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Products ● **and Applications** **2010**

*Camera systems for vehicles, constructing equipment,
industrial trucks, cranes and agricultural machines*





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MOTEC

The right camera for each application!

Since 1992, we have been developing flexible and compact camera systems which are ideally tailored to the different application requirements of commercial vehicles, construction vehicles and agricultural vehicles as well as cranes and fork lift trucks.



No matter whether it comes to pallet handling of stock devices, to controlling the discharge tubes of combine harvesters or to the safe manoeuvring of dumpers at huge and complex construction sites – Motec cameras help drivers to do their job safely, efficiently and with utmost precision. A multitude of applications can be covered by our compact and robust system components which can be flexibly combined.

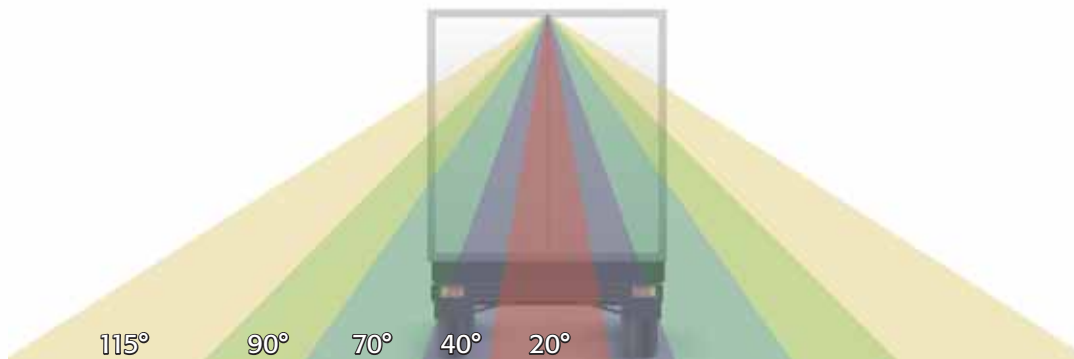


Individual system solutions require extensive expertise. In addition to the continuous advancement of our products, we are paying special attention to an extensive consulting and customer-oriented service. More than 800 customers in Germany and in Europe, among them some famous vehicle, machine and plant manufacturers, have been relying on our cameras, on our competence and on our experience for many years. Reliable, on-schedule product delivery is ensured by means of cooperation and trade partners as well as by our own sales offices.

The world of camera technology – a short guide

The correct image angle – a question of perspective!

The image angle indicates the range covered by the camera. In simple words, a large image angle means that the objective scales down, thus displaying a possibly large area. A small image angle however means that the objective “brings the world closer”, similar to a telescope.



Large image angles ($> 90^\circ$) are therefore suitable for monitoring areas which are otherwise difficult to observe (e.g. the rear areas of vehicles). Small image angles (e.g. 50°) however are ideal for cameras used for monitoring the area below and in front of the load.

Shock resistance

Shock resistance is a term frequently used in technical specifications. Basically the shock resistance describes the load to which objects are subjected when they are accelerated or decelerated. Example: if a force of $3g$ acts upon a person, his apparent weight is three times as high as his real weight. In case of a camera, the shock resistance indicates the maximum mechanical force which the camera can be subjected to without causing malfunctions. As a rule of thumb: the higher the shock resistance, the more robust the camera.

$$1g = 9,81 \text{ m/s}^2$$

IP Classification

Dust, water, vibrations – cameras must be able to operate reliably under tough conditions for many years. The IP code indicates under which ambient conditions the camera will be operational. The abbreviation IP stands for “Ingress Protection”. The IP code consists of two digits.

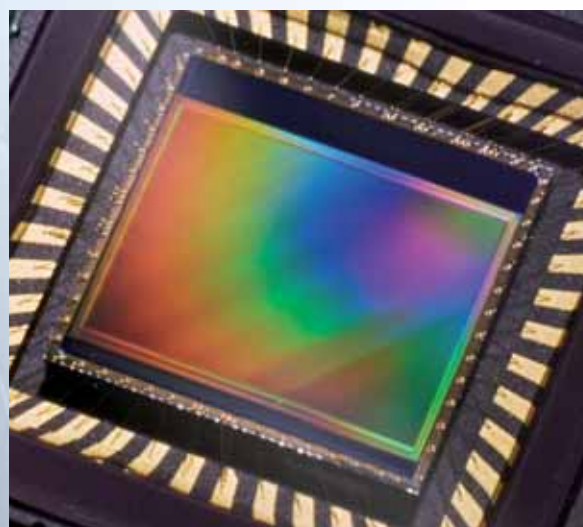
The first digit defines solid materials (tool, wire, dust etc.) and contacts; the second digit liquids (water drips, sprayed water, splashed water, high-pressure cleaner etc.). Motec cameras of the MC7000 series e.g. meet the criteria of protection class IP69K. They are 100% dust- and water-tight. The added letter “K” indicates that the cameras can withstand a water pressure of 80 to 100 bar (high-pressure cleaners).

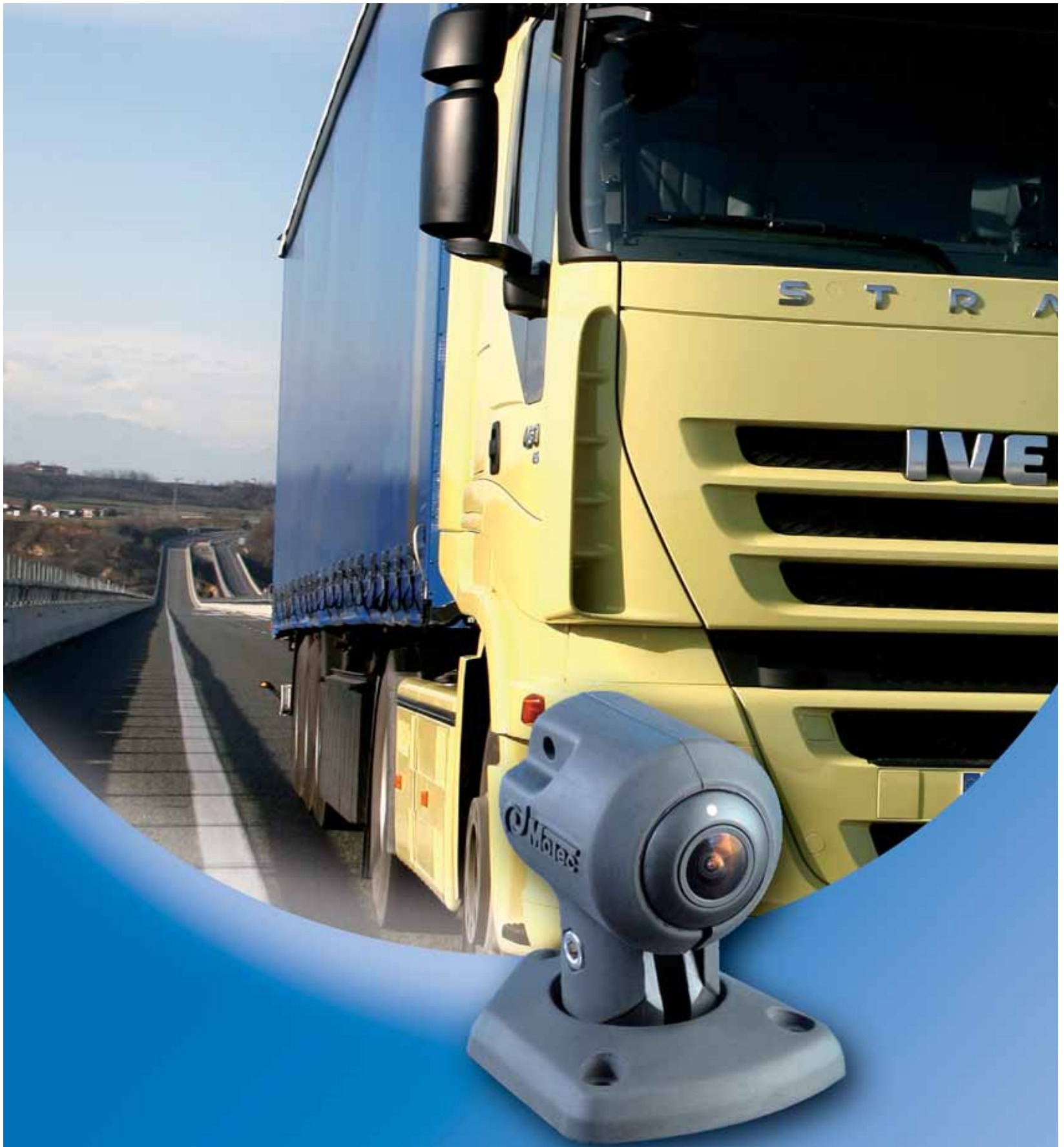
Camera type	IP class	Features
MC3000A MC6000C MC7000 MC9050 MC9150	IP69K	Dust-tight (complete protection against contact), water-tight, as well as tightness under high water pressure (high-pressure cleaning)
MC5100	IP68	Protected from dust and intruding water (when immersed for an undetermined time period)
	IP65	Dust-tight (complete protection against contact), protected from splashed water (from all directions)


CMOS technology

Sharp, high contrast images under back light and rapidly changing light conditions – this is made possible by state-of-the-art CMOS technology. CMOS sensors convert the light by means of transistors located directly at the pixels.

Since each pixel can be directly addressed, the so-called pixel-binning is much easier. Several pixels are combined to form a larger pixel. This grouping increases the light sensitivity, offsets brightness differences faster and reduces picture noise. Furthermore, blooming effects are limited. Some of our cameras, e.g. the MC7000 and MC9000 series, already use this technology.





Camera Systems  **for Vehicles**

Camera systems for vehicles

Articulated train box body

Camera systems facilitate the maneuvering and the precise approach to loading platforms. With articulated trains, a camera attached to the tractor can be used to monitor the drawbar area. Drivers are thus able to connect faster and safer and to estimate distances with higher precision.



Typical configuration rear area surveillance



Pos.	Product	
1	MD2070-Set, colour Monitor	395,-
2	MKW15, system cable	35,-
3	MK295, system cable (10m)	110,-
4	MK296, system cable (5m)	67,-
5	MKWW, system cable (10m)	40,-
6	MC6090C-3, compact camera	395,-

Articulated tanker train

Motec cameras are installed at the tail of the vehicle, on the top of the tank. Drivers can thus watch the entire area behind their vehicle; they can more easily estimate distances, timely recognize obstacles and maneuver their sensitive load more safely. All Motec systems are TÜV and ADR approved.



Typical configuration rear area surveillance



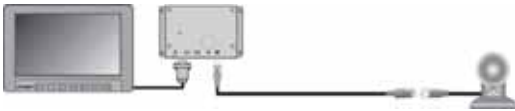
Pos.	Product	
1	MD3052A-L, colour monitor	385,-
2	MK24.10-G.8, system cable	84,-
3	MK11, helix cable (4m)	165,-
4	MK80.20-G.20-MA1, system cable	162,-
5	MC6090C-3, compact camera	395,-

Cameras as a replacement of mirrors

Drivers of large trucks are not able to see the area directly in front of their vehicles. Motec camera systems allow the driver to constantly watch this area, to detect dangerous situations and to avoid accidents. These turnkey solutions are certified according to the EC Directive 2003/97/EG, allowing for configurations with up to four cameras.



Typical configuration front and side area surveillance



Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MK73, junction cable (2m)	40,-
3	MB1205, control unit	156,-
4	MKW5, system cable	20,-
5	MC7115-3, colour camera	445,-

Flat bed truck

Flat bed trucks require flexible camera systems with variable disconnecting points and cable lengths that can be adapted to the length and to the variable boxes of the articulated train. Here, cameras are mainly used for rear area monitoring, but also for load control. Drivers can more easily estimate distances and safely pass critical sections.



Typical configuration rear area surveillance



Pos.	Product	
1	MD3052A-L, colour monitor	385,-
2	MK24.10-G.7, system cable	81,-
3	MK11, helix cable (4m)	165,-
4	MK35, system cable (1m)	90,-
5	MK80.10-MA1, system cable	119,-
6	MC7115-3, colour camera	445,-

Camera systems for vehicles

Dump truck

Robust and weather-resistant compact cameras, equipped with an integrated highpressure cleaning system, facilitate reverse operation. This means that blind spots are now a dead duck. Using Motec system solutions, drivers can see the entire environment of their vehicles, allowing them to maneuver safely and with utmost precision.



