реле T90, NT90, *купить в Минске*

г.Минск www.fotorele.net www.tiristor.by email minsk17@tut.by тел.+375447584780

Реле , каталог, описание, технические, характеристики, datasheet, параметры, маркировка, габариты, фото, даташит, T90, NT90

QR код

реле

реле электромеханическое

электронные компоненты

где и как купить в Минске?

nt90-rhas-dc12v-c-b-0.9 (rohs)

nt90-rhas-dc24v-c-b-0.9 (rohs)

nt90-rhcs-dc24v-cb-0.9

реле nt90rncs12cb

реле nt90rncs24cb (s90-24f)

nt90-rhas-dc12v-c-b-0.9 (rohs) /forward/ moq>15

nt90-rhas-dc24v-c-b-0.9 (rohs) /forward/ moq>15

nt90-rhcs-dc24v-cb-0.9 /forward/ moq>15

реле 24v 30a nrp16t-a-24d-30a (nt90rncs24cb) на заказ

nt90-rhas-dc12v-cb-0.9 [rohs]

nt90-rhas-dc12v-cb-0.9 [rohs]

nt90-rhas-dc24v-c-b-0.9 rohs

nt90r-n-c-s-ac220v-c-b

nt90rhcs110cb/dc110v dip5

nt90-rhas-dc12v-cb-0.9 (rohs)

nt90-rhas-dc24v-cb-0.9 (rohs)

nt90rhasdc12vcb09(rohs)

nt90rhasdc24vcb09(rohs)

nt90rhcsdc24vcb09

nt90rh1addc110v

nt90rh1addc12v

nt90rh1addc15v

nt90rh1addc18v

nt90rh1addc24v

nt90rh1addc3v

nt90rh1addc48v

nt90rh1addc5v

nt90rh1addc6v

nt90rh1addc9v

nt90rh1aedc110v

nt90rh1aedc12v

nt90rh1aedc15v

nt90rh1aedc18v

nt90rh1aedc24v

nt90rh1aedc3v

nt90rh1aedc48v

nt90rh1aedc5v

nt90rh1aedc6v

nt90rh1aedc9v

nt90rh1aodc110v

nt90rh1aodc12v

nt90rh1aodc15v

nt90rh1aodc18v

nt90rh1aodc24v

nt90rh1aodc3v

nt90rh1aodc48v

nt90rh1aodc5v

nt90rh1aodc6v

nt90rh1aodc9v

nt90rh1asdc110v

nt90rh1asdc12v

nt90rh1asdc15v

nt90rh1asdc18v

nt90rh1asdc24v

nt90rh1asdc3v

nt90rh1asdc48v

nt90rh1asdc5v

nt90rh1asdc6v

nt90rh1asdc9v

nt90rh1bddc110v

nt90rh1bddc12v

nt90rh1bddc15v

nt90rh1bddc18v

nt90rh1bddc24v

nt90rh1bddc3v

nt90rh1bddc48v

nt90rh1bddc5v

nt90rh1bddc6v

nt90rh1bddc9v

nt90rh1bedc110v

nt90rh1bedc12v

nt90rh1bedc15v

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nt90rh1bedc48v

nt90rh1bedc5v

nt90rh1bedc6v

nt90rh1bedc9v

nt90rh1bodc110v

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nt90rh1bsdc6v

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nt90rn1aedc24v

nt90rn1aedc3v

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nt90rnbdac110vsb0.9

nt90rnbdac110vsf0.6

nt90rnbdac110vsf0.9

nt90rnbdac12vcb0.6

nt90rnbdac12vcb0.9

nt90rnbdac12vcf0.6

nt90rnbdac12vcf0.9

nt90rnbdac12vsb0.6

nt90rnbdac12vsb0.9

nt90rnbdac12vsf0.6

nt90rnbdac12vsf0.9

nt90rnbdac24vcb0.6

nt90rnbdac24vcb0.9

nt90rnbdac24vcf0.6

nt90rnbdac24vcf0.9

nt90rnbdac24vsb0.6

nt90rnbdac24vsb0.9

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nt90rnbeac110vsf0.6

nt90rnbeac110vsf0.9

nt90rnbeac12vcb0.6

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nt90rnbeac24vsb0.6

nt90rnbeac24vsb0.9

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nt90rnboac110vcb0.6

nt90rnboac110vcb0.9

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nt90rnboac110vsb0.6

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nt90rnboac110vsf0.9

nt90rnboac12vcb0.6

nt90rnboac12vcb0.9

nt90rnboac12vcf0.6

nt90rnboac12vcf0.9

nt90rnboac12vsb0.6

nt90rnboac12vsb0.9

nt90rnboac12vsf0.6

nt90rnboac12vsf0.9

nt90rnboac24vcb0.6

nt90rnboac24vcb0.9

nt90rnboac24vcf0.6

nt90rnboac24vcf0.9

nt90rnboac24vsb0.6

nt90rnboac24vsb0.9

nt90rnboac24vsf0.6

nt90rnboac24vsf0.9

nt90rnbsac110vcb0.6

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nt90rnbsac110vcf0.9

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nt90rnbsac12vsf0.6

nt90rnbsac12vsf0.9

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nt90rnbsac24vcb0.9

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nt90rnbsac24vcf0.9

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nt90rncdac24vcf0.6

nt90rncdac24vcf0.9

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nt90rnceac110vcf0.9

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nt90rnceac110vsb0.9

nt90rnceac110vsf0.6

nt90rnceac110vsf0.9

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nt90rnceac12vcb0.9

nt90rnceac12vcf0.6

nt90rnceac12vcf0.9

nt90rnceac12vsb0.6

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nt90rnceac24vcf0.6

nt90rnceac24vcf0.9

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nt90rnceac24vsb0.9

nt90rnceac24vsf0.6

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nt90rncoac110vcb0.9

nt90rncoac110vcf0.6

nt90rncoac110vcf0.9

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nt90rncoac110vsf0.6

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nt90rncoac12vcb0.9

nt90rncoac12vcf0.6

nt90rncoac12vcf0.9

nt90rncoac12vsb0.6

nt90rncoac12vsb0.9

nt90rncoac12vsf0.6

nt90rncoac12vsf0.9

nt90rncoac24vcb0.6

nt90rncoac24vcb0.9

nt90rncoac24vcf0.6

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nt90rncsac12vcf0.9

nt90rncsac12vsb0.6

nt90rncsac12vsb0.9

nt90rncsac12vsf0.6

nt90rncsac12vsf0.9

nt90rncsac24vcb0.6

nt90rncsac24vcb0.9

nt90rncsac24vcf0.6

nt90rncsac24vcf0.9

nt90rncsac24vsb0.6

nt90rncsac24vsb0.9

nt90rncsac24vsf0.6

nt90rncsac24vsf0.9

T90 Series, 30A PCB Relay

- **30A, 1 Form A (NO); 20A, 1 Form C (CO)**
- **Available as open frame or sealed construction**
- **Meets UL 508 and 873 Spacing - 3.18 through air, 6.36 over surface**
- **UL class F insulation system standard**

Typical applications
HVAC, Appliances, Industrial Controls

Approvals

UL E22575; CSA LR15734

Technical data of approved types on request

Contact Data

Contact arrangement	1 form A (NO), 1 form B (NC), 1 form C (CO)
Rated voltage	277VAC
Max. switching voltage	277VAC
Rated current	30A
Limiting continuous current	30A
Limiting making current	30A
Limiting breaking current	30A
Contact material	AgCdO
Min. recommended contact load	1A, 5VDC or 12VAC
Initial contact resistance	75 mΩ at 1A at 5VDC or 12VAC
Frequency of operation, with load	360hr
Operate/release time max., including bounce	15/15ms

Contact ratings

Type	Load	Cycles
Typical		
AgCdO, open style relay		
NO	30A, 240VAC, general purpose	$100x10^3$
NO	20A, 240VAC, resistive heater	$100x10^3$
CO	20A/10A, 240VAC, general purpose	$100x10^3$
CO	20A/10A, 28VDC, resistive	$100x10^3$
UL 508/873		
AgCdO		
NO	30A, 240VAC, general purpose	$100x10^3$
NC	15A, 240VAC, general purpose	$100x10^3$
CO	20A/10A, 240VAC, general purpose	$100x10^3$
NO	20A, 240VAC, resistive	$100x10^3$
NC	15A, 240VAC, resistive	$100x10^3$
CO	20A/10A, 240VAC, resistive	$100x10^3$
NO	80LRA/30FLA, 240VAC	$30x10^3$
NC	30LRA/10FLA, 240VAC	$30x10^3$
CO	53.6LRA/20FLA / 20LRA/6.7FLA, 240VAC	$100x10^3$
NO	98LRA/22FLA, 120VAC	$100x10^3$
NO	2HP, 240VAC	$1x10^3$
NC	1/2HP, 240VAC	$1x10^3$
NO	1HP, 120VAC	$1x10^3$
NC	1/4HP, 120VAC	$1x10^3$
NO	6A, 277VAC, ballast	$100x10^3$
NC	3A, 277VAC, ballast	$6x10^3$
NO	TV5, 240VAC, tungsten	$6x10^3$
NC	TV3, 240VAC, tungsten	$6x10^3$
NO	20A, 28VDC, resistive	$100x10^3$
NC	10A, 28VDC, resistive	$100x10^3$

All ratings at 25°C (unless otherwise noted) with relay properly vented. Remove vent nib from enclosed relays after soldering and cleaning for optimum life.

