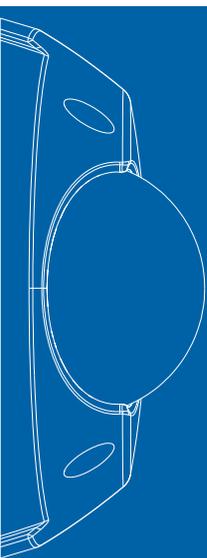




# AXIS 209FD-R/209MFD-R Network Cameras

*Compact, rugged network cameras for mobile video surveillance*



*AXIS 209FD-R/209MFD-R are compact, rugged network cameras designed specifically to withstand tough environments. Their tamper-resistant casing stands up to the vibrations, humidity, dust and fluctuating temperatures found e.g. in buses and trains.*



## **FLAT DESIGN** >

AXIS 209FD-R/209MFD-R are palm-sized discreet network cameras specifically designed for mass transit vehicles. The flat, tamper-resistant casing makes them ideal for installation e.g. in buses or trains.

## **PROGRESSIVE SCAN AND MEGAPIXEL** >

Progressive scan technology provides full resolution images of moving objects, with no distortion. AXIS 209FD-R provides VGA resolution, whereas AXIS 209MFD-R is a 1.3 megapixel network camera.

## **VIBRATION, HUMIDITY AND DUST RESISTANT** >

The rugged design is adapted for handling the vibrations, humidity, dust and temperature fluctuations typical for mass transit vehicles.

## **ACTIVE TAMPERING ALARM** >

AXIS 209FD-R/209MFD-R feature intelligent capabilities such as the active tampering alarm, which offers effective casing protection by sending an alarm when tampering attempts like blocking or spray-painting are detected.

## **POWER OVER ETHERNET** >

Power over Ethernet (IEEE 802.3af) supplies power to the cameras via the network, eliminating the need for power cables and reducing installation costs.

## FOR DEMANDING ENVIRONMENTS

AXIS 209FD-R/209MFD-R Network Cameras are compact, rugged network cameras designed specifically for the demanding environments found in mass transit vehicles.

## COMPACT & DISCREET DESIGN

The interiors of buses and trains generally allow very limited space for video surveillance equipment. The curved surfaces and soft padding usually found in these vehicles can provide quite a challenge when mounting a camera. Thanks to their flat and compact design, AXIS 209FD-R/209MFD-R are ideal for installing in these situations. Measuring only 4 cm (1.6 inches) in height, AXIS 209FD-R/209MFD-R are discreet, take up a minimum of space, and fit perfectly in any area of a bus or train. Every part of the cameras are optimized, from the electronic and camera components, to the placement of the network connector.



## PROGRESSIVE SCAN AND MEGAPIXEL

When using traditional, interlaced scanning techniques, image quality is degraded when a frame of recorded video is frozen. AXIS 209FD-R/209MFD-R instead use progressive scan, which drastically reduces motion blur and provides undistorted images at full resolution. The crisp and clear images delivered by AXIS 209FD-R/209MFD-R facilitate the identification of individuals and objects of interest. AXIS 209FD-R, with its VGA sensor, is adapted for mass transit vehicles such as buses and track-bound traffic, whereas AXIS 209MFD-R, featuring 1.3 megapixel resolution, gives excellent image detail in environments with good lighting conditions, e.g. in trains.

## SIMULTANEOUS MOTION JPEG AND MPEG-4

AXIS 209FD-R/209MFD-R offer simultaneous Motion JPEG and MPEG-4 video streams. These streams can be optimized for image quality and bandwidth efficiency, by configuring the frame rate, resolution, compression level and format.

## ACTIVE TAMPERING ALARM

AXIS 209FD-R/209MFD-R feature an active tampering alarm, an intelligent feature incorporated in the camera, further strengthening the benefits of digital IP-based video. The tampering alarm detects if AXIS 209FD-R/209MFD-R are blocked, spray-painted or moved.

## RESISTANT TO VIBRATIONS, HUMIDITY AND DUST

AXIS 209FD-R/209MFD-R are designed to withstand the tough and changing conditions in a bus or train. They have been developed in cooperation with leading public transport operators, to ensure a robust construction that can withstand these conditions without premature wear and tear. The rugged design is built to handle the vibrations and dust typically found in mass transit vehicles. The small built-in heater takes care of any moisture and thereby eliminates condensation on the lens or cover.

## EASY INSTALLATION

AXIS 209FD-R/209MFD-R are quick and easy to install. Their design allows flexible installation on ceilings or side panels. Sloping surfaces can be compensated for, by horizontal camera adjustment, and tilt and rotation of the lens. The AXIS Installation Monitor tool can be used to quickly and easily view the image from the camera, to check the position and focus. AXIS 209MFD-R offers digital PTZ functionality for remote adjustment of viewing angle.



## POWER OVER ETHERNET

Equipped with Power over Ethernet (PoE) support, AXIS 209FD-R/209MFD-R use the Ethernet cable for both power and video, making installation quick and cost-efficient. The cable is fitted with a connector specially designed to withstand the vibrations in buses and trains, with a choice of two different types: either a rugged RJ-45 or an M12 connector.



## POWERFUL EVENT MANAGEMENT

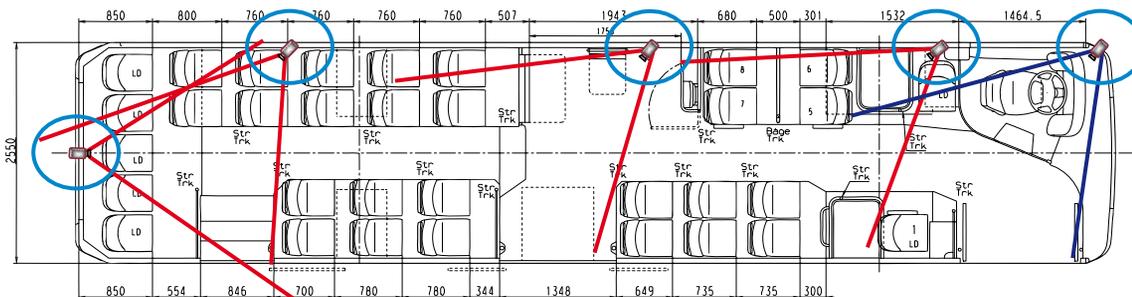
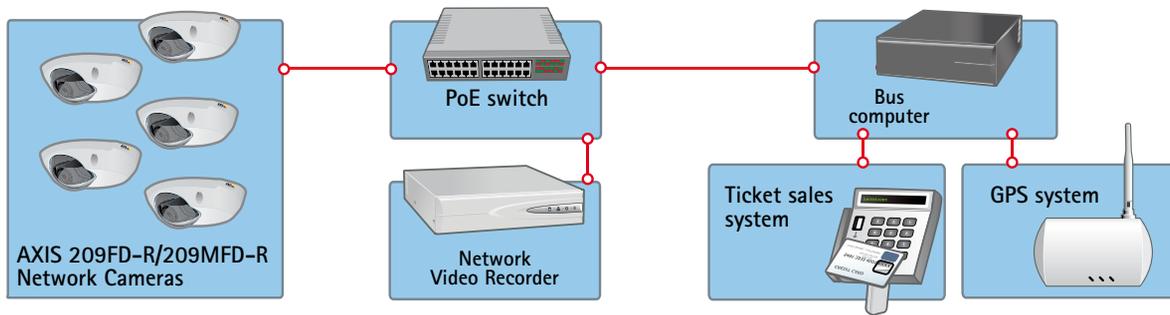
AXIS 209FD-R/209MFD-R offer powerful event management functionality such as video motion detection, and pre/post-alarm buffering securing images just before and after an alarm.

## OPEN PROGRAMMING INTERFACE

AXIS 209FD-R/209MFD-R include VAPIX®, the industry-standard application programming interface (API) from Axis Communications, which facilitates the development of customized software solutions. The API ensures compatibility with the market's widest range of third-party video management software, available from Axis Application Development Partners.

