



Product designation

Power contactor

Product type designation

BG09

**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 $I_{th}$                             | A                                                  | 20     |
| Operational current $I_e$                                                      | AC-1 ( $\leq 40^\circ\text{C}$ )                   | A 20   |
|                                                                                | AC-1 ( $\leq 55^\circ\text{C}$ )                   | A 0    |
|                                                                                | AC-3 ( $\leq 440\text{V } \leq 55^\circ\text{C}$ ) | A 9    |
|                                                                                | AC-4 (400V)                                        | A 4    |
| Rated operational power AC-3 ( $T \leq 55^\circ\text{C}$ )                     | 230V                                               | kW 2.2 |
|                                                                                | 400V                                               | kW 4   |
|                                                                                | 415V                                               | kW 4.3 |
|                                                                                | 440V                                               | kW 4.5 |
|                                                                                | 500V                                               | kW 5   |
|                                                                                | 690V                                               | kW 5   |
| Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )                     | 230V                                               | kW 8   |
|                                                                                | 400V                                               | kW 14  |
|                                                                                | 500V                                               | kW 16  |
|                                                                                | 690V                                               | kW 22  |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$                                  | A 12   |
|                                                                                | 48V                                                | A 10   |
|                                                                                | 75V                                                | A 4    |
|                                                                                | 110V                                               | A 3    |
|                                                                                | 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 15   |
|                                                                                | 48V                                                | A 14   |
|                                                                                | 75V                                                | A 9    |
|                                                                                | 110V                                               | A 8    |
|                                                                                | 220V                                               | A —    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$                                  | A 16   |
|                                                                                | 48V                                                | A 16   |
|                                                                                | 75V                                                | A 10   |
|                                                                                | 110V                                               | A 10   |
|                                                                                | 220V                                               | A 2    |

|                                                                      |          |      |      |
|----------------------------------------------------------------------|----------|------|------|
| IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series      |          |      |      |
| ≤24V                                                                 | A        | 16   |      |
| 48V                                                                  | A        | 16   |      |
| 75V                                                                  | A        | 10   |      |
| 110V                                                                 | A        | 10   |      |
| 220V                                                                 | A        | 2    |      |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |          |      |      |
| ≤24V                                                                 | A        | 7    |      |
| 48V                                                                  | A        | 6    |      |
| 75V                                                                  | A        | 2    |      |
| 110V                                                                 | A        | 1    |      |
| 220V                                                                 | A        | –    |      |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |          |      |      |
| ≤24V                                                                 | A        | 8    |      |
| 48V                                                                  | A        | 8    |      |
| 75V                                                                  | A        | 5    |      |
| 110V                                                                 | A        | 4    |      |
| 220V                                                                 | A        | –    |      |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |          |      |      |
| ≤24V                                                                 | A        | 10   |      |
| 48V                                                                  | A        | 10   |      |
| 75V                                                                  | A        | 6    |      |
| 110V                                                                 | A        | 5    |      |
| 220V                                                                 | A        | 0,8  |      |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |          |      |      |
| ≤24V                                                                 | A        | 10   |      |
| 48V                                                                  | A        | 10   |      |
| 75V                                                                  | A        | 6    |      |
| 110V                                                                 | A        | 5    |      |
| 220V                                                                 | A        | 0,8  |      |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |          | A    | 96   |
| Protection fuse                                                      |          |      |      |
|                                                                      | gG (IEC) | A    | 20   |
|                                                                      | aM (IEC) | A    | 10   |
| Making capacity (RMS value)                                          |          | A    | 92   |
| Breaking capacity at voltage                                         |          |      |      |
|                                                                      | 440V     | A    | 72   |
|                                                                      | 500V     | A    | 72   |
|                                                                      | 690V     | A    | 72   |
| Resistance per pole (average value)                                  |          | m?   | 10   |
| Power dissipation per pole (average value)                           |          |      |      |
|                                                                      | Ith      | W    | 4    |
|                                                                      | AC3      | W    | 0.81 |
| Tightening torque for terminals                                      |          |      |      |
|                                                                      | min      | Nm   | 0.8  |
|                                                                      | max      | Nm   | 1    |
|                                                                      | min      | lbin | 9    |
|                                                                      | max      | lbin | 9    |
| Tightening torque for coil terminal                                  |          |      |      |
|                                                                      | min      | Nm   | 0.8  |
|                                                                      | max      | Nm   | 1    |
|                                                                      | min      | lbin | 9    |
|                                                                      | max      | lbin | 9    |

