).
- If the modules are not exchanged within the first 12 operating hours, the camera will store the information of new sensor modules in the camera configuration.
- The camera will check the configuration on every reboot to see if the stored sensor modules are still present. If changes of the sensor module configuration have been detected (e.g., if a sensor module had to be replaced), the camera will show a corresponding message in the live image.

If required, the module configuration can be adjusted, e.g. you can define in which camera image (left or right) the sensor module should be displayed in a double image display.

1. Got to **Admin Menu > Hardware Configuration > Sensor Module Configuration**
2. Select the corresponding sensor module types

Do the **Sensor Module Configuration** in the following cases:

- **Switching the displayed camera images:** You want to show the left-hand camera image on the right (and vice versa), without having to physically swap the module connectors at the camera itself.
- **Exchanging sensor modules:** In this case, the MOBOTIX S74 will display a message box and will log a system message to inform you that sensor modules have been exchanged .
- **Adding/activating sensor modules:** You can activate modules that had been deactivated before.
- **Switching off/removing sensor modules:** If required, you can deactivate connected modules in this dialog.

For more information, consult the Reference Manual of the camera (see **www.mobotix.com > Services > Download Center > Marketing & Documentation > User Manuals**.

8

# Maintenance

This section contains the following information:

**Replacing the microSD card** ..... **82**

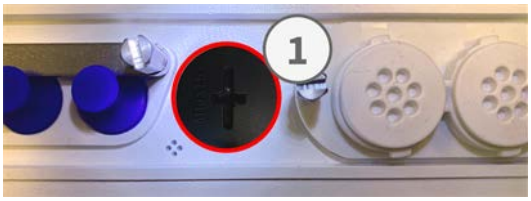
**Cleaning the Camera and Lenses** ..... **83**

# Replacing the microSD card

**CAUTION! Risk of equipment damage and data loss!**

- Before removing the microSD card, disable recording and reboot the camera.
- Disconnect the camera from the power supply.
- Do not touch the circuit board while replacing the microSD card.
- Ensure that the microSD card is not write-protected.

1. **Deactivate storage:** If storage on microSD card is still activated, deactivate it in the cameras web interface: **Admin Menu > Storage on External File Server / Flash Device**, then reboot the camera.
2. Disconnect the camera's power supply.
3. **Open the SD card housing:** Loosen the threaded plug on the housing ① (e.g. using a suitable coin) and remove the plug.




4. **Unlock the microSD card holder:** Using tweezers, gently press the SD card into the slot ② (as indicated by the arrow) until you hear a click. The card is protruding slightly and can be easily removed with the tweezers.




5. **Remove the microSD card.**
6. **Insert microSD card:** Carefully insert the new microSD card into the slot using tweezers and press it in lightly until it clicks into place.
7. **Activate storage:**
   - Format a new microSD card as outlined in the camera's *Storage on External File Server / Flash Device* online help topic.
   - If the microSD card already is formatted with MxFFS, you can activate storage in **Admin Menu > Storage on External File Server / Flash Device**. After rebooting the camera, recording will automatically resume.
8. **Reboot the camera.**

# Cleaning the Camera and Lenses

Clean the camera housing using a mild alcohol-free detergent without abrasive particles.

To protect the lens protection glass, only use the supplied mounting supplies.

## Cleaning the lens protection glass

- Use the wide end of the module wrench M.1, p. 15 to remove/install the lens protection glass. The narrow side of the wrench is used to adjust the sharpness (focal length) of the tele lenses.
- You should clean the lens protection glasses and domes regularly using a clean, lint-free cotton cloth. If the dirt is more persistent, add a mild alcohol-free detergent without abrasive particles.
- Make sure you instruct cleaning personnel on how to clean the camera.

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