



|  |                    |      |                 |
|--|--------------------|------|-----------------|
| Product designation                                  |                    |      | Power contactor |
| Product type designation                             |                    |      | BF09            |
| Contact characteristics                              |                    |      |                 |
| Number of poles                                      |                    | nr.  | 3               |
| Rated insulation voltage Ui IEC/EN                   |                    | V    | 690             |
| Rated impulse withstand voltage Uimp                 |                    | kV   | 6               |
| Operational frequency                                | min                | Hz   | 25              |
|  | max                | Hz   | 400             |
| Conventional free air thermal current Ith IEC/EN     |                    | A    | 25              |
| Operational current Ie                               | AC-1 (≤40°C)       | A    | 25              |
|  | AC-3 (≤440V ≤55°C) | A    | 9               |
|  | AC-4 (400V)        | A    | 4.9             |
| Rated operational power AC-1 (T≤40°C)                | 230V               | kW   | 9.5             |
|  | 400V               | kW   | 16              |
|  | 500V               | kW   | 21              |
|  | 690V               | kW   | 27              |
| Rated operational power AC-3 (T≤55°C)                | 230V               | kW   | 2.2             |
|  | 400V               | kW   | 4.2             |
|  | 415V               | kW   | 4.5             |
|  | 440V               | kW   | 4.8             |
|  | 500V               | kW   | 5.5             |
|  | 690V               | kW   | 7.5             |
| Short-time allowable current for 10s (IEC/EN60947-1) |                    | A    | 150             |
| Protection fuse                                      | gG (IEC)           | A    | 25              |
|  | aM (IEC)           | A    | 10              |
| Making capacity (RMS value)                          |                    | A    | 90              |
| Breaking capacity at voltage                         | 440V               | A    | 72              |
|  | 500V               | A    | 72              |
|  | 690V               | A    | 71              |
| Resistance per pole (average value)                  |                    | mΩ   | 2.5             |
| Power dissipation per pole (average value)           | Ith                | W    | 1.6             |
|  | AC3                | W    | 0.2             |
| 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        | lbft            | 0.8                      |
|   |                              | max        | lbft            | 0.74                     |
| Max number of wires simultaneously connectable      |                              | nr.        |                 | 2                        |
| Conductor section                                   |                              |            |                 |                          |
|   | AWG                          |            |                 |                          |
|   |                              | /kcmil min |                 | 16                       |
|   |                              | /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> | 4                        |
| Power terminal protection according to IEC/EN 60529 |                              |            |                 | IP20 when wired          |
| Auxiliary contact characteristics                   |                              |            |                 |                          |
| Type of contact                                     |                              |            |                 | 1 NO                     |
| Thermal current I <sub>th</sub>                     |                              |            |                 | A 10                     |
| IEC/EN 60947-5-1 designation                        |                              |            |                 | A600 - P600              |
| Operational current I <sub>e</sub> AC-1 (≤40°C)     |                              |            |                 | A 25                     |
| 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               | Screw / DIN rail<br>35mm |
|   |                              | 125V       | A               | 0.6                      |
|   |                              | 220V       | A               | 0.2                      |
|   |                              | 600V       | A               | 1.2                      |
| Ambient conditions                                  |                              |            |                 |                          |
| Temperature   |                              |            |                 |                          |
|   | Operating temperature        |            |                 |                          |
|   |                              | min        | °C              | -50                      |
|   |                              | max        | °C              | 70                       |
|   | Storage temperature          |            |                 |                          |
|   |                              | min        | °C              | -60                      |
|   |                              | max        | °C              | 80                       |
| Max altitude  |                              |            |                 | m 3000                   |
| Operational position                                |                              |            |                 |                          |
|   | Operating position normal    |            |                 | vertical plan            |
|   | Operating position allowable |            |                 | ±30°                     |
| Fixing  |                              |            |                 | Screw / DIN rail<br>35mm |
| Weight  |                              |            |                 | g 0.5                    |

## Operations

|                 |        |          |
|-----------------|--------|----------|
| Mechanical life | Cycles | 20000000 |
| Electrical life | Cycles | 2000000  |