Typical configuration rear area surveillance



Pos.	Product	
1	MD3052A-L, colour monitor	385,-
2	MKW20-G.15, system cable	105,-
3	MC3115A-3, compact camera	495,-
4	RS1000, high pressure cleaning set	295,-

Refuse collection vehicle Rear loader

Motec camera systems facilitate maneuvering of the vehicle and provide improved view of the critical areas of the vehicle. Drivers are able to continuously monitor the traffic. Optionally, a second camera can be used to monitor the front area.



Typical configuration rear area surveillance



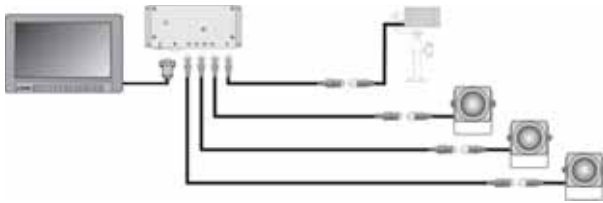
Pos.	Product	
1	MD3052A-L, colour monitor	385,-
2	MKW20, system cable	40,-
3	MC3100A-3, compact camera	495,-

Refuse collection vehicle Side loader

Drivers need to control both the traffic and the operating processes at the vehicle. Motec cameras provide support e.g. in order to precisely position the lifter or to control the downpour. In case of kerbside driven vehicles, a front camera can provide precious help to the driver by monitoring the on coming traffic.



Typical configuration rear and working area surveillance



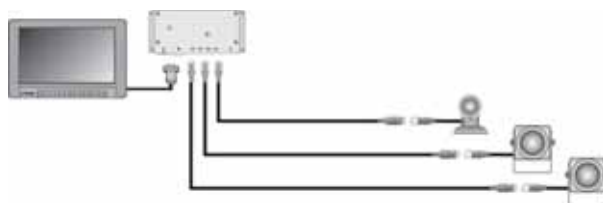
Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MK73.4, junction cable	40,-
3	MB1405, control unit	295,-
4	MKW5, system cable	20,-
5	MKW20, system cable	40,-
6	SK2120-3, front camera	375,-
7	MC6090C-3, compact camera	395,-

Refuse collection vehicle Front loader

Front loader camera systems can include several cameras which cover the rear area, the area in front of the vehicle and the downpour process. The entire system facilitates one-man operation and increases traffic safety.



Typical configuration rear and working area surveillance



Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MB1405, control unit	295,-
3	MKW5, system cable	20,-
4	MKW20, system cable	40,-
5	MC7115-3, front camera	445,-
6	MC6090C-3, compact camera	395,-

Camera systems for vehicles

Small sweeping machines

Drivers of small sweeping machines need to not only watch the traffic, but also to control the sweeping operation. Motec cameras cover the hidden area behind the compact vehicle and support the driver during maneuvering and reverse operation, e. g. at traffic islands, drives or in pedestrian areas.



Typical configuration rear area surveillance



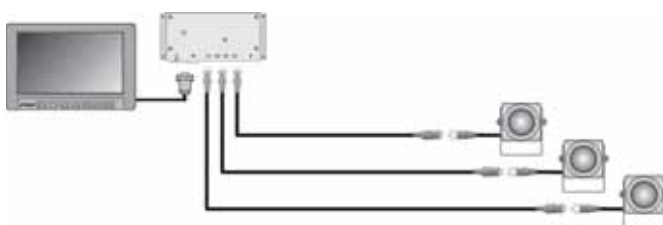
Pos.	Product	
1	MD3052A-L, colour monitor	385,-
2	MKW10, system cable	30,-
3	MC6090C-3, compact camera	395,-

Truck mounted sweeping machines

Drivers need to simultaneously keep an eye both on the traffic and on the operation of the vehicle. In many situations, this results in a major risk for man and machine. Motec camera systems support targeted reverse operation and control of the sweeping unit.



Typical configuration rear and working area surveillance



Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MK73.4, junction cable (4m)	40,-
3	MB1405, control unit	295,-
4	MKW10, system cable	30,-
5	MKW20, system cable	40,-
6	MC6070C-3, compact camera	395,-
7	MC6090C-3, compact camera	395,-

Winter maintenance vehicles

Motec cameras are attached to the upper rear end of the gritting unit, allowing the driver to watch the rear traffic, the gritting table and the grit distribution. Cameras also facilitate reverse operation, e. g. at traffic islands, or in drives. An integrated cleaning system removes dirt from the lens upon a simple push of the button.



Typical configuration rear area surveillance



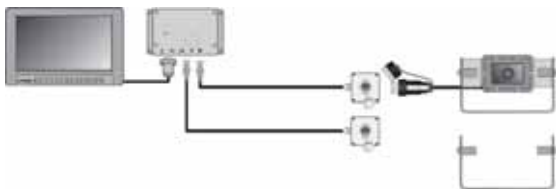
Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MB1205, control unit	156,-
3	MK25.12-MA2, system cable	125,-
4	MK35.3, system cable	90,-
5	MC3100A-2, compact camera	535,-
6	MC1000-SWH2, rapid change mount	155,-
7	RS1000, high pressure cleaning set	295,-

Municipal Carriers

All year long, municipal vehicles can be equipped with a multitude of different accessories for various applications. Using a special quick-fix mount, the camera position can be changed easily without any readjustment. This means the camera is quickly operational at any other position.



Typical configuration working area surveillance



Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MK73.4, junction cable	40,-
3	MB1205, control unit	156,-
4	MK25.5-MA2, system cable	98,-
5	MK25.10-MA2, system cable	92,-
6	MC3100A-2, compact camera	535,-
7	MC1000-SWH2, rapid change mount	155,-

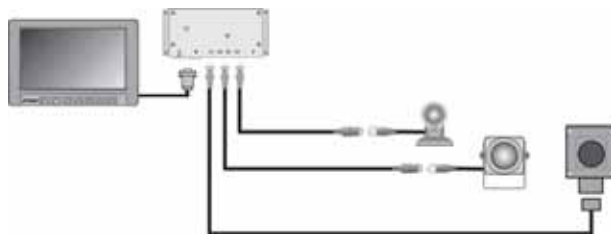
Camera systems for vehicles

Fire fighting vehicles

Motec cameras are used to allow the view to hidden areas behind the vehicle and to support the driver while maneuvering and reversing in emergency situations and in areas which are difficult to access. Camera signals are transmitted to a compact color monitor by cable.



Typical configuration rear and working area surveillance



Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MB1405, control unit	295,-
3	MKW10, system cable	30,-
4	MKW15, system cable	35,-
5	MC7115-3, front camera	445,-
6	MC6090C-3, compact camera	395,-
7	PathFindIR, thermal imaging camera	2.793,-

SAR-Vehicles

Every second counts during rescue operations. State-of-the-art camera systems increase the safety during reverse operation. Ambulances can be equipped with cameras that enables the operator to look to the hidden areas behind the vehicle. Camera signals are transmitted by cable to a compact colour monitor mounted in the driver's cabin.



Typical configuration rear area surveillance



Pos.	Product	
1	MD3052A-L, colour monitor	385,-
2	MKW20, system cable	40,-
3	MC6090C-3, compact camera	395,-



Camera Systems ●
for Constructing Equipment /
Special applications

Camera systems for constructing equipment/special applications

Wheel loader

Persons and vehicles rapidly disappear out of sight. In cases where the direct view of the driver is too limited to ensure the required safety, Motec camera systems help the driver to constantly keep an eye on the vicinity of the wheel loader and to safely and quickly manoeuvre the vehicle.



Typical configuration rear area surveillance



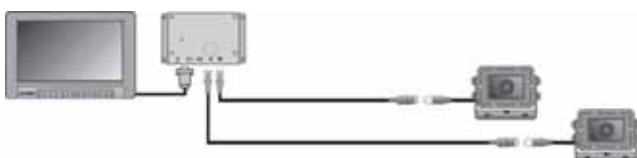
Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MK73, junction cable (2m)	40,-
3	MB1205, control unit	156,-
4	MKW10-G.8, system cable	85,-
5	MC3100A-3, compact camera	495,-

Excavators

Motec's robust, shock-resistant cameras detect the entire area around the digging arm and also the rear area using wide lens angles. Such cameras are a valuable tool for operators in particular when it comes to demolition work or loading. Motec also offers wireless transmission systems for the transmission of video signals from and to mobile excavators.



Typical configuration rear and working area surveillance



Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MK73, junction cable (2m)	40,-
3	MB1205, control unit	156,-
4	MKW10-G.8, system cable	85,-
4	MKW20-G.17, system cable	110,-
5	MC3100A-3, compact camera	495,-
6	MC3070A-3, compact camera	495,-

Camera systems for constructing equipment/special applications

Skips

Our robust compact cameras, equipped with high-pressure cleaning systems, facilitate reverse operation at crusher plants and dumping sites – thus putting an end to blind spots. Motec system solutions allow the driver to keep an eye on the surrounding of his vehicle and to control it safely and precisely.



Typical configuration rear area surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15-G.13, system cable	99,-
3	MC3100A-3, compact camera	495,-

Milling cutters

Up to four cameras are available to allow for a perfect view on the conveyor belt, on the mill or on the rear area of the machine, providing drivers with improved control of the mill and allowing them the stay on track even without external support personnel.



Typical configuration rear and working area surveillance



Pos.	Product	
1	MD3074A, colour monitor	775,-
2	MKW15, system cable	35,-
3	MC6090C-3, compact camera	395,-

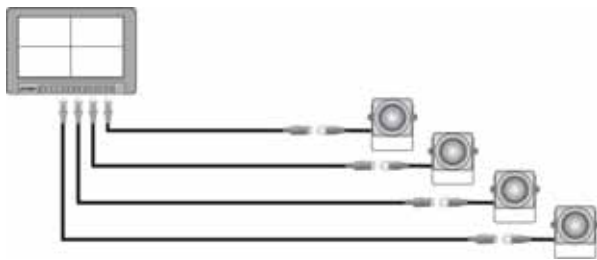
Camera systems for constructing equipment/special applications

Pavers

Using a camera drivers have better control of the filling area. In addition, they are able to detect alignment failures at an early stage and allow the operators to adjust and stay safely on track.



Typical configuration working area surveillance



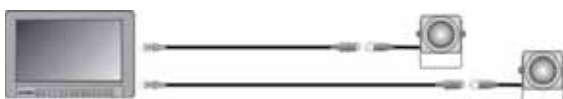
Pos.	Product	
1	MD3072B-Quad-V.K.L, colour monitor	752,-
2	MKW15, system cable	35,-
3	MC6070C-3, compact camera	395,-

Compactors

For roller compactors Motec cameras are an ideal tool for the reliable monitoring of dangerous areas. Two additional cameras, attached to both sides of the roller support the driver in following a bearing line and to stay on track.



Typical configuration rear and working area surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable	35,-
3	MKW10, system cable	30,-
4	MC6070C-3, compact camera	395,-

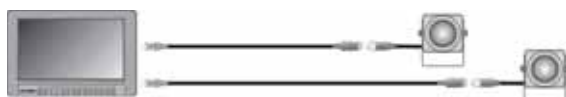
Camera systems for constructing equipment/special applications

Road marking

Road marking requires a high degree of precision. Motec cameras help drivers to stay on the bearing line. In case of small marking devices, the camera is attached directly underneath the driver. This allows a continuous view on the spraying device so that drivers do not have to lean outside the vehicle – a clear ergonomical benefit.



Typical configuration working area surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable	35,-
3	MKW10, system cable	30,-
4	MC6070C-3, compact camera	395,-

Crushers

The new wireless video transmission system MVR6000 allows drivers of loaders or dumpers to switch between up to three camera signals of systems mounted on up to three different crushers. This way drivers of wheel loaders and skips are able to see if the crushers funnel are full, empty, blocked or congested.



