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## Multi-pole Power Relay for Contactor Current Range Capable of Carrying and Switching 40 A at 440 VAC

- One pole, 40 A can be carried and switched.
- The maximum load capacity of 160 A when using 4-pole parallel connections.
- All materials used are compliant with the RoHS Directive
- EN 60947-4-1 certification for mirror contact mechanisms has been obtained by using a combination of the relay and auxiliary contact blocks.
- A design with a small number of openings makes it difficult for dust or foreign matter to enter.
- Ideal for supply power to industrial inverters, servo drivers, and other devices, and switching power to motors and other equipment.



## Specifications

### Approved Standards

UL Standard: UL508, UL840 (File No. E41643)

| Model | Coil Ratings | Contact Ratings |                                                                | Number of Test Operations |
|-------|--------------|-----------------|----------------------------------------------------------------|---------------------------|
| G7Z   | 12, 24 VDC   | NO contact      | 40 A, 480 VAC, 60 Hz (Resistive)                               | 80,000                    |
|       |              |                 | 5 A, 120 VDC (Resistive)                                       | 100,000                   |
|       |              |                 | 22 A, 480 VAC, 60 Hz (General Use)                             | 100,000                   |
|       |              |                 | D300* (1-A current applied)                                    | ---                       |
|       |              | NC contact      | 25 A, 480 VAC, 60 Hz (Resistive)                               | 100,000                   |
|       |              |                 | 5 A, 120 VDC (Resistive)<br>10 A, 480 VAC, 60 Hz (General Use) |                           |
|       |              |                 | D300* (1-A current applied)                                    | ---                       |

\*Auxiliary contact ratings

| Model | Contact Ratings |                            |
|-------|-----------------|----------------------------|
| G73Z  | NO contact      | D300 (1-A current applied) |
|       | NC contact      |                            |

CSA Standard: CSA Certification: CSA C22.2 No. 14

EN Standard/TÜV Certification: EN 60947-4-1  
(Certification No. R50079155)

| Model | Coil Ratings | Contact Ratings |                                                                                                                                          |
|-------|--------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|
| G7Z   | 12, 24 VDC   | NO contact      | AC-1: 40 A, 440 V, 50/60 Hz<br>AC-3: 16 A, 440 V, 50/60 Hz<br>DC-1: 5 A, 110 V<br>*AC-15: 0.5 A, 440 V, 50/60 Hz<br>*DC-13: 0.5 A, 110 V |
|       |              | NC contact      | AC-1: 25 A, 440 V, 50/60 Hz<br>DC-1: 5 A, 110 V<br>*AC-15: 0.5 A, 440 V, 50/60 Hz<br>*DC-13: 0.5 A, 110 V                                |
| G73Z  | ---          | NO contact      | AC-15: 0.5 A, 440 V, 50/60 Hz<br>DC-13: 0.5 A, 110 V                                                                                     |
|       |              | NC contact      |                                                                                                                                          |

\*Auxiliary contact ratings

### Reference Information

UL 508: Industrial control devices  
UL 840: Insulation coordination including clearance and creepage distance for electrical devices  
CSA C22.2 No. 14: Industrial control devices  
EN 60947-4-1: Contactors

## Specifications (continued)

### Ratings

#### Coil

| Rated Voltage | Rated Current (mA) | Coil Resistance (Ω) | Must operate Voltage        | Must release Voltage | Maximum Voltage | Power Consumption (W) |
|---------------|--------------------|---------------------|-----------------------------|----------------------|-----------------|-----------------------|
|               |                    |                     | Percentage of Rated Voltage |                      |                 |                       |
|               |                    |                     | 75% max.                    | 10% min.             | 110%            |                       |
| 12 VDC        | 308                | 39                  | 75% max.                    | 10% min.             | 110%            | Approx. 3.7           |
| 24 VDC        | 154                | 156                 |                             |                      |                 |                       |

Notes:

1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of  $\pm 15\%$ .
2. Operating characteristics were measured at a coil temperature of 23°C.
3. The maximum allowable voltage is the maximum value of the fluctuation range from the relay coil operating power supply and was measured at an ambient temperature of 23°C. There is, however, no continuous allowance.

### Contacts

#### Relay

| G7Z-4A-□Z, G7Z-3A1B-□Z, G7Z-2A2B-□Z    |    |                 |                                 |                           |
|----------------------------------------|----|-----------------|---------------------------------|---------------------------|
|                                        |    | Resistive load  | Inductive load $\cos\phi = 0.3$ | Resistive load L/R = 1 ms |
| Contact structure                      |    | Double break    |                                 |                           |
| Contact material                       |    | Ag alloy        |                                 |                           |
| Rated load                             | NO | 40 A at 440 VAC | 22 A at 440 VAC                 | 5 A at 110 VDC            |
|                                        | NC | 25 A at 440 VAC | 10 A at 440 VAC                 | 5 A at 110 VDC            |
| Rated carry current                    | NO | 40 A            |                                 |                           |
|                                        | NC | 25 A            |                                 |                           |
| Maximum contact voltage                |    | 480 VAC         |                                 | 125 VDC                   |
| Maximum contact current                | NO | 40 A            | 22 A                            | 5 A                       |
|                                        | NC | 25 A            | 10 A                            | 5 A                       |
| Maximum switching capacity             | NO | 17,600 VA       | 9,680 VA                        | 550 W                     |
|                                        | NC | 11,000 VA       | 4,400 VA                        | 550 W                     |
| Failure rate P value (reference value) |    | 2 A at 24 VDC   |                                 |                           |

Note: The ratings for the auxiliary contact block mounted on the G7Z are the same as those for the G73Z auxiliary contact block.

#### Auxiliary Contact Block

| G73Z-20Z, G73Z-11Z, G73Z-02Z           |                |                                 |                           |
|----------------------------------------|----------------|---------------------------------|---------------------------|
|                                        | Resistive load | Inductive load $\cos\phi = 0.3$ | Resistive load L/R = 1 ms |
| Contact structure                      | Double break   |                                 |                           |
| Contact material                       | Au clad + Ag   |                                 |                           |
| Rated load                             | 1 A at 440 VAC | 0.5 A at 440 VAC                | 0.5 A at 110 VDC          |
| Rated carry current                    | 1 A            |                                 |                           |
| Maximum contact voltage                | 480 VAC        |                                 | 125 VDC                   |
| Maximum contact current                | 1 A            | 0.5 A                           |                           |
| Maximum switching capacity             | 440 VA         | 220 VA                          | 55 W                      |
| Failure rate P value (reference value) | 1 mA at 5 VDC  |                                 |                           |

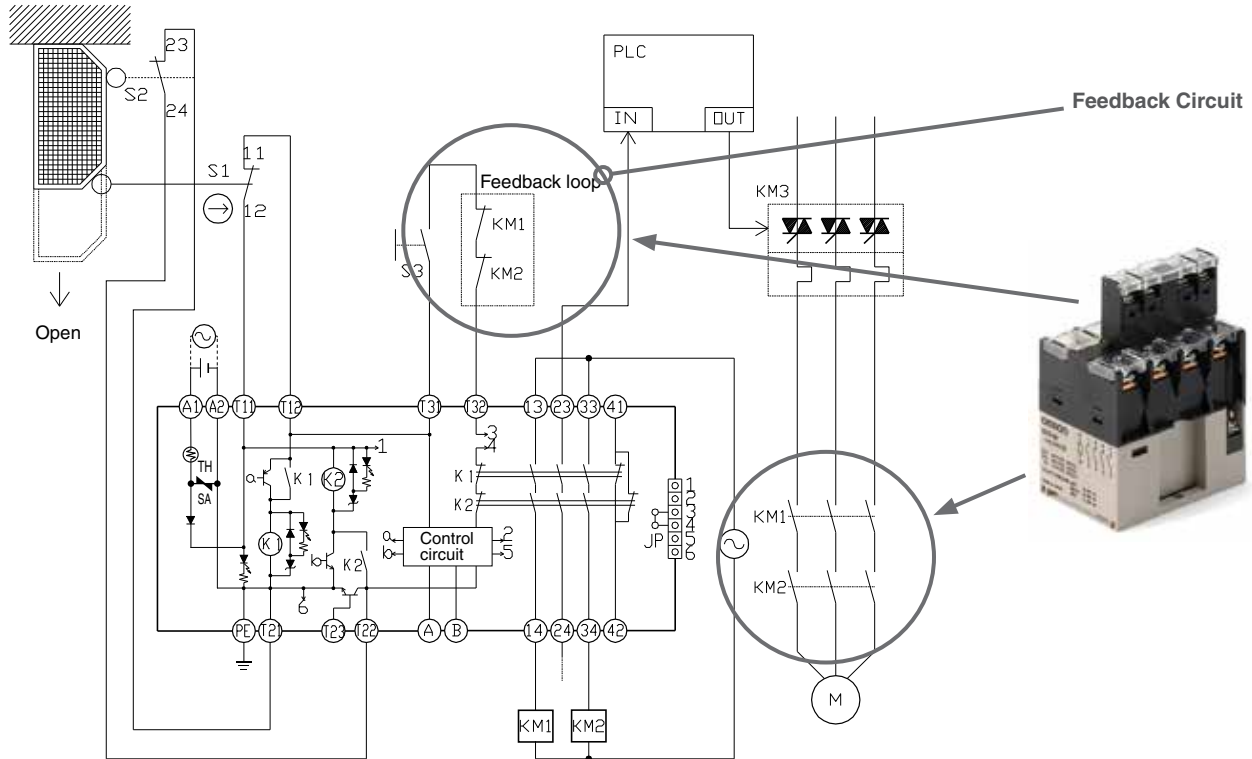
## Mirror Contacts

### Safety Function with Mirror Contacts

EN 60947-4-1 certification for mirror contact mechanisms has been obtained by using a combination of a relay and auxiliary contact blocks (5 VDC, 1 mA), enabling application in feedback circuits of safety circuits.

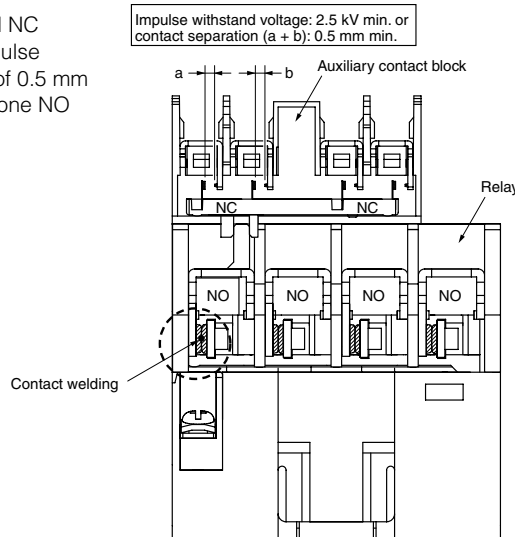
#### Application Example: General Safety Circuit

G9SA-301 (24-V AC/DC) (two limit switch input channels with manual reset)



### Mirror Contact Mechanism

By combining a Relay with an auxiliary contact block, all NC contacts of the auxiliary contact block will satisfy an impulse withstand voltage of 2.5 kV or higher or maintain a gap of 0.5 mm or greater when the coil is de-energized even if at least one NO contact (main contact) of the Relay is welded.

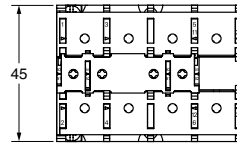
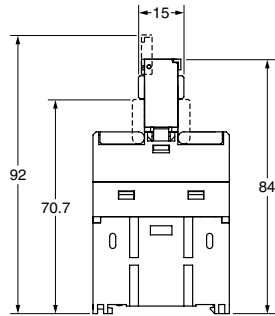


## Dimensions

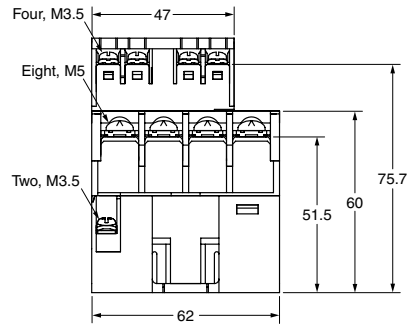
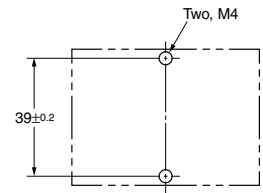
(mm)

### Relay (12 VDC, 24 VDC) with Auxiliary Contact Block

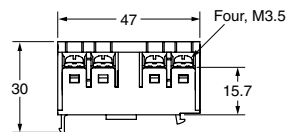
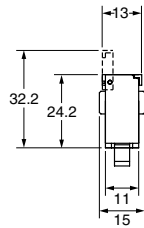
4 Poles



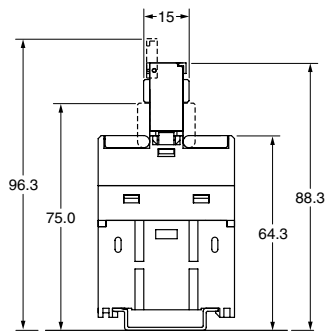
Mounting Hole Dimensions



### Auxiliary Contact Block



### DIN Track Mounting Height (when using PFP-100N or PFP-50N mounting rail)



Note: The dimensions are typical values.

## Ordering

### Model Number Legend

#### Relay with Auxiliary Contact Block

G7Z – □ – □ □

① ② ③

- ① Relay Contact Configuration
  - 4A: 4PST-NO
  - 3A1B: 3PST-NO/SPST-NC
  - 2A2B: DPST-NO/DPST-NC
- ② Contact Configuration of Auxiliary Contacts
  - 20: DPST-NO
  - 11: SPST-NO/SPST-NC
  - 02: DPST-NC
- ③ Contact Mechanism of Auxiliary Contacts
  - Z: Bifurcated crossbar contact

#### Auxiliary Contact Block

G73Z – □ □

① ②

- ① Contact Configuration of Auxiliary Contacts
  - 20: DPST-NO
  - 11: SPST-NO/SPST-NC
  - 02: DPST-NC
- ② Contact Mechanism of Auxiliary Contacts
  - Z: Bifurcated crossbar contact

### Relay with Auxiliary Contact Block

#### Relay with Auxiliary Contact Block (for Screw Terminals)

| Classification                     |                   | Contact configuration |                         | Rated Voltage | Model        |
|------------------------------------|-------------------|-----------------------|-------------------------|---------------|--------------|
|                                    |                   | Relay                 | Auxiliary Contact Block |               |              |
| Relay with Auxiliary Contact Block | 4 poles + 2 poles | 4PST-NO               | DPST-NO                 | 12, 24 VDC    | G7Z-4A-20Z   |
|                                    |                   |                       | SPST-NO/SPST-NC         |               | G7Z-4A-11Z   |
|                                    |                   |                       | DPST-NC                 |               | G7Z-4A-02Z   |
|                                    |                   | 3PST-NO/SPST-NC       | DPST-NO                 |               | G7Z-3A1B-20Z |
|                                    |                   |                       | SPST-NO/SPST-NC         |               | G7Z-3A1B-11Z |
|                                    |                   |                       | DPST-NC                 |               | G7Z-3A1B-02Z |
|                                    |                   | DPST-NO/DPST-NC       | DPST-NO                 |               | G7Z-2A2B-20Z |
|                                    |                   |                       | SPST-NO/SPST-NC         |               | G7Z-2A2B-11Z |
|                                    |                   |                       | DPST-NC                 |               | G7Z-2A2B-02Z |
|                                    |                   |                       |                         |               |              |
|                                    |                   |                       |                         |               |              |
|                                    |                   |                       |                         |               |              |

Notes:

- 1. Relay contact terminals are M5, and the coil terminals are M3.5.
- 2. Auxiliary contact block terminals are M3.5

### Accessories (Order Separately)

#### Auxiliary Contact Block

| Classification          |         | Contact Configuration | Model    |
|-------------------------|---------|-----------------------|----------|
| Auxiliary Contact Block | 2 poles | DPST-NO               | G73Z-20Z |
|                         |         | SPST-NO/SPST-NC       | G73Z-11Z |
|                         |         | DPST-NC               | G73Z-02Z |