

Product Data Sheet

Features

- ✓ Small size, light weight.
- ✓ Low coil power consumption, heavy contact load.
- ✓ Strong anti-shock and anti-vibration, high reliability, long life.
- ✓ Suitable for automobile, machine, electronic equipment, air conditioner and household appliances applications.



Approvals:



Main Contact			
Contact Arrangement	A(SPSTNO) (SPDT(B-M))		
Contact Material	AgSnO ₂		
Contact Rating (Resistive)	NO:30A/240VAC,14VDC; NC:20A/240VAC;30A/14VDC NO:40A/240VAC,30VDC; NC:30A/240VAC,30VDC NO:30A/277VAC;NC:20A/277VAC Motor Load: NO:2HP 250VAC ; NC:1.5HP 250VAC TV-5 5A/280VAC(Ballast)		
Max. Switching Power	1200W 7200VA (10000VA)		
Max. Switching Voltage	30VDC 280VAC		
Max. Switching Current	40A		
Contact Resistance	≤30mΩ Item 4.12 of IEC 61810-7		
Operation Life	Electrical	1×10 ⁵	Item 4.30 of IEC 61810-7
	Mechanical	1×10 ⁷	Item 4.31 of IEC 61810-7

Ordering Number

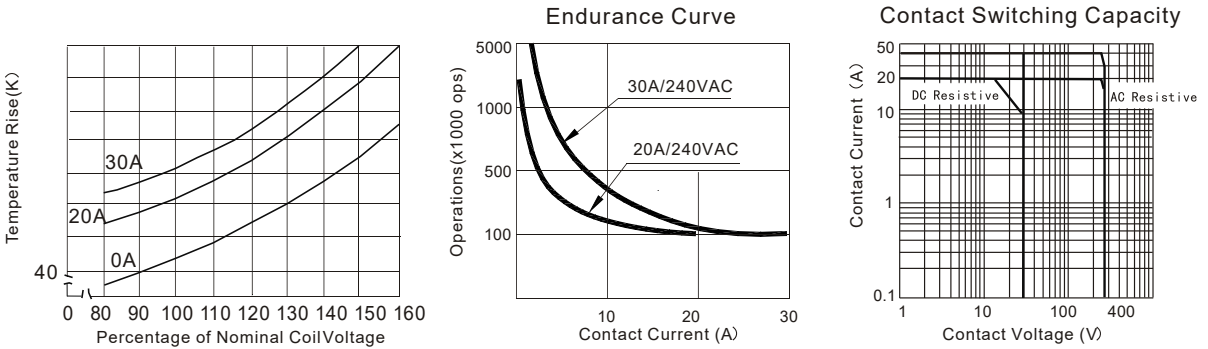
MKR-T90	H	A	E	12A	S	F
Series Style: A, B MKR-T90A MKR-T90B						
Load H:30A N:40A						
Contact arrangement A:SPNO C:SPDT						
Enclosure E: Flux proof						
Coil rated Voltage(V) AC:12A, 24A, 110A,120A, 220A, 240A, 277A DC:5D,9D,12D,15D,24D,36D,48D,110D						
Contact material S:AgSnO ₂						
Resist heat class F:155°C						

Product Data Sheet

Characteristics		
Insulation Resistance	1000M Ω min (at 500VDC)	Item 4.11 of IEC 61810-7
Dielectric Strength Between Contacts Between Contact and Coil	50Hz 1500V 50Hz 2500V	Item 4.9 of IEC 61810-7 Item 4.9 of IEC 61810-7
Shock Resistance	Functional: 98m/s ² 11ms	Item 4.26 of IEC 61810-7
	Destructive: 80m/s ² 11ms	Item 4.26 of IEC 61810-7
Vibration Resistance	10Hz~55Hz Double amplitude 1.5mm	Item 4.28 of IEC 61810-7
Terminals Strength	10N	Item 4.24 of IEC 61810-7
Ambient Temperature	-55°C~85°C	
Relative Humidity	5% to 85%	Item 4.16 of IEC 61810-7
Mass	37g	Item 4.7 of IEC 61810-7