Mechanical endurance	$10x10^6$ ops.

Coil Data

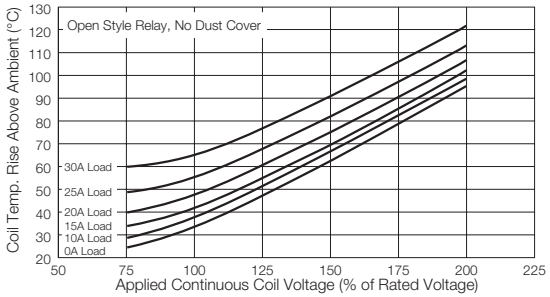
Coil voltage range	5 to 110VDC
Max. coil power	1.0W
Max. coil temperature	155°C
Coil insulation system according UL	Class F

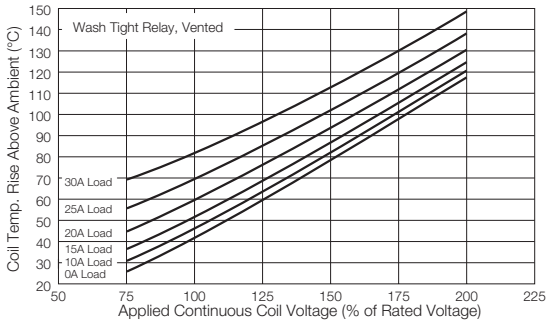
Coil versions, DC coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power wW
5	5	3.75	0.5	27	900
6	6	4.5	0.6	40	900
9	9	6.75	0.9	97	900
12	12	9	1.2	155	900
18	18	13.5	1.8	380	900
24	24	18	2.4	660	900
48	48	36	4.8	2560	900
110	110	82.5	11	13450	900

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

Ambient temperature vs. coil voltage – 1W coil





Data graphed above are average values and should be verified in application. Tests were conducted within a 2' (.6m) cube (still air); at nominal coil power @ 25°C; with normally open contact loaded; and with 4' (1.22m) long, #10AWG load wires. P.C. board relays were mounted to a 30A, single side P.C. board. Coil rise test conducted with a 30A PC board to maintain 20°C max. rise at 30°C. The relay connections and wiring must be designed with an adequate cross section to ensure proper current flow and heat dissipation. After cleaning process knock-off nib should be removed for optimum life of wash-tight relays.

08-2011, Rev. 0811
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T90 Series, 30A PCB Relay (Continued)

Insulation Data

Initial dielectric strength	
between open contacts	$1500V_{rms}$
between contact and coil	$1500V_{rms}$
Initial insulation resistance	
between insulated elements	$1x10^9\Omega$
Clearance/creepage	
between contact and coil	3.17mm

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	-55ºC to 85ºC 1)
Category of environmental protection	
IEC 61810	RT0 - open, RTII - flux proof

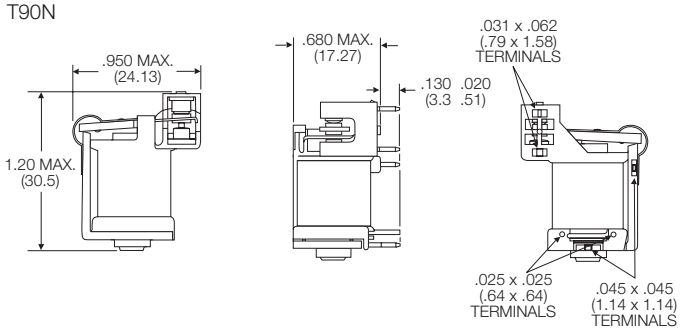
Other Data (continued)

Vibration resistance (functional)	1.65mm max excursions, 10-55 Hz
Shock resistance (functional)	10g for 11msec
Shock resistance (destructive)	100g
Terminal type	pcb-tht
Weight	20g open relay 26g wash-tight relay
Resistance to soldering heat THT	
IEC 60068-2-20	250°C
Packaging/unit	tray/50 pcs., box/500 pcs.

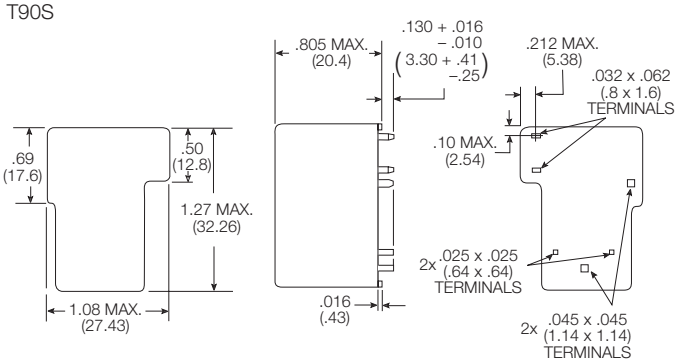
1) Operating ambient temperature must consider "Must Operate Voltage Change Over Temperature," Contact Temperature Rise, Coil Temperature Rise (If coil is not allowed to cool) and Maximum Coil Temperature. Specification ambient considers 20A load with coil cooled to ambient.

Dimensions

T90N

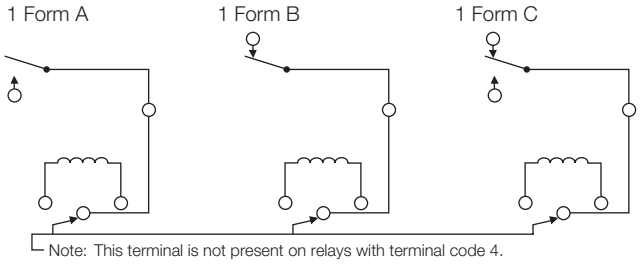


T90S



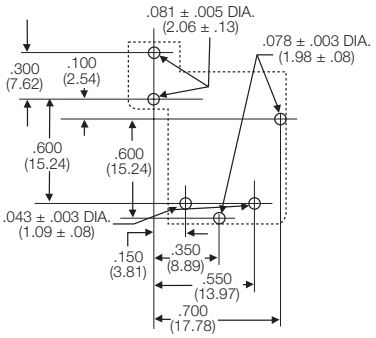
Terminal assignment

Bottom view on pins



PCB layout

Bottom view on pins



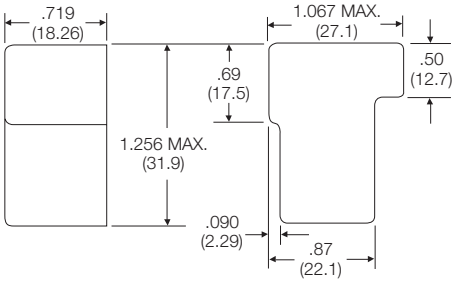
Only necessary terminals are present on single throw models and terminal code 4 models. Consequently, some holes will be unnecessary for those models.

Accessory

Optional plastic dust cover is a snap-on unit, open on the PC board side of the relay. The cover, when ordered with the relay, is shipped separately. It is designed to be snapped into place by the customer after the relay has been assembled to the PC board.

Product Code	Description	Part Number
35C620A	Black dust cover, for use on T90N relay	4-1393209-2

35C620A



T90 Series, 30A PCB Relay (Continued)

Product code structure Typical product code **T90 S 5 D 1 2 -24**

Type
- **T90** Power PCB relay T90

Enclosure
- **N** Open, no enclosure (snap-on dust cover available as an option)
- **S** Wash-tight, sealed plastic case with knock off nib for ventilation

Contact arrangement
- **1** 1 form A (1 NO)
- **2** 1 form B (1 NC)
- **5** 1 form C (1 CO)

Coil Input
- **D** DC voltage

Mounting and termination
- **1** PCB terminals
- **4** PCB terminals, no common terminal between coil terminals (see pcb layout/terminal assignment drawing)

Note: Terminal code 4 recommended for UL 873 applications. Consult factory for use of terminal code 1 for UL 873 applications.

