



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 18   |
|                                                                                | AC-1 ( $\leq 70^\circ\text{C}$ )                   | A 15   |
|                                                                                | 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 $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series      |                   |      |      |
|                                                                                     | $\leq 24\text{V}$ | A    | 16   |
|                                                                                     | 48V               | A    | 16   |
|                                                                                     | 75V               | A    | 10   |
|                                                                                     | 110V              | A    | 10   |
|                                                                                     | 220V              | A    | 2    |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 1 poles in series |                   |      |      |
|                                                                                     | $\leq 24\text{V}$ | A    | 7    |
|                                                                                     | 48V               | A    | 6    |
|                                                                                     | 75V               | A    | 2    |
|                                                                                     | 110V              | A    | 1    |
|                                                                                     | 220V              | A    | –    |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 2 poles in series |                   |      |      |
|                                                                                     | $\leq 24\text{V}$ | A    | 8    |
|                                                                                     | 48V               | A    | 8    |
|                                                                                     | 75V               | A    | 5    |
|                                                                                     | 110V              | A    | 4    |
|                                                                                     | 220V              | A    | –    |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 3 poles in series |                   |      |      |
|                                                                                     | $\leq 24\text{V}$ | A    | 10   |
|                                                                                     | 48V               | A    | 10   |
|                                                                                     | 75V               | A    | 6    |
|                                                                                     | 110V              | A    | 5    |
|                                                                                     | 220V              | A    | 0,8  |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 4 poles in series |                   |      |      |
|                                                                                     | $\leq 24\text{V}$ | 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)                                                 |                   | mΩ   | 10   |
| Power dissipation per pole (average value)                                          |                   |      |      |
|                                                                                     | $I_{th}$          | W    | 4    |
|                                                                                     | AC-3              | 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 | I <sub>bin</sub> | 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 properly wired |

### Mechanical features

|                             |                  |   |                       |
|-----------------------------|------------------|---|-----------------------|
| Operating position          |                  |   |                       |
|                             | normal allowable |   | Vertical plan ±30°    |
| Fixing                      |                  |   | Screw / DIN rail 35mm |
| Weight                      |                  | g | 182                   |
| 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 50/60Hz         |         | V        | 230  |
| AC operating voltage                |         |          |      |
| of 50/60Hz coil powered at 50Hz     |         |          |      |
| pick-up                             | min     | %Us      | 75   |
|                                     | max     | %Us      | 115  |
| drop-out                            |         |          |      |
|                                     | min     | %Us      | 20   |
|                                     | max     | %Us      | 55   |
| of 50/60Hz coil powered at 60Hz     |         |          |      |
| pick-up                             | min     | %Us      | 80   |
|                                     | 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 |

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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  |
| Fuse class            |    | RK5 |

Contact rating of auxiliary contacts according to UL

A600 - Q600

## Ambient conditions

## Temperature

### Operating temperature

|     |    |     |
|-----|----|-----|
| min | °C | -50 |
| max | °C | +70 |

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Storage temperature

|     |    |     |
|-----|----|-----|
| min | °C | -60 |
| max | °C | +80 |

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Max altitude

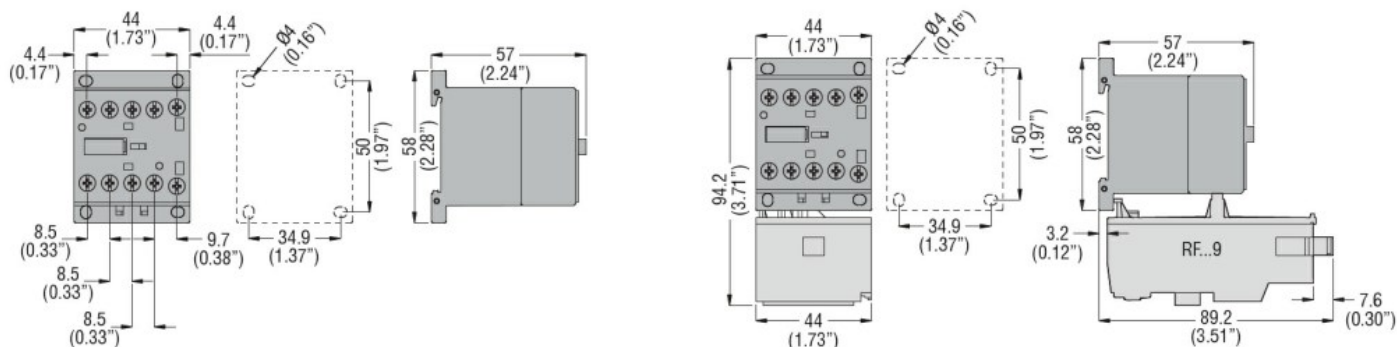
|   |      |
|---|------|
| m | 3000 |
|---|------|

## Resistance & Protection

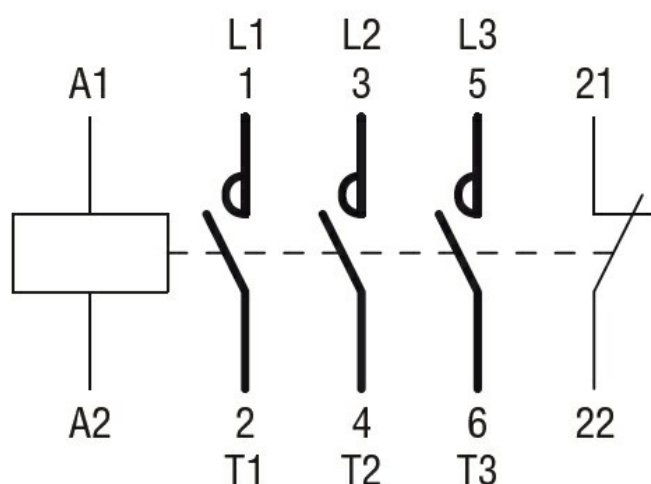
## Pollution degree

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