Typical configuration working area surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MVR6000-RX, radio receiver	445,-
3	MVR6065-TX, radio transmitter	595,-
4	MK5, system cable (1m)	70,-
5	MC3100A, compact camera	515,-

Camera systems for constructing equipment/special applications

Loading machines

Two cameras attached to a loading machine provide valuable support for rear-area and gripper monitoring. Drivers are now able to see complete areas which usually have been hidden from the driver's view, e.g. when loading goods behind walls or ship-board walls.



Typical configuration rear and working area surveillance



Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MK73, junction cable (2m)	40,-
3	MB1205, control unit	156,-
4	MKW10-G.8, system cable	85,-
5	MKW20-G.17, system cable	110,-
6	MC3100A-3, compact camera	495,-
7	MC3070A-3, compact camera	495,-

Telehandler

For telehandler applications, one camera is usually attached to the fork, bucket or gripper, while another camera may be used to monitor the rear area or the area opposite the cabin. Such dual-camera systems provide seamless monitoring of the rear area plus all danger or operating areas around the jobsite.



Typical configuration rear area and load surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK24.1, system cable	60,-
3	MK24.1, system cable	60,-
4	MK17, system cable (2m)	120,-
5	MC6090C, compact camera	425,-
6	MC6070C, compact camera	425,-

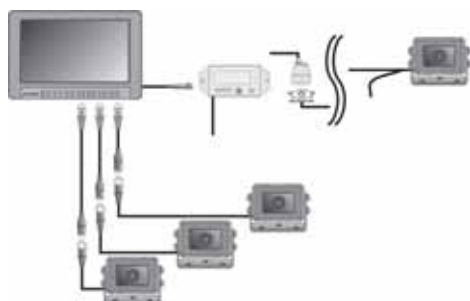
Camera systems for constructing equipment/special applications

Tunneling

For large drilling devices Motec cameras facilitate the monitoring of the pressure sluice and of the flow of material. A second camera is often used to monitor a laser spot. Operators are thus able to precisely align the drilling machine and to adjust deviations from the target at an early stage.



Typical configuration working area surveillance



Pos.	Product	
1	MC3100A-3, compact camera	495,-
2	MTP-VE twisted Pair Receiver	395,-
3	MTP-VS twisted Pair Transmitter	395,-
4	MK67, coaxial cable	55,-

Drilling devices

Our compact camera MC6000A helps operators to keep an eye on the winch and to check whether the rope is correctly coiled and uncoiled. The second camera secures the area behind the device.



Typical configuration rear and working area surveillance



Pos.	Product	
1	MD3052A-L, colour monitor	385,-
2	MKW10, system cable	30,-
3	MKW15, system cable	35,-
4	MC6090C-3, compact camera	395,-
5	MC6070C-3, compact camera	395,-

Camera systems for constructing equipment/special applications

Ready-mix trucks

Without any technical support, the target point often is simply a black hole for the driver. Motec cameras are able to detect this area behind the drum. The benefit at this point is that the driver is able to approach the filling funnel more precisely without requiring any support personnel.



Typical configuration rear area and side area surveillance



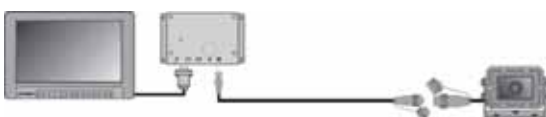
Pos.	Product	
1	MD3052A-L, colour monitor	385,-
2	MKW15, system cable	99,-
3	MC6090C-3, compact camera	395,-
4	MC7115-3, front camera	445,-
5	MKW5, system cable	20,-

Track construction machines

Cameras mounted on the upper wagon provide a perfect pano-ramic view and they are able to almost completely detect the rear end of the lower wagon (track axis). In addition, drivers can perform rerailing and coupling actions more securely.



Typical configuration rear area surveillance



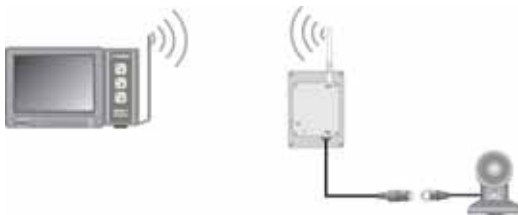
Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MK73, junction cable (2m)	40,-
3	MB1205, control unit (4m)	156,-
4	MK26.10-G.8, system cable (5m)	94,-
5	MC3100A-2, compact camera	535,-

Horizontal drilling

Two cameras are used to monitor both the break-off device and the thread receptacle. Images are sent to the operator console by means of wireless transmission before being transmitted to the opposite side. Signals can be amplified by means of high-gain antennas, thus covering distances of up to 2.5 km.



Typical system application Monitoring of start and finish site



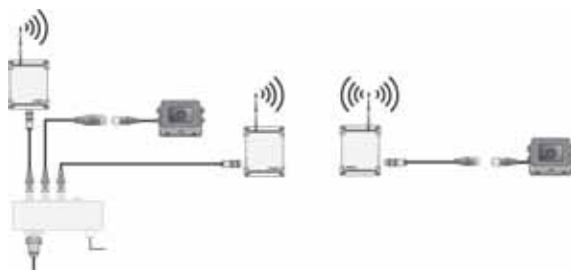
Pos.	Product	
1	MD3052A-L, colour monitor	385,-
2	MK24, system cable (1m)	60,-
3	MVR6000-RX, radio receiver	445,-
4	MVR6065-TX, radio transmitter	595,-
5	MK81, system cable (1m)	55,-
6	MC7090P-3, compact camera	275,-

Micro-tunnelling

Motec systems are individually customized to the micro-tunnelling requirements. E.g. a camera can be installed in the drill head to monitor the control units. Twisted pair technology is used to transmit the image to the operator console across large distances and across several section points without any disturbances.



Typical system application Monitoring in the drill head



Pos.	Product	
1	MVR6065-RX, radio receiver	545,-
2	MVR6065-TX, radio transmitter	595,-
3	MKW, system cable (10m)	30,-
4	MK24, system cable (5m)	64,-
5	MC3040A-3, compact camera	495,-

Track construction

Motec systems installed on track maintenance machines offer a maximum of safety. Two cameras reliably monitor the areas in front of and behind the machine. The signals are distributed to the monitors of the three platforms using video distributors, making sure that all employees can independently access the images.



Typical system application Monitoring in and against the driving direction



Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MK24, system cable (5m)	60,-
3	MB1205, control unit	156,-
4	MK5, system cable (5m)	75,-
5	MV14, Video Distribution Box	299,-
6	MC3100A, compact camera	515,-



Camera Systems  **for Industrial Trucks**

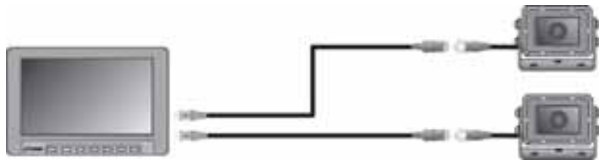
Camera systems for industrial trucks

Front stackers A

Using a camera attached to the retractable mast, drivers get a good view of the machine track. A second camera covers the area behind the stacker. This camera is automatically activated as soon as the driver switches to reverse gear.



Typical configuration view over the load / rear area surveillance



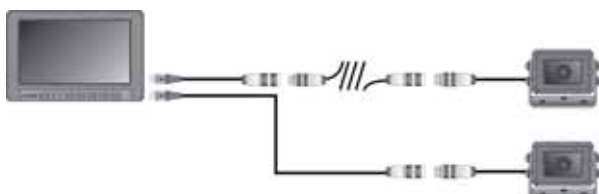
Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW10, system cable	30,-
3	MC3100A-3, compact camera	495,-

Front stackers B

Bulky / massive attachments such as turning devices, multiple clamps or feed fork carriers may obstruct visibility of the fork tips. The use of a camera system, however, provides perfect visibility of the truck's loading bay and of the engaging flaps of the pallets.



Typical configuration working area surveillance/ rear area surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK24.6, system cable	66,-
3	MK17.4, helix cable	130,-
4	MC3070A, compact camera	515,-
5	MK24.6, system cable	66,-
6	MC3100A, compact camera	515,-

Reach trucks

Attached to the inside of the right fork or in the free lift area, Motec cameras (fork or compact camera) are always level with the load, allowing for fast and secure handling of pallets in high rack warehouses. The camera's image angle of 50° allows the driver to watch both forks simultaneously.



Typical configuration working area surveillance fork camera



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK24.6, system cable	66,-
3	MK228.15, mast cabel	289,-
4	mast cable strain relief set /pulleys	29,-
5	MK364, junction cable	77,-
7	MC9050C-Set423, fork mounted camera	795,-

Reach trucks

The new MC9150 extends Motec's product range for fork lifts. In contrast to prong-mounted cameras, these robust and compact types are attached to the back of the fork. The MC9150 is thus ideally protected against shock and impact. With an image angle of 50°, it offers an unobstructed view on both prongs.



Typical system application Pallet handling



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK24.6, system cable	66,-
3	MK228.15, mast cabel	223,-
4	mast cable strain relief set /pulleys	29,-
5	MK379.1,5, junction cable	82,-
6	MC9000-H1, camera fastener for MC9150	189,-
7	MC9150, compact camera Pinhole	595,-

Camera systems for industrial trucks

Mandown high rack stackers

If loads are in distances of more than six yards from the ground, the human eye is no longer able to precisely position the fork and the load. With Motec cameras attached to the fork carrier, drivers are always level with the load. This allows them to rapidly and safely place pallets into stock or remove them from stock.



Typical configuration material handling compact camera



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK24.6, system cable	66,-
3	MK228.15, mast cabel	289,-
4	mast cable strain relief set /pulleys	29,-
5	MK5.6, system cable	77,-
6	MC3040A, compact camera	515,-

Commissioning stackers

Safety and efficiency of commissioning stackers can be maximized by the use of up to two cameras. A reverse camera allows drivers to timely detect obstacles. An additional camera attached to the fork carrier allows for rapid and safe placement or removal of pallets into/from stock.



Typical configuration material handling fork camera



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK24.6, system cable	66,-
3	MK228.15, mast cabel	289,-
4	mast cable strain relief set / pulleys	29,-
5	MK364, junction cable	77,-
6	MC9050C-Set423, fork mounted camera	795,-

Telescopic fork

Enhancing the safety and flexibility for warehouse applications: Motec cameras are attached to the inside of the pallet pusher at a well protected position. This allows the driver to see the shelf and the rear pallet – even if it is loaded. With a 50° image angle, the driver can see both prongs and the engagement ears of the pallets.



Typical system application Pallet handling



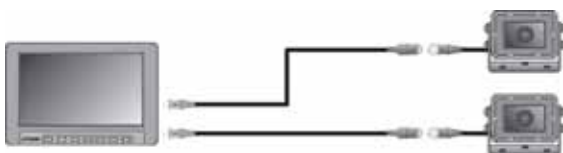
Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK24.6, system cable	66,-
3	MK4.15, mast cabel	50,-
4	MK17.2, helix cable	120,-
5	MA3, control box	107,-
6	MK379.1,5 junction cable	82,-
7	MC9150, compact camera Pinhole	595,-

Four-way stackers

Motec cameras support the versatility and flexibility of four-way stackers. Rear area and lateral cameras allow the driver to watch all driving directions, thus increasing the operational safety. An additional camera attached to the fork carrier facilitates the placement or removal of pallets.



Typical configuration driveway surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW10, system cable	30,-
3	MC3070A-3, compact camera	495,-
4	MKW10, system cable	30,-
5	MC3070A-3, compact camera	495,-

Camera systems for industrial trucks

Reach stackers A

Side or rear view mirrors are frequently not sufficient for the driver to monitor the entire rear area or to safely control the reach stacker. If stackers are equipped with a Motec camera, drivers are able to see any movement behind or on the side of the vehicle; allowing them to better estimate distances and thus to maneuver more safely and rapidly.



Typical configuration rear area surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable	35,-
3	MC3115A-3, compact camera	495,-

Reach stackers B

Camera systems can be a valuable help for operators of reach stackers when loading or unloading containers to and from wagons or trailers. For this purpose, the cameras are installed on the spraeider in such a way to provide optimum view of the twist-locks.



