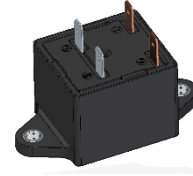


ESM-20**High voltage DC Relay****1 Product Features**

- ◆Ceramic Brazing seal, No arc leakage, Make sure no fire and burst
- ◆Compact structure, low noise
- ◆The mixed gas mainly filled with hydrogen can prevent the contact from oxidation and burning
- ◆20A 85℃ long time current carrying capacity
- ◆The insulation resistance reaches 1000MΩ (1500VDC) and meets the requirements of IEC60664-1

**2 Performance Data**

Parameter		Units	Value
Contact Form		/	1 form A
Contact Rated Load		A	20
Mechanical Durability		Ops	3×10^5
Max. Switching Voltage		VDC	1500
Max. Breaking Current		/	200A(1000V DC) 1 times
Current Tolerance ¹⁾		/	30A: 60min; 40A: 20min; 80A: 30s
Contact Resistance		mΩ	≤ 5
Operating Time (at rated voltage)		ms	≤ 30
Release Time (at rated voltage)		ms	≤ 10
Insulation Resistance		MΩ	1000 (1500VDC)
Dielectric Withstand Voltage	Between Open Contacts	/	4000VAC 50 Hz/60 Hz
	Between Contacts and Coil	/	4000VAC 50 Hz/60 Hz
Electrical Endurance ²⁾	20A 1000VDC (DC-1)	Ops	2×10^4
	15A 1500VDC (DC-1)	Ops	1×10^4
Impact	Stability	/	196m/s ²
	Strength	/	490 m/s ²
Vibration		/	10Hz~500Hz 49 m/s ²
Operating Temp		℃	-40~+85
Fumidity		/	5%~85%RH
Form Of Load Outlet		/	Internal Thread/External Thread
Weight		g	150
Outline Dimensions		/	Reference outline drawing

Remark: 1) please refer to the attached figure "tolerance curve". 2) The on-off ratio is 0.6s: 5.4s. Please note that if the coil parallel diode is used, the release time of the relay will be greatly prolonged and the service life will be reduced.

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3 Coil Parameters

Nominal Voltage(Us)	12V DC	24V DC	48V DC
Operating Voltage Range	±20%Us	±20%Us	±20%Us
Pickup Voltage	9.6Vmax	19.2Vmax	368Vmax
Dropout Voltage	1.2Vmin	2.4Vmin	4.8Vmin
Coil Power	2.6W	2.6W	2.6W

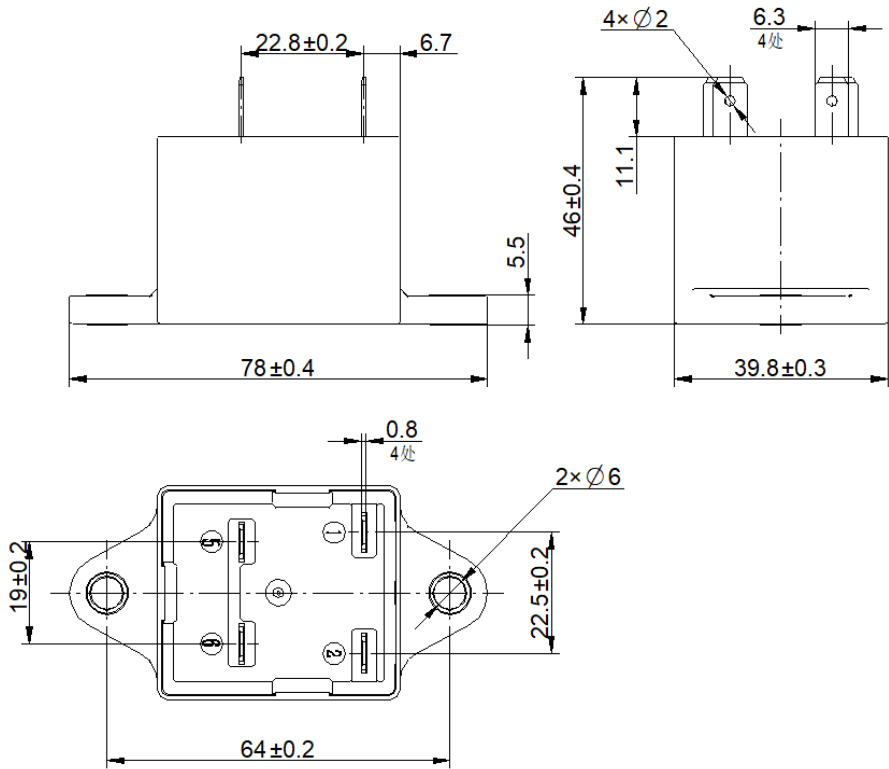
4 Example of order marking

EV M - 20 A / 1500 - 12 Q 2 (XXX)

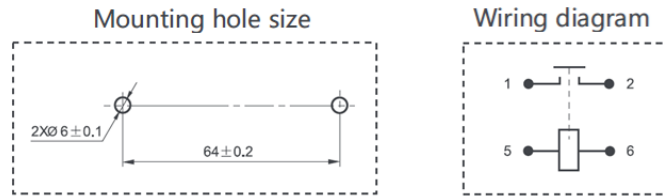
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- ① Product Model: EV
- ② Product Type: M: Ceramic Sealed Type
- ③ Contact form: A: 1 Form A
- ④ Series Code: 20: 20A
- ⑤ Load Voltage: 1000: 1000VDC
- ⑥ Nominal coil voltage: 12: 12VDC、24: 24VDC.....
- ⑦ Coil lead-out end form: Q: Insert (6.3)
- ⑧ Form Of Load Outlet: 2: Insert (6.3)
- ⑨ Characteristics Code: Subject To Customer Requirements

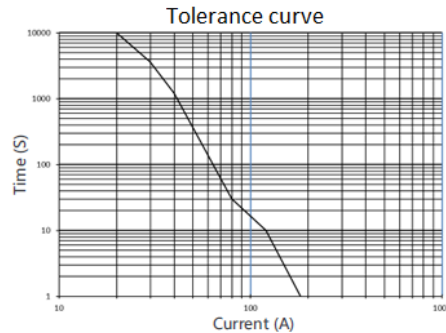
5 Outline drawing



6 Mounting hole/Wiring diagram



7 Performance graph



Remark: The above data is measured under the conditions of ambient temperature 85°C and the sectional area of conductor wire $\geq 4\text{mm}^2$. The data is for reference only, do not use it to select fuse directly.

8 Precautions for use

- ※ When installing the product, the Torque of the fastening bolt should be kept within the specified range, exceeding the maximum value may cause the product to break.
 - 1) Contact insert and pull force : 49N max
 - 2) Torque at mounting point (M5) : $3 \sim 4\text{N}\cdot\text{m}$
- ※ Please connect according to the schematic diagram. When the wiring is wrong, it may cause accidental misoperation and abnormal heating. Please pay attention to it.
- ※ Avoid installing products in areas directly affected by rain, or in areas with a strong magnetic field, or near objects with heat radiation.
- ※ If the relay coil and contact of the relay continuously at rated voltage (or current), the power is switched on immediately after it was cut off, at this time because the coil temperature increases, the resistance of the coil increases, which makes the product pull-in voltage increase, then it may lead to exceed the rated pull-in voltage.
- ※ If applied to inductive load (I load) at the same time $L/R > 1\text{ ms}$, it is recommended that the inductive load be connected in parallel with a surge current protection device, otherwise, it may cause the product electrical life shortened, the main contact broken bad.
- ※ The drive circuit power of the product coil must be greater than the coil power of the product, otherwise the on-off ability of the product will be reduced.
- ※ Please to avoid sticking grease and other foreign bodies on the leading-out piece, and use the connection wire of 10mm^2 or above, otherwise abnormal heating may be caused at the leading-out end.

