



**PRODUCT SPECIFICATION**

**General Purpose  
Relays**

**21**

**Series**

# 21 Series General Purpose Relays



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# 21 Series General Purpose Relays



## General Purpose Relays



WERNER's 21 Series General Purpose & Power Relays represent the most complete line of state-of-the-art high performance electrical switches, designed and manufactured to highest international industry standards. Mechanical lifetimes of up to 10 Million operations and electrical durability of up to 250.000 switching cycles under full load make WERNER Relays your best choice of all.

### Features Overview

- All models designed applying MFMS design principles (Max Function Min Space)
- All models designed applying solid modeling and finite elements design methods
- All Power Relay Series are equipped with mechanical operation status indicator
- All models approved under UL, CE, RoHS, CCC and DEMKO standards
- All models design for heavy duty or even vibrating environments
- All models available for use with 50 Hz and 60 Hz cycles

### Highlights

- All fixed contacts powered by WERNER AFT (Anti-Fuse-Technology)
- All Power Relays Series provide massive silver blade or pin contacts
- Power Relay Series with up to 10 Ampere Continuous Load Current
- Most models available in 6V, 12V, 24V, 110V & 220V AC or DC
- Most models available in DPDT, 3PDT as well as 4DPT
- Up to 7 types of operation status indication available

21 Series General Purpose & Power Relays by WERNER provide our highly demanding industrial customers out of all industry verticals worldwide with the most reliable devices in the industry. Combined with the vast selection of sockets in our 70 – 75 Product Series you will find an industrial solution exceeding your expectations whilst satisfying you're every need and design requirement.

# 21 Series General Purpose Relays



## General Purpose Relays

### Features:

- Switching Power of 5 A
- No Cadmium
- Blade & PC Board mounting
- Built-in LED
- DPDT, 3PDT & 4PDT
- Compact & small in size

### Over voltage category

III, as per EN IEC 60947-5-1

### Approvals

#### Approbations and Declaration of conformity

UL	
CE	
RoHS	
CCC	
Demko	



## AC Coil Ratings

Voltage (V)	Rated Current (mA)		Coil Resistance ( $\Omega$ )	Operation Properties		
	AC 50Hz	AC 60Hz		Released Voltage	Continuous Voltage	Operate Voltage
6V	214.1	183	12.2	30% min.	110% max	80% min.
12V	106.5	91	46			
24V	53.8	46	180			
48V	24.7	21.1	788			
110V	9.9	8.4	4,430			
120V	10.8	9.2	4,430			
220V	4.8	4.2	18,790			
240V	5.3	4.6	18,790			

±15% at 20°C

## DC Coil Ratings

Voltage	Rated Current (mA)	Coil Resistance ( $\Omega$ )	Operation Properties		
			Released Voltage	Continuous Voltage	Operate Voltage
6V	151	39.8	110% max.	80% max.	10% min.
12V	75	160			
24V	37.7	636			
48V	18.8	2560			
110V	9.9	11,100			
120V	-	-			
220V	-	-			
240V	-	-			

±15% at 20°C

## Weight

Model No.	21.12 & 21.22 (DPDT)	21.13 & 21.23 (3PDT)	21.14 & 21.24 (4PDT)
Weight (approx.)	35g	37g	39g

# 21 Series General Purpose Relays



## Contact Ratings

Model	Continuous Current	Maximum Switching Power		Rated Load		
		Resistive Load	Inductive Load	Voltage (V)	Res. Load	Ind. Load
DPDT	5A	1100VA AC	440VA AC	110V AC	5A	2.5 A
		150W DC	75W DC	220V AC	5A	2 A
				30V DC	5A	2.5 A
3PDT	5A	1200VA AC	288VA AC	240V AC	5A	1.2 A
		150W DC	60W DC	30V DC	5A	2 A
4PDT	5A	1200VA AC	288VA AC	240V AC	5A	1.2 A
		150W DC	60W DC	30V DC	5A	2 A

