

# Motor Contactor J7KN

- Range from 4 to 500 kW (AC 3, 380/415 V)
- AC and DC operated
- Integrated auxiliary contacts; integrated aux. contact of J7KN contactors up to 11kW suitable for electronic circuits
- Screw fixing and snap fitting (35 mm DIN rail) up to 37 kW
- Compliant to the global standards
- Finger proof (BGV A2)
- System contactors for Fuseless Load Feeders with integrated link modules
- All needed approvals like CE, UL, GOST & CCC. The J7KN fulfills the following standards; IEC 947-4-1, VDE 0660 and EN 60947-4-1.
- Accessories like auxiliary contacts front or/and side mounted, mechanical interlock and suppressor units.
- Mirror Contacts (NC) according to IEC 60947-4-1 for safety applications



## Model Number Legend

### 1. Motor Contactors

J7KN-□-□-□-□-□ □  
1 2 3 4 5 6

- 1) Motor Contactor
- 2) G for low DC control power consumption
- 3) Rated Motor Current.  
D for integrated aux. contact for electronic circuits (except for 4-pole versions)
- 4) Integrated auxiliary contact configuration
- 5) Coil voltage
- 6) D for DC coil supply

### 2. Aux. Contact Modules for Motor Contactors

J73KN-□-□-□ □  
1 2 3 4

- 1) Auxiliary Contact Modules
- 2) Motor contactors size
- 3) Combination of NO / NC contacts
- 4) Place of mounting

### 3. Accessories for Motor Contactors (Pneumatic Timers)

J74KN-□-□-□-□ □  
1 2 3 4 5

- 1) Accessories for Motor Contactor
- 2) Motor contactors size
- 3) Pneumatic Timer
- 4) Time range
- 5) Function

### 4. Accessories for Motor Contactors (Mechanical Interlock)

J74KN-□-□ □  
1 2 3

- 1) Accessories for Motor Contactor
- 2) Motor contactors size
- 3) Mechanical Interlock

### 5. Accessories for Motor Contactors (RS Suppressor units)

J74KN-□-□-□ □  
1 2 3 4

- 1) Accessories for Motor Contactor
- 2) Motor contactors size
- 3) RS-surge suppressors
- 4) Voltage

### 6. Accessories for Motor Contactors (RC Suppressor units)

J74KN-□-□-□ □  
1 2 3 4

- 1) Accessories for Motor Contactor
- 2) C2 = J7KN
- 3) RC = RC suppressor unit
- 4) Voltage

### 7. Accessories for Motor Contactors (Additional Terminals and Terminal Covers)

J74KN-□-□ □  
1 2

- 1) Accessories for Motor Contactor
- 2) Version

### 8. Insulated wiring systems for Motor Contactors

J74-WK□-□ □  
1 2 3

- 1) Additional reference for LVSG
- 2) WKR = Wiring Kit Reverser;  
WKSD = Wiring Kit Star Delta
- 3) Version

■ Contactors

|  | Ratings  |             |                      |                 | Rated current<br>AC1 | No. of Poles | Control circuit<br>Power consum. |         | Aux. Contacts |    | Partnumber |                 | Add.<br>suffix<br>for<br>DC<br>types<br>coil<br>voltage<br><br>D |                   |                 |
|--|--|-------------|----------------------|-----------------|----------------------|--------------|----------------------------------|---------|---------------|----|------------|-----------------|--|-------------------|-----------------|
|  | AC2, AC3   |             |                      |                 |                      |              | Inrush                           | Hold    | Built-in      |    | front      | side            |  | Type <sup>1</sup> |                 |
|  | 380 V<br>400 V<br>415 V<br>kW  | 500 V<br>kW | 660 V<br>690 V<br>kW | 690 V<br>A      |                      |              |                                  |         | DC type W     | NO |            |                 |  |                   | NC <sup>2</sup> |
| <br>J7KN-AC   | 4  | 5,5         | 5,5                  | 25              | 3                    | 33-45        | 7-10                             | 1       | –             | 4  | –          | J7KN-10D-10 □□□ | –  |                   |                 |
|  |  |             |                      |                 | 4                    |              |                                  | –       | 1             |    |            | J7KN-10D-01 □□□ |  |                   |                 |
|  |  |             |                      |                 | 3                    | 3            | 3                                | 1       | –             |    |            | 3               |  | J7KN-10D-4 □□□    |                 |
|  |  |             |                      |                 | 4                    |              |                                  | –       | 1             |    |            |                 |  | J7KNG-10-10 □□□   |                 |
|  |  |             |                      |                 | 3                    | 75           | 2                                | –       | –             |    |            | 3               |  | J7KNG-10-01 □□□   |                 |
|  |  |             |                      |                 | 4                    |              |                                  | 1       | –             |    |            |                 |  | J7KNG-10-4 □□□    |                 |
|  | 3  | –           | 1                    | J7KN-10D-10 □□□ |                      |              |                                  |         |               |    |            |                 |  |                   |                 |
|  | –  | –           | 1                    | J7KN-10D-01 □□□ |                      |              |                                  |         |               |    |            |                 |  |                   |                 |
|  | <br>J7KNG     | 5,5         | 7,5                  | 7,5             | 25                   | 3            | 33-45                            | 7-10    | 1             | –  | 4          | –               | J7KN-14D-10 □□□  | –                 |                 |
|  |  |             |                      |                 |                      | 4            |                                  |         | –             | 1  |            |                 | J7KN-14D-01 □□□  |                   |                 |
|  |  |             |                      |                 |                      | 3            | 3                                | 3       | 1             | –  |            |                 | 3  |                   | J7KN-14D-4 □□□  |
|  |  |             |                      |                 |                      | 4            |                                  |         | –             | 1  |            |                 |  |                   | J7KNG-14-10 □□□ |
| 3  |  |             |                      |                 |                      | 75           | 2                                | –       | –             | 3  |            |                 | J7KNG-14-01 □□□  |                   |                 |
| 4  |  |             |                      |                 |                      |              |                                  | 1       | –             |    |            |                 | J7KNG-14-4 □□□   |                   |                 |
| 3  |  | –           | 1                    | J7KN-14D-10 □□□ |                      |              |                                  |         |               |    |            |                 |  |                   |                 |
| –  |  | –           | 1                    | J7KN-14D-01 □□□ |                      |              |                                  |         |               |    |            |                 |  |                   |                 |
| <br>J7KN-DC |  | 7,5         | 10                   | 10              | 32                   | 3            | 33-45                            | 7-10    | 1             | –  | 4          | –               | J7KN-18D-10 □□□  | –                 |                 |
|  |  |             |                      |                 |                      | 4            |                                  |         | –             | 1  |            |                 | J7KN-18D-01 □□□  |                   |                 |
|  |  |             |                      |                 |                      | 3            | 3                                | 3       | 1             | –  |            |                 | 3  |                   | J7KN-18D-4 □□□  |
|  |  |             |                      |                 |                      | 4            |                                  |         | –             | 1  |            |                 |  |                   | J7KNG-18-10 □□□ |
|  | 3  |             |                      |                 |                      | 75           | 2                                | –       | –             | 3  |            |                 | J7KNG-18-01 □□□  |                   |                 |
|  | 4  |             |                      |                 |                      |              |                                  | 1       | –             |    |            |                 | J7KNG-18-4 □□□   |                   |                 |
|  | 3  | –           | 1                    | J7KN-18D-10 □□□ |                      |              |                                  |         |               |    |            |                 |  |                   |                 |
|  | –  | –           | 1                    | J7KN-18D-01 □□□ |                      |              |                                  |         |               |    |            |                 |  |                   |                 |
|  | <br>J7KN-22 | 11          | 10                   | 10              | 32                   | 3            | 33-45                            | 7-10    | 1             | –  | 4          | –               | J7KN-22D-10 □□□  | –                 |                 |
|  |  |             |                      |                 |                      | 4            |                                  |         | –             | 1  |            |                 | J7KN-22D-01 □□□  |                   |                 |
|  |  |             |                      |                 |                      | 3            | 3                                | 3       | 1             | –  |            |                 | 3  |                   | J7KN-22D-4 □□□  |
|  |  |             |                      |                 |                      | 4            |                                  |         | –             | 1  |            |                 |  |                   | J7KNG-22-10 □□□ |
| 3  |  |             |                      |                 |                      | 75           | 2                                | –       | –             | 3  |            |                 | J7KNG-22-01 □□□  |                   |                 |
| 4  |  |             |                      |                 |                      |              |                                  | 1       | –             |    |            |                 | J7KNG-22-4 □□□   |                   |                 |
| 3  |  | –           | 1                    | J7KN-22D-10 □□□ |                      |              |                                  |         |               |    |            |                 |  |                   |                 |
| –  |  | –           | 1                    | J7KN-22D-01 □□□ |                      |              |                                  |         |               |    |            |                 |  |                   |                 |
| <br>J7KN-24 |  | 11          | 15                   | 15              | 50                   | 3            | 90-115                           | 9-13    | –             | –  | 4          | 4               | J7KN-24 □□□  | –                 |                 |
|  |  |             |                      |                 |                      |              | 4                                | 4       |               |    |            |                 | J7KNG-24 □□□   |                   |                 |
|  |  |             |                      |                 |                      |              | 140                              | 2       |               |    |            |                 | J7KN-24 □□□  |                   |                 |
|  |  | 15          | 18,5                 | 18,5            | 65                   | 3            | 3                                | 90-115  | 9-13          | –  | –          | 4               | 4  | J7KN-32 □□□       | –               |
|  | 4  |             |                      |                 |                      |              |                                  | 4       | J7KNG-32 □□□  |    |            |                 |  |                   |                 |
|  | 140  |             |                      |                 |                      |              |                                  | 2       | J7KN-32 □□□   |    |            |                 |  |                   |                 |
|  | 18,5   | 18,5        | 18,5                 | 80              | 3                    | 3            | 90-115                           | 9-13    | –             | –  | 4          | 4               | J7KN-40 □□□  | –                 |                 |
|  |  |             |                      |                 |                      |              | 4                                | 4       |               |    |            |                 | J7KNG-40 □□□   |                   |                 |
|  |  |             |                      |                 |                      |              | 140                              | 2       |               |    |            |                 | J7KN-40 □□□  |                   |                 |
|  | <br>J7KN-50 | 22          | 30                   | 30              | 110                  | 3            | 140-185                          | 13-18   | –             | –  | 4          | 4               | J7KN-50 □□□  | –                 |                 |
|  |  |             |                      |                 |                      |              | 200                              | 6       |               |    |            |                 | J7KNG-50 □□□   |                   |                 |
|  |  | 30          | 37                   | 37              | 120                  | 3            | 3                                | 140-185 | 13-18         | –  | –          | 4               | 4  | J7KN-62 □□□       | –               |
| 200  |  |             |                      |                 |                      |              |                                  | 6       | J7KNG-62 □□□  |    |            |                 |  |                   |                 |
| 37   |  | 45          | 45                   | 130             | 3                    | 3            | 140-185                          | 13-18   | –             | –  | 4          | 4               | J7KN-74 □□□  | –                 |                 |
|  |  |             |                      |                 |                      |              | 200                              | 6       |               |    |            |                 | J7KNG-74 □□□   |                   |                 |

|   | Ratings                       |             |                      | Rated current<br>AC1 | No. of Poles                  | Control circuit<br>Power consum. |          | Aux. Contacts |          |    |                  | Partnumber                     |
|---|-------------------------------|-------------|----------------------|----------------------|-------------------------------|----------------------------------|----------|---------------|----------|----|------------------|--------------------------------|
|   | AC2, AC3                      |             |                      |                      |                               | AC type VA<br>DC type W          | Inrush   | Hold          | Built-in |    | Additional       |                                |
|   | 380 V<br>400 V<br>415 V<br>kW | 500 V<br>kW | 660 V<br>690 V<br>kW | 690 V<br>A           |                               |                                  |          |               |          | NO | NC <sup>*2</sup> | front                          |
| <br>J7KN-90/115      | 45                            | 55          | 55                   | 160                  | 3                             | 190-280 VA                       | 2.5-5 VA |               |          | 7  | 4                | J7KN-90 □□□□ <sup>*3</sup>     |
|   | 55                            | 55          | 55                   | 200                  |                               | 280 W                            | 5 W      |               |          |    |                  | J7KN-115 □□□□ <sup>*3</sup>    |
| <br>J7KN-151/176     | 75                            | 75          | 75                   | 230                  | 3                             | 350                              | 5        | -             | -        | 4  | 2                | J7KN-151 □□□□ <sup>*3</sup>    |
|   |                               |             |                      | 4                    | J7KN-151-4 □□□□ <sup>*3</sup> |                                  |          |               |          |    |                  |                                |
|   | 90                            | 90          | 90                   | 250                  | 3                             |                                  |          |               |          |    |                  | J7KN-176 □□□□ <sup>*3</sup>    |
|   |                               |             |                      |                      | 4                             |                                  |          |               |          |    |                  | J7KN-176-4 □□□□ <sup>*3</sup>  |
| <br>J7KN-210 to 316  | 110                           | 160         | 160                  | 350                  | 3                             | 360                              | 5        | -             | -        | 4  | 4                | J7KN-210 □□□□ <sup>*3</sup>    |
|   | 132                           | 210         | 210                  | 450                  |                               |                                  |          |               |          |    |                  | J7KN-260 □□□□ <sup>*3</sup>    |
|   | 160                           | 250         | 250                  | 500                  |                               |                                  |          |               |          |    |                  | J7KN-316 □□□□ <sup>*3</sup>    |
| <br>J7KN-450 to 860 | 250                           | 375         | 375                  | 600                  | 3                             | 800-950 VA                       | 9-11 VA  | 2             | 2        | 4  | -                | J7KN-450-22 □□□□ <sup>*3</sup> |
|   | 300                           | 475         | 475                  | 760                  |                               | 750-850 W                        | 8-10 W   |               |          |    |                  | J7KN-550-22 □□□□ <sup>*3</sup> |
|   | 400                           | 630         | 630                  | 1000                 |                               | 1350-1600 VA                     | 21-25 VA |               |          |    |                  | J7KN-700-22 □□□□ <sup>*3</sup> |
|   | 500                           | 700         | 700                  | 1100                 |                               | 1300-1550 W                      | 18-22 W  |               |          |    |                  | J7KN-860-22 □□□□ <sup>*3</sup> |

\*1 For more coil voltages refer to Appendix.

\*2 Mirror Contact (NC) according to IEC 60947-4-1 for safety applications

\*3 Universal Current models (AC and DC operated)

## Additional products

### Auxiliary Contacts Blocks

|   | Rated Operational Current |              |             | Mounting + comments                        | Contacts  |  | Suitable for Contactors    | Partnumber               |
|---|---------------------------|--------------|-------------|--|---|--|----------------------------|--------------------------|
|   | AC15<br>230V              | AC15<br>400V | AC1<br>690V |  |  |  |                            |                          |
|    | 3                         | 2            | 10          | Front, standard version                    | 1   | –  | J7KN-10D up to<br>J7KN-115 | J73KN-B-10 <sup>2</sup>  |
|   | 3                         | 2            | 10          |  | –   | 1  |                            | J73KN-B-01 <sup>2</sup>  |
|   | 3                         | 2            | 10          | EM/LB version<br>(early make/late break)   | 1   | –  |                            | J73KN-B-10U <sup>2</sup> |
|   | 3                         | 2            | 10          |  | –   | 1  |                            | J73KN-B-01U <sup>2</sup> |
|   | 6                         | 4            | 25          | High current version                       | 1   | –  |                            | J73KN-B-10A <sup>2</sup> |
|   | 6                         | 4            | 25          |  | –   | 1  |                            | J73KN-B-01A <sup>2</sup> |
|    | 3                         | 2            | 10          | Side version, max.<br>2 pcs per contactor  | 1   | 1  | J7KN-24 up to<br>J7KN-115  | J73KN-C-11S <sup>2</sup> |
|    | 3                         | 2            | 10          | Front version, max.<br>1 pcs per contactor | 1   | 1  | J7KN-151 up to<br>J7KN-316 | J73KN-D-11F              |
|   | 3                         | 2            | 10          |  | 2   | 2  |                            | J73KN-D-22F              |
|   | 3                         | 2            | 10          | Side version, max.<br>2 pcs per contactor  | 1   | 1  | J7KN-151 up to<br>J7KN-316 | J73KN-D-11S              |
|  | 3                         | 2            | 10          | Front version, max.<br>1 pcs per contactor | 2   | 2  | J7KN-450 up to<br>J7KN-860 | J73KN-E-22F              |

<sup>1</sup> Mirror Contact (NC) according to IEC 60947-4-1 for safety applications.

