

# **T92 Series Two-pole 30A PCB or Panel Mount Relay**

- 40A, 2 form A (NO) and 2 form C (CO) switching capability
- Designed to control compressor loads to 3.5 tons, 110LRA / 25.3FLA
- Meets requirements of UL 508 and UL 873 spacings 8mm through air, 9.5mm over surface
- Meets requirements of VDE 8mm spacing, 4kV dielectric coil-tocontact
- Meets requirements of UL Class F construction
- UL approved for 600VAC switching (1.5HP)
- New screw terminal version (consult factory for availability, ratings)

## Typical applications

HVAC, residential / commercial appliances, industrial controls.

## Approvals

UL E58304 (Recognized and Listed); CSA LR48471; VDE 40019600 Technical data of approved types on request.

## **Contact Data**

Contact arrangement	2 form A (NO), 2 form C (CO)
Rated voltage	277VAC
Max. switching voltage	600VAC
Rated current	30A NO; 3A NC
Limiting continuous current	40A NO; 3A NC
Limiting making current	40A NO; 3A NC
Limiting breaking current	40A NO; 3A NC
Contact material	AgSnOlnO, AgCdO
Min. recommended contact load	500ma (NO)/ 100ma (NC), 12VAC
Frequency of operation, with load	360hr
Operate/release time max., including	p bounce 25/25ms

Operate/release time max., including bounce 25

#### Contact ratings 1)

Type	Load	Cycles
UL508		
AgCdO		
NO	40A, 277VAC, resistive	6x10 <sup>3</sup>
NO	30A, 120/277VAC, resistive	100x10 <sup>3</sup>
NO	10A, 600VAC, general purpose	100x10 <sup>3</sup>
NO	1HP, 120VAC	100x10 <sup>3</sup>
NO	3HP, 240VAC	1x10 <sup>3</sup>
NO	1.5HP, 480 or 600VAC	100x10 <sup>3</sup>
NO	110LRA/25.3FLA, 240VAC (DC coil only)	100x10 <sup>3</sup>
NO	60LRA/14FLA, 240VAC (AC coil only)	100x10 <sup>3</sup>
NO	3A, 240VAC, pilot duty	100x10 <sup>3</sup>
NO	20A, 28VDC, resistive	100x10 <sup>3</sup>
NO	TV10, 120VAC	100x10 <sup>3</sup>
NC	3A, 277VAC	100x10 <sup>3</sup>
NC	2A, 480VAC	100x10 <sup>3</sup>
NC	1A, 600VAC	100x10 <sup>3</sup>
AgSnOlnO		
NO	30A, 120/277VAC, resistive (DC coil only)	200x10 <sup>3</sup>
NO	30A, 120/277VAC, resistive (AC coil only)	100x10 <sup>3</sup>
NO	20A, 480VAC, resistive	100x10 <sup>3</sup>
NO	1.5HP, 120VAC, 2 pole making/breaking (Fig.1)	100x10 <sup>3</sup>
NO	3HP, 240VAC, 3 phase (DC coil only)	100x10 <sup>3</sup>
NO	3HP, 480VAC, 3 phase (DC coil only)	100x10 <sup>3</sup>
NO	2HP, 600VAC, 3 phase (DC coil only)	100x10 <sup>3</sup>
VDE		
AgCdO, flange		
NO	20A, 400VAC	100x10 <sup>3</sup>
NC	3A, 400VAC	30x10 <sup>3</sup>
CO	20A NO / 3A NC, 400VAC	30x10 <sup>3</sup>
AgCdO, PC mc		100 100
NO	30A, 400VAC	100x10 <sup>3</sup>
NC	3A, 400VAC	30x10 <sup>3</sup>
CO	30A NO / 3A NC, 400VAC	30x10 <sup>3</sup>



Contact ratings 1) (continued) ARI 780-86 Endurance Test (section 6.6): HVAC Definite Purpose Contactor Standard Normally Open Contacts Single Phase/Two Pole (Both poles together switching a single load) 110 LRA, 25.3 FLA, 200K operations (DC Coil) IL1 L2 Figure 1 Τ2 Single Phase Per Pole (Single load per pole) 110 LRA, 18 FLA, 200K operations (DC Coil). 60 LRA, 14 FLA, 200K operations (AC Coil). || 1 2 Figure 2 古T2 त्त∏1

 Contact ratings at 25°C (unless otherwise noted) with relay properly vented. FLA, LRA ratings are compatible with 3.5 ton compressor applications.

Q

Mechanical endurance

Q

10x10<sup>6</sup> ops.