Contact material
- **2** AgCdO

Coil voltage
Coil code: please refer to coil versions table

Product Code	Enclosure	Contacts	Terminals	Contact Material	Coil	Part Number
T90N1D12-5	open, no cover	1 form A, 1 NO	pcb	AgCdO	5 VDC	7-1393208-4
T90N1D12-9					9 VDC	7-1393208-5
T90N1D12-12					12 VDC	6-1393208-5
T90N1D12-18					18 VDC	6-1393208-8
T90N1D12-24					24 VDC	7-1393208-0
T90N1D12-48					48 VDC	7-1393208-3
T90N1D12-110					110 VDC	6-1393208-4
T90N1D42-12			pcb, no extra COM		12 VDC	7-1393208-7
T90N1D42-24					24 VDC	7-1393208-9
T90N5D12-5		1 form C, 1 CO	pcb		5 VDC	9-1393208-5
T90N5D12-12					12 VDC	8-1393208-6
T90N5D12-18					18 VDC	9-1393208-0
T90N5D12-24					24 VDC	9-1393208-3
T90N5D12-48					48 VDC	9-1393208-4
T90N5D12-110					110 VDC	8-1393208-5
T90N5D42-12			pcb, no extra COM		12VDC	9-1393208-9
T90N5D42-24					24 VDC	1393209-2
T90S1D12-5	wash tight	1 form A, 1 NO	pcb		5 VDC	1-1393209-8
T90S1D12-6					6 VDC	1-1393209-9
T90S1D12-9					9 VDC	2-1393209-0
T90S1D12-12					12 VDC	1-1393209-2
T90S1D12-18					18 VDC	1-1393209-3
T90S1D12-24					24 VDC	1-1393209-6
T90S1D42-12			pcb, no extra COM		12 VDC	2-1393209-2
T90S1D42-24					24 VDC	2-1393209-5
T90S1D42-48					48 VDC	2-1393209-6
T90S5D12-5		1 form C, 1 CO	pcb		5 VDC	3-1393209-4
T90S5D12-12					12 VDC	2-1393209-8
T90S5D12-18					18 VDC	3-1393209-0
T90S5D12-24					24 VDC	3-1393209-1
T90S5D12-48					48 VDC	3-1393209-3
T90S5D42-12			pcb, no extra COM		12 VDC	1423094-1
T90S5D42-18					18 VDC	3-1393209-8
T90S5D42-24					24 VDC	4-1393209-0

08-2011, Rev. 0811
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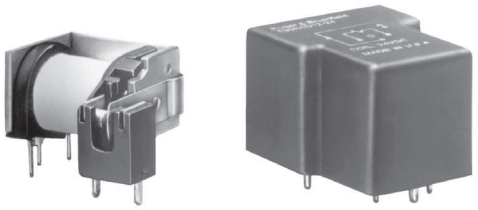
T90 Series, 30A PCB Relay

- **30A, 1 form A (NO); 20A, 1 form C (CO)**
- **Available as open frame or sealed construction**
- **Meets UL 508 and 873 Spacing - 3.18 through air, 6.36 over surface**
- **UL class F insulation system standard**



Typical applications
HVAC, Appliances, Industrial Controls.

Approvals

UL E22575; CSA LR15734

Technical data of approved types on request.

Contact Data

Contact arrangement	1 form A (NO), 1 form B (NC), 1 form C (CO)
Rated voltage	277VAC
Max. switching voltage	277VAC
Rated current	30A
Limiting continuous current	30A
Limiting making current	30A
Limiting breaking current	30A
Contact material	AgCdO
Min. recommended contact load	1A, 5VDC or 12VAC
Initial contact resistance	75 mΩ at 1A at 5VDC or 12VAC
Frequency of operation, with load	360hr
Operate/release time max., including bounce	15/15ms

Contact ratings

Type	Load	Cycles
Typical		
AgCdO, open style relay		
NO	30A, 240VAC, general purpose	$100x10^3$
NO	20A, 240VAC, resistive heater	$100x10^3$
CO	20A/10A, 240VAC, general purpose	$100x10^3$
CO	20A/10A, 28VDC, resistive	$100x10^3$
UL 508/873		
AgCdO		
NO	30A, 240VAC, general purpose	$100x10^3$
NC	15A, 240VAC, general purpose	$100x10^3$
CO	20A/10A, 240VAC, general purpose	$100x10^3$
NO	20A, 240VAC, resistive	$100x10^3$
NC	15A, 240VAC, resistive	$100x10^3$
CO	20A/10A, 240VAC, resistive	$100x10^3$
NO	80LRA/30FLA, 240VAC	$30x10^3$
NC	30LRA/10FLA, 240VAC	$30x10^3$
CO	53.6LRA/20FLA / 20LRA/6.7FLA, 240VAC	$100x10^3$
NO	98LRA/22FLA, 120VAC	$100x10^3$
NO	2HP, 240VAC	$1x10^3$
NC	1/2HP, 240VAC	$1x10^3$
NO	1HP, 120VAC	$1x10^3$
NC	1/4HP, 120VAC	$1x10^3$
NO	6A, 277VAC, ballast	$100x10^3$
NC	3A, 277VAC, ballast	$6x10^3$
NO	TV5, 240VAC, tungsten	$6x10^3$
NC	TV3, 240VAC, tungsten	$6x10^3$
NO	20A, 28VDC, resistive	$100x10^3$
NC	10A, 28VDC, resistive	$100x10^3$

All ratings at 25°C (unless otherwise noted) with relay properly vented. Remove vent nib from enclosed relays after soldering and cleaning for optimum life.

Mechanical endurance	$10x10^6$ ops.

Coil Data

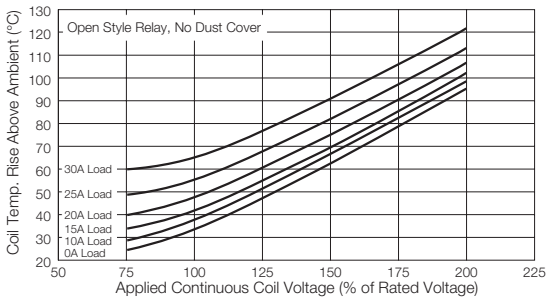
Coil voltage range	5 to 110VDC
Max. coil power	1.0W
Max. coil temperature	155°C
Coil insulation system according UL	Class F

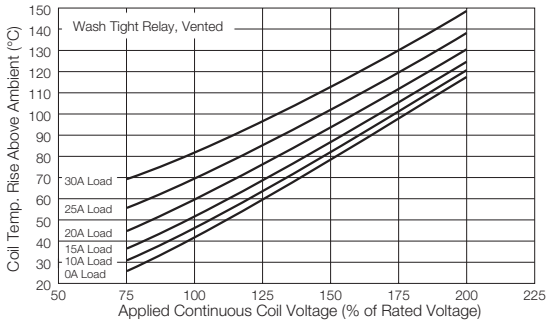
Coil versions, DC coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power wW
5	5	3.75	0.5	27	900
6	6	4.5	0.6	40	900
9	9	6.75	0.9	97	900
12	12	9	1.2	155	900
18	18	13.5	1.8	380	900
24	24	18	2.4	660	900
48	48	36	4.8	2560	900
110	110	82.5	11	13450	900

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

Ambient temperature vs. coil voltage – 1W coil





Data graphed above are average values and should be verified in application. Tests were conducted within a 2' (.6m) cube (still air); at nominal coil power @ 25°C; with normally open contact loaded; and with 4' (1.22m) long, #10AWG load wires. P.C. board relays were mounted to a 30A, single side P.C. board. Coil rise test conducted with a 30A PC board to maintain 20°C max. rise at 30°C. The relay connections and wiring must be designed with an adequate cross section to ensure proper current flow and heat dissipation. After cleaning process knock-off nib should be removed for optimum life of wash-tight relays.

02-2014, Rev. 0214
www.te.com

T90 Series, 30A PCB Relay (Continued)

Insulation Data

Initial dielectric strength	
between open contacts	$1500V_{rms}$
between contact and coil	$1500V_{rms}$
Initial insulation resistance	
between insulated elements	$1x10^9\Omega$
Clearance/creepage	
between contact and coil	3.17mm

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	-55ºC to 85ºC [1]
Category of environmental protection	
IEC 61810	RT0 - open, RTIII - wash tight

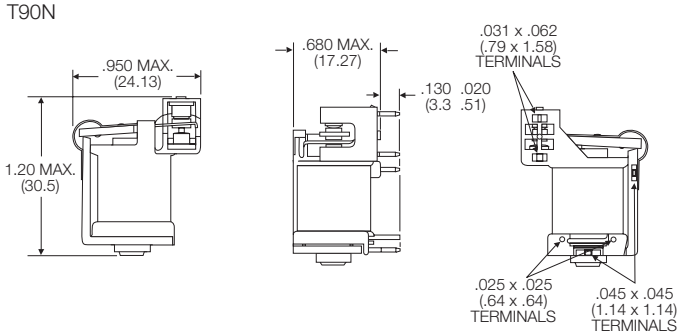
Other Data (continued)

Vibration resistance (functional)	1.65mm max excursions, 10-55 Hz
Shock resistance (functional)	10g for 11msec
Shock resistance (destructive)	100g
Terminal type	PCB-tht
Weight	20g open relay 26g wash-tight relay
Resistance to soldering heat THT	
IEC 60068-2-20	250°C
Packaging/unit	tray/50 pcs., box/500 pcs.

