PCK series

Slim 16 Amp Miniature Power PC Board Relay

Appliances, HVAC, Office Machines.

UL File No. E82292
CSA File No. LR48471
Applying for VDE

Features

- Slim outline to save board space.
- 1 Form A contact arrangement.
- Quick connect terminal type.
- Meet 5,000V dielectric voltage between coil and contacts.
- Meet 10,000V surge voltage between coil and contacts.

Contact Data @ 20°C

Arrangements: 1 Form A (SPST-NO) .
Material: AgSnO.
Max. Switching Rate: 300ops./ min. (no load).
20ops./ min. (rated load).
Expected Mechanical Life: 2 million ops (no load).
Expected Electrical Life: 100,000 ops (rated load).
Minimum Load: 100mA @ 5VDC.
Initial Contact Resistance: 100 milliohms @ 1A, 6VDC.

Contact Ratings

Ratings: 16A @ 250VAC resistive.
16A @ 24VDC resistive.
Max. Switched Voltage: **AC:** 277V.
DC: 24V.
Max. Switched Current: 16A.
Max. Switched Power: 4,000VA, 385W.

Initial Dielectric Strength

Between Open Contacts: 1,000VAC, 50/60 Hz. (1 min.).
Between Contacts and Coil: 5,000VAC, 50/60 Hz. (1 min.).
Surge Voltage Between Coil and Contacts: 10,000V (1.2/50µs).

Initial Insulation Resistance

Between Mutually Insulated Conductors: 1,000Mohm @ 500VDCM.

Coil Data

Voltage: 5 to 24VDC.
Duty Cycle: Continuous.
Nominal Power: 500mW.
Max. Coil Power: 130% of nominal at 20°C.

Coil Data @ 20°C

PCK				
Rated Coil Voltage (VDC)	**Nominal Current (mA)**	**Coil Resistance (ohms) ± 10%**	**Must Operate Voltage (VDC)**	**Must Release Voltage (VDC)**
3	133.3	22.5	2.25	0.15
5	100.0	50.0	3.75	0.25
6	83.3	72.0	4.50	0.30
9	55.6	162.0	6.75	0.45
12	41.7	288.0	9.00	0.60
18	27.8	648.0	13.50	0.90
24	20.9	1,150.0	18.00	1.20

Operate Data @ 20°C

Must Operate Voltage: 75% of nominal voltage or less.
Must Release Voltage: 5% of nominal voltage or more.
Operate Time: 20ms max.
Release Time: 10ms max.

Environmental Data

Temperature Range:
Operating: -30°C to +70°C.
Vibration, Mechanical: 10 to 55Hz., 1.5mm double amplitude.
Operational: 10 to 55Hz., 1.5mm double amplitude.
Shock, Mechanical: 1000m/s^2 (100G approximately).
Operational: 100m/s^2 (10G approximately).
Operating Humidity: 20 to 85% RH. (Non-condensing).

Mechanical Data

Termination: Printed circuit terminals with quick connect terminals.
Enclosure: Vented (Flux-tight) plastic cover.
Weight: 0.46 oz (13g) approximately.

Ordering Information

Typical Part Number ▶	PCK	-1	12	D	2	M

1. Basic Series:
PCK = 16A PC board terminals

2. Termination:
1 = 1 pole

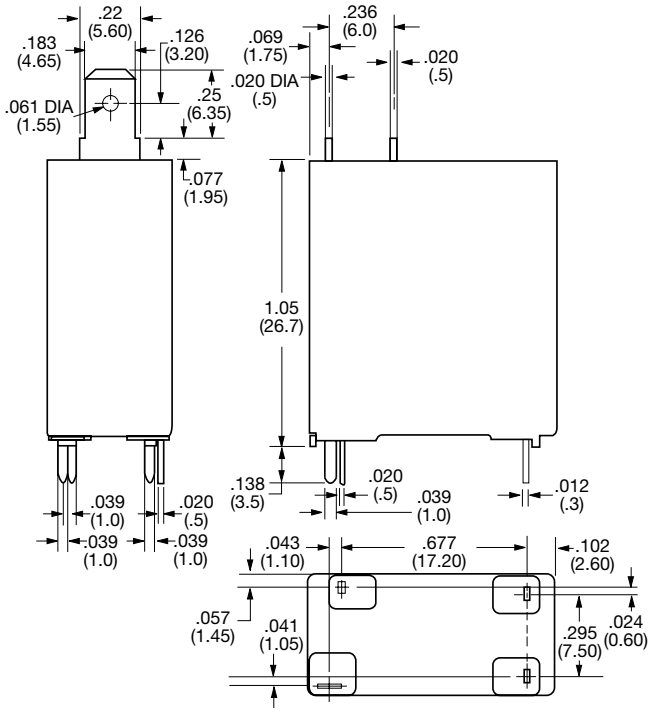
3. Coil Voltage:
05 = 5VDC 06 = 6VDC 09 = 9VDC
12 = 12VDC 18 = 18VDC 24 = 24VDC

4. Coil Input:
D = Standard

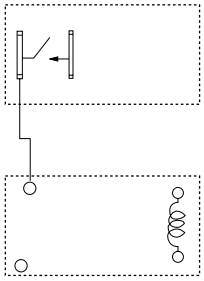
5. Contact Material:
2 = AgSnO

6. Contact Arrangement:
M = 1 Form A (SPST-NO)

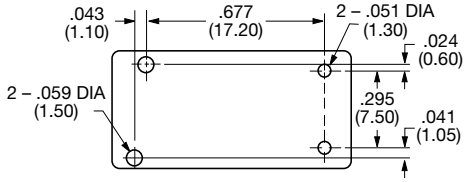
Outline Dimensions



Wiring Diagram (Bottom View)

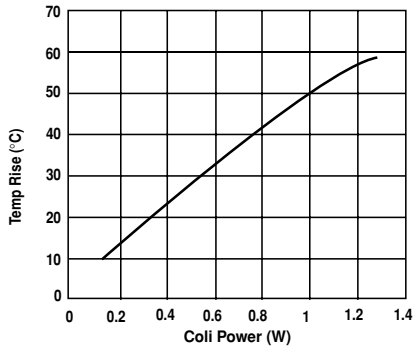


PC Board Layout (Bottom View)

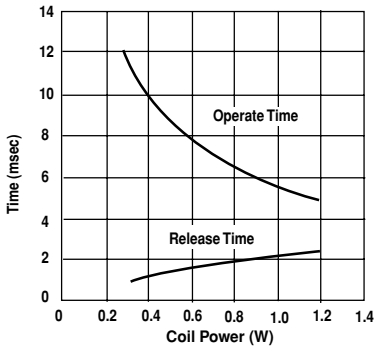


Reference Data

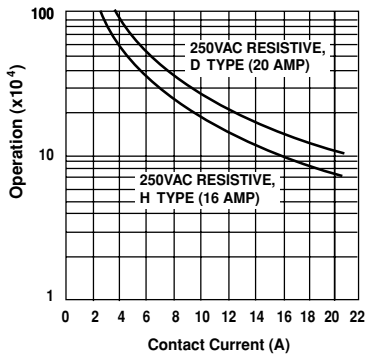
Coil Temperature Rise



Operate Time



Life Expectancy



PCKW series

Dual Coil (Hold 90mW), Slim 16Amp Miniature Power PC Board Relay

Appliances, HVAC, Office Machines.

Applying for UL, CSA, VDE

Features

- Dual coil (operate and hold coil) architecture.
- Requires extra low power of 90mW to hold.
- Slim outline to save board space.
- 1 Form A contact arrangement.
- Quick connect terminal type.

Contact Data @ 20°C

Arrangements: 1 Form A (SPST-NO).
Material: Ag Alloy.
Max. Switching Rate: 300ops./ min. (no load).
10ops./ min. (rated load).
Expected Mechanical Life: 2 million ops (no load).
Expected Electrical Life: 100,000 ops (rated load).
Minimum Load: 100mA @ 5VDC.
Initial Contact Resistance: 100 milliohms @ 1A, 6VDC.

Contact Ratings

Ratings: 16A @ 250VAC resistive.
Max. Switched Voltage: **AC:** 277V.
DC: 24V.
Max. Switched Current: 16A.
Max. Switched Power: 4,000VA, 385W.

Initial Dielectric Strength

Between Open Contacts: 1,000VAC, 50/60 Hz. (1 min.).
Between Contacts and Coil: 4,000VAC, 50/60 Hz. (1 min.).
Surge Voltage Between Coil and Contacts: 10,000V (1.2/50µs).

Initial Insulation Resistance

Between Mutually Insulated Conductors: 1,000Mohm @ 500VDCM.

Coil Data

Voltage: 12 to 24VDC.
Duty Cycle: 1 second, max. (ON coil).
Continuous (HOLD coil).
Nominal Power: 900mW (ON).
90mW (HOLD).
Max. Coil Power: 130% of nominal at 20°C.

Coil Data @ 20°C

PCKW				
Rated Coil Voltage (VDC)	**ON Coil Resistance (ohms) ± 10%**	**Hold Coil Resistance (ohms) ± 10%**	**Must Operate Voltage (VDC)**	**Must Release Voltage (VDC)**
12	1,600	160	9.00	0.60
18	3,600	360	13.50	0.90
24	6,400	640	18.00	1.20

Operate Data @ 20°C

Must Operate Voltage: 75% of nominal voltage or less.
Must Release Voltage: 5% of nominal voltage or more.
Operate Time: 15ms max. (at ON coil and HOLD coil connected as parallel).
Release Time: 10ms max. (at HOLD coil only).