#### **Coil Data**

COLL	Jala											
Coil vo	Coil voltage range 5 to 110VDC; 12 to 240VAC											
Max. c	. coil power 1.7W; 4.0VA											
Max. c	Aax. coil temperature 155°C											
Coil insulation system according UL Class F												
Coil versions, DC coil												
Coil	Rate	ed Ope	erate	Releas	е	Coil	Rated coil					
code	volta	ge vol <sup>.</sup>	tage	voltage	e re	sistance	power					
	VD	C VI	DC	VDC	9	Ω±10%	W					
6	6	۷	1.5	0.6		22	1.7					
9	9	6	6.75	0.9		48	1.7					
12	12	9	)	1.2		86	1.7					
18	18	3 13	3.5	1.8		197	1.7					
24	24	- 18	3	2.4		350	1.7					
48	48	36	6	4.8		1390	1.7					
110	11(	) 82	2.5	11		7255	1.7					
Coil v	ersions, A	C coil										
Coil	Rated	Frequency	Operat	e Re	elease	Coil	Rated coil					
code	voltage		voltage	e vo	oltage	resistance	power					
	VAC	Hz	VAC, 60	Hz VAC	C, 60Hz	Ω±10%	VA					
12	12	60	9.6	6	1.2	9.1	4					
24	24	60	19.2	2	2.4	36.6	4					
120	110/120	50/60	96	1	2	950	4					
240	220/240	50/60	192	2	24	3800	4					
277	250/277	50/60	222	2	28	5485	4					
All figure	es are given f	or coil without	preeneraiz	ation. at a	mbient te	emperature +	23°C.					

All figures are given for coil without preenergization, at ambient temperature +23°C.

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# T92 Series Two-pole 30A PCB or Panel Mount Relay (Continued)

### Coil Data (continued)

# Ambient temperature vs. coil voltage

- Assumptions: 1. Thermal resistance = 35°C per Watt (DC only.)
- 2. Still air.
- 3. Nominal coil resistance.
- 4. Max. mean coil temperature = 155°C (change of resistance method).
- 5. Coil temperature rise due to load =  $6.3^{\circ}$ C @ 30 amps.
- 6. Curves are based on 1.7W at 25°C (DC only.).

O2 120 O2 100 00 00 00 00 00 00 00 00 00 00 00 00 0								Amp Amp	Cont Cont	act L	oad oad		
0 ₽ 20													
Jo Ma	70	75 8	30 8	35 9			15 1 f Rate				35 1.	40 14	45 150

# **Insulation Data**

Initial dielectric strength	
between open contacts	1500V <sub>rms</sub>
between contact and coil	4000V <sub>rms</sub>
between adjacent contact	2000V <sub>rms</sub>
Initial surge withstand voltage	
between contact and coil	6kV
Initial insulation resistance	
between insulated elements	1x10 <sup>9</sup> Ω
Clearance/creepage	
between contact and coil	8mm clearance/9.5mm creepage

### **Other Data**

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content								
refer to the Product Compliance Support Center at								
www.te.com/customersupport/rohssupportcenter								
Ambient temperature								
DC coil	-55°C to 85°C							
AC coil	-55°C to 65°C							
Category of environmental protection								
IEC 61810	RTI - dust protected,							
	RTII - flux proof, RTIII - wash tight							
Vibration resistance (functional)	1.65mm max excursions, 10-55 Hz							
Shock resistance (functional)	10g for 11msec							
Shock resistance (destructive)	100g							
Terminal type	PCB-tht or quick connect							
Weight	86g							
Resistance to soldering heat THT								
IEC 60068-2-20	250°C							
Packaging/unit	tray/30 pcs., box/120 pcs.							

# Dimensions

T92 – Mounting and termination code 1



#### T92 - Mounting and termination code 2, 3 and 4



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# T92 Series Two-pole 30A PCB or Panel Mount Relay (Continued)

### Dimensions



Terminal assignment Bottom view on pins

2 form A





2 form C

6

0

## PCB layout

Bottom view on pins

T92 - Mounting and termination code 1



An alternate PC board layout utilizes  $.076 \pm .003$  ( $1.93 \pm .076$ ) diameter holes on the same center-to-center spacing shown above. Use of the rectangular holes is recommended for improved solderability.

Only necessary terminals are present on single throw models. Consequently, some holes will be unnecessary for single throw models.

Product c	ode structure	Typical p	T92	S	11	D	2	2	-24					
Туре Т92	Printed circuit board / panel mount power relay T92													
Enclosure					1									
Р	Dust protected plastic case													
S	Wash-tight, tape sealed, plas	tic case (Mounting and termination co	ode 1)											
	Top sealed, not wash-tight, r	ot tape sealed on bottom (Mounting a	and terminatior	n codes 2	2, 3 & 4)									
Contact arra	angement													
7	2 form A (2 NO)	11 2 form C (2 CO)												
Coil Input		· · ·												
A	AC voltage, 60Hz or 50/60 H	z (consult coil versions table) D	C voltage											
Mounting a	nd termination													
1	Printed circuit board mount;	printed circuit board terminals.												
2	Panel mount via flanged cover; .250" (6.35mm) x .032" (.81mm) QC terminal													
3	Panel mount via flanged cover; .187" (4.75mm) x .032" (.81mm) QC terminals for coil and .250" (6.35mm) for contacts													
4	Panel mount via flanged cover, .187" (4.75mm) x .020" (.51mm) QC terminals for coil and .250" (6.35mm) for contacts.													
5	Panel mount via flanged cover, M4 screws w/ captive pressure plates. Requires Enclosure P and Contact arrangement 7.													
Contact ma	terial													
2	AgCdO	4 AgSnOlnO												
Coil voltage														
	Coil code: please refer to co	versions table												

