M4

20×10×12

c UL us E158859 R50044268

Features

- DIL Pitch Terminals .High Sensitivity.
- Conforms to FCC Part 68 1.5kV Surge and Dielectric 1000VAC.
- Fully sealed (immersion cleaning).
- High Reliability bifurcated Contact.
- Application for Telecommunication Equipment,Office Equipment,Security Alarm Systems,Measuring instruments, Medical Monitoring Equipment,Audio Visual Equipment,Flight Simulator,Sensor Control.

Ordering Information

M4 12 H _ _

1 2 3 4 5

1 Part number：M4
2 Coil rated voltage：DC:3:3V；5:5V；6:6V；9:9V；12:12V；18:18V；24:24V；48:48V
3 Enclosure：H: Sealed Type
4 Nominal coil power：Nil:0.15W；A:0.2W；M:0.45W
5 Contact material：Nil: AgPd；W: AgNi

Contact Data

Contact Arrangement		2C（DPDT(B-M)）（Bifurcated Crossbar）	
Contact Material		AgPd(Gold clad) AgNi(Gold clad)	
Contact Rating (resistive)		1A/24VDC; 0.5A/120VAC	
Max. Switching Power		60W 125VA	Min. Switching load：0.01mA/10mV（Reference Value）
Max. Switching Voltage		220VDC 250VAC	Max. Switching Current:2A
Contact Resistance or Voltage drop		⩽50mΩ	Item 4.12 of IEC 61810-7
Operational Life	Electrical	1A/24VDC：5×10^5（Ag Ni：1×10^5） 0.5A/120VAC：2×10^5	Item 4.30 of IEC 61810-7
	Mechanical	10^8	Item 4.30 of IEC 61810-7

CAUTION:
Relays previously tested or used above 10mA resistive at 6VDC maximum or peak AC open circuit are not recommended for subsequent use in low level applications.

Coil Parameter

Dash numbers	Coil voltage VDC		Coil resistance Ω±10%	Pick up voltage VDC(max) (70% or 66%of rated voltage)	Release voltage VDC(min) (5% or 10% of rated voltage)	Coil power W	Operate Time ms	Release Time ms
	Rated	Max.						
M4-003	3	7.5	60	2.1	0.15	0.15	Approx. 4.5	Approx. 1.5
M4-005	5	12.5	167	3.5	0.25	0.15		
M4-006	6	15.0	240	4.2	0.3	0.15		
M4-009	9	22.5	540	6.3	0.45	0.15		
M4-012	12	30.0	960	8.4	0.6	0.15		
M4-018	18	40.0	1620	12.6	0.9	0.20		
M4-024	24	52.9	2880	16.8	1.2	0.20		
M4-048	48	84.9	7680	33.6	2.4	0.30		
M4-003A	3	6.5	45	2.1	0.3	0.2	Approx. 4.5	Approx. 1.5
M4-005A	5	10.8	125	3.5	0.5	0.2		
M4-006A	6	13.0	180	4.2	0.6	0.2		
M4-009A	9	19.5	405	6.3	0.9	0.2		
M4-012A	12	26.5	720	8.4	1.2	0.2		
M4-024A	24	52.9	2880	16.8	2.4	0.2		
M4-048A	48	103.9	11520	33.6	4.8	0.2		
M4-005M	5	7.7	56	3.3	0.5	0.45	Approx. 4.5	Approx. 1.5
M4-006M	6	9.2	80	4.0	0.6	0.45		
M4-009M	9	13.7	180	6.0	0.9	0.45		
M4-012M	12	18.3	320	8.0	1.2	0.45		
M4-018M	18	27.5	720	12.0	1.8	0.45		
M4-024M	24	36.7	1280	15.9	2.4	0.45		
M4-048M	48	72.5	5000	33.0	4.8	0.45		

CAUTION:
1.The use of any coil voltage less than the rated coil voltage will compromise the operation of the relay.
2.Pickup and release voltage are for test purposes only and are not to be used as design criteria.
3.Unless otherwise stated, the rated coil voltage specified in coil parameter table shall be used for all tests and its application to the relay.

