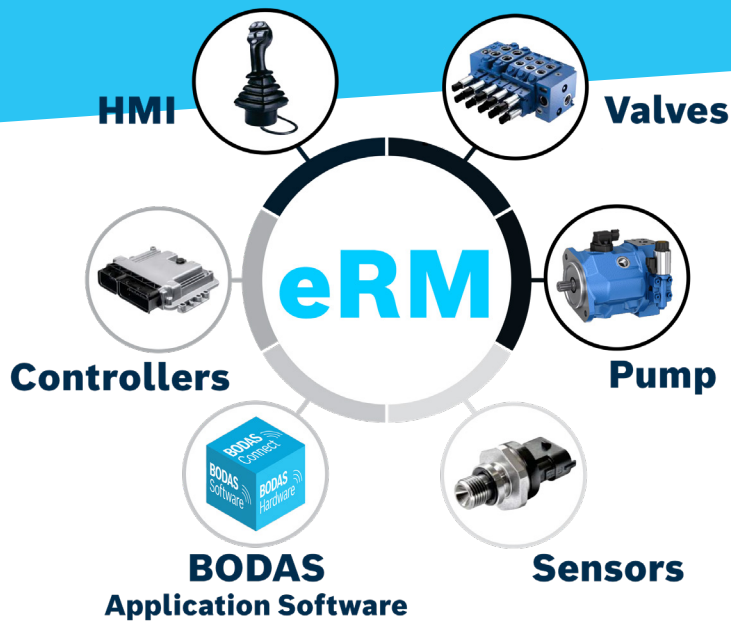


# Electronic Valve Control – eRM

## Ready-to-use functionality with emphasis on efficiency and productivity



The new eRM BODAS valve control software provides functionality for dynamically controlling the working hydraulic functions of compact off-highway equipment. When using eRM, the complexity of controlling load sensing systems is handled by Bosch Rexroth's robust, easy-to-implement, and well-tested software, while delivering a higher level of productivity and efficiency for your machine.

## FUNCTION AND BENEFITS

### Electronic flow control

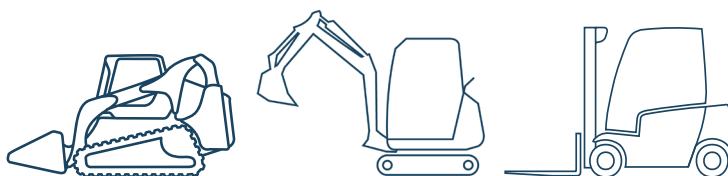
The eRM software allows for electronic flow control of a main control valve, thus enabling customizable control modes and machine performance.

For standard control, a predefined functions set is available on a dedicated Rexroth control unit. Static and dynamic adaptations can be done via parameter calibration and/or via CAN bus commands.

## CUSTOMER BENEFITS

- ▶ Smart flow control for sequential and multiple actuator motion
- ▶ Auxiliary circuits integration
- ▶ Designed for standard and high-flow circuits
- ▶ Dynamic flow-sharing capability
- ▶ Actuator priority control
- ▶ Variable control parameters and machine dynamics

## APPLICATIONS



### Target Markets

- ▶ CTL/SSL
- ▶ AWP
- ▶ Refuse vehicles
- ▶ Municipal vehicles
- ▶ Work truck crane
- ▶ Forklift truck
- ▶ Skid steer
- ▶ Telehandler
- ▶ Compact construction equipment

### Machine Applications

- ▶ Lift/lower tilt functions
- ▶ Outrigger
- ▶ Winch
- ▶ Attachment/aux flow function
- ▶ Broom/brush motor control
- ▶ Blade angle/tilt/rotate

## Electronic Valve Control – eRM

Ready-to-use hydraulic function control

# CONTROL CAPABILITIES

### The eRM software – the mastermind

Controlled via a CAN interface, the eRM software allows for the highest degree of controllability and flexibility in multiple machine applications. The software comprises innovative, dynamic, and precise work functions, increasing the overall productivity of the machine and optimizing energy consumption. Additionally, convenience functions like user profiles can be easily configured for a personalized machine experience during operation and stored for later use.

The eRM software can be installed on a Rexroth BODAS controller. When coupled with the eOC software, eRM unleashes the full power of machine implements electrification in mobile applications.

### Actuator Basic Movements

This function translates operator joystick commands into respective actuator flow demands according to a parameterizable flow curve. Parameters are available to select pump type, displacement size and control valve. The prime mover speed is considered for better flow demand calculation and ultimately higher command resolution.

### Gradient Limits

This function provides a means to manipulate the actuators' acceleration and deceleration rates independently via configurable parameters. Additionally, the function provides specific start and end of movement parameters to finely adjust each actuator characteristics.

### Actuator Flow Sharing

This function encompasses a priority flow sharing function that calculates reduced flow demands for each actuator. This reduced flow demand is based on the available pump flow and each of the actuator's priority group allocation. Additionally, a minimum flow limit can be set to preserve operability of the highest-priority actuators.

### Float Functionality

This function allows the use of the main control valve float functionality. The function is activated either manually when the joystick corresponding to a particular actuator is commanded to move in the direction of gravity and an additional input in the HMI is triggered, or automatically when the joystick position reaches a specified command limit.

### User Profiles

This function allows the machine operator to select values for a set of parameters that modify machine behavior via the HMI. Some of the parameters may include actuator gradient limits, flow sharing prioritization, and lower limits.

### Implement Electronic Power Management

This function adapts the implement commands based on the engine load condition and implement demand. This dynamic adjustment is applied to operate the implements within a pre-defined allowed power range, avoiding engine speed drop and ensuring power distribution to additional machine functions. Additionally, the power distribution between implement and remaining consumers can be modified based on a set of parameters.

### Auxiliary Flow Controls

This function maps joystick operator commands with auxiliary flow commands based on HMI configurable parameters. Additionally, through HMI, it is possible to use a parameter to increase or decrease the maximum allowable auxiliary flow.

### Auxiliary Circuit Pressure Bleed Off

This function relieves the pressure in the auxiliary hydraulic circuit to allow for the easy connection of the quick-connect attachment hoses. This function can be triggered either manually via HMI or automatically if it is detected that the operator is not present in the machine after a parametrized set de-bounce time.

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