## A TYPICAL INSTALLATION

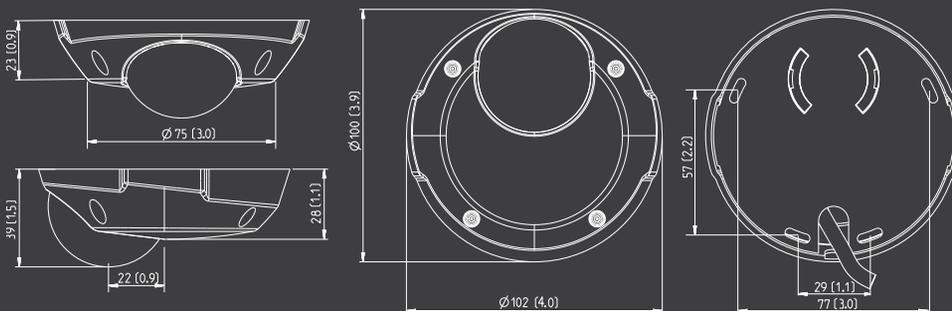
The installation is facilitated by powering the cameras with a PoE-enabled switch.



The five cameras in this drawing are all powered by one PoE switch. Each camera uses a single cable for both power and video.

## DIMENSIONS

Measurements in millimeters (inches)



## SECURITY AND NETWORK MANAGEMENT

AXIS 209FD-R/209MFD-R provide a high degree of security, featuring multi-level password protection, IP address filtering and HTTPS encryption. IPv6 is supported in addition to IPv4, eliminating the need for network address translation and simplifying configuration in an IPv6-enabled network. Network utilization is optimized with the support for Quality of Service (QoS), which enables reservation of network capacity and prioritization of mission critical surveillance in a QoS-aware network.