## Specifications

Operating Temperature	Blade Terminal	DPDT	-25 to +45°C (No freezing)
		3PDT	-25 to +55°C (No freezing)
		4PDT	-25 to +55°C (No freezing)
Operating Temperature	PC Board Terminal	DPDT	-25 to +45°C (No freezing)
		3PDT	-25 to +55°C (No freezing)
		4PDT	-25 to +55°C (No freezing)
Contact Resistance		DPDT	30mΩ maximum
		3PDT	50mΩ maximum
		4PDT	50mΩ maximum
Operating Humidity		-	45 to 85% RH (no condensation)
Insulation Resistance		-	100 MΩ minimum (500V DC megger)
Dielectric Strength		DPDT	Between live and dead parts: 2,200V AC, 1 minute
		3PDT	Between contact and coil: 2,200V AC, 1 minute
			Between contacts of different poles: 2,200V AC, 1 minute
			Between contacts of the same pole: 1,000V AC, 1 minute
Vibration Resistance		-	Damage limits: 10 to 60Hz, amplitude 0.5 mm
		-	Operating extremes: 10 to 55Hz, amplitude 0.5 mm
Shock Resistance		-	Damage limits: 1,000m/s <sup>2</sup>
		-	Operating extremes: 200m/s <sup>2</sup>
Mechanical Durability		AC	10,000,000 operations minimum
		DC	
Electrical Durability		DPDT	500,000 operations minimum (220V AC, 5A)
		3PDT	100,000 operations minimum (220V AC, 5A)
		4PDT	200,000 operations minimum (220V AC, 3A)
Power Consumption (approx.)		DPDT	AC: 1.4 VA (50 Hz), 1.2 VA (60 Hz) DC: 0.9W
		3PDT	
		4PDT	
Operate Time		DPDT	20ms maximum
		3PDT	
		4PDT	
Release Time		DPDT	20ms maximum
		3PDT	
		4PDT	
Minimum Applicable Load		DPDT	5V DC, 1 mA (reference value)
		3PDT	1V DC, 1 mA (reference value)
		4PDT	
Contact Material		DPDT	Silver
		3PDT	
		4PDT	
Operating Frequency		-	Electrical: 2000 operations/hour maximum
		-	Mechanical: 20,000 operations/hour maximum

Measured at 20° C Operating temperature

# 21 Series General Purpose Relays



## Model Number Structure - General Purpose Relays



21.14.31.120

Series	
21 Series General Purpose Relays	

Terminal Type	
1	Blade
2	PC Board

Number of Poles	
2	DPDT
3	3PDT
4	4PDT

Types		
0	Basic	
1	LED	
2	LED & Diode	DC Only
3	LED & Check button	
4	LED & Check button & Diode	DC Only
5	LED & RC	AC Only
6	LED & Check button & RC	AC Only




Voltage	
006	6V
012	12V
024	24V
048	48V
110	110V
120	120V
220	220V
240	240V

Coil	
1	AC
2	DC

# 21 Series General Purpose Relays



## Model Number Selection

Appearance	Terminal Type	Types	Voltage	Model No.	
				DPDT	
				AC	DC
 DPDT   3PDT   4PDT	Blade	Basic	6V	21.12.01.006	21.12.02.006
			12V	21.12.01.012	21.12.02.012
			24V	21.12.01.024	21.12.02.024
			48V	21.12.01.048	21.12.02.048
			110V	21.12.01.110	21.12.02.110
			120V	21.12.01.120	21.12.02.120
			220V	21.12.01.220	21.12.02.220
			240V	21.12.01.240	21.12.02.240
		LED	6V	21.12.11.006	21.12.12.006
			12V	21.12.11.012	21.12.12.012
			24V	21.12.11.024	21.12.12.024
			48V	21.12.11.048	21.12.12.048
			110V	21.12.11.110	21.12.12.110
			120V	21.12.11.120	21.12.12.120
			220V	21.12.11.220	21.12.12.220
			240V	21.12.11.240	21.12.12.240
		LED & Diode DC Only	6V	–	21.12.22.006
			12V	–	21.12.22.012
			24V	–	21.12.22.024
			48V	–	21.12.22.048
			110V	–	21.12.22.110
			120V	–	21.12.22.120
			220V	–	21.12.22.220
			240V	–	21.12.22.240
		LED & Check button	6V	21.12.31.006	21.12.32.006
			12V	21.12.31.012	21.12.32.012
			24V	21.12.31.024	21.12.32.024
			48V	21.12.31.048	21.12.32.048
110V	21.12.31.110		21.12.32.110		
120V	21.12.31.120		21.12.32.120		
220V	21.12.31.220		21.12.32.220		
240V	21.12.31.240		21.12.32.240		
LED & Diode & Check button DC Only	6V	–	21.12.42.006		
	12V	–	21.12.42.012		
	24V	–	21.12.42.024		
	48V	–	21.12.42.048		
	110V	–	21.12.42.110		
	120V	–	21.12.42.120		
	220V	–	21.12.42.220		
	240V	–	21.12.42.240		
LED & RC AC Only	6V	21.12.51.006	–		
	12V	21.12.51.012	–		
	24V	21.12.51.024	–		
	48V	21.12.51.048	–		
	110V	21.12.51.110	–		
	120V	21.12.51.120	–		
	220V	21.12.51.220	–		
	240V	21.12.51.240	–		
LED & RC & Check button AC Only	6V	21.12.61.006	–		
	12V	21.12.61.012	–		
	24V	21.12.61.024	–		
	48V	21.12.61.048	–		
	110V	21.12.61.110	–		
	120V	21.12.61.120	–		
	220V	21.12.61.220	–		
	240V	21.12.61.240	–		

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## Model Number Selection




Model No.		Model No.	
3PDT		4PDT	
AC	DC	AC	DC
21.13.01.006	21.13.02.006	21.14.01.006	21.14.02.006
21.13.01.012	21.13.02.012	21.14.01.012	21.14.02.012
21.13.01.024	21.13.02.024	21.14.01.024	21.14.02.024
21.13.01.048	21.13.02.048	21.14.01.048	21.14.02.048
21.13.01.110	21.13.02.110	21.14.01.110	21.14.02.110
21.13.01.120	21.13.02.120	21.14.01.120	21.14.02.120
21.13.01.220	21.13.02.220	21.14.01.220	21.14.02.220
21.13.01.240	21.13.02.240	21.14.01.240	21.14.02.240
21.13.11.006	21.13.12.006	21.14.11.006	21.14.12.006
21.13.11.012	21.13.12.012	21.14.11.012	21.14.12.012
21.13.11.024	21.13.12.024	21.14.11.024	21.14.12.024
21.13.11.048	21.13.12.048	21.14.11.048	21.14.12.048
21.13.11.110	21.13.12.110	21.14.11.110	21.14.12.110
21.13.11.120	21.13.12.120	21.14.11.120	21.14.12.120
21.13.11.220	21.13.12.220	21.14.11.220	21.14.12.220
21.13.11.240	21.13.12.240	21.14.11.240	21.14.12.240
-	21.13.22.006	-	21.14.22.006
-	21.13.22.012	-	21.14.22.012
-	21.13.22.024	-	21.14.22.024
-	21.13.22.048	-	21.14.22.048
-	21.13.22.110	-	21.14.22.110
-	21.13.22.120	-	21.14.22.120
-	21.13.22.220	-	21.14.22.220
-	21.13.22.240	-	21.14.22.240
21.13.31.006	21.13.32.006	21.14.31.006	21.14.32.006
21.13.31.012	21.13.32.012	21.14.31.012	21.14.32.012
21.13.31.024	21.13.32.024	21.14.31.024	21.14.32.024
21.13.31.048	21.13.32.048	21.14.31.048	21.14.32.048
21.13.31.110	21.13.32.110	21.14.31.110	21.14.32.110
21.13.31.120	21.13.32.120	21.14.31.120	21.14.32.120
21.13.31.220	21.13.32.220	21.14.31.220	21.14.32.220
21.13.31.240	21.13.32.240	21.14.31.240	21.14.32.240
-	21.13.42.006	-	21.14.42.006
-	21.13.42.012	-	21.14.42.012
-	21.13.42.024	-	21.14.42.024
-	21.13.42.048	-	21.14.42.048
-	21.13.42.110	-	21.14.42.110
-	21.13.42.120	-	21.14.42.120
-	21.13.42.220	-	21.14.42.220
-	21.13.42.240	-	21.14.42.240
21.13.51.006	-	21.14.51.006	-
21.13.51.012	-	21.14.51.012	-
21.13.51.024	-	21.14.51.024	-
21.13.51.048	-	21.14.51.048	-
21.13.51.110	-	21.14.51.110	-
21.13.51.120	-	21.14.51.120	-
21.13.51.220	-	21.14.51.220	-
21.13.51.240	-	21.14.51.240	-
21.13.61.006	-	21.14.61.006	-
21.13.61.012	-	21.14.61.012	-
21.13.61.024	-	21.14.61.024	-
21.13.61.048	-	21.14.61.048	-
21.13.61.110	-	21.14.61.110	-
21.13.61.120	-	21.14.61.120	-
21.13.61.220	-	21.14.61.220	-
21.13.61.240	-	21.14.61.240	-



