



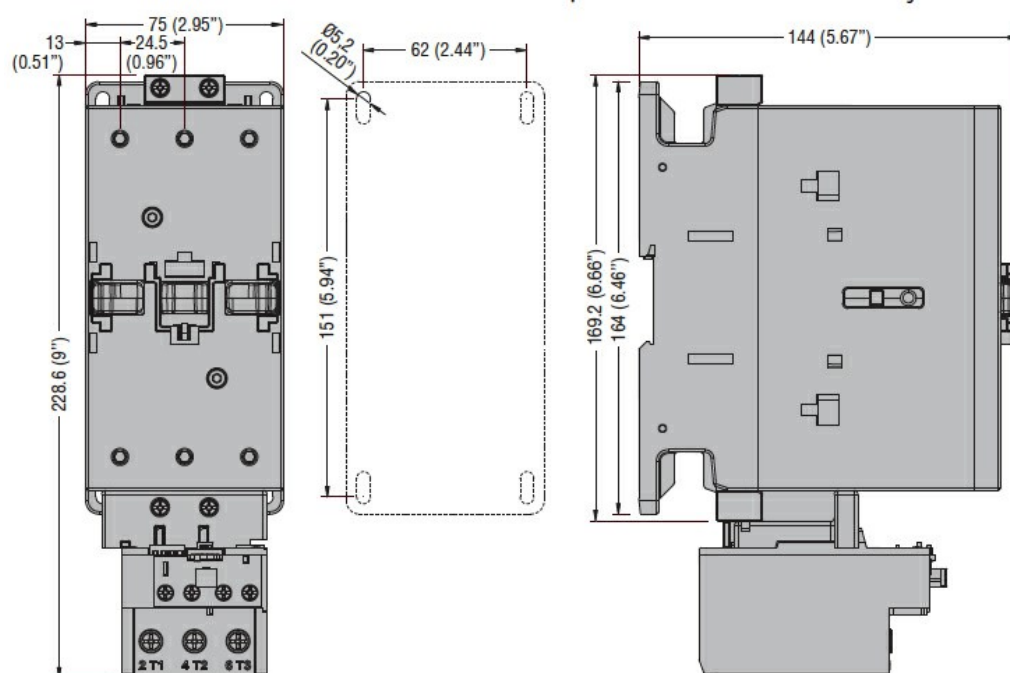
#### Contact characteristics

|                                                                                |                                                   |        |
|--------------------------------------------------------------------------------|---------------------------------------------------|--------|
| Number of poles                                                                | Nr.                                               | 3      |
| 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                                                 | 165    |
| Operational current $I_e$                                                      | AC-1 ( $\leq 40^\circ\text{C}$ )                  | A 165  |
|                                                                                | AC-1 ( $\leq 55^\circ\text{C}$ )                  | A 135  |
|                                                                                | AC-1 ( $\leq 70^\circ\text{C}$ )                  | A 118  |
|                                                                                | AC-3 ( $\leq 440\text{V} \leq 55^\circ\text{C}$ ) | A 150  |
|                                                                                | AC-4 (400V)                                       | A 70   |
| Rated operational power AC-3 ( $T \leq 55^\circ\text{C}$ )                     | 230V                                              | kW 45  |
|                                                                                | 400V                                              | kW 75  |
|                                                                                | 415V                                              | kW 75  |
|                                                                                | 440V                                              | kW 75  |
|                                                                                | 500V                                              | kW 90  |
|                                                                                | 690V                                              | kW 110 |
|                                                                                | 1000V                                             | kW 55  |
| Rated operational current AC-3 ( $T \leq 55^\circ\text{C}$ )                   | 230V                                              | A 150  |
|                                                                                | 400V                                              | A 150  |
|                                                                                | 415V                                              | A 150  |
|                                                                                | 440V                                              | A 150  |
|                                                                                | 500V                                              | A 128  |
|                                                                                | 690V                                              | A 113  |
|                                                                                | 1000V                                             | A 51   |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$                                 | A 165  |
|                                                                                | 48V                                               | A 165  |
|                                                                                | 75V                                               | A 150  |
|                                                                                | 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 165  |
|                                                                                | 48V                                               | A 165  |
|                                                                                | 75V                                               | A 165  |
|                                                                                | 110V                                              | A 150  |
|                                                                                | 220V                                              | A 14   |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$                                 | A 165  |
|                                                                                | 48V                                               | A 165  |

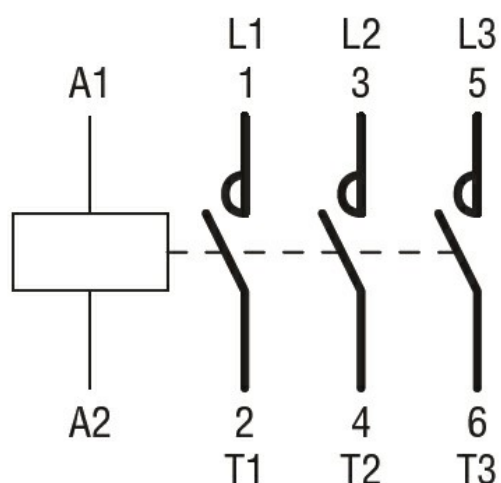
|                                                                      |                 |      |      |
|----------------------------------------------------------------------|-----------------|------|------|
|                                                                      | 75V             | A    | 165  |
|                                                                      | 110V            | A    | 160  |
|                                                                      | 220V            | A    | 150  |
| IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series      |                 |      |      |
|                                                                      | ≤24V            | A    | 165  |
|                                                                      | 48V             | A    | 165  |
|                                                                      | 75V             | A    | 165  |
|                                                                      | 110V            | A    | 165  |
|                                                                      | 220V            | A    | 165  |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |                 |      |      |
|                                                                      | ≤24V            | A    | 165  |
|                                                                      | 48V             | A    | 60   |
|                                                                      | 75V             | A    | 44   |
|                                                                      | 110V            | A    | 6    |
|                                                                      | 220V            | A    | –    |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |                 |      |      |
|                                                                      | ≤24V            | A    | 165  |
|                                                                      | 48V             | A    | 82   |
|                                                                      | 75V             | A    | 70   |
|                                                                      | 110V            | A    | 80   |
|                                                                      | 220V            | A    | 7    |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |                 |      |      |
|                                                                      | ≤24V            | A    | 165  |
|                                                                      | 48V             | A    | 195  |
|                                                                      | 75V             | A    | 110  |
|                                                                      | 110V            | A    | 120  |
|                                                                      | 220V            | A    | 120  |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |                 |      |      |
|                                                                      | ≤24V            | A    | 165  |
|                                                                      | 48V             | A    | 130  |
|                                                                      | 75V             | A    | 130  |
|                                                                      | 110V            | A    | 150  |
|                                                                      | 220V            | A    | 150  |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |                 | A    | 1200 |
| Protection fuse                                                      |                 |      |      |
|                                                                      | gG (IEC)        | A    | 250  |
|                                                                      | aM (IEC)        | A    | 160  |
| Making capacity (RMS value)                                          |                 | A    | 1500 |
| Breaking capacity at voltage                                         |                 |      |      |
|                                                                      | 440V            | A    | 1200 |
|                                                                      | 500V            | A    | 1025 |
|                                                                      | 690V            | A    | 905  |
| Resistance per pole (average value)                                  |                 | mΩ   | 0.45 |
| Power dissipation per pole (average value)                           |                 |      |      |
|                                                                      | I <sub>th</sub> | W    | 12   |
|                                                                      | AC-3            | W    | 10.1 |
| Tightening torque for terminals                                      |                 |      |      |
|                                                                      | min             | Nm   | 6    |
|                                                                      | max             | Nm   | 7    |
|                                                                      | min             | lbin | 4.4  |
|                                                                      | max             | lbin | 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                   |
|                                                     |                                 | max              | mm <sup>2</sup> | 70                    |
| Flexible c/w lug conductor section                  |                                 |                  |                 |                       |
|                                                     |                                 | min              | mm <sup>2</sup> | 1.5                   |
|                                                     |                                 | max              | mm <sup>2</sup> | 70                    |
| Power terminal protection according to IEC/EN 60529 |                                 |                  |                 | IP20 front            |
| Mechanical features                                 |                                 |                  |                 |                       |
| Operating position                                  |                                 |                  |                 |                       |
|                                                     |                                 | normal allowable |                 | Vertical plan ±30°    |
| Fixing                                              |                                 |                  |                 | Screw / DIN rail 35mm |
| Weight                                              |                                 |                  | g               | 2020                  |
| Operations                                          |                                 |                  |                 |                       |
| Mechanical life                                     |                                 |                  | cycles          | 15000000              |
| Electrical life                                     |                                 |                  | cycles          | 800000                |
| Safety related data                                 |                                 |                  |                 |                       |
| Performance level B10d according to EN/ISO 13489-1  |                                 |                  |                 |                       |
|                                                     |                                 | rated load       | cycles          | 800000                |
|                                                     |                                 | mechanical load  | cycles          | 15000000              |
| EMC compatibility                                   |                                 |                  |                 | yes                   |
| AC coil operating                                   |                                 |                  |                 |                       |
| Rated AC voltage at 50/60Hz                         |                                 |                  | V               | 400                   |
| 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             | 40                    |
|                                                     |                                 | max              | %Us             | 55                    |
| AC average coil consumption at 20°C                 |                                 |                  |                 |                       |
|                                                     | of 50/60Hz coil powered at 50Hz |                  |                 |                       |
|                                                     |                                 | in-rush          | VA              | 300                   |
|                                                     |                                 | holding          | VA              | 20                    |
|                                                     | of 50/60Hz coil powered at 60Hz |                  |                 |                       |
|                                                     |                                 | in-rush          | VA              | 275                   |
|                                                     |                                 | holding          | VA              | 17                    |
|                                                     | of 60Hz coil powered at 60Hz    |                  |                 |                       |
|                                                     |                                 | in-rush          | VA              | 300                   |

