

Ultra-Miniature Automotive PCB Relay

G8NW-2

- Compact size.
- High performance PCB relay.
- Fully automated assembly.
- Fully sealed construction.
- Separate SPDT contacts.



Ordering Information

Description	Model
Standard type	G8NW-2
High sensitivity (low pull-in voltage)	G8NW-2S
High temperature (150° C)	G8NW-2L
High temperature / high sensitivity	G8NW-2H
Flasher load switching	G8NW-2F
Ultra-high sensitivity	G8NW-2U
Reflow solder type	G8NW-2R
Pin in paste solder type	G8NW-2C

Typical Applications

- Power windows/power door lock
- Smart junction box and module applications
- Seat adjustment
- Sunroof

Specifications

Contact Data

Max. switching current	30 A
Max. switching voltage	16 V
Max. carry current	25 A (at 20° C for 1 hour)
Min. carry current	100 mA
Contact material	Silver tin alloy – cadmium free (PdRu for -F type)

Coil Ratings (at 20° C)

Type	Rated voltage	Coil resistance (±10%)	Nominal power consumption	Pull in voltage	Dropout voltage
G8NW-2	12 VDC	225 Ω	640 mW	< 7.2 V	> 1.0 V
G8NW-2L		180 Ω	800 mW	< 6.5 V	
G8NW-2S				< 7.2 V	
G8NW-2H		130 Ω	1108 mW	< 5.5 V	
G8NW-2F				< 7.2 V	
G8NW-2U		< 5.5 V			
G8NW-2R		–	–	–	
G8NW-2C	–	–	–	–	

Characteristics

Max. initial contact voltage drop/resistance		250 mV @ 10 A/50 mΩ @ 1 A
Operate time		10 ms max. (2.5 ms typical) @ 12 VDC
Release time		10 ms max. (1.2 ms typical) (see Note)
Bounce time	Operate	5 ms max. (0.5 ms typical)
	Release	10 ms max. (4.0 ms typical)
Switching frequency	Mechanical	18,000 operations per hour
	Electrical	1,800 operations per hour (under rated loading)
Insulation resistance		100 MΩ min. (@ 500 VDC)
Dielectric strength		1.0 mA max. leakage at 500 VAC, 50-60 Hz for 1 minute between coil & contacts and between contacts
Vibration	Mechanical durability	10-500 Hz, 44.1 m/s ²
	Malfunction durability	10-500 Hz, 44.1 m/s ²
Shock	Mechanical durability	1000 m/s ²
	Malfunction durability	100 m/s ² min.
Ambient operating temperature		-40°C to 85°C (105°C max. for -L and -H types)
Humidity		35% to 85% RH
Service life	Mechanical	1,000,000 operations
	Electrical	100,000 operations (load dependant)
Weight		8.0 g (approx.)

Note: External coil suppression will cause a measurable increase in release times and may cause the relay's characteristics to fall out of the specifications given here.

Characteristics Reference Data

■ Durability Test Data

Relay	Load type	Current	Cycles tested
G8N / G8NW / G8ND	Power window motor (locked)	26 A	200,000
	Door lock motor	27 A 8A Steady state	130,000

Normalized Coil Resistance vs. Temperature (20° C reference)



Example: Resistance of 225Ω coil
 = 75% of 225Ω at -40° C, or 169Ω
 = 100% of 225Ω at 20° C, or 225Ω
 = 125% of 225Ω at 85° C, or 281Ω

Load Limit Curve



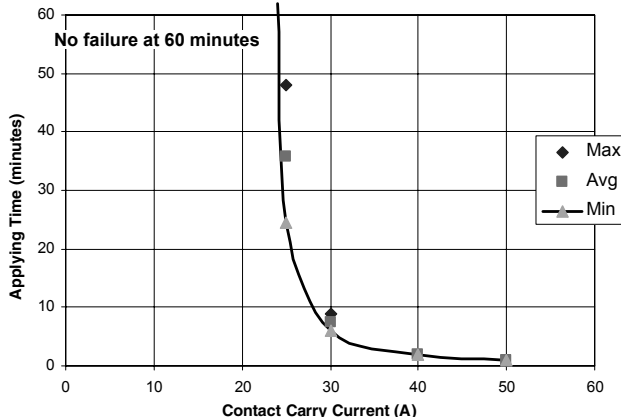
Coil Temperature vs. Applied Voltage at 20°C (G8N-1, 225Ω coil)



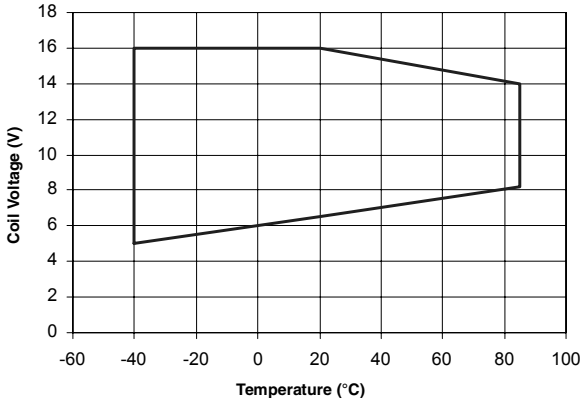
Overcurrent Energization (20°C, G8N-1 225Ω coil, 4 samples)



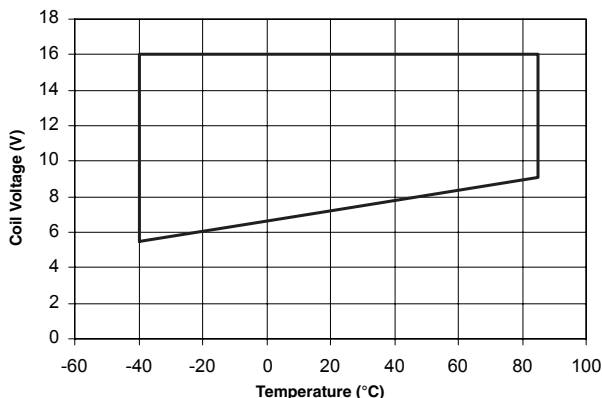
Overcurrent Energization (85°C, G8N-1 225Ω coil, 4 samples)



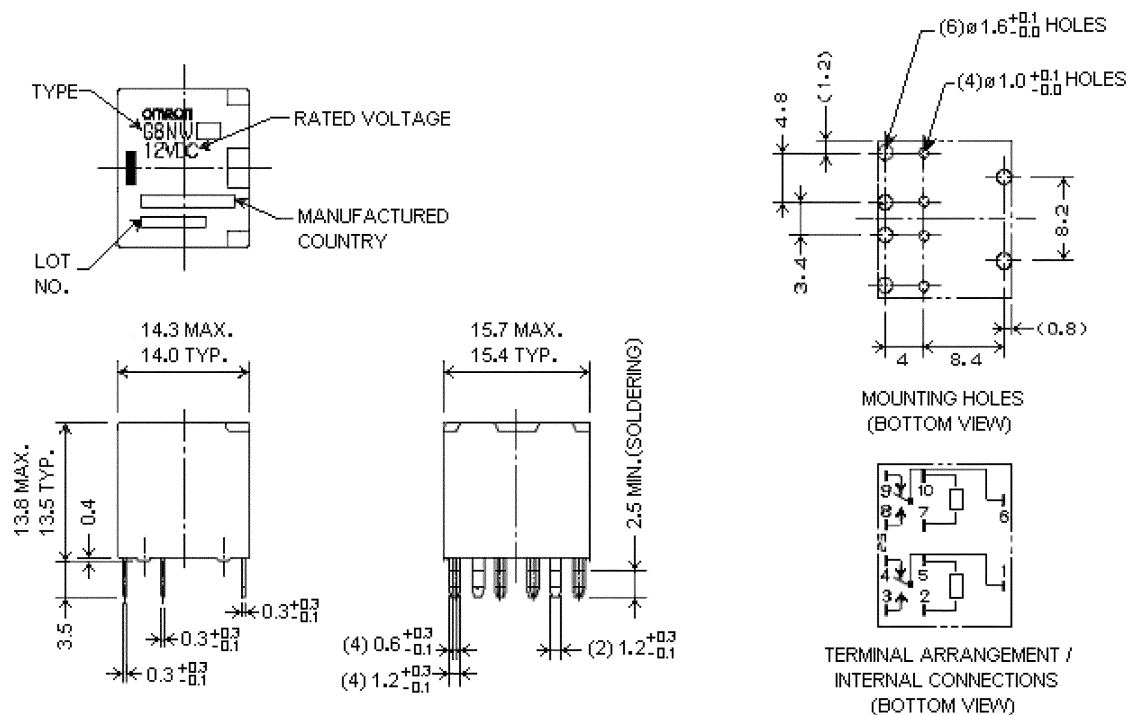
Operating Voltage Range (G8N-1, 180Ω coil)



Operating Voltage Range (G8N-1, 225Ω coil)

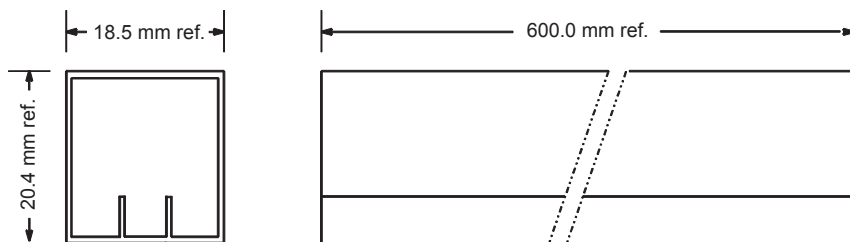


Dimensions



Note: G8NW-2C type terminals are $1.9+0.3\text{mm}$ (not 3.5mm) for pin in paste solder process.

■ Tube Packaging



36 relays per tube, 30 tubes per box (1080 relays per box).

- Note:**
1. For additional information, please contact Omron.
 2. Prior to receipt of order, specifications subject to change without notice.
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 4. Omron can meet some special performance characteristics upon request.
 5. All data at 20°C unless otherwise noted.
 6. If several relays are to be mounted on a single PCB, they must be given at least 3 mm clearance on all sides.

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