Statement:

The document is for customer reference only. Specifications and parameters may be changed due to product improvement. For the specific parameters and performance of each product, please refer to the specifications and samples provided by _____ without further notice.

Relay performance parameters in different application areas are different, so customers should choose the appropriate products according to the specific conditions of use, if in doubt, please contact _____ for more technical support.

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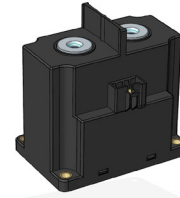
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邮政编码：200063

POSTAL CODE: 200063

ESM-150**High voltage DC Relay****1 Product Features**

- ◆ Ceramic Brazing seal, No arc leakage, Make sure no fire and burst
- ◆ Compact structure, low noise
- ◆ The mixed gas mainly filled with hydrogen can prevent the contact from oxidation and burning
- ◆ 250A 85℃ long time current carrying capacity
- ◆ The insulation resistance reaches 1000MΩ (1500VDC) and meets the requirements of IEC60664-1

**2 Performance Data**

Parameter		Units	Value
Contact Form		/	1 Form A
Contact Rated Load		A	150
Mechanical Durability		Ops	3×10^5
Max. Switching Voltage		VDC	1500
Max. Breaking Current		/	2000A(1000V DC) 1 times
Current Tolerance ¹⁾		/	300A: 10min; 500A: 30s; 1500A: 15s
Contact Resistance		mΩ	< 10
Operating Time (at rated voltage)		ms	≤ 40
Release Time (at rated voltage)		ms	≤ 15
Insulation Resistance		MΩ	1000 (1500VDC)
Dielectric Withstand Voltage	Between Open Contacts	/	4000VAC 50 Hz/60 Hz
	Between Contacts and Coil	/	4000VAC 50 Hz/60 Hz
Electrical Endurance ²⁾	100A 1500VDC (Break)	Ops	5×10^3
	150A 1500VDC (Break)	Ops	2.5×10^3
Impact	Stability	/	196m/s^2
	Strength	/	490m/s^2
Vibration		/	10Hz~500Hz 49m/s^2
Auxiliary Contact (On demand)	Form	/	NO
	Rated Load	/	2A/30VDC、3A/125VAC
	Min. Operating Voltage Current	/	0.1A/8V
Operating Temp		℃	-40~+85
Fumidity		/	5%~85%RH
Form Of Load Outlet		/	Internal Thread
Weight		g	1080
Outline Dimensions		/	Reference outline drawing

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Remark: 1) please refer to the attached figure "tolerance curve". 2) The on-off ratio is 0.6s: 5.4s. Please note that if the coil parallel diode is used, the release time of the relay will be greatly prolonged and the service life will be reduced.

3 Coil Parameters

Nominal Voltage(Us)	12V DC	24V DC	(10~32)V DC	(36~66)V DC
Operating Voltage Range	±20%Us	±20%Us	±10%Us	±10%Us
Pickup Voltage	9.6Vmax	19Vmax	9Vmax	32 Vmax
Dropout Voltage	12Vmin	2.4min	4Vmin	12Vmin
Coil Power	When switched on: 50W, When holding: 5W	When switched on: 50W, When holding: 5W	When switched on: 34W, When holding: 3W	When switched on: 42W, When holding:3W

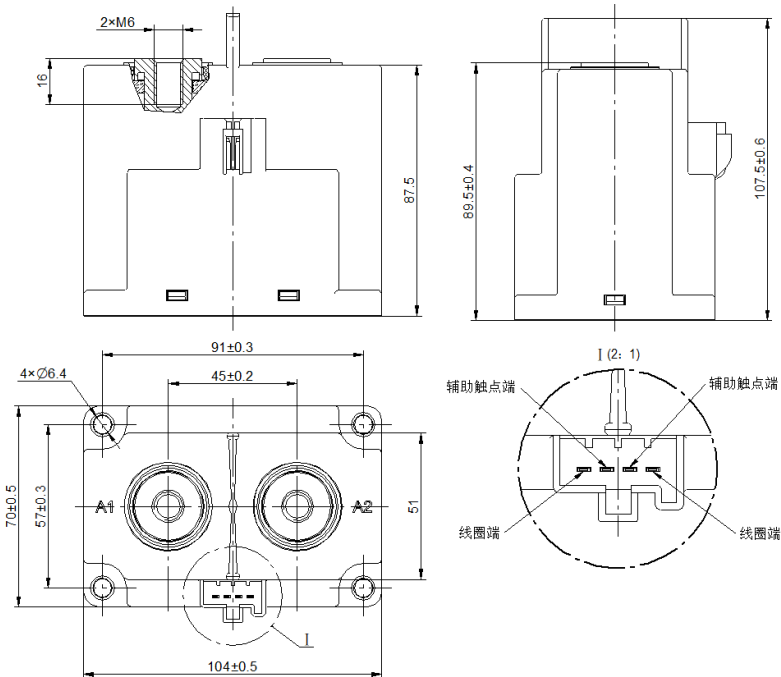
4 Example of order marking

ES M - 150 A / 1500 - 12 - F 4 (XXX)

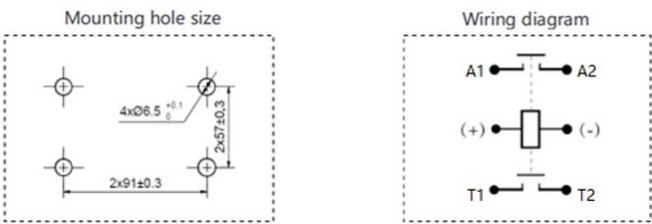
①②③④⑤⑥⑦⑧⑨

- ① Product Model: ES
- ② Product Type: M: Ceramic Sealed Type
- ③ Series Code: 150: 150A
- ④ Contact form: A: 1 Form A
- ⑤ Load Voltage: 1500: 1500VDC
- ⑥ Nominal coil voltage: 12: 12VDC 、24: 24VDC 、A: (10~32)VDC、D: (36~66)VDC
- ⑦ Auxiliary Contact: F: With Normally Open Auxiliary Contacts
- ⑧ Form Of Load Outlet: 4: Internal Thread
- ⑨ Characteristics Code: Subject To Customer Requirements

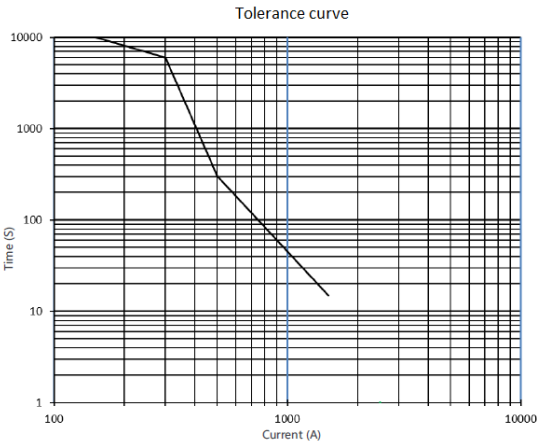
5 Outline drawing



6 Mounting hole/Wiring diagram



7 Performance graph



Remark: The above data is measured under the conditions of ambient temperature 85℃ and the sectional area of conductor wire $\geq 50\text{mm}^2$. The data is for reference only, do not use it to select fuse directly.