<sup>2</sup> Contacts suitable for electronic circuits, according to IEC60947-5-4 for rated voltage 24 VDC (test ratings 17 VDC, 5 mA). Positively guided contacts. Technical data see page 24.

### Pneumatic Timer

|   | Function  | Time range<br>s | Mounting +<br>comments | Contacts  |   |   |   | Suitable for Contactors                        | Partnumber      |
|---|-----------|-----------------|------------------------|---|---|---|---|--|-----------------|
|   |           |                 |                        |  |  |  |  |  |                 |
|  | On-delay  | 0.1 - 40        | Front                  | 1   | 1   | –   | –   | Front for contactors<br>J7KN-10D up to J7KN-40 | J74KN-B-TP40DA  |
|   | On-delay  | 10 - 180        |                        | 1   | 1   | –   | –   |  | J74KN-B-TP180DA |
|   | Off-delay | 0.1 - 40        |                        | –   | –   | 1   | 1   |  | J74KN-B-TP40IA  |
|   | Off-delay | 10 - 180        |                        | –   | –   | 1   | 1   |  | J74KN-B-TP180IA |

### Mechanical Interlocks

|   | Interlocks contactors with contactors (dimensions need to be the same) | Partnumber                   |             |
|---|--|------------------------------|-------------|
| Type  | Type   | Type                         |             |
|  | J7KN(G)-10(D) - J7KN(G)-40   | + J7KN(G)-10(D) - J7KN(G)-40 | J74KN-B-ML  |
|   | J7KN-24 - J7KN-74  | + J7KN-24 - J7KN-74          | J74KN-C-ML  |
|   | J7KN-90 - J7KN-115   | + J7KN-90 - J7KN-115         | J74KN-D2-ML |
|   | J7KN-151 - J7KN-316  | + J7KN-151 - J7KN-316        | J74KN-E-ML  |

**Suppressor units**

|   | Function                  | For Contactors     | Voltages  |                                  | Partnumber<br>Type  |
|---|---------------------------|--------------------|---|----------------------------------|---|
|  | RC-Unit snap on contactor | J7KN-10D - J7KN-74 | 12 - 48 V<br>48 - 127 V<br>110 - 230 V<br>230 - 415 V | AC/DC<br>AC/DC<br>AC/DC<br>AC/DC | <b>J74KN-C2-RC24</b><br><b>J74KN-C2-RC110</b><br><b>J74KN-C2-RC230</b><br><b>J74KN-C2-RC400</b> |

**Additional products**

|  | Function   | For Contactors                | Specification<br>Cable Cross-section to clamp mm <sup>2</sup> |          |                                      | Partnumber                         |
|--|--|-------------------------------|---|----------|--------------------------------------|------------------------------------|
|  |  |                               | solid or<br>stranded  | flexible | flex. with<br>multicore<br>cable end | Type                               |
|   | Terminals single pole  | J7KN-50 - J7KN-74             | 4 - 35  | 6 - 25   | 4 - 25                               | <b>J74KN-LG-9030</b><br>(3pcs set) |
|   |  | J7KN-151 - J7KN-176           | 16 - 120  | –        | 16 - 95                              | <b>J74KN-LG-11224</b>              |
|   | Terminal cover for terminal protection according DIN 57106, BVG-A2 | J7KN-151 - J7KN-176<br>3-pole | for 3 terminals; 2 units for one contactor                    |          |                                      | <b>J74KN-LG-10404</b>              |
|  |  | J7KN-210 - J7KN-316           |   |          |                                      | <b>J74KN-LG-11457</b>              |
|  | Marking system for contactors and aux. contactblocks               | J7KN-10 to J7KN-74 & J73KN-B  | 2-section without marking, divisible                          |          |                                      | <b>J74KN-P487-1</b>                |
|  |  |                               | 4-section without marking, divisible                          |          |                                      | <b>J74KN-P245-1</b>                |

**Insulated wiring systems for motor contactors**

|   | Function                             | For Contactors      | Specification<br>Maximum current | Partnumber<br>Type |
|---|--------------------------------------|---------------------|----------------------------------|--------------------|
|  | For reversing contactors (2 parts)   | J7KN-10D - J7KN-22D | 22                               | <b>J74-WKR-B2</b>  |
|   |                                      | J7KN-24 - J7KN-40   | 40                               | <b>J74-WKR-C</b>   |
|  | For star-delta combination (4 parts) | J7KN-10D - J7KN-22D | 22                               | <b>J74-WKSD-B2</b> |
|   |                                      | J7KN-24 - J7KN-40   | 40                               | <b>J74-WKSD-C</b>  |

**Wiring Diagrams Coil Circuit / Terminal marking Contactors**

| Range                                   | Supply                     | Wiring coil circuit | Terminal marking |
|---|----------------------------|---------------------|------------------|
| J7KN-10D/14D/18D/22D-10                 | AC                         |                     |                  |
| J7KN-10D/14D/18D/22D-01                 | AC                         |                     |                  |
| J7KNG-10/14/18/22-10                    | DC                         |                     |                  |
| J7KNG-10/14/18/22-01                    | DC                         |                     |                  |
| J7KN-10D/14D/18D/22D-10...D             | DC with double wiring coil |                     |                  |
| J7KN-10D/14D/18D/22D-01...D             | DC with double wiring coil |                     |                  |
| J7KN-10D/14D/18D/22D-4                  | AC                         |                     |                  |
| J7KNG-10/14/18/22-4                     | DC                         |                     |                  |
| J7KN-24/32/40/50/62/74                  | AC                         |                     |                  |
| J7KNG-24/32/40                          | DC                         |                     |                  |
| J7KN-24/32/40/50/62/74D                 | DC with double wiring coil |                     |                  |
| J7KN-90/115/151/176<br>J7KN-210/260/316 | AC/DC                      |                     |                  |
| J7KN- 151/176-4                         | AC/DC                      |                     |                  |
| J7KN- 450/550/700/860                   | AC/DC                      |                     |                  |

**Auxiliary Contacts**

| Range            | Contactors  | Terminal marking  |
|------------------|---|---|
| J73KN-B-10       | J7KN-10D/14D/18D/22D/24/32/40/50/62/74/90/115<br>J7KNG-10/14/18/22/24/32/40 |                              |
| J73KN-B-01 (U/A) | J7KN-24/32/40/50/62/74/90/115<br>J7KNG-24/32/40                             |                              |
| J73KN-C-11S      | J7KN-10D/14D/18D/22D/24/32/40/50/62/74/90/115<br>J7KNG-10/14/18/22/24/32/40 | (left side) (right side)<br> |
| J73KN-D-11F      | J7KN-151 up to J7KN-316   |                              |
| J73KN-D-22F      | J7KN-151 up to J7KN-316   |                              |
| J73KN-D-11S      | J7KN-151 up to J7KN-316   |                             |
| J73KN-E-22F      | J7KN-450 up to J7KN-860   |                            |

**Pneumatic timer**

| Range                        | Contactors  | Terminal marking  |
|------------------------------|---|---|
| J73KN-B-TP...DA<br>ON-delay  | J7KN-10D/14D/18D/22D/24/32/40<br>J7KNG-10/14/18/22/24/32/40 |  |
| J73KN-B-TP...IA<br>OFF-delay | J7KN-10D/14D/18D/22D/24/32/40<br>J7KNG-10/14/18/22/24/32/40 |  |

**Coil voltage**

**Type-suffix for Contactors**

| Contactor range     | Suffix | Marking at coil |           | Rated Control Voltage $U_s$ |       |               |       |
|---------------------|--------|-----------------|-----------|-----------------------------|-------|---------------|-------|
|                     |        | 50Hz<br>V       | 60Hz<br>V | 50Hz<br>min V               | max V | 60Hz<br>min V | max V |
| J7KN-10D to J7KN-74 | 24     | 24              | 24        | 22                          | 24    | 24            | 27    |
|                     | 48     | 48              | 48        | 44                          | 48    | 48            | 52    |
|                     | 110    | 110             | 110-120   | 100                         | 110   | 110           | 122   |
|                     | 180    | 180-210         | 200-240   | 180                         | 210   | 200           | 240   |
|                     | 230    | 220-240         | 230-264   | 220                         | 240   | 230           | 264   |
|                     | 400    | 380-415         | 400-440   | 380                         | 415   | 400           | 460   |
| J7KN-90 to J7KN-860 | 500    | 500-550         | 550-600   | 500                         | 550   | 550           | 600   |
|                     | 24     | 24              | 24        | 24                          | 24    | 24            | 24    |
|                     | 48     | 48              | 48        | 48                          | 48    | 48            | 48    |
|                     | 110    | 110-120         | 110-120   | 110                         | 120   | 110           | 120   |
|                     | 230    | 220-240         | 220-240   | 220                         | 240   | 220           | 240   |
|                     | 400    | 380-415         | 380-415   | 380                         | 415   | 380           | 415   |

Operating range of magnet-coils:

AC:  $0.85 \times U_s$  (min. value of rated control voltage) up to  $1.1 \times U_s$  (max. value of rated control voltage).

DC:  $0.8 \times U_s$  (min. value of rated control voltage) up to  $1.1 \times U_s$  (max. value of rated control voltage).

## ■ Engineering data and characteristics

### Approximate Values for three-phase Motors

#### Motor Full Load Currents

Approximate values of motor F.L.C. and minimum „slow blow“ respectively „gL“ short-circuit fuse

