

# High Voltage Relay



The ongoing trend in the automotive industry toward electric powered vehicles leads to new requirements for manufacturers of electric components and high voltages are unavoidable in order to achieve similar power levels as with combustion engines in these vehicles. Unfortunately, high voltages are also responsible for switching arcs when separating electric loads and often cause damage to contacts. Hence, the main task for manufacturers is to minimize the burn time of the switching arc. The new KISSLING high voltage relay meets these requirements and allows a safe and controllable operation. KISSLING is the first manufacturer worldwide, offering a non-gas-filled ceramic contact chamber. This ceramic design is the basis for a

for a safe and long-term operation of the KISSLING solution. There is no risk that the gas may escape from the relay over time, which would jeopardize the operational functionality.

The biggest challenge for manufacturers is to minimize the burn time of the switching arc. KISSLING has achieved a new standard in minimum burn time by using a highly dynamic and efficient actuation system, which ensures a first-class product lifecycle and reliable KISSLING quality. This new relay type is another example of the successful combination of innovative development and the proven design features of the existing relay-portfolio of KISSLING, which allows a flexible and customer-friendly installation.

## Summary of your benefits:

### Exceptional quality

due to high reliability KISSLING relay-design

### Highly suitable for hostile environments

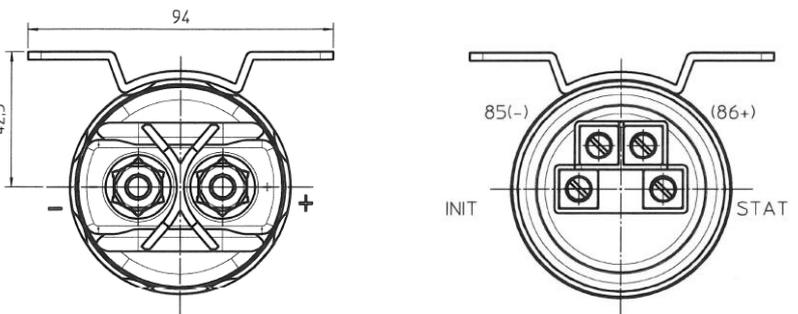
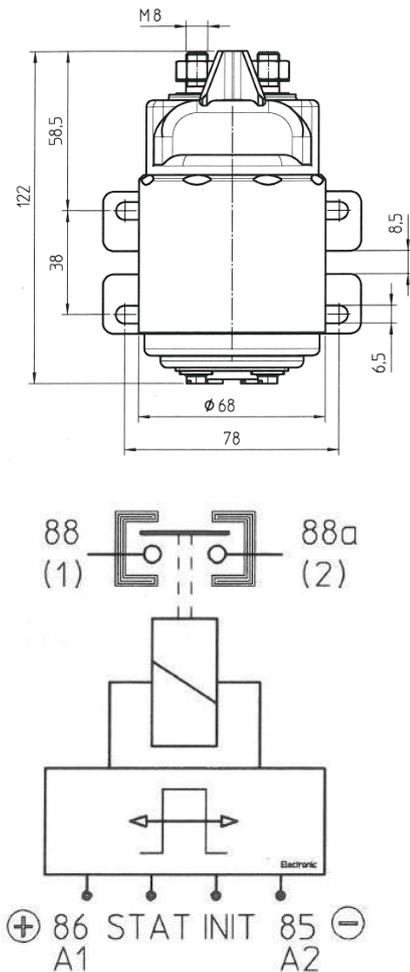
hermetically sealed to level IP67 / IP6K9K

### Maximum safety

in emergency and overload scenarios

### Reduced adaptation costs

due to pre-integrated PWM-electronic



As seen in the circuit diagram (left), the important connections for control of the relay are the connections 85, 86 and INIT. The integrated electronic regulates the pulse width modulation (PWM) signal and controls the relay coil for an optimized energy usage. The STAT-output is used as an electrical auxiliary contact and can be used (for example) to analyse the amount of operating switching cycles. The STAT-output can also be used for individual customer requirements.

Upon request, the relay is also available without the integrated electronic circuit. In this case, the customer must provide a PWM functionality in accordance with KISSLING's specifications. If the electronic is not required, a mechanical auxiliary contact can be integrated into the relay.

## Technical data

### Environmental Characteristics

Temperature range	-40°C to +85°C
IP rating interior	IP67 / IP6K9K (rel. to IEC 529)
Weight	approx. 800g
Min. conductor cross-section:	95mm <sup>2</sup> / AWG 4/0

### Electrical Characteristics

Min. insulation resistance; initial	100MΩ
Max. contact drop initial	150mV
Duty rating	300A

### Durability

Endurance (mechanical)	1.000.000 cycles
500VDC / 300A (resistive load)	15.000 cycles
300VDC / 800A (emergency shutdown)	3 cycles

### Coil data

Voltage range	9V-16V or 18V – 32V
Min. pick-up voltage	16V
Pick-up current (150ms)	approx. 2A
Electr. Drop-out at undervoltage	< 9V or <18V

### Switching times

Operate (incl. bounce)	max. 60ms
Bounce	max. 4ms
Release	max. 40ms
Opening time contacts	<10ms