Typical configuration Twistlock monitoring



Pos.	Product	
1	MD3100-20-V.K.L, colour monitor	998,-
2	MK404.4, system cable	75,-
3	MB1405-Quad, control unit	385,-
4	MK24.10, system cable	68,-
5	MK66.20, system cable	310,-
6	MK66.20, system cable	310,-
7	MC3070A, compact camera	515,-

Straddle carriers

Lifting gear and containers drastically restrict the driver's sight. This is a major security risk when maneuvering or reversing. Robust and weather-resistant Motec cameras detect the areas behind the vehicle and provide indispensable circumferential visibility.



Typical configuration rear area surveillance



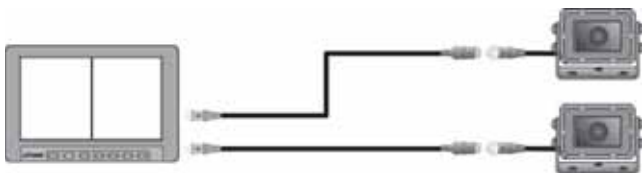
Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable	35,-
3	MC3100A-3, compact camera	495,-

Straddle Carriers B

Secure and fast handling of containers – Motec cameras provide an ideal view of the twist locks. Camera images are transmitted to two colour monitors, allowing the driver to position the containers with millimetre accuracy. The system can optionally be upgraded with a reverse area camera.



Typical system application Container handling



Pos.	Article	
1	MD3072B-Quad-V.K.L, moniteur couleur	752,-
2	MKW15, system cable	30,-
3	MC3100A-3, compact camera	495,-
4	MKW10, system cable	30,-
5	MC3100A-3, system cable	495,-

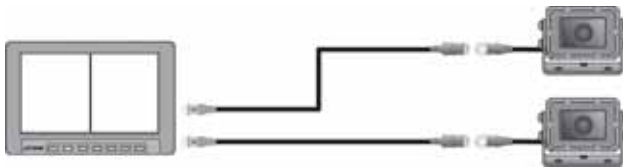
Camera systems for industrial trucks

Side stackers

Rear area and lateral cameras provide side stacker operators visibility in all driving directions, thus increasing the safety during operation. An additional camera attached to the fork carrier can be used to facilitate the placement and removal of products. A quad-display allows for the simultaneous display of several cameras.



Typical configuration rear area surveillance



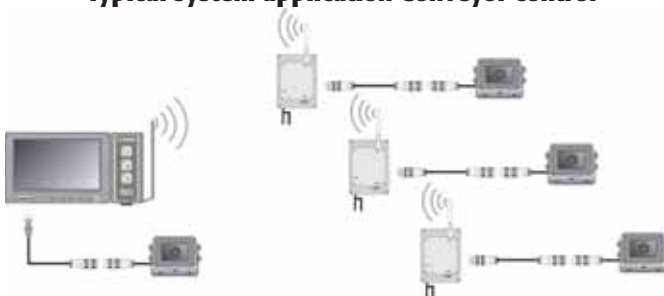
Pos.	Product	
1	MD3072B-Quad-V.K.L, colour monitor	752,-
2	MKW15, system cable	35,-
3	MC3100A-3, compact camera	495,-
4	MKW10, system cable	30,-
5	MC3100A-3, compact camera	495,-

Log stackers

A camera mounted above the conveyor transmits images to the log stacker monitor using wireless technology. The operator can permanently monitor the conveyor process – reducing congestions and idle times to a minimum. If required, up to three conveyor belts can be monitored in parallel.



Typical system application Conveyor control



Pos.	Artikel	
1	MD3072B-Quad-V.K.L, colour monitor	752,-
2	MVR6000-RX, radio receiver	445,-
3	MVR6065-TX, radio transmitter	595,-
4	MK5.x, Systemkabel	70,-
5	MC3040A, compact camera	515,-
6	MK24.x, system cable	45,-
7	MC3100A, compact camera	515,-



Camera Systems ●
for Cranes

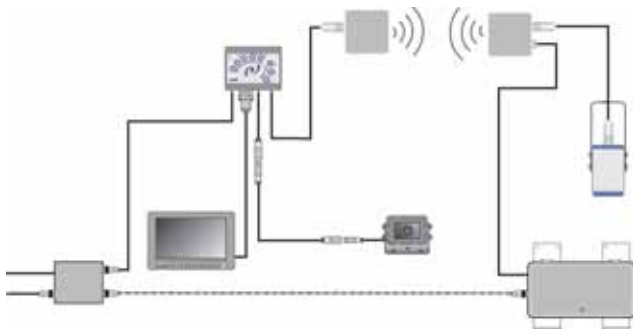
Camera systems for cranes

Mobile cranes

Especially developed for crane applications the MC5200 autofocussing motorized zoom colour camera allows crane operators not only to approach loads faster and with higher precision but also to recognize diagonal pull and slant slope.



Typical configuration load surveillance, radio transmission



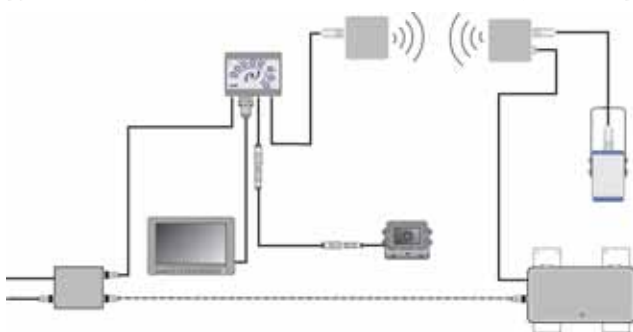
Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MBE5200, control unit	695,-
3	MK279.5, system cable	149,-
4	MVR5200, radio transmission system	2.880,-
5	MC5200, motorzoom camera	1.995,-
6	MP5000-2, suspended mount	499,-
7	MAB5100, storage battery box	1.185,-

Top-slewing tower cranes

The MC5200 is directly attached to the trolley. The benefit of this system is that the crane operator can safely monitor all operations; he can realize obstacles on time or he can check if the load is correctly attached to the hook. Camera images can be transmitted to the cabin by radio.



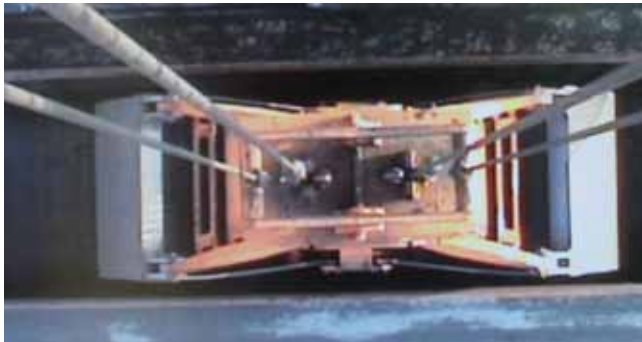
Typical configuration load surveillance, storage battery box



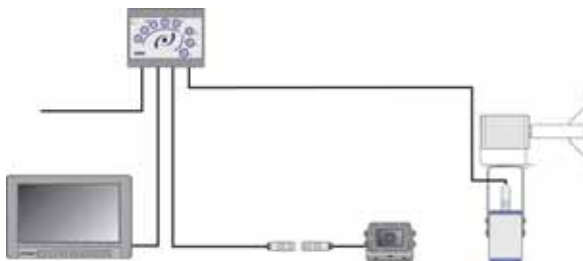
Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MBE5200, control unit	695,-
3	MK279.5, system cable	149,-
4	MVR5200, radio transmission system	2.880,-
5	MC5200, motorzoom camera	1.995,-
6	MP5000-2, suspended mount	499,-
7	MAB5000-1, storage battery box	1.265,-

Luffing-jib tower cranes

Depending on the jib angle, the camera is permanently perpendicular due to the suspended mount. The crane operator can continuously monitor the hook and can thus lift and set down loads with higher precision. Camera signals are transmitted to the cabin via cable.



Typical configuration load and winch surveillance



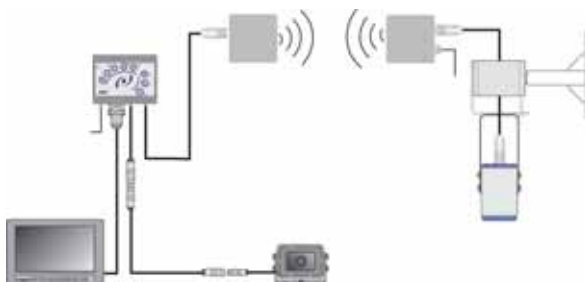
Pos.	Product		
1	MD3070A-MS.K.L, colour monitor		406,-
2	MK73, junction cable (2m)		40,-
2	MBE5100, control unit		695,-
3	MK279, system cable		149,-
4	MC5100, motorzoom camera		1.995,-
5	MP5000-2, suspended mount		499,-
6	MC3100A, compact camera		515,-

Lattice boom cranes

Downtimes due to incorrect winding or time-consuming rope changes cause financial losses. Using a MC5100 Motec crane camera attached to the pulley, crane operators can timely recognize whether the rope is perfectly coiled or uncoiled. They can also see how fast the winch rotates, allowing them to prevent slant slope.



Typical configuration load and winch surveillance



Pos.	Product		
1	MD3070A-MS.K.L, colour monitor		406,-
2	MBE5200, control unit		695,-
3	MK279, system cable (0,5m)		119,-
4	MVR5200, radio transmission unit		2.880,-
5	MC5200, motorzoom camera		1.995,-
6	MP5000, suspended mount		499,-
7	MC3100A, compact camera		515,-

Camera systems for cranes

Rope excavator

Side or additional rear view mirrors are often not sufficient to operate rope excavators safely and precisely. Using a Motec camera, operators are able to look what is happening on the side or on the rear of the excavator. The benefit is that operators can better estimate distances and can thus maneuver faster and more safely.



Typical configuration winch surveillance



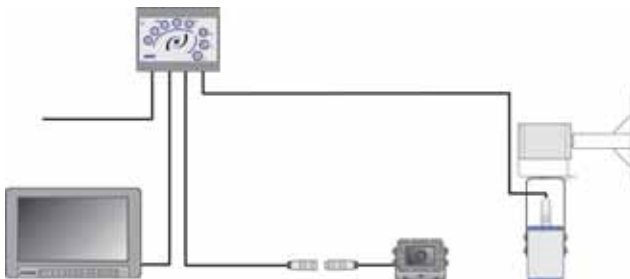
Pos.	Product	
1	MD3052A-L, colour monitor	395,-
2	MKW15, system cable	35,-
3	MC3100A-3, compact camera	495,-

Harbor mobile cranes

When lifting and setting down loads, crane operators lack a direct view into the working area, e.g. into the ship body. Using the MC5100 color camera, especially developed for crane applications, operators can monitor permanently the hook and can thus lift and set down loads more precisely.



Typical configuration load and rear area surveillance



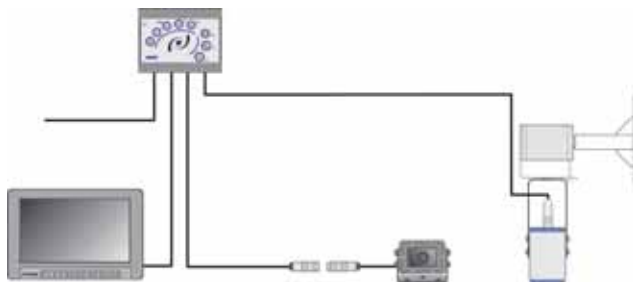
Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MBE5100, control unit	695,-
3	MK279, system cable (0,5m)	119,-
4	MC5100, motorzoom camera	1.995,-
5	MP5000, suspended mount	494,-
6	MC3100A, compact camera	495,-

Ship cranes

When used with ship cranes, cameras can provide time savings because operators can see the cargo compartment of the ship despite the fact that their cabin is a long distance away. With additional camera technology attached to the hook, crane operators are able to work faster and more efficiently.



