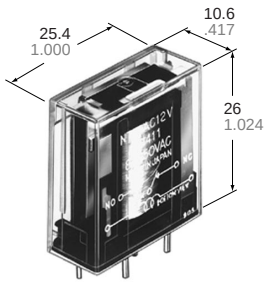
NAiS

VERTICAL TYPE
POWER RELAYS

NT-RELAYS



mm inch

UL File No.: E43149
CSA File No.: LR26550

- **High contact capacity of 8 A 250 V AC**
- **Sensitive: 140 mW (DC) low operating power**
- **Compact size, small mounting space for high density packaging**
- **Long life, Mechanical: more than 10^7 operations**
  Electrical (8 A 250 V AC resistive): more than 10^5 operations
- **Standard terminal grid, .100 inch (2.54 mm)**
- **AC coils available**

SPECIFICATIONS

Contacts

Arrangement			1 Form C
Initial contact pressure			Approx. 12 g 0.4 oz
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)			50 mΩ
Contact material			Gold-clad silver nickel
Rating (resistive)	Nominal switching capacity		8 A 250 VAC, 5 A 24 VDC
	Maximum switching power		2,000 VA (AC), 120 W (DC)
	Maximum switching voltage		250 V AC, 24 V DC
	Max. switching current		8 A
	UL/CSA rating		8 A, 1/10 HP 125, 250 V AC 5 A 30 V DC
Expected life (min. operations)	Mechanical		10^7
	Electrical (resistive)	8 A 250 V AC, 8 A 24 V DC	10^5
		5 A 250 V AC, 5 A 24 V DC	2×10^5

Coil

Nominal operating power	Approx. 290 mW (DC) Approx. 0.75 VA (AC)
Minimum operating power	Approx. 140 mW (DC), Approx. 0.48 VA (AC)

Characteristics

Maximum operating speed		20 cps. (DC), 5 cps. (AC)
Initial insulation resistance*1		Min. 1,000 MΩ at 500 V DC
Breakdown voltage*2	Between open contacts	1,000 Vrms
	Between contacts and coil	2,000 Vrms
Operate time*3 (at nominal voltage)		Approx. 10 ms
Release time(without diode)*3 (at nominal voltage)		Approx. 5 ms (DC), Approx. 20 ms (AC)
Temperature rise (at max. allowable voltage)		Max. 65°C
Shock resistance	Functional*4	Min. 98 m/s² {10 G}
	Destructive*5	Min. 980 m/s² {100 G}
Vibration resistance	Functional*6	98 m/s² {10 G}, 10 to 55 Hz at 1.6 mm double amplitude
	Destructive	117.6 m/s² {12 G}, 10 to 55 Hz at 2 mm double amplitude
Conditions for operation, transport and storage*7 (Not freezing and condensing at low temperature)	Ambient temp.	–55°C to +55°C –67°F to +131°F
	Humidity	5 to 85% R.H.
Unit weight		Approx. 14 g .49 oz

Remarks

*1 Measurement at same location as “Initial breakdown voltage” section
*2 Detection current: 10 mA
*3 Excluding contact bounce time
*4 Half-wave pulse of sine wave: 11ms; detection time: 10µs
*5 Half-wave pulse of sine wave: 6ms
*6 Detection time: 10µs
*7 Refer to 5. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT (Page 49)

TYPICAL APPLICATIONS

Electronic computer and peripheral equipment, data transmission equipment, security equipment, communication equipment, various machine tools, etc.

ORDERING INFORMATION

Ex. NT | 1 | DC12V

Contact arrangement	Coil voltage
1: 1 Form C	DC 5, 6, 12, 24 V

(Notes) 1. For UL/CSA recognized types, add suffix UL/CSA
2. Standard packing Carton: 50 pcs., Case: 500 pcs.

TYPES AND COIL DATA

DC coils at 20°C 68°F

Part No.	Nominal voltage	Pick-up voltage, (max.)	Drop-out voltage, (min.)	Coil resistance	Nominal operating current	Nominal operating power	Maximum allowable voltage
NT1-DC5V	5 V DC	3.5 V DC	0.5 V DC	100 Ω	50 mA	0.25 W	10 V DC
NT1-DC6V	6	4.2	0.6	130	46	0.28	12
NT1-DC12V	12	8.4	1.2	500	24	0.29	24
NT1-DC24V	24	16.8	2.4	2,000	12	0.29	48

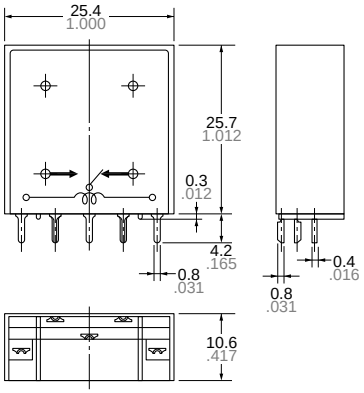
Note:

1. The range of coil current is ±15% for AC (60 Hz), ±10% for DC (20°C).

2. Each coil resistance of the DC types is the measured value at the coil temperature of 20°C. Compensate coil resistance by plus or minus 0.4% for each °C of coil temperature change.

