

T92 Series Two-pole Power Relay

- 30/40/50A 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)
- Screw terminal version (consult factory for availability, ratings)
- Anti-explosive version available (Meets EN 60079-15)
- WG version available (Meets EN 60335-1)

Typical applications

HVAC, residential / commercial appliances, industrial controls, charging

Approvals

UL E22575; CSA LR48471; VDE 40019600 Technical data of approved types on request.

Contact Da	ata
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Contact Data		
Туре	T92	T92H
Contact arrangement	2 form A (NO)	2 form A (NO)
	2 form C (CO)	
Rated voltage	277VAC	
Max. switching voltage	600VAC	
Rated current	30A/40A NO; 3A NC	50A NO
Overload current*	60A NO; 4.5A NC	75A NO
Contact material	Ag Alloy	
Min. recommended contact load	500mA (NO), 12VAC	or 5VDC
	100mA (NC), 12VAC	or 5VDC
Frequency of operation, with load	360 cycles p	er hour
Operate/release time max.,		
including bounce	25/25ms	
Initial contact resistance	< 100 mΩ at 6V	/DC 1A
*Note: Minimum electrical endural	nce 50 cycles	

Contact ratings¹⁾ (T92H Type)

UL508		
NO	50A, 277VAC, resistive, 85°C	6x10 ³
Note: Co	il voltage 12-48VDC covered in UL approval	

Contact ratings 1) (T92 Type)

Load	Cycles
40A, 277VAC, resistive	6x10 ³
30A, 120/277VAC, resistive	100x10 ³
10A, 600VAC, general purpose	100x10 ³
1HP, 120VAC	100x10 ³
3HP, 240VAC	1x10 ³
1.5HP, 480 or 600VAC	100x10 ³
110LRA/25.3FLA, 240VAC (DC coil only)	100x10 ³
60LRA/14FLA, 240VAC (AC coil only)	100x10 ³
3A, 240VAC, pilot duty	100x10 ³
20A, 28VDC, resistive	100x10 ³
TV10, 120VAC	100x10 ³
3A, 277VAC	100x10 ³
2A, 480VAC	100x10 ³
1A, 600VAC	100x10 ³
	 30A, 120/277VAC, resistive 10A, 600VAC, general purpose 1HP, 120VAC 3HP, 240VAC 1.5HP, 480 or 600VAC 110LRA/25.3FLA, 240VAC (DC coil only) 60LRA/14FLA, 240VAC (AC coil only) 3A, 240VAC, pilot duty 20A, 28VDC, resistive TV10, 120VAC 3A, 277VAC 2A, 480VAC



Contact ratings 1) (T92 Type) (continued)

Туре	Load	Cycles	
AgSnOlnO			
NO	40A, 240VAC, resistive 85°C		
NO	30A, 120/277VAC, resistive (DC coil only)	200x10 ³	
NO	30A, 120/277VAC, resistive (AC coil only)	100x10 ³	
NO	20A, 480VAC, resistive	100x10 ³	
NO	1.5HP, 120VAC, 2 pole making/breaking (Fig.1		
NO	3HP, 240VAC, 3 phase (DC coil only)	100x10 ³	
NO	3HP, 480VAC, 3 phase (DC coil only)	100x10 ³	
NO	2HP, 600VAC, 3 phase (DC coil only)	100x10 ³	
	y X (Cd Free), wash tight	100/110	
NO	30A, 250VAC, resistive	100x10 ³	
NO	30A, 400VAC, resistive	100x10 ³	
NO	20A, 480VAC, resistive	100x10 ³	
VDE	ZUA, 400VAC, TESISTIVE	100x10*	
	may unt relaying		
AgCdO, flange		100,103	
NO	20A, 400VAC	100x10 ³	
NC	3A, 400VAC	30x10 ³	
CO	20A NO / 3A NC, 400VAC	30x10 ³	
AgCdO, PC mo	5		
NO	30A, 400VAC	100x10 ³	
NC	3A, 400VAC	30x10 ³	
CO	30A NO / 3A NC, 400VAC	30x10 ³	
Anti-explosion,	sealed type		
NO	30A 250VAC, 25°C 100x10 ³		
Anti-explosion,	break device		
NO	15A 480VAC 100x10 ³		
ARI 780-86 En	durance Test (section 6.6):		
	Purpose Contactor Standard		
Normally Oper			
Single Phase/	Two Pole (Both poles together switching a single	e load)	
110 LRA, 25	5.3 FLA, 200K operations (DC Coil)		
	L1 L2		
Figure 1 T1			
1190101 []			
Single Phase F	Per Pole (Single load per pole)		
110 LRA, 18	FLA, 200K operations (DC Coil).		
	LA, 200K operations (AC Coil).		
,	L1 L2		
-			
Figure 2	ज्ञा। जिग्2		
1.90.0 2			
1) Contact rating	s at 25°C (unless otherwise noted) with relay properly vent	ied	
	gs are compatible with 3.5 ton compressor applications.		
Mechanical end	durance		
T92		10x10 ⁶ ops.	
T92H		1x10 ⁶ ops	
10211		1/10.002	

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Coil	Data

Coll Data	
Coil voltage range	5 to 110VDC; 12 to 240VAC
Max. coil power	1.7W; 4.0VA
Max. coil temperature	155°C
Coil insulation system according UL	Class F

Coil versions, DC coil (D type)

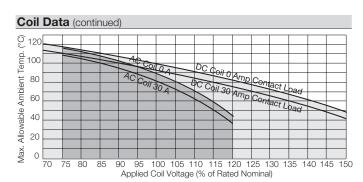
	310113, DO CO				
Coil	Rated	Operate	Release	Coil	Rated coil
code	voltage ²⁾	voltage	voltage	resistance	power
	VDC	VDC	VDC	Ω±10%	W
5	5	3.75	0.6	14.9	
6	6	4.5	0.6	22	
9	9	6.75	0.9	48	
12	12	9	1.2	86	
18	18	13.5	1.8	197	1.7W/
22	22	16.5	2.2	294	Min. 0.41W
24	24	18	2.4	350	hold
36	36	27	3.6	767	
48	48	36	4.8	1390	
110	110	82.5	11	7255	
120	120	90	12	8514	

2) For T92H type, after the energization time of 100ms with rated voltage, the coil requires a reduction of the coil voltage to 50% of rated voltage.

Coil versions, AC coil (A type)

00111	, ci biolib, i		JPC/			
Coil	Rated	Frequency	Operate	Release	Coil	Rated coil
code	voltage		voltage	voltage	resistance	power
	VAC	Hz	VAC, 60Hz	VAC, 60Hz	Ω±10%	VA
12	12	60	9.6	1.2	9.1	4
24	24	60	19.2	2.4	36.6	4
110	110	60	88	11	793	4
120	110/120	50/60	96	12	950	4
208	208	60	166.4	20.8	2841	4
240	220/240	50/60	192	24	3800	4
277	250/277	50/60	221.6	27.7	5485	4
Coil v	ersions, A	C coil (F ty	vpe)			
Coil	Rated	Frequency	Operate	Release	Coil	Rated coil
code	voltage		voltage	voltage	resistance	power
	VAC	Hz	VAC, 60Hz	VAC, 60Hz	Ω±10%	VA
12	12	50	9.6	1.2	11.2	3.5
24	24	50	19.2	2.4	44.4	3.5
48	48	50	38.4	4.8	179.2	3.5
240	240	50	192	24	4355	3.5
All figures are given for coil without preenergization, at ambient temperature +23°C						

All figures are given for coil without preenergization, at ambient temperature +23°C. For A type, 110V/120V, 50/60Hz. Signify 50Hz Operation at Nominal 110V, 60 Hz Operation at Nominal 120V.



Insulation Data

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

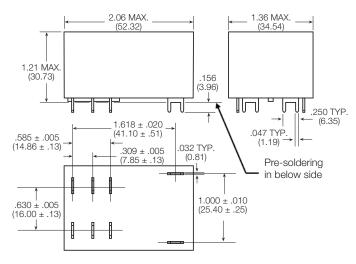
Other Data

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content		
refer to the P	roduct 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 amplitude, 10-55 Hz	
Shock resistance (functional)	10G for 11msec	
Shock resistance (destructive)	100G	
Terminal type	PCB / Quick Connect / Screw	
Weight	86g	
Resistance to soldering heat (for P	CB Terminal)	
IEC 60068-2-20	260°C, 10s	
Packaging/unit	tray/30 pcs., box/120 pcs.	

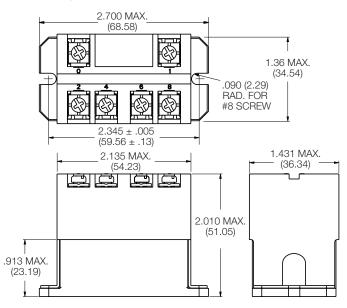


Dimensions

T92/T92H - Mounting and termination code 1



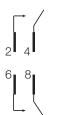
T92 – Mounting and termination code 5

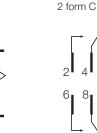


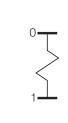
Terminal assignment

Bottom view on pins

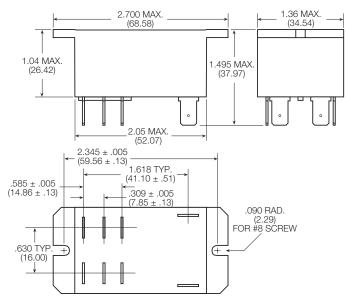
2 form A







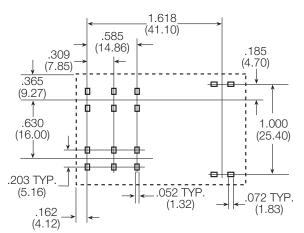
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PCB layout

Bottom view on pins

T92/T92H - 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.



Catalog product data, 'Definitions' section, application notes and all specifications are subject to change.



