



#### Contact characteristics

|                                                                 |                    |        |
|-----------------------------------------------------------------|--------------------|--------|
| Number of poles                                                 | Nr.                | 3      |
| Rated insulation voltage Ui IEC/EN                              | V                  | 690    |
| Rated impulse withstand voltage Uimp                            | kV                 | 6      |
| Operational frequency                                           | min                | Hz 25  |
|                                                                 | max                | Hz 400 |
| IEC Conventional free air thermal current Ith ≤ 40°C            | A                  | 20     |
| Operational current Ie                                          | AC-1 (≤40°C)       | A 20   |
|                                                                 | AC-1 (≤55°C)       | A 18   |
|                                                                 | AC-1 (≤70°C)       | A 15   |
|                                                                 | AC-3 (≤440V ≤55°C) | A 9    |
|                                                                 | AC-4 (400V)        | A 4    |
| Rated operational power AC-3 (T≤55°C)                           | 230V               | kW 2.2 |
|                                                                 | 400V               | kW 4   |
|                                                                 | 415V               | kW 4.3 |
|                                                                 | 440V               | kW 4.5 |
|                                                                 | 500V               | kW 5   |
|                                                                 | 690V               | kW 5   |
| Rated operational power AC-1 (T≤40°C)                           | 230V               | kW 8   |
|                                                                 | 400V               | kW 14  |
|                                                                 | 500V               | kW 16  |
|                                                                 | 690V               | kW 22  |
| IEC max current Ie in DC1 with L/R ≤ 1ms with 1 poles in series | ≤24V               | A 12   |
|                                                                 | 48V                | A 10   |
|                                                                 | 75V                | A 4    |
|                                                                 | 110V               | A 3    |
|                                                                 | 220V               | A –    |
| IEC max current Ie in DC1 with L/R ≤ 1ms with 2 poles in series | ≤24V               | A 15   |
|                                                                 | 48V                | A 14   |
|                                                                 | 75V                | A 9    |
|                                                                 | 110V               | A 8    |
|                                                                 | 220V               | A –    |
| IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series | ≤24V               | A 16   |
|                                                                 | 48V                | A 16   |
|                                                                 | 75V                | A 10   |
|                                                                 | 110V               | A 10   |
|                                                                 | 220V               | A 2    |
| IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series |                    |        |

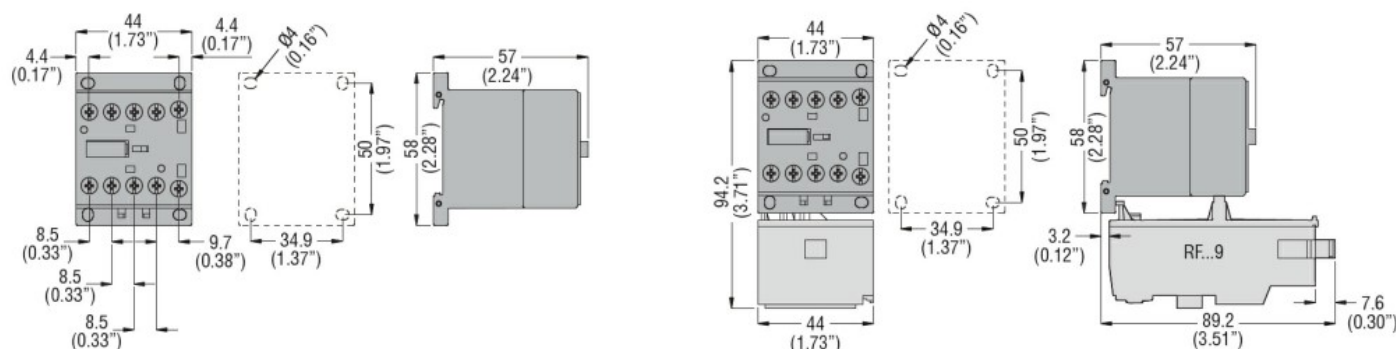
|                                                                      |          |      |      |
|----------------------------------------------------------------------|----------|------|------|
|                                                                      | ≤24V     | A    | 16   |
|                                                                      | 48V      | A    | 16   |
|                                                                      | 75V      | A    | 10   |
|                                                                      | 110V     | A    | 10   |
|                                                                      | 220V     | A    | 2    |
| IEC max current Ie 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 Ie 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 Ie 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 Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |          |      |      |
|                                                                      | ≤24V     | A    | 10   |
|                                                                      | 48V      | A    | 10   |
|                                                                      | 75V      | A    | 6    |
|                                                                      | 110V     | A    | 5    |
|                                                                      | 220V     | A    | 0,8  |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |          | A    | 96   |
| Protection fuse                                                      |          |      |      |
|                                                                      | gG (IEC) | A    | 20   |
|                                                                      | aM (IEC) | A    | 10   |
| Making capacity (RMS value)                                          |          | A    | 92   |
| Breaking capacity at voltage                                         |          |      |      |
|                                                                      | 440V     | A    | 72   |
|                                                                      | 500V     | A    | 72   |
|                                                                      | 690V     | A    | 72   |
| Resistance per pole (average value)                                  |          | mΩ   | 10   |
| Power dissipation per pole (average value)                           |          |      |      |
|                                                                      | Ith      | W    | 4    |
|                                                                      | AC-3     | W    | 0.81 |
| Tightening torque for terminals                                      |          |      |      |
|                                                                      | min      | Nm   | 0.8  |
|                                                                      | max      | Nm   | 1    |
|                                                                      | min      | Ibin | 9    |
|                                                                      | max      | Ibin | 9    |
| Tightening torque for coil terminal                                  |          |      |      |
|                                                                      | min      | Nm   | 0.8  |
|                                                                      | max      | Nm   | 1    |
|                                                                      | min      | Ibin | 9    |
|                                                                      | max      | Ibin | 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                  | 182                      |
| 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                 |
| EMC compatibility                                   |  |                  |                    | yes                      |
| AC coil operating                                   |  |                  |                    |                          |
| Rated AC voltage at 50/60Hz                         |  |                  | V                  | 230                      |
| AC operating voltage                                |  |                  |                    |                          |
| of 50/60Hz coil powered at 50Hz                     |  |                  |                    |                          |
|                                                     |  |                  |                    |                          |
|                                                     |  | pick-up          |                    |                          |
|                                                     |  | min              | %Us                | 75                       |
|                                                     |  | max              | %Us                | 115                      |
| drop-out                                            |  |                  |                    |                          |

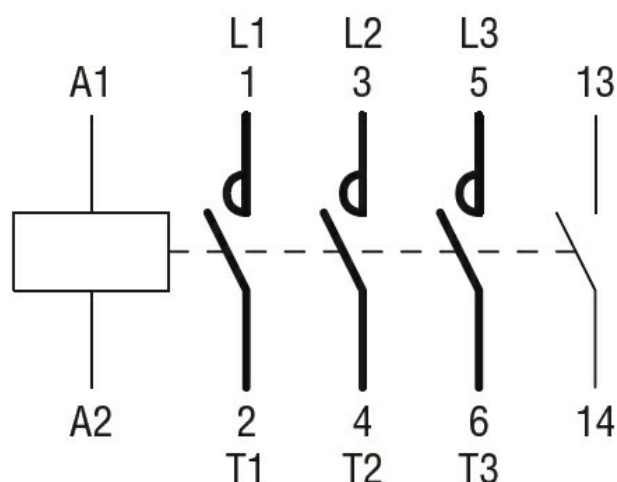
|                                                  |  |         |          |      |
|--------------------------------------------------|--|---------|----------|------|
|                                                  |  | min     | %Us      | 20   |
|                                                  |  | max     | %Us      | 55   |
| of 50/60Hz coil powered at 60Hz                  |  |         |          |      |
| pick-up                                          |  | min     | %Us      | 80   |
|                                                  |  | max     | %Us      | 115  |
| drop-out                                         |  | min     | %Us      | 20   |
|                                                  |  | max     | %Us      | 55   |
| AC average coil consumption at 20°C              |  |         |          |      |
| of 50/60Hz coil powered at 50Hz                  |  |         |          |      |
|                                                  |  | in-rush | VA       | 30   |
|                                                  |  | holding | VA       | 4    |
| of 50/60Hz coil powered at 60Hz                  |  |         |          |      |
|                                                  |  | in-rush | VA       | 25   |
|                                                  |  | holding | VA       | 3    |
| of 60Hz coil powered at 60Hz                     |  |         |          |      |
|                                                  |  | in-rush | VA       | 30   |
|                                                  |  | holding | VA       | 4    |
| Dissipation at holding ≤20°C 50Hz                |  |         | W        | 0.95 |
| 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        | 7.6  |

|                                                      |                           |                       |    |             |
|------------------------------------------------------|---------------------------|-----------------------|----|-------------|
|                                                      |                           | at 600V               | A  | 6.1         |
| 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 | 2           |
|                                                      |                           | 220/240V              | HP | 3           |
|                                                      |                           | 460/480V              | HP | 5           |
|                                                      |                           | 575/600V              | HP | 5           |
| 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          |
| Contact rating of auxiliary contacts according to UL |                           |                       |    | A600 - Q600 |
| 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 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