

Sub Miniature Printed Circuit Board Relays



NA/NAS* RELAY



L—0.590"
W—0.295"
H—0.385"

CONTACT DATA

Arrangement—2 form C (bifurcated contact)
Material—Gold overlaid silver alloy
Contact Resistance—50 mΩ max. (initial value)
Max. Switching Power—62.5 VA, 30 W
Max. Switching Voltage—125 VAC, 150 VDC
Ratings—125 VAC 0.5 A, 30 VDC 1A (resistive load)
Max. Carrying Current—2A
Life Expectancy—Mechanical: 100 million operations min.
Electrical: 600,000 operations min. at 30 VDC 1A
200,000 operations min. at 125 VAC 0.5A

COIL DATA

Voltages—3 to 48 VDC
Power (at 20°C)—
Single Winding Non--Latching—0.14 W (0.2 W for 24 V coil,
0.3 W for 48 V coil)
Single Winding Latching—0.1 W (0.15 W for 24 V coil)
Pick-up Voltage (at 20°C)—less than 75% of nominal voltage

GENERAL DATA

Insulation Resistance—1000 MΩ min. at 500 VDC
Dielectric Withstanding—1000 VAC 1 min. between open contacts
1000 VAC 1 min. between adjacent contacts
1500 VAC 1 min. between contacts and coil
[Single winding Non-latching]
[Single winding latching]
Lightning Surge—2500 V 2/10μs, between contacts and coil
[Single winding Non-latching]
[Single winding latching]

Temperature Range—-40°C ~ +85°C

Time Value—Operate: 4 msec max.
Release: 4 msec max. (with diode)

Vibration Resistance—20 G (10 ~ 500Hz) ... Non-erring
30 G (10 ~ 500Hz) ... Destructive

Shock Resistance—50 G (11±1 msec) ... Non-erring
100 G (6±1 msec) ... Destructive

* Substitute NAS prefix for SMD

Single Winding Non-Latching

Ordering Code	Nominal Coil Voltage (VDC)	Coil Resistance ±10% at 20°C (Ω)	Must Operate Voltage at 20°C (VDC)	Release or Reverse Operate Voltage at 20°C (VDC)	Coil Nominal Power (at 20°C)
NA 1.5 W-K	1.5	16.1	+ 1.13	+0.15	140
NA 3 W-K	3	64.3	+ 2.25	+0.15	140
NA 4.5 W-K	4.5	145	+ 3.37	+0.3	140
NA 5 W-K	5	178	+ 3.75	+0.5	140
NA 6 W-K	6	257	+ 4.5	+0.6	140
NA 9 W-K	9	570	+ 6.75	+0.9	140
NA 12 W-K	12	1,028	+ 9.0	+1.2	140
NA 18 W-K	18	1,820	+ 13.5	+1.8	200
NA 24 W-K	24	2,880	+ 18.0	+2.4	200
NA 48 W-K	48	7,680	+ 36.0	+4.8	300

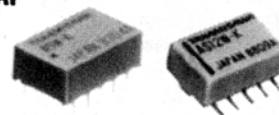
Single Winding Latching

Ordering Code	Nominal Coil Voltage (VDC)	Coil Resistance ±10% at 20°C (Ω)	Must Operate Voltage at 20°C (VDC)	Release or Reverse Operate Voltage at 20°C (VDC)	Coil Nominal Power (at 20°C)
NAL 1.5 W-K	1.5	22.6	+ 1.13	-0.13	100
NAL 3 W-K	3	90	+ 2.25	-2.25	100
NAL 4.5 W-K	4.5	203	+ 3.37	-3.37	100
NAL 5 W-K	5	250	+ 3.75	-3.75	100
NAL 6 W-K	6	360	+ 4.5	-4.5	100
NAL 9 W-K	9	810	+ 8.75	-8.75	100
NAL 12 W-K	12	1,440	+ 9.0	-9.0	100
NAL 18 W-K	18	2,160	+ 13.5	-13.5	150
NAL 24 W-K	24	3,840	+ 18.0	-18.0	150



A/AS RELAY

L—0.551",
W—0.354",
H—0.197"



CONTACT DATA

Arrangement—2FormC (DPDT)
Material—Stationary... Gold overlaid silver palladium
Movable... Silver palladium
Resistance—Max. 100mΩ (Initial)
Rating—1A 30V DC or 0.5A 125V AC (Resistive)
Life expectancy—Mechanical: Min 100 million operations
Electrical: Min 500,000 operations at 1A 30V DC
: Min 200,000 operations at 0.5A 125V AC

COIL DATA

Voltages—4.5 to 48V DC
Power (at 20°C)—Operate 0.07W (0.11W for 24V coil)
Nominal 0.14W (0.2W for 24V coil)
Operate (at 20°C)—70% of nominal voltage
Duty—Continuous.

GENERAL DATA

Insulation resistance—Min. 1000MΩ at 500V DC
Dielectric strength—1000V AC between open contact, coil-contact, adjacent contact
Surge strength—1500V
Temperature range—-40°C - +85°C at nominal voltage
Time Value (at nominal voltage)—Operate Max. 6mS Release Max. 4mS
Vibration Resistance—10 to 55Hz amplitude 3mm... Unerring
10 to 55Hz amplitude 5mm... Destructive } Reference Value
Shock Resistance—50G (11 mS)... Unerring
100G (6mS)... Destructive

Enclosure—PBT

Notes:

• Since this is the polarized relay, confirm the relays performance in the actual circuit, prior to use. When relays are expected to be mounted very closely together or to be used under strong magnetic fields.

Single Winding Non-Latching

Substitute AS Prefix for SMD Type

Ordering Code	Nominal Coil Voltage (VDC)	Coil Resistance ±10% at 20°C (Ω)	Must Operate Voltage at 20°C (VDC)	Release or Reverse Operate Voltage at 20°C (VDC)
A-3W-K	3	64.3	+2.1	+0.3
A-4.5W-K	4.5	145	+3.15	+0.45
A-5W-K	5	178	+3.5	+0.5
A-6W-K	6	257	+4.2	+0.6
A-9W-K	9	579	+6.3	+0.9
A-12W-K	12	1028	+8.4	+1.2
A-18W-K	18	1620	+12.6	+1.8
A-24W-K	24	2880	+16.8	+2.4
A-48W-K	48	7680	+33.6	+4.8

Single Winding Latching

Ordering Code	Nominal Coil Voltage (VDC)	Coil Resistance ±10% at 20°C (Ω)	Must Operate Voltage at 20°C (VDC)	Release or Reverse Operate Voltage at 20°C (VDC)
AL-3W-K	3	90	+2.1	-2.1
AL-4.5W-K	4.5	203	+3.15	-3.15
AL-5W-K	5	250	+3.5	-3.5
AL-6W-K	6	360	+4.2	-4.2
AL-9W-K	9	810	+6.3	-6.3
AL-12W-K	12	1440	+8.4	-8.4
AL-18W-K	18	2160	+12.6	-12.6
AL-24W-K	24	3840	+16.8	-16.8

Double Winding Latching

Ordering Code	Nominal Coil Voltage (VDC)	Coil Resistance ±10% at 20°C (Ω)	Must Operate Voltage at 20°C (VDC)	Release or Reverse Operate Voltage at 20°C (VDC)
AL-D3W-K	3	P 45 S 45	+2.1	+2.1
AL-D4.5W-K	4.5	P 101 S 101	+3.15	+3.15
AL-D5W-K	5	P 125 S 125	+3.5	+3.5
AL-D6W-K	6	P 180 S 180	+4.2	+4.2
AL-D9W-K	9	P 405 S 405	+6.3	+6.3
AL-D12W-K	12	P 720 S 720	+8.4	+8.4
AL-D18W-K	18	P 1080 S 1080	+12.6	+12.6
AL-D24W-K	24	P 1920 S 1920	+16.8	+16.8

P: Single Winding Coil
S: Double Winding Coil

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RELAYS