



MIC series product guide

Fully functional pan-tilt-zoom cameras



BOSCH

Invented for life

Introduction



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MIC series cameras

The MIC series of fully functional **Pan-Tilt-Zoom (PTZ)** cameras has been designed to offer an extremely reliable, robust and high quality surveillance solution for security applications that demand the very best performance. Precision engineered to exacting standards, the series offers numerous benefits over traditional dome and PTZ cameras, and is broken down into specific ranges that offer a best fit solution for virtually any application.

MIC series benefits

- ▶ Brushless motor technology* for ultra-reliable, smooth and whisper quiet operation
- ▶ Optically perfect, flat viewing window with integrated wiper option for the perfect picture, regardless of the weather
- ▶ Full 360° continuous rotation pan and up to 320° tilt control
- ▶ Ground breaking resolver technology for pin-point accuracy and control
- ▶ Rated to industry leading IP68** for use in even the harshest conditions
- ▶ Faultless operation mounted either upright or inverted. Certain ranges have a canted option for pole mount applications
- ▶ Multi-protocol operation – compatible with all leading control systems
- ▶ Plug and play cable carrying video, telemetry and power
- ▶ Vandal resistant
- ▶ Full range of brackets
- ▶ Comprehensive three-year warranty

* Not available with MIC440AX models

** MIC412TI models rated to IP67



MIC series applications

With seven unique ranges forming the MIC series - aluminum, stainless steel, underwater, ATEX certified (explosion protected), infrared, public address and thermal – a suitable camera solution can be found for virtually any application. What's more, with a host of easy

to specify options to choose from including camera module, privacy, alarm, washer, colour and heater options, it is finally possible to enjoy the full benefits of best-fit CCTV.

Traditional CCTV:	Town centers, car parks, traffic and highways monitoring, shopping malls, schools
High security:	Police HQ, embassies, airports, nuclear, critical infrastructure, government buildings
Hostile environments:	Problem housing estates, high crime areas
Marine environments:	Ports, sea fronts, harbours, ships and yachts
Extreme environments:	Coastal surveillance, wet and rainy outdoor surveillance, corrosive environments, desert conditions, cold environments
Architectural:	Stainless steel, modern buildings
Rapid deployment:	Police vehicles, building site security, perimeter security, events, surveillance vehicles
Prestigious developments:	Museums, visitor centers, science parks, heritage town centers
System upgrades:	Replacing traditional CCTV cameras

How to build your perfect MIC series camera

For a full MIC solution you will need to consider the following:

1. MIC series camera
2. MIC series Power Supply Unit (PSU)
3. If Bosch Bi-Phase control is required add Bi-Phase converter card (see page 11 for options)
4. MIC series cable (video, telemetry and power all-in-one)
5. Optional bracketry – such as conduit adapter
6. Optional keyboard

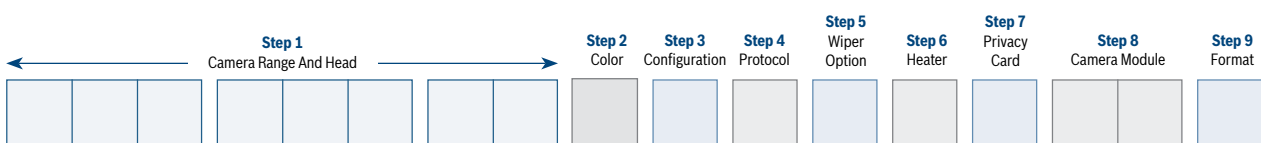
An overview of part numbers for MIC series cameras

MIC series part numbers are constructed of 17 digits, specifically designed to incorporate all available options for each camera.

Simply go to the relevant camera range within these pages and construct your part number.

Power Supply Units

MIC series Power Supply Units (PSUs) are available with various input voltages and house optional extras such as alarm cards and washer pump drives (PSUs suitable for infrared ranges have these built in). Please see page 11 for further details.



MIC400 ranges



MIC400 Aluminum (MIC400AL)



- ▶ 6mm thick aluminum casing
- ▶ Rated to IP68
- ▶ Brushless motors

Applications	
General CCTV	Prestigious developments
Town centers	Broadcast
Extreme environments	Marine/coastal
Rapid deployment	Architectural
High security	

MIC400 Stainless Steel (MIC400ST)



- ▶ Grade 316 ultra corrosion resistant stainless steel casing
- ▶ Rated to IP68
- ▶ Brushless motors

Applications	
Marine/coastal	Medical
Shipping	Food production
Oil rigs	Architectural
Nuclear	

MIC400 Infrared (MIC400IR)



- ▶ 6mm thick aluminum casing
- ▶ Rated to IP68
- ▶ Twin 850nm IR illuminators – with Black Diamond technology
- ▶ Brushless motors

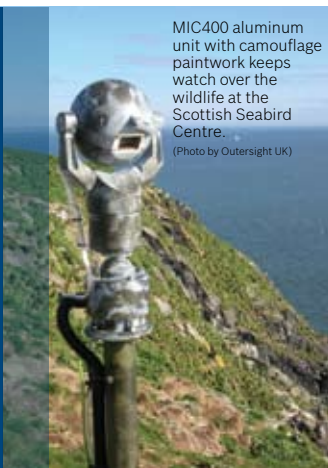
Applications	
General CCTV	High security
Town centers	Prestigious developments
Railway and bus stations	Marine/coastal
Rapid deployment	Architectural

MIC400 Public Address (MIC400PA)



- ▶ 6mm thick aluminum casing
- ▶ Rated to IP68 (speakers rated to IP66)
- ▶ Twin 100dB speakers for directional sound
- ▶ Third party amplifier required
- ▶ Brushless motors

Applications	
Town centers	Rapid deployment
Railway stations	Stadia
Events	Remote locations
Crowd control	Airports



MIC400 aluminum unit with camouflage paintwork keeps watch over the wildlife at the Scottish Seabird Centre.
(Photo by Outsight UK)



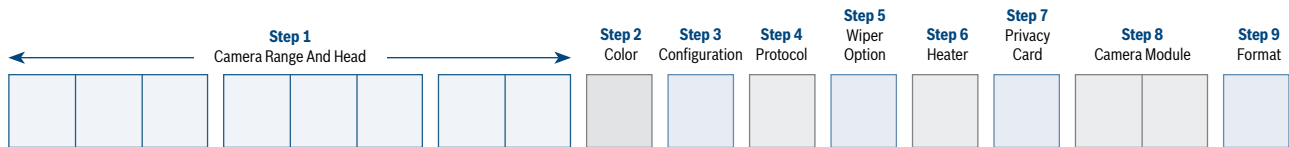
MIC400 infrared unit mounted on an extendable mast gives Tayside Police an eagle eye view.

MIC400 Underwater (MIC400UL/UT)



- ▶ Choice of aluminum (UL) or stainless steel (UT) casings
- ▶ Up-rated seals for submersion down to 25 meters
- ▶ Rated to IP68
- ▶ Brushless motors

Applications	
Ports & harbors	Marine research
Nuclear	Swimming pools



	Part No	MIC400 range - camera heads
Step 1 Choose camera head	MIC400AL	¼" PTZ, 470TVL, 18x or 36x day/night camera, IP68, built-in telemetry, choice of protocols, aluminum case
	MIC400IR	¼" PTZ with twin 850nm Black Diamond IR illuminators featuring 470TVL, 18x or 36x day/night camera, IP68, built-in telemetry, choice of protocols, aluminum case
	MIC400PA	¼" PTZ with twin speakers, 470TVL, 18x or 36x day/night camera, IP68/66, built-in telemetry, choice of protocols, aluminum case
	MIC400ST	¼" PTZ, 470TVL, 18x or 36x day/night camera, IP68, built-in telemetry, choice of protocols, grade 316 stainless steel case
	MIC400UL	¼" PTZ, 470TVL, 18x or 36x day/night camera, IP68, built-in telemetry, choice of protocols, aluminum case - suitable for immersion up to 25 meters
	MIC400UT	¼" PTZ, 470TVL, 18x or 36x day/night camera, IP68, built-in telemetry, choice of protocols, stainless steel case suitable for immersion in upto 25 meters
	Part No	MIC400 range - colours
Step 2 Choose color	B	Black - RAL9005 (not available on ST or UT)
	G	Gray - RAL7001 (not available on ST or UT)
	W	White - RAL9003 (not available on ST or UT)
	S	Stainless steel - natural metal (ST and UT only)
	Part No	MIC400 range - configuration
Step 3 Choose configuration	U	Upright mount (can be software inverted)
	C	Canted mount
	Part No	MIC400 range - protocols
Step 4 Choose protocol	W	Forward Vision
	D	Pelco P/D
	P	Bosch
		Additional protocols can be uploaded to the MIC camera using the USB Protocol Programmer available separately: MIC-USB485CVTR. For more information see the Protocol Programmer Manual
	Part No	MIC400 range - wiper
Step 5 Choose wiper	1	Wiper (not available on UL or UT)
	2	No wiper (UL and UT models only)
	Part No	MIC400 range - heater
Step 6 Choose heater	3	Heater
	4	No heater
	Part No	MIC400 range - privacy
Step 7 Choose privacy	5	Privacy
	6	No privacy
	Part No	MIC400 range - camera
Step 8 Choose camera	18	18x camera module
	36	36x camera module
	Part No	MIC400 range - camera format
Step 9 Choose format	P	PAL format camera module
	N	NTSC format camera module

Part Number	
MIC400ST	No privacy available, heater is STD.
MIC400UL/T	No canted or white options. all Underwater MIC have heaters as standard. No privacy card available.
MIC400PA	Available in grey only. No canted or heater options. No privacy.

Popular configuration examples	
Part Number	Description
MIC400ALBUP14618P	MIC400 aluminum, black, upright, Bosch protocol, integrated wiper, 18x day/night camera, PAL
MIC400ALGUD14618P	MIC400 aluminum, gray, upright, Pelco protocol, integrated wiper, 18x day/night camera, PAL
MIC400IRBUP14618P	MIC400 infrared, black, upright, Bosch protocol, integrated wiper, 18x day/night camera, PAL
MIC400IRBUP14636P	MIC400 infrared, black, upright, Bosch protocol, integrated wiper, 36x day/night camera, PAL
MIC400STSUP13518P	MIC400 stainless steel, upright, Bosch protocol, wiper, heater, 18x day/night camera, PAL

MIC412 range



Containing both a high quality optical day/night camera module and an FLIR thermal imaging module that sit side-by-side within the camera housing, the **compact MIC412 thermal range** turns from a high resolution overview camera into a high performance thermal camera at the press of a single button on the control keyboard. A choice of 18x or 36x day/night camera modules are available with the latest 50mm un-cooled FLIR thermal

imager to provide a range of enhanced viewing options, such as spectral heat variance and hot and cold spot highlights with a human detection range of over 780 meters. What's more, the FLIR thermal imager has built-in sun protection that allows the unit to 'self-heal' if inadvertently pointed at the sun.

MIC412 Thermal (MIC412TI)



- ▶ Dual spectra unit featuring both optical and thermal camera modules
- ▶ Switch from optical to thermal at the press of a single button
- ▶ 50mm FLIR thermal imager with a refresh rate of 9 Hz
- ▶ Sun protected
- ▶ Rated to IP67
- ▶ Brushless motors

Applications

Perimeter security	Fire departments
Border patrol	Law enforcement
Rescue services	

The thermal advantage

Thermal cameras do not rely on traditional optics to give a picture, instead they pick up heat sources and display the variances on screen. This enables them to give extremely detailed pictures in demanding conditions such as fog, rain, pitch-black darkness and even through smoke and snow.

Application examples

The MIC412 has been used in a variety of mobile and fixed applications from vehicle mounted surveillance at a busy London airport and security at sea on a luxury super yacht to perimeter protection for various critical sites. Each benefits from the robust nature of the MIC412 and the sheer power of detection it provides.



Optical image



Thermal image - White hot spot mode



Thermal image - Black hot spot mode



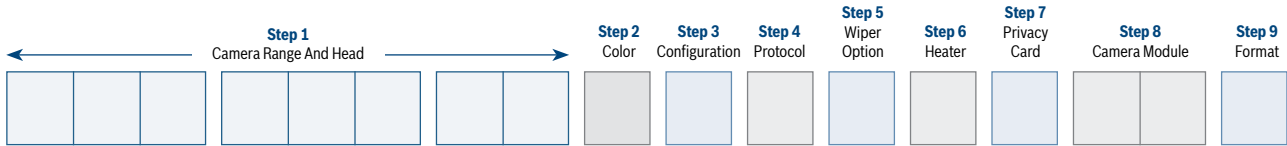
Thermal image - Ice and fire mode



Thermal image - Glow bow mode



Thermal image - Iron bow mode



	Part No	MIC412 range - camera heads
Step 1 Choose camera head	MIC412TI	¼" dual spectra "thermal" PTZ, 470TVL optical 18x day/night camera, FLIR 50mm 9Hz thermal imager, IP67, built-in telemetry, choice of protocols, aluminum case
	Part No	MIC412 range - colours
Step 2 Choose color	B	Black - RAL9005
	G	Gray - RAL7001
	W	White - RAL9003
	Part No	MIC412 range - configuration
Step 3 Choose configuration	U	Upright mount (can be software inverted)
	Part No	MIC412 range - protocols
Step 4 Choose protocol	W	Forward Vision
	D	Pelco P/D
	P	Bosch
		Additional protocols can be uploaded to the MIC camera using the USB Protocol Programmer available separately: MIC-USB485CVTR. For more information see the Protocol Programmer Manual
	Part No	MIC412 range - wiper
Step 5 Choose wiper	1	Wiper fitted as standard
	Part No	MIC412 range - heater
Step 6 Choose heater	3	Heater fitted as standard
	Part No	MIC412 range - privacy
Step 7 Choose privacy	6	No privacy (privacy is not available on this model)
	Part No	MIC412 range - camera
Step 8 Choose camera	18	18x camera module
	36	36x camera module
	Part No	MIC412 range - camera format
Step 9 Choose format	P	PAL format camera module
	N	NTSC format camera module

Popular configuration examples	
Part Number	Description
MIC412TIBUP13618P	MIC412 thermal (9Hz), black, upright, Bosch protocol, wiper (as standard), 18x day/night camera, PAL
MIC412TIBUP13636P	MIC412 thermal (9Hz), black, upright, Bosch protocol, wiper (as standard), heater, 36x day/night camera, PAL

MIC440 range



The MIC440 ATEX certified (explosion protected) range meets the exacting requirements of CSA/UL certification and ATEX Directive 94/9/EC Exd IIC T6 for **safe use in explosive atmospheres**, like those found in oil, gas,

chemical processing sites and petrochemical refineries. At the same time it gives the user all the benefits of the MIC series.

MIC440 ATEX certified (explosion protected) range (MIC440AX)



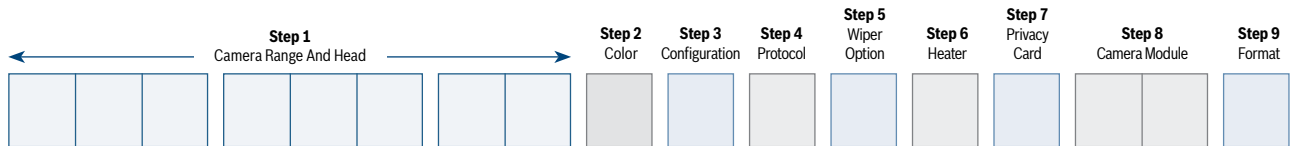
- ▶ Dual spectra unit certified to ATEX Directive 94/9/EC Exd IIC T6
- ▶ CSA and Inmetro certified
- ▶ Rated to IP68
- ▶ Integrated wiper
- ▶ Full functionality of MIC series cameras

Applications

Oil & Gas Industry	Shipping
Petrochemical	Manufacturing
Fertiliser Plants	Volatile Atmospheres
Cement Plants	

MIC440 ATEX certified (explosion protected) installed at Spalding Energy Plant, capturing high quality images in an extremely hazardous environment





	Part No	MIC440 range - camera heads
Step 1 Choose camera head	MIC440AX	1/4" ATEX certified PTZ, 470TVL, 18x day/night camera, IP68, built-in telemetry, choice of protocols, aluminum case
Step 2 Choose color	B	Black - RAL9005
Step 3 Choose configuration	U	Upright mount (can be software inverted)
Step 4 Choose protocol	W	Forward Vision
	D	Pelco P/D
	P	Bosch
		The protocol in the MIC440 cannot be changed by the user.
Step 5 Choose wiper	1	Wiper fitted as standard
Step 6 Choose heater	4	No heater (heater is not available on this model)
Step 7 Choose privacy	6	No privacy (privacy is not available on this model)
Step 8 Choose camera	18	18x camera module
	36	36x camera module
Step 9 Choose format	P	PAL format camera module
	N	NTSC format camera module

Popular configuration examples

Part Number	Description
MIC440BUP14618P	MIC440 ATEX certified (explosion protected), black, upright, Bosch protocol, wiper (as standard), 18x day/night camera, PAL

MIC series power supply units (PSUs), brackets and accessories



PSUs

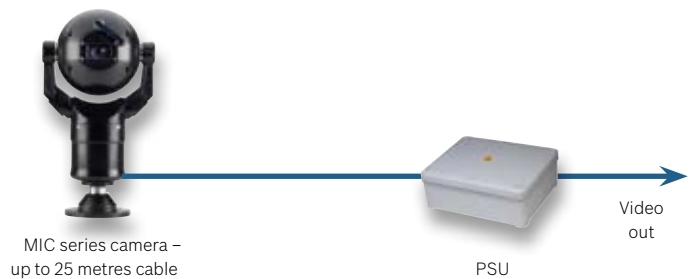
MIC series PSUs are available in a range of voltage inputs to provide a perfect fit for virtually any application. An interface is housed within the PSUs so an optional alarm card and washer pump drive can be fitted if required (supplied as standard in IR version PSUs).



MIC series standard PSU

Cables

Power, video and telemetry are transmitted through a single MIC series cable. All cables come complete with the MIC series connector for easy connection to the camera head.



MIC series camera – up to 25 metres cable

PSU

Video out

Brackets & accessories

A complete range of mounting brackets is available including wall, corner and pole mount. Deep and shallow conduit adaptors give extra flexibility. Available in standard colors, black, gray and white, including stainless versions.



MIC-SCA-B Shallow conduit adapter suitable for use with MIC-WMB, MIC-CMB and MIC-PMB



MIC-PMB pole mount bracket with MIC-SCA-B shallow conduit adapter attached



MIC-CMB-B corner mount bracket



MIC-DCA-B Deep conduit adapter



MIC-WMB-B with MIC400 aluminum attached



MIC-WKT and MIC-WKT IR washer kits (tube not included)

Keyboards

MIC series keyboards come in two distinct designs. The 501 is a robust keyboard that can fully control a single camera. Due to its compact size it is suitable for a wide range of applications including rapid deployment and vehicle mounting. The 516 can control up to 16 cameras and features a full range of function keys.



MIC-516KBD



MIC-501KBD

Part Number	MIC400 & MIC440 series power supply units (PSUs)
MIC-240PSU	230V AC input power supply unit including interface for MIC series cameras
MIC-IR-240PSU	230V AC input power supply unit with washer drive & 4-input alarm card – only for twin infrared camera versions
MIC-115PSU	115V AC input power supply unit including interface for MIC series cameras
MIC-IR-115PSU	115V AC input power supply unit with washer drive & 4-input alarm card – only for twin infrared camera versions
MIC-24PSU	24V AC input power supply unit including interface for MIC series cameras
MIC-IR-24PSU	24V AC input power supply unit with washer drive & 4-input alarm card – only for twin infrared camera versions
MIC-12PSU	12V DC input power supply unit including interface for MIC series cameras
MIC-IR-12PSU	12V DC input power supply unit with washer drive & 4-input alarm card – only for twin infrared camera versions
MIC-ALM	8 Input alarm card for PSU (Not for IR PSU)

Part Number	MIC412 series power supply units (PSUs)
MIC-240-THERMAL	230V AC input power supply unit including interface for MIC series cameras - for use with MIC412 range
MIC-115-THERMAL	115V AC input power supply unit including interface for MIC series cameras - for use with MIC412 range

Part Number	MIC series Bosch Bi-Phase converters
MIC-BP3	Bosch Bi-Phase converter for IR versions of MIC series PSUs
MIC-BP4	Bosch Bi-Phase converter for non-IR versions of MIC series PSUs

Part Number	MIC series cables
MIC-2M	2m composite cable with plug for power, data & video
MIC-10M	10m composite cable with plug for power, data & video
MIC-20M	20m composite cable with plug for power, data & video
MIC-25M	25m composite cable with plug for power, data & video

Part Number	MIC series bracketry
MIC-WMB-B	Wall mount bracket - black RAL9005
MIC-WMB-G	Wall mount bracket - gray RAL7001
MIC-WMB-W	Wall mount bracket - white RAL9003
MIC-WMB-S	Wall mount bracket - grade 316 stainless steel (requires MIC-SPR or MIC-PMB for secure mounting due to weight)
MIC-CMB-B	Corner mount bracket - black RAL9005
MIC-CMB-G	Corner mount bracket - gray RAL7001
MIC-CMB-W	Corner mount bracket - white RAL9003
MIC-CMB-S	Corner mount bracket - grade 316 stainless steel
MIC-SCA-B	Shallow conduit adapter for 4" PCD base - black RAL9005
MIC-SCA-G	Shallow conduit adapter for 4" PCD base - gray RAL7001
MIC-SCA-W	Shallow conduit adapter for 4" PCD base - white RAL9003
MIC-SCA-S	Shallow conduit adapter for 4" PCD base - grade 316 stainless steel
MIC-DCA-B	Deep conduit adapter for 4" PCD base - black RAL9005
MIC-DCA-G	Deep conduit adapter for 4" PCD base - gray RAL7001
MIC-DCA-W	Deep conduit adapter for 4" PCD base - white RAL9003
MIC-DCA-S	Deep conduit adapter for 4" PCD base - grade 316 stainless steel
MIC-SPR	Spreader plate suitable for brickwork surface mounting
MIC-PMB	Pole mount bracket (includes 2 x 90mm banding ties)
MIC412-Sunshield	Sunshield kit for MIC412