8 Precautions for use

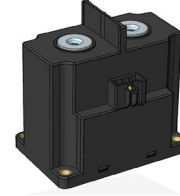
- ※ When installing the product, the Torque of the fastening bolt should be kept within the specified range, exceeding the maximum value may cause the product to break.
 - 1) Contact post force distance (M6) : 6~ 8 N.m
 - 2) Torque at mounting point (M5) : 3 ~ 4 N.m
- ※ Please connect according to the schematic diagram. When the wiring is wrong, it may cause accidental misoperation and abnormal heating. Please pay attention to it.
- ※ Avoid installing products in areas directly affected by rain, or in areas with a strong magnetic field, or near objects with heat radiation.
- ※ If the relay coil and contact of the relay continuously at rated voltage (or current), the power is switched on immediately after it was cut off, at this time because the coil temperature increases, the resistance of the coil increases, which makes the product pull-in voltage increase, then it may lead to exceed the rated pull-in voltage.
- ※ If applied to inductive load (I load) at the same time $L/R > 1\text{ ms}$, it is recommended that the inductive load be connected in parallel with a surge current protection device, otherwise, it may cause the product electrical life shortened, the main contact broken bad.
- ※ The drive circuit power of the product coil must be greater than the coil power of the product, otherwise the on-off ability of the product will be reduced.
- ※ Please to avoid sticking grease and other foreign bodies on the leading-out piece, and use the connection wire of 50mm^2 or above, otherwise abnormal heating may be caused at the leading-out end.

⚠Statement:

The document is for customer reference only. Specifications and parameters may be changed due to product improvement without further notice. Performance parameters in different application areas are different, so products according to the specific conditions of use, if in doubt, please contact more technical support.

ESM-250**High voltage DC Relay****1 Product Features**

- ◆ Ceramic Brazing seal, No arc leakage, Make sure no fire and burst
- ◆ Compact structure, low noise
- ◆ The mixed gas mainly filled with hydrogen can prevent the contact from oxidation and burning
- ◆ 250A 85℃ long time current carrying capacity
- ◆ The insulation resistance reaches 1000MΩ (1500VDC) and meets the requirements of IEC60664-1

**2 Performance Data**

Parameter		Units	Value
Contact Form		/	1 Form A
Contact Rated Load		A	250
Mechanical Durability		Ops	3×10^5
Max. Switching Voltage		VDC	1500
Max. Breaking Current		/	2000A(1000V DC) 1 times
Current Tolerance ¹⁾		/	400A: 10min; 1000A: 30s; 3000A: 6s
Contact Resistance		mΩ	<10
Operating Time (at rated voltage)		ms	≤40
Release Time (at rated voltage)		ms	≤15
Insulation Resistance		MΩ	1000 (1500VDC)
Dielectric Withstand Voltage	Between Open Contacts	/	4000VAC 50 Hz/60 Hz
	Between Contacts and Coil	/	4000VAC 50 Hz/60 Hz
Electrical Endurance ²⁾	100A 1500VDC (Break)	Ops	5×10^3
	250A 1500VDC (Break)	Ops	1×10^3
Impact	Stability	/	196m/s ²
	Strength	/	490 m/s ²
Vibration		/	10Hz~500Hz 49 m/s ²
Auxiliary Contact (On demand)	Form	/	NO
	Rated Load	/	2A/30VDC、3A/125VAC
	Min. Operating Voltage Current	/	0.1A/8V
Operating Temp		℃	-40~+85
Fumidity		/	5%~85%RH
Form Of Load Outlet		/	Internal Thread
Weight		g	1080
Outline Dimensions		/	Reference outline drawing

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Remark: 1) please refer to the attached figure "tolerance curve". 2) The on-off ratio is 0.6s: 5.4s. Please note that if the coil parallel diode is used, the release time of the relay will be greatly prolonged and the service life will be reduced.

3 Coil Parameters

Nominal Voltage(Us)	12V DC	24V DC	(10~32)V DC	(36~66)V DC
Operating Voltage Range	±20%Us	±20%Us	±10%Us	±10%Us
Pickup Voltage	9.6Vmax	19Vmax	9Vmax	32 Vmax
Dropout Voltage	12Vmin	2.4min	4Vmin	12Vmin
Coil Power	When switched on: 50W, When holding: 5W	When switched on: 50W, When holding: 5W	When switched on: 34W, When holding: 3W	When switched on: 42W, When holding:3W

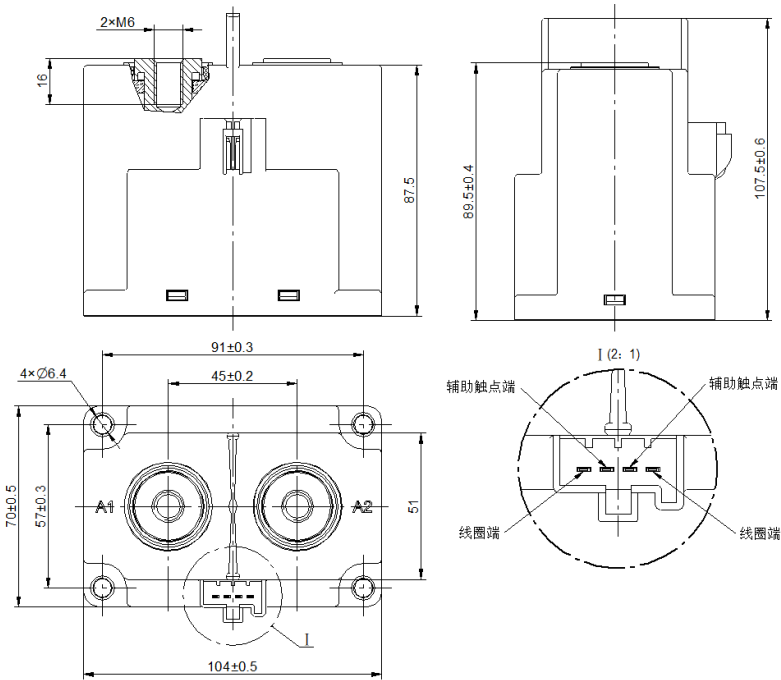
4 Example of order marking

ES M - 250 A / 1500 - 12 - F 4 (XXX)

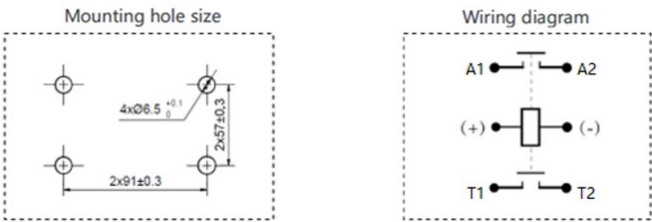
①②③④⑤⑥⑦⑧⑨

- ① Product Model: ES
- ② Product Type: M: Ceramic Sealed Type
- ③ Series Code: 250: 250A
- ④ Contact form: A: 1 Form A
- ⑤ Load Voltage: 1500: 1500VDC
- ⑥ Nominal coil voltage: 12: 12VDC 、24: 24VDC 、A: (10~32)VDC、D: (36~66)VDC
- ⑦ Auxiliary Contact: F: With Normally Open Auxiliary Contacts
- ⑧ Form Of Load Outlet: 4: Internal Thread
- ⑨ Characteristics Code: Subject To Customer Requirements

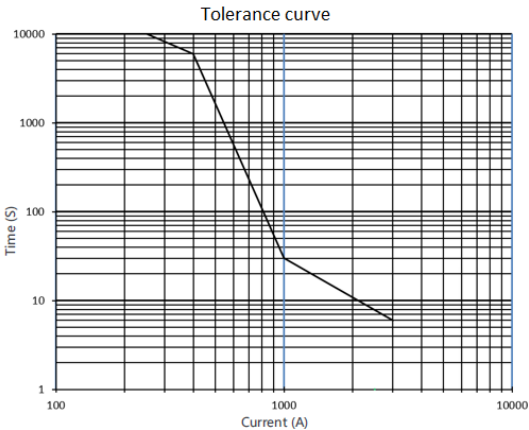
5 Outline drawing



6 Mounting hole/Wiring diagram



7 Performance graph



Remark: The above data is measured under the conditions of ambient temperature 85℃ and the sectional area of conductor wire $\geq 120\text{mm}^2$. The data is for reference only, do not use it to select fuse directly.

8 Precautions for use

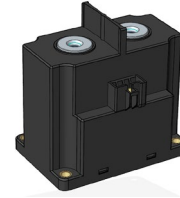
- ※ When installing the product, the Torque of the fastening bolt should be kept within the specified range, exceeding the maximum value may cause the product to break.
 - 1) Contact post force distance (M6) : 6~ 8 N.m
 - 2) Torque at mounting point (M5) : 3 ~ 4 N.m
- ※ Please connect according to the schematic diagram. When the wiring is wrong, it may cause accidental misoperation and abnormal heating. Please pay attention to it.
- ※ Avoid installing products in areas directly affected by rain, or in areas with a strong magnetic field, or near objects with heat radiation.
- ※ If the relay coil and contact of the relay continuously at rated voltage (or current), the power is switched on immediately after it was cut off, at this time because the coil temperature increases, the resistance of the coil increases, which makes the product pull-in voltage increase, then it may lead to exceed the rated pull-in voltage.
- ※ If applied to inductive load (I load) at the same time $L/R > 1\text{ ms}$, it is recommended that the inductive load be connected in parallel with a surge current protection device, otherwise, it may cause the product electrical life shortened, the main contact broken bad.
- ※ The drive circuit power of the product coil must be greater than the coil power of the product, otherwise the on-off ability of the product will be reduced.
- ※ Please to avoid sticking grease and other foreign bodies on the leading-out piece, and use the connection wire of 120mm^2 or above, otherwise abnormal heating may be caused at the leading-out end.

⚠Statement:

The document is for customer reference only. Specifications and parameters may be changed due to product improvement. Specific parameters and performance of each product, please refer to the specifications and samples provided by us without further notice. Performance parameters in different application areas are different, so products according to the specific conditions of use, if in doubt, please contact us for more technical support.

ESM-350**High voltage DC Relay****1 Product Features**

- ◆ Ceramic Brazing seal, No arc leakage, Make sure no fire and burst
- ◆ Compact structure, low noise
- ◆ The mixed gas mainly filled with hydrogen can prevent the contact from oxidation and burning
- ◆ 350A 85℃ long time current carrying capacity
- ◆ The insulation resistance reaches 1000MΩ (1500VDC) and meets the requirements of IEC60664-1

**2 Performance Data**

Parameter		Units	Value
Contact Form		/	1 Form A
Contact Rated Load		A	350
Mechanical Durability		Ops	3×10^5
Max. Switching Voltage		VDC	1500
Max. Breaking Current		/	2000A(1000V DC) 1 times
Current Tolerance ¹⁾		/	500A: 10min; 1500A: 15s; 4000A: 3s
Contact Resistance		mΩ	<10
Operating Time (at rated voltage)		ms	≤40
Release Time (at rated voltage)		ms	≤15
Insulation Resistance		MΩ	1000 (1500VDC)
Dielectric Withstand Voltage	Between Open Contacts	/	4000VAC 50 Hz/60 Hz
	Between Contacts and Coil	/	4000VAC 50 Hz/60 Hz
Electrical Endurance ²⁾	150A 1500VDC (Break)	Ops	3×10^3
	350A 1000VDC (Break)	Ops	1×10^3
Impact	Stability	/	196m/s ²
	Strength	/	490 m/s ²
Vibration		/	10Hz~500Hz 49 m/s ²
Auxiliary Contact (On demand)	Form	/	NO
	Rated Load	/	2A/30VDC、3A/125VAC
	Min. Operating Voltage Current	/	0.1A/8V
Operating Temp		℃	-40~+85
Fumidity		/	5%~85%RH
Form Of Load Outlet		/	Internal Thread
Weight		g	1080
Outline Dimensions		/	Reference outline drawing

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Remark: 1) please refer to the attached figure "tolerance curve". 2) The on-off ratio is 0.6s: 5.4s. Please note that if the coil parallel diode is used, the release time of the relay will be greatly prolonged and the service life will be reduced.

3 Coil Parameters

Nominal Voltage(Us)	12V DC	24V DC	(10~32)V DC	(36~66)V DC
Operating Voltage Range	±20%Us	±20%Us	± 10%Us	± 10%Us
Pickup Voltage	9.6Vmax	19Vmax	9Vmax	32 Vmax
Dropout Voltage	12Vmin	2.4min	4Vmin	12Vmin
Coil Power	When switched on: 50W, When holding: 5W	When switched on: 50W, When holding: 5W	When switched on: 34W, When holding: 3W	When switched on: 42W, When holding:3W

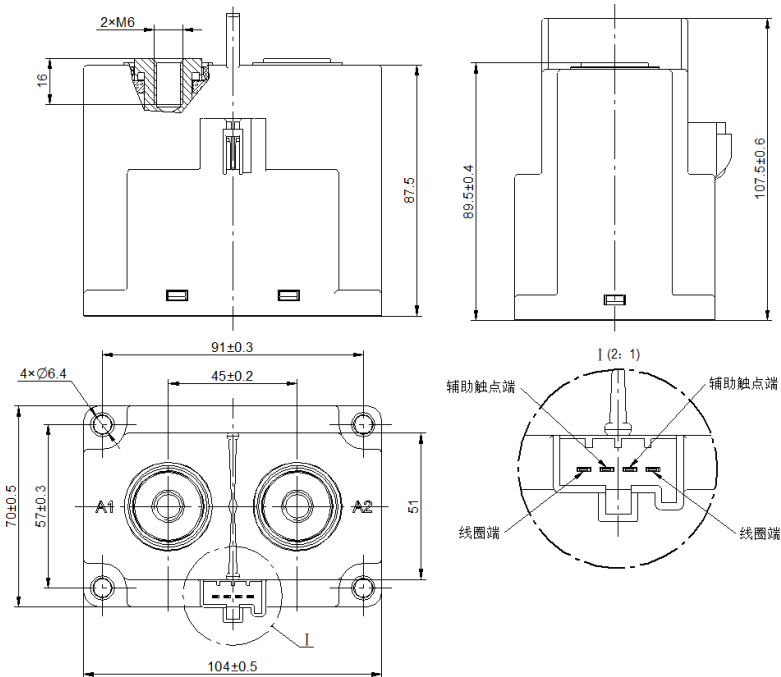
4 Example of order marking

ES M - 350 A / 1500 - 12 - F 4 (XXX)

