

# Power management in mobile vehicles



## Modular mini controller with high-current relay outputs

- High-performance, protected relay outputs with diagnostic function
- Connection of sensors and actuators without further external wiring
- Powerful CAN interfaces for various communication tasks
- Easy installation due to adapted mechanical *ecomatmobile* Basic concept
- Programmable to IEC 61131-3 with CODESYS



### **ecomatmobile Basic**

In many small and compact mobile applications, the requirements on control tasks are increasing. Cost-optimised, modular mini controllers for mobile use are in demand.

ifm offers *ecomatmobile* Basic consisting of the components BasicRelay, BasicController and BasicDisplay that are adapted to each other. This BasicController family is now complemented by the BasicController *relay*. Its special feature is made up of six protected power relay outputs with diagnostic capability for the supply of high-current consumers in mobile machines. In addition it has multifunctional digital and analogue inputs that can be configured via the application software. The BasicController *relay* is freely programmable via the IEC61131-3-compatible CODESYS software.



### Functions and advantages

The compact, flexible and inexpensive mini controller replaces the conventional relay logic and also demanding and complex process controllers.

#### • Mechanical design

The control electronics integrated in a compact plastic housing provides all the necessary connections for the inputs and outputs, communication and programming. The coded connectors for mobile use are easy to handle and available all over the world. The connection of sensors and actuators is carried out without further external wiring. Due to an increase of the protection rating through a cover and a pluggable cable seal the BasicController can also be used in areas that are exposed to splashing water.

#### • Powerful electronics

The integrated 32-bit processor and the electronics are optimally tailored to the application. Inputs and outputs can be configured to the application via the user program. The powerful plug-in relay outputs ensure the connection of high-current consumers. All relay outputs are with diagnostic capability and individually protected. Each output has a freely programmable status LED. Thanks to the additional multi-functional inputs a flexible control module for mobile machines is available.

#### • Programmable to IEC 61131-3

The CODESYS software enables a clear and easy creation of the application software for the user. The control module BasicController supports all common CODESYS programming languages. Simple and clearly structured function libraries are available for communication and special device functions.

#### • Communication interfaces

The BasicController is equipped with two CAN interfaces to ISO 11898. These interfaces are used to exchange data with the connected BasicDisplay, further BasicController modules or the engine controller. Among others, the interfaces support the CANopen protocol and the J1939 protocol. The CAN interfaces are also used for programming. To do so, the unit electronics is directly and conveniently activated via the powerful PC-CAN interface CANfox. In this way, operating system and application program can be loaded or parameters changed.

#### Applications:

compact construction machines, attachments, mini vehicles, special functions

### The products

Description	Order no.
BasicController <i>relay</i> 8 I / 6 O relay	CR0431
Starter set consisting of BasicController 12 I / 8 O, BasicRelay, BasicDisplay incl. software, power supply, cable and accessories	EC0400
Module cover IP 54 without display recess, with cable seal	EC0401
Plug set for BasicController <i>relay</i>	EC0464
Mounting and contact set for BasicController <i>relay</i>	EC0465
Relay and fuse set for 12 V applications	EC0466
Relay and fuse set for 24 V applications	EC0467
CAN programming interface CANfox	EC2112
Adapter set CAN/RS232 for CANfox	EC2113
CODESYS programming software, German	CP9006
CODESYS programming software, English	CP9008

### Technical data

BasicController <i>relay</i>	
Housing	Plastic, potted
Device connection	AMP blade male terminals 6.3 mm
Protection rating, with cover EC0401, EC0402	IP 20 IP 54
Operating voltage [V DC]	8...32
Current consumption [mA]	≤ 45
Temperature range	
Operation [°C]	-40...75
Storage [°C]	-40...85
Indicators	LED Red / green
Processor	PowerPC, 50 MHz
Data memory SRAM [kB]	592
Data memory Flash [kB]	1536
Data memory (retain), FRAM [kB]	1
Inputs (total):	8
Digital, analogue, frequency	4
Digital, resistance measurement	4
Outputs (total):	
Micro relay ISO 7588-3, 15 A (total current max. 60 A)	6
Diagnostics via NO and NC contact of the relay. Protected via mini controller to DIN ISO 8820-3	
Supported CAN protocols	CANopen (DS 301 V 4.1) SAE J 1939 free CAN protocol
Programming software	CODESYS V 2.3
Standards and tests (extract)	CE, E1 (UN-ECE R10)