



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<br>max                                                                                           | Hz<br>Hz<br>25<br>400                                                |
| IEC Conventional free air thermal current $I_{th}$                             | A                                                                                                    | 20                                                                   |
| Operational current $I_e$                                                      | AC-1 ( $\leq 40^\circ\text{C}$ )<br>AC-3 ( $\leq 440\text{V} \leq 55^\circ\text{C}$ )<br>AC-4 (400V) | A<br>A<br>A<br>20<br>9<br>4                                          |
| Rated operational power AC-3 ( $T \leq 55^\circ\text{C}$ )                     | 230V<br>400V<br>415V<br>440V<br>500V<br>690V                                                         | kW<br>kW<br>kW<br>kW<br>kW<br>kW<br>2.2<br>4<br>4.3<br>4.5<br>5<br>5 |
| Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )                     | 230V<br>400V<br>500V<br>690V                                                                         | kW<br>kW<br>kW<br>kW<br>8<br>14<br>16<br>22                          |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$<br>48V<br>75V<br>110V<br>220V                                                      | A<br>A<br>A<br>A<br>A<br>12<br>10<br>4<br>3<br>—                     |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series | $\leq 24\text{V}$<br>48V<br>75V<br>110V<br>220V                                                      | A<br>A<br>A<br>A<br>A<br>15<br>14<br>9<br>8<br>—                     |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$<br>48V<br>75V<br>110V<br>220V                                                      | A<br>A<br>A<br>A<br>A<br>16<br>16<br>10<br>10<br>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       |
| <b>Mechanical features</b>                          |                             |                 |                       |
| Operating position                                  | normal allowable            |                 | Vertical plan ±30°    |
| Fixing                                              |                             |                 | Screw / DIN rail 35mm |
| Weight                                              |                             | g               | 224                   |
| Conductor section                                   | AWG/kcmil conductor section | max             | 12                    |
| <b>Auxiliary contact characteristics</b>            |                             |                 |                       |
| 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                   |
| <b>Operations</b>                                   |                             |                 |                       |
| Mechanical life                                     |                             | cycles          | 20000000              |
| Electrical life                                     |                             | cycles          | 500000                |
| <b>Safety related data</b>                          |                             |                 |                       |
| 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                   |
| <b>DC coil operating</b>                            |                             |                 |                       |
| DC rated control voltage                            |                             | V               | 48                    |
| DC operating voltage                                | pick-up                     | min             | %U <sub>s</sub> 75    |

|          |     |     |     |
|----------|-----|-----|-----|
| drop-out | max | %Us | 115 |
|          | min | %Us | 10  |
|          | max | %Us | 25  |

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

|         |   |     |
|---------|---|-----|
| in-rush | W | 3.2 |
| holding | W | 3.2 |

#### 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

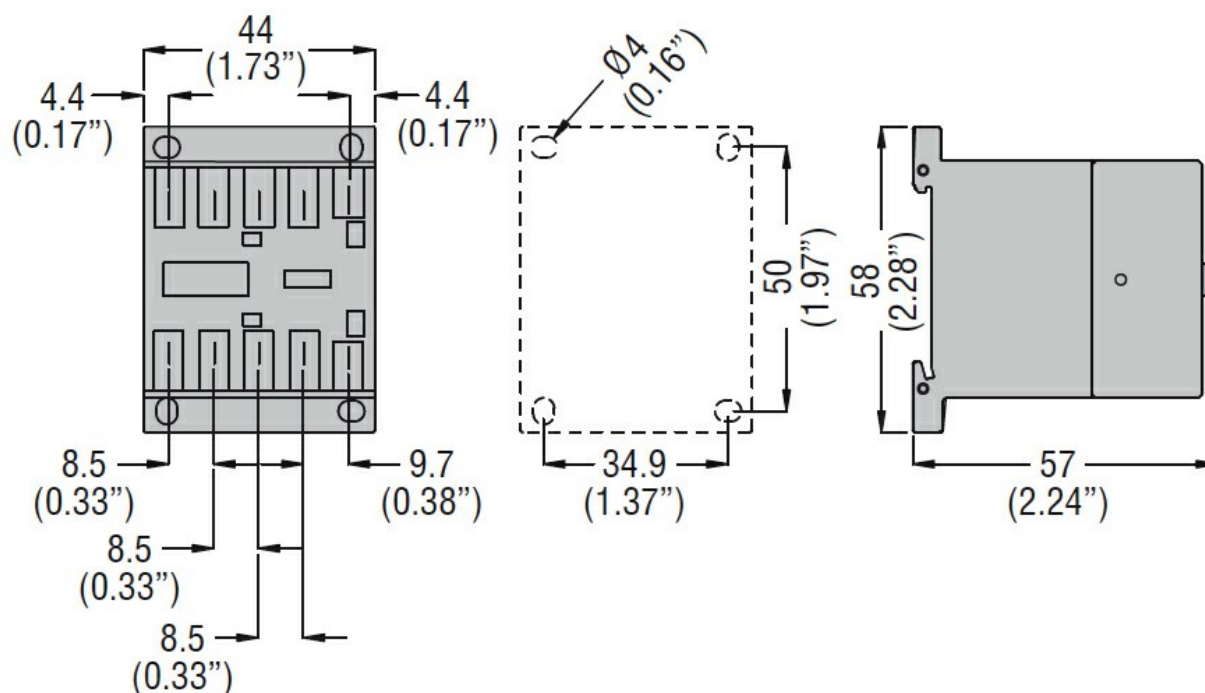
m 3000

#### Resistance & Protection

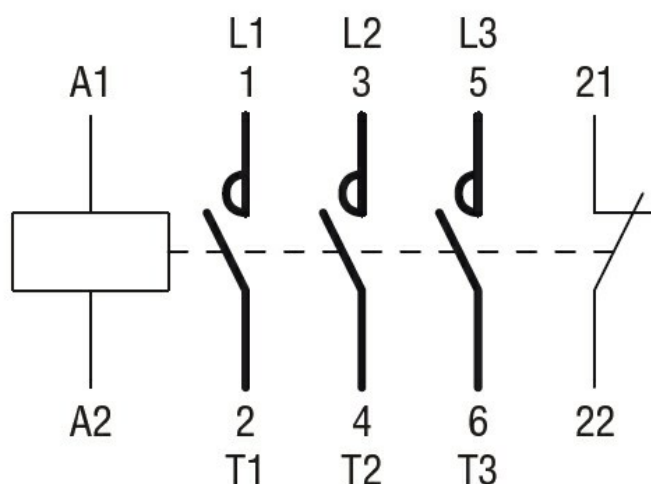
Pollution degree

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