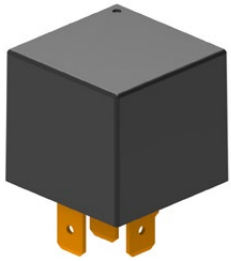
MAH

汽车应用
Automotive Applications



- 40A，60A 触点切换能力
- 具有四种触点形式
- 多种安装方式
- 防尘罩和塑封型可供选择
- 外形尺寸 L×W×H: 27.8×27.8×25.1mm
- 40A，60A switching capability
- 4 Kinds of Contact Form available
- Various mounting terminations available
- Dust protected type and sealed type available
- Profile Dimension L×W×H: 27.8×27.8×25.1mm

MAH - S - 1 12 - C - 1 R

产品型号 Model	产品结构 Structure	触点组数 Number of Poles	线圈电压 Coil Voltage	触点形式 Contact Form	结构形式 Version	线圈并联元件 Parallel Coil Components
	S: 塑封型 无：防尘罩型 S: Wash tight Nil: Dust Protected	1: 1 组 1 Pole	12: 12VDC 24: 24VDC	A: 常开 NO B: 常闭 NC C: 转换 NO/NC 2A: 双常开 2NO	1: 光背快速接引出端 Cover Without Bracket 3: 铁背快速接引出端 Cover With Metal Bracket 4: 塑背快速接引出端 Cover With Plastic Bracket	R: 并联电阻 With Resistor 无：无并联元件 Nil: No Components D1: 并联二极管（阳极接 86# 脚）With Parallel Diode (anode connection pin # 86) D2: 并联二极管（阳极接 85# 脚）With Parallel Diode (anode connection pin # 85)

触点参数 CONTACT PARAMETERS

触点形式 Contact Form	1a, 1b, 1c	2a	
触点材料 Contact Material	银合金 Silver Alloy		
接触压降 Voltage Drop(初始 Initial)	NO：典型值 Type.40mV，最大值 Max.300 mV		
	NC：典型值 Type.40mV，最大值 Max.300 mV		
最大连续电流 Max.Continuous Current	NO/NC:40A/30A	NO/NC: 60A/45A	NO:2×20A
电气寿命 Electrical Life	见附表 1 See attached list 1		
机械寿命 Mechanical Life	1×10^6 次 OPS		

性能参数 CHARACTERISTICS

绝缘电阻 Insulation Resistance		100MΩ(500VDC)
介质耐压 Dielectric Strength		触点与线圈间 Between Coil，Contacts：500VAC 1min
		断开触点间 Between Open Contacts: 500VAC 1min
动作时间 Operate Time		≤ 10ms
释放时间 Release Time		≤ 10ms
环境温度 Ambient Temperature		-40°C ~+125°C
振　动 Vibration		10Hz~500Hz，49m/s2(5G)
冲　击 Shock	功能性的 Functional	98m/s^2 (10G)
	破坏性的 Destructive	196m/s^2 (20G)
引出端形式 Termination		快连接式引出端 QC
封装形式 Construction		防尘罩型 Dust Protected，塑封型 Wash tight
重　量 Unit Weight		约 Approx.: 35g
机械性能 Mechanical Data		外壳保持力 :(拉和压)200N Cover Retention:(Pull，Push)200N
		引出脚保持力 :(拉和压)100N Terminal Retention:(Pull，Push)100N
		引出脚抗弯曲力 :(各方向)10N Terminal Resistance To Bending(Front，Side)10N

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线圈规格表 COIL DATA(23°C)

额定电压 Rated Voltage VDC	动作电压 Operate Voltage VDC	释放电压 Release Voltage VDC	线圈电阻 Coil Resistance Ω±10%	线圈功率 Coil Power W	并联电阻 Parallel Resistance Ω±10%	等效电阻 Equivalent Resistance Ω±10%	允许最大线圈电压 (1) Max.Allowable Overdrive Voltage VDC	
							20°C	85°C
12	≤ 8.4	≥ 1.2	85	约 Approx.1.7	-	-	20.2	15.7
12	≤ 8.4	≥ 1.2	85	约 Approx.1.9	680	75.5		
24	≤ 16.8	≥ 2.4	340	约 Approx.1.7	-	-	39.5	31.5
24	≤ 16.8	≥ 2.4	340	约 Approx.1.9	2700	302		
24	≤ 16.8	≥ 2.4	255	约 Approx.2.3	-	-		

注意：(1) 触点无负载电流，线圈电阻为最小值情况下， 继电器线圈允许施加的最大连续工作电压。
Be careful:(1)Max.Allowable overdrive voltage is stated with no load applied minimum coil resistance.

