

EV Solutions, EV Relays

GER-010 (Pre-charge Relay)



Size, mm (W×H×D)	34 × 27.5 × 42
Weight	80g
Contact Form	SPST-NO
Contact Structure	Double Break, Single
Coil Rated Voltage	12Vdc
Power Consumption	2.4W
Ambient Operating Temperature	-40~85°C (none icing and condensation)
Ambient Operating Humidity	5 ~ 85%
Main Terminals	0.187 Fasten
Coil Terminals	0.187 Fasten

Basic Characteristics of EV Relay

Pick-up Voltage	Less than 9.0V
Drop-out Voltage	More than 1.2V
Initial Voltage Drop	Less than 0.5V, 10A
Operate Time	Less than 50ms
Release Time	Less than 30ms
Bounce Time	Less than 3ms
Insulation Resistance (at 500VDC)	Min. 100MΩ
Breakdown Voltage	2500VAC for 1min(Detection Time : 10mA)
Temp. Characteristics	-40°C to 85°C
Max. Load Current (Continuously)	10A 12VDC at 85°C
Short-time Load Current (15min)	15A 12VDC at 85°C
Short-time Load Current (2min)	30A 12VDC at 85°C
Sound Emission	Less than 60dB(at distance 30cm)

Electrical & Mechanical Durability of EV Relay

Switching Life(1)	-
Switching Life(2)	-
Cut-Off Life (1)	DC450V 30A 5 Ops
Cut-Off Life (2)	-
Reverse Switching Life(1)	-
Reverse Switching Life(2)	-
Making Current Life	DC450V 10A 150,000 Ops
Mechanical Life	200,000 Ops

GER-040



Size, mm (W×H×D)	67 × 35 × 47.2
Weight	140g
Contact Form	SPST-NO
Contact Structure	Double Break, Single
Coil Rated Voltage	12Vdc
Power Consumption	3W
Ambient Operating Temperature	-40~85°C (none icing and condensation)
Ambient Operating Humidity	5 ~ 85%
Main Terminals	0.250 Fasten
Coil Terminals	0.187 Fasten

Basic Characteristics of EV Relay

Pick-up Voltage	Less than 9.0V
Drop-out Voltage	More than 1.2V
Initial Voltage Drop	Less than 0.4V, 40A
Operate Time	Less than 50ms
Release Time	Less than 30ms
Bounce Time	Less than 3ms
Insulation Resistance (at 500VDC)	Min. 100MΩ
Breakdown Voltage	2500VAC for 1min(Detection Time : 10mA)
Temp. Characteristics	-40°C to 85°C
Max. Load Current (Continuously)	40A 12VDC at 85°C
Short-time Load Current (15min)	65A 12VDC at 85°C
Short-time Load Current (2min)	100A 12VDC at 85°C
Sound Emission	Less than 60dB (at distance 30cm)

Electrical & Mechanical Durability of EV Relay

Switching Life(1)	DC450V 40A 5,000 Ops.
Switching Life(2)	DC450V 30A 10,000 Ops
Cut-Off Life (1)	DC450V 400A ,1 Ops
Cut-Off Life (2)	-
Reverse Switching Life(1)	DC200V -40A 1,000 Ops
Reverse Switching Life(2)	-
Making Current Life	DC450V 30A 80,000 Ops
Mechanical Life	200,000 Ops

GER-100



Size, mm (W×H×D)	78.8× 38 × 69
Weight	350g
Contact Form	SPST-NO
Contact Structure	Double Break, Single
Coil Rated Voltage	12Vdc
Power Consumption	4.5W
Ambient Operating Temperature	-40~85°C (none icing and condensation)
Ambient Operating Humidity	5 ~ 85%
Main Terminals	M5 × 8mm Screw
Coil Terminals	Quick(KET090-II)

Basic Characteristics of EV Relay

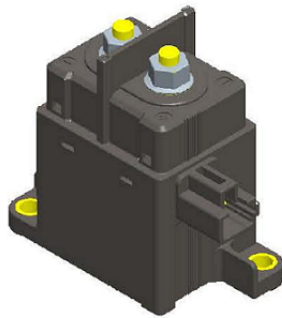
Pick-up Voltage	Less than 9.0V
Drop-out Voltage	More than 1.2V
Initial Voltage Drop	Less than 0.1V, 100A
Operate Time	Less than 50ms TOP
Release Time	Less than 30ms
Bounce Time	Less than 3ms
Insulation Resistance (at 500VDC)	Min. 100MΩ
Breakdown Voltage	2500VAC for 1min(Detection Time : 10mA)
Temp. Characteristics	-40°C to 85°C
Max. Load Current (Continuously)	100A 12VDC at 85°C
Short-time Load Current (15min)	150A 12VDC at 85°C
Short-time Load Current (2min)	225A 12VDC at 85°C
Sound Emission	Less than 60dB (at distance 30cm)