| Motor rating<br>Range according to BS for 415V |       |     |      |    | 220-230V Motor<br>Value of fusing at motor start |             |         | 240V Motor<br>Value of fusing at motor start |             |         | 380-400V Motor<br>Value of fusing at motor start |             |         | 415V Motor<br>Value of fusing at motor start |             |         | 500V Motor<br>Value of fusing at motor start |             |         | 660-690V Motor<br>Value of fusing at motor start |             |         |
|--|-------|-----|------|----|--|-------------|---------|--|-------------|---------|--|-------------|---------|--|-------------|---------|--|-------------|---------|--|-------------|---------|
| kW   | PS-hp | hp  | cos  | %  | F.L.C.<br>A                                      | D.O.L.<br>A | YD<br>A | F.L.C.<br>A                                  | D.O.L.<br>A | YD<br>A | F.L.C.<br>A                                      | D.O.L.<br>A | YD<br>A | F.L.C.<br>A                                  | D.O.L.<br>A | YD<br>A | F.L.C.<br>A                                  | D.O.L.<br>A | YD<br>A | F.L.C.<br>A                                      | D.O.L.<br>A | YD<br>A |
| 0.06   | 0.08  | -   | 0.7  | 59 | 0.38   | 1           | 1       | 0.35   | 1           | 1       | 0.22   | 1           | 1       | -  | -           | -       | 0.16   | 1           | 1       | -  | -           | -       |
| 0.09   | 0.12  | -   | 0.7  | 60 | 0.55   | 2           | 2       | 0.5  | 2           | 2       | 0.33   | 1           | 1       | -  | -           | -       | 0.24   | 1           | 1       | -  | -           | -       |
| 0.12   | 0.16  | -   | 0.7  | 61 | 0.76   | 2           | 2       | 0.68   | 2           | 2       | 0.42   | 2           | 2       | -  | -           | -       | 0.33   | 1           | 1       | -  | -           | -       |
| 0.18   | 0.24  | -   | 0.7  | 61 | 1.1  | 2           | 2       | 1  | 2           | 2       | 0.64   | 2           | 2       | -  | -           | -       | 0.46   | 1           | 1       | -  | -           | -       |
| 0.25   | 0.34  | -   | 0.7  | 62 | 1.4  | 4           | 2       | 1.38   | 4           | 2       | 0.88   | 2           | 2       | -  | -           | -       | 0.59   | 2           | 2       | -  | -           | -       |
| 0.37   | 0.5   | -   | 0.72 | 64 | 2.1  | 4           | 4       | 1.93   | 4           | 4       | 1.22   | 4           | 2       | -  | -           | -       | 0.85   | 2           | 2       | 0.7  | 2           | 2       |
| 0.55   | 0.75  | -   | 0.75 | 69 | 2.7  | 4           | 4       | 2.3  | 4           | 4       | 1.5  | 4           | 2       | -  | -           | -       | 1.2  | 4           | 2       | 0.9  | 2           | 2       |
| 0.75   | 1     | 1   | 0.8  | 74 | 3.3  | 6           | 4       | 3.1  | 6           | 4       | 2  | 4           | 4       | 2  | 4           | 4       | 1.48   | 4           | 2       | 1.1  | 2           | 2       |
| 1.1  | 1.5   | 1.5 | 0.83 | 77 | 4.9  | 10          | 6       | 4.1  | 6           | 6       | 2.6  | 4           | 4       | 2.5  | 4           | 4       | 2.1  | 4           | 4       | 1.5  | 4           | 2       |
| 1.5  | 2     | 2   | 0.83 | 78 | 6.2  | 10          | 10      | 5.6  | 10          | 10      | 3.5  | 6           | 4       | 3.5  | 6           | 4       | 2.6  | 4           | 4       | 2  | 4           | 4       |
| 2.2  | 3     | 3   | 0.83 | 81 | 8.7  | 16          | 10      | 7.9  | 16          | 10      | 5  | 10          | 6       | 5  | 10          | 6       | 3.8  | 6           | 6       | 2.9  | 6           | 4       |
| 2.5  | 3.4   | -   | 0.83 | 81 | 9.8  | 16          | 16      | 8.9  | 16          | 10      | 5.7  | 10          | 10      | -  | -           | -       | 4.3  | 6           | 6       | -  | -           | -       |
| 3  | 4     | 4   | 0.84 | 81 | 11.6   | 20          | 16      | 10.6   | 20          | 16      | 6.6  | 16          | 10      | 6.5  | 16          | 10      | 5.1  | 10          | 10      | 3.5  | 6           | 4       |
| 3.7  | 5     | 5   | 0.84 | 82 | 14.2   | 25          | 20      | 13   | 25          | 16      | 8.2  | 16          | 10      | 7.5  | 16          | 10      | 6.2  | 16          | 10      | -  | -           | -       |
| 4  | 5.5   | -   | 0.84 | 82 | 15.3   | 25          | 20      | 14   | 25          | 20      | 8.5  | 16          | 10      | -  | -           | -       | 6.5  | 16          | 10      | 4.9  | 10          | 6       |
| 5.5  | 7.5   | 7.5 | 0.85 | 83 | 20.6   | 35          | 25      | 18.9   | 35          | 25      | 11.5   | 20          | 16      | 11   | 20          | 16      | 8.9  | 16          | 10      | 6.7  | 16          | 10      |
| 7.5  | 10    | 10  | 0.86 | 85 | 27.4   | 35          | 35      | 24.8   | 35          | 35      | 15.5   | 25          | 20      | 14   | 25          | 16      | 11.9   | 20          | 16      | 9  | 16          | 10      |
| 8  | 11    | -   | 0.86 | 85 | 28.8   | 50          | 35      | 26.4   | 35          | 35      | 16.7   | 25          | 20      | -  | -           | -       | 12.7   | 20          | 16      | -  | -           | -       |
| 11   | 15    | 15  | 0.86 | 87 | 39.2   | 63          | 50      | 35.3   | 50          | 50      | 22   | 35          | 25      | 21   | 35          | 25      | 16.7   | 25          | 20      | 13   | 25          | 16      |
| 12.5   | 17    | -   | 0.86 | 87 | 43.8   | 63          | 50      | 40.2   | 63          | 50      | 25   | 35          | 35      | -  | -           | -       | 19   | 35          | 25      | -  | -           | -       |
| 15   | 20    | 20  | 0.86 | 87 | 52.6   | 80          | 63      | 48.2   | 80          | 63      | 30   | 50          | 35      | 28   | 35          | 35      | 22.5   | 35          | 25      | 17.5   | 25          | 20      |
| 18.5   | 25    | 25  | 0.86 | 88 | 64.9   | 100         | 80      | 58.7   | 80          | 63      | 37   | 63          | 50      | 35   | 50          | 50      | 28.5   | 50          | 35      | 21   | 35          | 25      |
| 20   | 27    | -   | 0.86 | 88 | 69.3   | 100         | 80      | 63.4   | 80          | 80      | 40   | 63          | 50      | -  | -           | -       | 30.6   | 50          | 35      | -  | -           | -       |
| 22   | 30    | 30  | 0.87 | 89 | 75.2   | 100         | 80      | 68   | 100         | 80      | 44   | 63          | 50      | 40   | 63          | 50      | 33   | 50          | 50      | 25   | 35          | 35      |
| 25   | 34    | -   | 0.87 | 89 | 84.4   | 125         | 100     | 77.2   | 100         | 100     | 50   | 80          | 63      | -  | -           | -       | 38   | 63          | 50      | -  | -           | -       |
| 30   | 40    | 40  | 0.87 | 90 | 101  | 125         | 125     | 92.7   | 125         | 100     | 60   | 80          | 63      | 55   | 80          | 63      | 44   | 63          | 50      | 33   | 50          | 35      |
| 37   | 50    | 50  | 0.87 | 90 | 124  | 160         | 160     | 114  | 160         | 125     | 72   | 100         | 80      | 66   | 100         | 80      | 54   | 80          | 63      | 42   | 63          | 50      |
| 40   | 54    | -   | 0.87 | 90 | 134  | 160         | 160     | 123  | 160         | 160     | 79   | 100         | 100     | -  | -           | -       | 60   | 80          | 63      | -  | -           | -       |
| 45   | 60    | 60  | 0.88 | 91 | 150  | 200         | 160     | 136  | 200         | 160     | 85   | 125         | 100     | 80   | 100         | 100     | 64.5   | 100         | 80      | 49   | 63          | 63      |
| 51   | 70    | -   | 0.88 | 91 | 168  | 200         | 200     | 154  | 200         | 200     | 97   | 125         | 100     | -  | -           | -       | 73.7   | 100         | 80      | -  | -           | -       |
| 55   | 75    | -   | 0.88 | 91 | 181  | 250         | 200     | 166  | 200         | 200     | 105  | 160         | 125     | -  | -           | -       | 79   | 125         | 100     | 60   | 80          | 63      |
| 59   | 80    | 80  | 0.88 | 91 | 194  | 250         | 250     | 178  | 250         | 200     | 112  | 160         | 125     | 105  | 160         | 125     | 85.3   | 125         | 100     | -  | -           | -       |
| 75   | 100   | 100 | 0.88 | 91 | 245  | 315         | 250     | 226  | 315         | 250     | 140  | 200         | 160     | 135  | 200         | 160     | 106  | 160         | 125     | 82   | 125         | 100     |
| 90   | 125   | 125 | 0.88 | 92 | 292  | 400         | 315     | 268  | 315         | 315     | 170  | 250         | 200     | 165  | 200         | 200     | 128  | 160         | 160     | 98   | 125         | 125     |
| 110  | 150   | 150 | 0.88 | 92 | 358  | 500         | 400     | 327  | 400         | 400     | 205  | 250         | 250     | 200  | 250         | 250     | 156  | 200         | 200     | 118  | 160         | 125     |
| 129  | 175   | 175 | 0.88 | 92 | 420  | 500         | 500     | 384  | 500         | 400     | 242  | 315         | 250     | 230  | 315         | 250     | 184  | 250         | 200     | -  | -           | -       |
| 132  | 180   | -   | 0.88 | 92 | 425  | 500         | 500     | 393  | 500         | 500     | 245  | 315         | 250     | -  | -           | -       | 186  | 250         | 200     | 140  | 200         | 160     |
| 147  | 200   | 200 | 0.88 | 93 | 472  | 630         | 630     | 432  | 630         | 500     | 273  | 315         | 315     | 260  | 315         | 315     | 207  | 250         | 250     | -  | -           | -       |
| 160  | 220   | -   | 0.88 | 93 | 502  | 630         | 630     | 471  | 630         | 630     | 295  | 400         | 315     | -  | -           | -       | 220  | 315         | 250     | 170  | 200         | 200     |
| 184  | 250   | 250 | 0.88 | 93 | 590  | 800         | 630     | 541  | 630         | 630     | 340  | 400         | 400     | 325  | 400         | 400     | 259  | 315         | 315     | -  | -           | -       |
| 200  | 270   | -   | 0.88 | 93 | 626  | 800         | 800     | 589  | 800         | 630     | 370  | 500         | 400     | -  | -           | -       | 278  | 315         | 315     | 215  | 250         | 250     |
| 220  | 300   | 300 | 0.88 | 93 | 700  | 1000        | 800     | 647  | 800         | 800     | 408  | 500         | 500     | 385  | 500         | 400     | 310  | 400         | 400     | -  | -           | -       |
| 250  | 340   | -   | 0.88 | 93 | 803  | 1000        | 1000    | 736  | 1000        | 800     | 460  | 630         | 500     | -  | -           | -       | 353  | 500         | 400     | 268  | 315         | 315     |
| 257  | 350   | 350 | 0.88 | 93 | 826  | 1000        | 1000    | 756  | 1000        | 800     | 475  | 630         | 630     | 450  | 630         | 500     | 363  | 500         | 400     | -  | -           | -       |
| 295  | 400   | 400 | 0.88 | 93 | 948  | 1250        | 1000    | 868  | 1000        | 1000    | 546  | 800         | 630     | 500  | 630         | 630     | 416  | 500         | 500     | -  | -           | -       |
| 315  | 430   | -   | 0.88 | 93 | 990  | 1250        | 1250    | 927  | 1250        | 1000    | 580  | 800         | 630     | -  | -           | -       | 445  | 630         | 500     | 337  | 400         | 400     |
| 355  | 483   | -   | 0.89 | 95 | -  | -           | -       | -  | -           | -       | 636  | 800         | 800     | -  | -           | -       | 483  | 630         | 630     | 366  | 500         | 400     |
| 400  | 545   | -   | 0.89 | 96 | -  | -           | -       | -  | -           | -       | 710  | 1000        | 800     | -  | -           | -       | 538  | 630         | 630     | 410  | 500         | 500     |

The motor F.L.C. be valid for standard internal and surface cooled three-pole motors with 1500 min<sup>-1</sup>. The fuses values be valid for the motor F.L.C. shown in the table and D.O.L.-start: starting current max. 6x motor F.L.C., starting time max. 5s; star-delta-start: starting current max. 2x motor F.L.C., starting time max. 15s. For motors with higher F.L.C., higher starting current and / or longer starting time, larger short-circuit fuses are required.

The maximum admissible value is dependent on the switchgear respectively thermal overload relay.



Approximate values of motor F.L.C. according to CSA and UL

| Motor rating<br>hp | Motor F.L.C. at 110-120V |              |              | Motor F.L.C. at 220-240V <sup>*1</sup> |              |              | Motor F.L.C. at 440-480V |              |              | Motor F.L.C. at 550-600V |              |              |
|--------------------|--------------------------|--------------|--------------|--|--------------|--------------|--------------------------|--------------|--------------|--------------------------|--------------|--------------|
|                    | 1-phase<br>A             | 2-phase<br>A | 3-phase<br>A | 1-phase<br>A                           | 2-phase<br>A | 3-phase<br>A | 1-phase<br>A             | 2-phase<br>A | 3-phase<br>A | 1-phase<br>A             | 2-phase<br>A | 3-phase<br>A |
| 1/2                | 9.8                      | 4.0          | 4.4          | 4.9                                    | 2.0          | 2.2          | 2.5                      | 1.0          | 1.1          | 2.0                      | 0.8          | 0.9          |
| 3/4                | 13.8                     | 4.8          | 6.4          | 6.9                                    | 2.4          | 3.2          | 3.5                      | 1.2          | 1.6          | 2.8                      | 1.0          | 1.3          |
| 1                  | 16.0                     | 6.4          | 8.4          | 8.0                                    | 3.2          | 4.2          | 4.0                      | 1.6          | 2.1          | 3.2                      | 1.3          | 1.7          |
| 1 1/2              | 20.0                     | 9.0          | 12.0         | 10.0                                   | 4.5          | 6.0          | 5.0                      | 2.3          | 3.0          | 4.0                      | 1.8          | 2.4          |
| 2                  | 24.0                     | 11.8         | 13.6         | 12.0                                   | 5.9          | 6.8          | 6.0                      | 3.0          | 3.4          | 4.8                      | 2.4          | 2.7          |
| 3                  | 34.0                     | 16.6         | 19.2         | 17.0                                   | 8.3          | 9.6          | 8.5                      | 4.2          | 4.8          | 6.8                      | 3.3          | 3.9          |
| 5                  | 56.0                     | 26.4         | 30.4         | 28.0                                   | 13.2         | 15.2         | 14.0                     | 6.6          | 7.6          | 11.2                     | 5.3          | 6.1          |
| 7 1/2              | 80.0                     | 38.0         | 44.0         | 40.0                                   | 19.0         | 22.0         | 21.0                     | 9.0          | 11.0         | 16.0                     | 8.0          | 9.0          |
| 10                 | 100.0                    | 48.0         | 56.0         | 50.0                                   | 24.0         | 28.0         | 26.0                     | 12.0         | 14.0         | 20.0                     | 10.0         | 11.0         |
| 15                 | 135.0                    | 72.0         | 84.0         | 68.0                                   | 36.0         | 42.0         | 34.0                     | 18.0         | 21.0         | 27.0                     | 14.0         | 17.0         |
| 20                 | -                        | 94.0         | 108.0        | 88.0                                   | 47.0         | 54.0         | 44.0                     | 23.0         | 27.0         | 35.0                     | 19.0         | 22.0         |
| 25                 | -                        | 118.0        | 136.0        | 110.0                                  | 59.0         | 68.0         | 55.0                     | 29.0         | 34.0         | 44.0                     | 24.0         | 27.0         |
| 30                 | -                        | 138.0        | 160.0        | 136.0                                  | 69.0         | 80.0         | 68.0                     | 35.0         | 40.0         | 54.0                     | 28.0         | 32.0         |
| 40                 | -                        | 180.0        | 208.0        | 176.0                                  | 90.0         | 104.0        | 88.0                     | 45.0         | 52.0         | 70.0                     | 36.0         | 41.0         |
| 50                 | -                        | 226.0        | 260.0        | 216.0                                  | 113.0        | 130.0        | 108.0                    | 56.0         | 65.0         | 86.0                     | 45.0         | 52.0         |
| 60                 | -                        | -            | -            | -                                      | 133.0        | 145.0        | -                        | 67.0         | 77.0         | -                        | 53.0         | 62.0         |
| 75                 | -                        | -            | -            | -                                      | 166.0        | 192.0        | -                        | 83.0         | 96.0         | -                        | 66.0         | 77.0         |
| 100                | -                        | -            | -            | -                                      | 218.0        | 248.0        | -                        | 109.0        | 124.0        | -                        | 87.0         | 99.0         |
| 125                | -                        | -            | -            | -                                      | -            | 312.0        | -                        | 135.0        | 156.0        | -                        | 108.0        | 125.0        |
| 150                | -                        | -            | -            | -                                      | -            | 360.0        | -                        | 156.0        | 180.0        | -                        | 125.0        | 144.0        |
| 200                | -                        | -            | -            | -                                      | -            | 480.0        | -                        | 208.0        | 240.0        | -                        | 167.0        | 192.0        |
| 250                | -                        | -            | -            | -                                      | -            | 602.0        | -                        | -            | 302.0        | -                        | -            | 242.0        |
| 300                | -                        | -            | -            | -                                      | -            | -            | -                        | -            | 361.0        | -                        | -            | 289.0        |
| 350                | -                        | -            | -            | -                                      | -            | -            | -                        | -            | 414.0        | -                        | -            | 336.0        |
| 400                | -                        | -            | -            | -                                      | -            | -            | -                        | -            | 477.0        | -                        | -            | 382.0        |
| 500                | -                        | -            | -            | -                                      | -            | -            | -                        | -            | 590.0        | -                        | -            | 472.0        |

\*1 Determine the motor current for 200V and 208V by increasing the values for 220-240V at 200V about 15% and for 208V about 10%.

