WR11

Miniature PCB Relay

» Features

- 5A switching capacity
- 1 form A and 1 form C contact configuration
- Max. ambient temperature 105°C
- 4kV impulse withstand voltage (between coil and contact)
- Low coil power consumption (400mW or 200mW)
- UL insulation system: class F
- Accordance with IEC60335-1
- Accordance with EN/IEC60079-15

19.8 x 9.9 x 15.2 [mm]

» Application Examples

- Air conditioners, refrigerators
- Microwave ovens
- Heaters

» Ordering Information

WR11	100	E	12	S	P	C	Nil
1	2	3	4	5	6	7	8

1. Type: WR11
2. Contact configuration: 100 = 1NO (1 form A)
001 = 1CO (1 form C)
3. Contact material: E = Ag Alloy
4. DC Coil voltage: 5 = 5V; 9 = 9V; 12 = 12V
24 = 24V
5. Protection: Nil = Vented (Flux-tight, RTII)
S = Sealed (washable, RTIII)
6. Material: Nil = CTI≥250V
P = CTI≥175V
7. Coil power: Nil = 400mW (1CO only)
C = 200mW (1NO only)
8. Special Suffix: Nil = Standard

» Contact Data

Contact Arrangement	1 form C (CO) or 1 form A (NO)
Contact Material	Ag alloy
Contact Rating (Resistive Load)	5A, 250VAC, 105°C
Max. Switching Voltage	277VAC
Max. Switching Current	15A
Min. Switching Capacity	100mA, 5VDC
Contact Resistance	≤100mΩ (by voltage drop 6VDC/1A)
Electrical endurance	100 x 10^3;
Mechanical endurance	10 x 10^6

» Coil Rating

Coil voltage [VDC]	Coil Resistance R[Ω] ± 10%	Pull-in Voltage [VDC]	Drop-out Voltage [VDC]	Coil Power [mW]	Max. Applied Voltage [VDC]
5	63	≤ 75% of nominal voltage	≥ 5% of nominal voltage	400	≤ 130% of nominal voltage
9	202				
12	360				
24	1440				
5	125			200	
9	405				
12	720				
24	2880				

The data shown in Coil Rating tables are initial values

All specifications subject to change. Consult NF FORWARD for latest specifications.

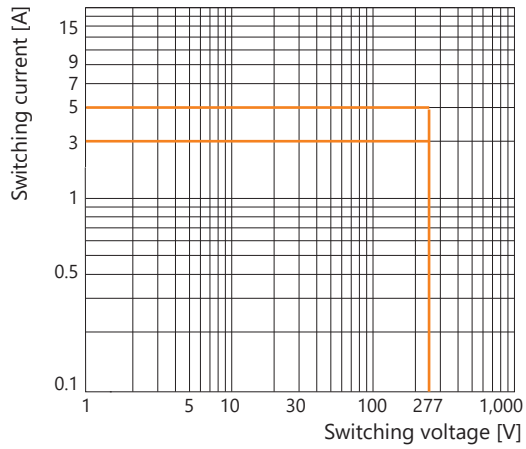
» Specification

Creepage / Clearance Distance	≥ 7mm / ≥ 5mm
Initial Dielectric Strength	between open contacts 1000V, 50/60 Hz for 1 min
	between contact and coil 4000V, 50/60 Hz for 1 min
Impulse withstand voltage	between contact and coil 5kV (1.2 x 50μs)
Material Group of Insulation Parts	IIIa
Over Voltage Category	III
Tracking Index	CTI≥175V for P material, CTI≥250V for standard material
Glow wire according to IEC60335-1	GWFI 850°C and GWIT 775°C
Envrionmental Protection	RTII (Vented, Flux tight) / RTIII (Sealed, Washable)
Operate Time / Release Time	≥ 20ms / ≥ 10ms (@ nominal voltage)
Frequency of Operation	360 / hour (With load)
	18000 / hour (Without load)
Vibration Resistance (Malfunction)	10 to 55 to 10 Hz , 1.5mm double amplitude
Shock Resistance (Malfunction)	98m/s²
Ambient Operating Temperature 1)	-40 to +105°C
Ambient Operating Humidity 1)	20% to 85%
Weight	Approx. 7g
Packing Unit	20 pcs / tube; 1000 pcs / box;

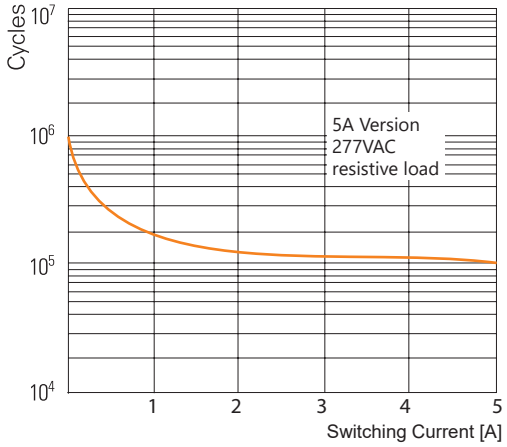
1) Without icing or condensation

» Engineering Data

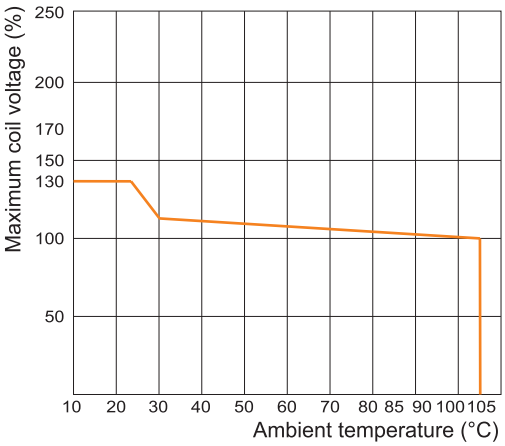
Max. switching capacity



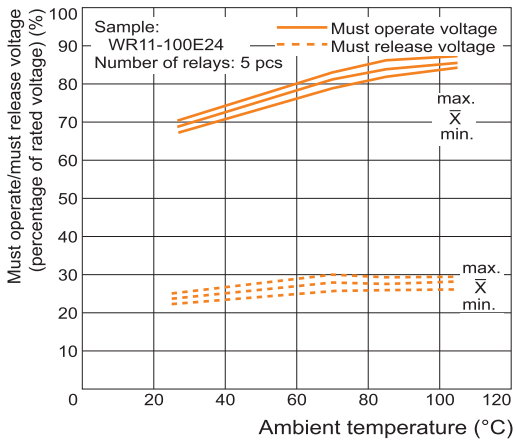
Electrical Endurance



Ambient Temperature vs. Maximum Coil Voltage



Ambient Temperature vs. Must Operate and Must Release Voltages



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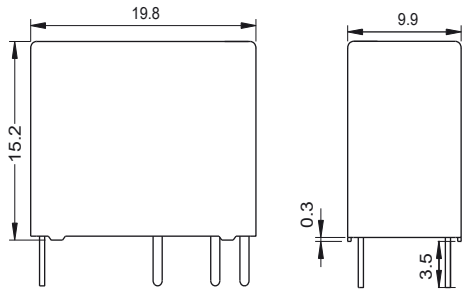
» Safety approvals

Approval	File No.	Rating(s)
VDE	40048250	1 form A: 5A, 277VAC, cosΦ=0.4, 85°C, 100k ops.; 5A, 30VDC, 105°C, 50k ops. 1 form C: 5A/3A, 277VAC, cosΦ=0.4, 85°C, 25k ops.
UL	E352916	1 form A: 5A, 277VAC, resistive, 105°C, 100k ops.; 5A, 30VDC, resistive, 105°C, 100k ops.; 1/6HP, 277VAC, 105°C, 30k ops.; C300, 85°C, 6k ops. 1 form C: NO: 5A, 277VAC, resistive, 105°C, 100k ops.; NO: C300, 85°C, 6k ops.; NC: 3A, 277VAC, resistive, 105°C, 100k ops.

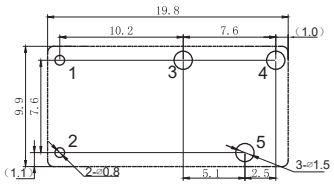
» Dimensions

1 form C

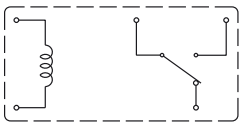
Dimensions



PCB Mounting Holes (Bottom View)

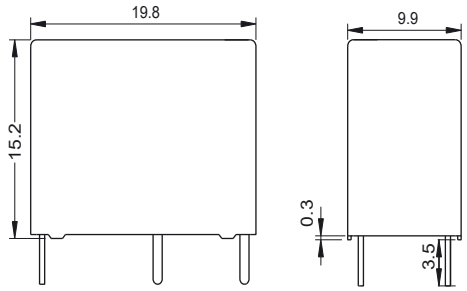


Wiring Diagram

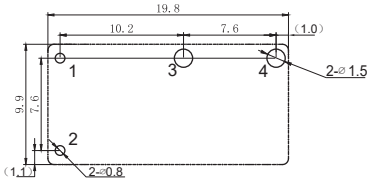


1 form A

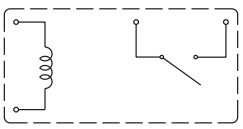
Dimensions



PCB Mounting Holes (Bottom View)



Wiring Diagram



Tolerance

Outline dimension	
<1mm	±0.2mm
1~5mm	±0.3mm
>5mm	±0.4mm
PCB board layout	
Pitch-row	±0.1mm
Aperture	+0.1mm

Disclaimer
All technical performance data apply to the relay as such, specific conditions of the individual application are not considered. Please always check the suitability of the relay for your intended purpose. We do not assume any responsibility or liability for not complying herewith. Any responsibility for the application of the product remains with the customer only. All specified values apply at room temperature, unless otherwise stated. All specifications are subject to change without notification. All rights are reserved.