# STAY LOOSE

## HIGH-QUALITY CONTROL PANEL SOLUTIONS THAT CAN BE INDIVIDUALLY ADAPTED TO THE NEEDS OF EACH MACHINE WHILE REQUIRING ONLY SHORT DEVELOPMENT TIMES ENABLE OEMs TO TAKE A MORE FLEXIBLE APPROACH TO MOBILE AUTOMATION

▷ Automation technologies play a very important role in all machine sectors nowadays. The goal is always the same: optimizing processes, increasing efficiency and combining individual subsystems to create one high-end system. In addition, it is essential that automation products, processes and developments must always be adapted to the needs of the customer – a standard solution just does not exist. This places a major responsibility on developers and manufacturers of control techniques.

Moreover, the efficient control of, for example, aerial work platforms or mobile cranes is a complex process. The control system must be adapted to the specific machine model, considering factors such as its degree of extension or permissible load. On the other hand, safety issues must by no means be neglected. For this reason, a high-quality control system needs to ensure, for instance, an optimum outrigger position, a secure export of the arm and the basket, and the storage of different operating modes. The careful consideration of all those important aspects, in turn, requires long development times for a control panel to be ready for use.

### We shall overcome

To overcome this problem, the Moba Mobile Automation Group has now extended its robust modular operating unit HMI$^{mc}$ line-up. The result – the modular MCP control panel – does not only fulfill all essential control panel criteria, such as



MAIN IMAGE: **More flexibility with the modular control panel MCP**



**Wear-free joystick with non-contact operation**

robustness, safety and usability, but also provides the user with complete flexibility. Thanks to its modular concept, different components can easily be combined into a perfectly functioning system. A custom design of the control unit is therefore easy.

Joystick modules, display modules and keypad modules can be combined as desired. Concerning the joystick module, there is the option of integrating a lockable or non-lockable joystick for optimum protection. Due to the non-contact operation of the joystick, it can be easily replaced without the need to completely dismantle the operating unit, considerably extending its lifetime. Also, a display module that incorporates either a monochromatic or

graphic display can be integrated into the operating unit. Keypad modules contain up to 16 keys and additional LEDs. Keys can be assigned to desired functions, with freely selectable plastic films. Furthermore, menu structure, color scheme, LEDs and symbolic language are structured so that the operator can intuitively and quickly capture all relevant data – in real time.

Mobile machines intended for outdoor use also require protection against shock, vibration and water. For this reason, all Moba Group components are optimally protected against environmental influences by a special potting technique.

Because all controllers and sensors are redundantly configured with two channels,

RIGHT: **Three module-based HMI^mc equipped with two joysticks and one keypad**
LEFT: **Better control of aerial work platforms and mobile cranes can be achieved**

they correspond to the EN standard Cat 3 and all safety requirements.

## Free thinking

The HMI^mc has a CAN interface and offers the machine OEM the possibility to freely program and develop controllers with CODESYS. This removes the unnecessary expense of investing in a costly security software. All products are certified according to ISO/EN13849, so that manufacturers can fully rely on the expertise resulting from 40 years of experience in the market.

Additionally, a CODESYS security library facilitates a constant monitoring of stability, permissible load and platform inclination. The main functions of the security software include:

• Monitoring the moment depending on turret position, outrigger and inclination;
• Monitoring the maximum boom angle and potential wind load;
• Monitoring a secure outrigger;
• Monitoring the cage load and platform inclination;
• Providing various operating modes, such as standard mode, tunnel function, wall function and emergency operation;
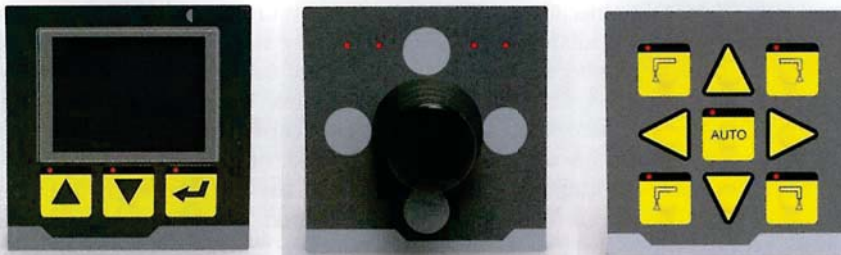• Home function;
• Memory function.

Once the Moba Group software detects an error, which could potentially jeopardize the stability, an automatic safety shutdown is initiated. An emergency operation can then bring the cage occupants safely back to the ground. Movements that could bring the platform to tilt are also locked by the software and hardware.

No matter what demands the HMI must withstand, the Moba Group provides the optimum components, which only have to be combined. Due to the modular concept, proven individual components can now be combined into a high-quality overall system. The extension of the HMI^mc into the modular control panel MCP therefore provides further proof of its extraordinary range and flexibility.

The innovative system contributes to the automation of aerial work platforms and mobile cranes in two ways. First, it combines all relevant criteria of a high-quality control panel, such as robustness, safety and usability. It is robust due to particularly resistant individual parts and a special potting technique, safe as a result of the EN standard Cat 3, and user-friendly thanks to the customized combination of individual modules. Second, it even fulfills another highly significant criterion that is important for both client and developer: a short development time. **iVT**



A wide range of different modules can individually be combined, such as a high-resolution graphic display, a joystick and a keypad module

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| Moba Group quality standards for the MCP | | |
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| **Robustness** | **Safety** | **Usability** |
| Robust individual parts | ISO/EN13849 certified products | Flexible combination of individual modules |
| Potting technique by the Moba Group, protecting the system from environmental influences | Controllers and sensors comply to EN standard Cat 3<br><br>Two-channel controllers and sensors | Customized software, programmable with CODESYS<br><br>Real-time operation |
| | Redundant controllers and sensors | Intuitive symbolic language |
| | Safety software by the Moba Group | Intuitive menu structure |
| | CODESYS security library<br><br>Lockable joystick | Easy replaceable joystick<br><br>LEDs<br><br>EOL tools |