**Contactors**

**Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660**

| Main Contacts   | Type                    | J7KN(G)-10(D) | J7KN(G)-14(D) | J7KN(G)-18(D) | J7KN(G)-22(D) | J7KN(G)-24 | J7KN(G)-32 | J7KN(G)-40  | J7KN-50    |
|---|-------------------------|---------------|---------------|---------------|---------------|------------|------------|-------------|------------|
| Rated insulation voltage $U_i^{*1}$                             | V AC                    | 690           | 690           | 690           | 690           | 690        | 690        | 690         | 690        |
| Making capacity $I_{eff}$                                       | at $U_e = A$<br>690V AC | 200           | 200           | 200           | 200           | 400        | 500        | 500         | 700        |
| Breaking capacity $I_{eff}$                                     | 400V AC A               | 180           | 180           | 200           | 200           | 380        | 400        | 400         | 600        |
| J7KN-09 to J7KN-22  | 500V AC A               | 150           | 150           | 180           | 180           | 300        | 370        | 370         | 500        |
| J7KN-24 to J7KN-860   | 690V AC A               | 100           | 100           | 150           | 150           | 260        | 340        | 340         | 400        |
|   | 1000V AC A              | –             | –             | –             | –             | –          | –          | –           | –          |
| <b>Utilization category AC1</b>                                 |                         |               |               |               |               |            |            |             |            |
| <b>Switching of resistive load</b>                              |                         |               |               |               |               |            |            |             |            |
| Rated operational current $I_e (=I_{th})$ at 40°C, open         | 690V A                  | <b>25</b>     | <b>25</b>     | <b>32</b>     | <b>32</b>     | <b>50</b>  | <b>65</b>  | <b>80</b>   | <b>110</b> |
| Rated operational power of three-phase resistive loads          | 220V kW                 | 9,5           | 9,5           | 12,2          | 12,2          | 19,0       | 24,7       | 30,4        | 41,9       |
|   | 230V kW                 | 9,9           | 9,9           | 12,7          | 12,7          | 19,9       | 25,9       | 31,8        | 43,8       |
|   | 240V kW                 | 10,4          | 10,4          | 13,3          | 13,3          | 20,8       | 27,0       | 33,2        | 45,7       |
|   | 380V kW                 | 16,4          | 16,4          | 21,0          | 21,0          | 32,9       | 42,7       | 52,6        | 72,3       |
|   | 400V kW                 | 17,3          | 17,3          | 22,1          | 22,1          | 34,6       | 45,0       | 55,4        | 76,1       |
|   | 415V kW                 | 17,9          | 17,9          | 23,0          | 23,0          | 35,9       | 46,7       | 57,4        | 79,0       |
|   | 440V kW                 | 19,0          | 19,0          | 24,4          | 24,4          | 38,1       | 49,5       | 60,9        | 83,7       |
|   | 500V kW                 | 21,6          | 21,6          | 27,7          | 27,7          | 43,3       | 56,2       | 69,2        | 95,2       |
|   | 660V kW                 | 28,5          | 28,5          | 36,5          | 36,5          | 57,1       | 74,2       | 91,3        | 125,6      |
|   | 690V kW                 | 29,8          | 29,8          | 38,2          | 38,2          | 59,7       | 77,6       | 95,5        | 131,3      |
|   | 1000V kW                | –             | –             | –             | –             | –          | –          | –           | –          |
| Rated operational current $I_e (=I_{the})$ at 60°C, enclosed    | 690V A                  | 25            | 25            | 32            | 32            | 40         | 55         | 65          | 90         |
| Rated operational power of three-phase resistive loads          | 220V kW                 | 9,5           | 9,5           | 12,2          | 12,2          | 15,2       | 20,9       | 24,7        | 34,3       |
|   | 230V kW                 | 9,9           | 9,9           | 12,7          | 12,7          | 15,9       | 21,9       | 25,9        | 35,8       |
|   | 240V kW                 | 10,4          | 10,4          | 13,3          | 13,3          | 16,6       | 22,8       | 27,0        | 37,4       |
|   | 380V kW                 | 16,4          | 16,4          | 21,0          | 21,0          | 26,3       | 36,2       | 42,7        | 59,2       |
|   | 400V kW                 | 17,3          | 17,3          | 22,1          | 22,1          | 27,7       | 38,1       | 45,0        | 62,3       |
|   | 415V kW                 | 17,9          | 17,9          | 23,0          | 23,0          | 28,7       | 39,5       | 46,7        | 64,6       |
|   | 440V kW                 | 19,0          | 19,0          | 24,4          | 24,4          | 30,4       | 41,9       | 49,5        | 68,5       |
|   | 500V kW                 | 21,6          | 21,6          | 27,7          | 27,7          | 34,6       | 47,6       | 56,2        | 77,9       |
|   | 660V kW                 | 28,5          | 28,5          | 36,5          | 36,5          | 45,7       | 62,8       | 74,2        | 102,8      |
|   | 690V kW                 | 29,8          | 29,8          | 38,2          | 38,2          | 47,7       | 65,7       | 77,6        | 107,4      |
|   | 1000V kW                | –             | –             | –             | –             | –          | –          | –           | –          |
| Minimum cross-section of conductor at load with $I_e (=I_{th})$ | mm <sup>2</sup>         | 4             | 4             | 6             | 6             | 10         | 16         | 25          | 35         |
| <b>Utilization category AC2 and AC3</b>                         |                         |               |               |               |               |            |            |             |            |
| <b>Switching of three-phase motors</b>                          |                         |               |               |               |               |            |            |             |            |
| Rated operational current $I_e$ open and enclosed               | 220V A                  | 12            | 15            | 18            | 22            | 24         | 30         | 40          | 50         |
|   | 230V A                  | 11,5          | 14,5          | 18            | 22            | 24         | 30         | 40          | 50         |
|   | 240V A                  | 11            | 14            | 18            | 22            | 24         | 32         | 40          | 50         |
|   | <b>380-400V A</b>       | <b>10</b>     | <b>14</b>     | <b>18</b>     | <b>22</b>     | <b>24</b>  | <b>32</b>  | <b>40</b>   | <b>50</b>  |
|   | 415V A                  | 9             | 14            | 18            | 22            | 23         | 30         | 40          | 50         |
|   | 440V A                  | 9             | 14            | 18            | 22            | 23         | 30         | 40          | 50         |
|   | 500V A                  | 7             | 9             | 9             | 9             | 17,5       | 21         | 21          | 33         |
|   | 660-690V A              | 6,5           | 8,5           | 8,5           | 8,5           | 17         | 20         | 20          | 31         |
|   | 1000V A                 | –             | –             | –             | –             | –          | –          | –           | –          |
| Rated operational power of three-phase motors                   | 220-230V kW             | 3             | 4             | 5             | 6             | 6          | 8,5        | 11          | 12,5       |
|   | 240V kW                 | 3             | 4             | 5             | 7             | 7          | 9          | 11,5        | 13,5       |
|   | <b>380-400V kW</b>      | <b>4</b>      | <b>5,5</b>    | <b>7,5</b>    | <b>11</b>     | <b>11</b>  | <b>15</b>  | <b>18,5</b> | <b>22</b>  |
|   | 415V kW                 | 4,5           | 6             | 8,5           | 12            | 12         | 16         | 20          | 24         |
|   | 440V kW                 | 4,5           | 6             | 8,5           | 12            | 12         | 16         | 20          | 24         |
|   | 500V kW                 | 5,5           | 7,5           | 10            | 10            | 15         | 18,5       | 18,5        | 30         |
|   | 660-690V kW             | 5,5           | 7,5           | 10            | 10            | 15         | 18,5       | 18,5        | 30         |
|   | 1000V kW                | –             | –             | –             | –             | –          | –          | –           | –          |

\*1 Suitable at 690V for: earthed-neutral systems, overvoltage I to IV, pollution degree 3 (standard-industry):  $U_{imp} = 8kV$ .  
Data for other conditions on request.

**Contactors**

Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660

| Type            | J7KN-62    | J7KN-74    | J7KN-90    | J7KN-115   | J7KN-151   | J7KN-176   | J7KN-210   | J7KN-260   | J7KN-316   | J7KN-450   | J7KN-550   | J7KN-700    | J7KN-860    |
|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|
| V~              | 690        | 690        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 690         | 690         |
| A               | 900        | 900        | 1100       | 1200       | 1500       | 2000       | 2100       | 2600       | 3200       | 4500       | 5500       | 7000        | 8600        |
| A               | 800        | 800        | 950        | 1100       | 1200       | 1500       | 1600       | 2100       | 2600       | 4500       | 5500       | 7000        | 8000        |
| A               | 700        | 700        | 850        | 1000       | 1200       | 1500       | 1600       | 2100       | 2600       | 4500       | 5500       | 7000        | 8000        |
| A               | 500        | 500        | 600        | 600        | 1000       | 800        | 1200       | 1900       | 2300       | 3200       | 4400       | 5600        | 6900        |
| A               | –          | –          | –          | –          | 500        | 600        | 700        | 850        | 1000       | –          | –          | –           | –           |
| <b>A</b>        | <b>120</b> | <b>130</b> | <b>160</b> | <b>200</b> | <b>230</b> | <b>250</b> | <b>350</b> | <b>450</b> | <b>500</b> | <b>700</b> | <b>760</b> | <b>1000</b> | <b>1100</b> |
| kW              | 45,7       | 49,5       | 60         | 76         | 87         | 95         | 133        | 171        | 190        | 266        | 289        | 381         | 419         |
| kW              | 47,7       | 51,7       | 63         | 79         | 91         | 99         | 139        | 179        | 199        | 279        | 302        | 398         | 438         |
| kW              | 49,8       | 54,0       | 66         | 83         | 95         | 103        | 145        | 187        | 207        | 291        | 315        | 415         | 457         |
| kW              | 78,9       | 85,5       | 105        | 131        | 151        | 164        | 230        | 296        | 329        | 460        | 500        | 658         | 724         |
| kW              | 83,0       | 90,0       | 110        | 138        | 159        | 173        | 242        | 311        | 346        | 485        | 426        | 692         | 762         |
| kW              | 86,2       | 93,3       | 115        | 143        | 165        | 179        | 251        | 323        | 359        | 503        | 546        | 718         | 790         |
| kW              | 91,3       | 99,0       | 121        | 152        | 175        | 190        | 266        | 342        | 381        | 533        | 579        | 762         | 838         |
| kW              | 103,8      | 112,5      | 138        | 173        | 199        | 216        | 303        | 389        | 453        | 606        | 658        | 866         | 952         |
| kW              | 137,0      | 148,4      | 182        | 228        | 262        | 285        | 400        | 514        | 571        | 800        | 868        | 1143        | 1257        |
| kW              | 143,2      | 155,2      | 191        | 239        | 274        | 298        | 418        | 537        | 597        | 836        | 908        | 1195        | 1314        |
| kW              | –          | –          | 221        | 277        | 318        | 346        | 433        | 546        | 606        | 692        | 866        | –           | –           |
| A               | 100        | 110        | 120        | 135        | 180        | 200        | 280        | 360        | 400        | 550        | 600        | 800         | 875         |
| kW              | 38,1       | 41,9       | 45         | 51         | 68         | 76         | 106        | 137        | 152        | 209        | 228        | 304         | 333         |
| kW              | 39,8       | 43,8       | 47         | 53         | 71         | 79         | 111        | 143        | 159        | 219        | 239        | 318         | 348         |
| kW              | 41,5       | 45,7       | 49         | 56         | 74         | 83         | 116        | 150        | 166        | 228        | 249        | 332         | 363         |
| kW              | 65,7       | 72,3       | 78         | 88         | 118        | 131        | 184        | 237        | 263        | 362        | 395        | 526         | 575         |
| kW              | 69,2       | 76,1       | 83         | 93         | 124        | 138        | 193        | 249        | 277        | 381        | 415        | 554         | 606         |
| kW              | 71,8       | 79,0       | 86         | 97         | 129        | 143        | 201        | 259        | 287        | 395        | 431        | 575         | 628         |
| kW              | 76,1       | 83,7       | 91         | 102        | 137        | 152        | 213        | 274        | 304        | 419        | 457        | 609         | 666         |
| kW              | 86,5       | 95,2       | 103        | 116        | 155        | 173        | 242        | 312        | 346        | 476        | 519        | 692         | 757         |
| kW              | 114,2      | 125,6      | 137        | 154        | 205        | 228        | 320        | 412        | 457        | 628        | 685        | 914         | 1000        |
| kW              | 119,4      | 131,3      | 143        | 161        | 215        | 239        | 334        | 430        | 478        | 657        | 717        | 956         | 1045        |
| kW              | –          | –          | 166        | 187        | 277        | 346        | 388        | 499        | 554        | 692        | 866        | –           | –           |
| mm <sup>2</sup> | 50         | 50         | 70         | 95         | 95         | 120        | 240        | 2x150      | 2x(30x6)   | 2x(40x5)   | 2x(50x5)   | 2x(60x5)    | 2x(60x6)    |
| A               | 63         | 74         | 90         | 115        | 150        | 175        | 210        | 260        | 315        | 450        | 550        | 700         | 860         |
| A               | 62         | 74         | 90         | 115        | 150        | 175        | 210        | 260        | 315        | 450        | 550        | 700         | 860         |
| A               | 62         | 74         | 90         | 115        | 150        | 175        | 210        | 260        | 315        | 450        | 550        | 700         | 860         |
| <b>A</b>        | <b>62</b>  | <b>74</b>  | <b>90</b>  | <b>115</b> | <b>150</b> | <b>175</b> | <b>210</b> | <b>260</b> | <b>315</b> | <b>450</b> | <b>550</b> | <b>700</b>  | <b>860</b>  |
| A               | 62         | 74         | 90         | 115        | 150        | 175        | 210        | 260        | 315        | 450        | 550        | 700         | 860         |
| A               | 62         | 74         | 90         | 115        | 150        | 175        | 210        | 260        | 315        | 450        | 550        | 700         | 860         |
| A               | 42         | 42         | 60         | 60         | 150        | 175        | 210        | 260        | 315        | 450        | 550        | 700         | 860         |
| A               | 40         | 40         | 58         | 58         | 120        | 140        | 150        | 180        | 240        | 400        | 500        | 630         | 700         |
| A               | –          | –          | 58         | 58         | 60         | 70         | 85         | 100        | 125        | 200        | 250        | –           | –           |
| kW              | 18,5       | 22         | 25         | 33         | 40         | 50         | 60         | 75         | 90         | 132        | 175        | 225         | 280         |
| kW              | 19         | 23         | 27         | 35         | 45         | 55         | 65         | 80         | 100        | 140        | 185        | 235         | 290         |
| <b>kW</b>       | <b>30</b>  | <b>37</b>  | <b>45</b>  | <b>55</b>  | <b>75</b>  | <b>90</b>  | <b>110</b> | <b>132</b> | <b>160</b> | <b>250</b> | <b>300</b> | <b>400</b>  | <b>500</b>  |
| kW              | 33         | 40         | 49         | 63         | 80         | 95         | 115        | 140        | 180        | 257        | 315        | 415         | 515         |
| kW              | 33         | 40         | 49         | 63         | 85         | 100        | 125        | 150        | 190        | 270        | 335        | 450         | 530         |
| kW              | 37         | 45         | 55         | 55         | 90         | 100        | 132        | 160        | 210        | 300        | 375        | 500         | 600         |
| kW              | 37         | 45         | 55         | 55         | 110        | 132        | 132        | 160        | 210        | 375        | 500        | 630         | 700         |
| kW              | –          | –          | 55         | 55         | 75         | 90         | 110        | 132        | 160        | 280        | 355        | –           | –           |

**Contactors**

**Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660**

| Main Contacts   | Type  | J7KN(G)-10(D) | J7KN(G)-14(D) | J7KN(G)-18(D) | J7KN(G)-22(D) | J7KN(G)-24 | J7KN(G)-32 | J7KN(G)-40  | J7KN-50   |      |
|---|---|---------------|---------------|---------------|---------------|------------|------------|-------------|-----------|------|
| <b>Utilization category AC4</b>                         | 220V A  | 12            | 15            | 18            | 18            | 24         | 30         | 40          | 50        |      |
| <b>Switching of squirrel cage motors, inching</b>       | 230V A  | 11,5          | 14,5          | 18            | 18            | 24         | 30         | 40          | 50        |      |
| Rated operational current $I_e$ open and enclosed       | 240V A  | 11            | 14            | 18            | 18            | 24         | 32         | 40          | 50        |      |
|   | <b>380-400V A</b>                                     | <b>10</b>     | <b>14</b>     | <b>18</b>     | <b>18</b>     | <b>24</b>  | <b>32</b>  | <b>40</b>   | <b>50</b> |      |
|   | 415V A  | 9             | 14            | 18            | 18            | 23         | 30         | 37          | 45        |      |
|   | 440V A  | 9             | 14            | 18            | 18            | 23         | 30         | 37          | 45        |      |
|   | 500V A  | 9             | 12            | 16            | 16            | 17,5       | 21         | 21          | 33        |      |
|   | 660-V A   | 7             | 9             | 9             | 9             | 17         | 20         | 20          | 31        |      |
|   | 690V A  | 6,5           | 8,5           | 8,5           | 8,5           | 17         | 20         | 20          | 31        |      |
|   | 1000V A   | —             | —             | —             | —             | —          | —          | —           | —         |      |
|   | Rated operational power of three-phase motors 50-60Hz | 220-230V kW   | 3             | 4             | 5             | 5          | 6          | 8,5         | 11        | 12,5 |
|   |   | 240V kW       | 3             | 4             | 5             | 5          | 7          | 9           | 11,5      | 13,5 |
| <b>380-400V kW</b>                                      |   | <b>4</b>      | <b>5,5</b>    | <b>7,5</b>    | <b>7,5</b>    | <b>11</b>  | <b>15</b>  | <b>18,5</b> | <b>22</b> |      |
| 415V kW   |   | 4,5           | 6             | 8,5           | 8,5           | 12         | 16         | 20          | 24        |      |
| 440V kW   |   | 4,5           | 6             | 8,5           | 8,5           | 12         | 16         | 20          | 24        |      |
| 500V kW   |   | 5,5           | 7,5           | 10            | 10            | 15         | 18,5       | 18,5        | 30        |      |
| 660-690V kW   |   | 5,5           | 7,5           | 10            | 10            | 15         | 18,5       | 18,5        | 30        |      |
| 1000V kW  | —   | —             | —             | —             | —             | —          | —          | —           |           |      |
| <b>Utilization category AC5a</b>                        |   |               |               |               |               |            |            |             |           |      |
| <b>Switching of gas discharge lamps</b>                 |   |               |               |               |               |            |            |             |           |      |
| Rated operational current $I_e$ per pole at 220/230V    |   |               |               |               |               |            |            |             |           |      |
| Fluorescent lamps, uncompensated and serial compensated | A 20  | 20            | 25            | 25            | 40            | 52         | 64         | 88          | 96        |      |
| parallel compensated                                    | A   | 7             | 9             | 9             | 9             | 18         | 22         | 22          | 30        |      |
| dual-connection   | A   | 22,5          | 22,5          | 28            | 28            | 45         | 58         | 72          | 98        |      |
| Metal halide lamps <sup>1</sup> , uncompensated         | A   | 12            | 15            | 19            | 19            | 30         | 39         | 48          | 66        |      |
| parallel compensated                                    | A   | 7             | 9             | 9             | 9             | 18         | 22         | 22          | 30        |      |
| Mercury-vapour lamps <sup>2</sup> , uncompensated       | A   | 22,5          | 25            | 28            | 28            | 45         | 58         | 72          | 99        |      |
| parallel compensated                                    | A   | 7             | 9             | 9             | 9             | 18         | 22         | 22          | 30        |      |
| Mixed light lamps <sup>3</sup>                          | A   | 20            | 20            | 25            | 25            | 40         | 52         | 64          | 88        |      |
| <b>Utilization category AC5b</b>                        |   |               |               |               |               |            |            |             |           |      |
| <b>Switching of incandescent lamps<sup>4</sup></b>      |   |               |               |               |               |            |            |             |           |      |
| Rated operational current $I_e$ per pole at 220/230V    | A   | 12,5          | 12,5          | 12,5          | 12,5          | 25         | 31         | 31          | 43        |      |

