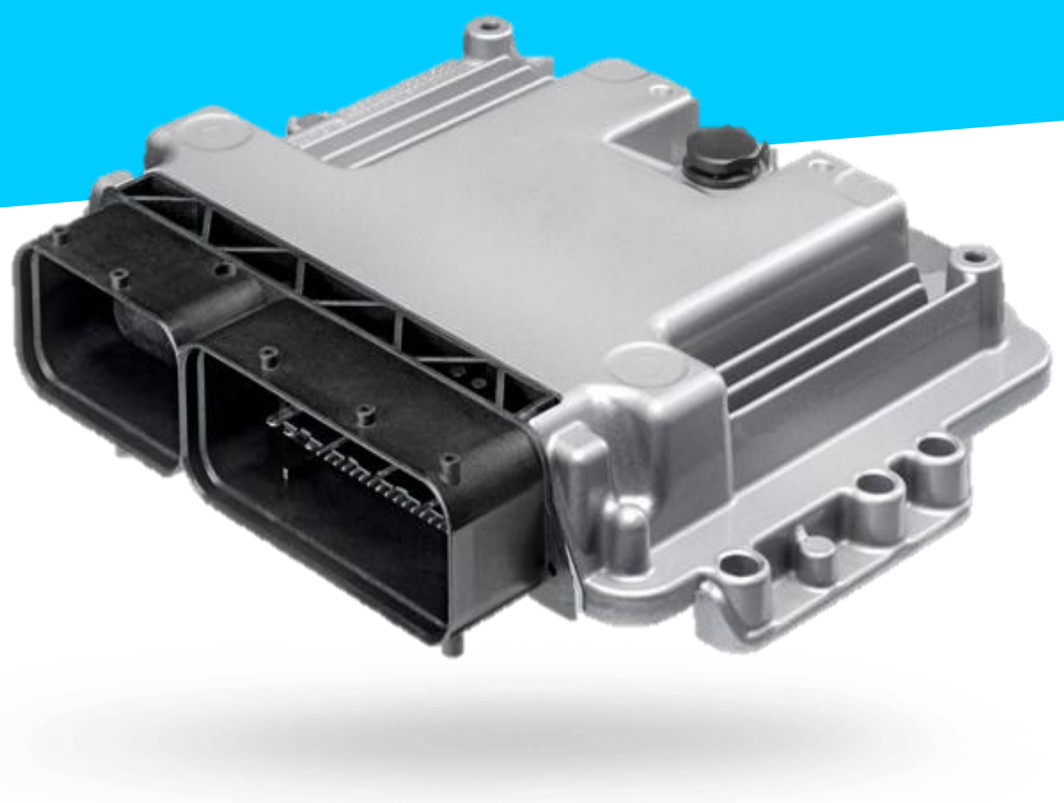
BODAS I/O extension module RCE10-10 series 31

Greater I/O capacity via CAN bus for controllers in mobile machines

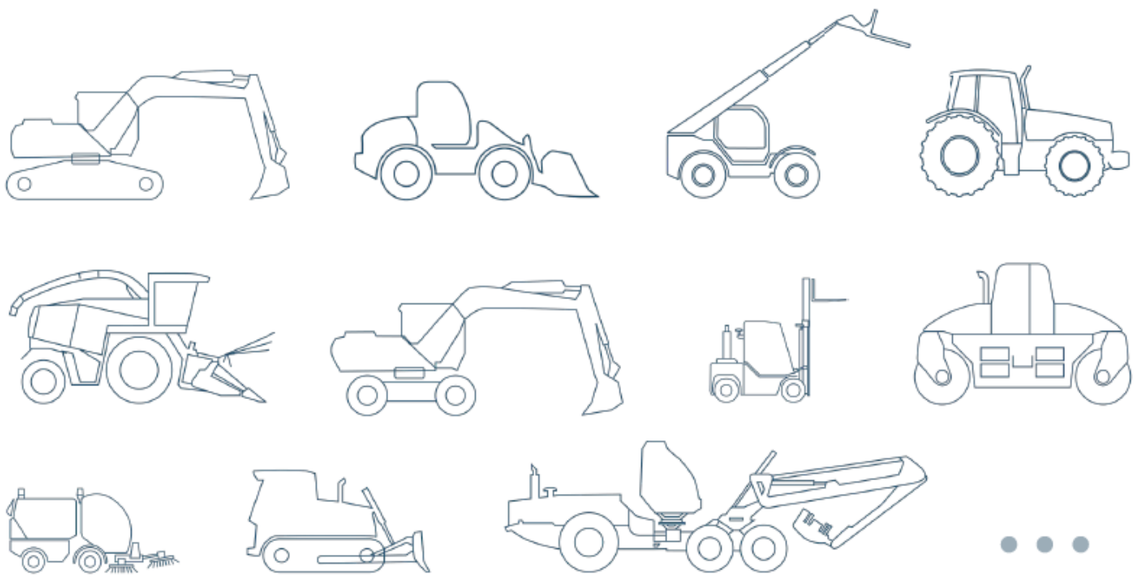


Some applications require more inputs and outputs for closed- and open-loop control of hydraulic components than a controller can deliver. A simple and cost-efficient way to extend the I/O capacity of controllers via CAN bus is the BODAS I/O extension module RCE10-10/31 from Bosch Rexroth. With its robust and compact design, it was developed specifically for use in mobile machines and satisfies the relevant protection requirements for ambient temperature, water and dust ingression, shock, vibration, and electromagnetic compatibility. This makes the Rexroth BODAS I/O extension module RCE10-10/31 the ideal solution for almost every application without safety functions.

CUSTOMER BENEFITS

- Easy configuration with familiar configuration tools
- Easy implementation of master-slave communication
- Integrated protection thanks to monitoring features
- Vendor-independent usability based on the CANopen standard CANopen standard
- Plenty of inputs and outputs for all needs
- High quality standards of Bosch Automotive Electronics

APPLICATIONS



FUNCTION AND BENEFITS

Easy configuration with familiar configuration tools
The Rexroth BODAS I/O extension module RCE10-10/31 is connected to controllers via CAN bus and communicates via the standardized CANopen protocol. It can easily be configured with customary CANopen configuration tools using service data objects (SDOs).

Easy implementation of master-slave communication
Solely for using a programmable BODAS RC controller series 30 as the master device: A ready-to-use template (RCE Device Driver) in C language simplifies the implementation of communication with the BODAS I/O extension modules RCE10-10/31 as a slave device on the master device.

Integrated protection thanks to monitoring features
With several integrated monitoring features, the BODAS I/O extension module RCE10-10/31 from Bosch Rexroth ensures a smooth operation. The input circuits for speed and analog signals partially feature electrically independent circuits. Faults can be detected by the microcontroller using software diagnostic functions. Faults in the supply voltage are detected by internal monitoring. All output signals and faults can be monitored by the microcontroller using the appropriate software. The RCE10-10/31 can be operated with all power outputs de-energized for service purposes. And last, but not least: The internal watchdog module switches off the power supply to proportional and switch outputs centrally when there are malfunctions in the program run.

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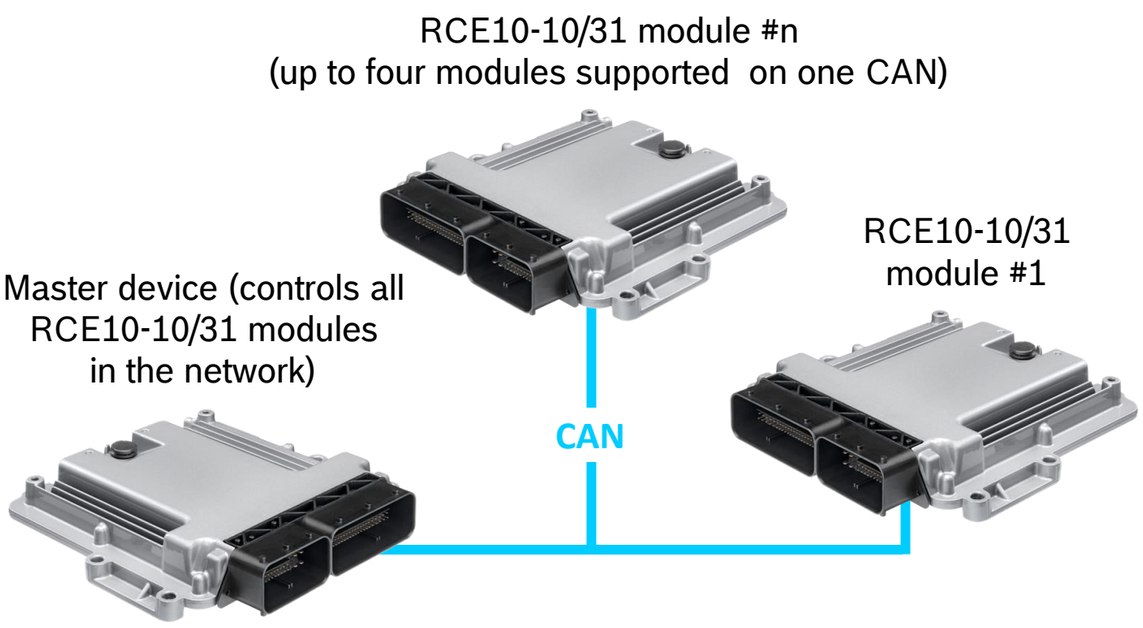
TECHNICAL DATA

BODAS I/O extension module RCE10-10 series 31	
Supply:	8 V to 32 V DC (nominal 12 V DC or 24 V DC)
Processor:	32-bit Tricore microprocessor TC1793, 270 MHz
Analog/digital voltage inputs:	Up to 23x 5V, up to 2x 10V, up to 8x 32V; Resolution: 12 bits
Resistance inputs:	Up to 4x 32kΩ
Analog Current inputs:	Up to 4x 20 mA
Frequency inputs:	Up to 6x DSM, up to 4x DSA2
Analog temperature inputs:	Up to 4x TSA/TSF
Digital voltage inputs:	Up to 8x 5 V, up to 8x SENT (Single Edge Nibble Transmission) inputs
Power outputs:	Up to 14x digital non-safety, up to 4x proportional non-safety, up to 14x digital safety, up to 12x low-side controlled proportional safe (6 active at a time), up to 4x high-side controlled proportional safe
Signal outputs:	Up to 2x 5 V, up to 4x 75% V_{bat} or PWM (duty cycle setpoint), up to 2x 20 mA, up to 3x digital low-side switch
CAN:	1x 2.0 B, CANopen
Dimensions LxWxH:	203 x 167 x 38 mm, without mating connector
Data sheet:	95221



RCE10-10/31 CANopen network example

Vendor-independent usability based on the CANopen standard
Easy integration in CAN bus systems and great interoperability with third-party controllers: The BODAS I/O extension module RCE10-10/31 from Bosch Rexroth fulfills the CANopen standard. For example, it complies with the recommendations of CAN in Automation (CiA), the international users' and manufacturers' group for the CAN network: the device profile CiA DS-401 for I/O modules as well as the communication profile CiA DS-301. Compliance with the CiA DS-301 is verified by a conformance test. The electronic datasheet (EDS), which is required to use manufacturer-independent CANopen configuration tools, is available as a file and can be loaded from the module.

Plenty of inputs and outputs for all needs
With a total of 64 inputs and outputs, the Rexroth BODAS I/O extension module RCE10-10/31 offers comprehensive connectivity options. For example, using the ten current-controlled power outputs, proportional solenoids can be controlled to compensate for voltage and temperature fluctuations. There are ten power outputs to control the switching functions. The module also has outputs for loads with low currents as well as analog voltage outputs. And low-side controlled safe proportional power outputs (SafePOL) as well as digital safe power outputs (SafeDOH) monitor load resistance and whether the low-side currents match the high-side currents. Another highlight is that the Rexroth BODAS I/O extension module RCE10-10/31 offers eight inputs for connecting sensors via the SAE J2716 SENT interface.

High quality standards of Bosch Automotive Electronics
Like all Bosch Rexroth controllers, the BODAS I/O extension module RCE10-10/31 is produced in accordance with the high quality standards of Bosch Automotive Electronics.

EXPLORE MORE

RCE10-10/31

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