Typical configuration load surveillance



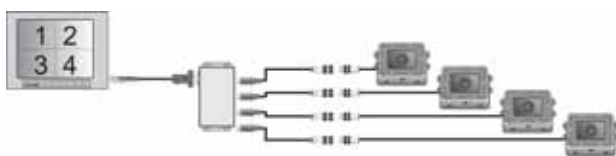
Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MBE5100, control unit	695,-
3	MK279, system cable (0,5m)	119,-
4	MC5100, motorzoom camera	1.995,-
5	MP5000, suspended mount	494,-
6	MC3100A, compact camera	515,-

Container cranes

Up to four cameras – two for each driving direction – are used to cover all operating areas and the driveways. The camera system not only includes the robust and weather resistant MC3000A series compact cameras, but also a quad-split-box which simultaneously monitors up to four camera on the 10" monitor.



Typical configuration driveway surveillance



Pos.	Product	
1	MD3100, colour monitor	1.685,-
2	MK78, system cable (0,5m)	65,-
3	MB1405-Quad	385,-
4	MK24, system cable (0,1m)	45,-
5	MC3070A, compact camera	515,-

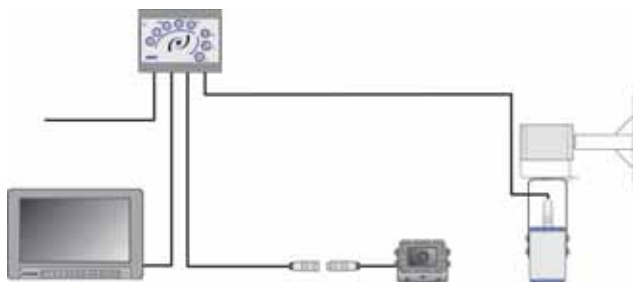
Camera systems for cranes

Offshore cranes

The MC5100-EX proof autofocussing motorized zoom colour camera allows crane operators to approach loads faster and with higher precision. Downtimes due to incorrect winding or time-consuming rope changes cause financial losses. The crane operator can timely recognize whether the rope is perfectly coiled or uncoiled.



Typical configuration load and winch surveillance



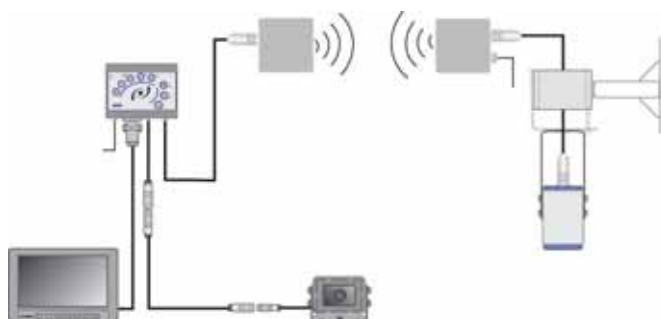
Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MBE5100, control unit	695,-
3	MK279, system cable (0,5m)	119,-
4	MC5100-EX, motorzoom camera, EX-proof	3.985,-
5	MP5000, suspended mount	494,-
6	MC3100A-EX-2, compact camera, EX-proof	1.295,-

Telescopic crane

Crane operators often lack direct view of the hook or of the operating area when lifting or spotting loads. Using our MC5200 motorized zoom camera which was specially developed for crane applications, crane operators are always close to the operation, allowing them not only to spot loads faster and with higher precision, but also to recognize slanting pull.



Typical configuration load and rear area surveillance



Pos.	Product	
1	MD3070A-MS.K.L, colour monitor	406,-
2	MBE5200, control unit	695,-
3	MK279, system cable (0,5m)	119,-
4	MVR5200, radio transmission unit	2.880,-
5	MC5200, motorzoom camera	1.995,-
6	MP5000, suspended mount	494,-
7	MC3100A, compact camera	515,-



Camera Systems ●
for Agricultural Machines

Camera systems for agricultural machines

Tractor

Are the direction, the track depth, and the speed correct? Tractor drivers almost automatically take this quick glance over their shoulder. A reflex with undesired consequences: hardening of neck muscles or back aches occur more and more often. Practical tests have shown that the use of cameras relieves drivers and helps them to work in an ergonomic position.



Typical system application Rear area / ergonomics



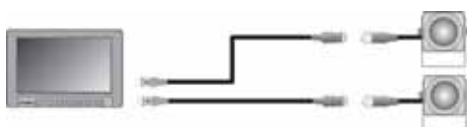
Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW5, system cable	20,-
3	MC6090C-3, compact camera	395,-

Tractor

A banksman is required for tractors with front-mounted accessory tools more than 12 feet wide. As an option, two cameras can be used, mounted on the left and on the right front of the vehicle. This allows drivers to watch both the front-mounted accessory tool and the traffic.



Typical system application double camera system: front-side monitoring



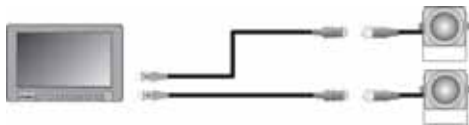
Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW10, system cable	30,-
3	MC6090C-3, compact camera	395,-

Timber harvesters

Used with timber harvesters, Motec cameras are ideally suited for monitoring the rear area. Drivers can thus always see the entire area behind their machine, allowing them to manoeuvre faster and more safely.



Typical system application Monitoring of rear area



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable	35,-
3	MC6090C-3, compact camera	395,-
4	MC6070C-3, compact camera	395,-

Forwarders

Cameras installed at forwarders are a contribution to increased safety. They provide an unobstructed view into the area behind the vehicle, an area which normally remains hidden to the driver. Cameras put an end to the blind angle. Drivers can detect persons and vehicles in due time and manoeuvre more safely.



Typical system application Monitoring of rear area



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable	35,-
3	MC6090C-3, compact camera	395,-

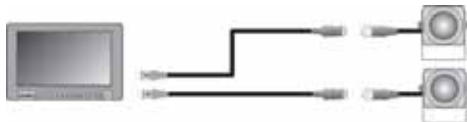
Camera systems for agricultural machines

Combine harvesters

Motec MC6000 series cameras effectively support the harvest. They help the driver to precisely align the discharge tube with the attendant trailer. Attached to the discharge, these cameras provide visibility into the trailer. A second camera, attached at the rear side, monitors the area behind the machine.



Typical system application Rear area and discharge control



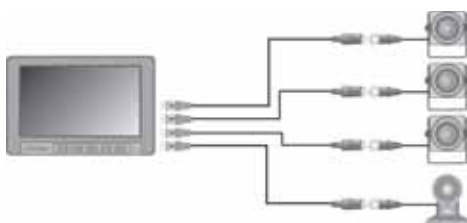
Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable	35,-
3	MC6090C-3, compact camera	395,-
4	MC6070C-3, compact camera	395,-

Combine harvesters

Discharge tube, hitch, rear area or chaff screw – using up to four cameras, drivers are able to monitor all vital processes in and around the combine harvester. They help him e.g. to ideally position sieves and blowers, to couple without external support or to check the filling level of the trailer.



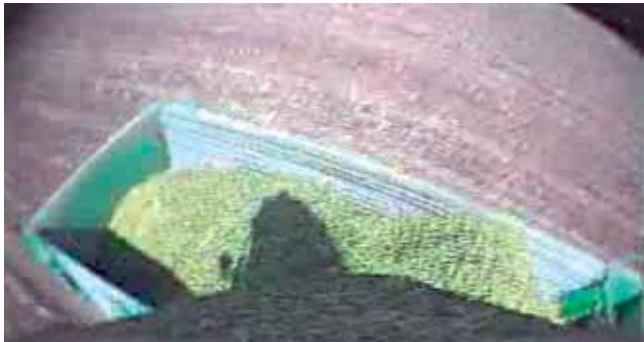
Typical system application Quad camera system: monitoring of working areas



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable	35,-
3	MKW10, system cable	30,-
4	MC6090C-3, compact camera	395,-
5	MC6070C-3, compact camera	395,-
6	MC7090P-3, compact camera	295,-

Field choppers

The drivers of other tractor/trailer combinations in the field can receive the camera image from the spout and no longer need to communicate using hand signals or radio. The view into the loading area tells the driver when the trailer is full at an early stage.



Typical system application Monitoring of harvest transfer



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable (5m)	35,-
3	MC6090C-3, compact camera	395,-
4	MVR6000-TX, radio transmitter	445,-
5	MD3052A-L, colour monitor	385,-
6	MVR6000-RX, radio receiver	445,-

Tractor / Balers

The driver is not able to see the bale discharge process from his driver's seat. However when using our camera serial MC6000 system, mounted directly to the bale discharge, the driver will be able to continuously monitor the discharge process and to detect any incorrect operations on short notice.



Typical configuration quality check bale discharge



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK84.5, system cable	95,-
3	MK232.10-G.10, system cable	115,-
4	MC6090C-3, compact camera	395,-

Camera systems for agricultural machines

Potato harvesters

On potato harvesters up to four cameras are often in use. They monitor all work areas and allow for a frictionless conveying process. With the 3072B-Quad the driver has a simultaneous view of the rear as well as the cutting unit, the transfer conveyor and the loading space in the accompanying vehicle.



Typical configuration working area surveillance



Pos.	Product	
1	MD3072B-Quad-V.K.L, colour monitor	695,-
2	MKW15, system cable	35,-
3	MKW20, system cable	40,-
4	MC6070C-3, compact camera	395,-
5	MC6090C-3, compact camera	395,-

Potato harvester (non self-propelled)

Rear area, sorting conveyor or track depth – camera systems with up to five cameras are suitable for pulled potato harvesters. Getting a look at the sorting conveyor is a particularly useful feature for drivers who are thus able to identify the amount of harvested potatoes and to ideally adapt the speed and the track depth to the capacity of the farm labourers.



Typical system application Double camera system: rear area / conveyor monitoring



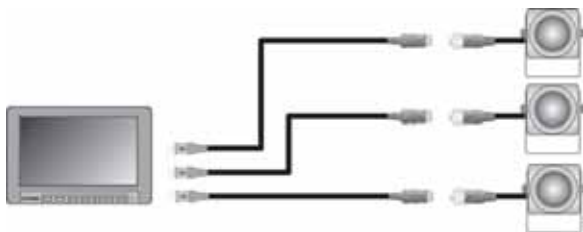
Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK263.5, system cable	135,-
3	MK264.10-G.4, system cable	130,-
4	MC6090C-3, compact camera	395,-

Beet harvester

Reducing damages caused by manoeuvring – Motec cameras provide drivers full view into the blind angle behind the machine. Additional cameras attached inside the machine allow drivers to see conveyors and sieve plates and thus to monitor all work processes in order to be able to recognize congestions at an early stage.



Typical system application Monitoring of working areas



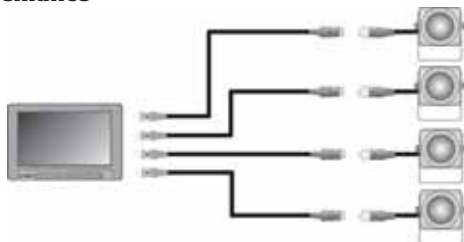
Pos.	Product	
1	MD3072B-Quad-V.K.L, colour monitor	695,-
2	MKW15, system cable (5m)	35,-
3	MKW20, system cable	40,-
4	MC6070C-3, compact camera	395,-
5	MC6090C-3, compact camera	395,-

Grape harvesters

Grape harvest work can be facilitated using up to four cameras. While one or two cameras monitor the grape harvest in the interior of the machine, one camera increases maneuvering safety and the fourth camera is used to monitor the discharge conveyor.



Typical configuration rear and working area surveillance



Pos.	Product	
1	MD3072B-Quad-V.K.L, colour monitor	695,-
2	MKW10, system cable	30,-
3	MC6070C-3, compact camera	395,-

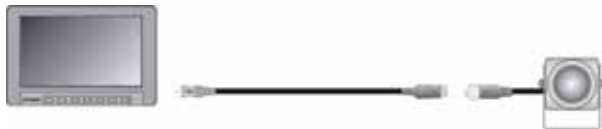
Camera systems for agricultural machines

Self-propelled manure trucks

Due to the size of manure trucks, it is often impossible to monitor the rear area. This results in the danger of persons or vehicles simply vanishing in the blind angle. A rear-area camera however, attached to the rear side of the vehicle, provides visibility into the area of the machine.