Characteristics

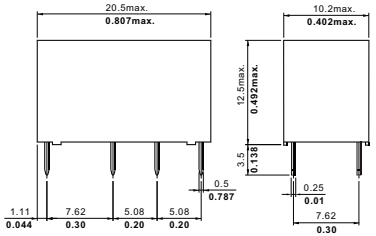
Electrostatic capacitance		
Between open Contacts	Approx.0.7pF	Item 4.41 of IEC 61810-7
Between coil & Contacts	Approx.1.0pF	Item 4.41 of IEC 61810-7
Between Contact Poles	Approx.0.9pF	Item 4.41 of IEC 61810-7
Insulation Resistance	1000MΩ min (at 500VDC)	Item 7 of IEC 60255-5
Dielectric Strength		
Between open Contacts Between coil & Contacts Between Contact Poles	1000VAC 1min 1000VAC 1min 1000VAC 1min	Item 6 of IEC 60255-5 Item 6 of IEC 60255-5 Item 6 of IEC 60255-5
Surge Withstand Voltage		
Between open Contacts Between coil & Contacts Between Contact Poles	1500V 1500V 1500V	FCC 68 FCC 68 FCC 68
Shock resistance	Functional:100m/s² 11ms; Survival:1000 m/s² 6ms	IEC 68-2-27 Test Ea
Vibration resistance	10Hz~55Hz Double amplitude Functional:1.5mm Survival:5mm	IEC 68-2-6 Test Fc
Terminals strength	5N	IEC 68-2-21 Test Ua1
Solderability	235℃±2℃ 3s±0.5s	IEC 68-2-20 Test Ta method 1
Temperature Range	-40℃~90℃(-40° F~194° F) (-40℃~80℃ for 0.3W,0.45W Coil)	
Mass	Approx. 4.5g	

Safety approvals

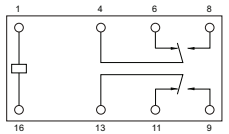
Safety approval	UL&CUR	TÜV
Load	1A/24VDC 0.5A/120VAC	1A/24VDC、0.5A/120VAC

Dimensions

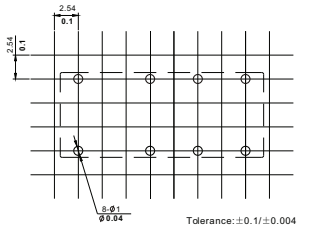
mm/inch



Dimensions

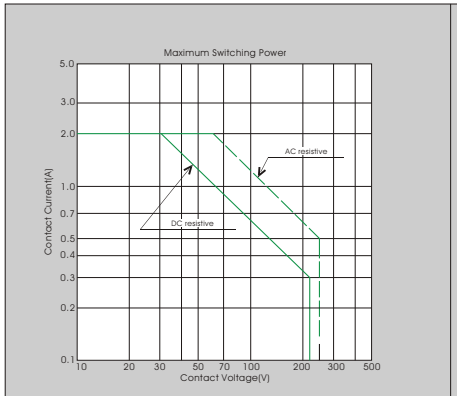


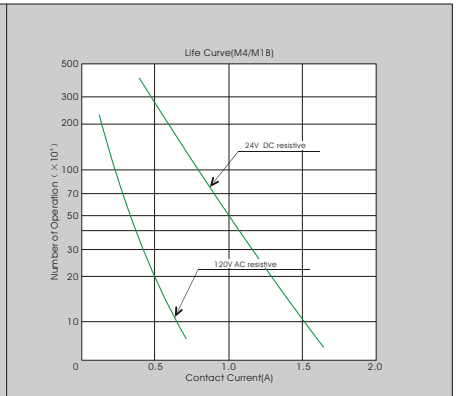
Wiring diagram
(Bottom view)