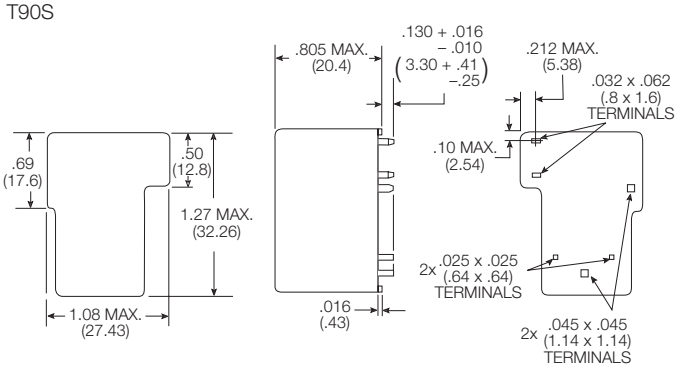
1) Operating ambient temperature must consider "Must Operate Voltage Change Over Temperature," Contact Temperature Rise, Coil Temperature Rise (If coil is not allowed to cool) and Maximum Coil Temperature. Specification ambient considers 20A load with coil cooled to ambient.

Dimensions

T90N

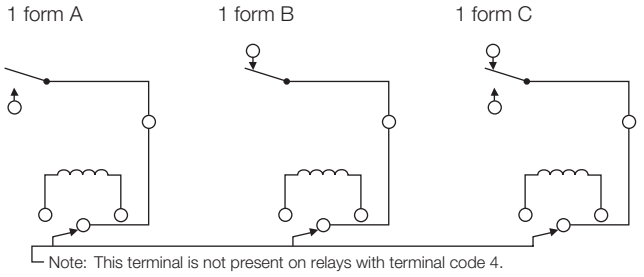


T90S



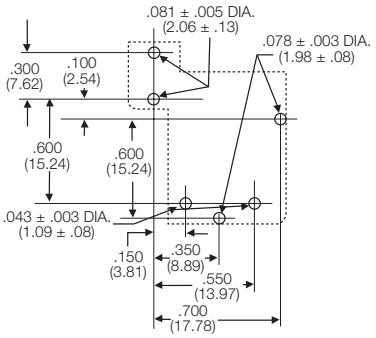
Terminal assignment

Bottom view on pins



PCB layout

Bottom view on pins



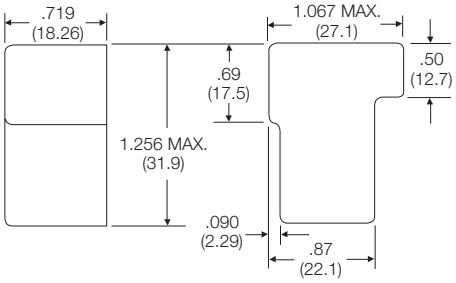
Only necessary terminals are present on single throw models and terminal code 4 models. Consequently, some holes will be unnecessary for those models.

Accessory

Optional plastic dust cover is a snap-on unit, open on the PC board side of the relay. The cover, when ordered with the relay, is shipped separately. It is designed to be snapped into place by the customer after the relay has been assembled to the PC board.

Product Code	Description	Part Number
35C620A	Black dust cover, for use on T90N relay	4-1393209-2

35C620A



T90 Series, 30A PCB Relay (Continued)

Product code structure Typical product code **T90 S 5 D 1 2 -24**

Type
- **T90** Power PCB relay T90

Enclosure
- **N** Open, no enclosure (snap-on dust cover available as an option)
- **S** Wash-tight, sealed plastic case with knock off nib for ventilation

Contact arrangement
- **1** 1 form A (1 NO) **2** 1 form B (1 NC) **5** 1 form C (1 CO)

Coil Input
- **D** DC voltage

Mounting and termination
- **1** PCB terminals
- **4** PCB terminals, no common terminal between coil terminals (see PCB layout/terminal assignment drawing)

Note: Terminal code 4 recommended for UL 873 applications. Consult factory for use of terminal code 1 for UL 873 applications.

Contact material
- **2** AgCdO

Coil voltage
- Coil code: please refer to coil versions table

Product Code	Enclosure	Contacts	Terminals	Contact Material	Coil	Part Number
T90N1D12-5	open, no cover	1 form A, 1 NO	PCB	AgCdO	5 VDC	7-1393208-4
T90N1D12-9					9 VDC	7-1393208-5
T90N1D12-12					12 VDC	6-1393208-5
T90N1D12-18					18 VDC	6-1393208-8
T90N1D12-24					24 VDC	7-1393208-0
T90N1D12-48					48 VDC	7-1393208-3
T90N1D12-110					110 VDC	6-1393208-4
T90N1D42-12			PCB, no extra COM		12 VDC	7-1393208-7
T90N1D42-24					24 VDC	7-1393208-9
T90N5D12-5		1 form C, 1 CO	PCB		5 VDC	9-1393208-5
T90N5D12-12					12 VDC	8-1393208-6
T90N5D12-18					18 VDC	9-1393208-0
T90N5D12-24					24 VDC	9-1393208-3
T90N5D12-48					48 VDC	9-1393208-4
T90N5D12-110					110 VDC	8-1393208-5
T90N5D42-12			PCB, no extra COM		12VDC	9-1393208-9
T90N5D42-24					24 VDC	1393209-2
T90S1D12-5	wash tight	1 form A, 1 NO	PCB		5 VDC	1-1393209-8
T90S1D12-6					6 VDC	1-1393209-9
T90S1D12-9					9 VDC	2-1393209-0
T90S1D12-12					12 VDC	1-1393209-2
T90S1D12-18					18 VDC	1-1393209-3
T90S1D12-24					24 VDC	1-1393209-6
T90S1D42-12			PCB, no extra COM		12 VDC	2-1393209-2
T90S1D42-24					24 VDC	2-1393209-5
T90S1D42-48					48 VDC	2-1393209-6
T90S5D12-5		1 form C, 1 CO	PCB		5 VDC	3-1393209-4
T90S5D12-12					12 VDC	2-1393209-8
T90S5D12-18					18 VDC	3-1393209-0
T90S5D12-24					24 VDC	3-1393209-1
T90S5D12-48					48 VDC	3-1393209-3
T90S5D42-12			PCB, no extra COM		12 VDC	1423094-1
T90S5D42-18					18 VDC	3-1393209-8
T90S5D42-24					24 VDC	4-1393209-0

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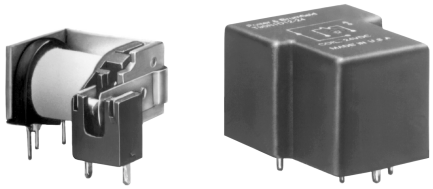


T90 series

30 Amp Printed Circuit Board Relay

File E22575 File LR15734
Patented

Users should thoroughly review the technical data before selecting a product part number. It is recommended that user also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

Features

- Up to 30A switching in SPST and 20A switching in SPDT arrangements.
- Silver cadmium oxide contacts.
- Available as an open-frame relay, with a snap-on dust cover or with an immersion cleanable(6), plastic sealed case.
- Meets UL 508 & UL 873 spacing – 1/8" through air, 1/8" over surface. (1/4" over surface with terminal code 4)
- UL class F insulation standard.
- Well suited for various industrial, commercial and residential applications, as well as many others.

Contact Ratings @ 25°C

Arrangements: 1 Form A (SPST-NO) and 1 Form C (SPDT).
Material: Silver-cadmium oxide.
Mechanical Life: 10 million operations, typical.

Contact Ratings @ 25°C with relay properly vented. Remove vent nib after soldering and cleaning.

Typical Electrical Load & Life (Open Style Relay)

Form & Contact Material	Contact Load	Type of Load	Ops
(1) Silver-cadmium oxide	30A @ 240VAC	UL General Purpose	100,000
	20A @ 240VAC	Resistive Heater	100,000
(5) Silver-cadmium oxide	20A/10A @ 240VAC	UL General Purpose	100,000
	20A/10A @ 28VDC	Resistive	100,000

Minimum Contact Load:
Silver Contacts: 500mA @ 5VDC or 12VAC.
Silver Cadmium Oxide Contacts: 1A @ 5VDC or 12VAC.
Initial Contact Resistance: 75 mΩ, max., @ min. rated current (switched).

Initial Dielectric Strength

Between Open Contacts: 1,500V rms.
Between Contacts and Coil: 1,500V rms (terminal code 1).
2,500V rms (UL 873 version terminal code 4).

