



### Contact characteristics

|  |   |        |
|--|---|--------|
| Number of poles  | Nr.   | 3      |
| Rated insulation voltage $U_i$ IEC/EN  | V   | 690    |
| Rated impulse withstand voltage $U_{imp}$                                      | kV  | 6      |
| Operational frequency  | min   | Hz 25  |
|  | max   | Hz 400 |
| IEC Conventional free air thermal current $I_{th} \leq 40^\circ\text{C}$       | A   | 28     |
| Operational current $I_e$  | AC-1 ( $\leq 40^\circ\text{C}$ )                  | A 28   |
|  | AC-1 ( $\leq 55^\circ\text{C}$ )                  | A 23   |
|  | AC-1 ( $\leq 70^\circ\text{C}$ )                  | A 20   |
|  | AC-3 ( $\leq 440\text{V} \leq 55^\circ\text{C}$ ) | A 12   |
|  | AC-4 (400V)                                       | A 7.9  |
| Rated operational power AC-3 ( $T \leq 55^\circ\text{C}$ )                     | 230V  | kW 3.2 |
|  | 400V  | kW 5.7 |
|  | 415V  | kW 6.2 |
|  | 440V  | kW 6.2 |
|  | 500V  | kW 7.5 |
|  | 690V  | kW 10  |
| Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )                     | 230V  | kW 10  |
|  | 400V  | kW 18  |
|  | 500V  | kW 23  |
|  | 690V  | kW 32  |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$                                 | A 17   |
|  | 48V   | A 15   |
|  | 75V   | A 13   |
|  | 110V  | A 6    |
|  | 220V  | A –    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series | $\leq 24\text{V}$                                 | A 20   |
|  | 48V   | A 20   |
|  | 75V   | A 18   |
|  | 110V  | A 13   |
|  | 220V  | A 1    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$                                 | A 22   |
|  | 48V   | A 22   |
|  | 75V   | A 20   |
|  | 110V  | A 16   |
|  | 220V  | A 11   |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series | $\leq 24\text{V}$                                 | A 22   |
|  | 48V   | A 22   |
|  | 75V   | A 20   |
|  | 110V  | A 16   |

|  |                 |                  |      |
|--|-----------------|------------------|------|
|  | ≤24V            | A                | 20   |
|  | 48V             | A                | 20   |
|  | 75V             | A                | 20   |
|  | 110V            | A                | 16   |
|  | 220V            | A                | 12   |
| <hr/>  |                 |                  |      |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | ≤24V            | A                | 12   |
|  | 48V             | A                | 11   |
|  | 75V             | A                | 10   |
|  | 110V            | A                | 2    |
|  | 220V            | A                | –    |
| <hr/>  |                 |                  |      |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | ≤24V            | A                | 15   |
|  | 48V             | A                | 13   |
|  | 75V             | A                | 12   |
|  | 110V            | A                | 8    |
|  | 220V            | A                | 2    |
| <hr/>  |                 |                  |      |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | ≤24V            | A                | 18   |
|  | 48V             | A                | 18   |
|  | 75V             | A                | 15   |
|  | 110V            | A                | 12   |
|  | 220V            | A                | 6    |
| <hr/>  |                 |                  |      |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | ≤24V            | A                | 15   |
|  | 48V             | A                | 15   |
|  | 75V             | A                | 15   |
|  | 110V            | A                | 16   |
|  | 220V            | A                | 7    |
| <hr/>  |                 |                  |      |
| Short-time allowable current for 10s (IEC/EN60947-1)                             |                 | A                | 150  |
| <hr/>  |                 |                  |      |
| Protection fuse  | gG (IEC)        | A                | 32   |
|  | aM (IEC)        | A                | 12   |
| <hr/>  |                 |                  |      |
| Making capacity (RMS value)  |                 | A                | 120  |
| <hr/>  |                 |                  |      |
| Breaking capacity at voltage   | 440V            | A                | 96   |
|  | 500V            | A                | 96   |
|  | 690V            | A                | 94   |
| <hr/>  |                 |                  |      |
| Resistance per pole (average value)  |                 | mΩ               | 2.5  |
| <hr/>  |                 |                  |      |
| Power dissipation per pole (average value)                                       | I <sub>th</sub> | W                | 2    |
|  | AC-3            | W                | 0.4  |
| <hr/>  |                 |                  |      |
| Tightening torque for terminals  | min             | Nm               | 1.5  |
|  | max             | Nm               | 1.8  |
|  | min             | I <sub>bin</sub> | 1.1  |
|  | max             | I <sub>bin</sub> | 1.5  |
| <hr/>  |                 |                  |      |
| Tightening torque for coil terminal  | min             | Nm               | 0.8  |
|  | max             | Nm               | 1    |
|  | min             | I <sub>bin</sub> | 0.8  |
|  | max             | I <sub>bin</sub> | 0.74 |
| <hr/>  |                 |                  |      |
| Max number of wires simultaneously connectable                                   |                 | Nr.              | 2    |