* Supply the rated voltage (+30%, -10%) to both the parallel connected ON coil and the HOLD coil for 0.1 to 0.5 seconds to operate the relay. Then, remove power from the ON coil, but maintain voltage to the HOLD coil. In no case should power be applied to the ON coil for more than 1 second.

Environmental Data

Temperature Range:
Operating: -30°C to +70°C.
Vibration, Mechanical: 10 to 55Hz., 1.5mm double amplitude.
Operational: 10 to 55Hz., 1.5mm double amplitude.
Shock, Mechanical: 1000m/s² (100G approximately).
Operational: 100m/s² (10G approximately).
Operating Humidity: 20 to 85% RH. (Non-condensing).

Mechanical Data

Termination: Printed circuit terminals with quick connect terminals.
Enclosure: Vented (Flux-tight) plastic cover.
Weight: 0.49 oz (14g) approximately.

Ordering Information

Typical Part Number ▶	PCKW	-1	12	D	2	M

1. Basic Series:
PCKW = 16A double coil relay

2. Termination:
1 = 1 pole

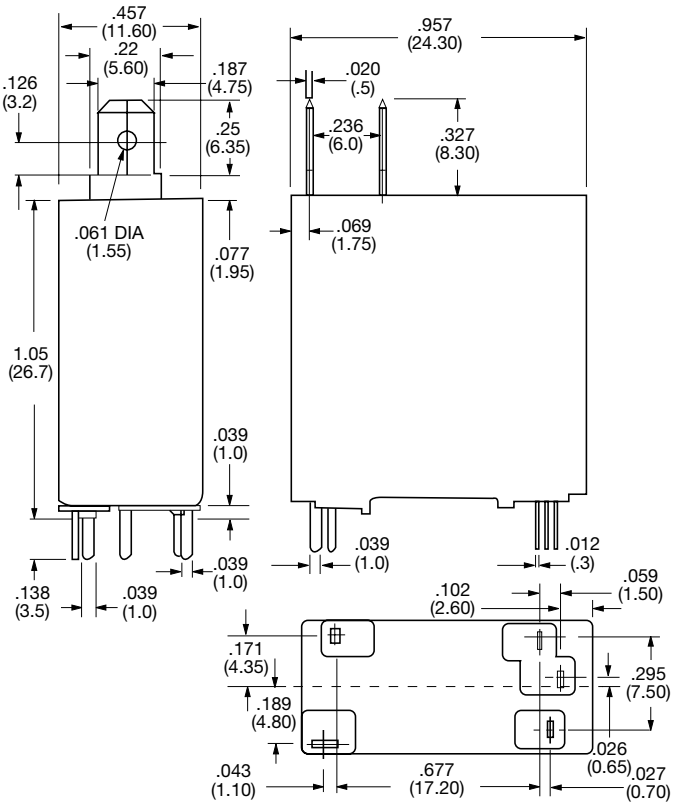
3. Coil Voltage:
12= 12VDC 18 = 18VDC 24 = 24VDC

4. Coil Input:
D = Standard

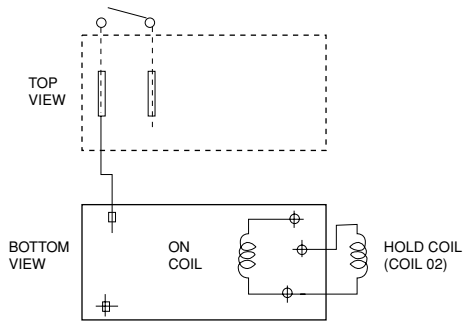
5. Contact Material:
2 = AgSnO

6. Contact Arrangement:
M = 1 Form A (SPST-NO)

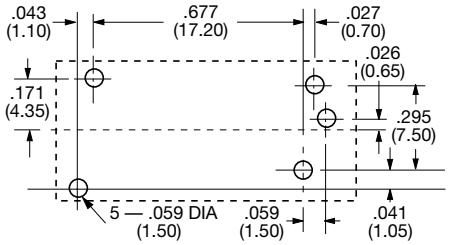
Outline Dimensions



Wiring Diagram (Bottom View)

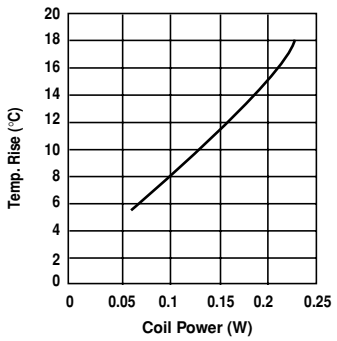


PC Board Layout (Bottom View)



Reference Data

Coil Temperature Rise



Life Expectancy