# 21 Series General Purpose Relays



## Model Number Selection

Appearance	Terminal Type	Types	Voltage	Model No.	
				DPDT	
				AC	DC
 <p>DPDT</p>  <p>3PDT</p>  <p>4PDT</p>	PC Board	Basic	6V	21.22.01.006	21.22.02.006
			12V	21.22.01.012	21.22.02.012
			24V	21.22.01.024	21.22.02.024
			48V	21.22.01.048	21.22.02.048
			110V	21.22.01.110	21.22.02.110
			120V	21.22.01.120	21.22.02.120
			220V	21.22.01.220	21.22.02.220
			240V	21.22.01.240	21.22.02.240
		LED	6V	21.22.11.006	21.22.12.006
			12V	21.22.11.012	21.22.12.012
			24V	21.22.11.024	21.22.12.024
			48V	21.22.11.048	21.22.12.048
			110V	21.22.11.110	21.22.12.110
			120V	21.22.11.120	21.22.12.120
			220V	21.22.11.220	21.22.12.220
			240V	21.22.11.240	21.22.12.240
		LED & Diode DC Only	6V	–	21.22.22.006
			12V	–	21.22.22.012
			24V	–	21.22.22.024
			48V	–	21.22.22.048
			110V	–	21.22.22.110
			120V	–	21.22.22.120
			220V	–	21.22.22.220
			240V	–	21.22.22.240
		LED & Check button	6V	21.22.31.006	21.22.32.006
			12V	21.22.31.012	21.22.32.012
			24V	21.22.31.024	21.22.32.024
			48V	21.22.31.048	21.22.32.048
110V	21.22.31.110		21.22.32.110		
120V	21.22.31.120		21.22.32.120		
220V	21.22.31.220		21.22.32.220		
240V	21.22.31.240		21.22.32.240		
LED & Diode & Check button DC Only	6V	–	21.22.42.006		
	12V	–	21.22.42.012		
	24V	–	21.22.42.024		
	48V	–	21.22.42.048		
	110V	–	21.22.42.110		
	120V	–	21.22.42.120		
	220V	–	21.22.42.220		
	240V	–	21.22.42.240		
LED & RC AC Only	6V	21.22.51.006	–		
	12V	21.22.51.012	–		
	24V	21.22.51.024	–		
	48V	21.22.51.048	–		
	110V	21.22.51.110	–		
	120V	21.22.51.120	–		
	220V	21.22.51.220	–		
	240V	21.22.51.240	–		
LED & RC & Check button AC Only	6V	21.22.61.006	–		
	12V	21.22.61.012	–		
	24V	21.22.61.024	–		
	48V	21.22.61.048	–		
	110V	21.22.61.110	–		
	120V	21.22.61.120	–		
	220V	21.22.61.220	–		
	240V	21.22.61.240	–		

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## Model Number Selection

Model No.		Model No.	
3PDT		4PDT	
AC	DC	AC	DC
21.23.01.006	21.23.02.006	21.24.01.006	21.24.02.006
21.23.01.012	21.23.02.012	21.24.01.012	21.24.02.012
21.23.01.024	21.23.02.024	21.24.01.024	21.24.02.024
21.23.01.048	21.23.02.048	21.24.01.048	21.24.02.048
21.23.01.110	21.23.02.110	21.24.01.110	21.24.02.110
21.23.01.120	21.23.02.120	21.24.01.120	21.24.02.120
21.23.01.220	21.23.02.220	21.24.01.220	21.24.02.220
21.23.01.240	21.23.02.240	21.24.01.240	21.24.02.240
21.23.11.006	21.23.12.006	21.24.11.006	21.24.12.006
21.23.11.012	21.23.12.012	21.24.11.012	21.24.12.012
21.23.11.024	21.23.12.024	21.24.11.024	21.24.12.024
21.23.11.048	21.23.12.048	21.24.11.048	21.24.12.048
21.23.11.110	21.23.12.110	21.24.11.110	21.24.12.110
21.23.11.120	21.23.12.120	21.24.11.120	21.24.12.120
21.23.11.220	21.23.12.220	21.24.11.220	21.24.12.220
21.23.11.240	21.23.12.240	21.24.11.240	21.24.12.240
-	21.23.22.006	-	21.24.22.006
-	21.23.22.012	-	21.24.22.012
-	21.23.22.024	-	21.24.22.024
-	21.23.22.048	-	21.24.22.048
-	21.23.22.110	-	21.24.22.110
-	21.23.22.120	-	21.24.22.120
-	21.23.22.220	-	21.24.22.220
-	21.23.22.240	-	21.24.22.240
21.23.31.006	21.23.32.006	21.24.31.006	21.24.32.006
21.23.31.012	21.23.32.012	21.24.31.012	21.24.32.012
21.23.31.024	21.23.32.024	21.24.31.024	21.24.32.024
21.23.31.048	21.23.32.048	21.24.31.048	21.24.32.048
21.23.31.110	21.23.32.110	21.24.31.110	21.24.32.110
21.23.31.120	21.23.32.120	21.24.31.120	21.24.32.120
21.23.31.220	21.23.32.220	21.24.31.220	21.24.32.220
21.23.31.240	21.23.32.240	21.24.31.240	21.24.32.240
-	21.23.42.006	-	21.24.42.006
-	21.23.42.012	-	21.24.42.012
-	21.23.42.024	-	21.24.42.024
-	21.23.42.048	-	21.24.42.048
-	21.23.42.110	-	21.24.42.110
-	21.23.42.120	-	21.24.42.120
-	21.23.42.220	-	21.24.42.220
-	21.23.42.240	-	21.24.42.240
-	-	21.24.51.006	-
-	-	21.24.51.012	-
-	-	21.24.51.024	-
-	-	21.24.51.048	-
-	-	21.24.51.110	-
-	-	21.24.51.120	-
-	-	21.24.51.220	-
-	-	21.24.51.240	-
21.23.61.006	-	21.24.61.006	-
21.23.61.012	-	21.24.61.012	-
21.23.61.024	-	21.24.61.024	-
21.23.61.048	-	21.24.61.048	-
21.23.61.110	-	21.24.61.110	-
21.23.61.120	-	21.24.61.120	-
21.23.61.220	-	21.24.61.220	-
21.23.61.240	-	21.24.61.240	-

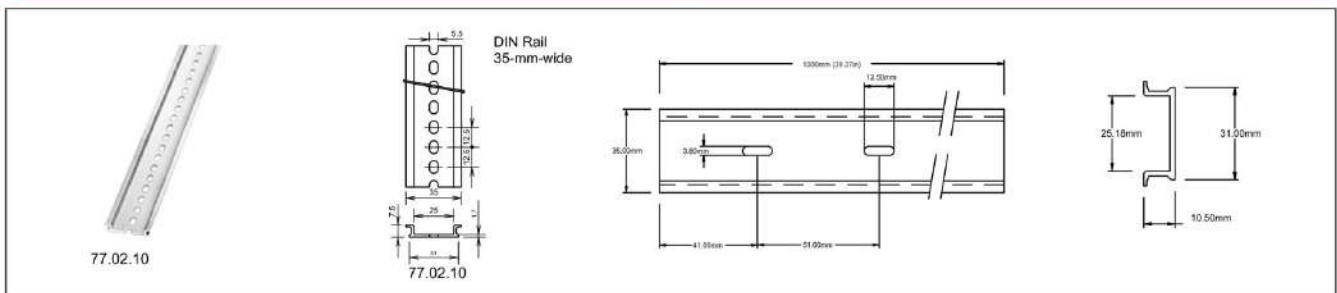
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## UL - Voltage Ratings

Model	Resistive			General		
	DPDT	3PDT	4PDT	DPDT	3PDT	4PDT
240V AC	5A	5A	5A	2A	5A	5A
120V DC	—	—	—	2.5A	—	—
110V DC	0.4A	0.2A	0.2A	—	0.2A	0.2A
30V DC	5A	5A	5A	—	5A	5A

## Accessories

### DIN Rails



DIN Rail No.	Material	Length	Weight	Width
77.02.10	Aluminum	1000 mm	200 g	35 mm

## Sockets - Blade Terminal Models

### Socket Specifications

Mounting Type	Terminal	Torque	Wire Size	Model No.		
				2 Poles	3 Poles	4 Poles
DIN Rail	With Finger-safe M3 screws - coil M3.5 screws - contact	5.5 - 9in•lbs	up to 2 - 14AWG	71.12.01	71.13.01	71.14.01
	Without Finger-safe M3 screws - coil M3.5 screws - contact	5.5 - 9in•lbs	up to 2 - 14AWG	71.12.00	71.13.00	71.14.00
PCB Mount Socket	—	—	—	71.22	71.23	71.24

Poles	2 Poles			3 Poles			4 Poles		
	No Finger-safe	Finger-safe	PCB	No Finger-safe	Finger-safe	PCB	No Finger-safe	Finger-safe	PCB
Voltage	250V	250V	250V	250V	250V	250V	250V	250V	250V
A	7	10	7	7	10	7	7	10	7

# 21 Series General Purpose Relays



## Mounting Clips



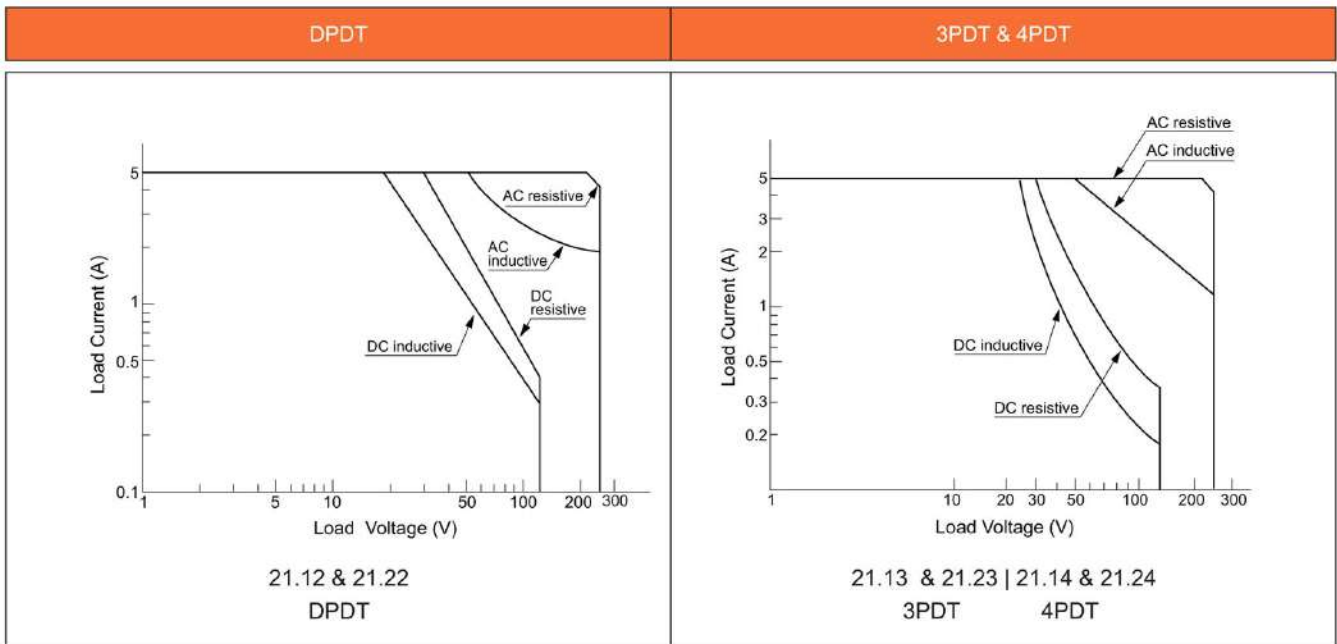
Mounting Clips No.	Rails	Width	Weight
77.03.10	77.02.10	45 mm	15.2 g

## Applicable Clips

Appearance	Description	Relay	Suitable For DIN Mount Socket	Suitable For PCB Mount Socket
	Leaf Spring (top latch)	21.12 & 21.22 (DPDT)	71.03.01	71.03.02
		21.13 & 21.23 (3PDT)		
		21.14 & 21.24 (4PDT)		
	Wire Spring	21.12 & 21.22 (DPDT)	71.02.01	71.02.02
		21.13 & 21.23 (3PDT)		
		21.14 & 21.24 (4PDT)		

\* For suitable relay please check Sockets catalogue

## Switching Capacity



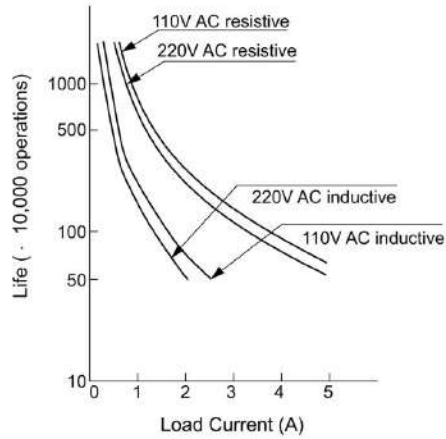
# 21 Series General Purpose Relays



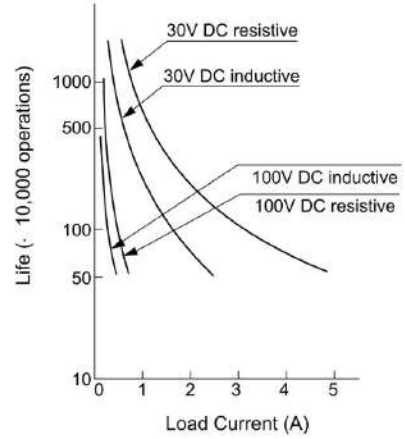
## Electrical Characteristics

### 21.12 & 21.22 (DPDT)

#### AC

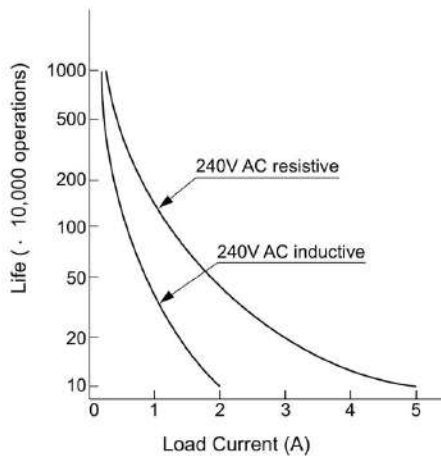


#### DC

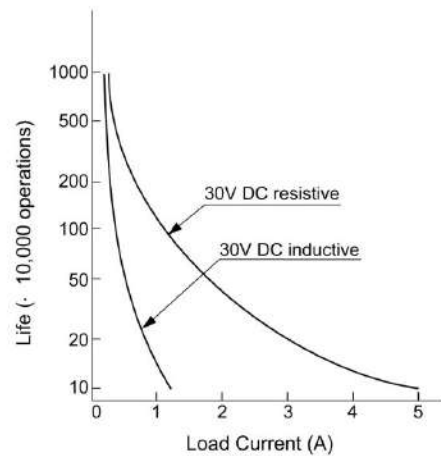


### 21.13 & 21.23 (3PDT)

#### AC

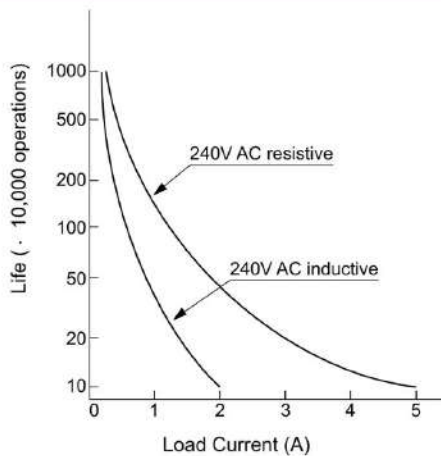


#### DC

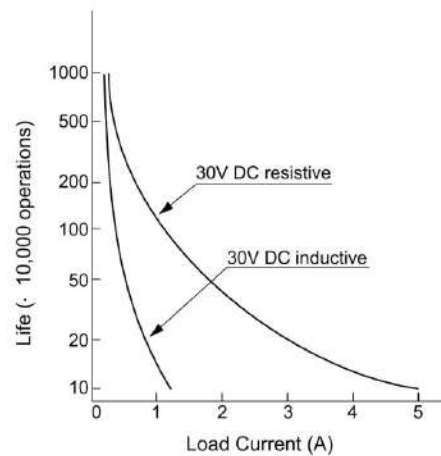


### 21.14 & 21.24 (4PDT)

#### AC



#### DC



# 21 Series General Purpose Relays



Dimensions	
Blade Terminal	PC Board Terminal
<p>21.12 (DPDT)</p> <p>DPDT</p>	<p>21.22 (DPDT)</p> <p>DPDT</p>
<p>21.13 (3PDT)</p> <p>3PDT</p>	<p>21.23 (3PDT)</p> <p>3PDT</p>
<p>21.14 (4PDT)</p> <p>4PDT</p>	<p>21.24 (4PDT)</p> <p>4PDT</p>

# 21 Series General Purpose Relays



## Basic Type - Internal Connection (Bottom View)

DPDT	3PDT	4PDT

## LED Type - Internal Connection (Bottom View)

DPDT	3PDT	4PDT

## LED & Diode Type - Internal Connection (Bottom View)

DPDT	3PDT	4PDT

## LED & RC Type - Internal Connection (Bottom View)

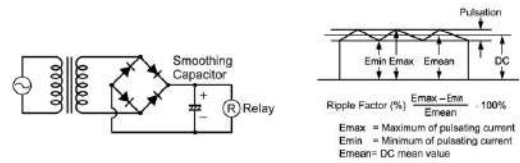
DPDT	3PDT	4PDT

\* Measured below 24V AC/DC

# 21 Series General Purpose Relays

## Instructions

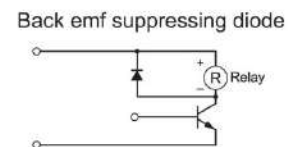
Apply rated voltage to the relay coil to ensure correct relay type. When using a power supply containing a ripple voltage, suppress the ripple factor within 6% however, a complete DC voltage is best for the coil power to make sure of stable relay operation. Pickup voltage and dropout voltage depend on the ripple factor when power is supplied through a rectification circuit. Include a smoothing capacitor for better operation.



Special consideration should be taken when driving an element at the same time as the relay operation for the circuit design. Leakage current ( $I_o$ ) flows through the relay coil while the relay is off. Leakage current causes coil release failure or adversely affects the vibration resistance and shock resistance. It is advisable to design a circuit as shown.

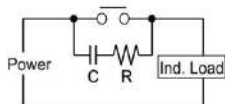


Connecting a diode to suppress at the back electromotive force prevents a high-voltage pulse which is generated when the relay coil is turned off, causing transistor to deteriorate or break, make sure the coil release time is slightly longer. To shorten the coil release time, connect a Zener diode which is slightly higher than the power voltage, between the collector and emitter of the transistor.

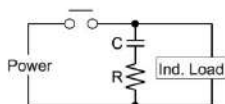


## Protection

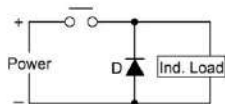
When an inrush current flows through the load, the contact may become welded. The contact ratings show maximum values, Make sure that these values are not exceeded. Contact a contact protection circuit, such as a current limiting resistor as an optional solution.



This protection circuit can be used when the load impedance is smaller than the RC impedance in an AC load power circuit.  
R: Resistor of approximately the same resistance value as the load  
C: 0.1 to 1  $\mu$ F

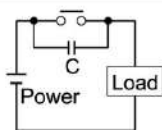


This protection circuit can be used for both AC and DC load power circuits.  
R: Resistor of approximately the same resistance value as the load  
C: 0.1 to 1  $\mu$ F

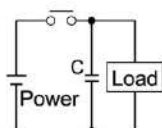


This protection circuit can be used for DC load power circuits. Use a diode with the following ratings.  
Reverse withstand voltage: Power voltage of the load circuit x 10  
Forward current: More than the load current.

## Prevents



This protection circuit is very effective in arc suppression when opening the contact however, the capacitor is charged while the contacts are opened else the capacitor is discharged through the contacts, increasing the possibility of contact welding.



This protection circuit is very effective in arc suppression when opening the contact however, a current flows to charge the capacitor, causing contact welding when the contacts are closed.



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## Safety Precautions

Do not drop, shock or remove the relay cover to maintain the initial characteristics.  
The relay cover cannot be removed from the base during normal operation.  
Use the relay in environments free from dust, condensation, dioxide or hydrogen sulfide.

Make sure that the coil voltage does not exceed applicable coil voltage range.  
Prevent usage of relays in the vicinity of strong magnetic field, as that may cause malfunctioning of relays.

Failure to turn off power before wiring, installation, removal and maintenance may cause electrical shock or fire hazard.

Attention on specifications and rated values to prevent electrical shock or fire hazard.  
Use wires of the proper size to meet voltage and current requirements.

Tighten the terminal screws on the relay socket to the proper tightening torque.

Prevent using the check button as a switch.

The durability of the check button is a minimum of 200 operations.

It is advisable to apply a positive voltage to terminals of neighboring poles and a negative voltage to the other terminals of neighboring poles when using DC loads on 4PDT relays to prevent the possibility of short circuits.

A soldering iron of 30 to 60W would be recommended when soldering the relay terminals and the preferred time to complete soldering is within 4 seconds approximately.

# 21 Series General Purpose Relays



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