



Product designation

Power contactor

Product type designation

B310

**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 $I_{th}$                             | A                                                  | 450    |
| Operational current $I_e$                                                      | AC-1 ( $\leq 40^\circ\text{C}$ )                   | A 450  |
|                                                                                | AC-1 ( $\leq 55^\circ\text{C}$ )                   | A 370  |
|                                                                                | AC-1 ( $\leq 70^\circ\text{C}$ )                   | A 300  |
|                                                                                | AC-3 ( $\leq 440\text{V } \leq 55^\circ\text{C}$ ) | A 320  |
|                                                                                | AC-4 (400V)                                        | A 150  |
| Rated operational power AC-3 ( $T \leq 55^\circ\text{C}$ )                     | 230V                                               | kW 100 |
|                                                                                | 400V                                               | kW 170 |
|                                                                                | 415V                                               | kW 188 |
|                                                                                | 440V                                               | kW 200 |
|                                                                                | 500V                                               | kW 213 |
|                                                                                | 690V                                               | kW 256 |
|                                                                                | 1000V                                              | kW 180 |
| Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )                     | 230V                                               | kW 158 |
|                                                                                | 400V                                               | kW 270 |
|                                                                                | 500V                                               | kW 350 |
|                                                                                | 690V                                               | kW 488 |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | 75V                                                | A 375  |
|                                                                                | 110V                                               | A 195  |
|                                                                                | 220V                                               | A --   |
|                                                                                | 330V                                               | A --   |
|                                                                                | 460V                                               | A --   |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series | 75V                                                | A 375  |
|                                                                                | 110V                                               | A 350  |
|                                                                                | 220V                                               | A 300  |
|                                                                                | 330V                                               | A --   |
|                                                                                | 460V                                               | A --   |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | 75V                                                | A 375  |
|                                                                                | 110V                                               | A 350  |
|                                                                                | 220V                                               | A 350  |

|                                                                      |          |      |      |
|----------------------------------------------------------------------|----------|------|------|
|                                                                      | 330V     | A    | 300  |
|                                                                      | 460V     | A    | --   |
| IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series      |          |      |      |
|                                                                      | 75V      | A    | 375  |
|                                                                      | 110V     | A    | 350  |
|                                                                      | 220V     | A    | 350  |
|                                                                      | 330V     | A    | 350  |
|                                                                      | 460V     | A    | 300  |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |          |      |      |
|                                                                      | 75V      | A    | 310  |
|                                                                      | 110V     | A    | 170  |
|                                                                      | 220V     | A    | --   |
|                                                                      | 330V     | A    | --   |
|                                                                      | 460V     | A    | --   |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |          |      |      |
|                                                                      | 75V      | A    | 310  |
|                                                                      | 110V     | A    | 290  |
|                                                                      | 220V     | A    | 230  |
|                                                                      | 330V     | A    | --   |
|                                                                      | 460V     | A    | --   |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |          |      |      |
|                                                                      | 75V      | A    | 310  |
|                                                                      | 110V     | A    | 310  |
|                                                                      | 220V     | A    | 290  |
|                                                                      | 330V     | A    | 230  |
|                                                                      | 460V     | A    | --   |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |          |      |      |
|                                                                      | 75V      | A    | 310  |
|                                                                      | 110V     | A    | 310  |
|                                                                      | 220V     | A    | 310  |
|                                                                      | 330V     | A    | 230  |
|                                                                      | 460V     | A    | 230  |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |          | A    | 2900 |
| Protection fuse                                                      |          |      |      |
|                                                                      | gG (IEC) | A    | 500  |
|                                                                      | aM (IEC) | A    | 400  |
| Making capacity (RMS value)                                          |          | A    | 3150 |
| Breaking capacity at voltage                                         |          |      |      |
|                                                                      | 440V     | A    | 3000 |
|                                                                      | 500V     | A    | 2700 |
|                                                                      | 690V     | A    | 2520 |
| Resistance per pole (average value)                                  |          | mΩ   | 0.2  |
| Power dissipation per pole (average value)                           |          |      |      |
|                                                                      | Ith      | W    | 40.5 |
|                                                                      | AC-3     | W    | 20   |
| Tightening torque for terminals                                      |          |      |      |
|                                                                      | min      | Nm   | 35   |
|                                                                      | max      | Nm   | 35   |
|                                                                      | min      | Ibin | 25.8 |
|                                                                      | max      | Ibin | 25.8 |
| Tightening torque for coil terminal                                  |          |      |      |
|                                                                      | min      | Nm   | 1    |
|                                                                      | max      | Nm   | 1    |

|                                                     |                                 |                  |                       |
|-----------------------------------------------------|---------------------------------|------------------|-----------------------|
|                                                     | min                             | I <sub>bin</sub> | 0.74                  |
|                                                     | max                             | I <sub>bin</sub> | 0.74                  |
| Max number of wires simultaneously connectable      |                                 | Nr.              | 2                     |
| Conductor section                                   |                                 |                  |                       |
|                                                     | AWG/Kcmil                       |                  |                       |
|                                                     | max                             |                  | 2x 3/0                |
| Power terminal protection according to IEC/EN 60529 |                                 |                  | IP00                  |
| <b>Mechanical features</b>                          |                                 |                  |                       |
| Operating position                                  |                                 |                  |                       |
|                                                     | normal allowable                |                  | Vertical plan<br>±30° |
| Fixing                                              |                                 |                  | Screw                 |
| Weight                                              |                                 | g                | 9490                  |
| <b>Operations</b>                                   |                                 |                  |                       |
| Mechanical life                                     |                                 | cycles           | 10000000              |
| Electrical life                                     |                                 | cycles           | 700000                |
| <b>Safety related data</b>                          |                                 |                  |                       |
| Performance level B10d according to EN/ISO 13489-1  |                                 |                  |                       |
|                                                     | rated load                      | cycles           | 700000                |
|                                                     | mechanical load                 | cycles           | 10000000              |
| Mirror contacts according to IEC/EN 60947-4-1       |                                 |                  | Yes                   |
| EMC compatibility                                   |                                 |                  | yes                   |
| <b>AC coil operating</b>                            |                                 |                  |                       |
| Rated AC voltage at 50/60Hz                         |                                 | V                | 60                    |
| AC operating voltage                                |                                 |                  |                       |
|                                                     | of 50/60Hz coil powered at 50Hz |                  |                       |
|                                                     | pick-up                         |                  |                       |
|                                                     | min                             | %U <sub>s</sub>  | 80                    |
|                                                     | max                             | %U <sub>s</sub>  | 110                   |
|                                                     | drop-out                        |                  |                       |
|                                                     | min                             | %U <sub>s</sub>  | 20                    |
|                                                     | max                             | %U <sub>s</sub>  | 60                    |
|                                                     | of 50/60Hz coil powered at 60Hz |                  |                       |
|                                                     | pick-up                         |                  |                       |
|                                                     | min                             | %U <sub>s</sub>  | 80                    |
|                                                     | max                             | %U <sub>s</sub>  | 110                   |
|                                                     | drop-out                        |                  |                       |
|                                                     | min                             | %U <sub>s</sub>  | 20                    |
|                                                     | max                             | %U <sub>s</sub>  | 60                    |
|                                                     | of 60Hz coil powered at 60Hz    |                  |                       |
|                                                     | pick-up                         |                  |                       |
|                                                     | min                             | %U <sub>s</sub>  | 80                    |
|                                                     | max                             | %U <sub>s</sub>  | 110                   |
|                                                     | drop-out                        |                  |                       |
|                                                     | min                             | %U <sub>s</sub>  | 20                    |
|                                                     | max                             | %U <sub>s</sub>  | 60                    |
| AC average coil consumption at 20°C                 |                                 |                  |                       |
|                                                     | of 50/60Hz coil powered at 50Hz |                  |                       |
|                                                     | in-rush                         | VA               | 300                   |
|                                                     | holding                         | VA               | 10                    |
|                                                     | of 50/60Hz coil powered at 60Hz |                  |                       |
|                                                     | in-rush                         | VA               | 300                   |
|                                                     | holding                         | VA               | 10                    |

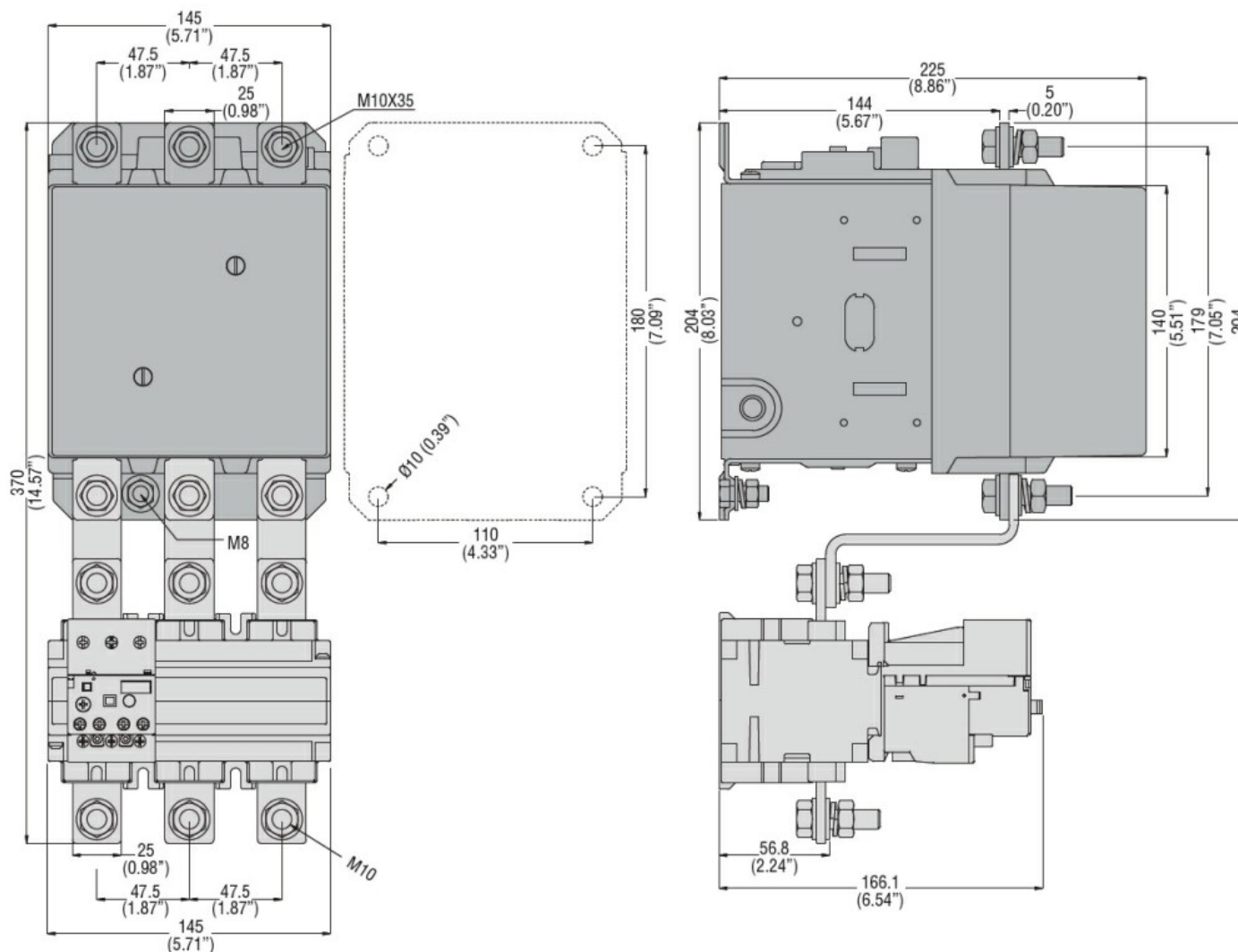
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|--------------------------------------------------|--|-----------------------|---------|
| Dissipation at holding ≤20°C 50Hz                |  | W                     | 10      |
| DC coil operating                                |  |                       |         |
| DC rated control voltage                         |  | V                     | 60      |
| DC operating voltage                             |  |                       |         |
| pick-up                                          |  | min                   | %Us 80  |
|                                                  |  | max                   | %Us 110 |
| drop-out                                         |  | min                   | %Us 20  |
|                                                  |  | max                   | %Us 60  |
| Average coil consumption ≤20°C                   |  |                       |         |
|                                                  |  | in-rush               | W 300   |
|                                                  |  | holding               | W 10    |
| Max cycles frequency                             |  |                       |         |
| Mechanical operation                             |  | cycles/h              | 2400    |
| Operating times                                  |  |                       |         |
| Average time for Us control                      |  |                       |         |
| in AC                                            |  |                       |         |
| Closing NO                                       |  | min                   | ms 80   |
|                                                  |  | max                   | ms 120  |
| Opening NO                                       |  | min                   | ms 30   |
|                                                  |  | max                   | ms 75   |
| in DC                                            |  |                       |         |
| Closing NO                                       |  | min                   | ms 80   |
|                                                  |  | max                   | ms 120  |
| Opening NO                                       |  | min                   | ms 30   |
|                                                  |  | max                   | ms 75   |
| UL technical data                                |  |                       |         |
| Rated operational voltage AC (UL)                |  | V                     | 600     |
| Full-load current (FLA) for three-phase AC motor |  |                       |         |
|                                                  |  | at 480V               | A 301   |
|                                                  |  | at 600V               | A 289   |
| Yielded mechanical performance                   |  |                       |         |
| for three-phase AC motor                         |  |                       |         |
|                                                  |  | 200/208V              | HP 100  |
|                                                  |  | 220/230V              | HP 125  |
|                                                  |  | 460/480V              | HP 250  |
|                                                  |  | 575/600V              | HP 300  |
| General USE                                      |  |                       |         |
| Contactor                                        |  |                       |         |
|                                                  |  | AC current            | A 450   |
| Short-circuit protection fuse, 600V              |  |                       |         |
| Standard fault                                   |  |                       |         |
|                                                  |  | Short circuit current | kA 18   |
|                                                  |  | Fuse rating           | A 800   |
|                                                  |  | Fuse class            | L       |
| Ambient conditions                               |  |                       |         |
| Temperature                                      |  |                       |         |
| Operating temperature                            |  | min                   | °C -50  |

|                     |     |    |      |
|---------------------|-----|----|------|
| Storage temperature | max | °C | 70   |
|                     | min | °C | -60  |
|                     | max | °C | 80   |
| Max altitude        | m   |    | 3000 |

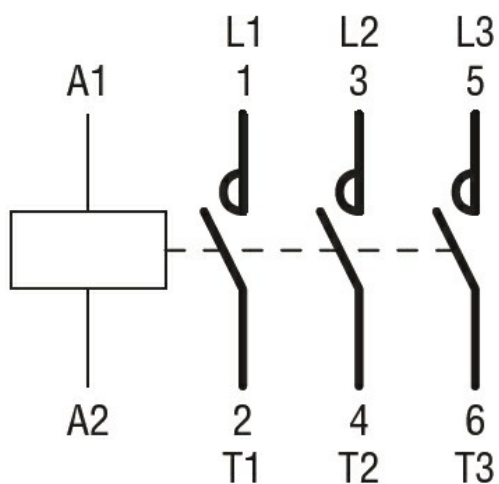
## Resistance & Protection

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 60947-1

IEC/EN 60947-4-1

UL 60947-1

UL 60947-4-1

#### Certificates

CCC

cULus

EAC

### ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching