

# Magnetic Contactor

# J7KC Series

**Best Match for upto 2.2 kW (240 VAC) \*2,  
5.5 kW (440 VAC) Motor and  
Primary Side switches**



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

- Push-In Plus wiring Technology saves Wiring and Maintenance time
- World's smallest size (\*1)
- Ideal for motor Control up to 2.2 kW (200 to 240 VAC) (\*2), 5.5 kW (380 to 440 VAC), AC-3 class
- Magnetic Contactor with Mirror contacts according to EN 60947-4-1 in safety applications, whose switching function is controlled by a safety-related system
- High Contact Reliability (Min. 5 VDC, 3 mA) by Bifurcated contacts
- Coil surge absorber unit installed as standard (\*3)
- Certified as compliant with the main safety standards

\*1. According to OMRON investigation, as of August 2019.

For push-in models.

\*2. Based on JIS C 8201-4-1

\*3. DC operated



Refer to *Safety Precautions* on page 18.

## Model Number Structure

**Model Number Legend** Order according to the format described in Ordering Information.

**J7KC** □ -12- □□ □□□□  
(1) (2) (3) (4)

### (1) Non-reversing/reversing

| Code |               |
|------|---------------|
| None | Non-reversing |
| R    | Reversing     |

### (2) Frame size

| Code |      |
|------|------|
| 12   | 12 A |

### (3) Auxiliary contacts

| Code | Contact form |
|------|--------------|
| 10   | SPST-1NO     |
| 01   | SPST-1NC     |

### (4) Coil voltage

| Operation   | Code   | Coil voltage |
|-------------|--------|--------------|
| AC-operated | AC 24  | 24 VAC       |
|             | AC 48  | 48 VAC       |
|             | AC 100 | 100 VAC      |
|             | AC 110 | 110 VAC      |
|             | AC 120 | 120 VAC      |
|             | AC 200 | 200 VAC      |
|             | AC 220 | 220 VAC      |
|             | AC 230 | 230 VAC      |
|             | AC 240 | 240 VAC      |
|             | AC 380 | 380 VAC      |
|             | AC 400 | 400 VAC      |
|             | AC 440 | 440 VAC      |
|             | AC 500 | 500 VAC      |

| Operation   | Code   | Coil voltage |
|-------------|--------|--------------|
| DC-operated | DC 12  | 12 VDC       |
|             | DC 24  | 24 VDC       |
|             | DC 48  | 48 VDC       |
|             | DC 60  | 60 VDC       |
|             | DC 100 | 100 VDC      |
|             | DC 110 | 110 VDC      |
|             | DC 120 | 120 VDC      |
|             | DC 200 | 200 VDC      |
|             | DC 210 | 210 VDC      |
|             | DC 220 | 220 VDC      |

## J7KC Series

### Ordering Information

#### Main unit

| Product Type       | Operation                                               | Coil rating | Auxiliary contact | Model            |
|--------------------|---------------------------------------------------------|-------------|-------------------|------------------|
| Magnetic contactor | AC-operated                                             | 24 VAC      | SPST-1NO          | J7KC-12-10 AC24  |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC24  |
|                    |                                                         | 48 VAC      | SPST-1NO          | J7KC-12-10 AC48  |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC48  |
|                    |                                                         | 100 VAC     | SPST-1NO          | J7KC-12-10 AC100 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC100 |
|                    |                                                         | 110 VAC     | SPST-1NO          | J7KC-12-10 AC110 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC110 |
|                    |                                                         | 120 VAC     | SPST-1NO          | J7KC-12-10 AC120 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC120 |
|                    |                                                         | 200 VAC     | SPST-1NO          | J7KC-12-10 AC200 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC200 |
|                    |                                                         | 220 VAC     | SPST-1NO          | J7KC-12-10 AC220 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC220 |
|                    |                                                         | 230 VAC     | SPST-1NO          | J7KC-12-10 AC230 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC230 |
|                    |                                                         | 240 VAC     | SPST-1NO          | J7KC-12-10 AC240 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC240 |
|                    |                                                         | 380 VAC     | SPST-1NO          | J7KC-12-10 AC380 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC380 |
|                    |                                                         | 400 VAC     | SPST-1NO          | J7KC-12-10 AC400 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC400 |
|                    |                                                         | 440 VAC     | SPST-1NO          | J7KC-12-10 AC440 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC440 |
|                    |                                                         | 500 VAC     | SPST-1NO          | J7KC-12-10 AC500 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 AC500 |
|                    | DC-operated<br>(With built-in surge<br>absorption unit) | 12 VDC      | SPST-1NO          | J7KC-12-10 DC12  |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC12  |
|                    |                                                         | 24 VDC      | SPST-1NO          | J7KC-12-10 DC24  |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC24  |
|                    |                                                         | 48 VDC      | SPST-1NO          | J7KC-12-10 DC48  |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC48  |
|                    |                                                         | 60 VDC      | SPST-1NO          | J7KC-12-10 DC60  |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC60  |
|                    |                                                         | 100 VDC     | SPST-1NO          | J7KC-12-10 DC100 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC100 |
|                    |                                                         | 110 VDC     | SPST-1NO          | J7KC-12-10 DC110 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC110 |
|                    |                                                         | 120 VDC     | SPST-1NO          | J7KC-12-10 DC120 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC120 |
|                    |                                                         | 200 VDC     | SPST-1NO          | J7KC-12-10 DC200 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC200 |
|                    |                                                         | 210 VDC     | SPST-1NO          | J7KC-12-10 DC210 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC210 |
|                    |                                                         | 220 VDC     | SPST-1NO          | J7KC-12-10 DC220 |
|                    |                                                         |             | SPST-1NC          | J7KC-12-01 DC220 |

