

General Purpose Relay MJN

Relay with Plug-in Termination, available in SPDT, DPDT or 3PDT models

- Rugged power driver offers superior 3/16" through-air and 3/8 over-surface spacing
- Interlocked frame and contact block prevent contact misalignment during plug-in
- Available with dust covers, indicator lamps and push-to-operate buttons
- UL and CSA recognition as motor controllers up to 600 VAC
- Recognized for 1/2 hp motor control applications at 240/480/600 VAC (1/3 hp at 120 VAC)



Ordering Information

To Order: Select part number and add the desired coil voltage rating (e.g. MJN1C-AC24).

| Item | | | Model | | | |
|--|----------|--------------|------------------------------|-------------------------------|------------------------------|-----------------|
| Type | Terminal | Contact form | 10A Version, flange mounting | 20 A Version, flange mounting | 30A Version, flange mounting | 10 A Relay only |
| Standard | Plug-in | SPDT | MJN1CF | --- | MJN1Z-E-RP | MJN1C |
| | | DPDT | MJN2CF | MJN2CE | --- | MJN2C |
| | | 3PDT | MJN3CF | --- | --- | MJN3C |
| LED indicator | Plug-in | SPDT | MJN1CF-N* | --- | --- | MJN1C-N |
| | | DPDT | MJN2CF-N* | --- | --- | MJN2C-N |
| | | 3PDT | MJN3CF-N* | --- | --- | MJN3C-N |
| Push-to-operate button | Plug-in | SPDT | MJN1CF-I* | --- | --- | MJN1C-I |
| | | DPDT | MJN2CF-I* | --- | --- | MJN2C-I |
| | | 3PDT | MJN3CF-I* | --- | --- | MJN3C-I |
| Push-to-operate button & LED indicator | Plug-in | SPDT | MJN1CF-IN* | --- | --- | MJN1C-IN |
| | | DPDT | MJN2CF-IN* | --- | --- | MJN2C-IN |
| | | 3PDT | MJN3CF-IN* | --- | --- | MJN3C-IN |
| Latching | Plug-in | DPDT | --- | --- | --- | MJN2CK |

Note: All part numbers marked with an "*" are non-standard parts. Contact an Omron representative for additional information.

Specifications

■ Contact Data

| | | |
|-----------------------------------|-------------|--|
| Configuration | | SPDT, DPDT, 3PDT |
| Initial contact resistance | | 50 mΩ max. |
| Materials | | 3/16" diameter Ag-Alloy |
| Contact UL ratings | 10 A | 10 amp @ 28 VDC and 120/240 VAC at 80% pf, 1/3 hp @ 120 VAC, 1/2 hp @ 277/240/480/600 VAC 8.5 FLA - 36 LRA at 18 VDC, 3 amp @ 480/600 VAC at 80% pf, 10 amp @ 277 VAC resistive |
| | 20 A | 20 amp @28 VDC and 120/240/277 VAC, 10 amp @ 480/600 VAC, 3.4 hp @ 120 VAC, 1-1/2 hp @ 240 VAC, 17 FLA - 65 LRA at 300VAC |
| | 30 A | 30 amp @ 28 VDC, 15 amp @ 480 / 600 VAC, 1hp @ 120 VAC, 1-1/2 hp @ 240 VAC |
| UL recognized file number | | E41643 |

■ Coil Data

Non-latching - AC

| Nominal voltage | Resistance in Ohms ± 10% | | Nominal coil power | | Coil voltages | Insulation resistance | Pick up voltage at 25°C (77°F) |
|-----------------|--------------------------|-------|--------------------|--------|--------------------------|----------------------------|--------------------------------|
| | 1 & 2 PDT | 3PDT | 1 & 2 PDT | 3PDT | | | |
| 6 VAC | 6.0 | 4.2 | 1.7 VA | 2.0 VA | 6 to 240 VAC 50/60 Hz | 1,000 MΩ min. @ 500 VDC | 85% of nominal |
| 12 VAC | 21 | 18 | | | | | |
| 24 VAC | 75 | 72 | | | | | |
| 120 VAC | 2,250 | 1,700 | | | | | |
| 240 VAC | 9,100 | 7,200 | | | | | |

Non-latching - DC

| Nominal voltage | Resistance in Ohms ± 10% | Nominal coil power | Coil voltages | Insulation resistance | Pick up voltage at 25°C (77°F) |
|-----------------|--------------------------|--------------------|---------------|----------------------------|--------------------------------|
| 5 VDC | 20 | 1.2 W | 5 to 110 VDC | 1,000 MΩ min. @ 500 VDC | 75% of nominal |
| 6 VDC | 32 | | | | |
| 12 VDC | 120 | | | | |
| 24 VDC | 470 | | | | |
| 48 VDC | 1,800 | | | | |
| 110 VDC | 10,000 | | | | |

Latching - AC

| Nominal voltage | Latch coil resistance in Ohms ± 10% | Unlatch coil resistance in Ohms ± 10% | Nominal coil power | | Coil voltages | Insulation resistance | Operate voltage (latch/unlatch) at 25°C (77°F) (see note) |
|-----------------|-------------------------------------|---------------------------------------|--------------------|--------|--------------------------|----------------------------|---|
| 6 VAC | 5.5 | 105 | 1.7 VA | 2.0 VA | 6 to 240 VAC 50/60 Hz | 1,000 MΩ min. @ 500 VDC | 85% of nominal |
| 12 VAC | 22 | 445 | | | | | |
| 24 VAC | 88 | 1,740 | | | | | |
| 120 VAC | 2,090 | 17,430 | | | | | |

Note: 120% of nominal or greater (one second duration single pulse) unlatch voltage - - above this the relay latches again.
Maximum continuous voltage: 120% of nominal (one coil only).

Latching - DC

| Nominal voltage | Latch coil resistance in Ohms $\pm 10\%$ | Unlatch coil resistance in Ohms $\pm 10\%$ | Nominal coil power | Coil voltages | Insulation resistance | Operate voltage (latch/unlatch) at 25°C (77°F) (see note) |
|-----------------|--|--|--------------------|---------------|---------------------------------|---|
| 5 VDC | 14 | 45 | 1.2 W | 5 to 110 VDC | 1,000 M Ω min. @ 500 VDC | 75% of nominal |
| 6 VDC | 20 | 64 | | | | |
| 12 VDC | 80 | 275 | | | | |
| 24 VDC | 330 | 1,070 | | | | |
| 48 VDC | 1,290 | 2,850 | | | | |
| 110 VDC | 5,125 | 10,750 | | | | |

Note: 120% of nominal or greater (one second duration single pulse) unlatch voltage - - above this the relay latches again.
Maximum continuous voltage: 120% of nominal (one coil only).

■ Characteristics

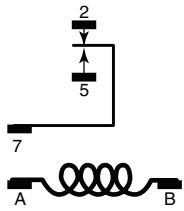
| | | | |
|--------------------------------------|------------------------------|--|-------------------------------|
| Operate time | | 15 ms nominal; 20 ms maximum | |
| Release time | | 6 ms nominal; 10 ms maximum | |
| Latch time | | 13 ms nominal with a one second pulse of nominal voltage (See note) | |
| Unlatch time | | 13 ms nominal with a one second pulse of nominal unlatch voltage after latching with a one second pulse of nominal latching voltage (See note) | |
| Operating ambient temperature | AC: 1 & 2 pole | Operating | -45° to 60°C (-49° to 140°F) |
| | | Storage | -65° to 100°C (-85° to 212°F) |
| | AC: 3 pole | Operating | -45° to 45°C (-49° to 113°F) |
| | | Storage | -65° to 100°C (-85° to 212°F) |
| | DC: 1, 2 & 3 pole | Operating | -45° to 70°C (-49° to 158°F) |
| | | Storage | -65° to 100°C (-85° to 212°F) |
| Insulation material | | High quality phenolic | |
| Duty cycle | | Rated for continuous duty operation at 25% overvoltage | |
| Shock | | 15 g's 11 \pm 1 ms (non-operating test, no mechanical damage) | |
| Vibration | | 0.1" DA or 10 g's, 10 to 55 Hz (operating test, no contact chatter) | |
| Life expectancy | | Electrical at rated load | 100,000 operations |
| | | Mechanical | 10,000,000 operations |
| Dielectric strength | | Greater than 750 VAC, RMS 60 Hz across open contacts Greater than 2,500 VAC, RMS 60 Hz all other mutually insulated elements | |
| Terminals | | Quick Connect | |
| Weight | | 64 g (2.3 oz) open relay 54 g (3.0 oz) enclosed relay | |

Note: A latch pulse of 50 ms minimum at nominal voltage is recommended to insure positive latching.

