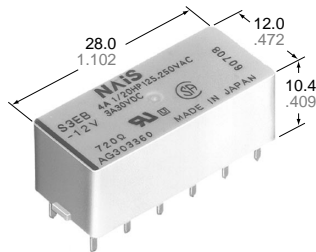


Nais

4 AMP POLARIZED HIGH DENSITY RELAY WITH HIGH SENSITIVITY

S-RELAYS



mm inch

FEATURES

- A variety of contact arrangements 2 Form A 2 Form B, 3 Form A 1 Form B, 4 Form A
- Latching types available
- High sensitivity in small size 100 mW pick-up and 200 mW nominal operating power
- High shock and vibration resistance
Shock: 50 G Vibration: 10 to 55 Hz at double amplitude of 3 mm
- Wide switching range From 100 μ A 100 mV DC to 4 A 250 V AC
- Low thermal electromotive force Approx. 3 μ V
- Dual-In-Line packaging arrangement

SPECIFICATIONS

Contacts

Arrangement	2 Form A 2 Form B, 3 Form A 1 Form B, 4 Form A	
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)	50 m Ω	
Initial contact pressure	Approx. 12 g .42 oz	
Initial contact bounce, max.	1 ms	
Contact material	Gold clad silver alloy	
Electrostatic capacitance	Approx. 3pF	
Thermal electromotive force (at nominal coil voltage)	Approx. 3 μ V	
Rating (resistive)	Nominal switching capacity	4 A 250 V AC, 3 A 30 V DC
	Maximum switching power	1,000 VA, 90 W
	Maximum switching voltage	250 V AC, 30 V DC (48 VDC at less than 0.5 A)
	Max. switching current	4 A (AC), 3 A (DC)
	Min. switching capacity**1	100 μ A 100 m V DC
Expected life (min. operations)	Mechanical (at 50 cps) 10 ⁸	
	Electrical (at 20 cpm)	4 A 250 V AC 10 ⁵
		3 A 30 V DC 2 \times 10 ⁵

Coil (polarized) (at 20°C 68°F)

Single side stable	Minimum operating power	Approx. 100 mW
	Nominal operating power	Approx. 200 mW
Latching	Minimum set and reset	Approx. 100 mW
	Nominal set and reset	Approx. 200 mW

Notes:

**1 This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

Remarks

- * Specifications will vary with foreign standards certification ratings.
- *1 Measurement at same location as "Initial breakdown voltage" section
- *2 Detection current: 10mA
- *3 Excluding contact bounce time
- *4 Half-wave pulse of sine wave: 11ms; detection time: 10 μ s
- *5 Half-wave pulse of sine wave: 6ms
- *6 Detection time: 10 μ s
- *7 Refer to 5. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT (Page 61).

Characteristics (at 25°C 77°F 50% Relative humidity)

Max. operating speed	20 cpm for maximum load, 50 cps for low-level load (1 mA 1 V DC)	
Initial insulation resistance*1	10,000 M Ω at 500 V DC	
Initial breakdown voltage*2	Between open contacts	750 Vrms
	Between contact sets	1,000 Vrms
	Between contacts and coil	1,500 Vrms
Operate time*3 (at nominal voltage)(at 20°C)	Max. 15 ms (Approx. 8 ms)	
Release time (without diode)*3 (at nominal voltage)(at 20°C)	Max. 10 ms (Approx. 5 ms)	
Set time*3 (latching) (at nominal voltage)(at 20°C)	Max. 15 ms (Approx. 8 ms)	
Reset time*3 (latching) (at nominal voltage)(at 20°C)	Max. 15 ms (Approx. 8 ms)	
Initial contact bounce, max.	1 ms	
Temperature rise (at nominal voltage)(at 20°C)	Max. 35°C with nominal coil voltage and at maximum switching current	
Shock resistance	Functional*4	Min. 490 m/s ² {50 G}
	Destructive*5	Min. 980 m/s ² {100 G}
Vibration resistance	Functional*6	176.4 m/s ² {18 G}, 10 to 55 Hz at double amplitude of 3 mm
	Destructive	235.2 m/s ² {24 G}, 10 to 55 Hz at double amplitude of 4 mm
Conditions for operation, transport and storage*7 (Not freezing and condens- ing at low temperature)	Ambient temp.	-40°C to +65°C -40°F to +149°F
	Humidity	5 to 85% R.H.
Unit weight	Approx. 8 g .28 oz	

TYPICAL APPLICATIONS

Telecommunications equipment, data processing equipment, facsimiles, alarm equipment, measuring equipment.