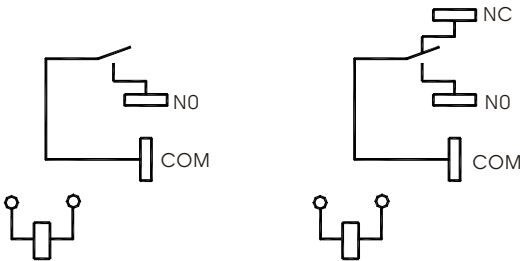
Safety Approvals	
Safety approval	UL&CUR
Load	NO:40A/240VAC ;30A/277VAC NC:30A/240VAC,30VDC;20A/277VAC Ballast:5A/280VAC TV-5 NO:2 HP 250VAC A:1HP/16AFLA/120VAC 2HP/12AFLA/240VAC NC:1$\frac{1}{2}$HP 250VAC B: 30LRA/10AFLA/120VAC 30LRA/10AFLA/240VAC

Characteristics Curves



Wiring diagram

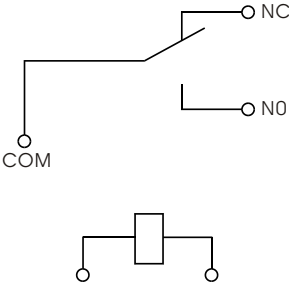
MKR-T90B



A (SPNO)

C (SPDT)

MKR-T90A



Product Data Sheet

Coil Parameter (AC Coil Parameter)								
Rated voltage VAC		Rated current mA	Coil resistance Ω ± 10%	Pick-up voltage VAC(max) (75%of rated voltage)	Drop-out voltage VAC(min) (30%of rated voltage)	Coil power VA	Operate time ms	Release time ms
Rated	Max							
12	15.6	166.6	27	9.0	3.6	2VA	—	—
24	31.2	83.3	120	18.0	7.2			
110	143	18.1	2360	82.5	33.0			
120	156	16.6	3040	90.0	36.0			
220	286	9.1	13490	165.0	66.0			
240	312	8.3	15740	180	72			
277	360.1	7.2	20300	207.8	83.1			

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.

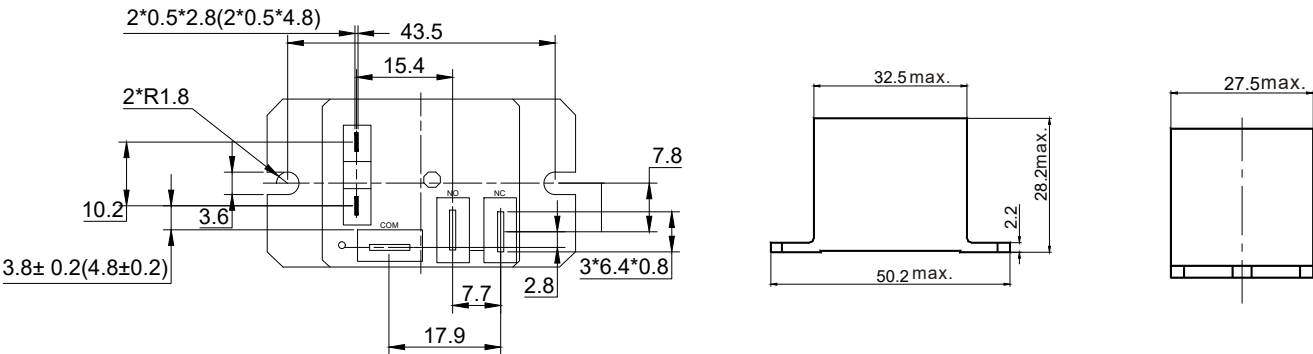
Coil Parameter (DC Coil Parameter)							
Rated voltage VDC		Coil resistance $\Omega \pm 10\%$	Pick-up voltage VDC(max) (75%of rated voltage)	Drop-out voltage VDC(min) (10%of rated voltage)	Coil power W	Operate time ms	Release time ms
Rated	Max						
3	3.9	10	2.25	0.3	0.9	≤ 15	≤ 10
5	6.5	28	3.75	0.5			
6	7.8	40	4.50	0.6			
9	11.7	90	6.75	0.9			
12	15.6	160	9.00	1.2			
15	19.5	250	10.25	1.5			
18	23.4	360	13.50	1.8			
24	31.2	640	18.00	2.4			
36	46.8	1440	27.00	3.6			
48	62.4	2560	36.00	4.8			
110	143	13445	82.50	11.0			

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.