| Product Type                 | Operation                                            | Coil rating | Auxiliary contact | Model             |
|------------------------------|------------------------------------------------------|-------------|-------------------|-------------------|
| Reversing magnetic contactor | AC-operated                                          | 24 VAC      | SPST-2NO          | J7KCR-12-10 AC24  |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC24  |
|                              |                                                      | 48 VAC      | SPST-2NO          | J7KCR-12-10 AC48  |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC48  |
|                              |                                                      | 100 VAC     | SPST-2NO          | J7KCR-12-10 AC100 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC100 |
|                              |                                                      | 110 VAC     | SPST-2NO          | J7KCR-12-10 AC110 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC110 |
|                              |                                                      | 120 VAC     | SPST-2NO          | J7KCR-12-10 AC120 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC120 |
|                              |                                                      | 200 VAC     | SPST-2NO          | J7KCR-12-10 AC200 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC200 |
|                              |                                                      | 220 VAC     | SPST-2NO          | J7KCR-12-10 AC220 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC220 |
|                              |                                                      | 230 VAC     | SPST-2NO          | J7KCR-12-10 AC230 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC230 |
|                              |                                                      | 240 VAC     | SPST-2NO          | J7KCR-12-10 AC240 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC240 |
|                              |                                                      | 380 VAC     | SPST-2NO          | J7KCR-12-10 AC380 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC380 |
|                              |                                                      | 400 VAC     | SPST-2NO          | J7KCR-12-10 AC400 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC400 |
|                              |                                                      | 440 VAC     | SPST-2NO          | J7KCR-12-10 AC440 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC440 |
|                              |                                                      | 500 VAC     | SPST-2NO          | J7KCR-12-10 AC500 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 AC500 |
|                              | DC-operated<br>(With built-in surge absorption unit) | 12 VDC      | SPST-2NO          | J7KCR-12-10 DC12  |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC12  |
|                              |                                                      | 24 VDC      | SPST-2NO          | J7KCR-12-10 DC24  |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC24  |
|                              |                                                      | 48 VDC      | SPST-2NO          | J7KCR-12-10 DC48  |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC48  |
|                              |                                                      | 60 VDC      | SPST-2NO          | J7KCR-12-10 DC60  |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC60  |
|                              |                                                      | 100 VDC     | SPST-2NO          | J7KCR-12-10 DC100 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC100 |
|                              |                                                      | 110 VDC     | SPST-2NO          | J7KCR-12-10 DC110 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC110 |
|                              |                                                      | 120 VDC     | SPST-2NO          | J7KCR-12-10 DC120 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC120 |
|                              |                                                      | 200 VDC     | SPST-2NO          | J7KCR-12-10 DC200 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC200 |
|                              |                                                      | 210 VDC     | SPST-2NO          | J7KCR-12-10 DC210 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC210 |
|                              |                                                      | 220 VDC     | SPST-2NO          | J7KCR-12-10 DC220 |
|                              |                                                      |             | SPST-2NC          | J7KCR-12-01 DC220 |