## Safety related data

Performance level B10d according to EN/ISO 13489-1

|   |                 |       |          |
|---|-----------------|-------|----------|
|   | rated load      | Cicli | 2000000  |
|   | mechanical load | Cicli | 20000000 |
| Mirror contacts according to IEC/EN 60947-4-1 |                 |       | yes      |
| EMC compatibility                             |                 |       | yes      |

## DC coil operating

|                          |     |     |      |
|--------------------------|-----|-----|------|
| DC rated control voltage | min | V   | 6    |
|                          | max | V   | 250  |
| DC operating voltage     |     |     |      |
| pick-up                  | min | %Us | 0.7  |
|                          | max | %Us | 1.25 |
| drop-out                 | min | %Us | 0.1  |
|                          | max | %Us | 0.40 |

Average coil consumption  $\leq 20^{\circ}\text{C}$

|  |   |     |
|--|---|-----|
| Average coil consumption $\leq 20^{\circ}\text{C}$ in-rush | W | 5.4 |
| Average coil consumption $\leq 20^{\circ}\text{C}$ holding | W | 5.4 |

## Max cycles frequency

|                       |          |      |
|-----------------------|----------|------|
| Mechanical operations | Cycles/h | 3600 |
|-----------------------|----------|------|

## Operating times

|                                |     |    |    |  |
|--------------------------------|-----|----|----|--|
| Average time for $U_s$ control |     |    |    |  |
| in AC                          |     |    |    |  |
| Closing NC                     | min | ms | 14 |  |
|                                | max | ms | 28 |  |
| Opening NC                     | min | ms | 7  |  |
|                                | max | ms | 18 |  |
| in DC                          |     |    |    |  |
| Closing NO                     | min | ms | 54 |  |
|                                | max | ms | 66 |  |
| Opening NO                     | min | ms | 14 |  |
|                                | max | ms | 17 |  |

## UL technical data

|  |         |      |       |
|--|---------|------|-------|
| Full-load current (FLA) for three-phase AC motor | at 480V | A    | 7.6   |
|  | at 600V | A    | 0.375 |
| Yielded mechanical performance for               |         |      |       |
| for single-phase AC motor                        |         |      |       |
| Yielded mechanical performance 110/120V          | hp      | 0.75 |       |
| Yielded mechanical performance 230V              | hp      | 2    |       |
| for three-phase AC motor                         |         |      |       |
| Yielded mechanical performance 200/208V          | hp      | 3    |       |
| Yielded mechanical performance 220/230V          | hp      | 3    |       |
| Yielded mechanical performance 460/480V          | hp      | 5    |       |
| Yielded mechanical performance 575/600V          | hp      | 7.5  |       |