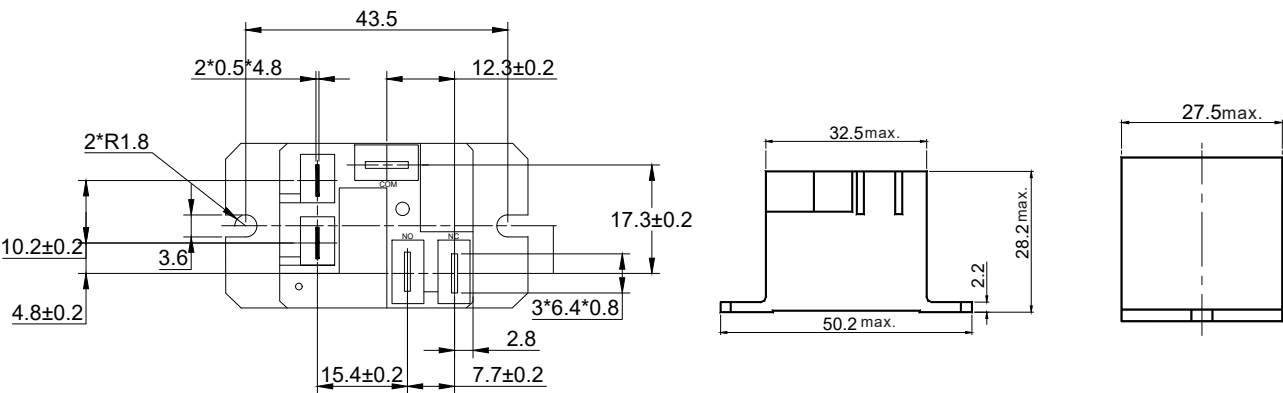
Product Data Sheet

Dimensions (mm)

MKR-T90A:



MKR-T90B:



Product Data Sheet

Features

- ✓ 50A contact switching capability.
- ✓ Available for DC Coil 1.5W.
- ✓ 2.7VA available for AC Coil.
- ✓ Suitable for automobile, machine, electronic equipment, air conditioner and household appliances applications.



Approvals:



Main Contact			
Contact Arrangement		A(SPSTBNO) C(SPDT(B-M))	
Contact Material		AgSnO ₂	
Contact Rating (Resistive)		NO:50A/240VAC; NC:35A/240VAC Motor Load: 2HP 250VAC TV-8	
Max. Switching Power		12000VA	
Max. Switching Voltage		280VAC	
Max. Switching Current		50A	
Contact Resistance		≤30mΩ	
Operation Life			Item 4.12 of IEC 61810-7
	Electrical	3 × 10 ⁴ (50A/277VAC,Resistive load,40 ,1s on 9s off) 6 × 10 ³ (50A/277VAC,Resistive load,85 ,1s on 9s off)	Item 4.30 of IEC 61810-7
	Mechanical	1 × 10 ⁷	Item 4.31 of IEC 61810-7

Ordering Number

MKR-T90	50	A	E	24	S	F
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Series Style: MKR-T90

Load: 50:50A

Contact arrangement A:SPNO C:SPDT

Enclosure E: Flux proof

Coil rated voltage(V) DC:5D, 9D, 12D, 15D, 24D, 48D
AC:24A, 110A, 220A, 240A, 277A

Contact material S: AgSnO₂

Resist heat class F: 155°C

Product Data Sheet

Characteristics

Insulation Resistance	1000M Ω min (at 500VDC)	Item 4.11 of IEC 61810-7
Dielectric Strength Between Contacts Between Contact and Coil	50Hz 1500V 50Hz 2500V	Item 4.9 of IEC 61810-7 Item 4.9 of IEC 61810-7
Shock Resistance	Functional: 98m/s ² 11ms	Item 4.26 of IEC 61810-7
	Destructive: 980m/s ² 11ms	Item 4.26 of IEC 61810-7
Vibration Resistance	10Hz~55Hz Double amplitude 1.5mm	Item 4.28 of IEC 61810-7
Terminals Strength	10N	Item 4.24 of IEC 61810-7
Ambient Temperature	-55°C~85°C	
Relative Humidity	5% to 85%	Item 4.16 of IEC 61810-7
Mass	37g	Item 4.7 of IEC 61810-7

Safety Approvals

Safety approval	UL&CUR
Load	NO: 50A/240VAC,277VAC 85°C NC: 35A/240VAC,277VAC 40°C

Coil Parameter (AC Coil Parameter)

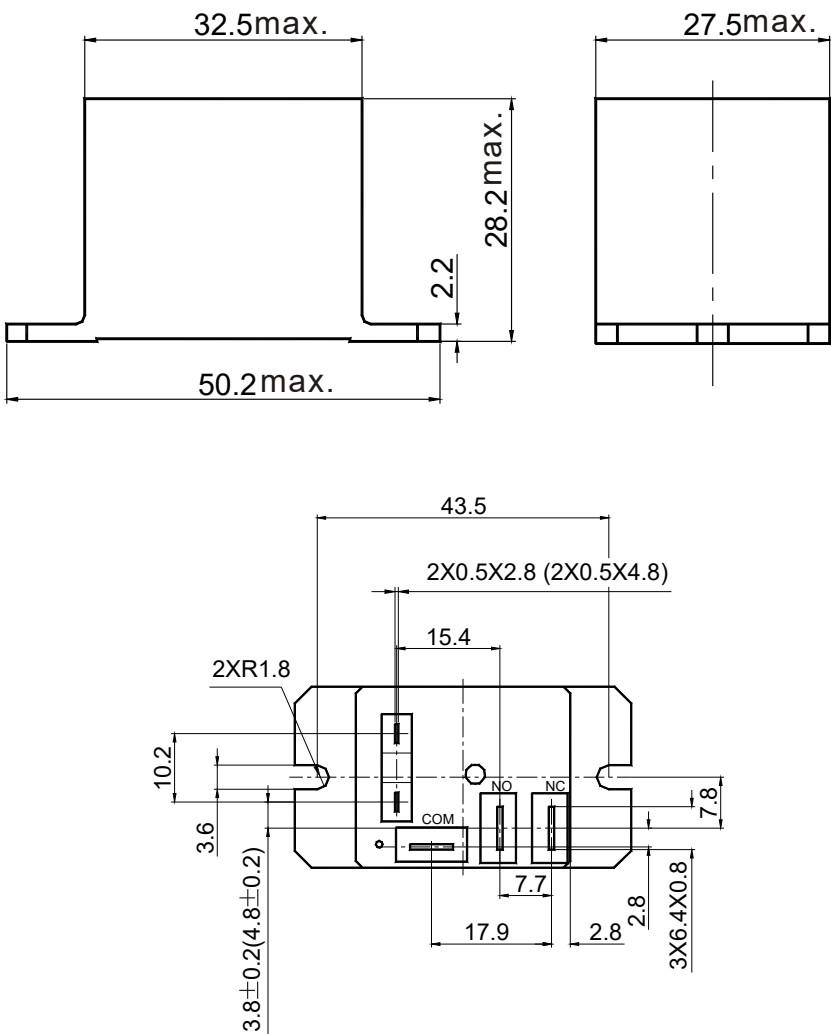
Coil voltage VAC		Rated current mA	Coil resistance $\Omega \pm 10\%$	Pick-up voltage V(max) (75%of rated voltage)	Drop-out voltage V(min) (10%of rated voltage)	Coil power VA	Operate time ms	Release time ms
Rated	Max							
24	28.8	112.5	96	18	7.2	2.7VA	—	—
110	132	22.5	2320	82.5	33			
220	264	12.3	9500	165	66			
240	288	11.3	11600	180	72			
277	332	9.7	15600	208	83			

Coil Parameter (DC Coil Parameter)

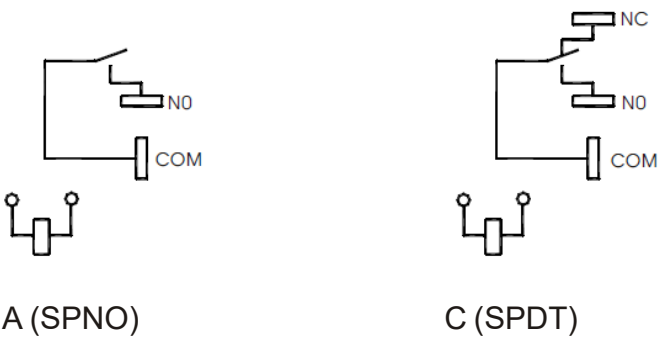
Rated voltage VDC		Coil resistance $\Omega \pm 10\%$	Pick-up voltage V(max) (75%of rated voltage)	Drop-out voltage V(min) (10%of rated voltage)	Coil power W	Operate time ms	Release time ms
Rated	Max						
5	6.5	16.7	3.75	0.5	1.5	≤ 15	≤ 10
6	7.8	24	4.50	0.6			
9	11.7	54	6.75	0.9			
12	15.6	96	9.00	1.2			
15	19.5	150	10.25	1.5			
18	23.4	216	13.50	1.8			
24	31.2	384	18.00	2.4			
48	62.4	1536	36.00	4.8			

Product Data Sheet

Dimensions (mm)



Wiring Diagram:



CAUTION: 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.