Typical system application Monitoring of rear area



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable (5m)	35,-
3	MC6090C-3, compact camera	395,-

Tractor / manure barrel

Used with this combination, Motec cameras provide visibility behind the machine and increase the safety in maneuvering operation. A second camera can be used to control the draw-off pipe.



Typical configuration rear area surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK263.5, system cable	135,-
3	MK264.10-G.4, system cable	130,-
4	MC6090C-3, compact camera	395,-

Self-propelled agricultural sprayers

Due to the size of self-propelled agricultural sprayers, drivers are unable to see behind the machine. This results in the danger of persons or vehicles simply vanishing in the blind angle. Motec cameras provide the required view.



Typical system application Monitoring of rear area



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MKW15, system cable (5m)	35,-
3	MC6090C-3, compact camera	395,-

Manure sprayer (non self-propelled)

Cameras effectively support the operation of non self-propelled manure sprayers. They are mounted to the rear side. Thanks to the broad image angle, drivers are able to see the entire range behind the vehicle. This not only allows him to better control the track, but also to manoeuvre faster and more safely.



Typical system application Monitoring of rear area



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK263.5, system cable	135,-
3	MK264.10-G.4, system cable	130,-
4	MC6090C-3, compact camera	395,-

Tractor/ trailer combination

Large tractors are used whenever it comes to towing heavy loads. Large hay waggons or liquid manure barrels are just a few examples for the large range of applications. For drivers, rear visibility is usually obscured by bulky attachments or heavy trailers.



Typical configuration rear area surveillance



Pos.	Product	
1	MD3072B-V.K.L, colour monitor	695,-
2	MK263.5, system cable (5m)	135,-
3	MK264.10-G.4, system cable	130,-
4	MC6090C-3, compact camera	395,-



**Components
and Accessories**



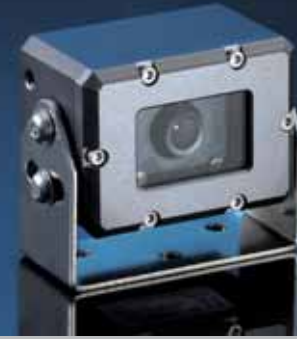
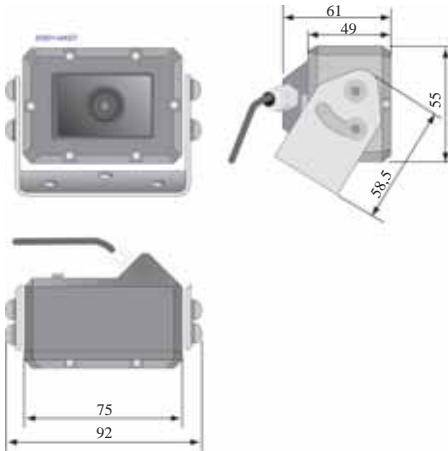
Cameras

MC3000A

515,-

This camera series has been designed for rugged environments. The robust, resistant housing consists of CNC-milled aluminum. It is equipped with an extended objective allowing larger image segments to be displayed. With viewing angles between 20 and 115 degrees, the MC3000A covers all important areas around the vehicle.

50g
Shock



Technical Data

Housing protection class	IP 69K
Shock resistance	50 g
Vibration resistance	10 g
Housing	Aluminium, anodized
Horizontal image angle	20°, 40°, 70°, 90°, 100°, 115°
Min. light intensity	< 0,3 lx
Resolution	542 (h) x 582 (v) Pixel
Operating temperature	-35°C ... +75°C

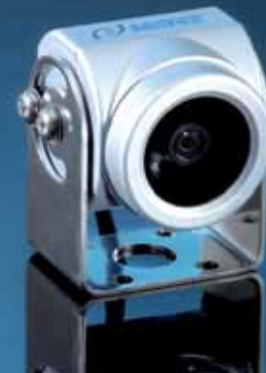
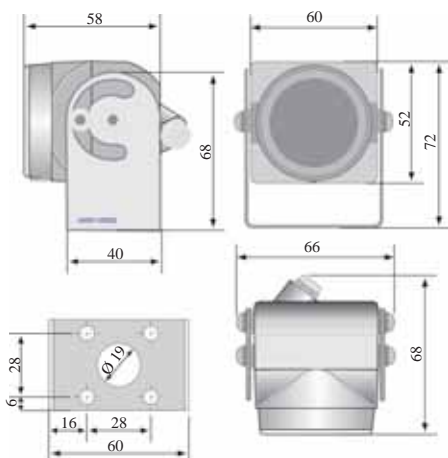
Accessories

Rapid-change mount	406 0083 005	155,-€
Cleaning set	406 0162 000	295,-€
Light shade	406 0015 000	25,-€

MC6000C

425,-

With its die-cast housing, the robust MC6000C compact camera is ideally protected against adverse weather conditions. Due to its high shock and vibration resistance, it can be used under the most difficult conditions. Equipped with an automatic brightness adjustment, the MC6000C provides sharp, high-contrast images even under changing exposure to light.



Technical Data

Housing protection class	IP 69K
Shock resistance	50 g
Vibration resistance	10 g
Housing	Aluminium, anodized
Horizontal image angle	70°, 90°
Min. light intensity	< 0,3 lx
Resolution	542 (h) x 582 (v) Pixel
Operating temperature	-35°C ... +75°C

Accessories

Multi adapter	406 0184 001	19,-€
Rapid-change mount	406 0184 003	75,-€
Light shade (short)	406 0184 002	9,-€
Protective glass	406 0184 006	29,-€

MC7000P

275,-

The compact MC7000 series camera is equipped with a CMOS chip. The camera is therefore able to more quickly adapt to changing light conditions, providing clear, high-contrast images even in backlight. While the camera is delivered with a rubber mount, a mount made of stainless steel is available as an option. Thanks to the three-axis alignment, the camera can be installed safely and flexibly.



IP69K

Technical Data

Housing protection class	IP 69K
Shock resistance	50 g
Vibration resistance	10 g
Housing	Aluminium
Horizontal image angle	90°, 115°
Min. light intensity	< 1 lx
Resolution	720 (h) x 576 (v) Pixel
Operating temperature	-35°C ... +75°C

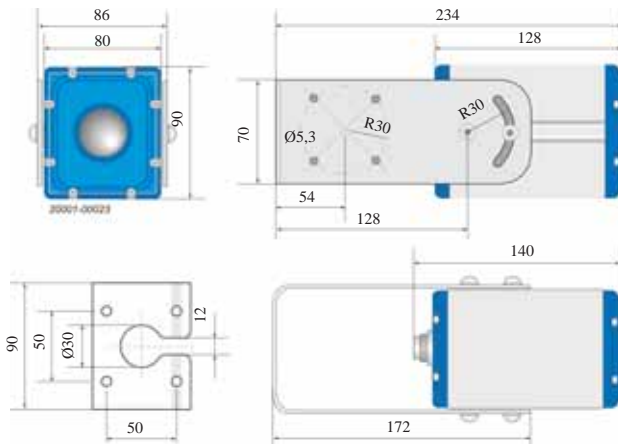
Accessories

mount	406 0202 000	20,-€
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MC5200/MC5226

1.995,-

The MC5200/MC5226 has been specially developed for load monitoring applications at mobile cranes, tower cranes and lattice mast cranes. State-of-the-art, modular video technology provides sharp, high-contrast images and allows for up to 312-fold zooming. The Motec System Bus (MSB) allows for independent, digital control of camera functions and simple system handling.



312x Zoom

Technical Data

Housing protection class	IP 68
Shock resistance	50 g
Vibration resistance	10 g
Housing	Aluminium, anodized
Horizontal image angle	2,8° ... 48° (MC5200) 1,6° ... 42° (MC5226)
Min. light intensity	< 0,7 lx
Resolution	752 (h) x 582 (v) Pixel
Operating temperature	-35°C ... +60°C

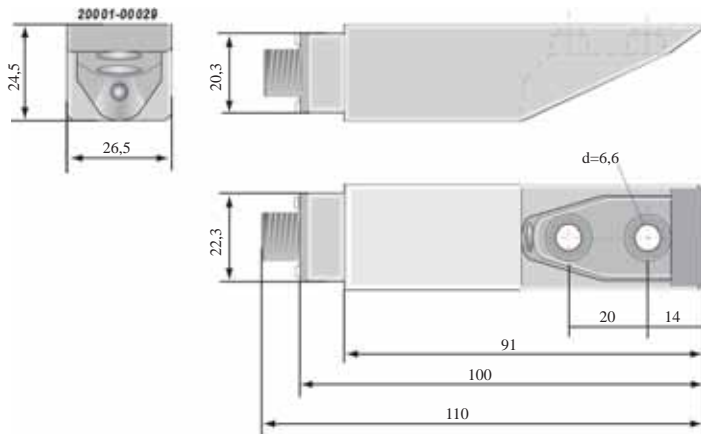
Cameras

MC9000

785,-

100g Shock

The fork-arm mounted camera MC9000 is mainly used with reach trucks in storage applications. Attached to the inside of a fork blade, it allows operators to rapidly and safely handle pallets because now they are virtually always level with the fork entry.



Technical Data

Housing protection class	IP 69K
Shock resistance	100 g
Vibration resistance	10 g
Housing	stainless steel
Horizontal image angle	50°
Min. light intensity	0,2 lx
Resolution	640 (h) x 480 (v) Pixel
Operating temperature	-40°C...+80°C

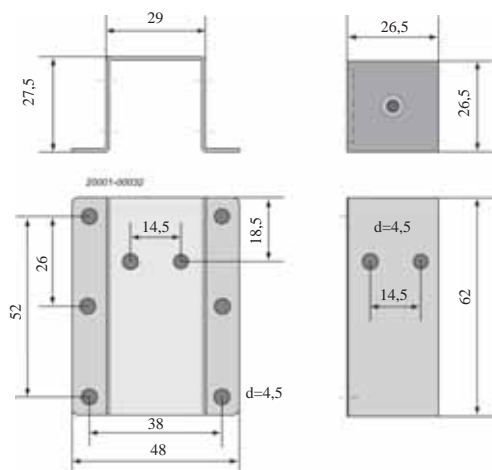
Accessories

Camera extension tube	813 0120 004	29,-€
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MC9150

595,-

The small, robust compact camera with PIN-HOLE objective has been designed especially for installations with limited space. It is equipped with a CMOS sensor which ensures optimum image quality even under difficult light conditions. Thanks to the massive housing in combination with the lens aperture of just 3mm, the camera is well protected against special stress.



Technical Data

Housing protection class	IP 69K
Shock resistance	100 g
Vibration resistance	10 g
Housing	stainless steel
Horizontal image angle	50°
Min. light intensity	0,2 lx
Resolution	640 (h) x 480 (v) Pixel
Operating temperature	-40°C...+80°C

Accessories

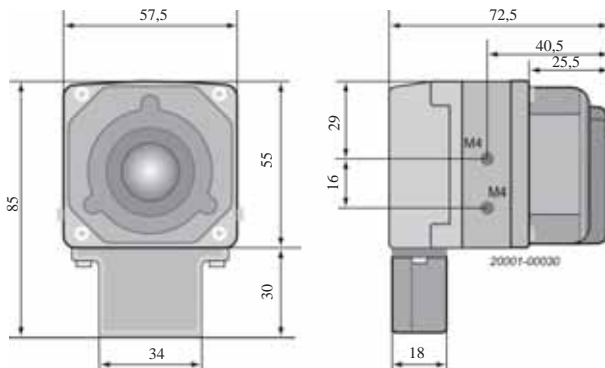
Camera fastener	406 0199 000
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PathFindIR

PathFindIR-25Hz-PAL 2.997,-
PathFindIR-9Hz-PAL 2.793,-



The infrared camera PathFindIR does not require any light source at all as it provides sharp images even in total darkness. Drivers are able to detect persons, animals or objects at an early stage and thus to react appropriately in case of dangerous situations. Motec is the distributor in Germany and Switzerland of PathFindIR, which is manufactured by the US company Flir.



