



| | | | |
|---|---|-----|-----|
| 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 ($\leq 40^{\circ}\text{C}$) | A | 25 |
| | AC-1 ($\leq 55^{\circ}\text{C}$) | A | 20 |
| | AC-1 ($\leq 70^{\circ}\text{C}$) | A | 18 |
| | AC-3 ($\leq 440\text{V} \leq 55^{\circ}\text{C}$) | A | 9 |
| | AC-4 (400V) | A | 4.9 |
| Rated operational power AC-1 ($T \leq 40^{\circ}\text{C}$) | | | |
| | 230V | kW | 9.5 |
| | 400V | kW | 16 |
| | 500V | kW | 21 |
| | 690V | kW | 27 |
| IEC max current I _e in DC1 with L/R $\leq 1\text{ms}$ with 1 poles in series | | | |
| | $\leq 24\text{V}$ | A | 15 |
| | 48V | A | 13 |
| | 75V | A | 12 |
| | 110V | A | 6 |
| | 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 | 18 |
| | 48V | A | 18 |
| | 75V | A | 17 |
| | 110V | A | 12 |
| | 220V | A | 1 |
| IEC max current I _e in DC1 with L/R $\leq 1\text{ms}$ with 3 poles in series | | | |
| | $\leq 24\text{V}$ | A | 20 |
| | 48V | A | 20 |
| | 75V | A | 20 |
| | 110V | A | 15 |
| | 220V | A | 10 |
| IEC max current I _e in DC1 with L/R $\leq 1\text{ms}$ with 4 poles in series | | | |
| | $\leq 24\text{V}$ | A | 20 |
| | 48V | A | 20 |
| | 75V | A | 20 |
| | 110V | A | 16 |
| | 220V | A | 12 |

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 | 10 |
| 48V | A | 9 |
| 75V | A | 8 |
| 110V | A | 2 |
| 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 | 13 |
| 48V | A | 11 |
| 75V | A | 10 |
| 110V | A | 7 |
| 220V | A | 2 |

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 | 15 |
| 48V | A | 15 |
| 75V | A | 13 |
| 110V | A | 11 |
| 220V | A | 6 |

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 | 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) $\text{m}\Omega$ 2.5

Power dissipation per pole (average value)

| | | |
|-----------------|---|-----|
| I _{th} | W | 1.6 |
| AC-3 | W | 0.2 |

Tightening torque for terminals

| | | |
|-----|------------------|-----|
| min | Nm | 1.5 |
| max | Nm | 1.8 |
| min | I _{bin} | 1.1 |
| max | I _{bin} | 1.5 |

Tightening torque for coil terminal

| | | |
|-----|------------------|------|
| min | Nm | 0.8 |
| max | Nm | 1 |
| min | I _{bin} | 0.8 |
| max | I _{bin} | 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 properly wired |
| Mechanical features | | | |
| Operating position | normal | Vertical plan | |
| | allowable | ±30° | |
| Fixing | | Screw / DIN rail | |
| | | 35mm | |
| Weight | g | 362 | |
| Operations | | | |
| Mechanical life | cycles | 20000000 | |
| Electrical life | cycles | 2000000 | |
| Safety related data | | | |
| Performance level B10d according to EN/ISO 13489-1 | | | |
| | rated load | cycles | 2000000 |
| | mechanical load | cycles | 20000000 |
| EMC compatibility | | yes | |
| AC coil operating | | | |
| Rated AC voltage at 50/60Hz | V | 24 | |
| 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 | VA | 75 | |
| holding | VA | 9 | |
| of 50/60Hz coil powered at 60Hz | | | |
| in-rush | VA | 70 | |
| holding | VA | 6.5 | |
| of 60Hz coil powered at 60Hz | | | |
| in-rush | VA | 75 | |
| holding | 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

Rated operational voltage AC (UL) V 600

Full-load current (FLA) for three-phase AC motor

| | | |
|---------|---|-----|
| at 480V | A | 7.6 |
| at 600V | A | 9 |

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 |

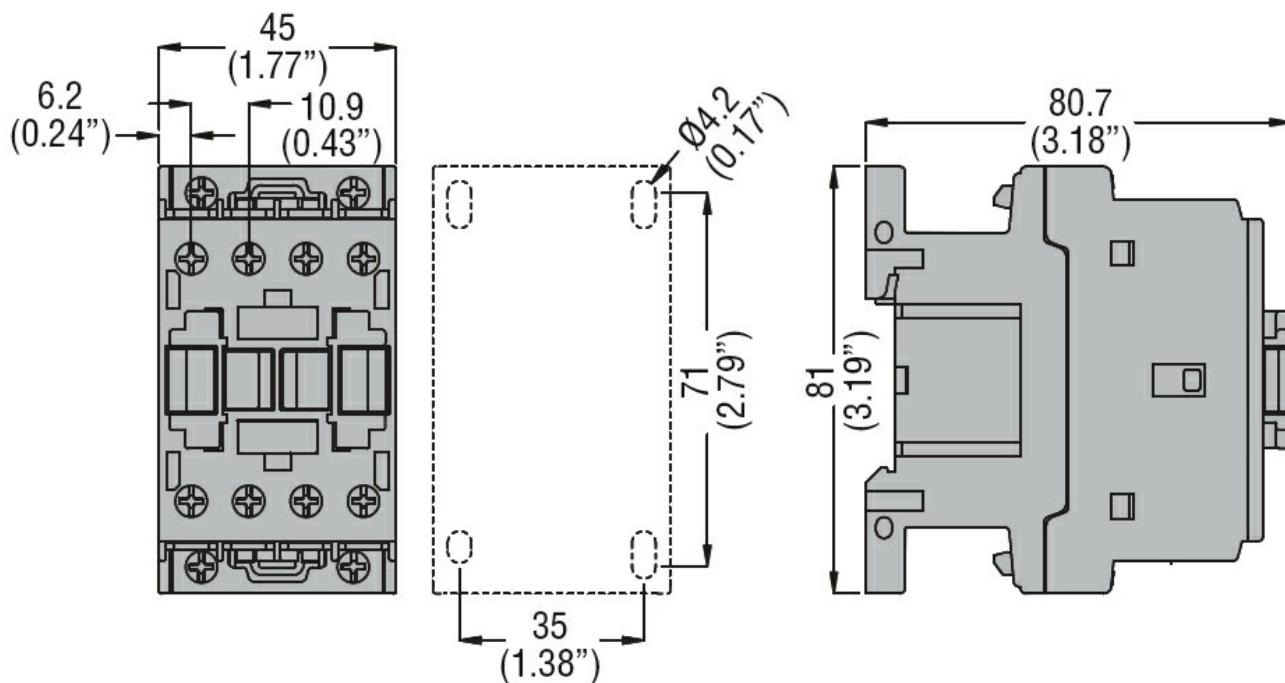
Max altitude

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

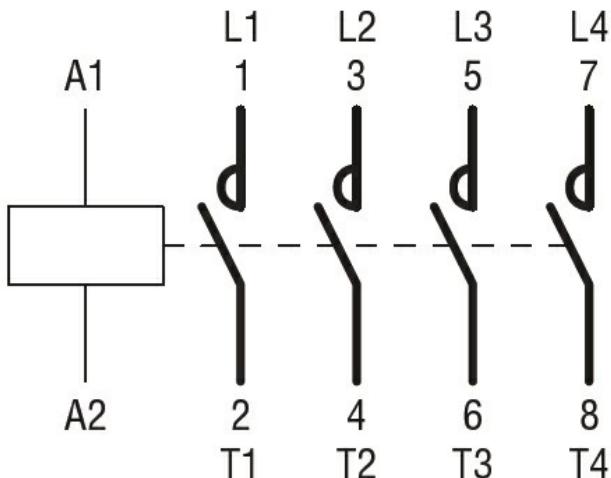
Resistance & Protection
Pollution degree

| |
|---|
| 3 |
|---|

Dimensions



Wiring diagrams



Certifications and compliance

Compliance

CSA C22.2 n° 60947-1
CSA C22.2 n° 60947-4-1
IEC/EN/BS 60947-1
IEC/EN/BS 60947-4-1
UL 60947-1
UL 60947-4-1

Certificates

CCC
cULus
EAC

ETIM classification

ETIM 8.0

EC000066 -
Power contactor,
AC switching