Contact rating of auxiliary contacts according to UL

A600 - P600

General USE

Contactor

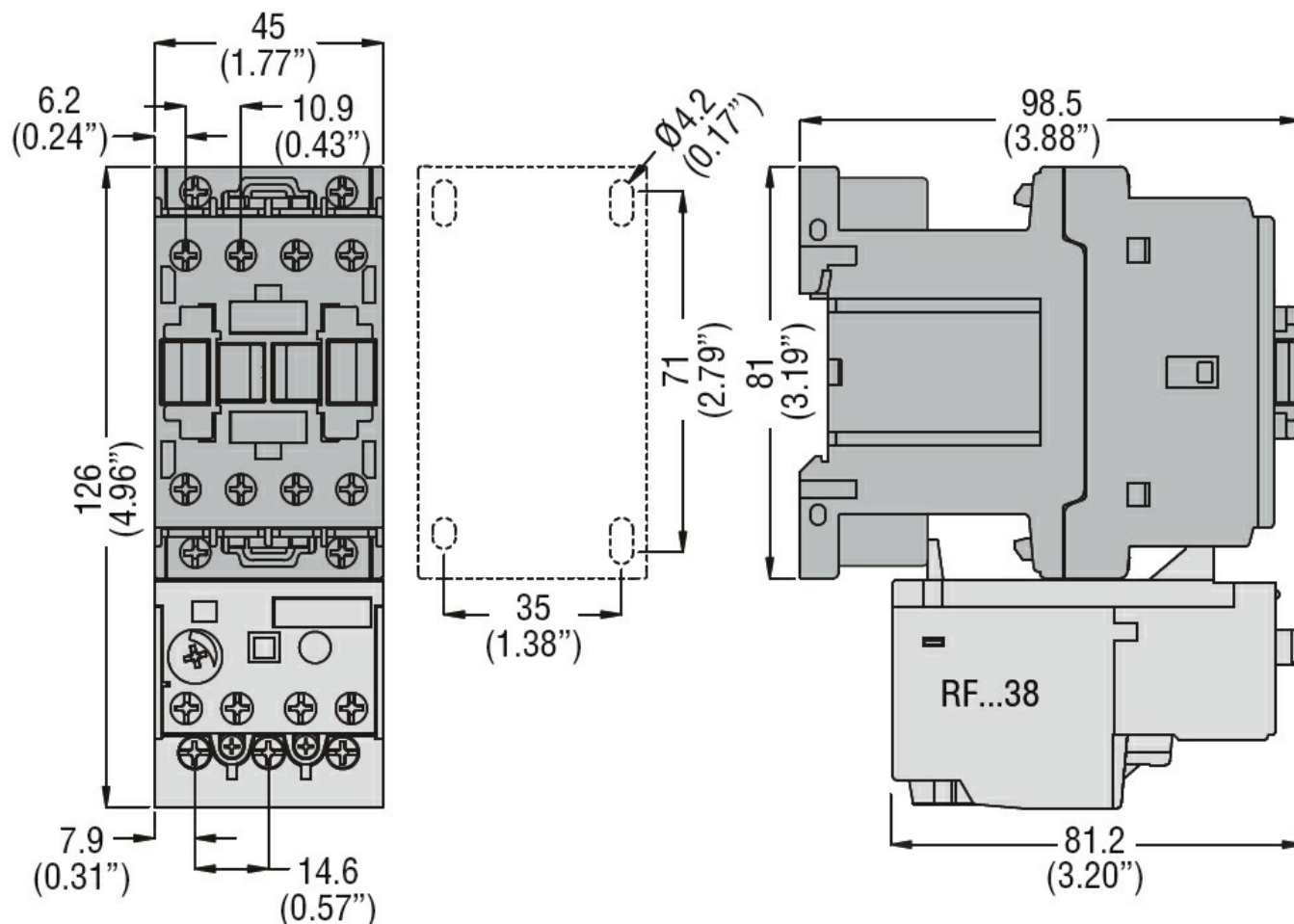
AC current A 25

Other features

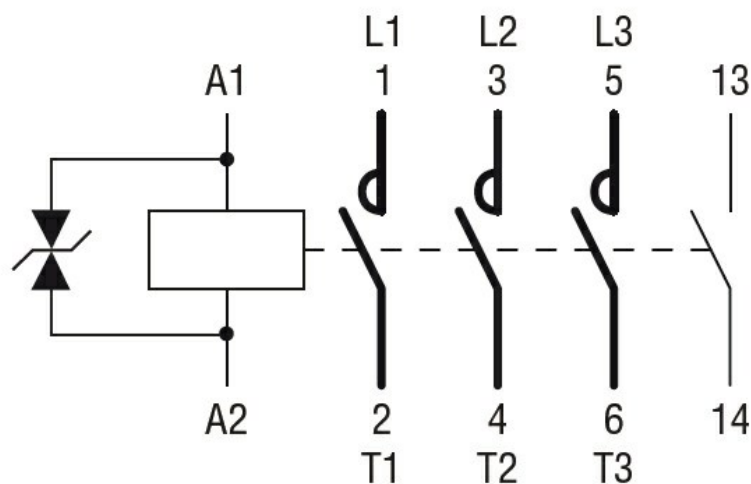
Pollution degree

3

Dimensions



Wiring diagrams



Certifications and compliance

Certifications

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

Compliance

CCC

cULus

EAC

ETIM 6 classification

EC000066 - Power contactor, AC switching