## J7KC Series

### Options (Order Separately)

#### Auxiliary contact unit

| Number of poles | Auxiliary contact | Model              |
|-----------------|-------------------|--------------------|
| 2 poles         | 2PST-2NO          | <b>J73KC-AM-20</b> |
|                 | 2PST-1NO 1NC      | <b>J73KC-AM-11</b> |
|                 | 2PST-2NC          | <b>J73KC-AM-02</b> |
| 4 poles         | 4PST-4NO          | <b>J73KC-AM-40</b> |
|                 | 4PST-3NO 1NC      | <b>J73KC-AM-31</b> |
|                 | 4PST-2NO 2NC      | <b>J73KC-AM-22</b> |
|                 | 4PST-1NO 3NC      | <b>J73KC-AM-13</b> |
|                 | 4PST-4NC          | <b>J73KC-AM-04</b> |

#### Interlock unit

| Model          |
|----------------|
| <b>J74KC-A</b> |

#### Reversing conductor kit

| Type                  | Model              |
|-----------------------|--------------------|
| For main circuit      | <b>J75KC-WKR-A</b> |
| For auxiliary circuit | <b>J75KC-WKR-B</b> |

#### Coil surge absorption unit

| Adopted Coil voltage type | LED indicator | Model               |
|---------------------------|---------------|---------------------|
| 24-48 VAC                 | No            | <b>J76KC-RC-1</b>   |
| 48-125 VAC                |               | <b>J76KC-RC-2</b>   |
| 100-250 VAC               |               | <b>J76KC-RC-3</b>   |
| 24-48 VAC                 | Yes           | <b>J76KC-RC-N-1</b> |
| 48-125 VAC                |               | <b>J76KC-RC-N-2</b> |

#### Insulation stop

| Model          | Minimum order (bag) |
|----------------|---------------------|
| <b>J77KC-K</b> | 1<br>(30 pcs./bag)  |

#### Tools for removal

| Model        |
|--------------|
| <b>J78KC</b> |

## Ratings/Specifications

The ratings/specifications are the same for both non-reversing/reversing types.

### Coil rating

#### AC operated

| Displayed model | Rated voltage |             | Allowable voltage range |             |             | Must operate voltage | Must release voltage |
|-----------------|---------------|-------------|-------------------------|-------------|-------------|----------------------|----------------------|
|                 | 50 Hz         | 60 Hz       |                         | 50 Hz       | 60 Hz       |                      |                      |
| AC 24           | 24 VAC        | 24-26 VAC   | 85 to 110%              | 21-27 VAC   | 21-29 VAC   | 85% max.             | 20% min.             |
| AC 48           | 48 VAC        | 48-52 VAC   |                         | 41-53 VAC   | 41-58 VAC   |                      |                      |
| AC 100          | 100 VAC       | 100-110 VAC |                         | 85-110 VAC  | 85-121 VAC  |                      |                      |
| AC 110          | 100-110 VAC   | 110-120 VAC |                         | 85-121 VAC  | 94-132 VAC  |                      |                      |
| AC 120          | 110-120 VAC   | 120-130 VAC |                         | 94-132 VAC  | 102-143 VAC |                      |                      |
| AC 200          | 200 VAC       | 200-220 VAC |                         | 170-220 VAC | 170-242 VAC |                      |                      |
| AC 220          | 200-220 VAC   | 220-240 VAC |                         | 170-242 VAC | 187-264 VAC |                      |                      |
| AC 230          | 220-230 VAC   | 230 VAC     |                         | 187-253 VAC | 196-253 VAC |                      |                      |
| AC 240          | 220-240 VAC   | 240-260 VAC |                         | 187-264 VAC | 204-286 VAC |                      |                      |
| AC 380          | 346-380 VAC   | 380-420 VAC |                         | 295-418 VAC | 323-462 VAC |                      |                      |
| AC 400          | 380-400 VAC   | 400-440 VAC |                         | 323-440 VAC | 340-484 VAC |                      |                      |
| AC 440          | 415-440 VAC   | 440-480 VAC |                         | 353-484 VAC | 374-528 VAC |                      |                      |
| AC 500          | 480-500 VAC   | 500-550 VAC |                         | 408-550 VAC | 425-605 VAC |                      |                      |

#### DC operated

| Displayed model | Rated voltage | Allowable voltage range |             | Must operate voltage | Must release voltage |
|-----------------|---------------|-------------------------|-------------|----------------------|----------------------|
| DC 12           | 12 VDC        | 85 to 110%              | 11-14 VDC   | 85% max.             | 10% min.             |
| DC 24           | 24 VDC        |                         | 21-27 VDC   |                      |                      |
| DC 48           | 48 VDC        |                         | 41-53 VDC   |                      |                      |
| DC 60           | 60 VDC        |                         | 51-66 VDC   |                      |                      |
| DC 100          | 100 VDC       |                         | 85-110 VDC  |                      |                      |
| DC 110          | 110 VDC       |                         | 94-121 VDC  |                      |                      |
| DC 120          | 120 VDC       |                         | 102-132 VDC |                      |                      |
| DC 200          | 200 VDC       |                         | 170-220 VDC |                      |                      |
| DC 210          | 210 VDC       |                         | 179-231 VDC |                      |                      |
| DC 220          | 220 VDC       |                         | 187-242 VDC |                      |                      |

### Coil characteristics (reference value)

#### AC operated

| Frequency                |              | 50 Hz       | 60 Hz       |
|--------------------------|--------------|-------------|-------------|
| Coil power consumption   | Making (VA)  | 22 (200 V)  | 25 (220 V)  |
|                          | Holding (VA) | 4.5 (200 V) | 4.5 (220 V) |
| Power loss (W)           |              | 1.2 (200 V) | 1.3 (220 V) |
| Must operate voltage (V) |              | 122 to 135  | 128 to 138  |
| Must release voltage (V) |              | 80 to 89    | 83 to 96    |
| Operate time (ms)        |              | 17 to 26    |             |
| Release time (ms)        |              | 6 to 16     |             |

**Note:** 1. Coil ratings: Characteristics for 200 VAC, 50 Hz / 200-220 VAC, 60 Hz  
 2. Coil power consumption value is the same for a coil that is not rated 200 VAC.  
 3. Indicated operate/release times for 200 VAC, 50 Hz.  
 4. Closed and open voltages of 100 V coil (100 VAC, 50 Hz/100-110 VAC, 60 Hz) are approximately one half the values in the table above.  
 5. Values in the table above are examples for 20°C cold condition.

#### DC operated

|                          |             |            |
|--------------------------|-------------|------------|
| Coil power consumption   | Making (W)  | 2.4 (24 V) |
|                          | Holding (W) | 2.2 (24 V) |
| Time constant (ms)       | Holding     | 20         |
| Must operate voltage (V) |             | 10 to 11   |
| Must release voltage (V) |             | 4 to 6     |
| Operate time (ms)        |             | 34 to 60   |
| Release time (ms)        |             | 5 to 10    |

**Note:** 1. Coil ratings: Characteristics for 24 VDC  
 2. Coil power consumption value is the same for a coil that is not rated 24 VDC.  
 3. Values in the table above are examples for 20°C cold condition.

