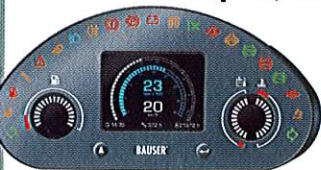


## Minimum input, maximum results



Just a few simple steps are needed to launch into a new instrument cluster project with **Bauser**. The first thing to decide is the number of digital and analog inputs; then how they will be connected (using a low switch or high switch), followed by the thresholds of these inputs, and the CAN protocol, which is then implemented into the cluster's hardware and software.

The instrument cluster can be controlled by up to 26 pins, fulfilling the demanding requirements of a customer's project. CAN uses two of the pins (for CAN high and CAN low), and the remaining pins are used for digital and analog inputs, FET outputs, and for the instrument cluster's power supply. The cluster

can be housed in a standardized PCB casing, which, if necessary, can be modified. It is, however, possible for Bauser's design team to create customized casings entirely to customer specifications, whereby any components not required can be discounted from the PCB.

Even after production, changes due to future vehicle modifications can be made with a PC configuration tool. With such a tool, consisting of a hardware adaptor to communicate between display instrument, PC and software tool, OEMs, users and service technicians have an easy-to-operate solution at their disposal. It is therefore straightforward to re-parameterize various analog inputs, upgrade firmware, set a clock, or update service interval values.

### READER INQUIRY SERVICE

To learn more about this advertiser, visit: [www.ukipme.com/info/ivm](http://www.ukipme.com/info/ivm)  
Quote Ref: 516

## Clear control

Machines are becoming more complex, so it is all the more important to deliver clear, precise information about the machine's functionalities in an appropriate manner.

**Moba** therefore created the single-unit HMIc with a 3.5in color display and 320x240 pixel resolution. It is CoDeSys programmable and offers smart applications – i.e. it can be adapted according to customer demands and only the features needed are shown, to avoid the display of cumbersome data.

The HMIc mainly works with graphics and standardized symbols according to ISO 7000 that can be interpreted intuitively. This allows a fast interpretation of the information and also makes it usable worldwide. The HMIc works with a simple, structured menu and indicators, which, with the clear color structure, guide the operator through the menu.

To illustrate the processes being carried out, animated symbols allow them to be pictured vividly. The cycle times, depending on the application, lie in the millisecond range so they allow real-time visualization. Due to the high graphical performance, the animation flow can be realized fluently.



Additional to the graphics, all values are visualized numerically.

An additional encoder on the side of the robust HMI allows operators to switch between different menu items and to switch between pages quickly. Three additional LED lights over the three freely programmable key buttons enable the highlighting of special features.

CANbus communication and the real-time operating system offer high performance and all data is shown in real time on the display. Also the boot time is very fast.

It is also important that a display is built to survive harsh conditions – so Moba's HMIc is temperature- and moisture-resistant, and offers outstanding readability in sunlight. It can also be combined with other HMIc components, for example with keyboard or joystick modules.

### READER INQUIRY SERVICE

To learn more about this advertiser, visit: [www.ukipme.com/info/ivm](http://www.ukipme.com/info/ivm)  
Quote Ref: 518



## Making machines smart

An 'intelligent HMI' is not the same solution in a wheeled excavator as in a production drill rig in the quarry. But diverse applications have one thing in common – the intelligence is all about software.

The **maximatecc** solution is to offer a palette of software frameworks and tool chains, supporting different levels of system complexity and different approaches to software design. The company has integrated these different software solutions in the LinX Software Suite, which is a common platform for all its display products. The platform is based on open standards and OEMs can choose a range of programming tools: the Quic configuration tool which requires no programming skills, CoDeSys for users who prefer PLC programming, and Qt and C/C++ for more advanced programming. Through this approach, OEMs and system developers have the right tools to develop intelligent HMIs efficiently with high quality.

The UX (user experience) Designer module of the LinX Software Suite contains smart graphical components and style sheets – smart in the sense that they are highly and easily adaptable and that they, by design, ensure a high standard in terms of usability and interaction design.



The maximatecc display portfolio has two product lines: the CCpilot Xtreme line is designed for advanced HMI applications in the toughest environments, and the CCpilot Vision line is designed for in-cab HMI functions in standard vehicle applications. The latest addition is the CCpilot VC, a 5in color display with optional touchscreen. The VC has a truly multifunctional capability – it can be used as instrumentation display, control system GUI, video monitor, service tool, and more.

This is a major benefit in space-sensitive cabs where it can replace multiple smaller displays. With all HMI functions in one device, OEMs can create a more efficient, intuitive user interface. The CCpilot VC comes with the LinX Software Suite, meaning that the road is open to implement a truly intelligent HMI solution.

### READER INQUIRY SERVICE

To learn more about this advertiser, visit: [www.ukipme.com/info/ivm](http://www.ukipme.com/info/ivm)  
Quote Ref: 517

## Make a difference

Time-to-market is speeding up for OEMs who choose a DP700 Series PLUS+1 industrial vehicle display. Being designed for swift customization, the series gives machines a competitive difference, with much less effort required from development engineers.

**Danfoss** has focused on making the interactive, 7in display screens easy to read and sufficiently robust to survive even the toughest work environments. Operators can count on the real-time performance data to help them take machines to the highest level of productivity. The displays boast:

- Access to data in-cab or open usage;
- Fluid navigation;
- Enhanced viewability;
- Display of data in real time;



• A rugged build that will last in extreme environments.

The displays are available with a variety of options, including a projective capacitive touchscreen that works through the elements – and even through an operator's gloves.

### READER INQUIRY SERVICE

To learn more about this advertiser, visit: [www.ukipme.com/info/ivm](http://www.ukipme.com/info/ivm)  
Quote Ref: 519