



# For specialty vehicle applications

Eaton offers a wide range of innovative, flexible and high-performance vehicle controls and sensor products that withstand the harshest environments to meet the needs of specialty vehicle applications.

### 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, and decreases costly harness wires and the number of connection points by using digital communications, thus reducing the weight of the vehicle and 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 can 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)
- AccuProx®
- iProx
- Sealed Vehicle Rocker (SVR)

### Flexibility

The specialty vehicle market requires products to be flexible to meet many varied needs with a quick turn-around time. These include the option to purchase switch and labels separately, a broad spectrum of graphics and various colored frames and rockers. In addition, a broad range of sensor connectivity options, a variety of sensor types in industry-standard housing and easy-to-install sensors are in high demand. Eaton engineers ergonomical total flexible control and sensor solutions with these needs in mind, including,

- New Generation Rockers (NGR)
- eSM
- Euro SR
- Full-size Euro
- Industry-standard tubular and NEMA®-style sensor products
- Inductive proximity sensors with auto-configure outputs

### Sealing

In the specialty vehicle market, it's necessary to have versatile and dependable switch enclosures and connector designs to protect electrical conductors against harmful damage from the surrounding elements.

Eaton designs switch enclosures and robust sensors that can survive extreme environments anywhere on board the vehicle.

- SVR
- Euro SR
- Full-size Euro
- eSM
- NGR
- Mechanical limit switches
- Inductive proximity sensors

### High performance

Specialty vehicles demand durable, reliable products for maximized machine uptime, increasing productivity and reducing warranty costs. To address this, Eaton offers switches that are designed to survive the harshest and most difficult applications and sensors that have long operating ranges, increasing the survivability of the device.

- eSM
- SVR
- NGR
- Mechanical limit switches and inductive proximity sensors
- Inductive and optical sensors with some of the longest detection ranges available

# EATON

Powering Business Worldwide

Product Name	Product Features	
<b>Electronic Multiplex Switch Module (Rocker eSM)</b> 	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 cutout 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		
<b>Electronic Multiplex Switch Module (Keypad eSM)</b> 	Modules are J1939 standard with a master module and have up to seven expansion modules per CANbus node	
	Sealed to IP68 front and rear, and includes panel seal for severe environment application	
	Customizable icons with backlighting and up to four independent color indicator LEDs for switch status or scaling	
	Mechanical and electrical switch life in excess of 800,000 operations	
<b>Electronic Vehicle Display (eVu)</b> 	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	
<b>New Generation Rockers (NGR)</b> 	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°F to 185°F (-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	
<b>AccuProx Analog Inductive Sensor</b> 	Unique design ensures absolute linearity from one end of the sensing band to the other	
	Simplify the control system and logic associated with monitoring the position of a moving part of the vehicle with great precision and repeatability	
	Available in industry-standard tubular package in a variety of sizes and connectivity options to fit in any onboard application	
<b>iProx Sensing Technology</b> 	Available in a wide variety of industry-standard product enclosures, including tubular, cube style and long-range pancake housing	
	Allows a controls engineer to program logic directly into the sensor itself	
	Allows operator to program a range band	
	Can be programmed as a speed sensor	
Can be programmed to ignore metal objects that may interfere with the proper operation of an inductive sensor		
<b>Euro SR</b> 	Sleek, compact European switch style with up to six available terminals	
	Customizable frame and rocker colors, or choose from standard white, black or red actuator options	
	Actuators include decorative pad-printed rockers and snap-in lens rockers with optional palm guard protection feature	
	Accessories include customizable harnesses, standard connectors, dead back covers, panel plugs and external straps	
Easy snap-in mounting design with optional seal prevents moisture and dust resistance rated to IP67 (above panel only)		
<b>Full-Size Euro</b> 	Durable full-size European switch style with up to six available terminals	
	Customizable frame and rocker colors, or choose from standard white, black, red or grey frame and rocker options	
	Easy snap-in mounting design with seal option sealed to IP54 (above panel only)	
	Accessories include customizable harnesses, standard connectors, matching indicators, gang mounting systems, dead back covers, panel plugs and external straps	
Actuators include decorative pad-printed rockers and snap-in lens rockers		
<b>Sealed Vehicle Rockers (SVR)</b> 	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	
Mechanical and electrical life of 250,000 operations for low current applications as low as 2 mA with an operating temperature range of -40°F to 185°F (-40°C to 85°C)		

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