<sup>1</sup> Metal halide lamps and sodium-vapour lamps (high- and low-pressure lamps)

<sup>2</sup> High-pressure lamps

<sup>3</sup> Blended lamps, containing a mercury high-pressure unit and a tungsten helix in a fluorescent glass bulb (daylight lamps)

<sup>4</sup> Current inrush approx.  $16 \times I_e$

**Contactors**

Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660

| Type      | J7KN-62   | J7KN-74   | J7KN-90   | J7KN-115  | J7KN-151  | J7KN-176  | J7KN-210  | J7KN-260   | J7KN-316   | J7KN-450   | J7KN-550   | J7KN-700   | J7KN-860   |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| A         | 63        | 63        | 85        | 98        | 55        | 63        | 85        | 100        | 120        | 150        | 180        | 230        | 280        |
| A         | 62        | 62        | 85        | 98        | 55        | 63        | 85        | 100        | 120        | 150        | 180        | 230        | 280        |
| A         | 62        | 62        | 85        | 98        | 55        | 63        | 85        | 100        | 120        | 150        | 180        | 230        | 280        |
| <b>A</b>  | <b>62</b> | <b>62</b> | <b>85</b> | <b>85</b> | <b>55</b> | <b>63</b> | <b>85</b> | <b>100</b> | <b>120</b> | <b>150</b> | <b>180</b> | <b>230</b> | <b>280</b> |
| A         | 60        | 60        | 85        | 85        | 55        | 63        | 85        | 100        | 120        | 150        | 180        | 230        | 280        |
| A         | 55        | 55        | 85        | 85        | 55        | 63        | 85        | 100        | 120        | 150        | 180        | 230        | 280        |
| A         | 42        | 42        | 85        | 85        | —         | —         | —         | —          | —          | —          | —          | —          | —          |
| A         | 40        | 40        | 60        | 60        | —         | —         | —         | —          | —          | —          | —          | —          | —          |
| A         | 40        | 40        | 57,5      | 57,5      | —         | —         | —         | —          | —          | —          | —          | —          | —          |
| A         | —         | —         | —         | —         | —         | —         | —         | —          | —          | —          | —          | —          | —          |
| kW        | 18,5      | 18,5      | 25        | 30        | 15        | 18,5      | 25        | 30         | 37         | 45         | 51         | 68         | 80         |
| kW        | 19        | 19        | 27        | 32        | 15,5      | 19        | 26        | 31         | 38         | 47         | 53         | 71         | 83         |
| <b>kW</b> | <b>30</b> | <b>30</b> | <b>45</b> | <b>45</b> | <b>25</b> | <b>30</b> | <b>45</b> | <b>55</b>  | <b>63</b>  | <b>75</b>  | <b>90</b>  | <b>120</b> | <b>150</b> |
| kW        | 33        | 33        | 49        | 49        | 25        | 33        | 45        | 55         | 65         | 80         | 100        | 132        | 160        |
| kW        | 33        | 33        | 49        | 49        | 30        | 34        | 48        | 55         | 67         | 85         | 100        | 132        | 160        |
| kW        | 37        | 37        | 55        | 55        | 25        | 30        | 55        | 65         | 75         | 100        | 110        | 150        | 185        |
| kW        | 37        | 37        | 55        | 55        | 25        | 30        | 55        | 65         | 75         | 100        | 110        | 150        | 185        |
| kW        | —         | —         | —         | —         | —         | —         | —         | —          | —          | —          | —          | —          | —          |
| A         | 104       | —         | 100       | 120       | 120       | 140       | 180       | 220        | 280        | 360        | 450        | 570        | 700        |
| A         | 40        | 45        | 55        | 70        | 85        | 100       | 130       | 160        | 200        | 300        | 360        | 460        | 550        |
| A         | 108       | 117       | 112       | 144       | 120       | 140       | 180       | 220        | 280        | 360        | 450        | 570        | 700        |
| A         | 72        | 78        | 85        | 90        | 95        | 110       | 140       | 180        | 230        | 300        | 380        | 490        | 610        |
| A         | 40        | 45        | 55        | 70        | 75        | 85        | 110       | 140        | 170        | 260        | 300        | 400        | 480        |
| A         | 108       | 117       | 112       | 144       | 120       | 140       | 180       | 220        | 280        | 360        | 450        | 570        | 700        |
| A         | 40        | 45        | 55        | 70        | 75        | 85        | 110       | 140        | 170        | 260        | 300        | 400        | 480        |
| A         | 96        | 104       | 100       | 120       | 100       | 120       | 160       | 200        | 250        | 320        | 400        | 500        | 600        |
| A         | 56        | 56        | 69        | 75        | 100       | 120       | 160       | 190        | 220        | 260        | 315        | 440        | 500        |

**Contactors**

**Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660**

| Main Contacts                                      | Type                    | J7KN(G)-10(D) | J7KN(G)-14(D) | J7KN(G)-18(D) | J7KN(G)-22(D) | J7KN(G)-24 | J7KN(G)-32 | J7KN(G)-40 | J7KN-50 |
|--|-------------------------|---------------|---------------|---------------|---------------|------------|------------|------------|---------|
| <b>Utilization category AC6a</b>                   |                         |               |               |               |               |            |            |            |         |
| <b>Transformer primary switching</b>               |                         |               |               |               |               |            |            |            |         |
| at inrush  | n                       | 30            | 30            | 30            | 30            | 30         | 30         | 30         | 30      |
| Rated operational current $I_e$                    | 400V A                  | 4,5           | 5,5           | 7,5           | 7,5           | 10,5       | 13,5       | 13,5       | 20      |
| Rated operational power                            | 220-230V kVA            | 138           | 2,2           | 3             | 3             | 4,2        | 5,4        | 5,4        | 8       |
| dependent on inrush n                              | 200V kVA                | 1,9           | 2,3           | 3,1           | 3,1           | 4,3        | 5,6        | 5,6        | 8,3     |
|  | 380-400V kVA            | 3,1           | 3,8           | 5,2           | 5,2           | 7,3        | 9,3        | 9,3        | 13,5    |
| For different inrush-factors x                     | 415-440V- kVA           | 3,4           | 4,2           | 5,7           | 5,7           | 8          | 10,2       | 10,2       | 15      |
| use the following formula:                         | 500V kVA                | 3,9           | 4,8           | 6,5           | 6,5           | 9          | 11,5       | 11,5       | 17      |
| $P_x = P_n \cdot (n/x)$                            | 660-690V kVA            | 5,4           | 6,5           | 9             | 9             | 12,5       | 16         | 16         | 24      |
| <b>Utilization category AC6b</b>                   |                         |               |               |               |               |            |            |            |         |
| <b>Switching of three-phase capacitors</b>         |                         |               |               |               |               |            |            |            |         |
| Maximum inrush current (peak value)                |                         | 35            | 25            | 20            | 20            | 25         | 25         | 25         | 25      |
| as multiple k of the capacitor rated current       | k                       |               |               |               |               |            |            |            |         |
| Rated operational $I_e$                            | 500V A                  | 8             | 12            | 15,5          | 15,5          | 23         | 32         | 32         | 45      |
| Rated operational power                            | 220-230V kVAr           | 3             | 4,5           | 6             | 6             | 8,5        | 12         | 12         | 17      |
| ( $\sin\phi \rightarrow 1$ )                       | 240V kVAr               | 3,5           | 5             | 6,5           | 6,5           | 9,5        | 13         | 13         | 18,5    |
|  | 380-400V kVAr           | 5             | 7,5           | 10            | 10            | 15         | 20         | 20         | 29      |
| For different multiples x                          | 415-440V kVAr           | 5,5           | 8             | 11            | 11            | 16         | 22         | 22         | 32      |
| use the following formula:                         | 500V kVAr               | 7             | 10            | 13            | 13            | 20         | 26         | 26         | 39      |
| $P_x = P_k \cdot (k/x)$                            | 660-690V kVAr           | 7             | 10            | 13            | 13            | 20         | 26         | 26         | 40      |
| <b>Switching of reactive capacitor banks</b>       |                         |               |               |               |               |            |            |            |         |
| Rated operational current $I_e$                    | 690V A                  | 8             | 13            | 18            | 20            | 28         | 36         | 42         | 48      |
| Rated operational power                            | 220-230V kVAr           | 2,9           | 5             | 7             | 7,5           | 11         | 14         | 16         | 20      |
|  | 240V kVAr               | 3,1           | 5,4           | 7             | 8             | 11         | 14         | 17         | 20      |
|  | 380-400V kVAr           | 5             | 9             | 12,5          | 13            | 20         | 25         | 27,5       | 33,3    |
|  | 415-440V kVAr           | 5,5           | 9,5           | 13            | 14            | 22         | 27         | 30         | 36      |
|  | 500V kVAr               | 6             | 11            | 15            | 17            | 25         | 30         | 36         | 40      |
|  | 660-690V kVAr           | 8             | 15            | 20            | 22            | 33         | 41         | 48         | 55      |
|  | 750(850)V kVAr          | -             | -             | -             | -             | -          | -          | -          | -       |
| <b>Utilization category DC1</b>                    |                         |               |               |               |               |            |            |            |         |
| <b>Switching of resistive load</b>                 |                         |               |               |               |               |            |            |            |         |
| Time constant $L/R \leq 1ms$                       |                         | 20            | 25            | 32            | 32            | 50         | 65         | 80         | 110     |
| Rated operational current $I_e$                    | 1 pole 24V A            |               |               |               |               |            |            |            |         |
|  | 60V A                   | 20            | 25            | 32            | 32            | 50         | 65         | 80         | 110     |
|  | 110V A                  | 6             | 6             | 6             | 6             | 10         | 10         | 10         | 12      |
|  | 220V A                  | 0,8           | 0,8           | 0,8           | 0,8           | 1,4        | 1,4        | 1,4        | 1,4     |
|  | 3 poles in series 24V A | 20            | 25            | 32            | 32            | 50         | 65         | 8/0        | 110     |
|  | 60V A                   | 20            | 25            | 32            | 32            | 50         | 65         | 80         | 110     |
|  | 110V A                  | 20            | 25            | 32            | 32            | 50         | 65         | 80         | 110     |
|  | 220V A                  | 16            | 20            | 20            | 20            | 30         | 35         | 35         | 63      |
| <b>Utilization category DC3 and DC5</b>            |                         |               |               |               |               |            |            |            |         |
| <b>Switching of shunt motors and series motors</b> |                         |               |               |               |               |            |            |            |         |
| Time constant $L/R \leq 15ms$                      |                         | 20            | 25            | 32            | 32            | 50         | 65         | 80         | 110     |
| Rated operational current $I_e$                    | 1 pole 24V A            |               |               |               |               |            |            |            |         |
|  | 60V A                   | 6             | 6             | 6             | 6             | 30         | 30         | 30         | 60      |
|  | 110V A                  | 1,2           | 1,2           | 1,2           | 1,2           | 1,8        | 1,8        | 1,8        | 1,8     |
|  | 220V A                  | 0,2           | 0,2           | 0,2           | 0,2           | 0,2        | 0,2        | 0,2        | 0,25    |
|  | 3 poles in series 24V A | 20            | 25            | 32            | 32            | 50         | 65         | 80         | 110     |
|  | 60V A                   | 20            | 25            | 32            | 32            | 40         | 40         | 40         | 80      |
|  | 110V A                  | 20            | 20            | 20            | 20            | 40         | 40         | 40         | 80      |
|  | 220V A                  | 2,5           | 2,5           | 2,5           | 2,5           | 4          | 4          | 4          | 5       |

**Contactors**

Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660

| Type             | J7KN-62 | J7KN-74           | J7KN-90 | J7KN-115 | J7KN-151 | J7KN-176 | J7KN-210 | J7KN-260 | J7KN-316 | J7KN-450 | J7KN-550 | J7KN-700 | J7KN-860 |
|------------------|---------|-------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| n                | 30      | 30                | 30      | 30       | 30       | 30       | 30       | 30       | 30       | 30       | 30       | 30       | 30       |
| A                | 27      | 33                | 38      | 50       | 65       | 80       | 90       | 120      | 142      | 203      | 248      | 315      | 390      |
| kVA              | 10,7    | 13                | 15      | 20       | 25       | 30       | 34       | 45       | 54       | 77       | 95       | 120      | 148      |
| kVA              | 11,2    | 13,5              | 15,5    | 20,5     | 27       | 33       | 37       | 50       | 59       | 80       | 100      | 130      | 160      |
| kVA              | 18,5    | 22,5              | 26      | 34       | 45       | 55       | 60       | 80       | 95       | 140      | 170      | 210      | 270      |
| kVA              | 20,5    | 25                | 29      | 38       | 46       | 57       | 63       | 85       | 100      | 145      | 175      | 220      | 280      |
| kVA              | 23      | 28                | 33      | 43       | 55       | 69       | 75       | 100      | 120      | 170      | 210      | 270      | 330      |
| kVA              | 32      | 39                | 45      | 60       | 56       | 69       | 100      | 135      | 160      | 200      | 250      | 320      | 350      |
| k                | 25      | 20                | 20      | 20       | 20       | 20       | 25       | 20       | 20       | 20       | 20       | 20       | 20       |
| A                | 60      | 70                | 87      | 100      | 120      | 155      | 195      | 225      | 255      | 300      | 370      | 440      | 520      |
| kVA <sub>r</sub> | 24      | 28                | 33      | 38       | 45       | 60       | 75       | 90       | 100      | 115      | 145      | 170      | 200      |
| kVA <sub>r</sub> | 25      | 29                | 36      | 42       | 52       | 62       | 78       | 94       | 104      | 120      | 150      | 175      | 205      |
| kVA <sub>r</sub> | 39      | 46                | 57      | 65       | 80       | 100      | 130      | 155      | 170      | 200      | 250      | 300      | 350      |
| kVA <sub>r</sub> | 43      | 50                | 60      | 70       | 95       | 110      | 135      | 165      | 175      | 210      | 260      | 310      | 360      |
| kVA <sub>r</sub> | 50      | 58                | 70      | 80       | 100      | 130      | 170      | 194      | 220      | 260      | 320      | 380      | 450      |
| kVA <sub>r</sub> | 50      | 58                | 70      | 80       | 100      | 130      | 170      | 194      | 220      | 260      | 320      | 380      | 450      |
| A                | 72      | 108 <sup>11</sup> | 98      | 105      | 115      | 140      | 200      | 225      | 250      | 330      | 420      | 550      | 600      |
| kVA <sub>r</sub> | 28      | 33                | 35      | 40       | 43       | 53       | 76       | 85       | 95       | 125      | 160      | 209      | 228      |
| kVA <sub>r</sub> | 28      | 36                | 39      | 43       | 45       | 55       | 80       | 90       | 100      | 130      | 170      | 220      | 240      |
| kVA <sub>r</sub> | 50      | 75 <sup>11</sup>  | 68      | 75       | 75       | 90       | 130      | 145      | 160      | 210      | 270      | 350      | 390      |
| kVA <sub>r</sub> | 53      | 75 <sup>11</sup>  | 71      | 77       | 80       | 100      | 140      | 160      | 170      | 230      | 290      | 380      | 420      |
| kVA <sub>r</sub> | 60      | 75                | 85      | 90       | 95       | 120      | 170      | 190      | 210      | 280      | 350      | 450      | 500      |
| kVA <sub>r</sub> | 82      | 100               | 110     | 120      | 125      | 150      | 200      | 230      | 260      | 350      | 450      | 600      | 650      |
| kVA <sub>r</sub> | –       | –                 | 115     | 125      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 120     | 130               | 160     | 200      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 120     | 130               | 160     | 200      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 12      | 12                | 20      | 25       | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 1,4     | 1,4               | 2       | 2,5      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 120     | 130               | 160     | 200      | 200      | 250      | 350      | 400      | 450      | 600      | 760      | 1000     | 1100     |
| A                | 120     | 130               | 160     | 200      | 200      | 250      | 350      | 400      | 450      | 600      | 760      | 1000     | 1100     |
| A                | 120     | 130               | 160     | 200      | 150      | 170      | 250      | 280      | 315      | 400      | 480      | 560      | 630      |
| A                | 80      | 80                | 100     | 160      | 80       | 100      | 150      | 180      | 200      | 250      | 315      | 400      | 450      |
| A                | 120     | 130               | 160     | 200      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 60      | 60                | 85      | 100      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 1,8     | 1,8               | 2       | 2,5      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 0,25    | 0,25              | 0,5     | 0,5      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 120     | 130               | 160     | 200      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 80      | 80                | 100     | 110      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 80      | 80                | 100     | 110      | –        | –        | –        | –        | –        | –        | –        | –        | –        |
| A                | 5       | 5                 | 7       | 8        | –        | –        | –        | –        | –        | –        | –        | –        | –        |

<sup>11</sup> Consider resistive load (I<sub>th</sub>). See page 10.