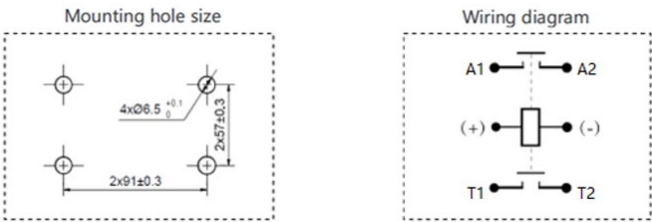
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- ① Product Model: ES
- ② Product Type: M: Ceramic Sealed Type
- ③ Series Code: 350: 350A
- ④ Contact form: A: 1 Form A
- ⑤ Load Voltage: 1500: 1500VDC
- ⑥ Nominal coil voltage: 12: 12VDC 、 24: 24VDC 、 A: (10~32)VDC、 D: (36~66)VDC
- ⑦ Auxiliary Contact: F: With Normally Open Auxiliary Contacts
- ⑧ Form Of Load Outlet: 4: Internal Thread
- ⑨ Characteristics Code: Subject To Customer Requirements

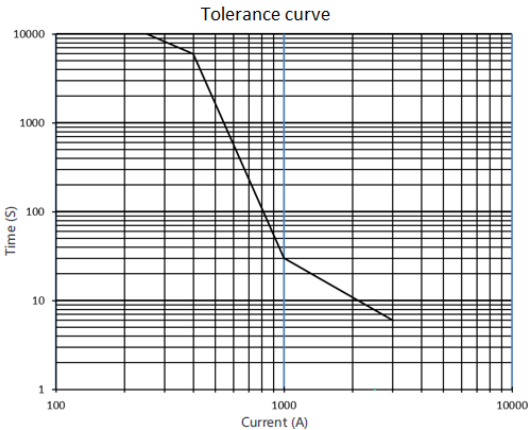
5 Outline drawing



6 Mounting hole/Wiring diagram



7 Performance graph



Remark: The above data is measured under the conditions of ambient temperature 85℃ and the sectional area of conductor wire $\geq 185\text{mm}^2$. The data is for reference only,do not use it to select fuse directly.

8 Precautions for use

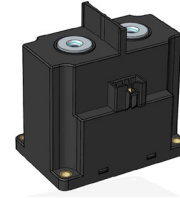
- ※ When installing the product, the Torque of the fastening bolt should be kept within the specified range, exceeding the maximum value may cause the product to break.
 - 1) Contact post force distance (M6) : 6~ 8 N.m
 - 2) Torque at mounting point (M5) :3 ~ 4 N.m
- ※ Please connect according to the schematic diagram. When the wiring is wrong, it may cause accidental misoperation and abnormal heating. Please pay attention to it.
- ※ Avoid installing products in areas directly affected by rain, or in areas with a strong magnetic field, or near objects with heat radiation.
- ※ If the relay coil and contact of the relay continuously at rated voltage (or current), the power is switched on immediately after it was cut off, at this time because the coil temperature increases, the resistance of the coil increases, which makes the product pull-in voltage increase, then it may lead to exceed the rated pull-in voltage.
- ※ If applied to inductive load (I load) at the same time $L/R > 1\text{ ms}$, it is recommended that the inductive load be connected in parallel with a surge current protection device, otherwise, it may cause the product electrical life shortened, the main contact broken bad.
- ※ The drive circuit power of the product coil must be greater than the coil power of the product, otherwise the on-off ability of the product will be reduced.
- ※ Please to avoid sticking grease and other foreign bodies on the leading-out piece, and use the connection wire of 185mm^2 or above, otherwise abnormal heating may be caused at the leading-out end.

⚠Statement:

The document is for customer reference only.Specifications and parameters may be changed due to product improvement specific parameters and performance of each product, please refer to the specifications and samples provided by without further notice.
performance parameters in different application areas are different, so iate for products according to the specific conditions of use, if in doubt, please contact for more technical support.

ESM-400**High voltage DC Relay****1 Product Features**

- ◆ Ceramic Brazing seal, No arc leakage, Make sure no fire and burst
- ◆ Compact structure, low noise
- ◆ The mixed gas mainly filled with hydrogen can prevent the contact from oxidation and burning
- ◆ 400A 85℃ long time current carrying capacity
- ◆ The insulation resistance reaches 1000MΩ (1500VDC) and meets the requirements of IEC60664-1

**2 Performance Data**

Parameter		Units	Value
Contact Form		/	1 Form A
Contact Rated Load		A	400
Mechanical Durability		Ops	3×10^5
Max. Switching Voltage		VDC	1500
Max. Breaking Current		/	2000A(1000V DC) 1 times
Current Tolerance ¹⁾		/	700A: 6min; 1500A: 30s; 3000A: 7s
Contact Resistance		mΩ	<10
Operating Time (at rated voltage)		ms	≤40
Release Time (at rated voltage)		ms	≤15
Insulation Resistance		MΩ	1000 (1500VDC)
Dielectric Withstand Voltage	Between Open Contacts	/	4000VAC 50 Hz/60 Hz
	Between Contacts and Coil	/	4000VAC 50 Hz/60 Hz
Electrical Endurance ²⁾	100A 1500VDC (Break)	Ops	5×10^3
	300A 1500VDC (Break)	Ops	2×10^2
Impact	Stability	/	196m/s ²
	Strength	/	490 m/s ²
Vibration		/	10Hz~500Hz 49 m/s ²
Auxiliary Contact (On demand)	Form	/	NO
	Rated Load	/	2A/30VDC、3A/125VAC
	Min. Operating Voltage Current	/	0.1A/8V
Operating Temp		℃	-40~+85
Fumidity		/	5%~85%RH
Form Of Load Outlet		/	Internal Thread/External Thread
Weight		g	1105
Outline Dimensions		/	Reference outline drawing

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Remark: 1) please refer to the attached figure "tolerance curve". 2) The on-off ratio is 0.6s: 5.4s. Please note that if the coil parallel diode is used, the release time of the relay will be greatly prolonged and the service life will be reduced.

