



Product designation
Product type designation

Power contactor
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 | 490 |
| 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 |
| DC coil operating | | | |
| DC rated control voltage | | V | 24 |

| | | | |
|----------------------|-----|-----|-----|
| DC operating voltage | | | |
| pick-up | min | %Us | 70 |
| | max | %Us | 125 |
| drop-out | | | |
| | min | %Us | 10 |
| | max | %Us | 40 |

| | | | |
|--------------------------------|---------|---|-----|
| Average coil consumption =20°C | | | |
| | in-rush | W | 5.4 |
| | holding | W | 5.4 |

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 |
| in DC | | | |
| Closing NO | min | ms | 54 |
| | max | ms | 66 |
| Opening NO | min | ms | 14 |
| | max | ms | 17 |
| Closing NC | min | ms | 24 |
| | max | ms | 30 |
| Opening NC | min | ms | 47 |
| | max | ms | 57 |

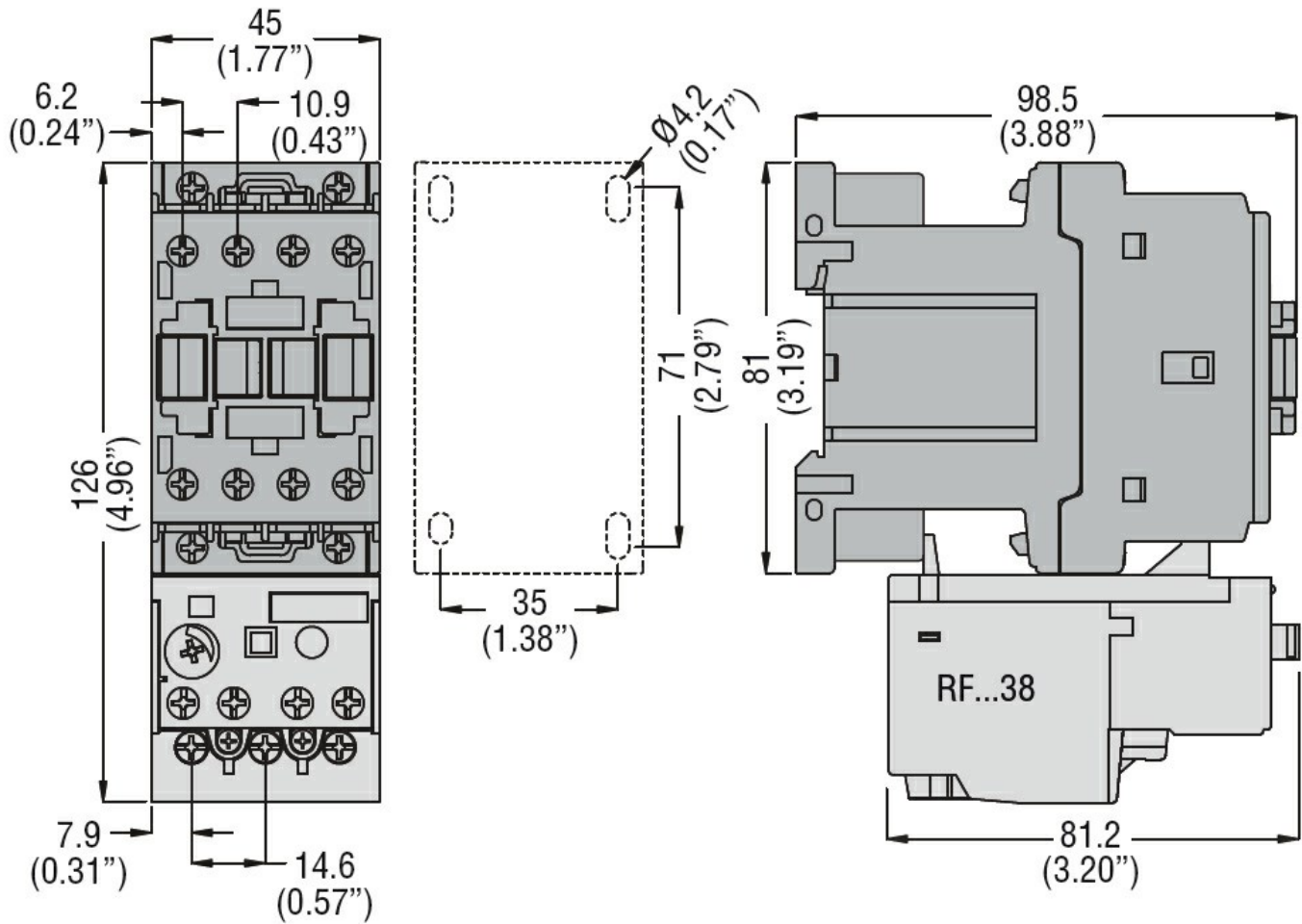
UL technical data

| | | | |
|--|---------|---|-------|
| Full-load current (FLA) for three-phase AC motor | | | |
| | at 480V | A | 7.6 |
| | at 600V | A | 0.375 |

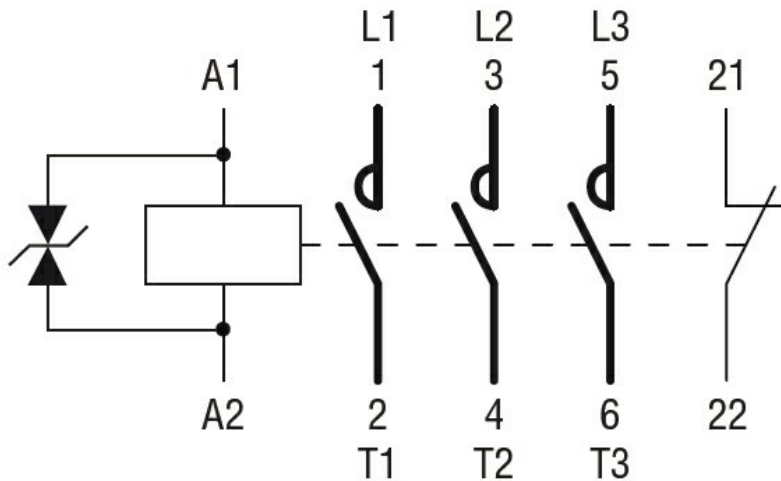
| | | | |
|--------------------------------|----------|----|------|
| Yielded mechanical performance | | | |
| for single-phase AC motor | | | |
| | 110/120V | HP | 0.75 |
| | 230V | HP | 2 |
| for three-phase AC motor | | | |
| | 200/208V | HP | 3 |
| | 220/230V | HP | 3 |
| | 460/480V | HP | 5 |
| | 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 | | | |
| Impact resistance | | | "" |
| 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