



Product designation

Power contactor

Product type designation

BGF09

### 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 160  |
|                                                                                | 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 |                                                   |        |

|                                                                      |          |      |      |
|----------------------------------------------------------------------|----------|------|------|
|                                                                      | ≤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                  | 1.1                   |
|                                                     |  | 125V             | A                  | 0.3                   |
|                                                     |  | 220V             | A                  | 0.1                   |
|                                                     |  | 600V             | A                  | 0.6                   |
| 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

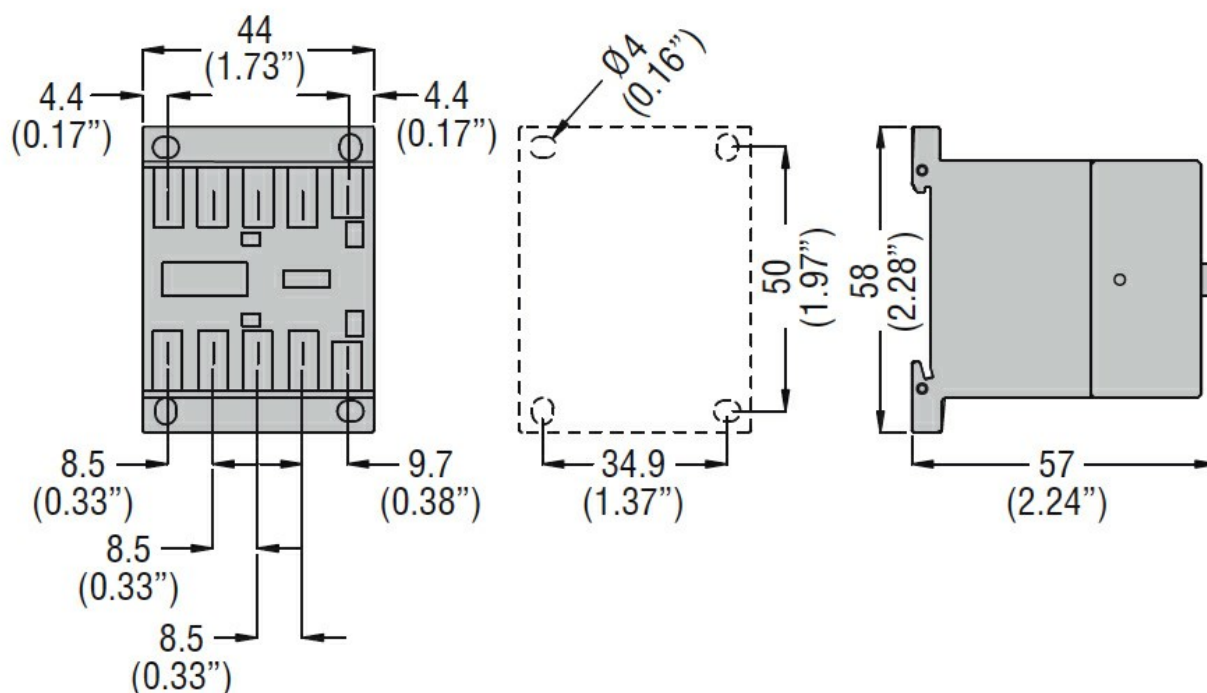
m 3000

## Resistance & Protection

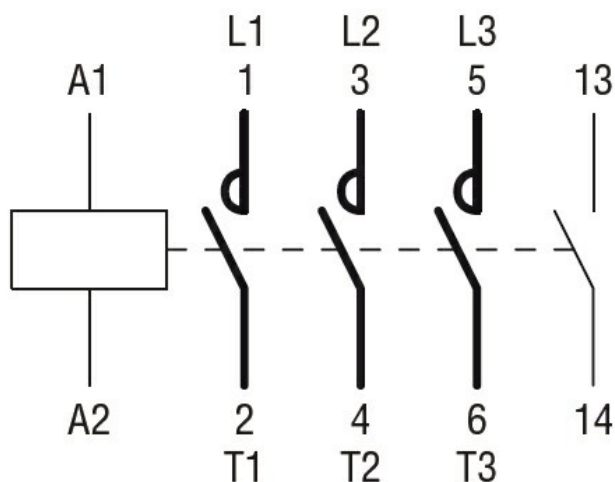
Pollution degree

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