## Contactors

### Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660

| Main Contacts   | Type  | J7KN(G)-10(D)   | J7KN(G)-14(D) | J7KN(G)-18(D) | J7KN(G)-22(D) | J7KN(G)-24  | J7KN(G)-32 | J7KN(G)-40 | J7KN-50  | J7KN-62 | J7KN-74 |
|---|---|---|---------------|---------------|---------------|---|------------|------------|--|---------|---------|
| <b>Maximum ambient temperature</b>  |   |   |               |               |               |   |            |            |  |         |         |
| Operation   | open °C   | -40 to +60 (+90)*1  |               |               |               |   |            |            |  |         |         |
|   | enclosed °C                                       | -40 to +40  |               |               |               |   |            |            |  |         |         |
| with thermal overload relay   | open °C   | -25 to +60  |               |               |               |   |            |            |  |         |         |
|   | enclosed °C                                       | -25 to +40  |               |               |               |   |            |            |  |         |         |
| Storage   | °C  | -50 to +90  |               |               |               |   |            |            |  |         |         |
| <b>Short circuit protection</b>   |   |   |               |               |               |   |            |            |  |         |         |
| for contactors without thermal overload relay   |   |   |               |               |               |   |            |            |  |         |         |
| Coordination-type "1" according to IEC 60947-4-1  |   |   |               |               |               |   |            |            |  |         |         |
| Contact welding without hazard of persons   |   |   |               |               |               |   |            |            |  |         |         |
| max. fuse size  | gL (gG) A   | 63  | 63            | 63            | 63            | 80  | 80         | 80         | 160  | 160     | 160     |
| Coordination-type "2" according to IEC 60947-4-1  |   |   |               |               |               |   |            |            |  |         |         |
| Light contact welding accepted  |   |   |               |               |               |   |            |            |  |         |         |
| max. fuse size  | gL (gG) A   | 25  | 35            | 35            | 35            | 50  | 50         | 50         | 100  | 125     | 125     |
| Contact welding not accepted  |   |   |               |               |               |   |            |            |  |         |         |
| max. fuse size  | gL (gG) A   | 16  | 16            | 16            | 16            | 25  | 35         | 35         | 50   | 63      | 63      |
| For contactors with thermal overload relay the device with the smaller admissible backup fuse (contactor or thermal overload relay) determines the fuse size. |   |   |               |               |               |   |            |            |  |         |         |
| <b>Cable cross-sections</b>   |   |   |               |               |               |   |            |            |  |         |         |
| for contactors without thermal overload relay   |   |   |               |               |               |   |            |            |  |         |         |
| 1 cable per clamp   |   |   |               |               |               |   |            |            |  |         |         |
| main connector  |   |   |               |               |               |   |            |            |  |         |         |
|   | solid or stranded mm <sup>2</sup>                 |  0,75-6  |               |               |               |  1,5-25            |            |            |  4-50 |         |         |
|   | flexible mm <sup>2</sup>                          | 1-4   |               |               |               | 2,5-16  |            |            | 10-35  |         |         |
|   | flexible with multicore cable end mm <sup>2</sup> | 0,75-4  |               |               |               | 1,5-16  |            |            | 6-35   |         |         |
| 2 cables per clamp solid or stranded mm <sup>2</sup>  |   | 6+(1-6) / 4+(0,75-4)<br>2,5+(0,75-2,5) / 1,5+(0,75-1,5)   |               |               |               | 16+(2,5-16) / 10+(4-16)<br>6+(4-16) / 4+(2,5-16)  |            |            | 50+4 / 35+6 / 25+(6-16)<br>16+(6-16) / 10+(6-16)   |         |         |
| flexible mm <sup>2</sup>  |   | 6+(1,5-4) / 4+(1-4)<br>2,5+(0,75-2,5) / 1,5+(0,75-1,5)  |               |               |               | 16+(2,5-6) / 10+(4-10)<br>6+(4-16) / 4+(2,5-16)   |            |            | 50+(4-10) / 35+(4-16)<br>25+(4-25) / 16+(4-16)   |         |         |
| 1 cable per clamp main connector  |   | solid AWG 18-10<br>flexible AWG 18-10   |               |               |               | 16-10<br>14-4   |            |            | 12-10<br>10-0  |         |         |
| 2 cables per clamp  |   | solid AWG 10+(16-10) / 12+(18-12)<br>14+(18-14) / 16+(18-16)<br>flexible AWG 10+(14-10) / 12+(18-12)<br>14+(18-14) / 16+(18-16) |               |               |               | 10+(16-10) / 12+(18-12)<br>14+(18-14) / 16+(18-16)<br>4+(18-12) / 6+(18-8)<br>8+(18-8) / 10+(18-12) |            |            | 10+(12-10) / 12+12<br>1+(12-10) / 2+(8-12)<br>3+(12-8) / 4+(10-6)                        |         |         |
| <b>Frequency of operations z</b>  |   |   |               |               |               |   |            |            |  |         |         |
| Contactors without thermal overload relay   |   |   |               |               |               |   |            |            |  |         |         |
|   | without load 1/h                                  | 10000   |               |               |               | 7000  |            |            | 7000   |         |         |
|   | AC3, I <sub>e</sub> 1/h                           | 600   |               |               |               | 600   |            |            | 400  |         |         |
|   | AC4, I <sub>e</sub> 1/h                           | 120   |               |               |               | 120   |            |            | 120  |         |         |
|   | DC3, I <sub>e</sub> 1/h                           | 600   |               |               |               | 600   |            |            | 400  |         |         |
| <b>Mechanical life</b>  |   |   |               |               |               |   |            |            |  |         |         |
| AC operated   | S x 10 <sup>6</sup>                               | 10  |               |               |               | 10  |            |            | 10   |         |         |
| DC operated   | S x 10 <sup>6</sup>                               | 10  |               |               |               | 10  |            |            | 10   |         |         |
| DC solenoid operated (J7KNG)  | S x 10 <sup>6</sup>                               | 50  |               |               |               | 50  |            |            | -  |         |         |
| <b>Short time current</b>   |   |   |               |               |               |   |            |            |  |         |         |
|   | 10s-current A                                     | 96  | 120           | 144           | 176           | 184   | 240        | 296        | 450  | 504     | 592     |
|   | 120s-current A                                    | 42  | 52            | 58            | 66            | 80  | 97         | 110        | 195  | 203     | 222     |
| <b>Power loss per pole</b> at I <sub>e</sub> /AC3 400V W  |   |   |               |               |               |   |            |            |  |         |         |
| contact resistance  | mW  | 0,21  | 0,35          | 0,5           | 0,75          | 0,7   | 1,3        | 2          | 2,2  | 3,9     | 5,5     |
| <b>Resistance to shock acc. to IED 68-2-27</b>  |   |   |               |               |               |   |            |            |  |         |         |
| Shock time 20ms sine-wave   | NO g  | 10  | 10            | 10            | 10            | 8   | 8          | 8          | 8  | 8       | 8       |
|   | NC g  | 6   | 6             | 6             | 6             | -   | -          | -          | -  | -       | -       |

\*1 With reduced control voltage range 0,9 up to 1,0 x U<sub>s</sub> and with reduced rated current I<sub>e</sub>/AC1 according to I<sub>e</sub>/AC3



**Contactors**

Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660

| Type                | J7KN-90                       | J7KN-115 | J7KN-151                            | J7KN-176 | J7KN-210 | J7KN-260                             | J7KN-316 | J7KN-450                             | J7KN-550                             | J7KN-700                             | J7KN-860                             |
|---------------------|-------------------------------|----------|-------------------------------------|----------|----------|--------------------------------------|----------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| °C                  | -10 to +60(+90) <sup>*1</sup> |          | -25 to +55(+70) <sup>*2</sup>       |          |          |                                      |          |                                      |                                      |                                      |                                      |
| °C                  | -40 to +40                    |          | -25 to +40                          |          |          |                                      |          |                                      |                                      |                                      |                                      |
| °C                  | -25 to +60                    |          | -25 to +55                          |          |          |                                      |          |                                      |                                      |                                      |                                      |
| °C                  | -25 to +40                    |          | -25 to +40                          |          |          |                                      |          |                                      |                                      |                                      |                                      |
| °C                  | -50 to +90                    |          | -55 to +80                          |          |          |                                      |          |                                      |                                      |                                      |                                      |
| A                   | 250                           | 250      | 250                                 | 315      | 400      | 450                                  | 500      | 630                                  | 630                                  | 800                                  | 1000                                 |
| A                   | 160                           | 200      | 200                                 | 250      | 315      | 400                                  | 400      | 500                                  | 560                                  | —                                    | —                                    |
| A                   | 100                           | 125      | 160                                 | 200      | 250      | 315                                  | —        | —                                    | —                                    | —                                    | —                                    |
| mm <sup>2</sup>     |                               |          | <br>busbar<br>18 x 4<br>screw<br>M8 |          |          | <br>busbar<br>25 x 6<br>screw<br>M10 |          | <br>busbar<br>30 x 5<br>screw<br>M12 | <br>busbar<br>40 x 6<br>screw<br>M12 | <br>busbar<br>50 x 8<br>screw<br>M12 | <br>busbar<br>50 x 8<br>screw<br>M14 |
| mm <sup>2</sup>     | top below<br>0,5-95 + 10-120  |          |                                     |          |          |                                      |          |                                      |                                      |                                      |                                      |
| mm <sup>2</sup>     | 0,5-70 + 10-95                |          |                                     |          |          |                                      |          |                                      |                                      |                                      |                                      |
| AWG                 | top below<br>20-10 —          |          |                                     |          |          |                                      |          |                                      |                                      |                                      |                                      |
| AWG                 | 20-2/0 8-2/0                  |          |                                     |          |          |                                      |          |                                      |                                      |                                      |                                      |
| 1/h                 | 3000                          |          | 1200                                |          |          | 1200                                 |          | 1200                                 |                                      |                                      |                                      |
| 1/h                 | 300                           |          | —                                   |          |          |                                      |          |                                      |                                      |                                      |                                      |
| 1/h                 | 120                           |          | —                                   |          |          |                                      |          |                                      |                                      |                                      |                                      |
| 1/h                 | 300                           |          | —                                   |          |          |                                      |          |                                      |                                      |                                      |                                      |
| S x 10 <sup>6</sup> | 5                             |          | 10                                  |          |          | 5                                    |          | 5                                    |                                      |                                      |                                      |
| S x 10 <sup>6</sup> | 5                             |          | 10                                  |          |          | 5                                    |          | 5                                    |                                      |                                      |                                      |
| S x 10 <sup>6</sup> | —                             |          | —                                   |          |          |                                      |          |                                      |                                      |                                      |                                      |
| A                   | 680                           | 880      | 1200                                | 1400     | 1800     | 2200                                 | 2600     | 3600                                 | 4400                                 | 5600                                 | 6900                                 |
| A                   | 275                           | 330      | 500                                 | 575      | 800      | 900                                  | 1000     | 1400                                 | 1750                                 | 2200                                 | 2600                                 |
| W                   | 4,8                           | 7,9      | 9                                   | 11       | 88       | 11                                   | 14,9     | 26,3                                 | 33,3                                 | 49                                   | 59,2                                 |
| mW                  | 0,6                           | 0,5      | 0,4                                 | 0,35     | 0,18     | 0,16                                 | 0,15     | —                                    | —                                    | —                                    | —                                    |
| g                   | 7                             | 7        | —                                   | —        | —        | —                                    | —        | —                                    | —                                    | —                                    | —                                    |
| g                   | 5                             | 5        | —                                   | —        | —        | —                                    | —        | —                                    | —                                    | —                                    | —                                    |

\*1 With reduced control voltage range 0,9 up to 1,0 x U<sub>s</sub> and with reduced rated current I<sub>e</sub>/AC1 according to I<sub>e</sub>/AC3

\*2 With reduced control voltage range 1,0 x U<sub>s</sub> and with reduced rated current I<sub>e</sub>/AC1 according to I<sub>e</sub>/AC3

**Contactors**

**Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660**

| Auxiliary Contacts   | Type  | J7KN-10D/14D/18D/22D  | J7KNG-10/14/18/22 | J7KN(G)-24/32/40    | J7KN-50/62/74 |
|--|---|---|-------------------|---------------------|---------------|
| <b>Rated insulation voltage</b> $U_i$ <sup>*1</sup>                                  | V~  | 690   |                   | —                   | —             |
| <b>Thermal rated current</b> $I_{th}$ to 690V  |   |   |                   |                     |               |
| Ambient temperature  | 40°C A  | 10  | 16                | —                   | —             |
|  | 60°C A  | 6   | 12                | —                   | —             |
| <b>Utilization category AC15</b>   |   |   |                   |                     |               |
| Rated operational current $I_e$  | 220-240V A  | 3   | 12                | —                   | —             |
|  | 380-415V A  | 2   | 4                 | —                   | —             |
|  | 440V A  | 1,6   | 4                 | —                   | —             |
|  | 500V A  | 1,2   | 3                 | —                   | —             |
|  | 660-690V A  | 0,6   | 1                 | —                   | —             |
| <b>Utilization category DC13</b>   |   |   |                   |                     |               |
| Rated operational current $I_e$  | 60V A   | 3,5   | 8                 | —                   | —             |
|  | 110V A  | 0,5   | 1                 | —                   | —             |
|  | 220V A  | 0,1   | 0,1               | —                   | —             |
| <b>Short circuit protection</b>  |   | For contactors with thermal overload relay the device with the smaller admissible control fuse (contactor or thermal overload relay) determines the fuse. |                   |                     |               |
| Short-circuit current 1kA, contact welding not accepted                              |   |   |                   |                     |               |
| max. fuse size   | gL (gG) A   | 25  |                   | —                   | —             |
| <b>Control Circuit</b>   |   |   |                   |                     |               |
| <b>Power consumption of coils</b>  |   |   |                   |                     |               |
| AC operated  | inrush VA   | 33-45   |                   | 90-115              | 140-165       |
|  | sealed VA   | 7-10  |                   | 9-13                | 13-18         |
|  | W   | 2,6-3   |                   | 2,7-4               | 5,4-7         |
| DC operated  | inrush W  | 75  |                   | 140                 | 200           |
| double winding coil  | sealed W  | 2   |                   | 2                   | 6             |
| DC solenoid operated (J7KNG)   | inrush W  | 3   |                   | 4                   | —             |
|  | sealed W  | 3   |                   | 4                   | —             |
| <b>Operation range of coils</b>  |   |   |                   |                     |               |
| in multiples of control voltage $U_s$  |   |   |                   |                     |               |
|  | AC operated                                       | 0,85-1,1  |                   | 0,85-1,1            | 0,85-1,1      |
|  | DC operated                                       | 0,8-1,1   |                   | 0,8-1,1             | 0,8-1,1       |
| <b>Switching time at control voltage <math>U_s \pm 10\%</math> <sup>*2, *3</sup></b> |   |   |                   |                     |               |
| AC operated  | make time ms                                      | 8-16  |                   | 10-25               | 12-28         |
|  | release time ms                                   | 5-13  |                   | 8-15                | 8-15          |
|  | arc duration ms                                   | 10-15   |                   | 10-15               | 10-15         |
| DC operated  | make time ms                                      | 8-12  |                   | 10-20               | 12-23         |
|  | release time ms                                   | 8-13  |                   | 10-15               | 10-18         |
|  | arc duration ms                                   | 10-15   |                   | 10-15               | 10-15         |
| DC solenoid operated (J7KNG)   | make time ms                                      | 65-85   |                   | 65-85               | —             |
|  | release time ms                                   | 20-30 <sup>*4</sup>   |                   | 20-30 <sup>*4</sup> | —             |
|  | arc duration ms                                   | 10-15   |                   | 10-15               | —             |
| <b>Cable cross-section</b>   |   |   |                   |                     |               |
| Auxiliary connector  | solid mm <sup>2</sup>                             | 0,75-6  |                   | —                   | —             |
|  | flexible mm <sup>2</sup>                          | 1-4   |                   | —                   | —             |
|  | flexible with multicore cable end mm <sup>2</sup> | 0,75-4  |                   | —                   | —             |
| Magnet coil  | solid mm <sup>2</sup>                             | 0,75-2,5  |                   | 0,75-2,5            | 0,75-2,5      |
|  | flexible mm <sup>2</sup>                          | 0,5-2,5   |                   | 0,5-2,5             | 0,5-2,5       |
|  | flexible with multicore end mm <sup>2</sup>       | 0,5-1,5   |                   | 0,5-1,5             | 0,5-1,5       |
| Clamps per pole  |   | 2   |                   | 2                   | 2             |
| Auxiliary connector  | solid AWG   | 18-10   |                   | —                   | —             |
|  | flexible AWG                                      | 18-10   |                   | —                   | —             |
| Magnet coil  | solid AWG   | 14-12   |                   | 14-12               | 14-12         |
|  | flexible AWG                                      | 18-12   |                   | 18-12               | 18-12         |
| Clamps per pole  |   | 2   |                   | 2                   | 2             |

<sup>\*1</sup> Suitable for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry):  $U_{imp} = 8kV$ .  
Data for other conditions on request.

<sup>\*2</sup> Total breaking time = release time + arc duration

**Contactors**

Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660

| Type            | J7KN-90             | J7KN-115             | J7KN-151             | J7KN-176 | J7KN-210                         | J7KN-260  | J7KN-316 | J7KN-450             | J7KN-550 | J7KN-700 | J7KN-860 |
|-----------------|---------------------|----------------------|----------------------|----------|----------------------------------|-----------|----------|----------------------|----------|----------|----------|
| V~              | —                   | —                    | —                    | —        | —                                | —         | —        | 690                  | —        | 690      | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | 10                   | —        | 10       | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | 3                    | —        | 3        | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | 2                    | —        | 2        | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | 1,5                  | —        | 1,5      | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | 1,5                  | —        | 1,5      | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | 1                    | —        | 1        | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | 1                    | —        | 1        | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | 0,5                  | —        | 0,5      | —        |
| A               | —                   | —                    | —                    | —        | —                                | —         | —        | 10                   | —        | 10       | —        |
| VA              | 190-280             | 350                  | 360                  | —        | 800-950                          | 1350-1600 | —        | —                    | —        | —        | —        |
| VA              | —                   | 5                    | 5                    | —        | 9-11                             | 21-25     | —        | —                    | —        | —        | —        |
| W               | 2,5-5               | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| W               | 280                 | 350                  | 360                  | —        | 700-850                          | 1300-1550 | —        | —                    | —        | —        | —        |
| W               | 5                   | 5                    | 5                    | —        | 8-10                             | 18-22     | —        | —                    | —        | —        | —        |
| W               | —                   | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| W               | —                   | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| ms              | 0,85-1,1<br>0,8-1,1 | 0,85-1,1<br>0,85-1,1 | 0,85-1,1<br>0,85-1,1 | —        | 0,85-1,1<br>0,85-1,1             | —         | —        | 0,85-1,1<br>0,85-1,1 | —        | —        | —        |
| ms              | 20-35               | 30-60                | 40-60                | —        | 50-10                            | —         | —        | —                    | —        | —        | —        |
| ms              | 35-50               | 30-80                | 15-45                | —        | 150-200 / 500-1000 <sup>*1</sup> | —         | —        | —                    | —        | —        | —        |
| ms              | 10-15               | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| ms              | 20-35               | 30-60                | 40-60                | —        | —                                | —         | —        | —                    | —        | —        | —        |
| ms              | 35-50               | 30-80                | 15-45                | —        | —                                | —         | —        | —                    | —        | —        | —        |
| ms              | 10-15               | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| ms              | —                   | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| ms              | —                   | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| ms              | —                   | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| mm <sup>2</sup> | 0,75-2,5            | —                    | —                    | —        | 0,75-2,5                         | —         | —        | 0,75-2,5             | —        | —        | —        |
| mm <sup>2</sup> | 0,75-2,5            | —                    | —                    | —        | 0,75-2,5                         | —         | —        | 0,75-2,5             | —        | —        | —        |
| mm <sup>2</sup> | 0,5-1,5             | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| mm <sup>2</sup> | 0,75-2,5            | 1-2,5                | 1-2,5                | —        | 1-2,5                            | —         | —        | 1-2,5                | —        | —        | —        |
| mm <sup>2</sup> | 0,5-2,5             | 1-2,5                | 1-2,5                | —        | 1-2,5                            | —         | —        | 1-2,5                | —        | —        | —        |
| mm <sup>2</sup> | 0,5-1,5             | —                    | —                    | —        | —                                | —         | —        | —                    | —        | —        | —        |
| mm <sup>2</sup> | 2                   | 2                    | 2                    | —        | 2                                | —         | —        | 2                    | —        | —        | —        |
| AWG             | 14-12               | —                    | —                    | —        | 16-12                            | —         | —        | 16-12                | —        | —        | —        |
| AWG             | 18-12               | —                    | —                    | —        | 16-12                            | —         | —        | 16-12                | —        | —        | —        |
| AWG             | 14-12               | 16-12                | 16-12                | —        | 16-12                            | —         | —        | 16-12                | —        | —        | —        |
| AWG             | 18-12               | 16-12                | 16-12                | —        | 16-12                            | —         | —        | 16-12                | —        | —        | —        |
| mm <sup>2</sup> | 2                   | 2                    | 2                    | —        | 2                                | —         | —        | 2                    | —        | —        | —        |

<sup>\*3</sup> Values for delay of the release time of the make contact and the make time of the break contact will be increased, if magnet coils are protected against voltage peaks (varistor, RC-unit, diode-unit)

<sup>\*4</sup> with built-in coil suppressor

## Contactors for North America

### Data according to UL508

| Main Contacts (cULus)  | Type        | J7KN(G)-10(D) | J7KN(G)-14(D) | J7KN(G)-18(D) | J7KN(G)-22(D) | J7KN(G)-24 | J7KN(G)-32 | J7KN(G)-40 | J7KN-50 | J7KN-62 |
|--|-------------|---------------|---------------|---------------|---------------|------------|------------|------------|---------|---------|
| Rated operational current "General Use"                                      | A           | 25            | 25            | 30            | 30            | 50         | 65         | 80         | 110     | 120     |
| <b>Motor DOL 3-pase at 60Hz</b>  |             |               |               |               |               |            |            |            |         |         |
| Rated operational current  | 600V A      | 10            | 14            | 18            | 22            | 22         | 27         | 34         | 44      | 52      |
| Rated operational power  | 110-120V hp | 1½            | 2             | 2             | 3             | 5          | 5          | 7½         | 10      | 10      |
|  | 200V hp     | 3             | 3             | 5             | 5             | 7½         | 10         | 10         | 15      | 20      |
|  | 220-240V hp | 3             | 3             | 7½            | 7½            | 10         | 10         | 15         | 20      | 25      |
|  | 277V hp     | 3             | 5             | 7½            | 7½            | 7½         | 10         | 15         | 20      | 25      |
|  | 380-415V hp | 5             | 5             | 10            | 10            | 10         | 15         | 20         | 25      | 30      |
|  | 440-480V hp | 5             | 7½            | 10            | 15            | 15         | 20         | 25         | 30      | 40      |
|  | 550-600V hp | 7½            | 10            | 15            | 20            | 20         | 25         | 30         | 40      | 50      |
| <b>Motor DOL 1-pase at 60Hz</b>  |             |               |               |               |               |            |            |            |         |         |
| Rated operational current  | 600V A      | 10            | 14            | 18            | 22            | 22         | 27         | 34         | 44      | 52      |
| Rated operational power of AC motors at 60Hz (1ph)                           | 110-120V hp | ½             | ¾             | 1             | 1½            | 1½         | 2          | 3          | 3       | 5       |
|  | 200V hp     | 1             | 1,5           | 2             | 3             | 3          | 5          | 7½         | 7½      | 10      |
|  | 220-240V hp | 1½            | 2             | 3             | 3             | 5          | 5          | 7½         | 10      | 15      |
|  | 277V hp     | 2             | 3             | 3             | 5             | 5          | 7½         | 10         | 10      | 15      |
|  | 380-415V hp | 3             | 3             | 5             | 5             | 5          | 7½         | 10         | 15      | 20      |
|  | 440-480V hp | 3             | 5             | 5             | 7½            | 7½         | 10         | 15         | 20      | 25      |
|  | 550-600V hp | 3             | 5             | 7½            | 10            | 10         | 15         | 20         | 25      | 30      |
| <b>Motor DOL 3-pase according ANSI A17.5</b>                                 |             |               |               |               |               |            |            |            |         |         |
| Rated operational current  | 600V A      | —             | —             | —             | —             | 15         | 22         | —          | 27      | 37      |
| Rated operational power of 3-phase motors for elevators (500.000 operations) | 110-120V hp | —             | —             | —             | —             | 2          | 3          | —          | 3       | 5       |
|  | 200V hp     | —             | —             | —             | —             | 3          | 5          | —          | 7½      | 10      |
|  | 220-240V hp | —             | —             | —             | —             | 5          | 7½         | —          | 7½      | 10      |
|  | 440-480V hp | —             | —             | —             | —             | 10         | 15         | —          | 20      | 25      |
|  | 550-600V hp | —             | —             | —             | —             | 10         | 20         | —          | 25      | 30      |
| Rated current 2 series contacts  | 600V A      | —             | —             | —             | —             | 22         | 27         | —          | 44      | 52      |
| Fuse Class RK5/Short-circuit current   | A/kA        | 45/5          | 50/5          | 70/5          | 90/5          | 90/5       | 125/5      | 175/5      | 200/5   | 250/5   |
| Fuse Class T/Short-circuit current   | A/kA        | 45/100        | 50/100        | 70/100        | 90/100        | 110/100    | 150/100    | 150/100    | 175/100 | 175/100 |
| Rated voltage  | V           | 600           | 600           | 600           | 600           | 600        | 600        | 600        | 600     | 600     |
| <b>Auxiliary Contacts (cULus)</b>  |             | A600          | A600          | A600          | A600          | —          | —          | —          | —       | —       |

**Contactors for North America**

**Data according to UL508**

| Type | J7KN-74 | J7KN-90               | J7KN-115              | J7KN-151 | J7KN-176 | J7KN-210 | J7KN-260 | J7KN-316 | J7KN-450 | J7KN-550 | J7KN-700 | J7KN-860 |
|------|---------|-----------------------|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| A    | 130     | 160                   | 200                   | 180      | 220      | 250      | 300      | 350      | 420      | 520      | 700      | 810      |
| A    | 66      | 85                    | 99                    | 125      | 150      |          |          |          | 300      | 400      | 550      | 700      |
| hp   | 10      | 15                    | 30                    | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | 25      | 25                    | 35                    | 40       | 50       | 60       | 75       | 100      | 125      | 150      | 200      | 250      |
| hp   | 30      | 35                    | 40                    | 50       | 60       | 75       | 100      | 125      | 125      | 150      | 250      | 300      |
| hp   | 30      | —                     | —                     | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | 40      | 50                    | 60                    | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | 50      | 65                    | 75                    | 100      | 125      | 150      | 200      | 250      | 250      | 350      | 500      | 600      |
| hp   | 50      | 85                    | 100                   | 125      | 150      | 200      | 250      | 300      | 250      | 350      | 500      | 600      |
| A    | 66      | 86                    | 103                   | 125      | 150      | —        | —        | —        | —        | —        | —        | —        |
| hp   | 7½      | 8                     | 10                    | 15       | 25       | —        | —        | —        | —        | —        | —        | —        |
| hp   | 15      | 15                    | 20                    | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | 15      | 20                    | 25                    | 25       | 30       | 40       | 50       | 50       | —        | —        | —        | —        |
| hp   | 15      | 20                    | 25                    | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | 20      | 30                    | 40                    | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | 25      | 40                    | 50                    | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | 30      | 50                    | 60                    | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| A    | —       | —                     | —                     | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | —       | —                     | —                     | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | —       | —                     | —                     | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | —       | —                     | —                     | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | —       | —                     | —                     | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| hp   | —       | —                     | —                     | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| A    | 66      | —                     | —                     | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| A/kA | 300/5   | 300/10                | 300/10                | 300/10   | 350/10   | 400/18   | 500/18   | 500/18   | 1200/18  | 1200/18  | 2000/30  | 2000/30  |
| A/kA | 175/100 | 300/100 <sup>*1</sup> | 300/100 <sup>*1</sup> | —        | —        | —        | —        | —        | —        | —        | —        | —        |
| V    | 600     | 600                   | 600                   | 600      | 600      | 600      | 600      | 600      | 600      | 600      | 600      | 600      |
| —    | —       | —                     | —                     | —        | —        | —        | —        | —        | A600     | A600     | A600     | A600     |

\*1 Class T and Class RK1

# Contactors

## Data according to IEC 60947-4-1, EN 60947-4-1, VDE 0660

### Contact Life

For selection of the suitable contactor-type according to supply voltage, power rating and application (utilization category AC1, AC3 or AC4) use contact life characteristic diagram.

For the most common supply voltages four scales of power ratings  $P_n$  are provided for each utilization category.

Select contactor-type according to utilization category **AC3** (breaking current  $I_a = I_e$ ) using the **motor rating** scales to the right, according to utilization category **AC4** (breaking current  $I_a = 6 \times I_e$ ) using the **motor rating** scales to the left.\*1

Select contactor-type according to utilization category **AC1** (breaking current  $I_a = I_e/AC1$ ) using the **breaking current** scale.\*1

1. Pay attention to the approved rated values of the selected contactor according to the national approvals

For contactors frequently used under AC3/AC4-mixed service conditions calculate contact life with the formula:

$$M = \frac{AC3}{1 + \frac{\%AC4}{100} \times \left(\frac{AC3}{AC4} - 1\right)}$$

M = Contact life (switching cycles) for AC3/AC4-mixed operations

AC3 = Contact life (switching cycles) for AC3 operations (normal switching conditions). Breaking current  $I_a =$  rated motor current  $I_n$ .

AC4 = Contact life (switching cycles) for AC4 operations (inching).

Breaking current  $I_a =$  multiples of rated motor current  $I_n$ .

%AC4 = Percents of AC4-operations related to the total cycles.

