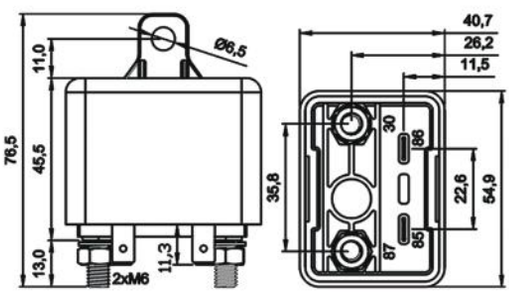
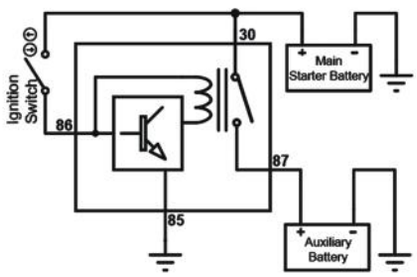
Dual Battery Isolator - Voltage Sensitive Relay

Product Code	***201.019.001***	***- 12V***	***Dust-proof***
	201.019.011	***- 12V***	***Sealed***

• 12V *• 160A Continuous* *• SPST NO / 1 Form A* *• 4 Terminals* *• w/ Bracket*

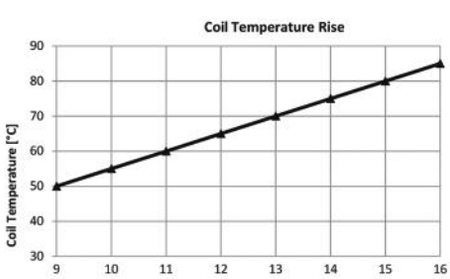
Terminal Configuration & Dimensions & Diagram

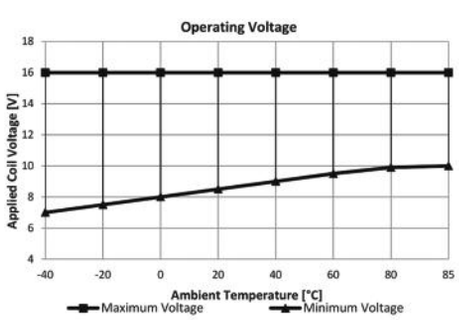


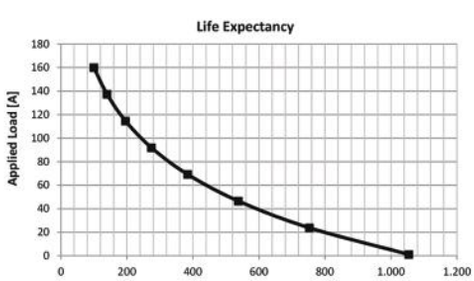


Technical Data

Nominal Voltage	12V	***Maximum Coil Voltage***	20V (< 1 min.)
Rated Continuous Load	160A	***Maximum Inrush Current***	350A
Contact Form	1 Form A / SPST NO	***Dielectric Strength***	>1000Vdc
Contact Material	AgNi10 (AgSnO2 upon request)	***Switching Cycles***	100.000
Operating Voltage	13,6V	***Mechanical Cycles (On / Off)***	>1.000.000
Drop Out Voltage	12,6V	***Vibration***	20-200Hz,5g:>10µs
Operating Voltage Delay Period	10 sec.	***Mechanical Shock***	>10g, 11ms>10µs
Drop out Voltage Delay Period	60 sec.	***IP Rating for 201.019.001***	IP54 DIN IEC60529
LED On	VSR is on and both batteries are in parallel	***IP Rating for 201.019.011***	IP67 DIN IEC60529
LED Off	VSR is off and batteries are disconnected	***Terminals***	30, 87: M6 Screw 85, 86: 6,3 x 0,8 mm
LED Blinking / Rapidly	Main Starter Battery is above 13,6V. VSR will be activated in 10 seconds	***Terminal / Plating***	30, 87: CuZn63/- 85, 86: Fe/E-Sn
LED Blinking / Slowly	Main Starter Battery is below 12,6V. VSR will disengage batteries in 60 seconds	***Bracket***	PA66GF30
Coil Suppression	1N4007 Diode	***Ambient Temperature***	- 40 / + 90 °C







Notes
All measurements are in milimeters.

Dual Battery Isolator - Voltage Sensitive Relay

Product Code	***201.019.001***	***- 12V***	***Dust-proof***	***(Cont'd)***
	201.019.011	***- 12V***	***Sealed***	

Product Details

Special and complex applications are necessary in order to charge the auxiliary battery in vehicles such as trailers, VIP vehicles or boats. The reason for this difficulty is to parallel the main starter battery and the auxiliary battery with one alternator when the engine is running and to separate them when the engine stops so, there is no need for a second alternator for charging the auxiliary battery. And more importantly, even if the main battery is used up, the cranking is not a problem as the auxiliary battery is full.

ELO Dual Battery Isolator - Voltage Sensitive Relay performs this task automatically. The relay measures the voltage of the main battery continuously. When the voltage of the main battery reaches 13,6V (fully charged), it also starts the charging of the auxiliary battery. At such time, both batteries are paralleled and charged simultaneously. When the engine is stopped, the voltage of the batteries start to drop from the peak point of 14,2-13,8. ELO Dual Battery Isolator - Voltage Sensitive Relay disconnects the batteries when they reach nominal voltage of 12,6V in order to ensure the electrical consumption is solely supplied from the auxiliary battery and the main starter battery is kept enough charged to start the engine.

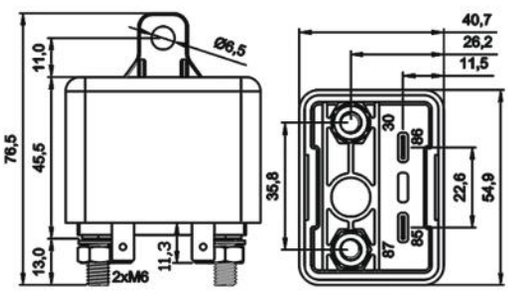
There is a delay of 10 seconds before the paralleling process and 60 seconds before the separation process. Thus, in case of sudden changes of consumption, ELO Dual Battery Isolator - Voltage Sensitive Relay does not perform unnecessary switching operations and the system operates stable. A red LED on the relay flashing frequently indicates that the main battery is full and the auxiliary battery charging will start shortly. If the LED is lit continuously, this suggests that the relay is in operation and both batteries are connected in parallel and charged together. The red LED blinking slowly indicates that the engine is off, the alternator is not generating electricity, and the auxiliary battery will be separated from the main battery shortly.

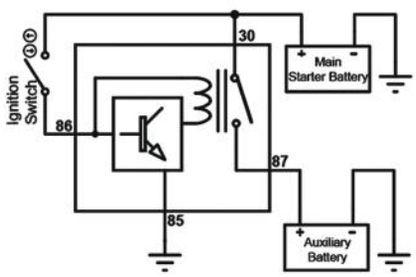
Dual Battery Isolator - Voltage Sensitive Relay

Product Code **201.019.003 - Dust-proof**
201.019.013 - Sealed

• *24V* • *100A Continuous* • *SPST NO / 1 Form A* • *4 Terminals* • *w/ Bracket*

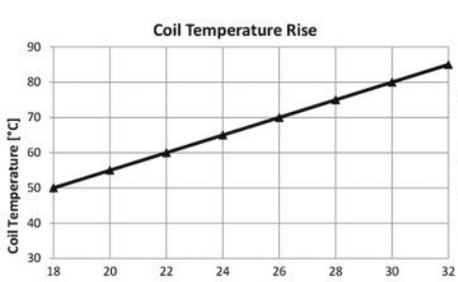
Terminal Configuration & Dimensions & Diagram

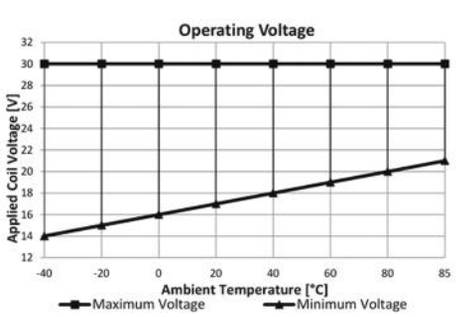


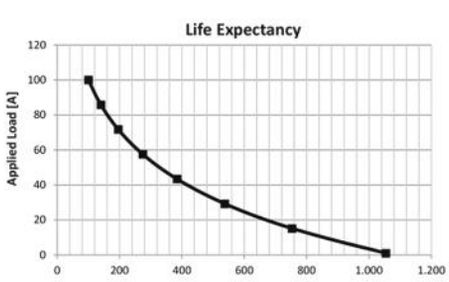


Technical Data

Nominal Voltage	24V	***Maximum Coil Voltage***	40V (< 1 min.)
Rated Continuous Load	100A	***Maximum Inrush Current***	300A
Contact Form	1 Form A / SPST NO	***Dielectric Strength***	>1000Vdc
Contact Material	AgSnO2 (AgNi10 on special request)	***Switching Cycles***	100.000
Operating Voltage	27,0V	***Mechanical Cycles (On / Off)***	>1.000.000
Drop Out Voltage	25,0V	***Vibration***	20-200Hz,5g:>10µs
Operating Voltage Delay Period	10 sec.	***Mechanical Shock***	>10g, 11ms>10µs
Drop out Voltage Delay Period	60 sec.	***IP Rating for 201.019.003***	IP54 DIN IEC60529
LED On	VSR is on and both batteries are in parallel	***IP Rating for 201.019.013***	IP67 DIN IEC60529
LED Off	VSR is off and batteries are disconnected	***Terminals***	30, 87: M6 Screw 85, 86: 6,3 x 0,8 mm
LED Blinking / Rapidly	Main Starter Battery is above 27,0V. VSR will be activated in 10 seconds	***Terminal / Plating***	30, 87: CuZn63/- 85, 86: Fe/E-Sn
LED Blinking / Slowly	Main Starter Battery is below 25,0V. VSR will disengage batteries in 60 seconds	***Bracket***	PA66GF30
Coil Suppression	1N4007 Diode	***Ambient Temperature***	- 40 / + 80 °C







Notes
All measurements are in milimeters.

Dual Battery Isolator - Voltage Sensitive Relay

Product Code	***201.019.003***	***- Dust-proof (Cont'd)***
	201.019.013	***- Sealed***

• 24V *• 100A Continuous* *• SPST NO / 1 Form A* *• 4 Terminals* *• w/ Bracket*

Product Details

Special and complex applications are necessary in order to charge the auxiliary battery in vehicles such as trailers, VIP vehicles or boats. The reason for this difficulty is to parallel the main starter battery and the auxiliary battery with one alternator when the engine is running and to separate them whenthe engine stops so, there is no need for a second alternator for charging the auxiliary battery. And more importantly, even if the main battery is used up, the cranking is not a problem as the auxiliary battery is full.

ELO Dual Battery Isolator - Voltage Sensitive Relay performs this task automatically. The relay measures the voltage of the main battery continuously. When the voltage of the main battery reaches 27,0V (fully charged), it also starts the charging of the auxiliary battery. At such time, both batteries are paralleled and charged simultaneously. When the engine is stopped, the voltage of the batteries start to drop from the peak point of 27,6 - 28,5V. ELO Dual Battery Isolator - Voltage Sensitive Relay disconnects the batteries when they reach nominal voltage of 25,0V in order to ensure the electrical consumption is solely supplied from the auxiliary battery and the main starter battery is kept enough charged to start the engine.

There is a delay of 10 seconds before the paralleling process and 60 seconds before the separation process. Thus, in case of sudden changes of consumption, ELO Dual Battery Isolator - Voltage Sensitive Relay does not perform unnecessary switching operations and the system operates stable. A red LED on the relay flashing frequently indicates that the main battery is full and the auxiliary battery charging will start shortly. If the LED is lit continuously, this suggests that the relay is in operation and both batteries are connected in parallel and charged together. The red LED blinking slowly indicates that the engine is off, the alternator is not generating electricity, and the auxiliary battery will be separated from the main battery shortly.