3 Coil Parameters

Nominal Voltage(Us)	12V DC	24V DC	(10~32)V DC	(36~66)V DC
Operating Voltage Range	±20%Us	±20%Us	±10%Us	±10%Us
Pickup Voltage	9.6Vmax	19Vmax	9Vmax	32 Vmax
Dropout Voltage	12Vmin	2.4min	4Vmin	12Vmin
Coil Power	When switched on: 50W, When holding: 5W	When switched on: 50W, When holding: 5W	When switched on: 34W, When holding: 3W	When switched on: 42W, When holding:3W

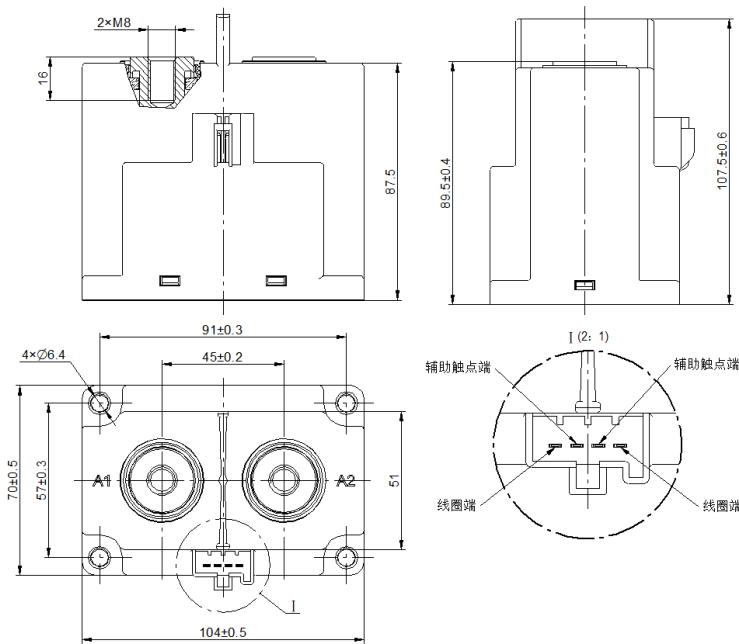
4 Example of order marking

ES M - 400 A / 1500 - 12 - F 4 (XXX)

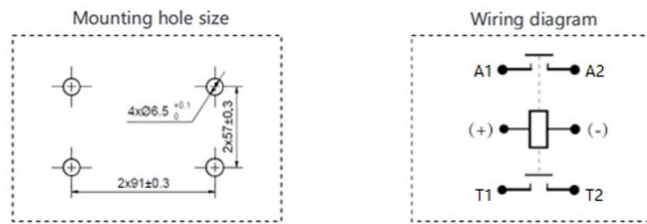
①②③④⑤⑥⑦⑧⑨

- ① Product Model: ES
- ② Product Type: M: Ceramic Sealed Type
- ③ Series Code: 400: 400A
- ④ Contact form: A: 1 Form A
- ⑤ Load Voltage: 1500: 1500VDC
- ⑥ Nominal coil voltage: 12: 12VDC 、24: 24VDC 、A: (10~32)VDC、D: (36~66)VDC
- ⑦ Auxiliary Contact: F: With Normally Open Auxiliary Contacts
- ⑧ Form Of Load Outlet: 4: Internal Thread
- ⑨ Characteristics Code: Subject To Customer Requirements

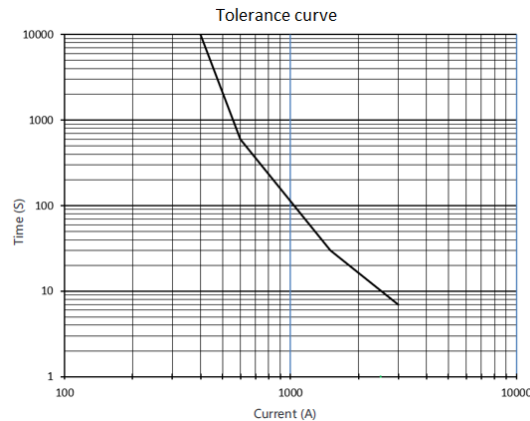
5 Outline drawing



6 Mounting hole/Wiring diagram



7 Performance graph



Remark: The above data is measured under the conditions of ambient temperature 85℃ and the sectional area of conductor wire $\geq 200\text{mm}^2$. The data is for reference only, do not use it to select fuse directly.

8 Precautions for use

- ※ When installing the product, the Torque of the fastening bolt should be kept within the specified range, exceeding the maximum value may cause the product to break.
 - 1) Contact post force distance (M8) : 8~ 10 N.m
 - 2) Torque at mounting point (M5) : 3 ~ 4 N.m
- ※ Please connect according to the schematic diagram. When the wiring is wrong, it may cause accidental misoperation and abnormal heating. Please pay attention to it.
- ※ Avoid installing products in areas directly affected by rain, or in areas with a strong magnetic field, or near objects with heat radiation.
- ※ If the relay coil and contact of the relay continuously at rated voltage (or current), the power is switched on immediately after it was cut off, at this time because the coil temperature increases, the resistance of the coil increases, which makes the product pull-in voltage increase, then it may lead to exceed the rated pull-in voltage.
- ※ If applied to inductive load (I load) at the same time $L/R > 1 \text{ ms}$, it is recommended that the inductive load be connected in parallel with a surge current protection device, otherwise, it may cause the product electrical life shortened, the main contact broken bad.
- ※ The drive circuit power of the product coil must be greater than the coil power of the product, otherwise the on-off ability of the product will be reduced.
- ※ Please to avoid sticking grease and other foreign bodies on the leading-out piece, and use the connection wire of 200mm^2 or above, otherwise abnormal heating may be caused at the leading-out end.

⚠Statement:

The document is for customer reference only. Specifications and parameters may be changed due to product improvement. Specific parameters and performance of each product, please refer to the specifications and samples provided by us without further notice. Performance parameters in different application areas are different, so please refer to the specifications of the products according to the specific conditions of use, if in doubt, please contact us for more technical support.

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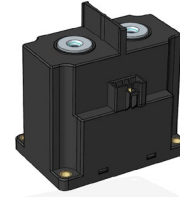
ADDRESS: 1007, Great Wall Building, 3000 Zhongshan North Road, Putuo District, Shanghai

邮政编码: 200063

POSTAL CODE: 200063

ESM-600**High voltage DC Relay****1 Product Features**

- ◆ Ceramic Brazing seal, No arc leakage, Make sure no fire and burst
- ◆ Compact structure, low noise
- ◆ The mixed gas mainly filled with hydrogen can prevent the contact from oxidation and burning
- ◆ 600A 85℃ long time current carrying capacity
- ◆ The insulation resistance reaches 1000MΩ (1500VDC) and meets the requirements of IEC60664-1

**2 Performance Data**

Parameter		Units	Value
Contact Form		/	1 Form A
Contact Rated Load		A	600
Mechanical Durability		Ops	3×10^5
Max. Switching Voltage		VDC	1500
Max. Breaking Current		/	2000A(1000V DC) 1 times
Current Tolerance ¹⁾		/	800A: 10min; 1500A: 30s; 3000A: 10s
Contact Resistance		mΩ	<10
Operating Time (at rated voltage)		ms	≤40
Release Time (at rated voltage)		ms	≤15
Insulation Resistance		MΩ	1000 (1500VDC)
Dielectric Withstand Voltage	Between Open Contacts	/	4000VAC 50 Hz/60 Hz
	Between Contacts and Coil	/	4000VAC 50 Hz/60 Hz
Electrical Endurance ²⁾	600A 1000VDC (Break)	Ops	1×10^3
	350A 1500VDC (Break)	Ops	5×10^2
Impact	Stability	/	196m/s ²
	Strength	/	490 m/s ²
Vibration		/	10Hz~500Hz 49 m/s ²
Auxiliary Contact (On demand)	Form	/	NO
	Rated Load	/	2A/30VDC、3A/125VAC
	Min. Operating Voltage Current	/	0.1A/8V
Operating Temp		℃	-40~+85
Fumidity		/	5%~85%RH
Form Of Load Outlet		/	Internal Thread
Weight		g	1107
Outline Dimensions		/	Reference outline drawing

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Remark: 1) please refer to the attached figure "tolerance curve". 2) The on-off ratio is 0.6s: 5.4s. Please note that if the coil parallel diode is used, the release time of the relay will be greatly prolonged and the service life will be reduced.

