



| | | | |
|---|--------------------|-----|-----|
| Product designation | Power contactor | | |
| Product type designation | BF09 | | |
| 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 | 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-3 (T=55°C) | 230V | kW | 2.2 |
| | 400V | kW | 4.2 |
| | 415V | kW | 4.5 |
| | 440V | kW | 4.8 |
| | 500V | kW | 5.5 |
| | 690V | kW | 7.5 |
| 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 I _e 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 I _e 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 I _e 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 I _e 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) | | | |
| | I _{th} | W | 1.6 |
| | AC3 | 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 wired |
| Mechanical features | | | |
| Operating position | normal allowable | | Vertical plan ±30° |
| Fixing | | | Screw / DIN rail 35mm |
| Weight | | g | 352 |
| Conductor section | | | |
| AWG/kcmil conductor section | max | | 10 |
| Auxiliary contact characteristics | | | |
| Thermal current I _{th} | | A | 10 |
| IEC/EN 60947-5-1 designation | | | A600 - P600 |
| Operating current AC15 | 230V | A | 3 |
| | 400V | A | 1.9 |
| | 500V | A | 1.4 |
| Operating current DC12 | 110V | A | 5.7 |
| Operating current DC13 | 24V | A | 5.7 |
| | 48V | A | 2.9 |
| | 60V | A | 2.3 |
| | 110V | A | 1.25 |
| | 125V | A | 1.1 |
| | 220V | A | 0.55 |
| | 600V | A | 0.2 |
| 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 |
| Mirror contacts according to IEC/EN 60947-4-1 | | | yes |
| EMC compatibility | | | yes |
| AC coil operating | | | |
| Rated AC voltage at 60Hz | | V | 230 |

AC operating voltage

of 60Hz coil powered at 60Hz
pick-up

| | | |
|-----|-----|-----|
| min | %Us | 80 |
| max | %Us | 110 |

drop-out

| | | |
|-----|-----|----|
| min | %Us | 20 |
| max | %Us | 55 |

AC average coil consumption at 20°C

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

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 |
|------------|---|----|

Auxiliary contacts

| | | |
|------------|---|-----|
| AC voltage | V | 600 |
| AC current | A | 10 |
| DC voltage | V | 250 |
| DC current | A | 1 |

Short-circuit protection fuse, 600V

High fault

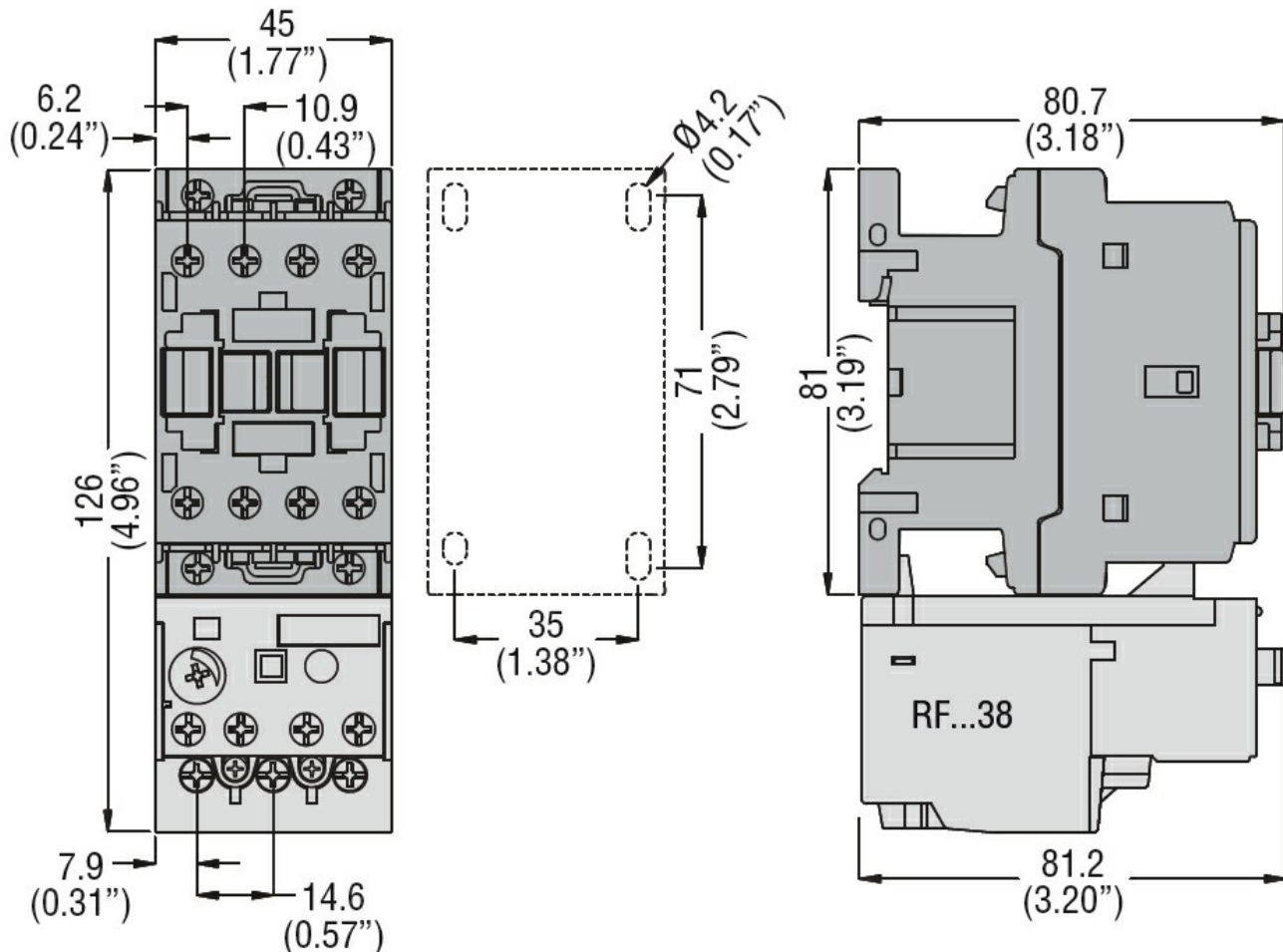
| | | |
|-----------------------|----|-----|
| Short circuit current | kA | 100 |
|-----------------------|----|-----|

| | | | |
|--|-----------------------|----|-------------|
| | Fuse rating | A | 30 |
| | Fuse class | | J |
| Standard fault | Short circuit current | kA | 5 |
| | Fuse rating | A | 60 |
| Contact rating of auxiliary contacts according to UL | | | A600 - P600 |
| Ambient conditions | | | |
| Temperature | | | |
| Operating temperature | | | |
| | min | °C | -50 |
| | max | °C | 70 |
| Storage temperature | | | |
| | min | °C | -60 |
| | max | °C | 80 |
| Max altitude | | m | 3000 |

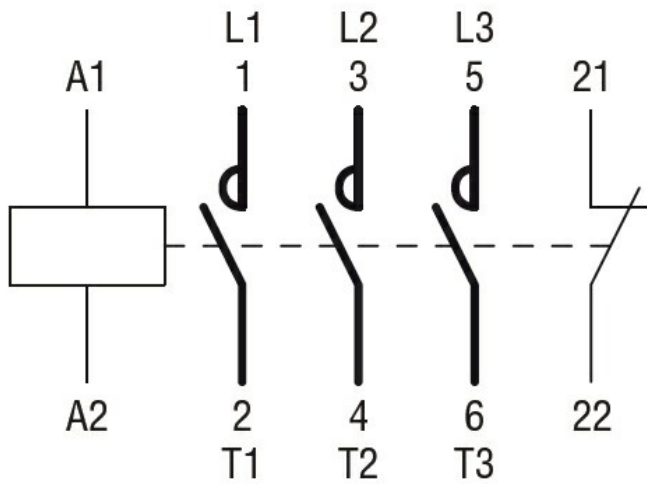
Resistance & Protection

| | |
|------------------|---|
| 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