Initial Insulation Resistance

Between Mutually Insulated Elements: 10^9 ohms, min., @ 500VDC, 25°C and 50% R.H.

Coil Data @ 25°C

Voltage: 5 to 110VDC.
Maximum Coil Power: 2.8 Watt
Maximum Coil Temperature(5): Class F: 155°C.
Duty Cycle: Continuous.

Coil Data

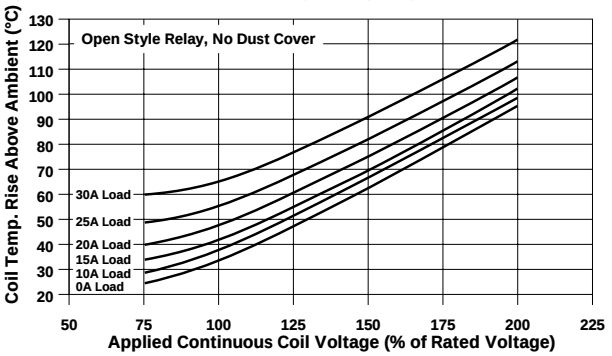
Nominal Voltage (VDC)	Resistance ±10% (Ohms)	Nominal Power (mW)	Nominal Current (mA)
5	27	930	185
6	40	900	150
9	97	840	93
12	155	930	77
15	256	880	59
18	380	850	47
24	660	870	36
48	2,560	900	19
110	13,450	900	8

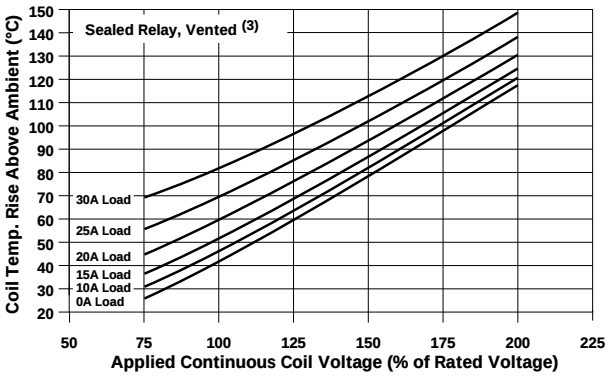
Operate Data @ 25°C

Must Operate Voltage: 75% of nominal voltage or less.
Must Release Voltage: 10% of nominal voltage or more.
Operate Time (Including Bounce)†: 15 ms, max.
Release Time (Including Bounce)†: 15 ms, max.
† At or From Nominal Coil Voltage

Typical Coil Temperature Rise

Data below are average values and should be verified in application. Tests were conducted within a 2' (.6 m) cube (still air) with relay mounted to a 30A, single side P.C. board (6); at nominal coil power @ 25°C; with normally open contact loaded; and with 4' (1.22 m) long, #10 AWG load wires.





Environmental Data

Storage Temperature Range: -40°C to 130°C.
Operating Temperature Range: -55°C to +85°C(1).
Vibration, Operational: 0.065" (1.65mm) max. excursions from 10-55 Hz. with no contact opening >100µs.
Shock, Operational: 10g for 11 ms with no contact opening >100µs.
Shock, Mechanical: 100g.

Mechanical Data

Termination: Printed circuit terminals(4).
Enclosures (all have 94V-0 flammability rating, Class F temp. rating):
Optional dust cover: Snap-on plastic dust cover is available for use on open style T90N.
Sealed case (T90S): Immersion cleanable, sealed plastic case(2).
Weight: Open Model T90N: 0.7 oz. (20g) approximately.
Sealed Model T90S: 0.9 oz. (26g) approximately.

Notes

(1) Operating ambient temperature must consider "Must Operate Voltage Change Over Temperature," Contact Temperature Rise, Coil Temperature Rise (If coil is not allowed to cool) and Maximum Coil Temperature. Specification ambient considers nominal coil voltage, 20A load with coil cooled to ambient.
(2) Sealed relay terminals should not be bent.
(3) Knock-off nib should be removed after cleaning process for optimum life of sealed relays.
(4) Maximum soldering temperature is 500°F for 4 seconds.
(5) Class F coils are UL systems approved for maximum coil temperature of 155°C by change of resistance method.
(6) See application note 13C265 for proper relay mounting, termination, cleaning and PC board conductor width. Coil rise test performed with 30A PC board to maintain 20°C maximum rise @ 30A.

Ordering Information

Typical Part Number ▶	T90	S	5	D	1	2	-24

1. Basic Series:
T90 = Printed circuit board power relay.

2. Enclosure:
N = Open, no cover (snap-on dust cover available as an option).
S = Immersion cleanable, sealed plastic case with knock-off nib for ventilation.

3. Contact Arrangement:
1 = 1 Form A (SPST-NO). 5 = 1 Form C (SPDT).

4. Coil Input:
D = DC Voltage.

5. Terminals:
1 = Printed circuit terminals.
4 = Printed circuit terminals, no common terminal between coil terminals (see wiring diagram).
Note: Terminal code 4 recommended for UL 873 applications. Consult factory for use of terminal code 1 for UL 873 applications.

6. Contact Material:
2 = Silver-cadmium oxide.

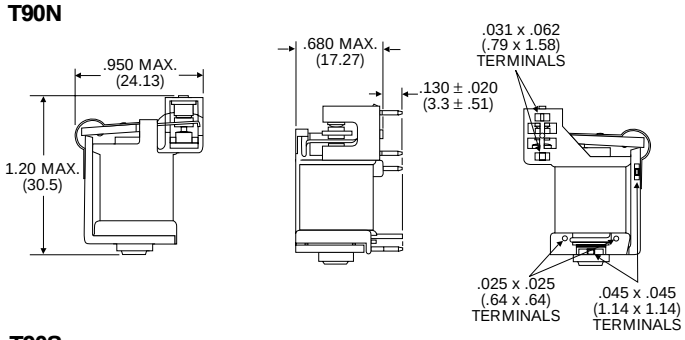
7. Coil Voltage:
5 = 5V DC 6 = 6V DC 9 = 9V DC 12 = 12V DC 15 = 15V DC 18 = 18V DC 24 = 24V DC 48 = 48V DC 110 = 110V DC

Our authorized distributors are more likely to maintain the following items in stock for immediate delivery.

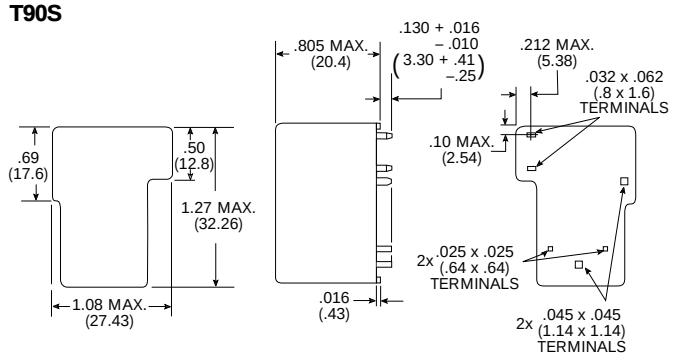
T90N1D12-12	T90N1D42-24	T90N5D42-24	T90S1D42-24	T90S5D42-24
T90N1D12-18	T90N5D12-12	T90S1D12-12	T90S5D12-12	
T90N1D12-24	T90N5D12-24	T90S1D12-24	T90S5D12-24	

Outline Dimensions

T90N



T90S

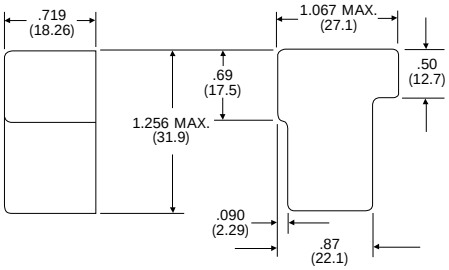


Optional Dust Cover For Use With Open-Style Relays

Optional plastic dust cover is a snap-on unit, open on the PC board side of the relay. The cover, when ordered with the relay, is shipped separately. It is designed to be snapped into place by the customer after the relay has been assembled to the PC board.

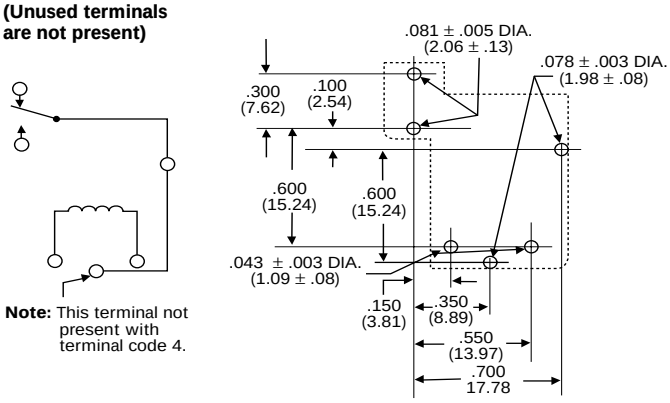
Cover Ordering Information – Boldface items are stocked.