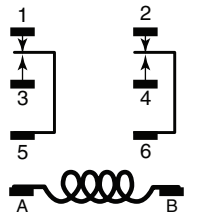
Terminal Arrangement

■ Non-Latching

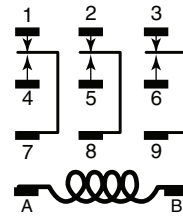
Reference only



1 Form C (SPDT)

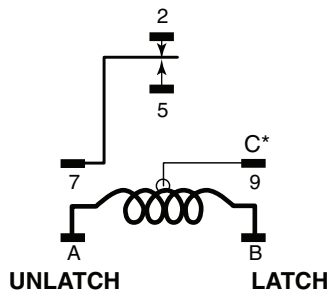


2 Form C (DPDT)

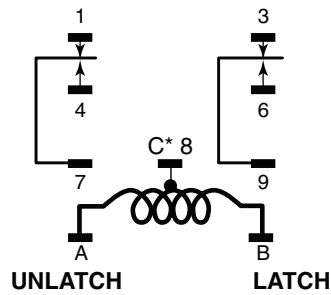


3 Form C (3PDT)

■ Latching / Unlatching



1 Form C (SPDT)



2 Form C (DPDT)

* C denoted common connection. On 3-pole relays the common connection is a wire lead coming off of the coil. It is not terminated to the relay header. Consult your Omron representative for single coil or isolated double coil models.

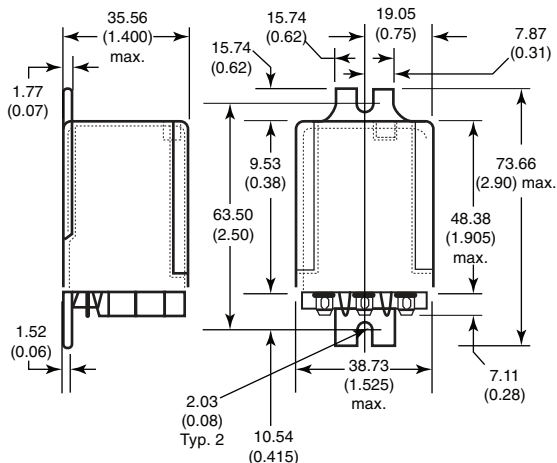
Dimensions

Unit: mm (inch)

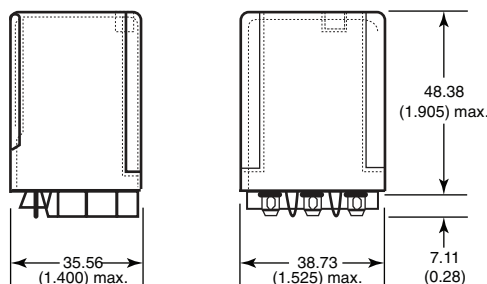
Relays

MJN□CF/MJN2CE

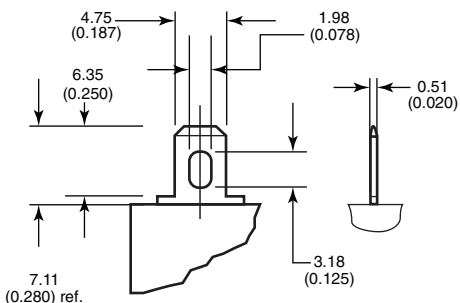
Dust cover with mounting flanges



Dust cover MJN

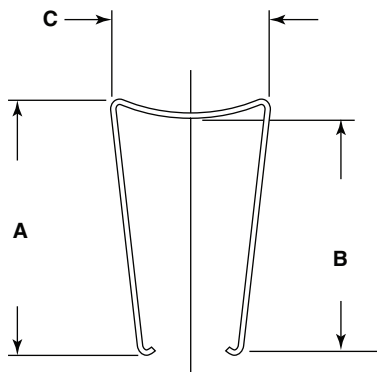


Terminal-10 Amp Version



Note: Mates with .187" UL standard quick-connect terminals; also suitable for solder connection.

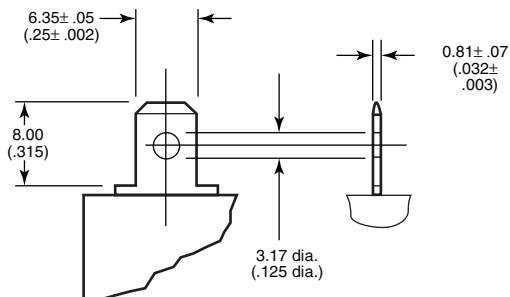
Hold Down Springs



Hold Down Springs Dimensional Reference chart

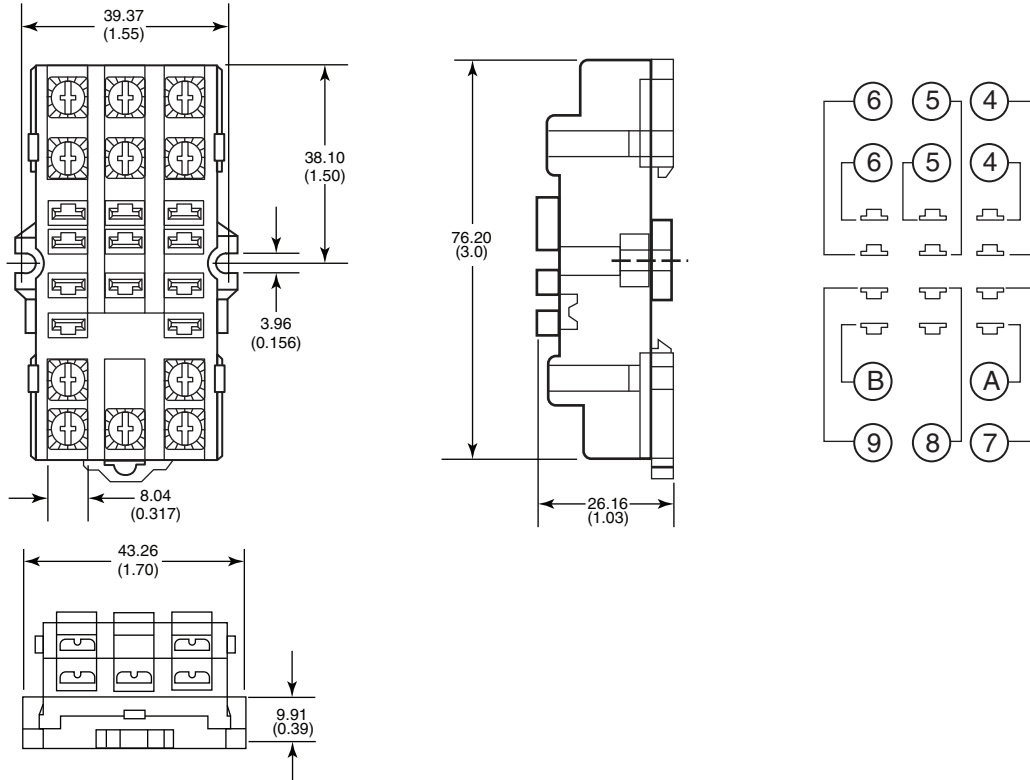
| Part number | Reference dimension | Actual dimension |
|-------------|---------------------|------------------|
| PYMJN-PCB | A | 58.67 (2.31) |
| | B | 53.82 (2.12) |
| | C | 37.08 (1.46) |
| PYMJN-S | A | 58.67 (2.31) |
| | B | 53.59 (2.11) |
| | C | 40.26 (1.59) |

Terminal-20 and 30 Amp Versions

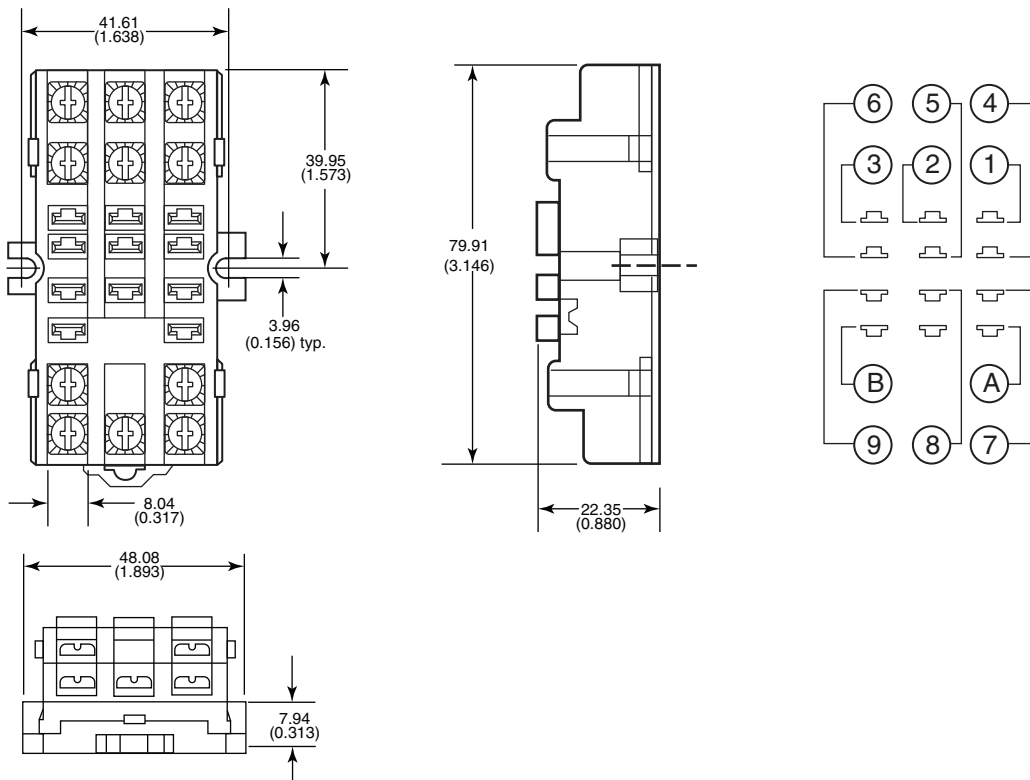


■ Sockets (for use with 10 Amp, non-flange mount versions)

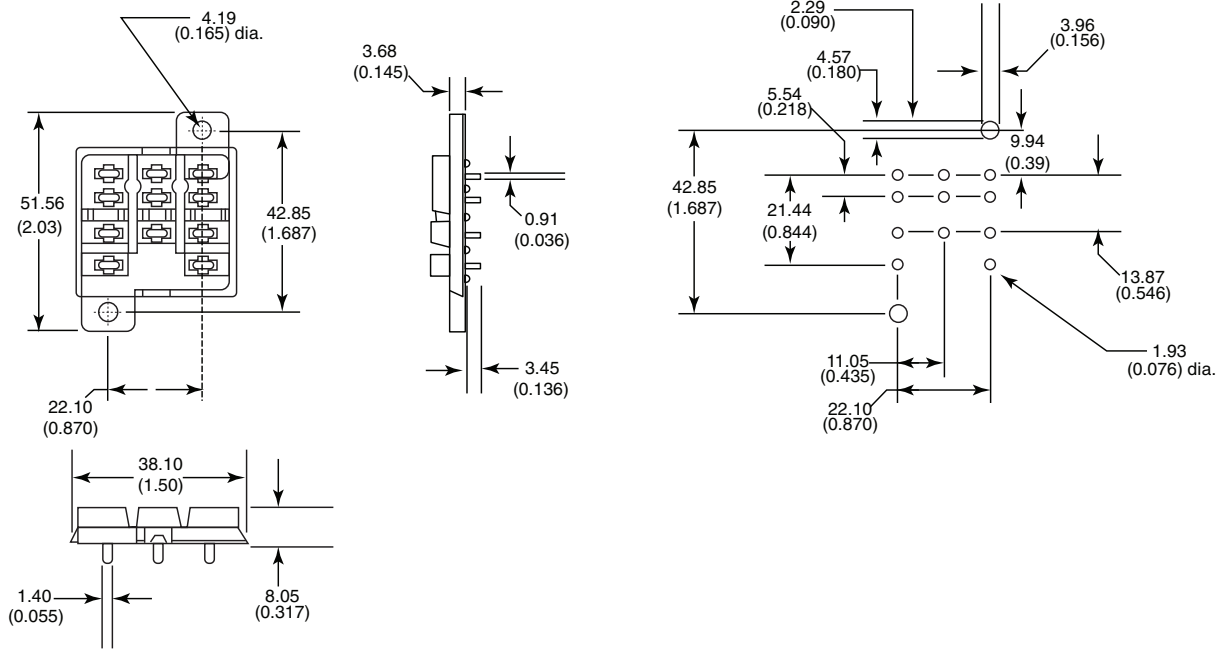
PTF11PC



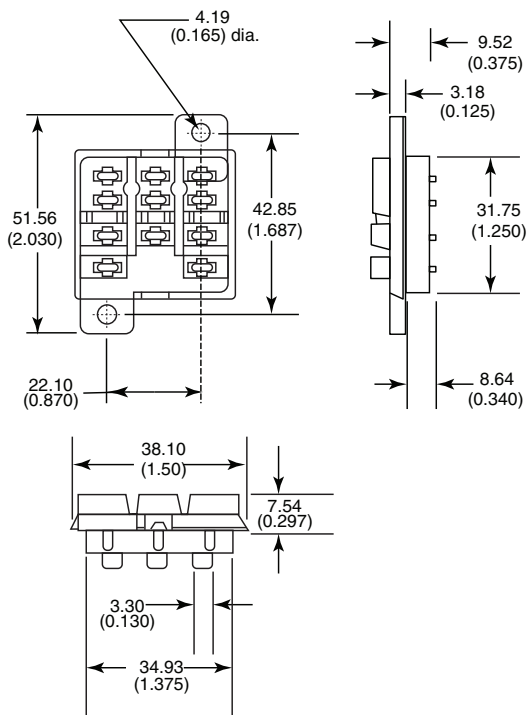
PTF21PC



PTFPCB



PTF11QDC



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