



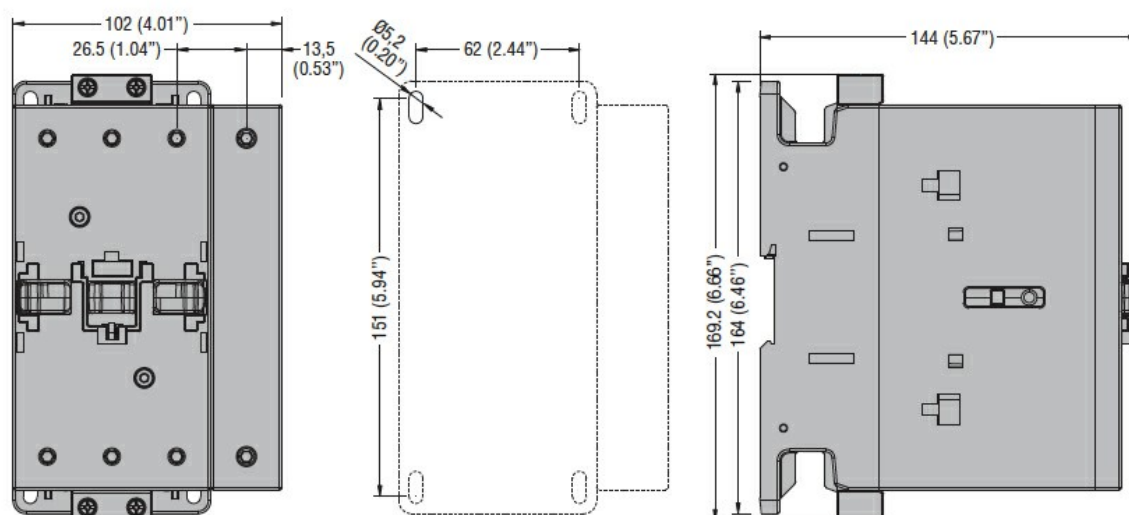
#### Contact characteristics

|                                                                                |                                                   |        |
|--------------------------------------------------------------------------------|---------------------------------------------------|--------|
| Number of poles                                                                | Nr.                                               | 4      |
| Rated insulation voltage $U_i$ IEC/EN                                          | V                                                 | 1000   |
| Rated impulse withstand voltage $U_{imp}$                                      | kV                                                | 8      |
| Operational frequency                                                          | min                                               | Hz 25  |
|                                                                                | max                                               | Hz 400 |
| IEC Conventional free air thermal current $I_{th} \leq 40^\circ\text{C}$       | A                                                 | 140    |
| Operational current $I_e$                                                      | AC-1 ( $\leq 40^\circ\text{C}$ )                  | A 140  |
|                                                                                | AC-1 ( $\leq 55^\circ\text{C}$ )                  | A 115  |
|                                                                                | AC-1 ( $\leq 70^\circ\text{C}$ )                  | A 100  |
|                                                                                | AC-3 ( $\leq 440\text{V} \leq 55^\circ\text{C}$ ) | A 95   |
|                                                                                | AC-4 (400V)                                       | A 45   |
| Rated operational current AC-3 ( $T \leq 55^\circ\text{C}$ )                   | 230V                                              | A 95   |
|                                                                                | 400V                                              | A 95   |
|                                                                                | 415V                                              | A 95   |
|                                                                                | 440V                                              | A 95   |
|                                                                                | 500V                                              | A 95   |
|                                                                                | 690V                                              | A 93   |
|                                                                                | 1000V                                             | A 33   |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$                                 | A 140  |
|                                                                                | 48V                                               | A 140  |
|                                                                                | 75V                                               | A 100  |
|                                                                                | 110V                                              | A 10   |
|                                                                                | 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 140  |
|                                                                                | 48V                                               | A 140  |
|                                                                                | 75V                                               | A 140  |
|                                                                                | 110V                                              | A 110  |
|                                                                                | 220V                                              | A 12   |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$                                 | A 140  |
|                                                                                | 48V                                               | A 140  |
|                                                                                | 75V                                               | A 155  |
|                                                                                | 110V                                              | A 120  |
|                                                                                | 220V                                              | A 125  |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series | $\leq 24\text{V}$                                 | A 140  |
|                                                                                | 48V                                               | A 140  |
|                                                                                | 75V                                               | A 155  |
|                                                                                | 110V                                              | A 140  |

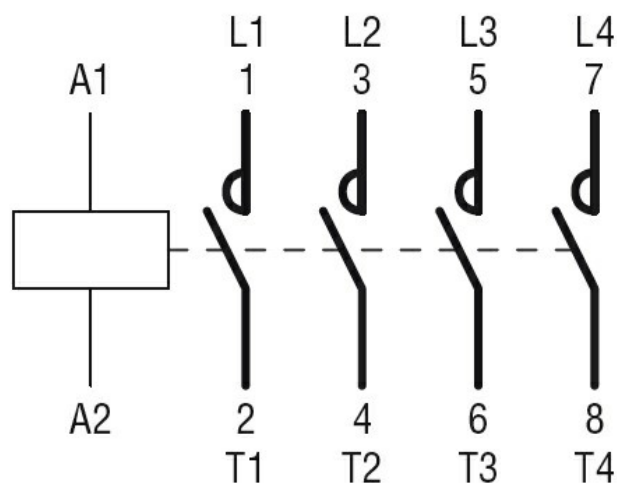
|                                                                      |          |                 |      |
|----------------------------------------------------------------------|----------|-----------------|------|
|                                                                      | 220V     | A               | 140  |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |          |                 |      |
|                                                                      | ≤24V     | A               | 140  |
|                                                                      | 48V      | A               | 44   |
|                                                                      | 75V      | A               | 36   |
|                                                                      | 110V     | A               | 6    |
|                                                                      | 220V     | A               | –    |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |          |                 |      |
|                                                                      | ≤24V     | A               | 140  |
|                                                                      | 48V      | A               | 63   |
|                                                                      | 75V      | A               | 60   |
|                                                                      | 110V     | A               | 55   |
|                                                                      | 220V     | A               | 7    |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |          |                 |      |
|                                                                      | ≤24V     | A               | 140  |
|                                                                      | 48V      | A               | 115  |
|                                                                      | 75V      | A               | 90   |
|                                                                      | 110V     | A               | 85   |
|                                                                      | 220V     | A               | 76   |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |          |                 |      |
|                                                                      | ≤24V     | A               | 140  |
|                                                                      | 48V      | A               | 110  |
|                                                                      | 75V      | A               | 110  |
|                                                                      | 110V     | A               | 105  |
|                                                                      | 220V     | A               | 95   |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |          | A               | 760  |
| Protection fuse                                                      |          |                 |      |
|                                                                      | gG (IEC) | A               | 160  |
|                                                                      | aM (IEC) | A               | 100  |
| Making capacity (RMS value)                                          |          | A               | 1200 |
| Breaking capacity at voltage                                         |          |                 |      |
|                                                                      | 440V     | A               | 1100 |
|                                                                      | 500V     | A               | 775  |
|                                                                      | 690V     | A               | 745  |
| Resistance per pole (average value)                                  |          | mΩ              | 0.45 |
| Power dissipation per pole (average value)                           |          |                 |      |
|                                                                      | Ith      | W               | 8.8  |
|                                                                      | AC-3     | W               | 4.1  |
| Tightening torque for terminals                                      |          |                 |      |
|                                                                      | min      | Nm              | 6    |
|                                                                      | max      | Nm              | 7    |
|                                                                      | min      | Ibin            | 4.4  |
|                                                                      | max      | Ibin            | 5.2  |
| Tightening torque for coil terminal                                  |          |                 |      |
|                                                                      | min      | Nm              | 0.8  |
|                                                                      | max      | Nm              | 1    |
|                                                                      | min      | Ibin            | 0.59 |
|                                                                      | max      | Ibin            | 0.74 |
| Conductor section                                                    |          |                 |      |
| AWG/Kcmil                                                            |          |                 |      |
|                                                                      | max      |                 | 2/0  |
| Flexible w/o lug conductor section                                   |          |                 |      |
|                                                                      | min      | mm <sup>2</sup> | 1.5  |

|                                                     |                  |                 |                          |
|-----------------------------------------------------|------------------|-----------------|--------------------------|
| Flexible c/w lug conductor section                  | max              | mm <sup>2</sup> | 70                       |
|                                                     | min              | mm <sup>2</sup> | 1.5                      |
|                                                     | max              | mm <sup>2</sup> | 70                       |
|                                                     |                  |                 |                          |
| Power terminal protection according to IEC/EN 60529 |                  |                 | IP20 front               |
| <b>Mechanical features</b>                          |                  |                 |                          |
| Operating position                                  |                  |                 |                          |
|                                                     | normal allowable |                 | Vertical plan<br>±30°    |
| Fixing                                              |                  |                 | Screw / DIN rail<br>35mm |
| Weight                                              |                  | g               | 2460                     |
| <b>Auxiliary contact characteristics</b>            |                  |                 |                          |
| Thermal current I <sub>th</sub>                     |                  | A               | 140                      |
| <b>Operations</b>                                   |                  |                 |                          |
| Mechanical life                                     |                  | cycles          | 15000000                 |
| Electrical life                                     |                  | cycles          | 1400000                  |
| <b>Safety related data</b>                          |                  |                 |                          |
| Performance level B10d according to EN/ISO 13489-1  |                  |                 |                          |
|                                                     | rated load       | cycles          | 1400000                  |
|                                                     | mechanical load  | cycles          | 15000000                 |
| <b>AC coil operating</b>                            |                  |                 |                          |
| Rated AC voltage at 50/60Hz, 60Hz                   |                  |                 |                          |
|                                                     | min              | V               | 20                       |
|                                                     | max              | V               | 48                       |
| AC operating voltage                                |                  |                 |                          |
| of 50/60Hz coil powered at 50Hz<br>pick-up          | min              | %U <sub>s</sub> | 85 U <sub>s</sub> min    |
|                                                     | max              | %U <sub>s</sub> | 110 U <sub>s</sub> max   |
| drop-out                                            | max              | %U <sub>s</sub> | ≤70 U <sub>s</sub> min   |
|                                                     |                  |                 |                          |
| of 50/60Hz coil powered at 60Hz<br>pick-up          | min              | %U <sub>s</sub> | 85 U <sub>s</sub> min    |
|                                                     | max              | %U <sub>s</sub> | 110 U <sub>s</sub> max   |
| drop-out                                            | max              | %U <sub>s</sub> | ≤70 U <sub>s</sub> min   |
|                                                     |                  |                 |                          |
| AC average coil consumption at 20°C                 |                  |                 |                          |
| of 50/60Hz coil powered at 50Hz                     | in-rush          | VA              | 130                      |
|                                                     | holding          | VA              | 3.5                      |
| of 50/60Hz coil powered at 60Hz                     | in-rush          | VA              | 130                      |
|                                                     | holding          | VA              | 3.5                      |
| of 60Hz coil powered at 60Hz                        | in-rush          | VA              | 130                      |
|                                                     | holding          | VA              | 3.5                      |
| Dissipation at holding ≤20°C 50Hz                   |                  | W               | 1.3...1,5                |
| <b>DC coil operating</b>                            |                  |                 |                          |
| DC rated control voltage                            |                  |                 |                          |
|                                                     | min              | V               | 20                       |
|                                                     | max              | V               | 48                       |
| max                                                 |                  | V               | 48                       |

|                                     |                       |            |     |               |
|-------------------------------------|-----------------------|------------|-----|---------------|
| DC operating voltage                |                       |            |     |               |
| pick-up                             |                       | min        | %Us | 80 Us min     |
|                                     |                       | max        | %Us | 110 Us max    |
| drop-out                            |                       |            |     |               |
|                                     |                       | max        | %Us | ≤70 Us min    |
| Average coil consumption ≤20°C      |                       |            |     |               |
|                                     |                       | in-rush    | W   | 76            |
|                                     |                       | holding    | W   | 1.7           |
| Max cycles frequency                |                       |            |     |               |
| Mechanical operation                |                       |            |     | cycles/h 1500 |
| Operating times                     |                       |            |     |               |
| Average time for Us control         |                       |            |     |               |
| in AC                               | Closing NO            | min        | ms  | 45            |
|                                     |                       | max        | ms  | 90            |
|                                     | Opening NO            | min        | ms  | 24            |
|                                     |                       | max        | ms  | 60            |
| in DC                               | Closing NO            | min        | ms  | 45            |
|                                     |                       | max        | ms  | 85            |
|                                     | Opening NO            | min        | ms  | 24            |
|                                     |                       | max        | ms  | 60            |
| UL technical data                   |                       |            |     |               |
| Rated operational voltage AC (UL)   |                       |            | V   | 600           |
| General USE                         |                       |            |     |               |
| Contactor                           |                       | AC current |     | A 150         |
|                                     |                       |            |     |               |
| Short-circuit protection fuse, 600V |                       |            |     |               |
| High fault                          | Short circuit current |            | kA  | 100           |
|                                     | Fuse rating           |            | A   | 200           |
|                                     | Fuse class            |            |     | J             |
| Standard fault                      | Short circuit current |            | kA  | 10            |
|                                     | Fuse rating           |            | A   | 250           |
|                                     | 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          |



### 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

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