## Ratings/Characteristics

|                           |                                                                      |                                              |                                     |                                               |                     |            |              |            |            |
|---------------------------|----------------------------------------------------------------------|----------------------------------------------|-------------------------------------|-----------------------------------------------|---------------------|------------|--------------|------------|------------|
| Main<br>circuit<br>rating | Rating based on<br>IEC 60947-4-1                                     | AC-1<br>(Resistive load)                     | Voltage range (V)                   |                                               | AC200-240 AC        |            | AC380-440 AC |            |            |
|                           |                                                                      |                                              | Rated operational current (A)       |                                               | 15                  |            | 15           |            |            |
|                           |                                                                      | AC-3<br>(3-phase cage<br>motor)              | Voltage range (V)                   |                                               | 200-240 AC          | 380-440 AC | 500-550 AC   | 600-690 AC |            |
|                           |                                                                      |                                              | Rated capacity (kW)                 |                                               | 3                   | 5.5        | 5.5          | 4          |            |
|                           |                                                                      |                                              | Rated operational current (A)       |                                               | 12                  | 12         | 9            | 5          |            |
|                           |                                                                      | AC-4<br>(3-phase cage<br>motor)              | Voltage range (V)                   |                                               | 200-240 AC          | 380-440 AC | 500-550 AC   | 600-690 AC |            |
|                           |                                                                      |                                              | Rated capacity (kW)                 |                                               | 3                   | 5.5        | 5.5          | 4          |            |
|                           |                                                                      |                                              | Rated operational current (A)       |                                               | 12                  | 12         | 9            | 5          |            |
|                           |                                                                      | DC-1<br>(Resistive load<br>L/R ≤ 1 ms)       | Voltage range (V)                   |                                               | 24 DC               | 48 DC      | 110 DC       | 220 DC     |            |
|                           |                                                                      |                                              | Rated<br>operational<br>current (A) | Number of serial contacts 1                   | 12                  | 12         | 6            | 1          |            |
|                           |                                                                      |                                              |                                     | Number of serial contacts 2                   | 12                  | 12         | 9            | 4          |            |
|                           |                                                                      |                                              |                                     | Number of serial contacts 3                   | 12                  | 12         | 12           | 12         |            |
|                           |                                                                      | DC-3, DC-5<br>(DC motor load<br>L/R ≤ 15 ms) | Voltage range (V)                   |                                               | 24 DC               | 48 DC      | 110 DC       | 220 DC     |            |
|                           |                                                                      |                                              | Rated<br>operational<br>current (A) | Number of serial contacts 1                   | 4                   | 1.5        | 1            | 0.3        |            |
|                           | Number of serial contacts 2                                          |                                              |                                     | 10                                            | 3                   | 2          | 0.8          |            |            |
|                           | Number of serial contacts 3                                          |                                              |                                     | 12                                            | 6                   | 5          | 1.5          |            |            |
|                           | Conventional free air thermal current<br>(rated flowing current) (A) |                                              |                                     | 15                                            |                     |            |              |            |            |
|                           | Rating based on<br>UL 60947-4-1,<br>CSA C22.2                        | 3-phase motor                                | Voltage range (V)                   |                                               | 200 AC              | 220-240 AC | 440-480 AC   | 550-600 AC |            |
|                           |                                                                      |                                              | Rated capacity (HP)                 |                                               | 3                   | 3          | 5            | 5          |            |
|                           |                                                                      |                                              | Rated operational current (A)       |                                               | 11                  | 9.6        | 7.6          | 6.1        |            |
|                           |                                                                      |                                              | Rated current (A)                   |                                               | 15                  |            |              |            |            |
|                           |                                                                      | Single-phase<br>motor                        | Voltage range (V)                   |                                               | 110-120 AC          |            | 200 AC       | 220-240 AC |            |
|                           |                                                                      |                                              | Rated capacity (HP)                 |                                               | 3/4                 |            | 1-1/2        | 2          |            |
|                           |                                                                      |                                              | Rated operational current (A)       |                                               | 13.8                |            | 11.5         | 12         |            |
|                           |                                                                      |                                              | Rated current (A)                   |                                               | 15                  |            |              |            |            |
|                           |                                                                      | FUSE                                         |                                     |                                               | 30A (Class K5, RK5) |            |              |            |            |
|                           |                                                                      | Rating based on<br>JIS C 8201-4-1            | AC-1<br>(resistive load)            | Voltage range (V)                             |                     | 200-240 AC |              | 380-440 AC |            |
|                           | Rated operational current (A)                                        |                                              |                                     | 15                                            |                     | 15         |              |            |            |
|                           | AC-3<br>(3-phase cage<br>motor)                                      |                                              | Voltage range (V)                   |                                               | 200-240 AC          |            | 380-440 AC   |            | 500-550 AC |
|                           |                                                                      |                                              | Rated capacity (kW)                 |                                               | 2.2                 |            | 5.5          |            | 5.5        |
|                           |                                                                      |                                              | Rated operational current (A)       |                                               | 12                  |            | 12           |            | 9          |
|                           | DC-1<br>(Resistive load<br>L/R ≤ 1 ms)                               |                                              | Voltage range (V)                   |                                               | 24 DC               | 48 DC      | 110 DC       |            | 220 DC     |
|                           |                                                                      |                                              | Rated<br>operational<br>current (A) | Number of serial contacts 1                   | 12                  | 12         | 6            | 1          |            |
|                           |                                                                      |                                              |                                     | Number of serial contacts 2                   | 12                  | 12         | 9            | 4          |            |
|                           |                                                                      |                                              |                                     | Number of serial contacts 3                   | 12                  | 12         | 12           | 12         |            |
|                           | DC-3, DC-5<br>(DC motor load<br>L/R ≤ 15 ms)                         |                                              | Voltage range (V)                   |                                               | 24 DC               | 48 DC      | 110 DC       |            | 220 DC     |
|                           |                                                                      |                                              | Rated<br>operational<br>current (A) | Number of serial contacts 1                   | 4                   | 1.5        | 1            | 0.3        |            |
|                           |                                                                      |                                              |                                     | Number of serial contacts 2                   | 10                  | 3          | 2            | 0.8        |            |
|                           |                                                                      |                                              |                                     | Number of serial contacts 3                   | 12                  | 6          | 5            | 1.5        |            |
|                           | Conventional free air thermal current<br>(rated flowing current) (A) |                                              |                                     | 15                                            |                     |            |              |            |            |
|                           | Minimum operate voltage/current (reference value)                    |                                              |                                     | 24 VDC 10 mA                                  |                     |            |              |            |            |
|                           | Electrical/<br>mechanical<br>endurance                               | Voltage range (V)                            |                                     | 220 AC                                        |                     | 440 AC     |              |            |            |
|                           |                                                                      | Rated operational current (A)                |                                     | 12                                            |                     | 12         |              |            |            |
|                           |                                                                      | Contact closed current (A)                   |                                     | 144                                           |                     | 144        |              |            |            |
|                           |                                                                      | Breaking current (A)                         |                                     | 120                                           |                     | 120        |              |            |            |
|                           |                                                                      | Switching frequency (times per hour)         |                                     | 1800                                          |                     | 1800       |              |            |            |
|                           |                                                                      | Endurance<br>(10,000 operations min.)        | Mechanical                          |                                               | 1000                |            | 1000         |            |            |
|                           |                                                                      |                                              | Electrical (AC3)                    |                                               | 100 *               |            |              |            |            |
|                           | Contact resistance (reference value)                                 |                                              |                                     | 10 mΩ max. (6 VDC, 1 mA, voltage drop method) |                     |            |              |            |            |

\* The electrical endurance is the value at 200 V based on the electrical endurance test conditions assumed in the IEC/JIS standards, and will vary depending on the characteristics and load conditions of the motor you use. A large motor starting current may cause a decrease of electrical endurance or contact sticking.

|                                   |                                                                   |                                                                                           |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
|-----------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------|------------|------------|------------|------------------------|--------|--------|--------|--|
| Auxiliary circuit rating          | Rating based on IEC 60947-5-1/ JIS C 8201-5-1                     | Voltage range (V)                                                                         |                                               | 100-120 AC                                                                              | 200-240 AC | 380-440 AC | 500-600 AC | 24 DC                  | 48 DC  | 110 DC | 220 DC |  |
|                                   |                                                                   | Rated operational current (A)                                                             |                                               | AC-15 (coil load)                                                                       |            |            |            | DC-13 (coil load)      |        |        |        |  |
|                                   |                                                                   |                                                                                           |                                               | 3                                                                                       | 3          | 1          | 0.5        | 2                      | 1      | 0.3    | 0.2    |  |
|                                   |                                                                   |                                                                                           |                                               | AC-12 (resistive load)                                                                  |            |            |            | DC-12 (resistive load) |        |        |        |  |
|                                   |                                                                   |                                                                                           |                                               | 6                                                                                       | 6          | 6          | 3          | 3                      | 2      | 1.5    | 0.5    |  |
|                                   |                                                                   | Contact closed and breaking current (A)                                                   |                                               | 30                                                                                      | 30         | 10         | 5          | 30                     | 30     | 10     | 5      |  |
|                                   | Conventional free air thermal current (rated flowing current) (A) |                                                                                           | 10                                            |                                                                                         |            |            |            |                        |        |        |        |  |
|                                   | Rating based on UL 508                                            | Rated carry current (A)                                                                   |                                               | 10                                                                                      |            |            |            |                        |        | 2.5    |        |  |
|                                   |                                                                   | Voltage range (V)                                                                         |                                               | 120 AC                                                                                  | 240 AC     | 480 AC     | 600 AC     | 125 DC                 | 250 DC |        |        |  |
|                                   |                                                                   | Contact closed current (A)                                                                |                                               | 60                                                                                      | 30         | 15         | 12         | 0.55                   | 0.27   |        |        |  |
|                                   |                                                                   | Breaking current (A)                                                                      |                                               | 6                                                                                       | 3          | 1.5        | 1.2        | 0.55                   | 0.27   |        |        |  |
|                                   |                                                                   | Rating code                                                                               |                                               | A 600                                                                                   |            |            |            |                        |        | Q 300  |        |  |
|                                   | Minimum operate voltage/current (reference value)                 |                                                                                           | 3 mA at 5 VDC                                 |                                                                                         |            |            |            |                        |        |        |        |  |
|                                   | Electrical/ mechanical endurance                                  | Switching frequency (times per hour)                                                      |                                               | 1800                                                                                    |            |            |            |                        |        |        |        |  |
|                                   |                                                                   | Mechanical (10,000 cycles min.)                                                           |                                               | 1000                                                                                    |            |            |            |                        |        |        |        |  |
|                                   |                                                                   | Electrical (10,000 cycles min.)                                                           | AC-15                                         | 220 V                                                                                   | 50         |            |            |                        |        |        |        |  |
|                                   |                                                                   |                                                                                           |                                               | 440 V                                                                                   | 50         |            |            |                        |        |        |        |  |
|                                   |                                                                   |                                                                                           | AC-12                                         | 220 V                                                                                   | 25         |            |            |                        |        |        |        |  |
|                                   |                                                                   |                                                                                           |                                               | 440 V                                                                                   | 25         |            |            |                        |        |        |        |  |
|                                   |                                                                   |                                                                                           | DC-13                                         | 220 V                                                                                   | 15         |            |            |                        |        |        |        |  |
|                                   | DC-12                                                             |                                                                                           | 220 V                                         | 50                                                                                      |            |            |            |                        |        |        |        |  |
|                                   | Contact resistance (reference value)                              |                                                                                           | 50 mΩ max. (6 VDC, 1 mA, voltage drop method) |                                                                                         |            |            |            |                        |        |        |        |  |
| Rated insulation voltage          |                                                                   | 690 VAC                                                                                   |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Rated impulse dielectric strength |                                                                   | 6 kV                                                                                      |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Rated frequency                   |                                                                   | 50/60 Hz                                                                                  |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Vibration resistance              |                                                                   | Vibration: 10 to 55 Hz, acceleration: 15 m/s <sup>2</sup>                                 |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Shock resistance                  |                                                                   | Shock value 50 m/s <sup>2</sup>                                                           |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Contact form                      |                                                                   | Double break form (main circuit: single contacts, auxiliary circuit: bifurcated contacts) |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Contact material                  |                                                                   | Ag alloy                                                                                  |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Mirror contact                    |                                                                   | Available *                                                                               |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Degree of protection              |                                                                   | IP20 (IEC60529)                                                                           |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Operating temperature             |                                                                   | -10 to +55°C (however, daily average shall not exceed 35°C)                               |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Ambient storage temperature       |                                                                   | -40 to +65°C (no condensation or icing)                                                   |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Relative humidity                 |                                                                   | 45% to 85% RH (no condensation or icing)                                                  |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Altitude                          |                                                                   | 2000 m max.                                                                               |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Weight                            |                                                                   | 160 g (J7KC-□-AC)/190 g (J7KC-□-DC)/400 g (J7KCR-□-AC)/460 g (J7KCR-□-DC)                 |                                               |                                                                                         |            |            |            |                        |        |        |        |  |
| Applicable Standards              |                                                                   | Safety standard                                                                           |                                               | EN 60947-4-1(IEC 60947-4-1), UL 60947-4-1, CSA 22.2 No.60947-4-1, CCC GB/T14048.4, UKCA |            |            |            |                        |        |        |        |  |

\* A mirror contact is a mechanism found mainly in contactors.

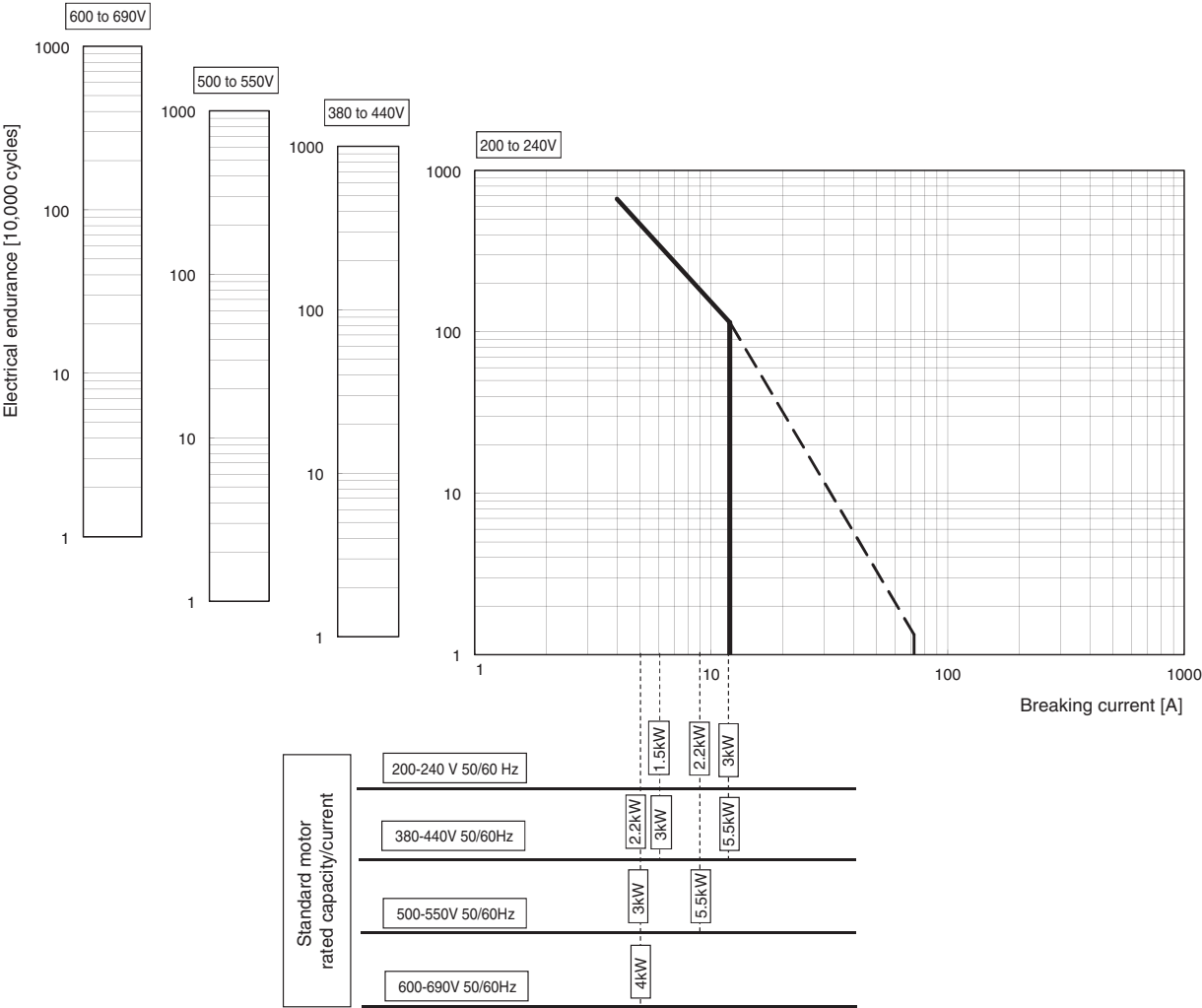
With the combination of the main circuit and the auxiliary circuit of the main unit, welding the main contacts will result in a structure that secures a shock resistance voltage of 2.5 kV or more, or a contact interval of 0.5 mm or more, for all of the auxiliary circuit NC contacts even if the excitation of the coil is released. The main contact may turn on even if the auxiliary circuit is welded. Even with the combined usage of the auxiliary contact unit (J73KC-AM), welding the main contact in the main unit will create a mirror contact surface where the attached auxiliary contact (NC contact) is separated.

# J7KC Series

## Engineering Data

### Electrical endurance curves

AC-3 breaking current and electrical endurance curve (Based on IEC 60947-4-1)



AC-1 breaking current and electrical endurance curve (for resistive load) (Based on IEC 60947-4-1)