|                                                     |  |                 |                  |                       |
|-----------------------------------------------------|--|-----------------|------------------|-----------------------|
| Max number of wires simultaneously connectable      |  |                 | Nr.              | 2                     |
| Conductor section                                   |  |                 |                  |                       |
| AWG/Kcmil                                           |  |                 |                  |                       |
|                                                     |  | max             | 12               |                       |
| Flexible w/o lug conductor section                  |  |                 |                  |                       |
|                                                     |  | min             | mm <sup>2</sup>  | 0.75                  |
|                                                     |  | max             | mm <sup>2</sup>  | 2.5                   |
| Flexible c/w lug conductor section                  |  |                 |                  |                       |
|                                                     |  | min             | mm <sup>2</sup>  | 1.5                   |
|                                                     |  | max             | mm <sup>2</sup>  | 2.5                   |
| Flexible with insulated spade lug conductor section |  |                 |                  |                       |
|                                                     |  | min             | mm <sup>2</sup>  | 1.5                   |
|                                                     |  | max             | mm <sup>2</sup>  | 2.5                   |
| Power terminal protection according to IEC/EN 60529 |  |                 |                  | IP20 when wired       |
| Mechanical features                                 |  |                 |                  |                       |
| Operating position                                  |  |                 |                  |                       |
|                                                     |  |                 | normal allowable | Vertical plan ±30°    |
| Fixing                                              |  |                 |                  | Screw / DIN rail 35mm |
| Weight                                              |  |                 | g                | 180                   |
| Conductor section                                   |  |                 |                  |                       |
| AWG/kcmil conductor section                         |  |                 |                  |                       |
|                                                     |  | max             | 12               |                       |
| Auxiliary contact characteristics                   |  |                 |                  |                       |
| Thermal current I <sub>th</sub>                     |  |                 | A                | 10                    |
| IEC/EN 60947-5-1 designation                        |  |                 |                  | A600 - Q600           |
| Operating current AC15                              |  |                 |                  |                       |
|                                                     |  | 230V            | A                | 3                     |
|                                                     |  | 400V            | A                | 1.9                   |
|                                                     |  | 500V            | A                | 1.4                   |
| Operating current DC12                              |  |                 |                  |                       |
|                                                     |  | 110V            | A                | 2.9                   |
| Operating current DC13                              |  |                 |                  |                       |
|                                                     |  | 24V             | A                | 2.9                   |
|                                                     |  | 48V             | A                | 1.4                   |
|                                                     |  | 60V             | A                | 1.2                   |
|                                                     |  | 110V            | A                | 0.6                   |
|                                                     |  | 125V            | A                | 0.55                  |
|                                                     |  | 220V            | A                | 0.3                   |
|                                                     |  | 600V            | A                | 0.1                   |
| Operations                                          |  |                 |                  |                       |
| Mechanical life                                     |  |                 | cycles           | 20000000              |
| Electrical life                                     |  |                 | cycles           | 500000                |
| Safety related data                                 |  |                 |                  |                       |
| Performance level B10d according to EN/ISO 13489-1  |  |                 |                  |                       |
|                                                     |  | rated load      | cycles           | 500000                |
|                                                     |  | mechanical load | cycles           | 20000000              |
| Mirror contacts according to IEC/EN 60947-4-1       |  |                 |                  | yes                   |
| EMC compatibility                                   |  |                 |                  | yes                   |
| AC coil operating                                   |  |                 |                  |                       |
| Rated AC voltage at 60Hz                            |  |                 | V                | 120                   |
| AC operating voltage                                |  |                 |                  |                       |

of 60Hz coil powered at 60Hz  
pick-up

|     |     |     |
|-----|-----|-----|
| min | %Us | 75  |
| max | %Us | 115 |

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 | 30 |
| holding | VA | 4  |

of 50/60Hz coil powered at 60Hz

|         |    |    |
|---------|----|----|
| in-rush | VA | 25 |
| holding | VA | 3  |

of 60Hz coil powered at 60Hz

|         |    |    |
|---------|----|----|
| in-rush | VA | 30 |
| holding | VA | 4  |

Dissipation at holding ≤20°C 50Hz

|   |      |
|---|------|
| W | 0.95 |
|---|------|

Max cycles frequency

Mechanical operation

cycles/h 3600

Operating times

Average time for Us control

in AC

Closing NO

|     |    |    |
|-----|----|----|
| min | ms | 12 |
| max | ms | 21 |

Opening NO

|     |    |    |
|-----|----|----|
| min | ms | 9  |
| max | ms | 18 |

Closing NC

|     |    |    |
|-----|----|----|
| min | ms | 17 |
| max | ms | 26 |

Opening NC

|     |    |    |
|-----|----|----|
| min | ms | 7  |
| max | ms | 17 |

in DC

Closing NO

|     |    |    |
|-----|----|----|
| min | ms | 18 |
| max | ms | 25 |

Opening NO

|     |    |   |
|-----|----|---|
| min | ms | 2 |
| max | ms | 3 |

Closing NC

|     |    |   |
|-----|----|---|
| min | ms | 3 |
| max | ms | 5 |

Opening NC

|     |    |    |
|-----|----|----|
| min | ms | 11 |
| max | ms | 17 |

UL technical data

Full-load current (FLA) for three-phase AC motor

|         |   |     |
|---------|---|-----|
| at 480V | A | 7.6 |
| at 600V | A | 6.1 |

Yielded mechanical performance

for single-phase AC motor

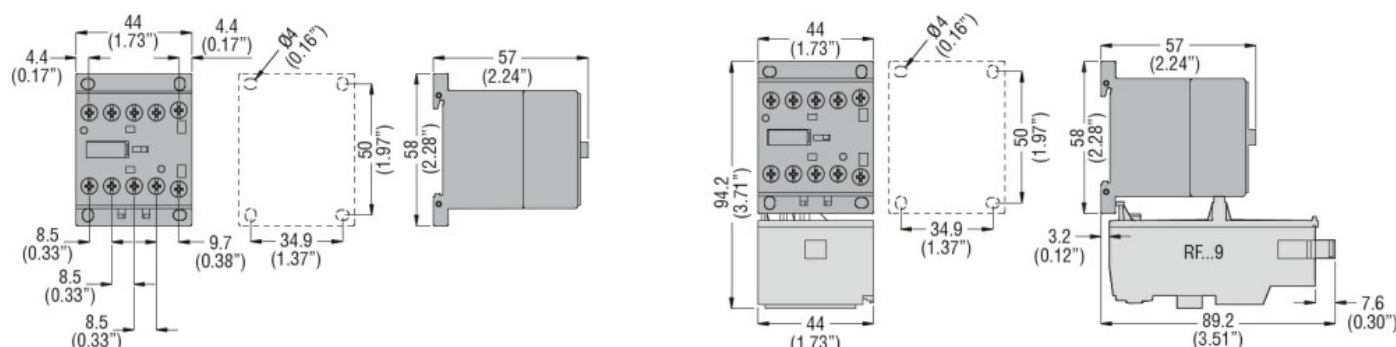
|                                                      |                       |                       |    |             |
|------------------------------------------------------|-----------------------|-----------------------|----|-------------|
|                                                      |                       | 110/120V              | HP | 0.5         |
|                                                      |                       | 230V                  | HP | 1.5         |
| for three-phase AC motor                             |                       |                       |    |             |
|                                                      |                       | 200/208V              | HP | 2           |
|                                                      |                       | 220/230V              | HP | 3           |
|                                                      |                       | 460/480V              | HP | 5           |
|                                                      |                       | 575/600V              | HP | 5           |
| General USE                                          |                       |                       |    |             |
|                                                      | Contactor             | AC current            | A  | 20          |
| 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  | 30          |
| Contact rating of auxiliary contacts according to UL |                       |                       |    | A600 - Q600 |
| 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

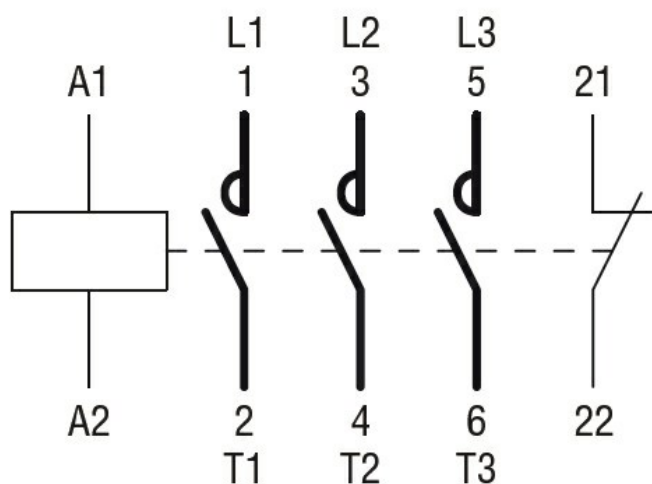
Pollution degree

3

## Dimensions



## Wiring diagrams



## Certifications and compliance

### Compliance

CSA C22.2 n° 60947-1

CSA C22.2 n° 60947-4-1

IEC/EN 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