## TECHNICAL SPECIFICATIONS – AXIS 209FD-R/209MFD-R NETWORK CAMERAS

<b>Models</b>	AXIS 209FD-R: VGA AXIS 209MFD-R: Megapixel Both are available in two variants: – With a rugged RJ-45 connector – With a rugged M12 connector	<b>Casing</b>	Polycarbonate base and polycarbonate transparent cover Tamper-proof mounting IP66-rated casing
<b>Image sensor</b>	AXIS 209FD-R: 1/4" Progressive Scan RGB VGA CMOS AXIS 209MFD-R: 1/3" Progressive Scan RGB 1.3 Megapixel CMOS	<b>Processors and memory</b>	CPU, video processing and compression: ARTPEC-A AXIS 209FD-R: RAM: 32 MB, Flash: 8 MB AXIS 209MFD-R: RAM: 64 MB, Flash: 8 MB
<b>Lens</b>	AXIS 209FD-R: 3.0 mm, F2.0, fixed iris Focus range: 0.5 m to infinity AXIS 209MFD-R: 3.6 mm, F1.8, fixed iris Focus range: 0.5 m to infinity	<b>Power</b>	Power over Ethernet (IEEE 802.3af), Class 1
<b>Angle of view</b>	AXIS 209FD-R: 66° horizontal AXIS 209MFD-R: 74° horizontal	<b>Operating conditions</b>	-20 – 50 °C (-4 – 122 °F) Humidity 20–80% RH (non-condensing)
<b>Camera angle adjustment</b>	Tilt 0–90° Pan ±10° Rotation ±10°	<b>Storage conditions</b>	-30 – 70 °C (-22 – 158 °F)
<b>Light sensitivity</b>	AXIS 209FD-R: 1.5 – 10000 lux, F2.0 AXIS 209MFD-R: 3 – 10000 lux, F1.8	<b>Installation, management and maintenance</b>	AXIS Camera Management tool on CD, and web-based configuration Configuration of backup and restore Firmware upgrades over HTTP or FTP, firmware available at <a href="http://www.axis.com">www.axis.com</a>
<b>Video compression</b>	Motion JPEG MPEG-4 Part 2 (ISO/IEC 14496-2) with motion estimation, Profiles: SP and ASP	<b>Video access from web browser</b>	Camera live view Video recording to file (ASF)
<b>Resolutions</b>	AXIS 209FD-R: 9 resolutions from 640x480 to 160x120 via API, 6 selections via configuration web page AXIS 209MFD-R: 24 resolutions from 1280x1024 to 160x90 via API, 19 selections via configuration web page	<b>Minimum web browsing requirements</b>	Pentium III CPU 500 MHz or higher, or equivalent AMD 128 MB RAM DirectX 9 compatible graphics board, Direct Draw Windows XP, 2000, Internet Explorer 6.x or later
<b>Frame rate</b>	AXIS 209FD-R: Up to 30 fps at all resolutions (Motion JPEG or MPEG-4) AXIS 209MFD-R: Up to 12 fps at 1280x1024 (Motion JPEG) Up to 8 fps at 1280x1024 (MPEG-4)		For other operating systems and browsers see <a href="http://www.axis.com/techsup">www.axis.com/techsup</a>
<b>Video streaming</b>	Simultaneous Motion JPEG and MPEG-4 Controllable frame rate and bandwidth Constant and variable bit rate (MPEG-4)	<b>System integration support</b>	Open API for application integration, including VAPIX® from Axis Communications*, AXIS Media Control SDK*, event trigger data in video stream Quality of Service (QoS) Layer 3, DiffServ Model Embedded Linux operating system * Available at <a href="http://www.axis.com">www.axis.com</a>
<b>Image settings</b>	Compression levels: 100 Rotation: 0°, 180° Configurable color level, brightness, sharpness, white balance, exposure control Overlay capabilities: time, date, text, image or privacy mask	<b>Supported protocols</b>	IPv4/v6, HTTP, HTTPS, SSL/TLS*, TCP, ICMP, QoS, SNMPv1/v2c/v3 (MIB-II), RTSP, RTP, UDP, IGMP, RTCP, SMTP, FTP, DHCP, UPnP, Bonjour, ARP, DNS, DynDNS, SOCKS, NTP More information on protocol usage available at <a href="http://www.axis.com">www.axis.com</a>
<b>Pan/tilt/zoom (AXIS 209MFD-R)</b>	Digital PTZ 20 preset positions, guard tour, sequence mode Supports Windows compatible joysticks		* This product includes software developed by the Open SSL Project for use in the Open SSL Tool kit ( <a href="http://www.openssl.org">www.openssl.org</a> )
<b>Shutter time</b>	AXIS 209FD-R: 1/10000 s to 1/4 s AXIS 209MFD-R: 1/15000 s to 1/4 s	<b>Accessories (included)</b>	AXIS PoE Midspan 1–port (in single packs of the RJ-45 camera variants only), key for tamper-proof screws, silica gel bag, Installation Guide, CD with installation tool, recording software and User's Manual, licenses for 1 encoder and 1 decoder, decoder software for Windows
<b>Security</b>	Multiple user access levels with password protection IP address filtering HTTPS encryption	<b>Video management software (not incl.)</b>	AXIS Camera Station – Video management software for viewing, recording and archiving up to 50 cameras See <a href="http://www.axis.com/partner/adp/">www.axis.com/partner/adp/</a> for more software applications via partners
<b>Users</b>	20 simultaneous users Unlimited number of users using multicast (MPEG-4)	<b>Accessories (not incl.)</b>	Multi-user decoder license pack Rugged, male RJ-45 connector compatible with the RJ-45 camera variants
<b>Alarm and event management</b>	Events triggered by video motion detection, active tampering alarm or according to a schedule Image upload over FTP, email and HTTP Notification over TCP, email and HTTP AXIS 209FD-R: 9 MB of pre- and post alarm buffer (approx 5 min of 320x240 resolution video at 4 fps) AXIS 209MFD-R: 20 MB of pre- and post alarm buffer (250 images or more, in full 1280x1024 resolution)	<b>Approvals</b>	CE: Automotive environment EN 55022 Class B, EN 10000-3-2, EN 61000-3-3, EN 55024, EN 55025, FCC Part 15, Subpart B Class B, ICES-003 Class B, VCCI Class B, C-tick AS/NZS CISPR 22, MIC Class A, EN 60950-1, IP66 EN 50155: vibration, mechanical shock and temperature ISO 16750-3: vibration
<b>Connector</b>	RJ-45 variant: Rugged, female RJ-45 connector M12 variant: Rugged, male D-coded M12 connector	<b>Dimensions (H x W x D) and weight</b>	39 x 102 x 100 mm (1.5" x 4.0" x 3.9") 0.18 kg (0.40 lb)

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