Part No.	Description
35C620A	Black dust cover for use on open-style, T90N relay.



Wiring Diagram & PC Board Layout (Bottom Views)

1 Form C
(Unused terminals are not present)



Note: This terminal not present with terminal code 4.

UL & CSA Contact Ratings

Voltage	Load Type	N.O. Contact	N. C. Contact
Silver Contacts			
240VAC	General Purpose	10A	5A
240VAC	Resistive	10A	5A
28VDC	Resistive	10A	5A
Silver-Cadmium Oxide Contacts			
240VAC	General Purpose†	30A	15A
240VAC	UL Resistive†	20A	15A
120VAC	Motor	1 HP	1/4 HP
240VAC	Motor	2 HP	1/2 HP
240VAC	LRA/FLA†	80/30	30/10
240VAC	Tungsten	TV5	TV3
277VAC	Ballast	6A	3A
28VDC	Resistive	20A	10A

† For Form C application, derate current to 67%.

NT90 (T90)

30.5 ×24.2 ×17

32.5 ×27.6 ×20.5

CQC 03001003503

c UL us E160644

R50126373

Features

- Small size, light weight.
- Low coil power consumption, heavy contact load.
- Strong anti-shock and anti-vibration, high reliability, long life.
- PC board mounting.
- 1.1W versions with contact gap to 2.0mm.
- Suitable for automobile, machine, electronic equipment, air conditioner and household appliances applications.

Ordering Information

NT90 R H A S DC12V C B 0.9

1 2 3 4 5 6 7 8 9

1 Part number：NT90(T90)
2 Terminal： R: without Pin6；NIL: With Pin6
3 Load：H:30A；N:40A
4 Contact arrangement：A:1A；B:1B；C:1C
5 Enclosure：S: Sealed type；D: Dust cover；
E: Covered；O: Open type

6 Coil rated voltage(V)：AC:12,24,110,120,220
DC:3,5,6,9,12,15,18,24,48,110
7 Contact material：C: AgCdO；S: $AgSnO_2$
8 Resist heat class：B:130℃ F:155℃
9 Coil power consumption：0.6:0.6W；0.9:0.9W；1.1:1.1W
NIL:2VA

Contact Data

Contact Arrangement		1A（SPSTNO） 1B(SPSTNC) 1C(SPDT(B-M))
Contact Material		AgCdO $AgSnO_2$
Contact Rating (resistive)		NO:30A/240VAC,14VDC; NC:20A/240VAC;30A/14VDC NO:40A/240VAC,30VDC; NC:30A/240VAC,30VDC (0.9W) 20A/240VAC(NT90R1.1) NO:30A/277VAC;NC:20A/277VAC Motor load：NO:2HP 250VAC；NC:1.5HP 250VAC Lamp load：TV-5 5A/280VAC(Ballast)
Max. Switching Power		1200W 7200VA （10000VA）
Max. Switching Voltage		110VDC 300VAC Max. Switching Current:40A
Contact Resistance or Voltage drop		≤ 30mΩ Item 4.12 of IEC 61810-7
Operation life	Electrical	10^5 2×10^4 (for NT90R1.1) Item 4.30 of IEC 61810-7
	Mechanical	10^7 5×10^6 (for NT90R1.1) Item 4.31 of IEC 61810-7

Coil Parameter

AC Coil Parameter

Dash numbers	Rated voltage VAC		Rated current mA	Coil resistance Ω±10%	Pick up voltage VAC(max) (75%of rated voltage)	Release voltage VAC(min) (30%of rated voltage)	Coil power	Operate Time ms	Release Time ms
	Rated	Max							
012AC	12	15.6	187	27	9.0	3.6	2VA	—	—
024AC	24	31.2	95	120	18.0	7.2			
110AC	110	143	20	2360	82.5	33.0			
120AC	120	156	16.5	3040	90.0	36.0			
220AC	220	286	6.4	13490	165.0	66.0			

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.

Coil Parameter

DC Coil Parameter

Dash numbers	Rated voltage V		Coil resistance Ω±10%	Pick up voltage V(max) (75%of rated voltage)	Release voltage V(min) (10%of rated voltage)	Coil power W	Operate Time ms	Release Time ms
	Rated	Max						
003-900	3	3.9	10	2.25	0.3	0.9	≤15	≤10
005-900	5	6.5	28	3.75	0.5			
006-900	6	7.8	40	4.50	0.6			
009-900	9	11.7	90	6.75	0.9			
012-900	12	15.6	160	9.00	1.2			
015-900	15	19.5	250	10.25	1.5			
018-900	18	23.4	360	13.50	1.8			
024-900	24	31.2	640	18.00	2.4			
048-900	48	62.4	2560	36.00	4.8			
110-900	110	143	13445	82.50	11.0			
003-600	3	3.9	15	2.25	0.3	0.6	≤15	≤10
005-600	5	6.5	42	3.75	0.5			
006-600	6	7.8	60	4.50	0.6			
009-600	9	11.7	135	6.75	0.9			
012-600	12	15.6	240	9.00	1.2			
015-600	15	19.5	375	10.25	1.5			
018-600	18	23.4	540	13.50	1.8			
024-600	24	31.2	960	18.00	2.4			
048-600	48	62.4	3840	36.00	4.8			
110-600	110	143	20167	82.50	11.0			

DC Coil Parameter

Dash numbers	Rated voltage V		Coil resistance Ω±10%	Pick up voltage V(max) (80%of rated voltage)	Release voltage V(min) (10% of rated voltage)	Coil power W	Operate Time ms	Release Time ms
	Rated	Max						
006-1100	6	7.8	33	4.8	0.6	1.1	≤15	≤10
012-1100	12	15.6	131	9.6	1.2			
024-1100	24	31.2	524	19.2	2.4			
048-1100	48	62.4	2095	38.4	4.8			

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.

Operation condition

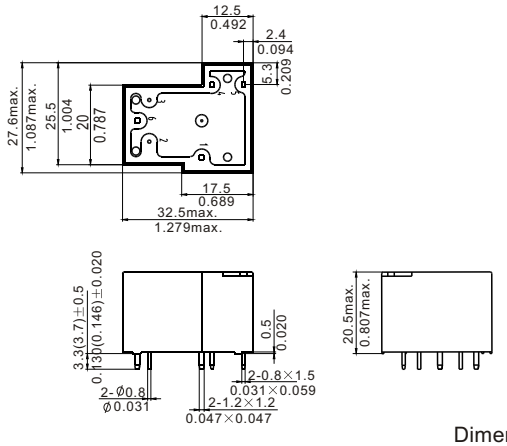
Insulation Resistance	1000MΩ min (at 500VDC)	Item 7 of IEC 60255-5
Dielectric Strength Between contacts Between contact and coil	 50Hz 1500V 50Hz 2500V 4000V（without Pin 6）	 Item 6 of IEC 60255-5 Item 6 of IEC 60255-5
Shock resistance	200m/s² 11ms	IEC 68-2-27 Test Ea
Vibration resistance	10Hz~55Hz double amplitude 1.5mm	IEC 68-2-6 Test Fc
Terminals strength	10N	IEC 68-2-21 Test Ua1
Solderability	235℃±2℃ 3s±0.5s	IEC 68-2-20 Test Ta method 1
Ambient Temperature	-55℃~100℃ -55℃~125℃	
Relative Humidity	85% (at 40℃)	IEC 68-2-3 Test Ca
Mass	27g（Open type） 30g	

Safety approvals

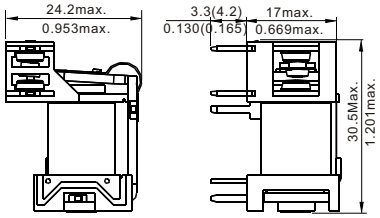
Safety approval	UL&CUR	TüV	CQC
Load	NO:40A/240VAC 30A/277VAC NC:30A/240VAC,30VDC 20A/277VAC Ballast:5A/280VAC TV-5 HP:NO:2 HP 250VAC A:1HP/16AFLA/120VAC 2HP/12AFLA/240VAC NC: $1\frac{1}{2}$HP 250VAC B:30LRA/10AFLA/120VAC 30LRA/10AFLA/240VAC	NO:40A/240VAC 14VDC 30A/277VAC NC:30A/240VAC 14VDC 20A/277VAC	NO:30A/240VAC NC:20A/240VAC