Electrical & Mechanical Durability of EV Relay

Switching Life(1)	DC450V 100A 2,000 Ops
Switching Life(2)	DC450V 40A 30,000 Ops
Cut-Off Life (1)	DC450V 200A 100 Ops
Cut-Off Life (2)	DC450V, 1,000A, 1 Ops
Reverse Switching Life(1)	DC200V -100A 1,000 Ops
Reverse Switching Life(2)	DC200V -150A 50 Ops
Making Current Life	DC450V 120A 80,000 Ops
Mechanical Life	250,000 Ops

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GER-150



Size, mm (W×H×D)	80 × 39.7 × 77.5
Weight	380g
Contact Form	SPST-NO
Contact Structure	Double Break, Single
Coil Rated Voltage	12Vdc
Power Consumption	4.5W
Ambient Operating Temperature	-40~85℃ (none icing and condensation)
Ambient Operating Humidity	5 ~ 85%
Main Terminals	M6 Flange Nut
Coil Terminals	Quick(KET090-II)

▣ Basic Characteristics of EV Relay

Pick-up Voltage	Less than 9.0V
Drop-out Voltage	More than 1.2V
Initial Voltage Drop	Less than 0.1V, 100A
Operate Time	Less than 50ms
Release Time	Less than 30ms
Bounce Time	Less than 2ms
Insulation Resistance (at 500VDC)	Min. 100MΩ
Breakdown Voltage	2500VAC for 1min(Detection Time : 10mA)
Temp. Characteristics	-40℃ to 85℃
Max. Load Current (Continuously)	150A 12VDC at 85℃
Short-time Load Current (10min)	200A 12VDC at 85℃
Short-time Load Current (2min)	300A 12VDC at 85℃
Sound Emission	Less than 65dB (at distance 60cm)

▣ Electrical & Mechanical Durability of EV Relay

Switching Life(1)	DC450V 10A 200,000 Ops
Switching Life(2)	DC50V 50A 200,000 Ops
Cut-Off Life (1)	DC450V 300A 100 Ops
Cut-Off Life (2)	DC450V, 1,000A, 1 Ops
Reverse Switching Life(1)	DC200V -150A 1,000 Ops
Reverse Switching Life(2)	DC200V -300A 100 Ops
Making Current Life	DC50V 50A 200,000 Ops
Mechanical Life	200,000 Ops

GER-250



Size, mm (W×H×D)	93 × 49 × 89
Weight	500g
Contact Form	SPST-NO
Contact Structure	Double Break, Single
Coil Rated Voltage	12Vdc
Power Consumption	6W(Stable), 35W(Inrush)
Ambient Operating Temperature	-40~85℃ (none icing and condensation)
Ambient Operating Humidity	5 ~ 85%
Main Terminals	M6 × 12mm Screw
Coil Terminals	Quick(KET090-II)

▶ Basic Characteristics of EV Relay

Pick-up Voltage	Less than 9.0V
Drop-out Voltage	More than 1.2V
Initial Voltage Drop	Less than 0.125V, 250A
Operate Time	Less than 50ms
Release Time	Less than 30ms
Bounce Time	Less than 2ms
Insulation Resistance (at 500VDC)	Min. 100MΩ
Breakdown Voltage	2500VAC for 1min(Detection Time : 10mA)
Temp. Characteristics	-40℃ to 85℃
Max. Load Current (Continuously)	250A 12VDC at 60℃
Short-time Load Current (10min)	375A 12VDC at 60℃
Short-time Load Current (2min)	550A 12VDC at 60℃
Sound Emission	Less than 65dB (at distance 60cm)

▶ Electrical & Mechanical Durability of EV Relay

Over-current Cut-off Life	DC400V 500A 100 Ops
Reverse Switching Life	DC200V -250A 100 Ops
Inrush Current Life	DC50V 50A 150,000 Ops
Switching Off Current Life	DC400V 10A 150,000 Ops
Cut-Off Life (break only)	DC400V 3,000A 1 Ops at EOL
Cut-Off Life (make/break)	DC400V -250A 100 Ops
Making Current Life	DC200V 250A 1,000 Ops
Mechanical Life	200,000 Ops