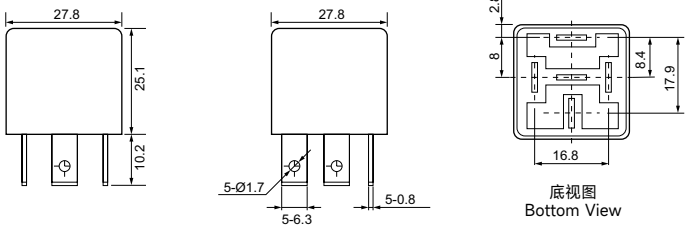
附表 1 ATTACHED LIST 1

负载电压 Load Voltage	负载类型 Load Type		负载电流 A Load Current			通断比 s On/Off Ratio		电耐久性 (次 OPS) Electrical Endurance	试验环境温度 Ambient Temp.
			1C		1A				
			常开 NO	常闭 NC	常开 NO	接通 On	断开 Off		
14VDC	阻性 Resistive	接 Make	40	30	40	2	2	1×10^5	详见电耐久性实验环境温度曲线 See Ambient Temp. Curve
		断 Break	40	30	40	2	2		
	感性 Inductive	接 Make	150	-	150	2	2		
		断 Break	30	-	30	2	2		
	灯 Lamp	接 Make	80	-	80	2	2		
		断 Break	33	-	33	2	2		
28VDC	阻性 Resistive	接 Make	30	20	30	2	2		At 23°C
		断 Break	30	20	30	2	2		

外形尺寸 PROFILE DIMENSION

单位 Unit: mm

MAH-1 □□ - □ -1



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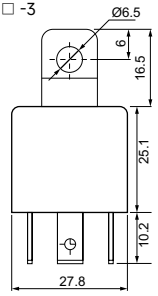
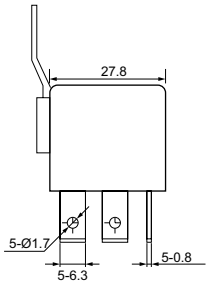
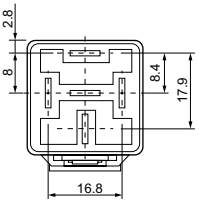
外形尺寸 PROFILE DIMENSION

单位 Unit: mm

MAH-1 □□ - □ -3

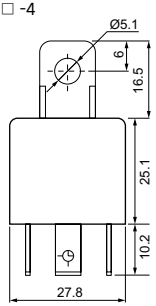


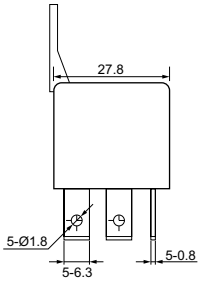


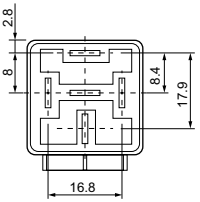


底视图
Bottom View

MAH-1 □□ - □ -4







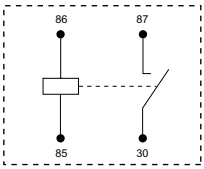
底视图
Bottom View

备注：(1) 产品部分外形尺寸未注尺寸公差，当外形尺寸≤ 1mm，公差为 ±0.2mm；
当外形尺寸在 1~5mm 之间时，公差为 ±0.3mm；当外形尺寸 > 5mm 时，公差为 ±0.4mm；
(2) 安装孔尺寸中未注尺寸公差的均为 ±0.1mm。

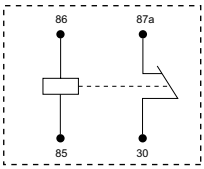
REMARK:
(1) In case of no tolerance shown in outline dimension: outline dimension ≤ 1mm, tolerance should be ±0.2mm; outline dimension > 1mm and ≤ 5mm, tolerance should be ±0.3mm; outline dimension > 5mm, tolerance should be ±0.4mm;
(2) The tolerance without indicating for PCB layout is always ±0.1mm.

接线图 (底视图)WIRING DIAGRAM (BOTTOM VIEW)

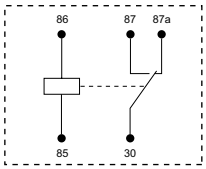
MAH- □ -1 □□ - □



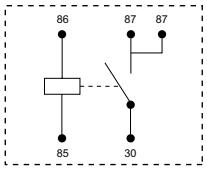
1A



1B



1C

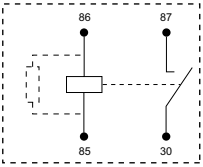


2A

MAH

接线图 (底视图)WIRING DIAGRAM (BOTTOM VIEW)

MAH- □ -1 □□ - □ - □ R



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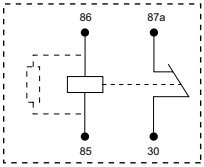

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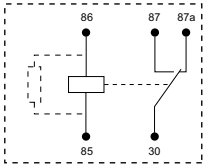

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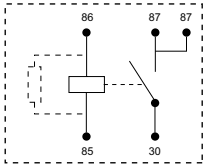
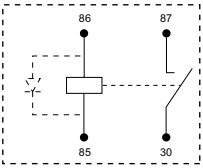


2A

MAH- □ -1 □□ - □ - □ D1



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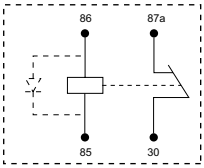

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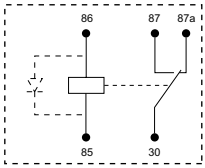
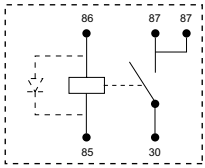
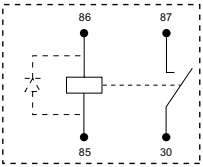


1C



2A

MAH- □ -1 □□ - □ - □ D2



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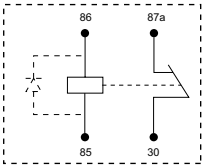

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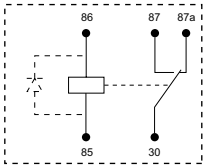
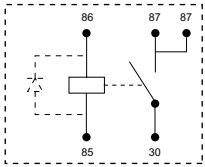
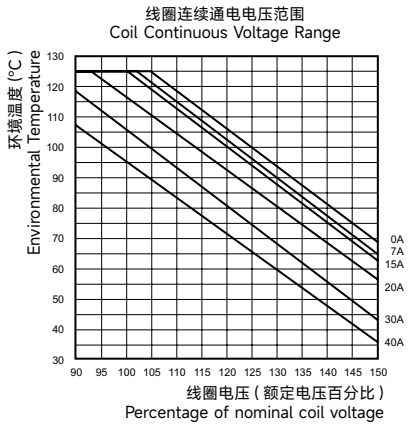


1C



2A

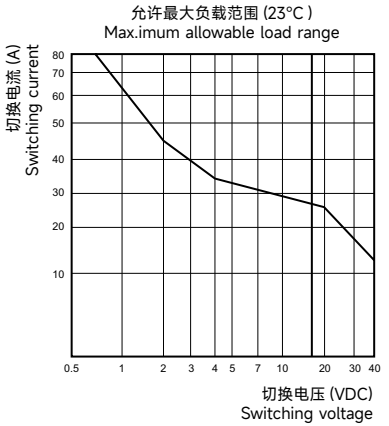
性能曲线图 PERFORMANCE CURVE



说明：
(1) 继电器线圈施加 最大连续工作电压时，触点应没有负载。
(2) 动作电压与线圈预通电电压有关，预通电后检查动作电压，其值会变大。
(3) 线圈最大允许温度为 180°C，考虑到电阻法所测量的线圈温升是平均值，推荐在不同使用环境，不同线圈电压，不同负载条件下测量时，线圈温度应小于 170°C。
(4) 当线圈实际工作电压超出曲线规定范围时，请联系美硕并提供相应详细使用条件。

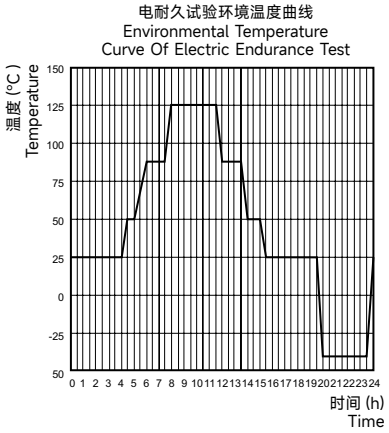
(1) When the relay applies the Max.imum continuous voltage, the contact shall be not Load
(2) Actuation voltage and coil pre energizing time, pre energizing voltage Relating to the detection of voltage after pre energizing, and its value will become larger
(3) The Max.imum allowable temperature of the coil is 180 degrees.Considering the temperature rise of the coil measured by the resistance method, it is recommended that the coil temperature should be less than 170 degrees under different environmental conditions, different coil voltages and different load conditions
(4) When the actual working voltage of the coil exceeds the specified range of the curve, please contact the master and provide the appropriate conditions for use

性能曲线图 PERFORMANCE CURVE



说明：
(1) 本图以常开触点为例， 本图电流为阻性。
(2) 产品按触点参数表进行负载与耐久性试验， 当实际使用的负载电压，电流，动作频率任一项与触点参数表不同时， 请重新进行确认试验。

(1) Take the normally open contact as an example, the current is resistive
(2) Load and durability test shall be carried out according to the contact parameter list.When the actual load voltage, current and action frequency are not the same as the contact parameters, please confirm the test again.



说明：
(1) 最低温度为 -40°C
(2) 最高温度为 125°C

(1)The minimum temperature is -40°C .
(2)The Max.imum temperature is 125°C

声明 STATEMENT:

1. 本产品规格书仅供客户使用时参考，若有更改，恕不另行通知。
   This product specification for client's reference, if any change without notice.
2. 对美硕而言，不可能评定继电器在每个具体应用领域的所有性能参数要求，因而客户应该根据具体的使用条件选择与之相匹配的产品，若有疑问，请与美硕联系获取更多的技术支持。但产品选型责任仅由客户负责。
   MEISHUO cannot evaluate all performance parameters for each specific application. Customers should select products based on matching conditions. For technical support, please contact us. Product selection responsibility lies solely with the customer.

本目录虽经多次校对以求正确，但仅供参考之用，一切以产品实物为准。
Although this catalogue has been proofread for many times, it is only for reference.
All items are subject to the actual products.

继电器综合样本 RELAYS COMPONENTS 2025

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