|   |                 |                 |                          |
|---|-----------------|-----------------|--------------------------|
| Conductor section                                   |                 |                 |                          |
| AWG/Kcmil   |                 | max             | 10                       |
| Flexible w/o lug conductor section                  |                 |                 |                          |
|   | min             | mm <sup>2</sup> | 1                        |
|   | max             | mm <sup>2</sup> | 6                        |
| Flexible c/w lug conductor section                  |                 |                 |                          |
|   | min             | mm <sup>2</sup> | 1                        |
|   | max             | mm <sup>2</sup> | 4                        |
| Flexible with insulated spade lug conductor section |                 |                 |                          |
|   | min             | mm <sup>2</sup> | 1                        |
|   | max             | mm <sup>2</sup> | 6                        |
| Power terminal protection according to IEC/EN 60529 |                 |                 | IP20 when properly wired |
| Cable stripping length                              |                 |                 |                          |
|   | main circuit    | mm              | 10                       |
|   | command circuit | mm              | 8                        |

### Mechanical features

|                    |                  |  |                       |
|--------------------|------------------|--|-----------------------|
| Operating position |                  |  |                       |
|                    | normal allowable |  | Vertical plan ±30°    |
| Fixing             |                  |  | Screw / DIN rail 35mm |
| Weight             |                  |  | g 500                 |

### Auxiliary contact characteristics

|                                 |      |             |      |
|---------------------------------|------|-------------|------|
| Thermal current I <sub>th</sub> |      | A           | 10   |
| IEC/EN 60947-5-1 designation    |      | A600 - P600 |      |
| Operating current AC15          |      |             |      |
|                                 | 230V | A           | 3    |
|                                 | 400V | A           | 1.9  |
|                                 | 500V | A           | 1.4  |
| Operating current DC12          |      |             |      |
|                                 | 110V | A           | 5.7  |
| Operating current DC13          |      |             |      |
|                                 | 24V  | A           | 5.7  |
|                                 | 48V  | A           | 2.9  |
|                                 | 60V  | A           | 2.3  |
|                                 | 110V | A           | 1.25 |
|                                 | 125V | A           | 1.1  |
|                                 | 220V | A           | 0.55 |
|                                 | 600V | A           | 0.2  |

### Operations

|                 |  |        |          |
|-----------------|--|--------|----------|
| Mechanical life |  | cycles | 20000000 |
| Electrical life |  | cycles | 2000000  |

### Safety related data

|  |                 |        |          |
|--|-----------------|--------|----------|
| Performance level B10d according to EN/ISO 13489-1 |                 |        |          |
|  | rated load      | cycles | 2000000  |
|  | mechanical load | cycles | 20000000 |

|   |  |  |     |
|---|--|--|-----|
| Mirror contacts according to IEC/EN 60947-4-1 annex F |  |  | Yes |
|---|--|--|-----|

|                   |  |  |     |
|-------------------|--|--|-----|
| EMC compatibility |  |  | yes |
|-------------------|--|--|-----|

