



#### Contact characteristics

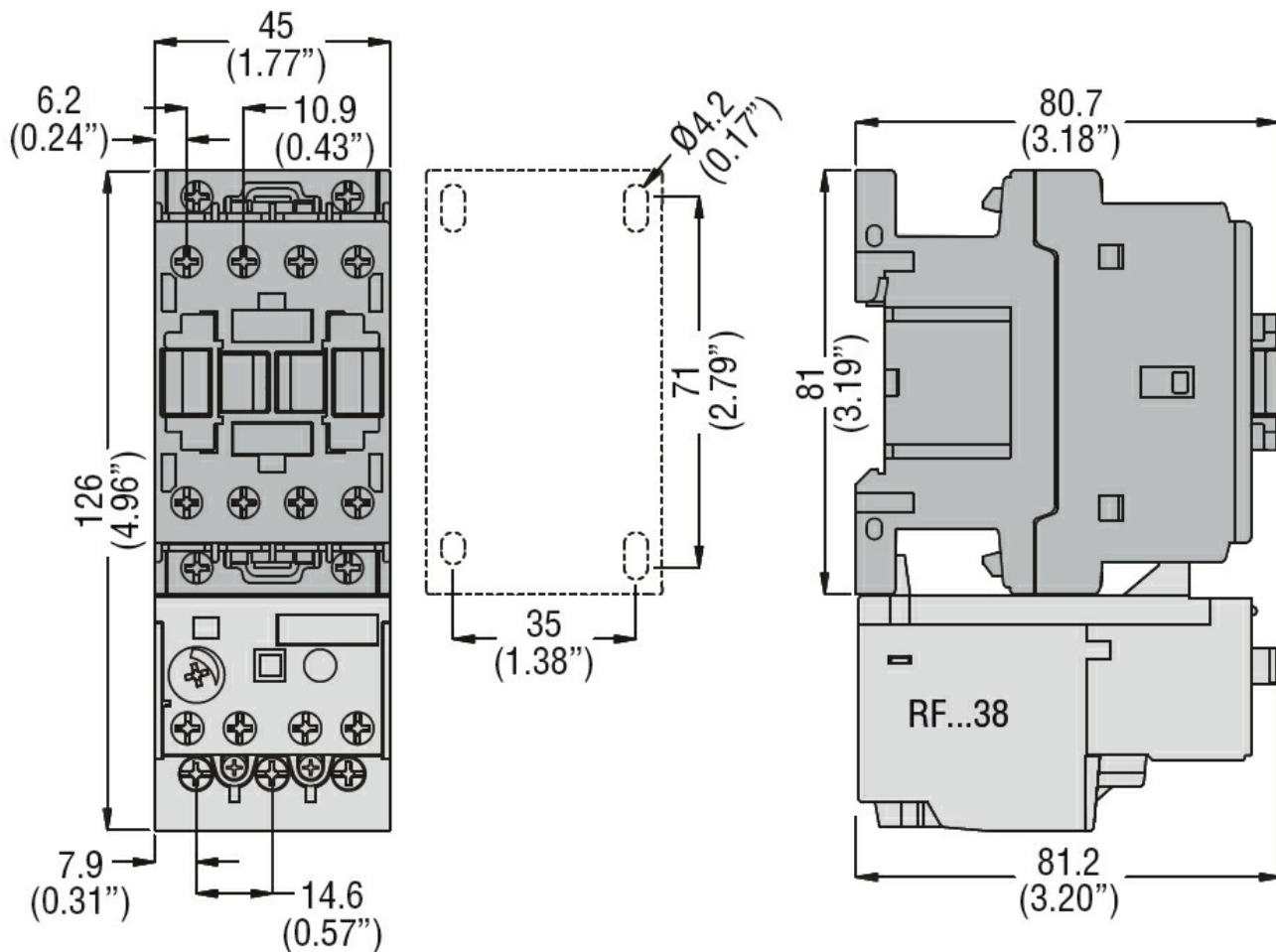
|                                                                                |                                                   |        |
|--------------------------------------------------------------------------------|---------------------------------------------------|--------|
| Number of poles                                                                | 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 5.5 |
|                                                                                | 500V                                              | kW 5   |
|                                                                                | 690V                                              | kW 5   |
| 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 |                                                   |        |

|                                                                      |          |      |      |
|----------------------------------------------------------------------|----------|------|------|
|                                                                      | ≤24V     | A    | 20   |
|                                                                      | 48V      | A    | 20   |
|                                                                      | 75V      | A    | 20   |
|                                                                      | 110V     | A    | 16   |
|                                                                      | 220V     | A    | 12   |
| IEC max current Ie 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    | –    |
| IEC max current Ie 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    |
| IEC max current Ie 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    |
| IEC max current Ie 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    |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |          | A    | 150  |
| Protection fuse                                                      |          |      |      |
|                                                                      | gG (IEC) | A    | 32   |
|                                                                      | aM (IEC) | A    | 12   |
| Making capacity (RMS value)                                          |          | A    | 120  |
| Breaking capacity at voltage                                         |          |      |      |
|                                                                      | 440V     | A    | 96   |
|                                                                      | 500V     | A    | 96   |
|                                                                      | 690V     | A    | 94   |
| Resistance per pole (average value)                                  |          | mΩ   | 2.5  |
| Power dissipation per pole (average value)                           |          |      |      |
|                                                                      | Ith      | W    | 2    |
|                                                                      | AC-3     | W    | 0.4  |
| Tightening torque for terminals                                      |          |      |      |
|                                                                      | min      | Nm   | 1.5  |
|                                                                      | max      | Nm   | 1.8  |
|                                                                      | min      | Ibin | 1.1  |
|                                                                      | max      | Ibin | 1.5  |
| Tightening torque for coil terminal                                  |          |      |      |
|                                                                      | min      | Nm   | 0.8  |
|                                                                      | max      | Nm   | 1    |
|                                                                      | min      | Ibin | 0.8  |
|                                                                      | max      | Ibin | 0.74 |
| Max number of wires simultaneously connectable                       |          | Nr.  | 2    |

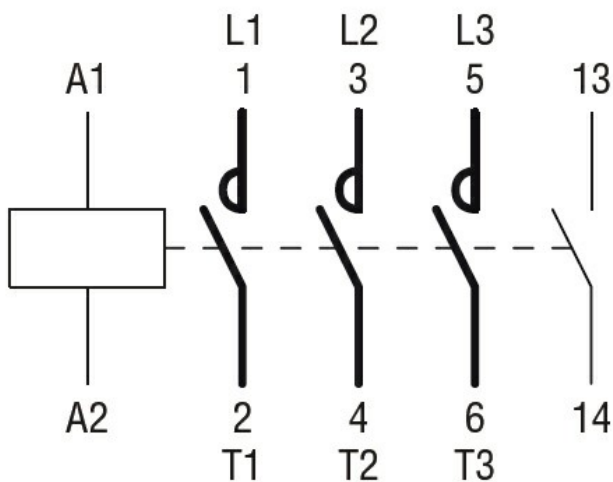
|                                                     |                  |                    |                          |
|-----------------------------------------------------|------------------|--------------------|--------------------------|
| Conductor section                                   |                  |                    |                          |
| 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 lenght                              |                  |                    |                          |
|                                                     | main circuit     | mm                 | 10                       |
|                                                     | command circuit  | mm                 | 8                        |
| Mechanical features                                 |                  |                    |                          |
| Operating position                                  |                  |                    |                          |
|                                                     | normal allowable | Vertical plan ±30° |                          |
| Fixing                                              |                  |                    | Screw / DIN rail 35mm    |
| Weight                                              |                  | g                  | 359                      |
| 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                 |
| EMC compatibility                                   |                  |                    | yes                      |
| AC coil operating                                   |                  |                    |                          |
| Rated AC voltage at 50/60Hz                         |                  | V                  | 110                      |
| AC operating voltage                                |                  |                    |                          |
| of 50/60Hz coil powered at 50Hz                     |                  |                    |                          |

|                                                  |            |          |          |      |
|--------------------------------------------------|------------|----------|----------|------|
|                                                  | pick-up    | min      | %Us      | 80   |
|                                                  |            | max      | %Us      | 110  |
|                                                  | drop-out   | min      | %Us      | 20   |
|                                                  |            | max      | %Us      | 55   |
| of 50/60Hz coil powered at 60Hz                  |            |          |          |      |
|                                                  | pick-up    | min      | %Us      | 85   |
|                                                  |            | max      | %Us      | 110  |
|                                                  | 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       | 75   |
|                                                  |            | holding  | VA       | 9    |
| of 50/60Hz coil powered at 60Hz                  |            |          |          |      |
|                                                  |            | in-rush  | VA       | 70   |
|                                                  |            | holding  | VA       | 6.5  |
| of 60Hz coil powered at 60Hz                     |            |          |          |      |
|                                                  |            | in-rush  | VA       | 75   |
|                                                  |            | holding  | VA       | 9    |
| Dissipation at holding ≤20°C 50Hz                |            |          | W        | 2.5  |
| Max cycles frequency                             |            |          |          |      |
| Mechanical operation                             |            |          | cycles/h | 3600 |
| Operating times                                  |            |          |          |      |
| Average time for Us control                      |            |          |          |      |
| 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       |      |
| 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       | 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

#### Certificates

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ,  
110VAC, 1NO AUXILIARY CONTACT

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