



Vehicle controls and sensors

Because medium and heavy-duty trucks require innovative, high-performance products, Eaton offers a wide range of vehicle controls and sensor products that are durable, flexible and fully customizable.

Innovation

Did you know that the harness is one of the most complex and costly assemblies in a vehicle? Eaton's multiplexing solution eases configuration, decreases costly harness wires and the number of connection points by using digital communications, thus reducing the weight of the vehicle, the complexity of assembly, and simplifying debugging. Less wiring means more space in the cab, as well as increased cost savings for installation.

With the increased demand of multiplexing, there is an increased need for low current electromechanical switches that communicate to vehicle body controllers. Eaton offers efficient electromechanical switches complementary in style to the multiplex switch module designs. In addition, sensors with embedded logic can reduce the cost and complexity of vehicle control systems. The

onboard logic capability of modern sensors can diminish cabling complexity and control system I/O count, reducing the overall installed cost of a sensing and control solution. Such innovative Eaton solutions include:

- Electronic multiplex switch module (eSM)
- Electronic vehicle display (eVu)
- New generation rockers (NGR)
- AccuProx®
- iProx
- Sealed Vehicle Rocker (SVR)

Flexibility

The diversity of the truck market demands options from sensor and control products, including late point definition, locking rockers, indicators that match switch styles, gang-mounting units with one panel cutout, a broad range of sensor connectivity options, easy-to-install sensors that simplify wiring

and a range of sensors with industry-standard housings to simplify mounting requirements and allow for easy reconfiguration. Eaton engineers ergonomic total flexible control and sensor solutions with these options in mind, including:

- NGR
- eSM
- Full line of connectivity products
- Quick-turn modified sensors
- Industry-standard tubular and NEMAT-style sensor products
- Inductive proximity sensors with auto-configure outputs

High performance

Because the truck market requires durable, reliable products for maximized uptime, Eaton offers switches that survive the harshest and most difficult applications anywhere onboard a vehicle in any operating environment. Eaton also offers sensors with

long operating ranges to increase the survivability of the sensor by increasing the distance between the sensor and the target.

- eSM
- NGR
- Mechanical limit switches and inductive proximity sensors
- Broad range of inductive and optical sensors

Customization

In vehicle applications, it's necessary for switches and sensors to have a unique look and feel, so that medium- and heavy-duty truck lines have a cohesive look that stands apart from other vehicles. Eaton can customize any switches by using platform engineering to adapt products to meet specific design needs. Eaton's sensors and limit switches can be modified or fully customized to meet the exact needs of any application.

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Electronic Multiplex Switch Module (eSM)

- Available in above or below panel rocker styles with accessories including matching indicator caps and dummy plugs
- Modules are J1939 standard with a master module and up to seven expansion modules per CANbus Node
- Can be reprogrammed in the field
- Requires only one panel cut-out instead of three, saving panel space and installation time
- Top, center and bottom LED lighting with software that offers unlimited circuit and lighting flexibility via J1939 CANbus communication
- Mechanical and electrical life of 200,000 operations minimum



Electronic Vehicle Display (eVu)

- Dashpanel display that simplifies viewing, selecting, inputting of equipment/status, such as temperature, pressure, speed, distance and capacity
- Standard internal warning alert buzzer, backlit legend display, sunlight-readable LCD characters
- Designed to meet SAE-1455



New Generation Rockers (NGR)

- Versatile electromechanical switch with up to 12 terminals available complementary to eSM below panel design with options available for low current switching
- Offers inventory savings and field assembly flexibility
- LED and incandescent bulb lighting available, with replaceable bulbs
- Mechanical life of 250,000 operations and an electrical life of 200,000 operations with an operating temperature range of -40°C to 85°C
- Standard sealing rated to IP42; Optional added protective seal rates switch to IP67 (above panel only)
- Available accessories include matching indicators, gang mounting systems, palm guard frames, panel plugs and connectors



Sealed Vehicle Rockers (SVR)

- Sealed to IP68 above and below the panel with optional sealed harness or connector
- Complementary in style to the above panel eSM design
- Accessories include indicators, gang mounting systems and palm guards
- Ten available terminals with actuator styles including above and below panel rockers and a paddle design



AccuProx

- Innovative design that ensures absolute linearity from one end of the sensing band to the other
- Industry-standard tubular package in a variety of sizes and connectivity options



iProx

- Available in a wide variety of industry-standard product enclosures, including tubular, cube style and long-range pancake housings
- Allows a controls engineer to program logic directly into the sensor itself
- Allows the user to program a range band
- Can be programmed as a speed sensor set to trip when the target detected reaches a certain rotational speed

- Can be programmed to ignore metal objects in the background that would normally interfere with the proper operation of an inductive sensor



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