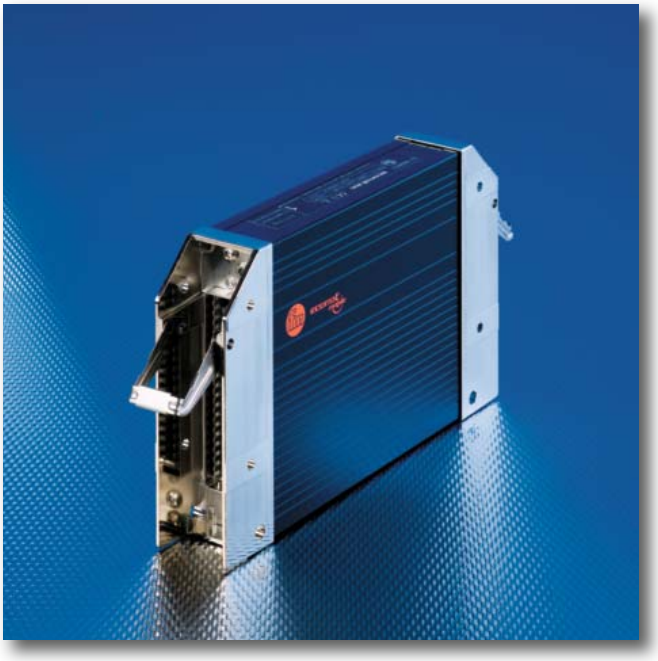
Robust controller for more mobility on wheels and tracks



ecomat® mobile

32-bit ExtendedController with 64 multifunctional inputs and outputs

- **Analogue and digital I/Os with diagnostic function for mobile applications**
- **For complex control functions in mobile machines**
- **5 CAN interfaces with CANopen and SAE J1939 protocol**
- **Freely programmable with CODESYS 2.3 to IEC 61131-3**
- **E1 type approval of the Kraftfahrtbundesamt (German Federal Motor Transport Authority)**

E1 | IP 67 | Vibration and shock resistant | CAN open®

ExtendedController for mobile machines

The mobile controller meets the requirements of modern electronics. The large number of inputs and outputs allows to simultaneously process sensor signals and proportional functions. The controller was developed particularly for use in off-highway and mobile machines on the basis of the current standards and long-term experience.

Connection and interfaces

Besides the multifunctional inputs and outputs each control module is equipped with 5 CAN interfaces. They support all important bus protocols, different baud rates and also the transparent and preprocessed data exchange. Programming to IEC 61131-3 ensures that all control functions can be easily integrated in the application program.

Functions and advantages

- **Mechanical design**

  The control electronics integrated into a compact metal housing provides all necessary connections for the inputs and outputs, communication and programming via the reverse-polarity protected central plugs suitable for mobile applications. The RGB status LED displays the most important system messages.

- **Powerful electronics**

  The core of the controller designed according to the applicable standards for electronics for mobile applications is a modern 32-bit processor. Monitoring and protection functions enable safe operation even under extreme operating conditions.
  The input / output extension is connected to the main controller via a CANopen interface.

- **Configurable inputs and outputs**

  By means of the application software the inputs and outputs can be configured to adapt to the respective application.

  Depending on the type of input, a configuration as digital, frequency or analogue input with diagnostic function or as digital input or input for resistance measurement is possible. In addition some of the inputs support the evaluation of positive and negative digital input signals. The analogue inputs enable both current and voltage measurement.

  Most outputs provide a configuration as digital or PWM output with diagnostic capabilities, with and without current control.

  Programmable to IEC 61131-3 with CODESYS

  Programming with the standardised IEC 61131-3 languages enables the user to create clear and easy application software.
  In addition, libraries are available for special functions of the controller.

- **CAN-interfaces with CANopen protocol**

  The controller is equipped with five CAN interfaces to ISO 11898. The data is exchanged with all connected bus participants via these interfaces. The CANopen protocol enables quick and flexible connection to the bus. For communication with the motor and the power train all interfaces can be reconfigured to the J1939 protocol.

Applications:

Complex construction machines, agricultural machines, municipal vehicles

Technical data ExtendedController CR0133		
Housing		Closed metal housing with flange fastening
Device connection		AMP connector 55 poles latched, protected against reverse polarity
Protection		IP 67
Operating voltage	[V DC]	8...32
Current consumption	[mA]	≤ 210
Temperature range	[°C]	-40...85
Indication		RGB LED
Controller		Infineon TriCore 1796
Number of inputs (configurable) Digital (positive / negative sensor signals) Analogue (0...10 / 32 V, 0...20 mA, ratiometric) Frequency (≤ 30 kHz) Digital (positive / negative sensor signals) Analogue (0...10 / 32 V, 0...20 mA, ratiometric) Digital (positive sensor signals) Resistance measurement (3...690 Ω / 16 Ω...30 kΩ) Digital (positive sensor signals) Frequency (≤ 30 kHz) Digital (positive sensor signals)		 12 4 6 4 6
Number of outputs (configurable) Digital, positive / negative switching PWM output (2/4 A, 3 A, H-bridge) Current-controlled (2/4 A, 3 A) Digital, positive-switching, PWM output (2 A) Current-controlled (2 A) Digital, positive-switching, PWM output (2 A) (2 of which analogue output 0...10 V) Digital, positive-switching, PWM output (4 A) Digital, positive-switching (2 A)		 16 2 8 2 4
Sensor supply 5 / 10 V DC, 400 mA		1
Interfaces		5 x CAN, 1 x RS232 1 x virt. COM port (USB)
Supported CAN protocols		CANopen (CiA DS 301 V4) SAE J 1939
Program memory	[MB]	1,2
Data memory RAM	[kB]	256
Data memory FRAM	[kB]	48
Data memory non-volatile	[kB]	4
Data memory auto-save	[kB]	4
Programming software		CODESYS V2.3
Standards and tests (extract)		CE, E1 (UN-ECE R10) EN50155 / EC50121