



#### Contact characteristics

|                                                                                     |                                                   |        |
|-------------------------------------------------------------------------------------|---------------------------------------------------|--------|
| Number of poles                                                                     | Nr.                                               | 4      |
| 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 9    |
|                                                                                     | AC-4 (400V)                                       | A 4    |
| 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      | $\leq 24\text{V}$                                 | A 16   |
|                                                                                     | 48V                                               | A 16   |
|                                                                                     | 75V                                               | A 10   |
|                                                                                     | 110V                                              | A 10   |
|                                                                                     | 220V                                              | A 2    |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 1 poles in series | $\leq 24\text{V}$                                 | 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               | 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)                                       |                 |                 |     |
|                                                                                  | I <sub>th</sub> | W               | 4   |
|                                                                                  | AC-3            | W               | 0.8 |
| Tightening torque for terminals                                                  |                 |                 |     |
|                                                                                  | min             | Nm              | 0.8 |
|                                                                                  | max             | Nm              | 1   |
|                                                                                  | min             | lbin            | 9   |
|                                                                                  | max             | lbin            | 9   |
| Tightening torque for coil terminal                                              |                 |                 |     |
|                                                                                  | min             | Nm              | 0.8 |
|                                                                                  | max             | Nm              | 1   |
|                                                                                  | min             | lbin            | 9   |
|                                                                                  | max             | lbin            | 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> | 0.8 |
|                                                                                  | 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                     |
| Mechanical features                                 |                                 |                 |                          |
| Operating position                                  |                                 |                 |                          |
|                                                     | normal<br>allowable             |                 | Vertical plan<br>±30°    |
| Fixing                                              |                                 |                 | Screw / DIN rail<br>35mm |
| Weight                                              |                                 | g               | 200                      |
| Auxiliary contact characteristics                   |                                 |                 |                          |
| Thermal current I <sub>th</sub>                     |                                 | A               | 10                       |
| IEC/EN 60947-5-1 designation                        |                                 |                 | A600                     |
| Operations                                          |                                 |                 |                          |
| Mechanical life                                     |                                 | cycles          | 20000000                 |
| Electrical life                                     |                                 | cycles          | 500000                   |
| Safety related data                                 |                                 |                 |                          |
| Performance level B10d according to EN/ISO 13489-1  |                                 |                 |                          |
|                                                     | rated load<br>mechanical load   | cycles          | 500000                   |
|                                                     |                                 | cycles          | 20000000                 |
| EMC compatibility                                   |                                 |                 | YES                      |
| AC coil operating                                   |                                 |                 |                          |
| Rated AC voltage at 60Hz                            |                                 | V               | 24                       |
| AC operating voltage                                |                                 |                 |                          |
|                                                     | of 60Hz coil powered at 60Hz    |                 |                          |
|                                                     | pick-up                         |                 |                          |
|                                                     | min                             | %Us             | 75                       |
|                                                     | 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               | 0.9                      |
| Max cycles frequency                                |                                 |                 |                          |
| Mechanical operation                                |                                 | cycles/h        | 3600                     |
| Operating times                                     |                                 |                 |                          |
| Average time for U <sub>s</sub> control             |                                 |                 |                          |
|                                                     | in AC                           |                 |                          |
|                                                     | Closing NO                      |                 |                          |
|                                                     | min                             | ms              | 12                       |
|                                                     | max                             | ms              | 21                       |
|                                                     | Opening NO                      |                 |                          |

|       |            |     |    |    |
|-------|------------|-----|----|----|
| in DC | Closing NC | min | ms | 9  |
|       |            | max | ms | 18 |
|       | Opening NC | min | ms | 17 |
|       |            | max | ms | 26 |
|       |            | min | ms | 7  |
|       |            | max | ms | 17 |
|       | 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   |

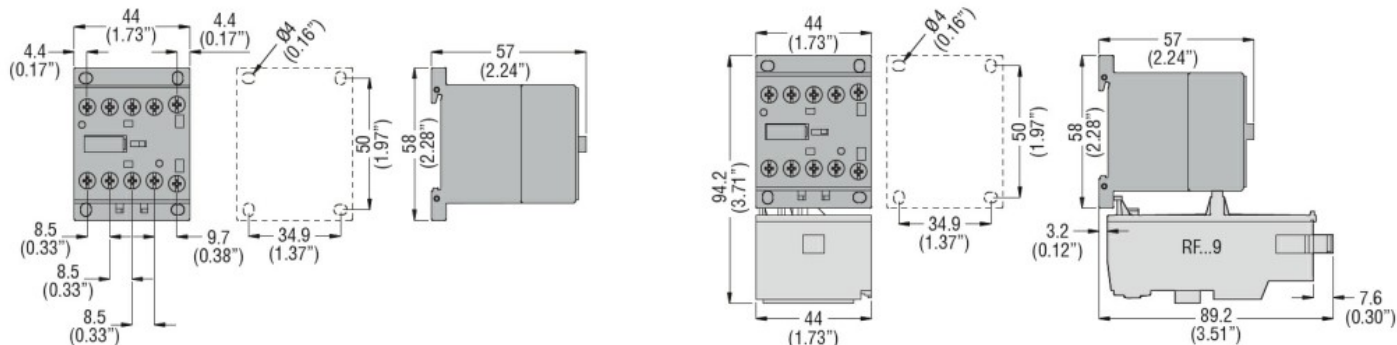
#### General USE

|                                     |                       |    |     |
|-------------------------------------|-----------------------|----|-----|
| 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  |
|                                     | Fuse class            |    | RK5 |

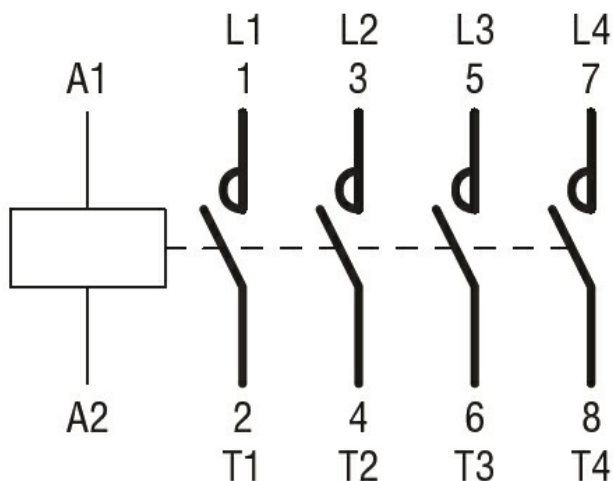
#### Ambient conditions

|                       |     |    |     |
|-----------------------|-----|----|-----|
| 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