3 Coil Parameters

Nominal Voltage(Us)	12V DC	24V DC	(10~32)V DC	(36~66)V DC
Operating Voltage Range	±20%Us	±20%Us	±10%Us	±10%Us
Pickup Voltage	9.6Vmax	19Vmax	9Vmax	32 Vmax
Dropout Voltage	12Vmin	2.4min	4Vmin	12Vmin
Coil Power	When switched on: 50W, When holding: 5W	When switched on: 50W, When holding: 5W	When switched on: 34W, When holding: 3W	When switched on: 42W, When holding:3W

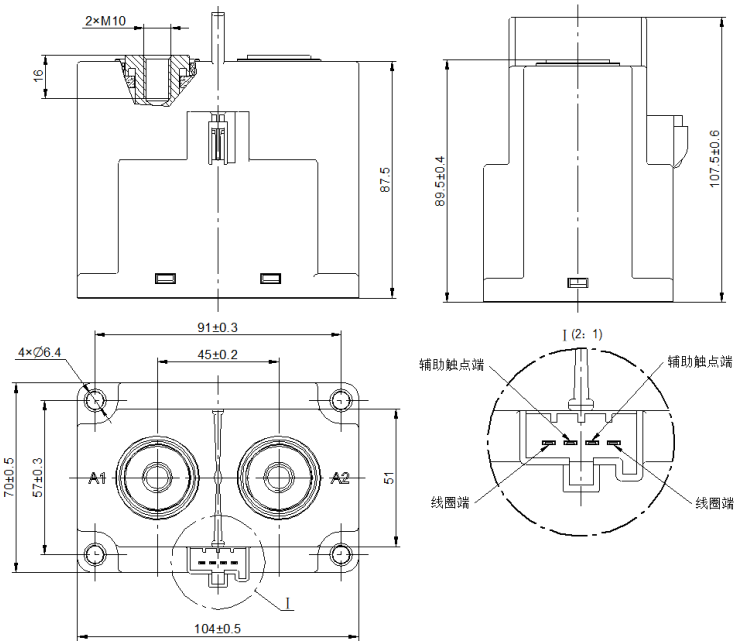
4 Example of order marking

ES M - 600 A / 1500 - 12 - F 4 (XXX)

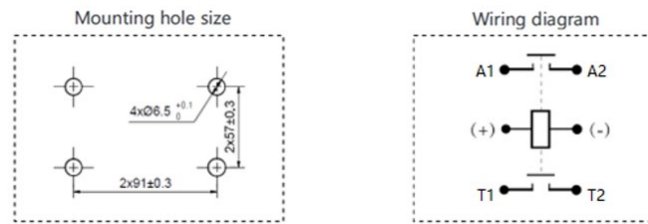
①②③④⑤⑥⑦⑧⑨

- ① Product Model: ES
- ② Product Type: M: Ceramic Sealed Type
- ③ Series Code: 600: 600A
- ④ Contact form: A: 1 Form A
- ⑤ Load Voltage: 1500: 1500VDC
- ⑥ Nominal coil voltage: 12: 12VDC 、24: 24VDC 、A: (10~32)VDC、D: (36~66)VDC
- ⑦ Auxiliary Contact: F: With Normally Open Auxiliary Contacts
- ⑧ Form Of Load Outlet: 4: Internal Thread
- ⑨ Characteristics Code: Subject To Customer Requirements

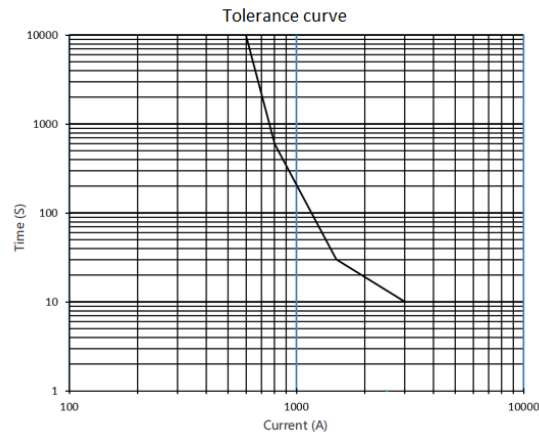
5 Outline drawing



6 Mounting hole/Wiring diagram



7 Performance graph



Remark: The above data is measured under the conditions of ambient temperature 85℃ and the sectional area of conductor wire $\geq 400\text{mm}^2$. The data is for reference only, do not use it to select fuse directly.

8 Precautions for use

- ※ When installing the product, the Torque of the fastening bolt should be kept within the specified range, exceeding the maximum value may cause the product to break.
 - 1) Contact post force distance (M10) : 10~ 12 N.m
 - 2) Torque at mounting point (M6) : 5 ~ 6 N.m
- ※ Please connect according to the schematic diagram. When the wiring is wrong, it may cause accidental misoperation and abnormal heating. Please pay attention to it.
- ※ Avoid installing products in areas directly affected by rain, or in areas with a strong magnetic field, or near objects with heat radiation.
- ※ If the relay coil and contact of the relay continuously at rated voltage (or current), the power is switched on immediately after it was cut off, at this time because the coil temperature increases, the resistance of the coil increases, which makes the product pull-in voltage increase, then it may lead to exceed the rated pull-in voltage.
- ※ If applied to inductive load (I load) at the same time $L/R > 1 \text{ ms}$, it is recommended that the inductive load be connected in parallel with a surge current protection device, otherwise, it may cause the product electrical life shortened, the main contact broken bad.
- ※ The drive circuit power of the product coil must be greater than the coil power of the product, otherwise the on-off ability of the product will be reduced.
- ※ Please to avoid sticking grease and other foreign bodies on the leading-out piece, and use the connection wire of 400mm^2 or above, otherwise abnormal heating may be caused at the leading-out end.

⚠Statement:

The document is for customer reference only. Specifications and parameters may be changed due to product improvement. Specific parameters and performance of each product, please refer to the specifications and samples provided by us without further notice. Performance parameters in different application areas are different, so products according to the specific conditions of use, if in doubt, please contact us for more technical support.