Dimensions

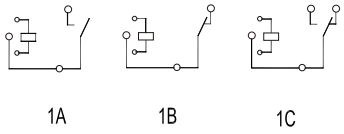
mm /inch



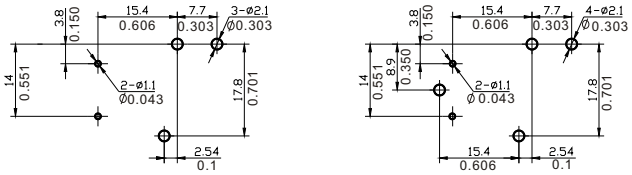
Dimensions



Open type



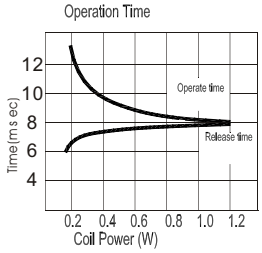
Wiring diagram(Bottom view)

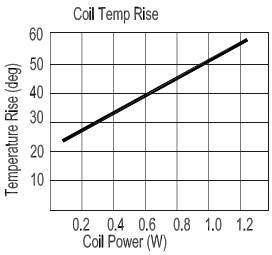


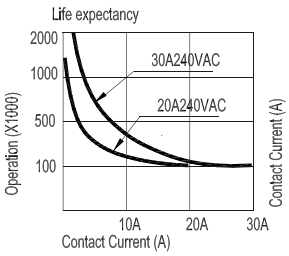
Mounting (Bottom view)

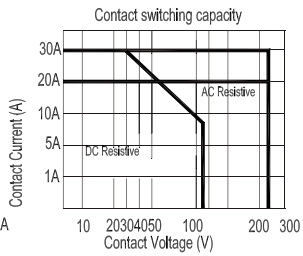
NOTES 1).Dimensions are in millimeters.
2).Inch equivalents are given for general information only.

Reference Data









10000VA

NT90 (T90)

30.5 ×24.2 ×17

32.5 ×27.6 ×20.5

CQC 03001003503 CE E9930952E01

c UL us E160644 R2033977

Patent No.: 95213824.7 99218304.9
99312549.2 01311661.4 02110881.1

Features

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

Ordering Information

NT90 R H A S DC12V C B 0.9
1 2 3 4 5 6 7 8 9

1 Part number: NT90(T90)
2 Terminal: R: without Pin6; NIL: With Pin6
3 Load: H:30A; N:40A
4 Contact arrangement: 1A:1A; 1B:1B; 1C:1C
5 Enclosure: S: Sealed type; D: Dust cover;
E: Covered; O: Open type

6 Coil rated voltage(V): AC:12,24,110,120,220
DC:3,5,6,9,12,15,18,24,48,110
7 Contact material: C: AgCdO; S: $AgSnO_2$; I: $AgSnO_2$ In_2O_3
8 Resist heat class: B:130℃ F:155℃
9 Coil power consumption: 0.6:0.6W; 0.9:0.9W
NIL:2VA

Contact Data

Contact Arrangement		1A (SPSTNO) 1B(SPSTNC) 1C(SPDT(B-M))	
Contact Material		AgCdO $AgSnO_2$ $AgSnO_2In_2O_3$	
Contact Rating (resistive)		NO:30A/240VAC,14VDC; NC:20A/240VAC;30A/14VDC NO:40A/250VAC,30VDC; NC:30A/250VAC,30VDC (0.9W) NO:30A/277VAC;NC:20A/277VAC Motor load: 2HP 250VAC ; 1.5HP 250V Lamp load: TV-5	
Max. Switching Power		1100W 7200VA	
Max. Switching Voltage		110VDC 250VAC	Max. Switching Current:40A
Contact Resistance or Voltage drop		≤ 30mΩ	Item 3.12 of IEC255-7
Operation life	Electrical	10^5	Item 3.30 of IEC255-7
	Mechanical	10^7	Item 3.31 of IEC255-7

Coil Parameter

AC Coil Parameter

Dash numbers	Rated voltage VAC		Rated current mA	Coil resistance Ω ±10%	Pick up voltage VAC(max) (75%of rated voltage)	Release voltage VAC(min) (30%of rated voltage)	Coil power	Operate Time ms	Release Time ms
	Rated	Max							
012AC	12	15.6	187	27	9.0	3.6	2VA	—	—
024AC	24	31.2	95	120	18.0	7.2			
110AC	110	143	20	2360	82.5	33.0			
120AC	120	156	16.5	3040	90.0	36.0			
220AC	220	286	6.4	13490	165.0	66.0			

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.

Coil Parameter

DC Coil Parameter

Dash numbers	Rated voltage V		Coil resistance Ω±10%	Pick up voltage V(max) (75%of rated voltage)	Release voltage V(min) (10%of rated voltage)	Coil power W	Operate Time ms	Release Time ms
	Rated	Max						
003-900	3	3.9	10	2.25	0.3	0.9	⩽15	⩽10
005-900	5	6.5	28	3.75	0.5			
006-900	6	7.8	40	4.50	0.6			
009-900	9	11.7	90	6.75	0.9			
012-900	12	15.6	160	9.00	1.2			
015-900	15	19.5	250	10.25	1.5			
018-900	18	23.4	360	13.50	1.8			
024-900	24	31.2	640	18.00	2.4			
048-900	48	62.4	2560	36.00	4.8			
110-900	110	143	13445	82.50	11.0			
003-600	3	3.9	15	2.25	0.3	0.6	⩽15	⩽10
005-600	5	6.5	42	3.75	0.5			
006-600	6	7.8	60	4.50	0.6			
009-600	9	11.7	135	6.75	0.9			
012-600	12	15.6	240	9.00	1.2			
015-600	15	19.5	375	10.25	1.5			
018-600	18	23.4	540	13.50	1.8			
024-600	24	31.2	960	18.00	2.4			
048-600	48	62.4	3840	36.00	4.8			
110-600	110	143	20167	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.

Operation condition

Insulation Resistance	1000MΩ min (at 500VDC)	Item 7 of IEC255-5
Dielectric Strength Between contacts Between contact and coil	 50Hz 1500V 50Hz 2500V 4000V (without Pin 6)	 Item 6 of IEC255-5 Item 6 of IEC255-5
Shock resistance	200m/s² 11ms	IEC68-2-27 Test Ea
Vibration resistance	10~55Hz double amplitude 1.5mm	IEC68-2-6 Test Fc
Terminals strength	10N	IEC68-2-21 Test Ua1
Solderability	235℃±2℃ 3±0.5s	IEC68-2-20 Test Ta method 1
Ambient Temperature	-55~100℃ -55~125℃	
Relative Humidity	85% (at 40℃)	IEC68-2-3 Test Ca
Mass	27g (Open type) 30g	

Qualification inspection:

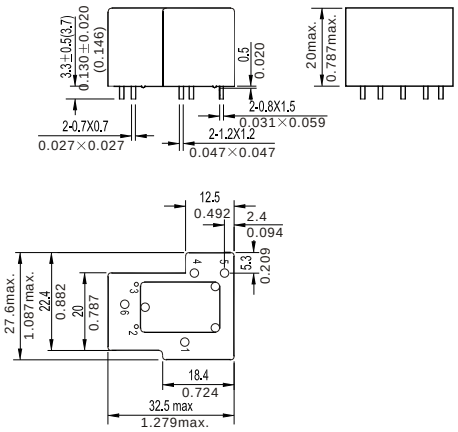
Perform the qualification test as specified in the table Ⅳ of IEC255-19-1 and minimum sample size 24.

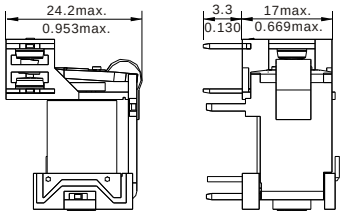
Safety approvals

Safety approval	UL&CUR	TüV	CQC
Load	NO:40A/240VAC 30A/277VAC NC:30A/240VAC 20A/277VAC 2 HP 250VAC TV-5 $1\frac{1}{2}$HP 250VAC HP:A 1HP/16AFLA/120VAC 2HP/12AFLA/240VAC B 30LRA/10AFLA/120VAC 30LRA/10AFLA/240VAC Insulation: B-class F-class	NO:40A/240VAC 14VDC NC:30A/240VAC 14VDC Insulation: B-class F-class	NO:30A/240VAC NC:20A/240VAC

Dimensions

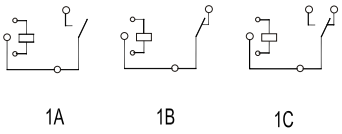
mm /inch



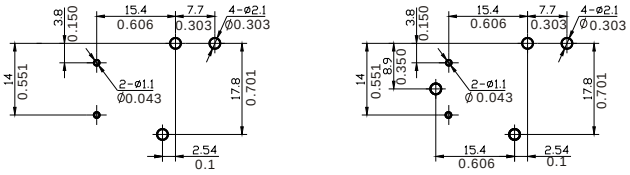


Open type

Dimensions



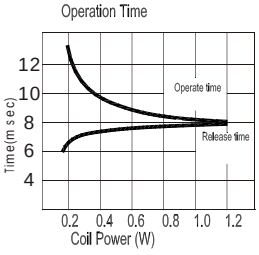
Wiring diagram(Bottom view)