Technical Data

Encapsulation	waterproof
Shock	30g per IEC 60068-2-27Ea
Vibration	per IEC 60068-2-64
Operating temperature	-40°C ... +80°C
Detector type	uncooled microbolometer
Resolution	320 x 240 Pixel
Spatial resolution	2 mRad
Field of view	36° (h), 27° (v)

Monitors

MD3052A-L

385,-

The MD3052A-L TFT monitor can display up to 2 video images. With a diagonal screen size of 14,2 cm (5,6"), this new product is the smallest monitor offered by Motec. Thanks to its compact design, it can be fitted in every driver's cab. The product is delivered with a light protection cover.

5.6" Screen



Technical Data

Housing protection class	IP 30
Shock resistance	10 g
Diagonal screen size	14,2 cm (5,6" / 4:3)
Backlight	300 cd/m ²
Video input	2
Power supply	12V / 24V DC
Resolution	320 (h) x 234 (v) Pixel
Operating temperature	-25°C...+60°C

Accessories

Sun protection cover	406 0168 002	18,-€
Shock absorber kit	406 0089 023	25,-€
Ball joint	406 0089 007	24,-€

MD3070A

345,-

The MD3070A series colour monitor has a diagonal screen size of approx. 17 centimeters and it is equipped with an integrated backlight. Thanks to its slim design, it can be easily accommodated in almost any driver cabin. The monitor operates in conjunction with a connection cable MK73 and a control box (MB1205, MB1405-Quad, MBE5200).



Technical Data

Housing protection class	IP 30
Shock resistance	10 g
Diagonal screen size	17,8 cm (7" / 16:9)
Backlight	500 cd/m ²
Video input	1
Power supply	12V DC
Resolution	1440 (h) x 234 (v) Pixel
Operating temperature	-25°C ... +80°C

Accessories

Sun protection cover	406 0168 001	18,-€
Shock absorber kit	406 0089 023	25,-€
Ball joint	406 0089 007	24,-€

MD3072B

595,-

The MD3072B, just as the identically designed MD3070A, has a diagonal screen size of 17 centimeters. It is furthermore equipped with a integrated control box to interface two cameras. Optional is a light protection cover, an anti-vibration damping and a ball joint available.



Technical Data

Housing protection class	IP 30
Shock resistance	20 g
Diagonal screen size	17,8 cm (7" / 16:9)
Backlight	500 cd/m ²
Video input	2
Power supply	12V / 24V DC
Resolution	1440 (h) x 234 (v) Pixel
Operating temperature	-30°C ... +80°C

Accessories

Sun protection cover	406 0168 001
Shock absorber kit	406 0089 023
Ball joint	406 0089 007

MD3072B-Quad

685,-

The MD3072B Quad Monitor directly connects up to four cameras, allowing users to display up to four images at the same time. Camera selection can be realized both automaically and manually. The sytem provides crystal-clear images thanks to its strong backlight display.



Technical Data

Housing protection class	IP 30
Shock resistance	20 g
Diagonal screen size	17,8 cm (7" / 16:9)
Backlight	500 cd/m ²
Video input	4 (simultaneous)
Power supply	12V / 24V DC
Resolution	1440 (h) x 234 (v) Pixel
Operating temperature	-30°C ... +80°C

Accessories

Sun protection cover	406 0168 001
Shock absorber kit	406 0089 023
Ball joint	406 0089 007

Monitors

MD3074A-Quad

775,-

The MD3074A-Quad monitor meets housing class IP65 requirements (protected against projected water) and can be used for cold store applications with alternating operation and for outdoor applications. While the monitor has four camera inputs, all four camera images can be displayed separately or simultaneously. An adaptable voltage converter (MPM48) is available for use with 48V machines.



Technical Data

Housing protection class	IP 65
Shock resistance	30 g
Diagonal screen size	17,8 cm (7" / 16:9)
Backlight	300 cd/m ²
Video input	4 (simultaneous)
Power supply	10V ... 32V DC
Resolution	1140 (h) x 234 (v) Pixel
Operating temperature	-30°C ... +70°C

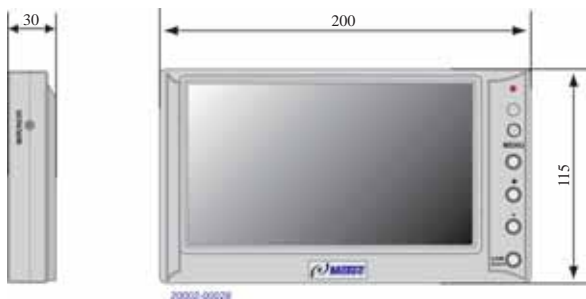
Accessories

Sun protection cover	406 0168 001
Shock absorber kit	406 0089 023
Ball joint	406 0089 007

MD2070-Set

395,-

The 7" monitor of the MD 2070 provides sharp, high-contrast images even under heavy sunlight. The monitor can optionally be operated with 12V or 24V. As part of the complete set, the integrated control unit MB2070 can control up to two cameras and mirror their images independently of each other.



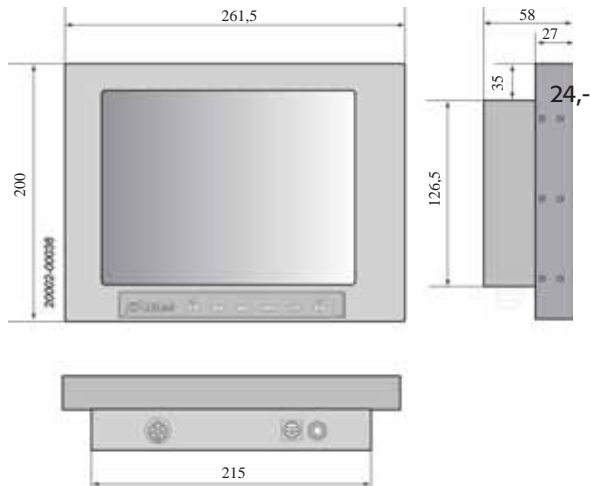
Technical Data

Housing protection class	IP 30
Shock resistance	5 g
Diagonal screen size	17,8 cm (7" / 16:9)
Backlight	350 cd/m ²
Video input	2
Power supply	24V DC
Resolution	1140 (h) x 234 (v) Pixel
Operating temperature	-15°C ... +65°C

MD3100

1.685,-

The new TFT monitor MD3100 has a large, 10.2" screen. With a rugged metal housing and the frontal IP54 protection class, this monitor is ideally suited for applications in difficult conditions.



10,2" Screen

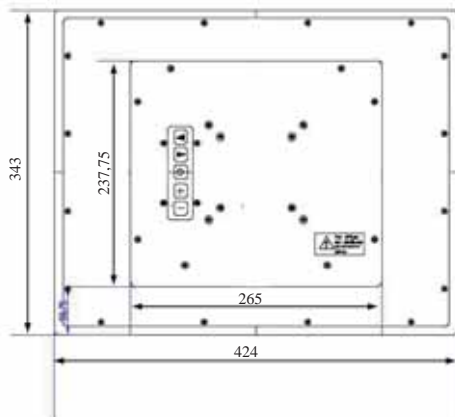
Technical Data

Housing protection class	IP 30 / IP 54 frontally
Shock resistance	5 g
Diagonal screen size	25,9 cm (10,2" / 16:9)
Backlight	400 cd/m ²
Video input	1
Power supply	12V / 24V DC
Resolution	800 (h) x 480 (v) Pixel
Operating temperature	-20°C ... +60°C

TFT 17"

1.399,-

The large TFT monitor (diagonal screen size 17") has been specially designed for industrial applications. The robust and resilient metal housing resists even rugged environmental conditions. The monitor stands out for its frontal housing protection class IP65.



Technical Data

Housing protection class	IP 30 / IP 65 frontally
Shock resistance	5 g
Diagonal screen size	43,2 cm
Backlight	280 cd/m ²
Video input	BNC, MiniDIN, Cinch, VGA
Power supply	230V AC
Resolution	1280(h) x 1024(v) Pixel
Operating temperature	-0°C ... +50°C

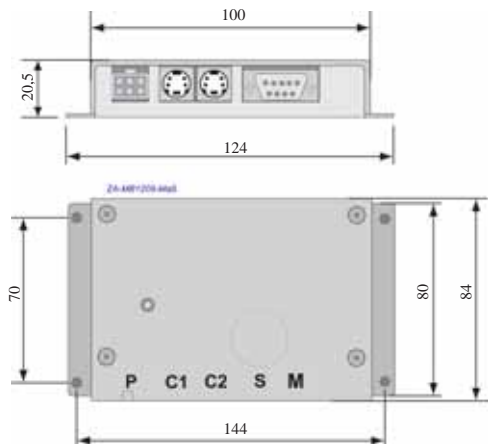
Control boxes

MB1205

156,-

Using the MB1205 control box, drivers can control up to two cameras. It can optionally be operated with either 12 or 24V DC and has a mirroring function for each camera. Control lines are used for switchover between the separate cameras.

2
CAM



Technical Data

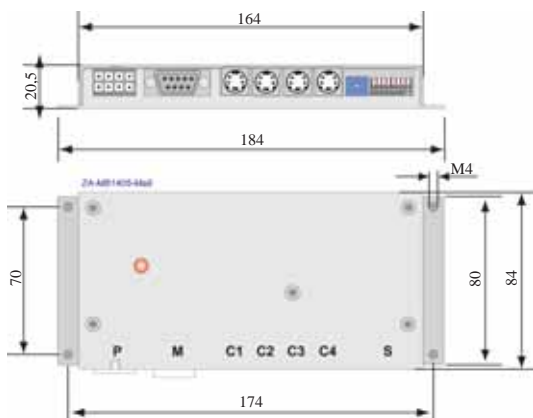
Housing protection class	IP 30
Camera input	2
Image mirror	Monitor end (DIP-Switch)
Priority	Camera C1 > C2
Trailer mode	On camera input C2
Housing	Metal (galvanised)
Operating temperature	-30°C ... +75°C
Power supply	10V ... 32V DC

MB1405

295,-

The Quadsplitter MB1405 provides enhanced flexibility for camera-based monitoring at commercial vehicles as it is able to manage and control up to four cameras. Due to its large functionality, the quadsplitter is suited for applications with refuse collection vehicles or articulated trains (front, side and rear area monitoring).

4
CAM



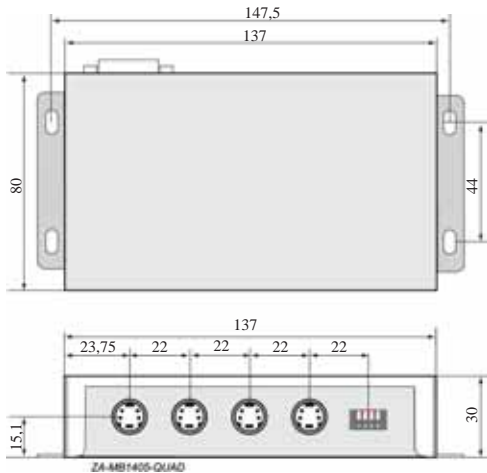
Technical Data

Housing protection class	IP 30
Camera input	4
Image mirror	Camera- or monitor end
Priority	C1 > C2 > C3 > C4
Trailer mode	On camera input C2
Housing	Metal (galvanised)
Operation temperature	-30°C ... +75°C
Power supply	24V DC

MB1405-Quad

385,-

The QuadSplitter MB1405-QUAD interfaces four cameras to a single monitor. The camera to be activated can be selected either via control lines or via an operating panel. Up to four cameras can be displayed in split screen or full image mode. The MB1405-QUAD supplies power to the cameras and to the TFT monitor.



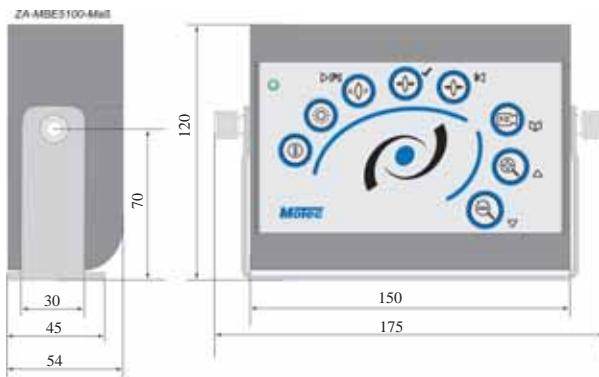
Technical Data

Housing protection class	IP 30
Camera input	4
Image mirror	configuration via DIP switches
Priority	C1 > C2 > C3 > C4
Trailer mode	On camera input C2
Housing	Metal
Operation temperature	-25°C ... +75°C
Power supply	10V ... 32V DC

MBE5200

695,-

The MBE5200 is used to digitally control the motorized zoom camera MC5100 via the MSB (Motec System Bus). The control panel provides functions such as "System on/off", "Zoom in/out" and "Select Cam 1/2". These functions can be controlled via external signals. A second input is available to connect a compact camera.



Technical Data

Housing protection class	IP 44
Function	Operating unit for motorized zoom camera
Additional function	2. camera input
Power supply	24V DC
Housing	Steel (galvanised)
Operating temperature	-30°C ... +60°C
Weight	750 g

Accessories

Ball joint	406 0089 007
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Signal transmission

MKW

This high-quality standard cable is used to connect the camera to the monitor. A water-tight connector ensures safe connection to the camera.

MKW10 30,-
MKW15 35,-
MKW20 40,-
MKW25 45,-
MKW30 55,-



MK24

The robust MK24 camera cable is equipped with a water-tight metal connector to the camera which has been designed to withstand extremely rough conditions of use.

MK24.1 60,-
MK24.10 68,-
MK24.15 70,-
MK24.20 80,-
MK24.30 99,-



MK25-MA2

The MK25-MA2 is mainly used for winter maintenance applications. The MA2 interface box serves as an interface that allows for rapid changes, and for continuous use of the camera system.

MK25.10-MA2 92,-
MK25.15-MA2 97,-
MK25.20-MA2 102,-



MK35

The MK35 has plastic connectors at both ends which are mainly used for winter maintenance vehicle camera systems.

MK35.1 90,-
MK35.10 90,-
MK35.15 100,-
MK35.20 105,-
MK35.25 115,-



Mast cable

Highly resilient mast cables are used for forklift applications. As the cable is installed within the forklift mast, it has to withstand extreme mechanical conditions. Different types of mast cable are available which can be run directly by means of guide pulleys (MK228) or in hydraulic tubes (MK4). Its robust connectors provide a permanently stable connection.

MK228.10	223,-
MK228.15	289,-
MK228.20	360,-



MK17 helix cable

Using the MK17 helix cable it is possible to transmit camera signals even through mechanically exposed locations which do not tolerate the use of standard cables. A typical application is the transmission of signals at forklift masts.

MK17.2	120,-
MK17.4	130,-
MK17.6	184,-
MK17.9	224,-



MK11 helix cable

The MK11 is used to connect the tractor and trailer of articulated lorries. Its robust connectors have been designed for frequent coupling procedures.

MK11.4	165,-
MK11.6	175,-



MK279

The MK279 is used to connect the motorized zoom camera and the MBE5200 operating panel.

MK279.05	119,-
MK279.10	175,-
MK279.25	297,-
MK279.50	465,-
MK279.70	595,-
MK279.100	798,-

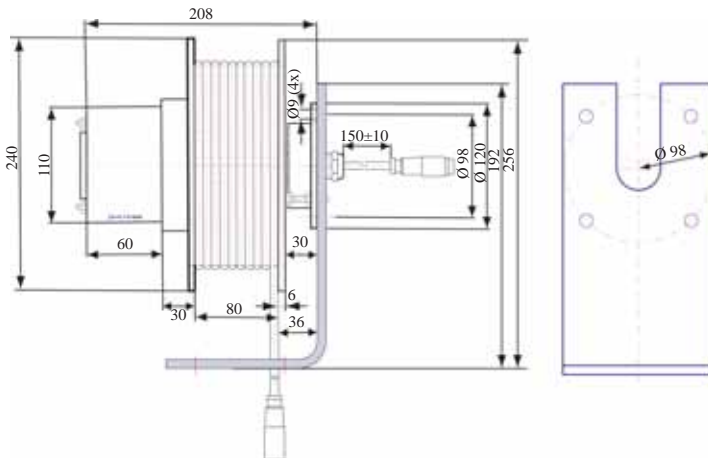


Signal transmission

FLT.S10 cable reel

1.299,-

This spring driven cable reel with gold-plated contacts has been specially developed for the transmission of video signals. The length of the extremely robust and cold-store-suited cable is 10 meter. The cable has been designed to operate between -30° and $+70^{\circ}$ C.



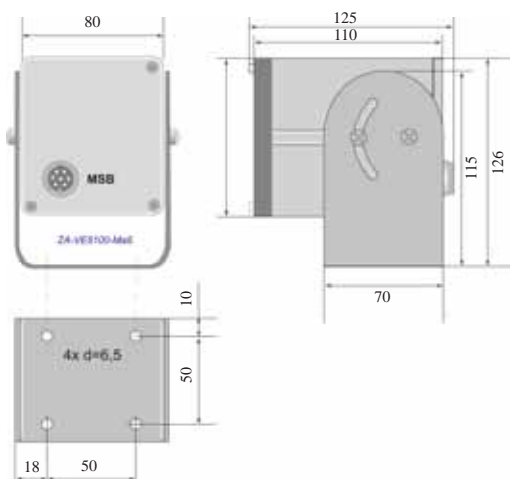
Technical Data

Housing protection class	IP 66
Shock resistance	10 g
Wrapped length	max. 10m
Cable diameter	ca. 9mm
Cable weight	90g/m
Operating temperature	$-30^{\circ}\text{C} \dots +70^{\circ}\text{C}$
Weight	ca. 6.5 kg

MVR5200

VE 1.485,-
VS 1.395,-

For the crane camera system, the MVR5200 wireless communication system can be used as an alternative to cable-based transmission in order to transmit camera images to the driver cabin. It operates in the 5.8 GHz frequency band and offers up to 5 video channels for the transmission of images.



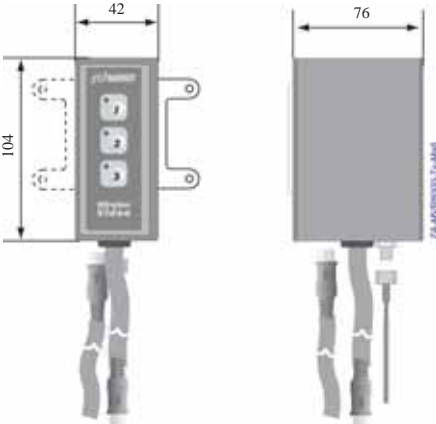
Technical Data

Housing protection class	IP 65
Shock resistance	30 g
Operating temperature	$-35^{\circ}\text{C} \dots +60^{\circ}\text{C}$
Frequency range	5,775 ... 5,830 GHz
Channels	5
Power supply	18V...32V DC
Current consumption	0,15 A

MVR6000

RX 445,-
TX 445,-

Using the wireless video communication system MVR6000, several vehicles are able to receive the same camera signal. Three channels are available for an error-free transmission of images. The MVR6000 operates in the 2.4 Gigahertz range with coverage of up to 500 meters.



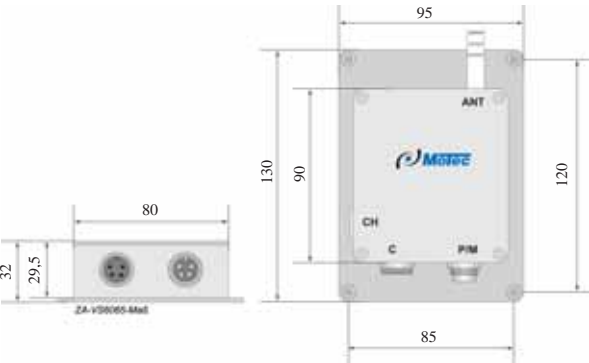
Technical Data

Shock resistance	5 g
Operating temperature	-10°C ... +65°C
Camera supply	12V / 250 mA stabilised
Frequency range	2,4 ... 2,4835 GHz ISM Band
Channels	3
Power supply	12V DC
Current consumption	400 mA

MVR6065

RX 545,-
TX 595,-

Using the wireless video communication system MVR6065, several vehicles are able to receive the same camera signal. The MVR6065 (IP65) has a water-tight housing and is therefore ideally suited for outdoor applications, e.g. at breaker systems. Three channels are available for an error-free transmission of images.



Technical Data

Housing protection class	IP 65
Shock resistance	50 g
Operating temperature	-20°C ... +65°C
Frequency range	2,4 ... 2,4835 GHz ISM Band
Channels	3
Power supply	12V DC
Current consumption	400 mA

Accessories

Rapid-change mount MC3000A

155,-

Robust and easily applied rapid-change mount for MC3000A series compact cameras. It is ideally suited for applications with municipal vehicles.



Cleaning set

295,-

The cleaning set is used to remove, with a simple push of a button, mud, dirt and smut using water. It includes a 24V high-pressure pump, a fiber re-enforced high pressure jet and a separate 13 liter tank. The cleaning set can be retrofitted to installed systems.



MC7000 Mount

20,-

Due to the extended adjusting range of the optional installation mount for MC7000 series cameras, it is always easy to ideally adjust the camera even under difficult installation conditions.



Multi adapter MC6000-MA

19,-€

All accessories to the MC6000 can be easily attached and replaced using the multi adapter. The base carrier consists of UV-resistant plastic and can be plugged onto the camera with just a few movements.



Rapid-change mount MC6000C

The rapid-change mount provides enhanced flexibility and reduces changeover times. Using the MC6000-SWH, it is possible to change the mounting position of the MC6000 compact camera at the vehicle within extremely short periods.

75,-



Light-shade MC6000C

Simply plugged to the multi adapter, the light-shade, available as an option for MC6000 series cameras, prevents sunrays from directly hitting the objective. This results in sharp images even if taken in sunlight.

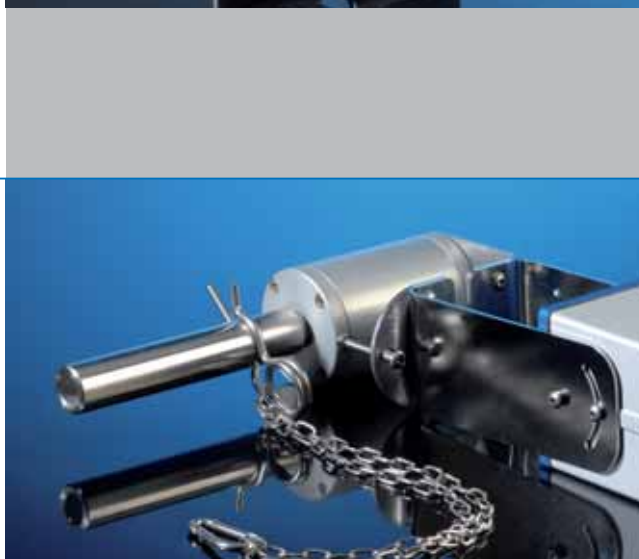
9,-



Suspended mount MP5000

The suspended mount is used to install the MC5100 crane camera at the end of the extension arm of mobile cranes, turret cranes and lattice mast cranes. The camera is therefore always perpendicular so that the crane operator can see whether the load is correctly attached to the hook. The damping has been designed such that the camera will always stay in the same position even if the extension arm is shaken by the wind or other movements. The camera can be directly attached to the trolley if the crane does not have a retractable extension.

494,-



Voltage transformers

Using voltage transformers, it is possible to operate camera systems on board vehicles that do not have a separate, interference-free on-board 12V or 24V DC power supply.

245,-



Monitor accessories

Light protection cover 18,-

The light protection cover protects the monitor against the effects of horizontal or lateral sunlight. It is available for almost all TFT monitors as it is either part of the standard package or can be ordered separately.



Ball joint / ball joint extension 25,-

Using the robust ball joint and a suitable extension, various TFT monitors can be safely fitted in almost any position of the driver's cab area.



Assembly and anti-vibration set 55,-

The anti-vibration set effectively absorbs vibrations and shock of the machine, preventing them from being transmitted to the monitor.







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