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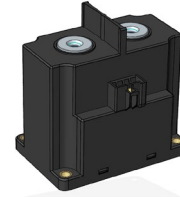
ADDRESS: 1007, Great Wall Building, 3000 Zhongshan North Road, Putuo District, Shanghai

邮政编码：200063

POSTAL CODE: 200063

ESM-800**High voltage DC Relay****1 Product Features**

- ◆ Ceramic Brazing seal, No arc leakage, Make sure no fire and burst
- ◆ Compact structure, low noise
- ◆ The mixed gas mainly filled with hydrogen can prevent the contact from oxidation and burning
- ◆ 800A 85℃ long time current carrying capacity
- ◆ The insulation resistance reaches 1000MΩ (1500VDC) and meets the requirements of IEC60664-1

**2 Performance Data**

Parameter		Units	Value
Contact Form		/	1 Form A
Contact Rated Load		A	800
Mechanical Durability		Ops	3×10^5
Max. Switching Voltage		VDC	1500
Max. Breaking Current		/	2000A(1000V DC) 1 times
Current Tolerance ¹⁾		/	1000A: 2min; 2000A: 20s; 3000A: 10s
Contact Resistance		mΩ	<10
Operating Time (at rated voltage)		ms	≤40
Release Time (at rated voltage)		ms	≤15
Insulation Resistance		MΩ	1000 (1500VDC)
Dielectric Withstand Voltage	Between Open Contacts	/	4000VAC 50 Hz/60 Hz
	Between Contacts and Coil	/	4000VAC 50 Hz/60 Hz
Electrical Endurance ²⁾	800A 1000VDC (Break)	Ops	2×10^2
	600A 1500VDC (Break)	Ops	5×10^2
Impact	Stability	/	196m/s ²
	Strength	/	490 m/s ²
Vibration		/	10Hz~500Hz 49 m/s ²
Auxiliary Contact (On demand)	Form	/	NO
	Rated Load	/	2A/30VDC、3A/125VAC
	Min. Operating Voltage Current	/	0.1A/8V
Operating Temp		℃	-40~+85
Fumidity		/	5%~85%RH
Form Of Load Outlet		/	Internal Thread
Weight		g	1115
Outline Dimensions		/	Reference outline drawing

地址：上海市普陀区中山北路 3000 号长城大厦 1007

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POSTAL CODE:200063

Remark: 1) please refer to the attached figure "tolerance curve". 2) The on-off ratio is 0.6s: 5.4s. Please note that if the coil parallel diode is used, the release time of the relay will be greatly prolonged and the service life will be reduced.

3 Coil Parameters

Nominal Voltage(Us)	12V DC	24V DC	(10~32)V DC	(36~66)V DC
Operating Voltage Range	±20%Us	±20%Us	±10%Us	±10%Us
Pickup Voltage	9.6Vmax	19Vmax	9Vmax	32 Vmax
Dropout Voltage	12Vmin	2.4min	4Vmin	12Vmin
Coil Power	When switched on: 50W, When holding: 5W	When switched on: 50W, When holding: 5W	When switched on: 34W, When holding: 3W	When switched on: 42W, When holding:3W

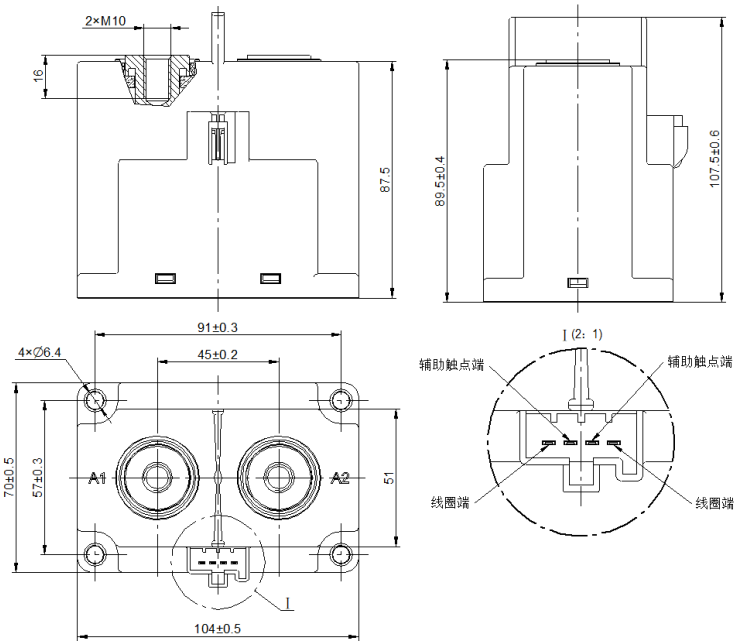
4 Example of order marking

ES M - 800 A / 1500 - 12 - F 4 (XXX)

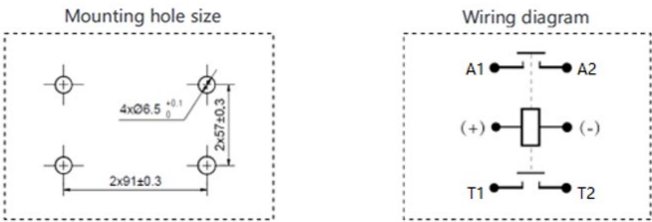
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- ① Product Model: ES
- ② Product Type: M: Ceramic Sealed Type
- ③ Series Code: 800: 800A
- ④ Contact form: A: 1 Form A
- ⑤ Load Voltage: 1500: 1500VDC
- ⑥ Nominal coil voltage: 12: 12VDC 、 24: 24VDC 、 A: (10~32)VDC、 D: (36~66)VDC
- ⑦ Auxiliary Contact: F: With Normally Open Auxiliary Contacts
- ⑧ Form Of Load Outlet: 4: Internal Thread
- ⑨ Characteristics Code: Subject To Customer Requirements

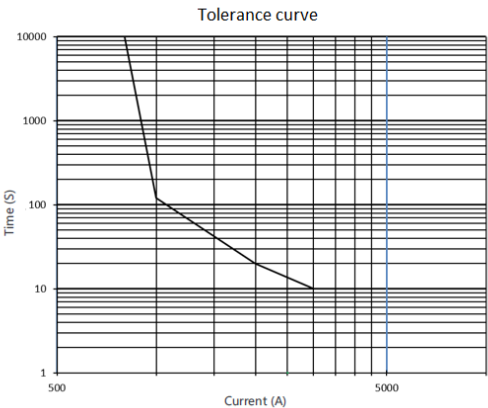
5 Outline drawing



6 Mounting hole/Wiring diagram



7 Performance graph



Remark: The above data is measured under the conditions of ambient temperature 85℃ and the sectional area of conductor wire $\geq 480\text{mm}^2$. The data is for reference only,do not use it to select fuse directly.

8 Precautions for use

- ※ When installing the product, the Torque of the fastening bolt should be kept within the specified range, exceeding the maximum value may cause the product to break.
 - 1) Contact post force distance (M10) : 10~ 12 N.m
 - 2) Torque at mounting point (M6) :5 ~ 6 N.m
- ※ Please connect according to the schematic diagram. When the wiring is wrong, it may cause accidental misoperation and abnormal heating. Please pay attention to it.
- ※ Avoid installing products in areas directly affected by rain, or in areas with a strong magnetic field, or near objects with heat radiation.
- ※ If the relay coil and contact of the relay continuously at rated voltage (or current), the power is switched on immediately after it was cut off, at this time because the coil temperature increases, the resistance of the coil increases, which makes the product pull-in voltage increase, then it may lead to exceed the rated pull-in voltage.
- ※ If applied to inductive load (I load) at the same time $L/R > 1\text{ ms}$, it is recommended that the inductive load be connected in parallel with a surge current protection device, otherwise, it may cause the product electrical life shortened, the main contact broken bad.
- ※ The drive circuit power of the product coil must be greater than the coil power of the product, otherwise the on-off ability of the product will be reduced.
- ※ Please to avoid sticking grease and other foreign bodies on the leading-out piece, and use the connection wire of 480mm^2 or above, otherwise abnormal heating may be caused at the leading-out end.

⚠Statement:

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