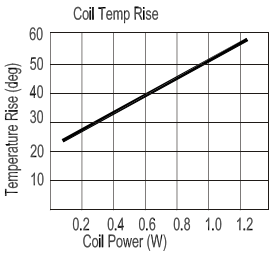


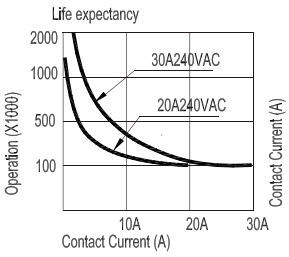
Mounting (Bottom view)

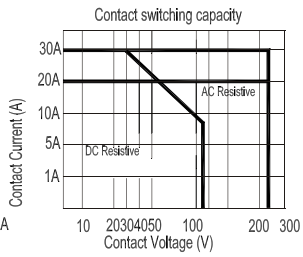
NOTES 1).Dimensions are in millimeters.
2).Inch equivalents are given for general information only.

Reference Data









32.5 ×27.6 ×20.5

NT90L

CQC 13002104039

c UL us E160644

Features

- Single and double coils magnet latching relay available.
- Switching capacity up to 50A.
- Energy saving and enviromental friendly product.

Ordering Information

NT90L 30 A S DC12V 0.9 D

1 2 3 4 5 6 7

1 Part number：NT90L
2 Load：30A,40A,50A/277VAC,28VDC （Resistive load）
5000W 240VAC （Incandescent Lamp ）
5A/280VAC;
16A/280VAC(50A)（Electronic ballast）
2HP 250VAC ;5HP 277VAC(50A)（Motor load）
3 Contact arrangement：A:1A；B:1B；C:1C
4 Enclosure：S: Sealed type；E: Covered；N:Open
5 Coil rated voltage(V)：5,12,24,48
6 Coil power consumption：0.9:0.9W;1.5:1.5W;
7 Coil: NIL:Singal coil; D:Double coils

Contact Data

Contact Arrangement		1A（SPSTNO） 1B(SPSTNC) 1C(SPDT(B-M))	
Contact Material		$AgSnO_2$	
Contact Rating (Resistive)		30A,40A/277VAC,28VDC 3 × 10^4; 50A/277VAC 5 × 10^4OPS（Resistive load）; 5000W 240VAC 3 × 10^4OPS;（Incandescent Lamp ）; 5A/280VAC 6000 OPS（Electronic ballast）; 2HP 250VAC 2 × 10^4OPS;5HP 277VAC 3 × 10^4OPS; （Motor load）;	
Max. Switching Power		1200W 12000VA;1500W 12500VA	
Max. Switching Voltage		110VDC 300VAC	Max. Switching Current:50A
Contact Resistance or Voltage drop		⩽ 20mΩ	Item 4.12 of IEC 61810-7
Operation life	Electrical	See contact rating	Item 4.30 of IEC 61810-7
	Mechanical	10^6	Item 4.31 of IEC 61810-7

Coil Parameter

Single Coil Parameter

Dash numbers	Rated voltage VDC	Coil resistance Ω ±10%	Switching voltage VDC (80%of rated voltage)	Operating voltage range VDC	Plus magnitude ms	Coil power	Operate Time ms	Reset Time ms
005-900	5	28	4.0	5~6	⩾100	0.9W	⩽15	⩽15
012-900	12	160	9.6	12~14.4				
024-900	24	640	19.2	24~28.8				
048-900	48	2560	38.4	48~57.6				

Dash numbers	Rated voltage VDC	Coil resistance Ω ± 10%	Switching voltage VDC (<80%of rated voltage)	Operating voltage range VDC	Plus magnitude ms	Coil powe W	Operate Time ms	Reset Time ms
Double Coil Parameter								
005-1500	5	17	4.0	5~6	⩾100	1.5W	⩽15	⩽15
012-1500	12	96	9.6	12~14.4				
024-1500	24	384	19.2	24~28.8				
048-1500	48	1536	38.4	48~57.6				

CAUTION: 1.When latching relays are installed in equipment, the latch and reset coil should not be powered simultaneously. Coil should not be pulsed with less than the nominal coil voltage and pulse width should be a minimum of three times the specified operate time of the relay. If these conditions are not followed, it is possible for the relay to in be the magnetically neutral position .

2.Switching voltage is for test purpose only and are no to be used as design criteria.

Safety approvals

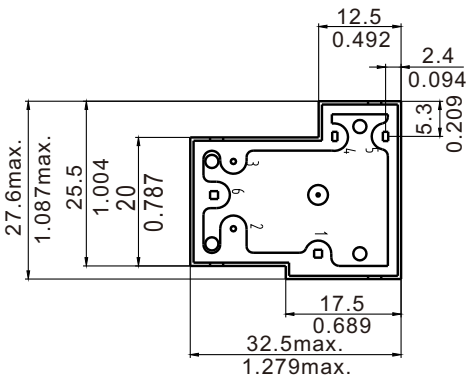
Safety approval	UL&CUR	CQC
Load	30A,40A/277VAC	30A,40A/277VAC

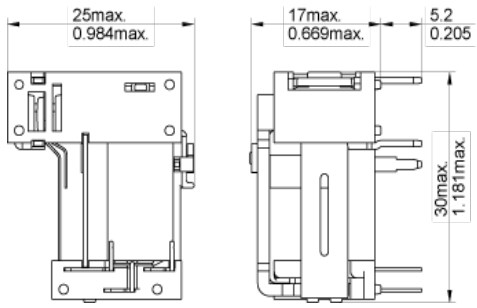
Operation condition

Insulation Resistance	1000MΩ min (at 500VDC)	Item 7 of IEC 60255-5
Dielectric Strength Between contacts Between contact and coil	 50Hz 1500V 1min 50Hz 2500V 4000V 1min	 Item 6 of IEC 60255-5 Item 6 of IEC 60255-5
Shock resistance	200m/s^2 11ms	IEC 68-2-27 Test Ea
Vibration resistance	10Hz~55Hz double amplitude 1.5mm	IEC 68-2-6 Test Fc
Terminals strength	10N	IEC 68-2-21 Test Ua1
Solderability	235℃±2℃ 3s±0.5s	IEC 68-2-20 Test Ta method 1
Ambient Temperature	-40℃~85℃	
Relative Humidity	85% (at 40℃)	IEC 68-2-3 Test Ca
Mass	28g	

Dimensions

mm /inch





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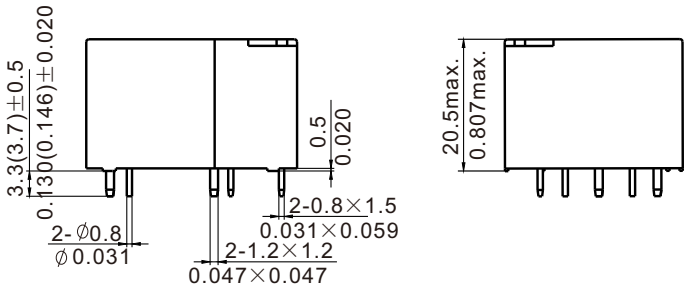

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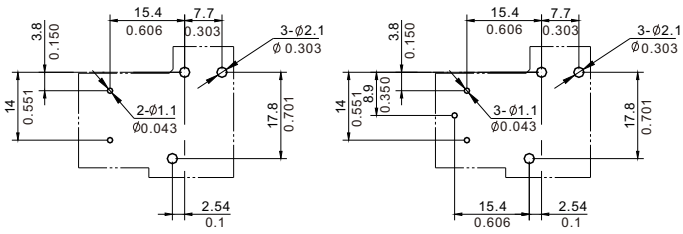
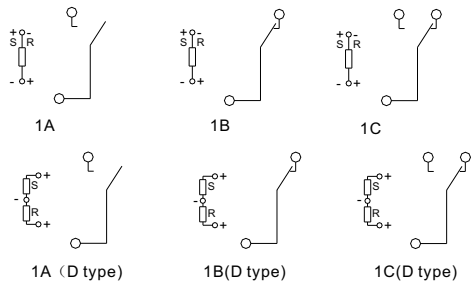


D type

Mounting (Bottom view)



S:Set R:Reset

Wiring diagram(Bottom view)

NOTES 1).Dimensions are in millimeters.
2).Inch equivalents are given for general information only.
3).Relays shall have plus (+) or plus (-) and minus signs placed on the ciruit diagram as shown.

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