|                                                            |                       |                    |      |
|------------------------------------------------------------|-----------------------|--------------------|------|
|                                                            | holding               | VA                 | 20   |
| Dissipation at holding $\leq 20^{\circ}\text{C}$ 50Hz      |                       | W                  | 6.5  |
| Max cycles frequency                                       |                       |                    |      |
| Mechanical operation                                       |                       | cycles/h           | 1500 |
| Operating times                                            |                       |                    |      |
| Average time for $U_s$ control<br>in AC                    |                       |                    |      |
|                                                            | Closing NO            |                    |      |
|                                                            | min                   | ms                 | 45   |
|                                                            | max                   | ms                 | 32   |
|                                                            | Opening NO            |                    |      |
|                                                            | min                   | ms                 | 9    |
|                                                            | max                   | ms                 | 24   |
| UL technical data                                          |                       |                    |      |
| Rated operational voltage AC (UL)                          |                       | V                  | 600  |
| Yielded mechanical performance<br>for three-phase AC motor |                       |                    |      |
|                                                            | 200/208V              | HP                 | 50   |
|                                                            | 220/240V              | HP                 | 50   |
|                                                            | 460/480V              | HP                 | 100  |
|                                                            | 575/600V              | HP                 | 125  |
| General USE                                                |                       |                    |      |
|                                                            | Contactor             |                    |      |
|                                                            | AC current            | A                  | 165  |
| Short-circuit protection fuse, 600V<br>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                   | $^{\circ}\text{C}$ | -50  |
|                                                            | max                   | $^{\circ}\text{C}$ | 70   |
|                                                            | Storage temperature   |                    |      |
|                                                            | min                   | $^{\circ}\text{C}$ | -60  |
|                                                            | max                   | $^{\circ}\text{C}$ | 80   |
| Max altitude                                               |                       | m                  | 3000 |
| 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

CCC

CSA C22.2 n. 60335-2-40:22 LZGH A2L

CSA C22.2 No. 60335-2-89:21 LZGH A2L

cULuS

UL 60335-2-40 LZGH A2L

UL 60335-2-89 LZGH A2L

## ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching