



# ORWH series

## 10 Amp Miniature Power PC Board Relay

UL<sup>®</sup> File No. E82292



Users should thoroughly review the technical data before selecting a product part number. It is recommended that user also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

### Features

- Compact relay with 1 Form A and 1 Form C contact arrangements.
- 10 Amp switching capacity.
- Flux-tight or sealed version available.
- Applications include appliance, HVAC, security system, garage opener control, emergency lighting.

### Contact Data @ 20°C

**Arrangements:** 1 Form A (SPST-NO) and 1 Form C (SPDT).

**Material:** AgCdO.

**Max. Switching Rate:** 300 ops./min. (no load).  
20 ops./min. (rated load).

**Expected Mechanical Life:** 10 million operations (no load).

**Expected Electrical Life:** 100,000 operations at 10A @ 250VAC res. (NO).

**Minimum Load:** 100mA @ 5VDC.

**Initial Contact Resistance:** 100 milliohms @ 1A, 6VDC.

### Contact Ratings

**Ratings:** 10A/6A @ 250VAC resistive (NO/NC),  
10A/6A @ 28VDC resistive (NO/NC),  
15A @ 120VAC resistive (NO),  
15A @ 28VDC resistive (NO),  
10A @ 277VAC resistive (NO).

**Max. Switched Voltage:** AC: 277V.  
DC: 30V.

**Max. Switched Current:** 15A.

**Max. Switched Power:** 2,770VA, 360W.

### Initial Dielectric Strength

**Between Open Contacts:** 750VAC 50/60 Hz. (1 minute).

**Between Coil and Contacts:** 1,500VAC 50/60 Hz. (1 minute).

**Surge Voltage Between Coil and Contacts:** 3,000V (1.2 / 50μs).

### Initial Insulation Resistance

**Between Mutually Insulated Elements:** 1,000M ohms min. @ 500VDC.

### Coil Data @ 20°C

**Voltage:** 3 to 48VDC.

**Nominal Power:** 360 mW

**Max. Coil Power:** 130% of nominal.

**Duty Cycle:** Continuous.

### Coil Data @ 20°C

ORWH				
Rated Coil Voltage (VDC)	Nominal Current (mA)	Coil Resistance (ohms) ± 10%	Must Operate Voltage (VDC)	Must Release Voltage (VDC)
3	120.0	25	2.1	0.3
5	71.4	70	3.5	0.5
6	60.0	100	4.2	0.6
9	44.4	225	6.3	0.9
12	40.0	400	8.4	1.2
24	15.0	1,600	16.8	2.4
48	7.5	6,400	33.6	4.8

### Operate Data

**Must Operate Voltage:** 70% of nominal voltage or less.

**Must Release Voltage:** 10% of nominal voltage or more.

**Operate Time:** 10 ms max.

**Release Time:** 5 ms max.

### Environmental Data

**Temperature Range:**

**Operating:** -30°C to +70°C

**Vibration, Mechanical:** 10 to 55 Hz., 1.5mm double amplitude

**Operational:** 10 to 55 Hz., 1.5mm double amplitude.

**Shock, Mechanical:** 1,000m/s<sup>2</sup> (100G approximately).

**Operational:** 100m/s<sup>2</sup> (10G approximately).

**Operating Humidity:** 20 to 85% RH. (Non-condensing).

### Mechanical Data

**Termination:** Printed circuit terminals.

**Enclosure (94V-0 Flammability Ratings):**

**ORWH-SS:** Vented (flux-tight) cover.

**ORWH-SH:** Sealed plastic case. Note: Vent nib should be removed after soldering and cleaning.

**Weight:** 0.33 oz (9.5g) approximately.

**Ordering Information**

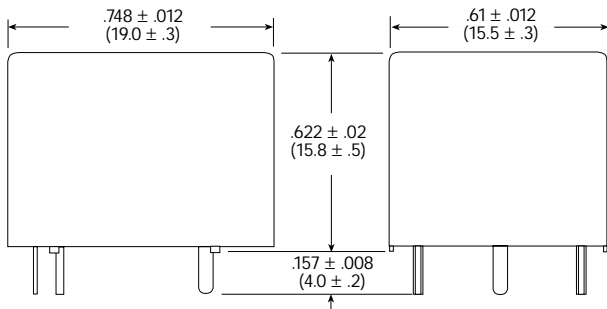
<b>Typical Part Number ▶</b>	<b>ORWH</b>	<b>-SS</b>	<b>-1</b>	<b>12</b>	<b>D</b>	<b>M</b>	<b>,N000</b>
<b>1. Basic Series:</b> ORWH = Miniature Power PC board relay.							
<b>2. Enclosure:</b> SS = Vented (flux-tight)* plastic case.      SH = Sealed plastic case							
<b>3. Number of Poles:</b> 1 = 1 pole							
<b>4. Coil Voltage:</b> 03 = 3VDC      06 = 6VDC      12 = 12VDC      48 = 48VDC 05 = 5VDC      09 = 9VDC      24 = 24VDC							
<b>5. Coil Input:</b> D = Standard							
<b>6. Contact Arrangement:</b> Blank = 1 Form C, SPDT      M = 1 Form A, SPST-NO							
<b>7. Option:</b> ,N000= Standard model.      Other Suffix = Custom model.							

\* Not suitable for immersion cleaning

**Our authorized distributors are more likely to maintain the following items in stock for immediate delivery.**

ORWH-SH-112DM,N000	ORWH-SH-109D,N000	ORWH-SS-112DM,N000	ORWH-SS-106D,N000	ORWH-SS-148D,N000
ORWH-SH-124DM,N000	ORWH-SH-112D,N000	ORWH-SS-124DM,N000	ORWH-SS-109D,N000	
ORWH-SH-105D,N000	ORWH-SH-124D,N000	ORWH-SS-148DM,N000	ORWH-SS-112D,N000	
ORWH-SH-106D,N000	ORWH-SH-148D,N000	ORWH-SS-105D,N000	ORWH-SS-124D,N000	

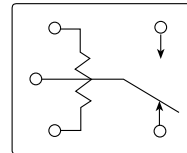
**Outline Dimensions**



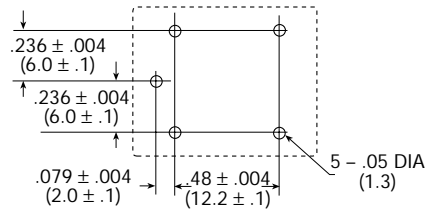
TERMINAL DIMENSIONS:  
COIL: 0.024 (0.6) DIA.  
LOAD: 0.12 x 0.35 (0.3 x 0.9)

**Note:** Only necessary terminals are present on 1 Form A models.

**Wiring Diagram (Bottom View)**



**PC Board Layout (Bottom View)**



**Socket**

**27E1064** socket is rated 10A @ 300VAC. UL Recognized for US and Canada. Designed to fit same suggested board layout as relay.

