



# NVF4-1 & NVF4-2

Features	
• Small size and light weight.	
• Heavy contact load (40A).	
• Suitable for automobile and lamp accessories application.	
• PC board mounting and direct insert mounting available.	
• 24V versions with contact gap >0.8mm.	

Ordering Information	
NVF4-1 C Z 30 b DC12V 1.6 C D	
1 2 3 4 5 6 7 8 9	
1 Part number: NVF4-1, NVF4-2 (Insulation Bracket), NVF4-2a (With Metal Bracket), Contact Arrangement: 1A, 1B, 1C, 1U) NVF4-2b (Shrouded Type With Metal Bracket)	5 Terminals: b: PCB type; a1: plug in type 1; a2: plug in type 2
2 Contact arrangement: A: 1A1; A2: 1A2; B: 1B; C: 1C; C2: 1C2; U: 1U	6 Coil rated voltage (V): DC: 6, 12, 24, 48
3 Enclosure: S: Sealed type; Z: Dust cover;	7 Coil power consumption: 1.6: 1.6W; 1.9: 1.9W; 2.3: 2.3W; 2.6: 2.6W
4 Contact current: A Form: 20A, 40A; B Form: 20A, 30A; C Form: 15A, 20A, 30A, 40A; U Form: 2×15A, 2×20A	8 Contact material: C: AgCdO; N: AgNi; NIL: AgSnO <sub>2</sub>
	9 Coil transient suppression: D: with diode; 2D: with two diodes; R: with resistance; DR: with diode and resistance; NIL: standard

Contact Data													
Contact Arrangement	1A (SPSTNO), 1B (SPSTNC), 1C (SPDT(B-M)), 1U (SPSTNODM)												
Contact Material	AgCdO, AgSnO <sub>2</sub> , AgNi												
Contact Rating (resistive)	<table border="1"> <thead> <tr> <th>1A</th> <th>1B</th> <th>1C</th> <th>1U</th> </tr> </thead> <tbody> <tr> <td>40A/14VDC</td> <td>30A/14VDC</td> <td>NO: 40A/14VDC NC: 30A/14VDC</td> <td>2×20A/14VDC</td> </tr> <tr> <td>20A/24VDC</td> <td>20A/24VDC</td> <td>15A, 20A/24VDC</td> <td>2×15A/24VDC</td> </tr> </tbody> </table>	1A	1B	1C	1U	40A/14VDC	30A/14VDC	NO: 40A/14VDC NC: 30A/14VDC	2×20A/14VDC	20A/24VDC	20A/24VDC	15A, 20A/24VDC	2×15A/24VDC
1A	1B	1C	1U										
40A/14VDC	30A/14VDC	NO: 40A/14VDC NC: 30A/14VDC	2×20A/14VDC										
20A/24VDC	20A/24VDC	15A, 20A/24VDC	2×15A/24VDC										
Max. Switching Power	630W												
Max. Switching Voltage	75VDC												
Contact Resistance or Voltage drop	< 30mΩ												
Operate Time	Electrical: 10 <sup>-3</sup> Mechanical: 10 <sup>-2</sup>												
Release Time	Item 4.12 of IEC 61810-7 Item 4.30 of IEC 61810-7 Item 4.31 of IEC 61810-7												

NOTE: Special high performance 24V version with contact gap >0.8mm; Limiting continuous current at 125°C: NO: 10A/15A, 1U: 2×11A.

### Coil Parameter

Dash numbers	Coil voltage VDC		Coil resistance Ω ± 10%	Pick up voltage VDC (max) (65% of rated voltage)	Release voltage VDC (min) (10% of rated voltage)	Coil power consumption W	Operate Time ms	Release Time ms
	Rated	Max.						
006-1600	6	7.8	22.5	3.9	0.6			
009-1600	9	11.7	50.6	5.9	0.9			
012-1600	12	15.6	90	7.8	1.2	1.6		
024-1600	24	31.2	360	15.6	2.4			
048-1600	48	62.4	1440	31.2	4.8			
006-1900	6	7.8	19	3.9	0.6			
012-1900	12	15.6	75.8	7.8	1.2	1.9	< 7	< 5
024-1900	24	31.2	303.2	15.6	2.4			
006-2300	6	7.8	15.6	3.9	0.6			
012-2300	12	15.6	62.6	7.8	1.2	2.3		
024-2300	24	31.2	250.4	15.6	2.4			
006-2600	6	7.8	13.8	3.9	0.6			
012-2600	12	15.6	55.4	7.8	1.2	2.6		
024-2600	24	31.2	221.5	15.6	2.4			

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 <sup>1)</sup>	100MΩ min (at 500VDC)	Item 7 of IEC 60255-5
Dielectric Strength <sup>1)</sup>		
Between contacts	50Hz 500V	Item 6 of IEC 60255-5
Between contact and coil	50Hz 750V	Item 6 of IEC 60255-5
Shock resistance	147m/s <sup>2</sup> 11ms	IEC 68-2-27 Test Ea
Vibration resistance	10Hz~40Hz double amplitude 1.5mm	IEC 68-2-6 Test Fc
Terminals strength	8N 4N (PC type)	IEC 68-2-21 Test Ua2
Solderability	235°C ± 2°C 3s ± 0.5s	IEC 68-2-20 Test Ta method 1
Ambient Temperature	-40°C~125°C	
Relative Humidity	85% (at 40°C)	IEC 68-2-3 Test Ca
Mass	31g (NVF4-1); 36g (NVF4-2); 45g (NVF4-2b)	

Note: 1). When testing, coil terminals should be connected, if coil transient suppression is installed in relay.

### Dimensions

mm / inch

NVF4-1 type

NVF4-2 type

Dimensions

NVF4-2b type

PCB type

Plug in type 1

Plug in type 2

Mounting (Bottom view)

Wiring diagram (Bottom view)

1A1, 1A2, 1B, 1C1, 1C2, 1U

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