



Product designation

Power contactor

Product type designation

BF09

Contact characteristics

| | | |
|--|--------------------|--------|
| Number of poles | Nr. | 4 |
| 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 | 25 |
| Operational current I_e | AC-1 (=40°C) | A 25 |
| | AC-1 (=55°C) | A 20 |
| | AC-1 (=70°C) | A 18 |
| | AC-3 (=440V =55°C) | A 9 |
| | AC-4 (400V) | A 4.9 |
| Rated operational power AC-1 (T=40°C) | 230V | kW 9.5 |
| | 400V | kW 16 |
| | 500V | kW 21 |
| | 690V | kW 27 |
| IEC max current I_e in DC1 with L/R = 1ms with 1 poles in series | =24V | A 15 |
| | 48V | A 13 |
| | 75V | A 12 |
| | 110V | A 6 |
| | 220V | A – |
| IEC max current I_e in DC1 with L/R = 1ms with 2 poles in series | =24V | A 18 |
| | 48V | A 18 |
| | 75V | A 17 |
| | 110V | A 12 |
| | 220V | A 1 |
| IEC max current I_e in DC1 with L/R = 1ms with 3 poles in series | =24V | A 20 |
| | 48V | A 20 |
| | 75V | A 20 |
| | 110V | A 15 |
| | 220V | A 10 |
| IEC max current I_e in DC1 with L/R = 1ms with 4 poles in series | =24V | A 20 |
| | 48V | A 20 |
| | 75V | A 20 |
| | 110V | A 16 |
| | 220V | A 12 |

IEC max current Ie in DC3-DC5 with L/R = 15ms with 1 poles in series

| | | |
|------|---|----|
| =24V | A | 10 |
| 48V | A | 9 |
| 75V | A | 8 |
| 110V | A | 2 |
| 220V | A | – |

IEC max current Ie in DC3-DC5 with L/R = 15ms with 2 poles in series

| | | |
|------|---|----|
| =24V | A | 13 |
| 48V | A | 11 |
| 75V | A | 10 |
| 110V | A | 7 |
| 220V | A | 2 |

IEC max current Ie in DC3-DC5 with L/R = 15ms with 3 poles in series

| | | |
|------|---|----|
| =24V | A | 15 |
| 48V | A | 15 |
| 75V | A | 13 |
| 110V | A | 11 |
| 220V | A | 6 |

IEC max current Ie in DC3-DC5 with L/R = 15ms with 4 poles in series

| | | |
|------|---|----|
| =24V | A | 15 |
| 48V | A | 15 |
| 75V | A | 15 |
| 110V | A | 12 |
| 220V | A | 7 |

Short-time allowable current for 10s (IEC/EN60947-1)

| | |
|---|-----|
| A | 150 |
|---|-----|

Protection fuse

| | | |
|----------|---|----|
| gG (IEC) | A | 25 |
| aM (IEC) | A | 10 |

Making capacity (RMS value)

| | |
|---|----|
| A | 90 |
|---|----|

Breaking capacity at voltage

| | | |
|------|---|----|
| 440V | A | 72 |
| 500V | A | 72 |
| 690V | A | 71 |

Resistance per pole (average value)

| | |
|----|-----|
| m? | 2.5 |
|----|-----|

Power dissipation per pole (average value)

| | | |
|-----|---|-----|
| Ith | W | 1.6 |
| AC3 | W | 0.2 |

Tightening torque for terminals

| | | |
|-----|------|-----|
| min | Nm | 1.5 |
| max | Nm | 1.8 |
| min | lbin | 1.1 |
| max | lbin | 1.5 |

Tightening torque for coil terminal

| | | |
|-----|------|------|
| min | Nm | 0.8 |
| max | Nm | 1 |
| min | lbin | 0.8 |
| max | lbin | 0.74 |

Max number of wires simultaneously connectable

| | |
|-----|---|
| Nr. | 2 |
|-----|---|

Conductor section

AWG/Kcmil

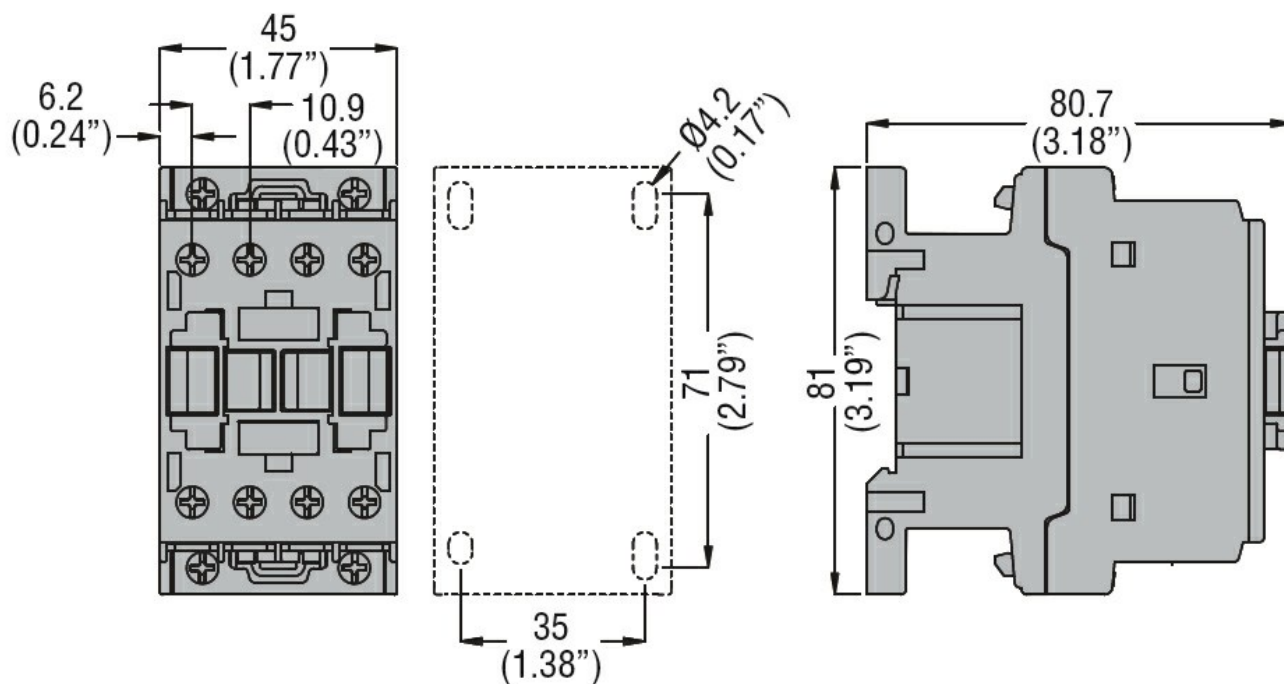
| | |
|-----|----|
| max | 10 |
|-----|----|

Flexible w/o lug conductor section

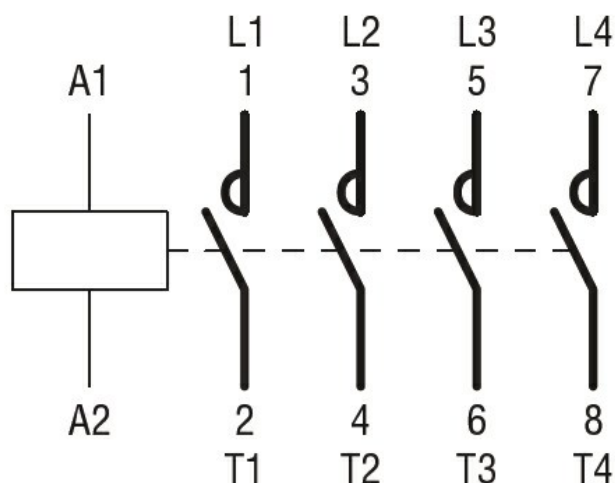
| | | |
|-----|-----------------|---|
| min | mm ² | 1 |
|-----|-----------------|---|

| | | | |
|---|----------------------------|-----------------|-----------------------|
| | max | mm ² | 6 |
| Flexible c/w lug conductor section | min | mm ² | 1 |
| | max | mm ² | 4 |
| Flexible with insulated spade lug conductor section | min | mm ² | 1 |
| | max | mm ² | 4 |
| 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 | 356 |
| Conductor section | | | |
| AWG/kcmil conductor section | max | | 10 |
| Operations | | | |
| Mechanical life | | cycles | 20000000 |
| Electrical life | | cycles | 2000000 |
| Safety related data | | | |
| Performance level B10d according to EN/ISO 13489-1 | rated load mechanical load | cycles | 2000000 |
| | | 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 | 80 |
| | max | %Us | 110 |
| drop-out | min | %Us | 20 |
| | max | %Us | 55 |
| of 50/60Hz coil powered at 60Hz | | | |
| pick-up | min | %Us | 85 |
| | max | %Us | 110 |
| drop-out | min | %Us | 20 |
| | max | %Us | 55 |
| AC average coil consumption at 20°C | | | |
| of 50/60Hz coil powered at 50Hz | in-rush holding | VA | 75 |
| | | VA | 9 |
| of 50/60Hz coil powered at 60Hz | in-rush holding | VA | 70 |
| | | VA | 6.5 |
| of 60Hz coil powered at 60Hz | in-rush holding | VA | 75 |
| | | VA | 9 |

| | | | |
|--|---------------------------|----------|-------|
| Dissipation at holding =20°C 50Hz | | W | 2.5 |
| Max cycles frequency | | | |
| Mechanical operation | | cycles/h | 3600 |
| Operating times | | | |
| Average time for Us control in AC | | | |
| | Closing NO | min | ms 8 |
| | | max | ms 24 |
| | Opening NO | min | ms 10 |
| | | max | ms 20 |
| | Closing NC | min | ms 14 |
| | | max | ms 28 |
| | Opening NC | min | ms 7 |
| | | max | ms 18 |
| UL technical data | | | |
| Full-load current (FLA) for three-phase AC motor | | | |
| | at 480V | A | 7.6 |
| | at 600V | A | 0.375 |
| Yielded mechanical performance | | | |
| | for single-phase AC motor | | |
| | 110/120V | HP | 0.75 |
| | 230V | HP | 2 |
| | for three-phase AC motor | | |
| | 200/208V | HP | 3 |
| | 220/230V | HP | 3 |
| | 460/480V | HP | 5 |
| | 575/600V | HP | 7.5 |
| General USE | | | |
| | Contactor | | |
| | AC current | A | 25 |
| 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 | 60 |
| 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