



#### 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                                                 | 20     |
| Operational current $I_e$                                                      | AC-1 ( $\leq 40^\circ\text{C}$ )                  | A 20   |
|                                                                                | AC-1 ( $\leq 55^\circ\text{C}$ )                  | A 18   |
|                                                                                | AC-1 ( $\leq 70^\circ\text{C}$ )                  | A 15   |
|                                                                                | AC-3 ( $\leq 440\text{V} \leq 55^\circ\text{C}$ ) | A 12   |
|                                                                                | AC-4 (400V)                                       | A 4.8  |
| 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 5.5 |
|                                                                                | 500V                                              | kW 5   |
|                                                                                | 690V                                              | kW 5   |
| Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )                     | 230V                                              | kW 8   |
|                                                                                | 400V                                              | kW 14  |
|                                                                                | 500V                                              | kW 16  |
|                                                                                | 690V                                              | kW 22  |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$                                 | A 12   |
|                                                                                | 48V                                               | A 10   |
|                                                                                | 75V                                               | A 4    |
|                                                                                | 110V                                              | A 3    |
|                                                                                | 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 15   |
|                                                                                | 48V                                               | A 14   |
|                                                                                | 75V                                               | A 9    |
|                                                                                | 110V                                              | A 8    |
|                                                                                | 220V                                              | A —    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$                                 | A 16   |
|                                                                                | 48V                                               | A 16   |
|                                                                                | 75V                                               | A 10   |
|                                                                                | 110V                                              | A 10   |
|                                                                                | 220V                                              | A 2    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series |                                                   |        |

|                                                                                  |                 |                  |      |
|----------------------------------------------------------------------------------|-----------------|------------------|------|
|                                                                                  | ≤24V            | A                | —    |
|                                                                                  | 48V             | A                | —    |
|                                                                                  | 75V             | A                | —    |
|                                                                                  | 110V            | A                | —    |
|                                                                                  | 220V            | A                | —    |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |                 |                  |      |
|                                                                                  | ≤24V            | A                | 7    |
|                                                                                  | 48V             | A                | 6    |
|                                                                                  | 75V             | A                | 2    |
|                                                                                  | 110V            | A                | 1    |
|                                                                                  | 220V            | A                | —    |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |                 |                  |      |
|                                                                                  | ≤24V            | A                | 8    |
|                                                                                  | 48V             | A                | 8    |
|                                                                                  | 75V             | A                | 5    |
|                                                                                  | 110V            | A                | 4    |
|                                                                                  | 220V            | A                | —    |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |                 |                  |      |
|                                                                                  | ≤24V            | A                | 10   |
|                                                                                  | 48V             | A                | 10   |
|                                                                                  | 75V             | A                | 6    |
|                                                                                  | 110V            | A                | 5    |
|                                                                                  | 220V            | A                | 0,8  |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |                 |                  |      |
|                                                                                  | ≤24V            | A                | —    |
|                                                                                  | 48V             | A                | —    |
|                                                                                  | 75V             | A                | —    |
|                                                                                  | 110V            | A                | —    |
|                                                                                  | 220V            | A                | —    |
| Short-time allowable current for 10s (IEC/EN60947-1)                             |                 | A                | 96   |
| Protection fuse                                                                  |                 |                  |      |
|                                                                                  | gG (IEC)        | A                | 20   |
|                                                                                  | aM (IEC)        | A                | 16   |
| Making capacity (RMS value)                                                      |                 | A                | 120  |
| Breaking capacity at voltage                                                     |                 |                  |      |
|                                                                                  | 440V            | A                | 96   |
|                                                                                  | 500V            | A                | 72   |
|                                                                                  | 690V            | A                | 72   |
| Resistance per pole (average value)                                              |                 | mΩ               | 10   |
| Power dissipation per pole (average value)                                       |                 |                  |      |
|                                                                                  | I <sub>th</sub> | W                | 4    |
|                                                                                  | AC-3            | W                | 1.44 |
| Tightening torque for terminals                                                  |                 |                  |      |
|                                                                                  | min             | Nm               | 0.8  |
|                                                                                  | max             | Nm               | 1    |
|                                                                                  | min             | I <sub>bin</sub> | 9    |
|                                                                                  | max             | I <sub>bin</sub> | 9    |
| Tightening torque for coil terminal                                              |                 |                  |      |
|                                                                                  | min             | Nm               | 0.8  |
|                                                                                  | max             | Nm               | 1    |
|                                                                                  | min             | I <sub>bin</sub> | 9    |
|                                                                                  | max             | I <sub>bin</sub> | 9    |
| Max number of wires simultaneously connectable                                   |                 | Nr.              | 2    |

|                                                      |  |                  |        |                          |
|------------------------------------------------------|--|------------------|--------|--------------------------|
| Conductor section                                    |  |                  |        |                          |
| AWG/Kcmil                                            |  |                  |        |                          |
|                                                      |  | max              |        | 12                       |
| Flexible w/o lug conductor section                   |  |                  |        |                          |
|                                                      |  | min              |        | mm <sup>2</sup> 0.75     |
|                                                      |  | max              |        | mm <sup>2</sup> 2.5      |
| Flexible c/w lug conductor section                   |  |                  |        |                          |
|                                                      |  | min              |        | mm <sup>2</sup> 1.5      |
|                                                      |  | max              |        | mm <sup>2</sup> 2.5      |
| Flexible with insulated spade lug conductor section  |  |                  |        |                          |
|                                                      |  | min              |        | mm <sup>2</sup> 1.5      |
|                                                      |  | max              |        | mm <sup>2</sup> 2.5      |
| Power terminal protection according to IEC/EN 60529  |  |                  |        | IP20 when properly wired |
| Mechanical features                                  |  |                  |        |                          |
| Operating position                                   |  |                  |        |                          |
|                                                      |  | normal allowable |        | Vertical plan ±30°       |
| Fixing                                               |  |                  |        | Screw / DIN rail 35mm    |
| Weight                                               |  |                  |        | g 128                    |
| Auxiliary contact characteristics                    |  |                  |        |                          |
| Thermal current I <sub>th</sub>                      |  |                  |        | A 10                     |
| IEC/EN 60947-5-1 designation                         |  |                  |        | A600 - Q600              |
| Operating current AC15                               |  |                  |        |                          |
|                                                      |  | 230V             | A      | 3                        |
|                                                      |  | 400V             | A      | 1.9                      |
|                                                      |  | 500V             | A      | 1.4                      |
| Operating current DC12                               |  |                  |        |                          |
|                                                      |  | 110V             | A      | 2.9                      |
| Operating current DC13                               |  |                  |        |                          |
|                                                      |  | 24V              | A      | 2.9                      |
|                                                      |  | 48V              | A      | 1.4                      |
|                                                      |  | 60V              | A      | 1.2                      |
|                                                      |  | 110V             | A      | 0.6                      |
|                                                      |  | 125V             | A      | 0.55                     |
|                                                      |  | 220V             | A      | 0.3                      |
|                                                      |  | 600V             | A      | 0.1                      |
| Operations                                           |  |                  |        |                          |
| Mechanical life                                      |  |                  |        | cycles 20000000          |
| Electrical life                                      |  |                  |        | cycles 500000            |
| Safety related data                                  |  |                  |        |                          |
| Performance level B10d according to EN/ISO 13489-1   |  |                  |        |                          |
|                                                      |  | rated load       | cycles | 500000                   |
|                                                      |  | mechanical load  | cycles | 20000000                 |
| Mirror contats according to IEC/EN 60947-4-1 annex F |  |                  |        | Yes                      |
| EMC compatibility                                    |  |                  |        | yes                      |
| DC coil operating                                    |  |                  |        |                          |
| DC rated control voltage                             |  |                  |        | V 125                    |
| DC operating voltage                                 |  |                  |        |                          |
| pick-up                                              |  |                  |        |                          |
|                                                      |  | min              |        | %Us 75                   |
|                                                      |  | max              |        | %Us 115                  |

drop-out

|     |     |    |
|-----|-----|----|
| min | %Us | 10 |
| max | %Us | 25 |

Average coil consumption  $\leq 20^{\circ}\text{C}$

|         |   |     |
|---------|---|-----|
| in-rush | W | 3.2 |
| holding | W | 3.2 |