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# T92 Series Two-pole 30A PCB or Panel Mount Relay (Continued)

Product Code	Enclosure	Contacts	Coil	Mounting	Contact Material	Coil	Part Number
	Plastic dust cover	2 form A, 2 NO	AC	Panel mount + quick connect	AgCdO	24 VAC	6-1393211-0
T92P7A22-120						120 VAC	5-1393211-7
T92P7A22-240						240 VAC	6-1393211-2
T92P7A22-277						277 VAC	6-1393211-3
T92P7A24-240					AgSnOlnO	240 VAC	3-1423008-3
T92P7A52-120				Panel mount + screw terminals	AgCdO	120 VAC	1423008-8
T92P7A52-240						240 VAC	1-1423008-2
T92P7D12-12			DC	PCB terminals		12 VDC	6-1393211-5
T92P7D12-24						24 VDC	6-1393211-6
T92P7D22-12				Panel mount + quick connect		12VDC	6-1393211-9
T92P7D22-24						24 VDC	7-1393211-1
T92P7D22-48						48 VDC	7-1393211-2
T92P7D24-12					AgSnOlnO	12VDC	2-1423008-2
T92P7D24-24						24 VDC	1423008-9
T92P7D42-24					AgCdO		7-1393211-5
T92P7D52-12				Panel mount + screw terminals		12 VDC	1-1423008-0
T92P7D52-24						24 VDC	1423967-1
T92P11A12-120		2 form C, 2 CO	AC	PCB terminals		120 VAC	3-1393211-8
T92P11A22-12				Panel mount + quick connect		12 VAC	3-1393211-9
T92P11A22-24						24 VAC	4-1393211-3
T92P11A22-120						120 VAC	4-1393211-0
T92P11A22-240						240 VAC	4-1393211-4
T92P11A22-277						277 VAC	4-1393211-6
T92P11A24-240					AgSnOlnO	240 VAC	3-1423008-7
T92P11A42-120					AgCdO	120VAC	4-1393211-8
T92P11D12-12			DC	PCB terminals		12 VDC	5-1393211-0
T92P11D22-12				Panel mount + quick connect			5-1393211-3
T92P11D22-24						24 VDC	5-1393211-4
T92P11D24-12					AgSnOlnO	12 VDC	3-1423008-5
T92P11D24-24						24 VDC	3-1423008-6
T92S7A12-24	Wash tight	2 form A, 2 NO	AC	PCB terminals	AgCdO	24 VAC	9-1393211-8
T92S7A12-120						120 VAC	9-1393211-7
T92S7A12-240						240 VAC	9-1393211-9
T92S7A22-24	Top sealed			Panel mount + quick connect		24 VAC	1393212-4
T92S7A22-120						120 VAC	1393212-2
T92S7A22-240						240 VAC	1393212-5
T92S7D12-12	Wash tight		DC	PCB terminals		12 VDC	1393212-8
T92S7D12-24						24 VDC	1-1393212-0
T92S7D12-48						48 VDC	1-1393212-1
T92S7D12-110						110 VDC	1393212-7
T92S7D14-24					AgSnOlnO	24 VDC	1-1423008-8
T92S7D22-12	Top sealed			Panel mount + quick connect	AgCdO	12 VDC	1-1393212-4
T92S7D22-18						18 VDC	1-1393212-5
T92S7D22-24						24 VDC	1-1393212-7
T92S7D22-110			10			110 VDC	1-1393212-3
T92S11A12-24	Wash tight	2 form C, 2 CO	AC	PCB terminals		24 VAC	8-1393211-1
T92S11A12-120						120 VAC	8-1393211-0
T92S11A12-240	Tara a a a la al			Descionation and all a surgest	-	240 VAC	8-1393211-2
T92S11A22-12	Top sealed			Panel mount + quick connect		12 VAC	8-1393211-3
T92S11A22-24						24 VAC	8-1393211-6
T92S11A22-120						120 VAC	8-1393211-4
T92S11A22-240 T92S11D12-12	Wash tight		DC	PCB terminals	-	240 VAC 12 VDC	8-1393211-7 8-1393211-9
T92S11D12-12	vvasn tignt		DC			24 VDC	
T92S11D12-24						48 VDC	9-1393211-0
						48 VDC 110 VDC	9-1393211-1 8-1393211-8
T92S11D12-110	Top sealed			Panel mount + quick connect			
T92S11D22-12	iup sealeu					12 VDC	9-1393211-3
T92S11D22-24						24 VDC	9-1393211-4

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