



MCDE5200 + MP5200

IMAGE SOURCE: Motec GmbH

Implementing future-proof assistance systems for cranes: Digital motor zoom camera with AI integration

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- Motec introduces a digital zoom camera system for cranes, enhancing load visibility and safety with update capability and optional AI integration.
- The MCDE5200 motor zoom camera offers FullHD resolution and a frame rate of up to 60fps, ensuring high-quality images.
- The system uses WPA2-secured WLAN modules for reliable and secure signal transmission, preventing dangerous situations.

- AI integration enables intelligent workspace monitoring, distinguishing authorized personnel by helmet or clothing colors.
- Future-proof features include support for Gigabit Ethernet and compatibility with the MDDE3124 intelligent display, allowing advanced HMI solutions like VR goggles.

Cranes lift loads weighing several tons over obstacles, usually in confined spaces. To support crane operators, powerful assistance systems are needed that ensure both greater safety and more comfort. The digital zoom camera system from Motec forms the basis for intelligent load visibility solutions that guarantee future-proof performance thanks to update capability and optional AI integration.

Operating cranes on a construction site demand the full skill of the operator as goods often have to be lifted over obstacles and set down outside the crane operator's field of vision. The loads moved by crane are usually very large and can weigh several tons while they have to be moved and positioned with pin-point accuracy. Camera systems mounted at the tip of the crane boom help ensure safe lifting also outside the crane operator's natural field of vision.



MCDE5200

IMAGE SOURCE: Motec GmbH

Safely avoid life-threatening situations

The more stable the signal connection and the higher the image quality, the safer and faster the crane operation can be carried out. Latencies or faulty connections can have serious consequences, especially with cameras that transmit their image data wirelessly. In the case of unsecured transmission systems, the camera or transmission module may send the images to the wrong vehicle when several cranes are used on a construction site. All of these issues could become potentially life-threatening if information about people in the danger zone is not conveyed timely and accurately.



MCDE5200+MCDE5200

IMAGE SOURCE: Motec GmbH

The camera and assistance system experts at Motec have developed the digital load vision system, a powerful system with a digital zoom camera and digital Wi-Fi transmission that can prevent such dangerous situations from occurring. Twan Pelders, Director of Business Development at Motec, explains the advantages: "With our WLAN modules, the signal transmission is secured using the WPA2 standard. This ensures correct transmission to the right recipient and at the same time the greatest possible protection against manipulation."



MCDE5200-MVRD5200

IMAGE SOURCE: Motec GmbH

Comprehensive digital system for cranes

The MCDE5200 motor zoom camera is part of the digital load vision system for cranes from Motec. Motec is the only manufacturer to offer a complete portfolio of digital components for cranes: from the camera to communication and control devices to the display. This means that crane manufacturers benefit from all the typical advantages of digitalization: the systems are networked and therefore updateable, flexibly configurable, and easy to integrate thanks to Power-over-Ethernet. The MCDE5200 motor zoom camera has a digital zoom in addition to the powerful optical zoom, delivering high quality images with FullHD resolution and a frame rate of up to 60fps.



MCDE5200-MVRD5200

IMAGE SOURCE: Motec GmbH

The digital components offer OEMs maximum flexibility: even if a crane manufacturer does not yet want to integrate additional camera-based assistance software on their machines, the Motec system gives them the option to add it at any time via an update. This ensures future-proof investment, and the vehicles can be kept up to date with the latest technology for longer, including the integration of additional assistance and AI software.



MCDE5200-MVRD5200

IMAGE SOURCE: Motec GmbH

AI assistance for greater safety and efficiency

Integrating AI into our camera systems enables intelligent workspace monitoring. The system not only warns when a person is in the area to be monitored but can also use helmet or clothing colors to distinguish whether a person is authorized to be in the defined area - and only warn the driver if it is really necessary.



MCDE5200-MVRD5200

IMAGE SOURCE: Motec GmbH

The digital camera system can also be used for the internal logic and verification of the assistance systems. Data fusion can be used to compare the image data from the camera with the sensor data from the machine control system, check its plausibility and thus further increase safety.



MCDE5200-MVRD5200

IMAGE SOURCE: Motec GmbH

Prepared for systems of the future

The digital crane system will support Gigabit Ethernet in the near future. With compatible communication modules and displays, this will make it possible to transmit up to twelve video signals from full HD cameras without loss and with virtually no latency. This offers previously unavailable options for setting up more powerful assistance systems.



MDDE1102

IMAGE SOURCE: Motec GmbH

Especially in combination with the newly developed, freely programmable MDDE3124 intelligent display, there are new possibilities to better support crane operators in their work. This 12.3-inch display, optimized for ADAS systems, has an integrated high-performance processor that allows intelligent person recognition software to run directly on the device without the need for an additional video control unit. In addition, the ultrawide format display can also be mounted and used vertically, allowing up to six camera images to be displayed simultaneously without restricting the crane operator's field of vision.



MDDE1102

IMAGE SOURCE: Motec GmbH

The fully digital system also makes completely new HMI solutions possible. One example: the camera systems can be coupled with VR goggles, which display the relevant information directly to the machine operator in his field of vision. This would make work even more ergonomic.

Twan Pelders summarizes: "Our digital crane camera system opens up a wide range of options for machine manufacturers that analogue camera systems cannot offer. In particular, the optimized process reliability thanks to the improved image quality and the secure transmission standard offer benefits for machine operators and crane drivers that they immediately notice in their day-to-day work. The option of integrating updates and additional software also provides increased investment security. Cranes with digital assistance systems are significantly more efficient."

Source: Motec GmbH

CRANES