Max cycles frequency

Mechanical operation

cycles/h 3600

Operating times

Average time for Us control

in AC

Closing NO

|     |    |    |
|-----|----|----|
| min | ms | 12 |
| max | ms | 21 |

Opening NO

|     |    |    |
|-----|----|----|
| min | ms | 9  |
| max | ms | 18 |

Closing NC

|     |    |    |
|-----|----|----|
| min | ms | 17 |
| max | ms | 26 |

Opening NC

|     |    |    |
|-----|----|----|
| min | ms | 7  |
| max | ms | 17 |

in DC

Closing NO

|     |    |    |
|-----|----|----|
| min | ms | 18 |
| max | ms | 25 |

Opening NO

|     |    |   |
|-----|----|---|
| min | ms | 2 |
| max | ms | 3 |

Closing NC

|     |    |   |
|-----|----|---|
| min | ms | 3 |
| max | ms | 5 |

Opening NC

|     |    |    |
|-----|----|----|
| min | ms | 11 |
| max | ms | 17 |

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 |

Yielded mechanical performance

for single-phase AC motor

|          |    |     |
|----------|----|-----|
| 110/120V | HP | 0.5 |
| 230V     | HP | 1.5 |

for three-phase AC motor

|          |    |     |
|----------|----|-----|
| 200/208V | HP | 3   |
| 220/240V | HP | 3   |
| 460/480V | HP | 7.5 |
| 575/600V | HP | 10  |

General USE

Contactor

|            |   |    |
|------------|---|----|
| AC current | A | 20 |
|------------|---|----|

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  | 30  |
| Fuse class            |    | RK5 |

Contact rating of auxiliary contacts according to UL

A600 - Q600

### Ambient conditions

## Temperature

### Operating temperature

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

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Storage temperature

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

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Max altitude

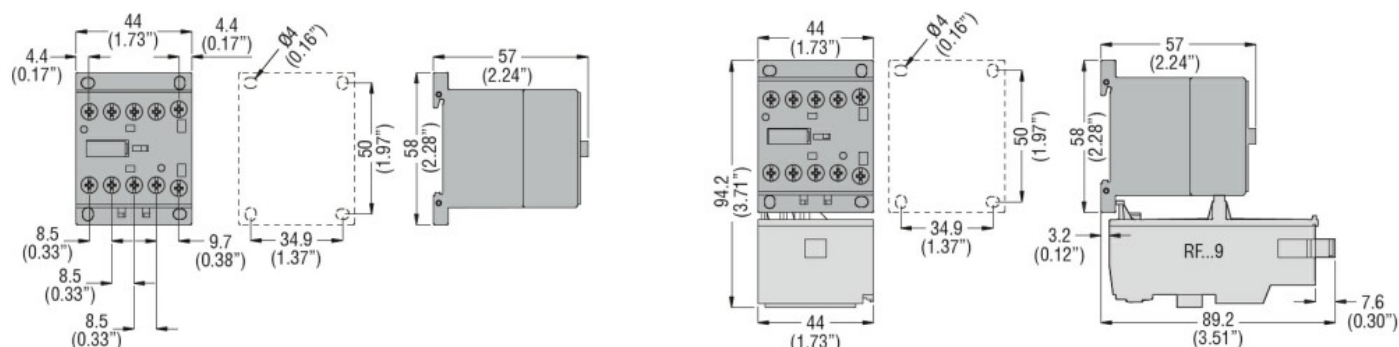
|   |      |
|---|------|
| m | 3000 |
|---|------|

## Resistance & Protection

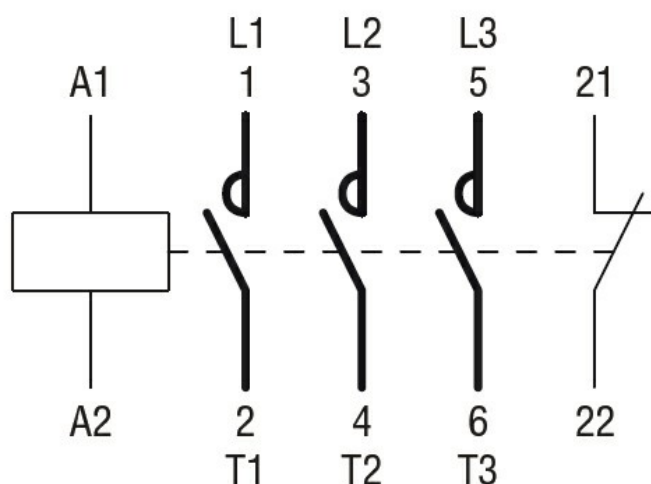
Pollution degree

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 60947-1

IEC/EN 60947-4-1

UL 60947-1

UL 60947-4-1

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

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching