



Product designation  
Product type designation

Power contactor  
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 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 <sub>e</sub> 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 I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | ≤24V             | A    |
| 48V  |  | A                | 6    |
| 75V  |  | A                | 2    |
| 110V   |  | A                | 1    |
| 220V   |  | A                | –    |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |  | ≤24V             | A    |
|  | 48V  | A                | 8    |
|  | 75V  | A                | 5    |
|  | 110V   | A                | 4    |
|  | 220V   | A                | –    |
|  | IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | ≤24V             | A    |
| 48V  |  | A                | 10   |
| 75V  |  | A                | 6    |
| 110V   |  | A                | 5    |
| 220V   |  | A                | 0,8  |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |  | ≤24V             | A    |
|  | 48V  | A                | 10   |
|  | 75V  | A                | 6    |
|  | 110V   | A                | 5    |
|  | 220V   | A                | 0,8  |
|  | Short-time allowable current for 10s (IEC/EN60947-1)                             |                  | A    |
| 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 <sub>th</sub>  | W                | 4    |
|  | AC-3   | W                | 0.81 |
|  |  |                  |      |
| Tightening torque for terminals  | min  | Nm               | 0.8  |
|  | max  | Nm               | 1    |
|  | min  | I <sub>bin</sub> | 9    |
|  | max  | I <sub>bin</sub> | 9    |
| Tightening torque for coil terminal  | min  | Nm               | 0.8  |
|  | max  | Nm               | 1    |
|  | min  | I <sub>bin</sub> | 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 |          |
| <b>Mechanical features</b>                          |                  |                          |          |
| Operating position                                  | normal allowable | Vertical plan ±30°       |          |
| Fixing  |                  | Screw / DIN rail 35mm    |          |
| Weight  | g                | 181                      |          |
| 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>AC coil operating</b>                            |                  |                          |          |
| 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 |

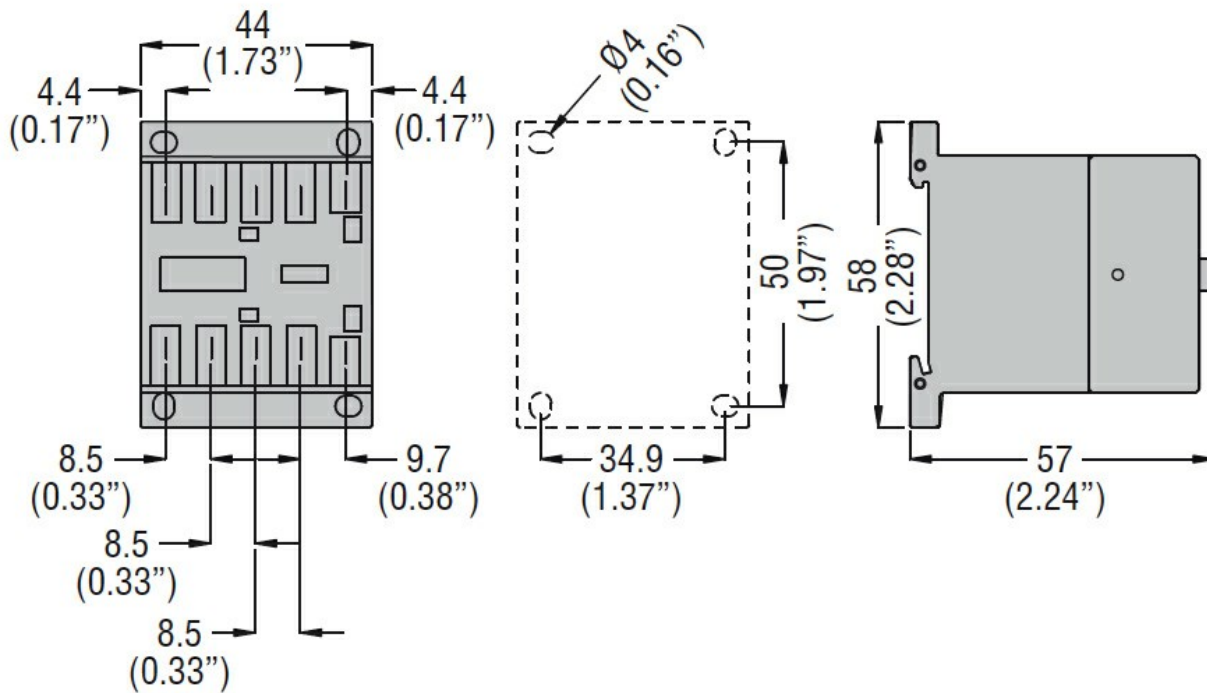
Closing NC

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

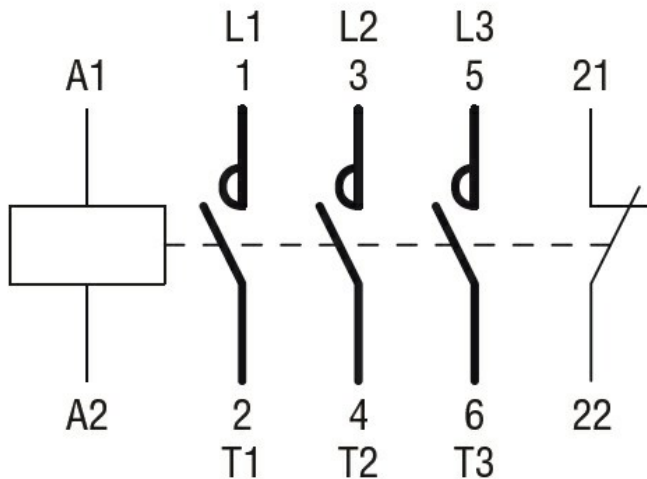
Opening NC

|     |    |    |
|-----|----|----|
| min | ms | 11 |
|-----|----|----|

|  |  |                       |    |             |
|--|--|-----------------------|----|-------------|
|  |  | max                   | ms | 17          |
| <b>UL technical data</b>                             |  |                       |    |             |
| 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 |
| <b>Ambient conditions</b>                            |  |                       |    |             |
| Temperature  |  |                       |    |             |
| Operating temperature                                |  |                       |    |             |
|  |  | min                   | °C | -50         |
|  |  | max                   | °C | +70         |
| Storage temperature                                  |  |                       |    |             |
|  |  | min                   | °C | -60         |
|  |  | max                   | °C | +80         |
| Max altitude   |  |                       |    |             |
|  |  |                       |    | m 3000      |
| <b>Resistance &amp; Protection</b>                   |  |                       |    |             |
| Pollution degree                                     |  |                       |    |             |
|  |  |                       |    | 3           |
| <b>Dimensions</b>                                    |  |                       |    |             |



### 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