#### Motor Rating $P_n/AC4$

660/ 500V 380/ 220/  
690V 400V 230V



#### Motor Rating $P_n/AC3$

660/ 500V 380/ 220/  
690V 400V 230V



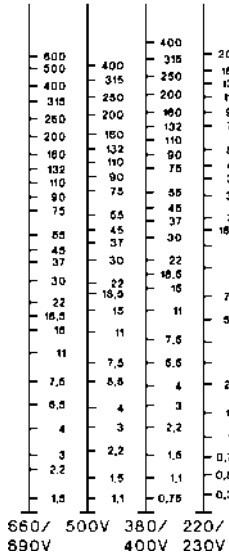
#### Breaking Current $I_a (=I_e/AC1)$

A



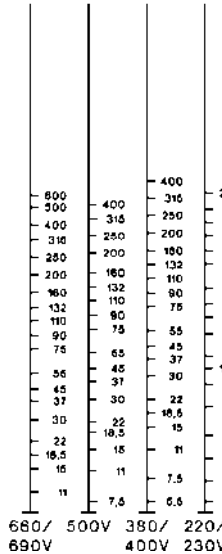
#### Motor Rating $P_n/AC4$

660/ 500V 380/ 220/  
690V 400V 230V



#### Motor Rating $P_n/AC3$

660/ 500V 380/ 220/  
690V 400V 230V



#### Breaking Current $I_a (=I_e/AC1)$

A



# Contactors

## Utilization Categories

For easier choice of devices and in order to make the comparison of different products simpler are utilization categories for contactors and motor-starters according to IEC 947-4-1 and VDE 0660 Part 102, for

control circuit devices and switching elements according to IEC 947-5-1 and VDE 0660 Part 200 determined. The table offers different utilization categories, typical applications and assorted test conditions.

| Type of current     | Category  | Typical applications   | Rated operational current | Test conditions for the number of on-load operating cycles |      |          |             |       |          | Test conditions for making and breaking capacities |      |          |             |       |          |
|---------------------|---|--|---------------------------|--|------|----------|-------------|-------|----------|--|------|----------|-------------|-------|----------|
|                     |   |  |                           | Make I/le  | U/Ur | cos      | Break Ic/le | Ur/Ur | cos      | Make I/le  | U/Ur | cos      | Break Ic/le | Ur/Ur | cos      |
| Alternating Current | AC1   | Non-inductive or slightly inductive loads-resistance furnaces                    | all values                | 1  | 1    | 0.95     | 1           | 1     | 0.95     | 1.5  | 1.05 | 0.8      | 1.5         | 1.05  | 0.8      |
|                     | AC2   | Slip-ring motors: starting, switching off  | all values                | 2.5  | 1    | 0.65     | 2.5         | 1     | 0.65     | 4  | 1.05 | 0.65     | 4           | 1.05  | 0.65     |
|                     | AC3   | Squirrel-cage motors: starting, switching off motors during running              | 17A< le 17A               | 6  | 1    | 0.65     | 1           | 0.17  | 0.65     | 10   | 1.05 | 0.45     | 8           | 1.05  | 0.45     |
|                     |   |  | le 100A                   | 6  | 1    | 0.35     | 1           | 0.17  | 0.35     | 10   | 1.05 | 0.45     | 8           | 1.05  | 0.45     |
|                     |   |  | le> 100A                  | 6  | 1    | 0.35     | 1           | 0.17  | 0.35     | 10   | 1.05 | 0.35     | 8           | 1.05  | 0.35     |
|                     | AC4   | Squirrel-cage motors: starting, plugging, inching                                | 17A< le 17A               | 6  | 1    | 0.65     | 6           | 1     | 0.65     | 12   | 1.05 | 0.45     | 10          | 1.05  | 0.45     |
|                     |   |  | le 100A                   | 6  | 1    | 0.35     | 6           | 1     | 0.35     | 12   | 1.05 | 0.45     | 10          | 1.05  | 0.45     |
|                     |   |  | le> 100A                  | 6  | 1    | 0.35     | 6           | 1     | 0.35     | 12   | 1.05 | 0.35     | 10          | 1.05  | 0.35     |
|                     | AC5a  | Switching of electric discharge lamp controls                                    | all values                | -  | -    | -        | -           | -     | -        | 3  | 1.05 | 0.45     | 3           | 1.05  | 0.45     |
|                     | AC5b  | Switching of incandescent lamps  | all values                | -  | -    | -        | -           | -     | -        | 1.5  | 1.05 | 1)       | 4           | 1.05  | 1)       |
|                     | AC6a  | Switching of transformers  | le 100A                   | -  | -    | -        | -           | -     | -        | 4.5  | 1.05 | 0.45     | 3.6         | 1.05  | 0.45     |
|                     |   |  | le> 100A                  | -  | -    | -        | -           | -     | -        | 4.5  | 1.05 | 0.35     | 3.6         | 1.05  | 0.35     |
|                     | AC6b  | Switching of capacitor banks   | -                         | -  | -    | -        | -           | -     | -        | 2)   |      |          | 2)          |       |          |
|                     | AC7a  | Slightly inductive loads in household appliances and similar applications        | all values                | -  | -    | -        | -           | -     | -        | 1.5  | 1.05 | 0.8      | 1.5         | 1.05  | 0.8      |
|                     | AC7b  | Motor loads for household applications   | le 100A                   | -  | -    | -        | -           | -     | -        | 8  | 1.05 | 0.45     | 6           | 1.05  | 0.45     |
| le> 100A            |   |  | -                         | -  | -    | -        | -           | -     | 8        | 1.05   | 0.35 | 6        | 1.05        | 0.35  |          |
| AC8a                | Hermetic refrigerant compressor motor control with manual resetting of overload releases    | le 100A  | -                         | -  | -    | -        | -           | -     | 6        | 1.05   | 0.45 | 6        | 1.05        | 0.45  |          |
|                     |   | le> 100A   | -                         | -  | -    | -        | -           | -     | 6        | 1.05   | 0.35 | 6        | 1.05        | 0.35  |          |
| AC8b                | Hermetic refrigerant compressor motor control with automatic resetting of overload releases | le 100A  | -                         | -  | -    | -        | -           | -     | 6        | 1.05   | 0.45 | 6        | 1.05        | 0.45  |          |
|                     |   | le> 100A   | -                         | -  | -    | -        | -           | -     | 6        | 1.05   | 0.35 | 6        | 1.05        | 0.35  |          |
| AC12                | Control of resistive loads and solid state loads with isolation by opto couplers            | all values   | -                         | -  | -    | -        | -           | -     | 1        | 1  | 0.9  | 1        | 1           | 0.9   |          |
| AC13                | Control of solid state loads with transformer isolation                                     | all values   | -                         | -  | -    | -        | -           | -     | 10       | 1.1  | 0.65 | 1.1      | 1.1         | 0.65  |          |
| AC14                | Control of small electromagnetic loads (<=72VA)   | -  | -                         | -  | -    | -        | -           | -     | 6        | 1.1  | 0.7  | 6        | 1.1         | 0.7   |          |
| AC15                | Control of electromagnetic load (>72VA)   | -  | 10                        | 1  | 0.7  | 1        | 1           | 0.4   | 10       | 1.1  | 0.3  | 10       | 1.1         | 0.3   |          |
|                     |   |  |                           | Make I/le  | U/Ur | L/R [ms] | Break Ic/le | Ur/Ur | L/R [ms] | Make I/le  | U/Ur | L/R [ms] | Break Ic/le | Ur/Ur | L/R [ms] |
| Direct Current      | DC1   | Non-inductive or slightly inductive loads resistance furnaces                    | all values                | 1  | 1    | 1        | 1           | 1     | 1        | 1.5  | 1.05 | 1        | 1.5         | 1.05  | 1        |
|                     | DC3   | Shunt-motors: starting, plugging, inching dynamic braking of d.c. motors         | all values                | 2.5  | 1    | 2        | 2.5         | 1     | 2        | 4  | 1.05 | 2.5      | 4           | 1.05  | 2.5      |
|                     | DC5   | Series-motors: starting, plugging, inching dynamic braking of d.c. motors        | all values                | 2.5  | 1    | 7.5      | 2.5         | 1     | 7.5      | 4  | 1.05 | 15       | 4           | 1.05  | 15       |
|                     | DC6   | Switching of incandescent lamps  | all values                | -  | -    | -        | -           | -     | -        | 1.5  | 1.05 | 1)       | 4           | 1.05  | 1)       |
|                     | DC12  | Control of resistive loads and solid state loads with isolation by opto couplers | all values                | -  | -    | -        | -           | -     | -        | 1  | 1    | 1        | 1           | 1     | 1        |
|                     | DC13  | Control of electromagnets  | all values                | 1  | 1    | 300      | 1           | 1     | 300      | 1.1  | 1.1  | 300      | 1.1         | 1.1   | 300      |
|                     | DC14  | Control of electromagnetic loads having economy resistors in circuit             | all values                | -  | -    | -        | -           | -     | -        | 10   | 1.1  | 15       | 10          | 1.1   | 15       |

U<sub>r</sub> Rated operational voltage, U Voltage before make, U<sub>r</sub> Recovery voltage, I<sub>r</sub> Rated operational current, I<sub>m</sub> Current make, I<sub>b</sub> Current broken

- 1) Test with incandescent lamps
- 2) Test conditions according to standard

## Accessories

### Data according to IEC 60947-4-1, EN 60947-5-1, VDE 0660

| Auxiliary Contacts   | Type  | J73KN-B  | J73KN-B...A | J73KN-C  | J73KN-D  | J74KN-B-TP... |
|--|---|----------|-------------|----------|----------|---------------|
| Rated insulation voltage $U_i^{*1}$  | V~  | 690      | 690         | 690      | 690      | 690           |
| Thermal rated current $I_{th}$ to 690V   |   |          |             |          |          |               |
| Ambient temperature  | 40°C A  | 10       | 25          | 10       | 10       | 10            |
|  | 60°C A  | 6        | 20          | 6        |          | -             |
| Frequency of operations z  | 1/h   | 3000     | 3000        | 3000     | 3000     | 1200          |
| Mechanical life  | $S \times 10^6$                                   | 10       | 10          | 10       | 10       | 1             |
| Power loss per pole at $I_g/AC1$   | W   | 0,5      | 1,5         | 0,5      | -        | -             |
| Utilization category AC15  |   |          |             |          |          |               |
| Rated operational current $I_g$  |   |          |             |          |          |               |
|  | 220-240V A  | 3        | 6           | 3        | 3        | 4             |
|  | 380-400V A  | 2        | 3           | 2        | 2        | 3             |
|  | 440V A  | 1,6      | 2           | 1,6      | 1,5      | 2             |
|  | 500V A  | 1,2      | 2           | 1,2      | 1,5      | 2             |
|  | 660-690V A  | 0,6      | 1           | 0,6      | 1        | 2             |
| Utilization category DC13  |   |          |             |          |          |               |
| Rated operational current $I_g$  |   |          |             |          |          |               |
|  | 60V A   | 2        | 8           | 2        | -        | 2,5           |
|  | 110V A  | 0,4      | 1           | 0,4      | 1        | 1,5           |
|  | 220V A  | 0,1      | 0,1         | 0,1      | 0,5      | 0,2           |
| Short circuit protection   |   |          |             |          |          |               |
| short-circuit current 1kA, contact welding not accepted max. fuse size   | gL (gG) A   | 20       | 25          | 20       | 10       | 10            |
| For contactors with thermal overload relay or auxiliary contacts the device with the smaller admissible control fuse (contactor or thermal overload relay) determines the fuse size. |   |          |             |          |          |               |
| Cable cross-sections   |   |          |             |          |          |               |
|  | solid or stranded mm <sup>2</sup>                 | 0,75-2,5 | 0,75-2,5    | 0,75-2,5 | 0,75-2,5 | 1-2,5         |
|  | flexible mm <sup>2</sup>                          | 0,75-2,5 | 0,75-2,5    | 0,75-2,5 | 0,75-2,5 | 0,75-2,5      |
|  | flexible with multicore cable end mm <sup>2</sup> | 0,5-1,5  | 0,5-1,5     | 0,5-1,5  | -        | 0,75-2,5      |
| Cables per clamp   |   | 2        | 2           | 2        | 2        | 2             |

\*1 Suitable for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry):  $U_{imp} = 8kV$ . Data for other conditions on request

### Data according to CSA, UL and CUL

| Auxiliary Contacts                      | Type      | J73KN-B | J73KN-B...A | J73KN-C | J73KN-D | J74KN-B-TP... |
|---|-----------|---------|-------------|---------|---------|---------------|
| Rated operational current „General Use“ | A         | 10      | 16          | 10      | 10      | 10            |
| Rated operational voltage               | max. V AC | 600     | 600         | 600     | 600     | 600           |
| Auxiliary Contacts                      |           | A600    | A600        | A600    | A600    | A600          |



■ Dimensions / Position of Terminals

Contactors

|   |   |   |   |   |
|---|---|---|---|---|
|    | <p><b>J7KN-10D/14D/18D/22D(-4)...</b></p>  | <p><b>J7KN-10D-10 to J7KN-22D-10</b></p>   | <p><b>J7KN-10D-01 to J7KN-22D-01</b></p>   | <p><b>J7KN-10D-4_ to J7KN-22D-4_</b></p>   |
|    | <p><b>J7KNG-10/14/18/22(-4)...D</b></p>    | <p><b>J7KNG-10-10...D<br/>J7KNG-14-10...D<br/>J7KNG-18-10...D<br/>J7KNG-22-10...D</b></p>    | <p><b>J7KNG-10-01...D<br/>J7KNG-14-01...D<br/>J7KNG-18-01...D<br/>J7KNG-22-01...D</b></p>    | <p><b>J7KNG-10-4_...D<br/>J7KNG-14-4_...D<br/>J7KNG-18-4_...D<br/>J7KNG-22-4_...D</b></p>    |
|   | <p><b>J7KN-10D/14D/18D/22D...D</b></p>    | <p><b>J7KN-10D-10...D<br/>J7KN-14D-10...D<br/>J7KN-18D-10...D<br/>J7KN-22D-10...D</b></p>  | <p><b>J7KN-10D-01...D<br/>J7KN-14D-01...D<br/>J7KN-18D-01...D<br/>J7KN-22D-01...D</b></p>  | <p><b>J7KN-10D-4_...D<br/>J7KN-14D-4_...D<br/>J7KN-18D-4_...D<br/>J7KN-22D-4_...D</b></p>  |
|  | <p><b>J7KN-24/32/40...</b></p>           | <p><b>J7KN-24<br/>J7KN-32<br/>J7KN-40</b></p>    |   |   |
|  | <p><b>J7KNG-24/32/40...D</b></p>         | <p><b>J7KNG-24...D<br/>J7KNG-32...D<br/>J7KNG-40...D</b></p>                               |   |   |

|   |   |  |  |  |
|---|---|--|--|--|
|    | <p><b>J7KN-24/32/40...D</b></p>              | <p><b>J7KN-24...D<br/>J7KN-32...D<br/>J7KN-40...D</b></p>   |  |  |
|    | <p><b>J7KN-50/62/74</b></p>                  | <p><b>J7KN-50<br/>J7KN-62<br/>J7KN-74</b></p>               |  |  |
|   | <p><b>J7KN-50/62/74...D</b></p>             | <p><b>J7KN-50...D<br/>J7KN-62...D<br/>J7KN-74...D</b></p>  |  |  |
|  | <p><b>J7KN-90...<br/>J7KN-115...</b></p>   | <p><b>J7KN-90<br/>J7KN-115</b></p>                        | <p><b>J7KN-90...D<br/>J7KN-115...D</b></p>  |  |
|  | <p><b>J7KN-151...<br/>J7KN-176...</b></p>  | <p><b>J7KN-151<br/>J7KN-176</b></p>                     | <p><b>J7KN-151<br/>J7KN-176</b></p>         |  |

|   |  |   |  |
|---|--|---|--|
|    | <p><b>J7KN-210...</b><br/><b>J7KN-260...</b><br/><b>J7KN-316...</b></p>  | <p><b>J7KN-210...</b><br/><b>J7KN-260...</b><br/><b>J7KN-316...</b></p>  |  |
|   | <p><b>J7KN-450...</b><br/><b>J7KN-550...</b></p>                         | <p><b>J7KN-450...</b><br/><b>J7KN-550...</b></p>                         |  |
|  | <p><b>J7KN-700...</b><br/><b>J7KN-860...</b></p>                       | <p><b>J7KN-700...</b><br/><b>J7KN-860...</b></p>                       |  |

**Auxiliary contacts blocks**



**Pneumatic Timer**



**Mechanical Interlocks**



**Suppressor Units**



**Additional Terminals**



**Terminals Cover**



**Marking Systems**



**Wiring Systems**



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### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

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