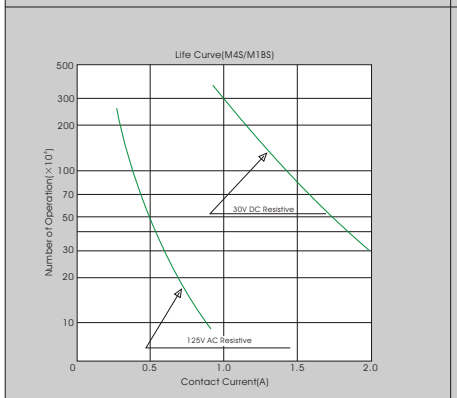


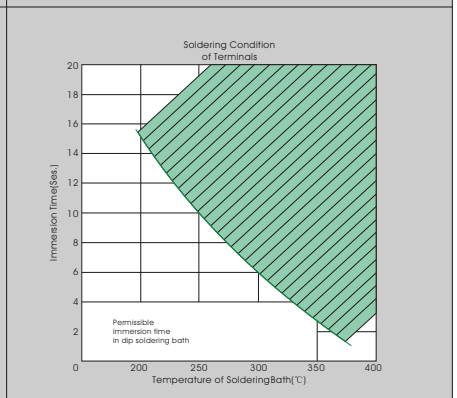
Mounting (Bottom view)

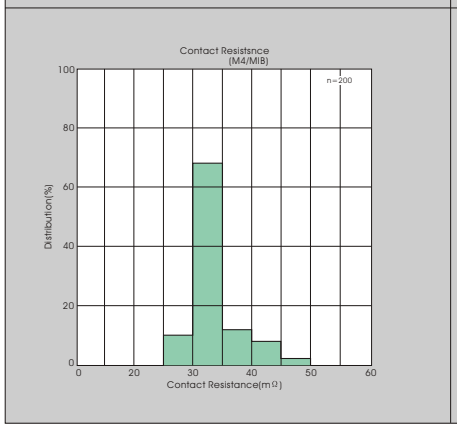
NOTES 1).Dimensions are in millimeters.
2).Inch equivalents are given for general information only.

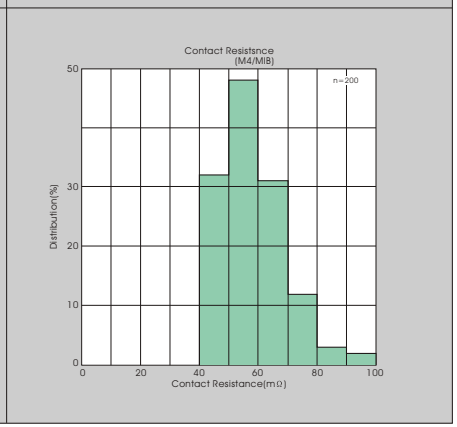

Maximum Switching Power
Contact Current(A)
Contact Voltage(V)
AC resistive
DC resistive

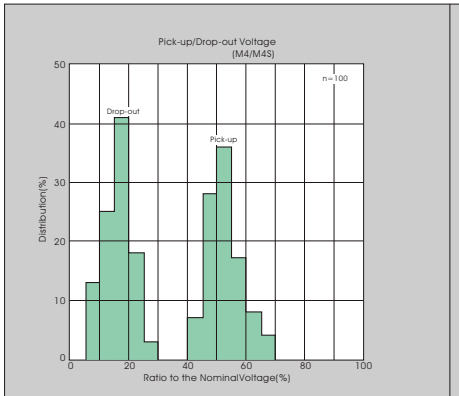

Life Curve(M4/M1B)
Number of Operation (×10⁴)
Contact Current(A)
24V DC resistive
120V AC resistive

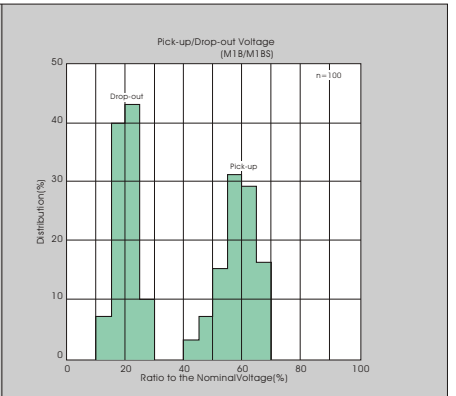

Life Curve(M4S/M1BS)
Number of Operation(×10⁴)
Contact Current(A)
30V DC Resistive
125V AC Resistive