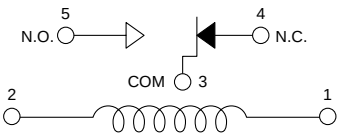
REFERENCE DATA

mm inch

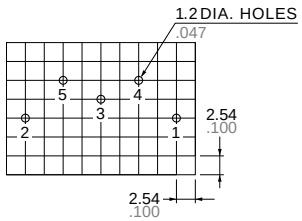


General tolerance: ±0.1 ±.004

Schematic (Bottom view)



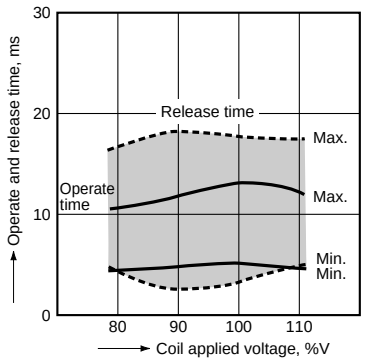
PC board pattern
(Copper-side view)



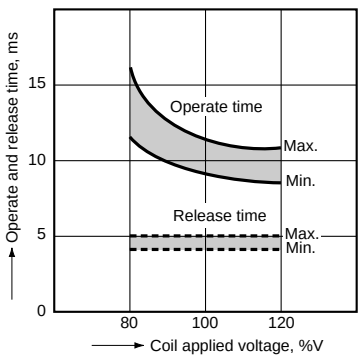
Tolerance: ±0.1 ±.004

REFERENCE DATA

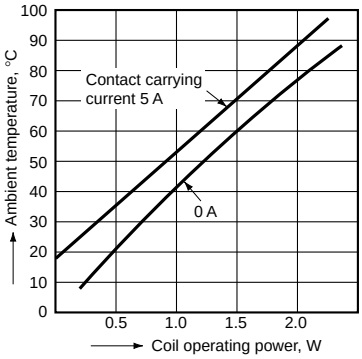
1. Operate and Release time (AC types)



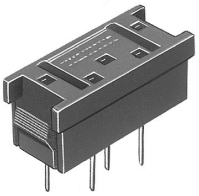
2. Operate and Release time (DC types)



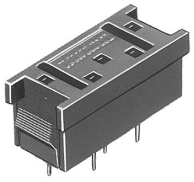
3. Coil temperature rise



NT relay socket



NT-SS
Solder terminal socket



NT-PS
PC board terminal socket

Specifications

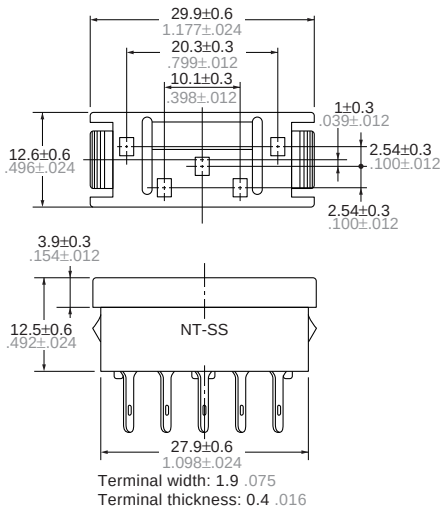
Breakdown voltage	2,000 Vrms between terminals
Insulation resistance	More than 100 MΩ between terminals
Heat resistance	150±3°C (302 ±5.4°F) for 1 hr
Maximum continuous current	5 A

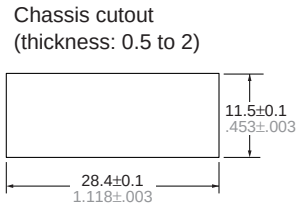
(Notes)
1. Do not insert or remove relays while in the energized condition.
2. Standard packing Carton: 50 pcs., Case: 200 pcs.

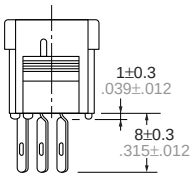
DIMENSIONS

mm inch

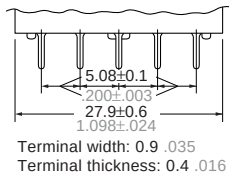
NT-SS

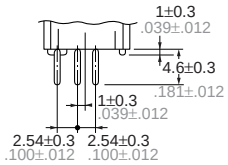




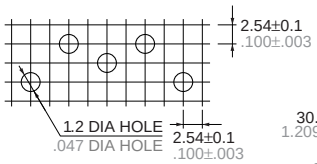


NT-PS

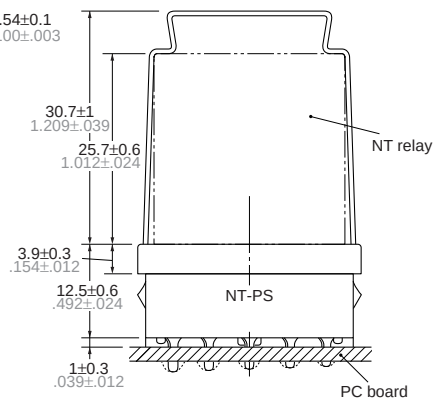




PC board pattern
(Copper-side view)



Relay mounted condition
(The holding spring is provided with each socket.)



For Cautions for Use, see Relay Technical Information (Page 36 to 64).