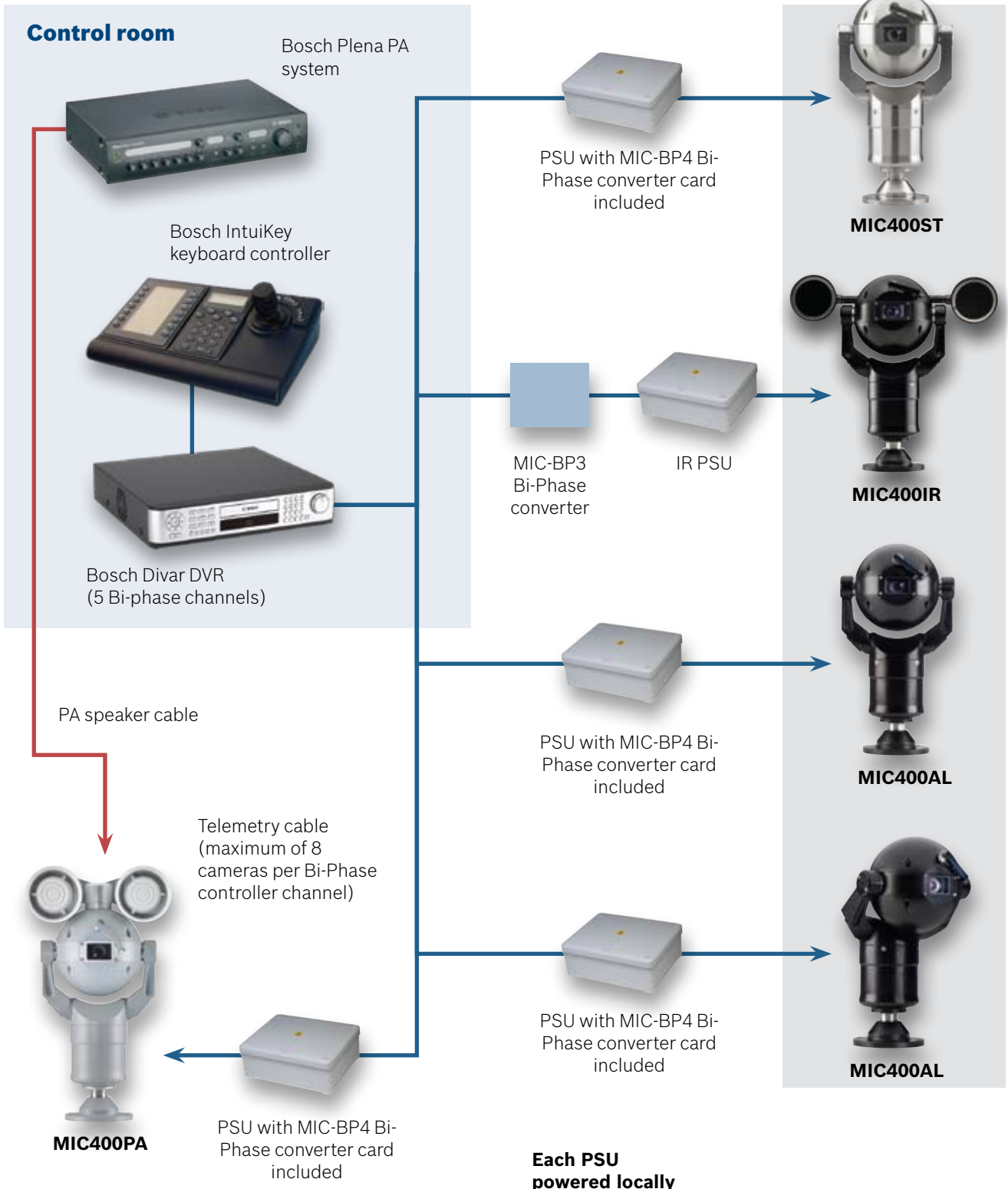
Part Number	MIC series keyboards/Dongle
MIC-501KBD	Keyboard controller with 3-axis joystick for 1 camera (FV protocol only)
MIC-516KBD	Keyboard controller with 3-axis joystick for 1 to 16 cameras (FV protocol only)
MIC-516ALM	8 Input alarm card for MIC-516KBD
MIC-USB485CVTR	USB to RS485 dongle for CAMSET

Part Number	MIC series accessories
MIC-WKT	Washer kit for non IR MIC400 models (incl. Washer pump drive card, washer nozzle and mounting bracket for 4" PCD base)
MIC-WKT-IR	Washer kit for IR MIC400 and MIC412 models (incl. washer nozzle and mounting bracket for 4" PCD base)
MIC-WN	Washer nozzle
MIC-WNB-PCD	Washer nozzle mounting bracket for 4" PCD base
MIC-GAS	Nebar gasket to fit between camera and bracket
MIC-RWB	Replacement wiper blade (single)
MIC-RWA-B	MIC400 Replacement wiper assembly black
MIC-RWA-C	MIC400 Replacement wiper assembly silver
MIC-RWA-S	MIC400 Replacement wiper assembly stainless steel

MIC Installation examples

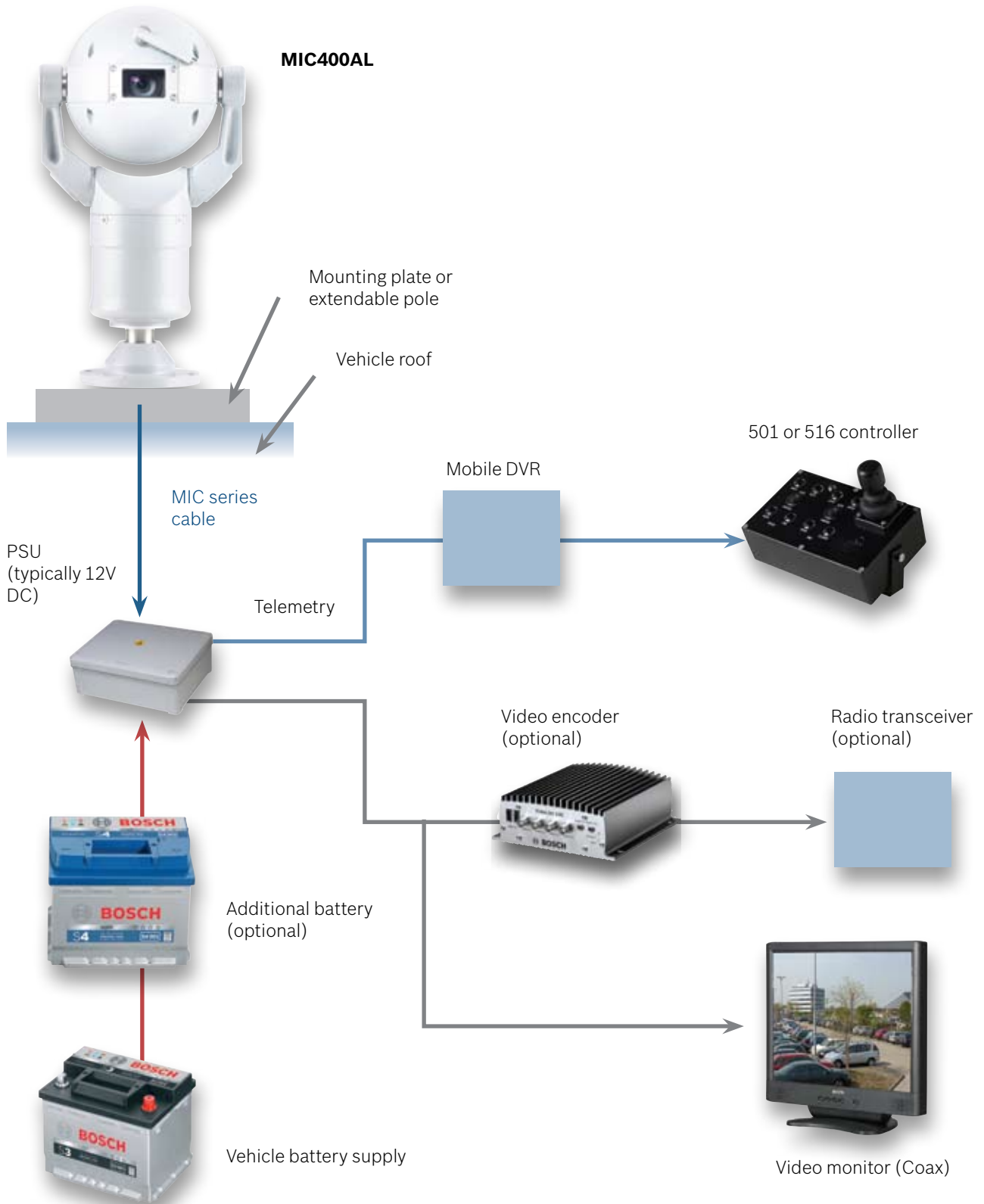


An example of a public space CCTV installation with MIC series cameras using Bosch Bi-phase protocol





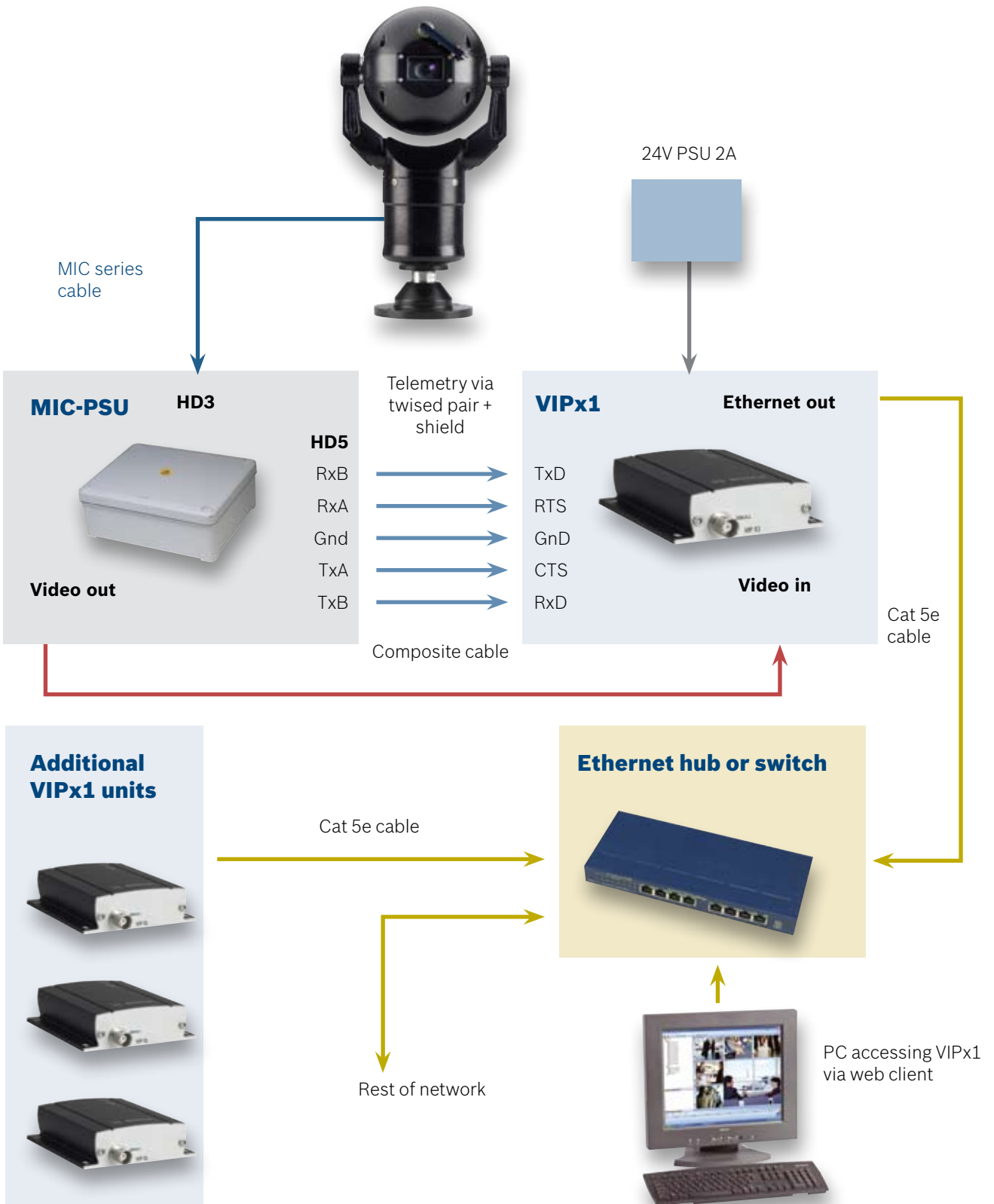
A typical vehicle installation with optional transmission facility



MIC Installation examples



An example of a network using the MIC400 connected via VIPx1/ethernet





MIC series – How to commission

MIC series cameras come complete with the powerful CAMSET configuration software to enable complete set-up of the camera head.

To access the camera you will need the following:

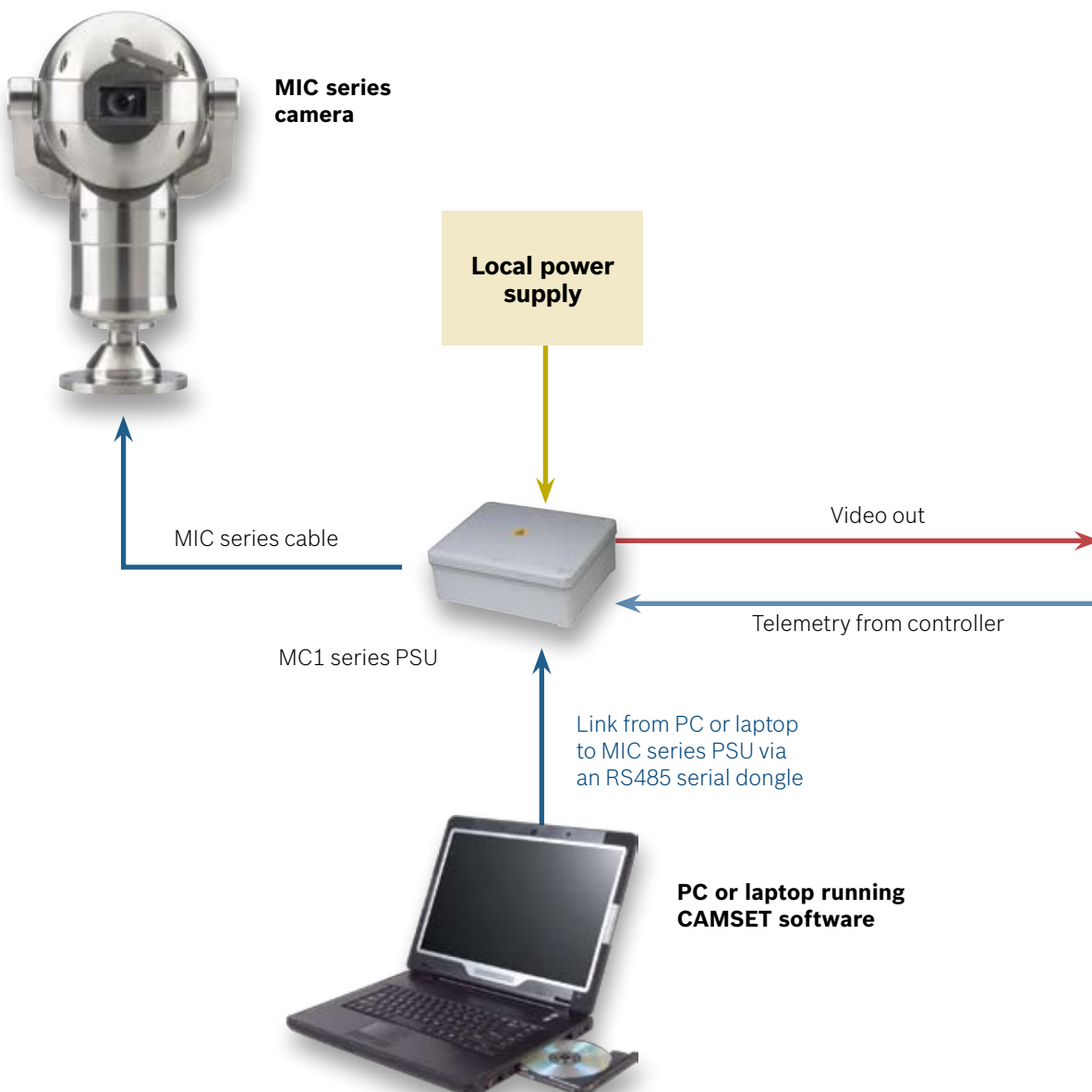
1. Software disk (shipped with every camera and also available as a download)
2. PC or laptop computer
3. A USB to RS485, RS232 to RS485 or USB to RS232 coupled with an RS232 to RS485 converter to connect the PC or laptop computer to the MIC series PSU. We recommend MIC-USB485CVTR.

Communicating with the camera head for initial set-up

Using CAMSET software users will need to:

1. Set the individual camera address (1-254)
2. Set the Baud rate to match the controller used
3. Optionally set up other options such as inverse image and/or invert controls (for inverted mount installations) plus advanced functionality.

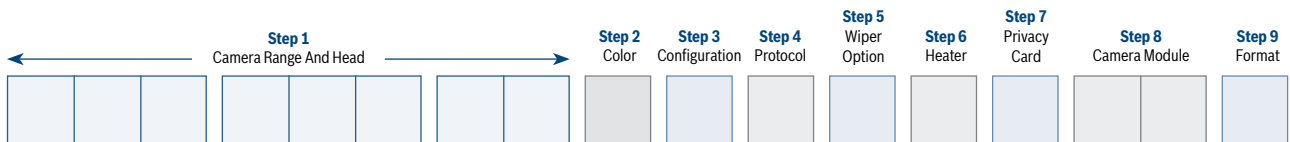
Please note: once the camera address and Baud rate are set popular functions such as presets set-up and preset tour set-up can be carried out by using the controller.



MIC Series product code matrix



	Codes	Notes
Product range	400 = Various models	
	412 = Thermal	
	440 = ATEX certified (explosion protected)	
Version	AL = Standard aluminum	440 range is AX only
	IR = Twin IR lamps	
	PA = Speakers	400 range versions are, AL, IR, PA, ST, UL and UT only
	ST = Stainless steel	
	UL = Underwater aluminum	
	UT = Underwater stainless	412 range versions use 9Hz thermal sensor
	AX = ATEX (explosion protected)	
TI = Thermal (9Hz thermal)		
Color	B = Black	440 range is only available in standard black
	G = Gray	
	W = White	Stainless is only for ST and UT versions
	S = Stainless (natural finish)	
Configuration	U = Upright (Can be software inverted)	412 and 440 ranges cannot be canted
	C = Canted	
Protocol	W = Forward Vision	
	D = Pelco P/D	
	P = Bosch	
Wiper	1 = Wiper fitted	400 UL and UT versions cannot be fitted with wiper
	2 = No wiper	412 and 440 ranges have wiper as standard
Heater	3 = Heater	IR, PA variants and the 440 range cannot be fitted with heater
	4 = No heater	
Privacy	5 = Privacy fitted	412 and 440 ranges cannot have privacy
	6 = No privacy	
Camera module	18 = 18:1	
	36 = 36:1	
Camera format	P = PAL	
	N = NTSC	





Customer care and warranty statements

Standard Warranty

All MIC series cameras come complete with a comprehensive 3-year warranty.

3-year warranty valid from date of delivery.

Warranty covers back-to-base repair at a MIC series Bosch approved service center.

Post Warranty Support

MIC products which have no valid warranty will be repaired where deemed possible by an approved service center at a pre-agreed price.

Repairs will only be carried out once the written agreement of the Purchaser is obtained. As installation, site location and regular maintenance may impact product life, an approved service center reserves the right to determine remaining lifetime and may recommend replacement instead of repair.

Where sub components of the MIC series and its associated peripherals remain available, such components will be available in the MIC series aftercare program. However, where such sub components become unavailable, or at a prohibitive price to affect a meaningful repair, an approved service center reserves the right to utilise alternative components or decline to repair products due to discontinuation of supply.

Technical Support Team

In the first instance please contact your local Bosch technical support team who will be pleased to assist you.

Our products are subject to testing and quality control procedures, however, sometimes a unit may need to be returned to the factory for evaluation and re-testing if the problem cannot be identified and resolved.

Notes



A Tradition of Quality and Innovation

For over 100 years, the Bosch name has stood for quality and reliability. Bosch is the global supplier of choice for innovative technology, backed by the highest standards for service and support.

Bosch Security Systems proudly offers a wide range of security, safety, communications and sound solutions that are relied upon every day in applications around the world, from government facilities and public venues to businesses, schools and homes.

Bosch Security Systems

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