### AC coil operating

AC operating voltage  
of 50/60Hz coil powered at 50Hz

drop-out

|                                       |          |         |     |     |
|---------------------------------------|----------|---------|-----|-----|
|                                       |          | max     | %Us | 55  |
| <b>DC coil operating</b>              |          |         |     |     |
| DC rated control voltage              |          |         | V   | 48  |
| DC operating voltage                  |          |         |     |     |
|                                       | pick-up  | min     | %Us | 80  |
|                                       |          | max     | %Us | 110 |
|                                       | drop-out | min     | %Us | 10  |
|                                       |          | max     | %Us | 40  |
| <b>Average coil consumption ≤20°C</b> |          |         |     |     |
|                                       |          | in-rush | W   | 2.4 |
|                                       |          | holding | W   | 2.4 |

**Max cycles frequency**

|                      |  |  |          |      |
|----------------------|--|--|----------|------|
| Mechanical operation |  |  | cycles/h | 3600 |
|----------------------|--|--|----------|------|

**Operating times**

|                                    |            |     |    |    |
|------------------------------------|------------|-----|----|----|
| <b>Average time for Us control</b> |            |     |    |    |
|                                    | in AC      |     |    |    |
|                                    | Closing NO | min | ms | 8  |
|                                    |            | max | ms | 24 |
|                                    | Opening NO | min | ms | 10 |
|                                    |            | max | ms | 20 |
|                                    | Closing NC | min | ms | 14 |
|                                    |            | max | ms | 28 |
|                                    | Opening NC | min | ms | 7  |
|                                    |            | max | ms | 18 |
|                                    | in DC      |     |    |    |
|                                    | Closing NO | min | ms | 75 |
|                                    |            | max | ms | 91 |
|                                    | Opening NO | min | ms | 15 |
|                                    |            | max | ms | 19 |
|                                    | Closing NC | min | ms | 24 |
|                                    |            | max | ms | 30 |
|                                    | Opening NC | min | ms | 67 |
|                                    |            | max | ms | 81 |

**UL technical data**

|  |                           |    |     |
|--|---------------------------|----|-----|
| Rated operational voltage AC (UL)                |                           | V  | 600 |
| Full-load current (FLA) for three-phase AC motor |                           |    |     |
|  | at 480V                   | A  | 11  |
|  | at 600V                   | A  | 11  |
| <b>Yielded mechanical performance</b>            |                           |    |     |
|  | for single-phase AC motor |    |     |
|  | 110/120V                  | HP | 1   |
|  | 230V                      | HP | 2   |
|  | for three-phase AC motor  |    |     |

|          |    |     |
|----------|----|-----|
| 200/208V | HP | 5   |
| 220/240V | HP | 5   |
| 460/480V | HP | 7.5 |
| 575/600V | HP | 10  |

General USE

Contactor

|            |   |    |
|------------|---|----|
| AC current | A | 28 |
|------------|---|----|

Auxiliary contacts

|            |   |     |
|------------|---|-----|
| AC voltage | V | 600 |
| AC current | A | 10  |
| DC voltage | V | 250 |
| DC current | A | 1   |

Short-circuit protection fuse, 600V

High fault

|                       |    |     |
|-----------------------|----|-----|
| Short circuit current | kA | 100 |
| Fuse rating           | A  | 30  |
| Fuse class            |    | J   |

Standard fault

|                       |    |    |
|-----------------------|----|----|
| Short circuit current | kA | 5  |
| Fuse rating           | A  | 70 |

Contact rating of auxiliary contacts according to UL

A600 - P600

Ambient conditions

Temperature

Operating temperature

|     |    |     |
|-----|----|-----|
| min | °C | -50 |
| max | °C | 70  |

Storage temperature

|     |    |     |
|-----|----|-----|
| min | °C | -60 |
| max | °C | 80  |

Max altitude

m 3000

Resistance & Protection

Pollution degree

3

Dimensions



Wiring diagrams



Certifications and compliance

Compliance

CSA C22.2 n° 60947-1

CSA C22.2 n° 60947-4-1

IEC/EN 60335-2-89

IEC/EN/BS 60947-1

IEC/EN/BS 60947-4-1

UL 60947-1

UL 60947-4-1

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Certificates

CCC  
CSA C22.2 n. 60335-2-40:22 LZGH A2L  
CSA C22.2 No. 60335-2-89:21 LZGH A2L  
cULus  
EAC  
UL 60335-2-40 LZGH A2L  
UL 60335-2-89 LZGH A2L

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ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching