



Product designation

Power contactor

Product type designation

BF12

Contact characteristics

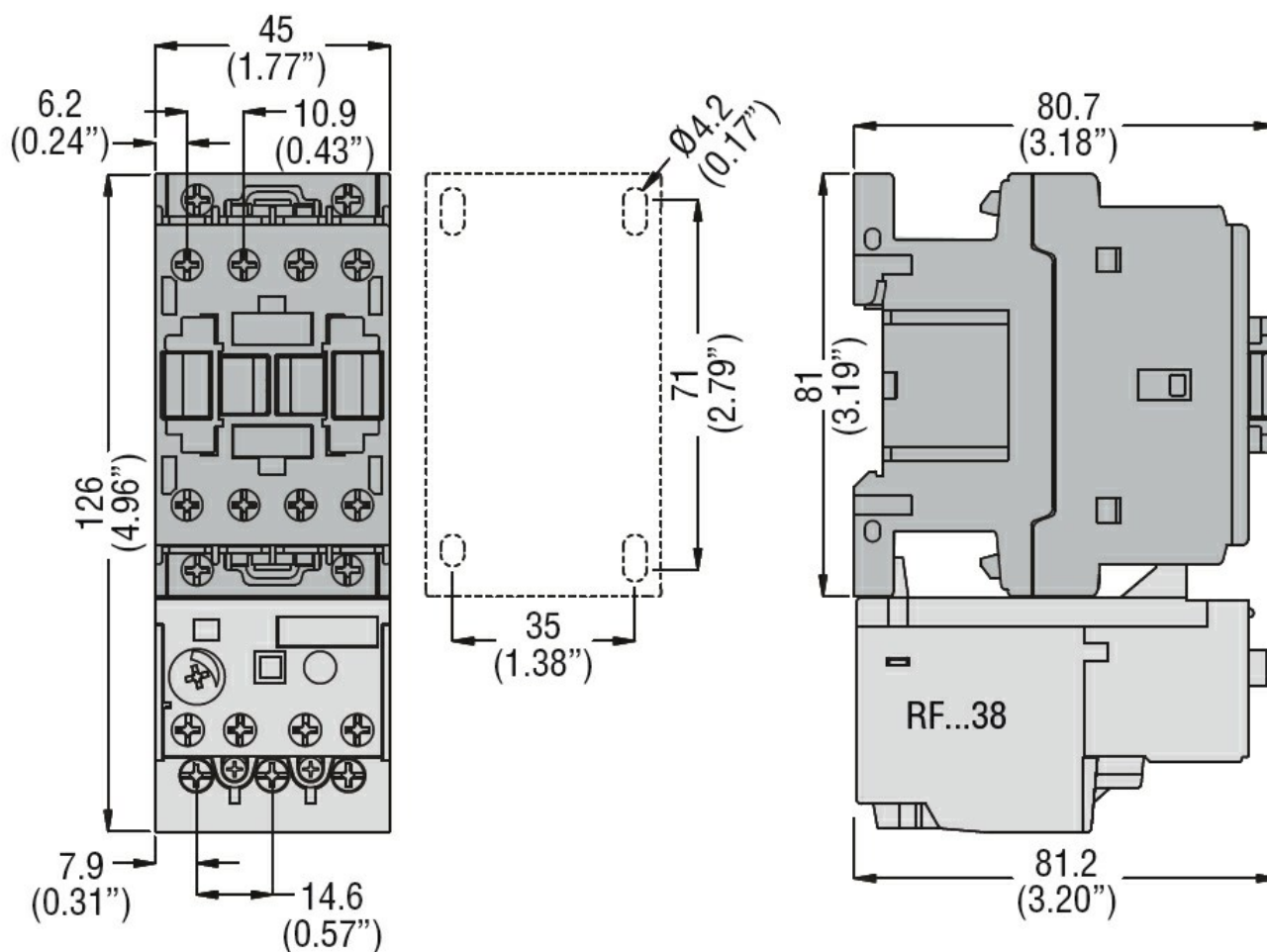
| | | |
|--|--|--------|
| Number of poles | Nr. | 3 |
| Rated insulation voltage U_i IEC/EN | V | 690 |
| Rated impulse withstand voltage U_{imp} | kV | 6 |
| Operational frequency | min | Hz 25 |
| | max | Hz 400 |
| IEC Conventional free air thermal current I_{th} | A | 28 |
| Operational current I_e | AC-1 ($\leq 40^\circ\text{C}$) | A 28 |
| | AC-1 ($\leq 55^\circ\text{C}$) | A 23 |
| | AC-1 ($\leq 70^\circ\text{C}$) | A 20 |
| | AC-3 ($\leq 440\text{V } \leq 55^\circ\text{C}$) | A 12 |
| | AC-4 (400V) | A 7.9 |
| Rated operational power AC-3 ($T \leq 55^\circ\text{C}$) | 230V | kW 3.2 |
| | 400V | kW 5.7 |
| | 415V | kW 6.2 |
| | 440V | kW 5.5 |
| | 500V | kW 5 |
| | 690V | kW 5 |
| Rated operational power AC-1 ($T \leq 40^\circ\text{C}$) | 230V | kW 10 |
| | 400V | kW 18 |
| | 500V | kW 23 |
| | 690V | kW 32 |
| IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$ | A 17 |
| | 48V | A 15 |
| | 75V | A 13 |
| | 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 20 |
| | 48V | A 20 |
| | 75V | A 18 |
| | 110V | A 13 |
| | 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 22 |
| | 48V | A 22 |
| | 75V | A 20 |
| | 110V | A 16 |

| | | | |
|---|-------------------|------|-----|
| | 220V | A | 11 |
| 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 | 12 |
| | 48V | A | 11 |
| | 75V | A | 10 |
| | 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 | 15 |
| | 48V | A | 13 |
| | 75V | A | 12 |
| | 110V | A | 8 |
| | 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 | 18 |
| | 48V | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| | 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 | 16 |
| | 220V | A | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | A | 150 |
| Protection fuse | | | |
| | gG (IEC) | A | 32 |
| | aM (IEC) | A | 12 |
| Making capacity (RMS value) | | A | 120 |
| Breaking capacity at voltage | | | |
| | 440V | A | 96 |
| | 500V | A | 96 |
| | 690V | A | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | |
| | I_{th} | W | 2 |
| | AC-3 | W | 0.4 |
| 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 |

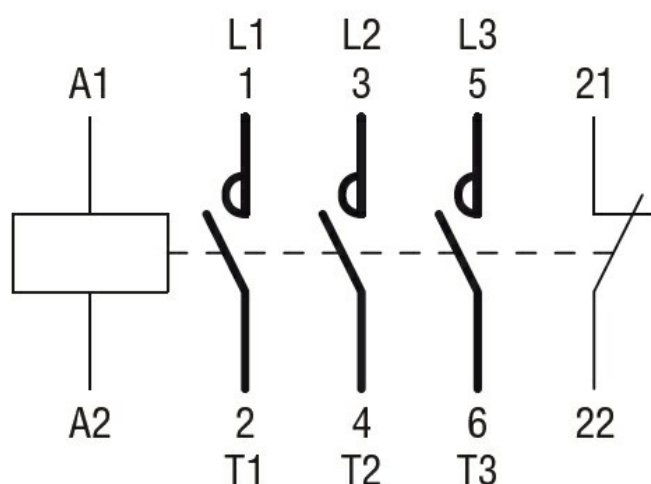
| | | | |
|---|------------------|------------------|------------------------------|
| | max | I _{bin} | 0.74 |
| Max number of wires simultaneously connectable | | Nr. | 2 |
| Conductor section | | | |
| AWG/Kcmil | max | | 10 |
| Flexible w/o lug conductor section | min | mm ² | 1 |
| | max | mm ² | 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 allowable | | Vertical plan ±30° |
| Fixing | | | Screw / DIN rail 35mm |
| Weight | | g | 364 |
| 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 | 48 |
| 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 | | | |
| Rated operational voltage AC (UL) | | V | 600 |
| Full-load current (FLA) for three-phase AC motor | | | |
| | at 480V | A | 11 |
| | at 600V | A | 11 |
| Yielded mechanical performance | | | |
| for single-phase AC motor | | | |
| | 110/120V | HP | 1 |
| | 230V | HP | 2 |
| for three-phase AC motor | | | |
| | 200/208V | HP | 5 |
| | 220/230V | HP | 5 |
| | 460/480V | HP | 7.5 |
| | 575/600V | HP | 10 |
| General USE | | | |
| Contactor | AC current | A | 28 |
| | 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 70 |
| 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