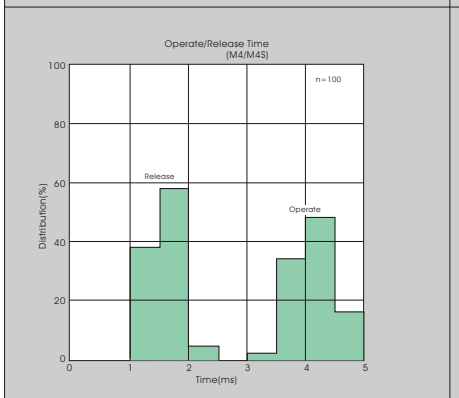

Soldering Condition
of Terminals
Immersion Time(Sec.)
Temperature of SolderingBath(℃)
Permissible
immersion time
in dip soldering bath

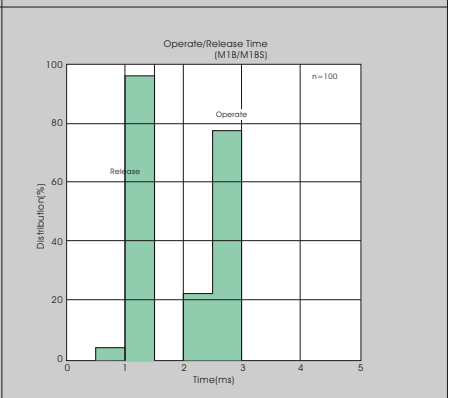

Contact Resistsnce
(M4/M1B)
n=200
Distribution(%)
Contact Resistance(mΩ)

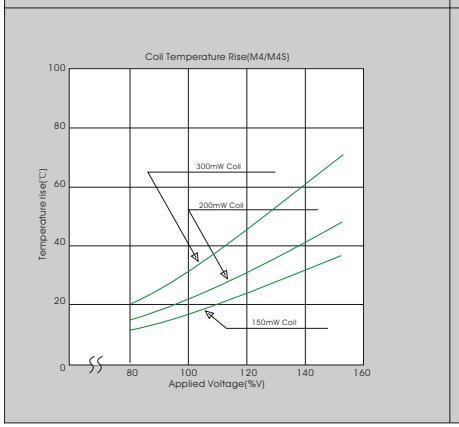

Contact Resistsnce
(M4/M1B)
n=200
Distribution(%)
Contact Resistance(mΩ)

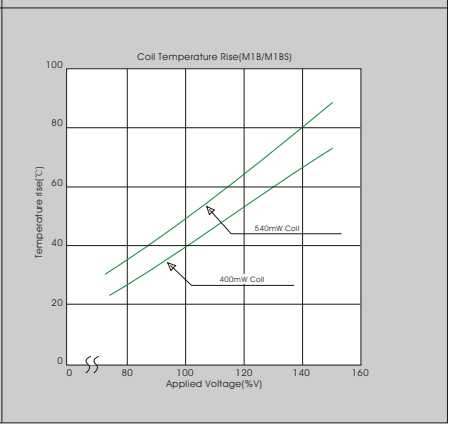

Pick-up/Drop-out Voltage
(M4/M4S)
n=100
Drop-out
Pick-up
Distribution(%)
Ratio to the NominalVoltage(%)


Pick-up/Drop-out Voltage
(M1B/M1BS)
n=100
Drop-out
Pick-up
Distribution(%)
Ratio to the NominalVoltage(%)


Operate/Release Time
(M4/M4S)
n=100
Release
Operate
Distribution(%)
Time(ms)


Operate/Release Time
(M1B/M1BS)
n=100
Release
Operate
Distribution(%)
Time(ms)


Coil Temperature Rise(M4/M4S)
Temperature rise(℃)
Applied Voltage(%V)
300mW Coil
200mW Coil
150mW Coil


Coil Temperature Rise(M1B/M1BS)
Temperature rise(℃)
Applied Voltage(%V)
540mW Coil
400mW Coil