S

ORDERING INFORMATION

Ex. S — 2 — L2 — 48 V

Product name	Contact arrangement	Operating function	Coil voltage, V DC
S	2: 2 Form A 2 Form B 3: 3 Form A 1 Form B 4: 4 Form A	Nil: Single side stable L: 1 coil latching L2: 2 coil latching	3, 5, 6, 12, 24, 48

Notes: 1) Standard packing; Carton 50 pcs. Case 500 pcs.
2) UL/CSA approved type is standard.

TYPES AND COIL DATA at 20°C 68°F

Single side stable

Type	Nominal voltage, V DC	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Nominal operating current, mA	Coil resistance, Ω ($\pm 10\%$)	Inductance, mH	Nominal operating power, mW	Maximum allowable voltage, V DC (40°C)
S□-3V	3	2.1	0.3	66.7	45	23	200	5.5
S□-5V	5	3.5	0.5	38.5	130	65	192	9.0
S□-6V	6	4.2	0.6	33.3	180	93	200	11.0
S□-12V	12	8.4	1.2	16.7	720	370	200	22.0
S□-24V	24	16.8	2.4	8.4	2,850	1,427	202	44.0
S□-48V	48	33.6	4.8	5.6	8,500	3,410	271	75.0

1 coil latching

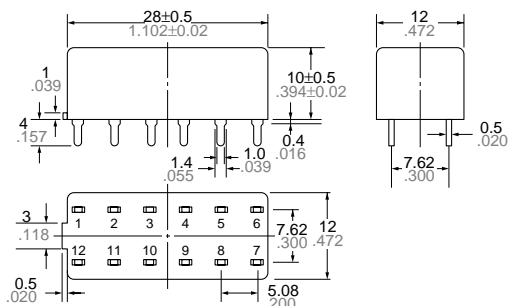
Type	Nominal voltage, V DC	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Nominal operating current, mA	Coil resistance, Ω ($\pm 10\%$)	Inductance, mH	Nominal operating power, mW	Maximum allowable voltage, V DC (40°C)
S□-L1-3V	3	2.1	0.3	33	90	0.04	99	8.4
S□-L1-5V	5	3.5	0.5	16	300	0.14	80	15.3
S□-L1-6V	6	4.2	0.6	16	360	0.14	96	16.8
S□-L1-12V	12	8.4	1.2	8	1450	0.6	96	33.7
S□-L1-24V	24	16.8	2.4	4	5700	2.05	96	66.7
S□-L1-48V	48	33.6	4.8	3	16,000	8.9	144	111

2 coil latching

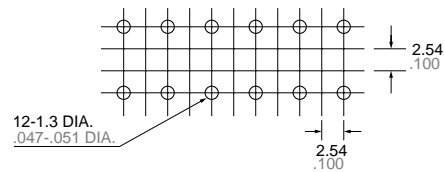
Type	Nominal voltage, V DC	Set and reset voltage, V DC (max.)	Nominal operating current, mA	Coil resistance, Ω ($\pm 10\%$)		Inductance, mH		Nominal operating power, mW	Maximum allowable voltage, V DC (40°C)
				Coil I	Coil II	Coil I	Coil II		
S□-L2-3V	3	2.1	66.7	45	45	10	10	200	5.5
S□-L2-5V	5	3.5	38.5	130	130	31	31	192	9.0
S□-L2-6V	6	4.2	33.7	180	180	40	40	200	11.0
S□-L2-12V	12	8.4	16.7	720	720	170	170	200	22.0
S□-L2-24V	24	16.8	8.4	2,850	2,850	680	680	202	44.0
S□-L2-48V	48	33.6	7.4	6,500	6,500	1,250	1,250	355	65.0

Note: Insert 2, 3 or 4 in □ for contact form required.

DIMENSIONS



PC board pattern (Copper-side view)



General tolerance: $\pm 0.3 \pm .012$

Tolerance: $\pm 0.1 \pm .003$