Product co	ode structure (T92H type)	Typical product code	T92H	Ρ	7	D	1	х	-12
Туре Т92Н	Power relay T92 High Performance (50A)								
Enclosure									
Р	Dust protected plastic case								
S	Wash-tight, tape sealed, plastic case (Mounting and	termination code 1)							
Contact arra	angement				_				
7	2 form A (2 NO)								
Coil Input						-			
D	DC voltage								
Mounting an	nd termination								
1	Printed circuit board mount; printed circuit board ter	minals.							
Contact mat	terial								
X S	Special Ag Alloy X (Cd Free)								
Coil voltage									
(Coil code: please refer to coil versions table								

Product code	Enclosure	Contacts	Coil	Mounting	Contact Material	Coil	Part number
T92HP7D1X-12	Plastic dust cover	2 form A, 2 NO	DC	PCB terminals	Special Ag Alloy X (Cd Free)	12VDC	6-1423008-6
T92HP7D1X-24						24VDC	6-1423008-7
T92HP7D1X-48						48VDC	6-1423008-9

Note. This list represents the most common types and does not show all variants covered by this datasheet, other types on request.

Product code structure (T92 type)

Product co	ode structure		Typical	product code	T92	S	11	D	2	2	-24	-99
Туре Т92	Printed circuit board / panel mo	ount power relay T	92									
Enclosure	Thinked billedit beard / parlor the	ount power rolay r	02									
P	Dust protected plastic case											
S	Wash-tight, tape sealed, plastic Wash-tight, glue sealed, plastic Top sealed, not wash-tight, not	case (Mounting a	nd termination o	code 1, 2 for an								
Contact arra	angement			<u>, </u>			<u> </u>					
7	2 form A (2 NO)	11 2 for	m C (2 CO)									
Coil Input	· · · · ·							-				
A	AC voltage, 60Hz or 50/60 Hz	(consult coil versio	ons table) D	DC voltage	FA	C volta	ge, 50⊦	lz				
Mounting an	nd termination						-		_			
1	Printed circuit board mount; pr	inted 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	r coil and	.250"	(6.35mr	n) for co	ontacts.			
5	Panel mount via flanged cover,	M4 screws w/ cap	otive pressure p	lates. Requires	Enclosur	e P and	d Contac	ct arran	gement	7.		
Contact ma	terial									-		
2	AgCdO	4 AgS	nOlnO X	Special Ag A	lloy X (Co	d Free)						
Coil voltage											_	
	Coil code: please refer to coil v	ersions table										
Customer c	ode											-
-99	Anti-explosion	- 00 V	VG version									



Product Code	Enclosure	Contacts	Coil	Mounting	Contact Material	Coil	Part Number
T92P7A22-24	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 24 VDC	2-1423008-2
T92P7D24-24					A =: 0 = 10	24 VDC	1423008-9
T92P7D42-24				Den el menuet a comunicada	AgCdO	101/00	7-1393211-5
T92P7D52-12				Panel mount + screw terminals		12 VDC 24 VDC	1-1423008-0
T92P7D52-24		0.6	10	DOD to main als			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 24 VAC	3-1393211-9
T92P11A22-24 T92P11A22-120						120 VAC	4-1393211-3
T92P11A22-120						240 VAC	4-1393211-0 4-1393211-4
T92P11A22-240						240 VAC 277 VAC	4-1393211-4
T92P11A24-240					AgSnOlnO	240 VAC	3-1423008-7
T92P11A24-240					AgCdO	120VAC	4-1393211-8
			DC	PCB terminals	Agodo	120VAC	5-1393211-0
T92P11D12-12 T92P11D22-12			DC	Pobleminais Panel mount + quick connect		12 000	5-1393211-0
T92P11D22-24				Farler mount + quick connect		24 VDC	5-1393211-3
T92P11D24-12					AgSnOlnO	12 VDC	3-1423008-5
T92P11D24-24					Agonomo	24 VDC	3-1423008-6
T92S7A12-24	Wash tight	2 form A, 2 NO	AC	PCB terminals	AgCdO	24 VDC	9-1393211-8
T92S7A12-120	VVasir tigrit	2 101117, 2 110	AO	T OD terminais	Agouo	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	100 000100			i anormount i quior connoct		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						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						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						240 VAC	8-1393211-7
T92S11D12-12	Wash tight		DC	PCB terminals		12 VDC	8-1393211-9
T92S11D12-24						24 VDC	9-1393211-0
T92S11D12-48						48 VDC	9-1393211-1
T92S11D12-110						110 VDC	8-1393211-8
T92S11D22-12	Top sealed			Panel mount + quick connect		12 VDC	9-1393211-3
T92S11D22-24						24 VDC	9-1393211-4
T92P7D12-12-99	Plastic dust cover	2 form A, 2 NO	DC	PCB terminals	AgCdO	12VDC	2-2071223-3
T92S7D1X-12-99	Wash tight				Special Ag Alloy	12VDC	6-1423008-1
T92S7D2X-12-99				Panel mount + quick connect	X (Cd Free)	12VDC	6-1423008-2
T92S7A22-240-00	Top Sealed(WG)		AC		AgCdO	240VAC	2-2071223-4
T92S7D12-12-00	Wash tight (WG)		DC	PCB terminals		12VDC	1-2071223-7

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