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GER-400



Size, mm (W×H×D)	60 × 67 × 96.5
Weight	700g
Contact Form	SPST-NO
Contact Structure	Double Break, Single
Coil Rated Voltage	12Vdc
Power Consumption	4W(Stable)
Ambient Operating Temperature	-40~85°C (none icing and condensation)
Ambient Operating Humidity	5 ~ 85%
Main Terminals	M6 × 12mm Screw
Coil Terminals	Quick(KET090-II)

Basic Characteristics of EV Relay

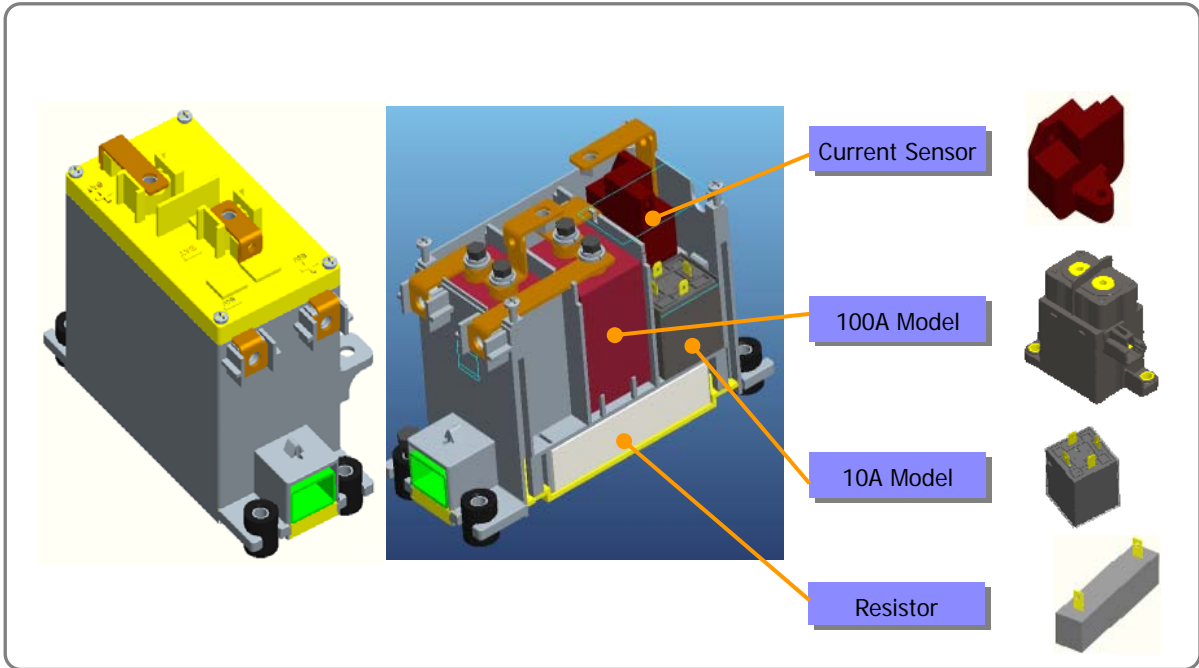
Pick-up Voltage	Less than 7.5V
Drop-out Voltage	More than 3.0V
Initial Voltage Drop	Less than 0.1V , 400A
Operate Time	Less than 30ms
Release Time	Less than 10ms
Bounce Time	Less than 2ms
Insulation Resistance (at 500VDC)	Min. 100MΩ
Breakdown Voltage	2500VAC for 1min(Detection Time : 10mA)
Temp. Characteristics	-40°C to 85°C
Max. Load Current (Continuously)	400A 12VDC at 85°C
Short-time Load Current (15min)	500A 12VDC at 85°C
Short-time Load Current (2min)	800A 12VDC at 85°C
Sound Emission	Less than 68dB (at distance 30cm)

Electrical & Mechanical Durability of EV Relay

Switching Life(1)	DC450V 400A 2,000 Ops
Switching Life(2)	DC450V 200A 5,000 Ops
Cut-Off Life (1)	DC450V 800A 300 Ops
Cut-Off Life (2)	DC450V, 3,200A, 1 Ops
Reverse Switching Life(1)	DC200V -400A 1,000 Ops
Reverse Switching Life(2)	DC200V -600A 50 Ops
Making Current Life	DC450V 400A 30,000 Ops
Mechanical Life	200,000 Ops

EV Solutions, EV Relays

PRA (Power Relay Assembly)



BDU (Battery Disconnect Unit)

