



| Product designation | | | Power contactor |
|---|--------------------|-----|-----------------|
| Product type designation | | | BF12 |
| Contact characteristics | | | • |
| Number of poles | | Nr. | 3 |
| Rated insulation voltage Ui IEC/EN | | V | 690 |
| Rated impulse withstand voltage Uimp | | kV | 6 |
| Operational frequency | _ | | |
| | min | Hz | 25 |
| | max | Hz | 400 |
| IEC Conventional free air thermal current Ith | | Α | 28 |
| Operational current le | | | |
| | AC-1 (≤40°C) | Α | 28 |
| | AC-1 (≤55°C) | Α | 23 |
| | AC-1 (≤70°C) | Α | 20 |
| | AC-3 (≤440V ≤55°C) | Α | 12 |
| | AC-4 (400V) | Α | 7.9 |
| Rated operational power AC-3 (T≤55°C) | | | |
| | 230V | kW | 3.2 |
| | 400V | kW | 5.7 |
| | 415V | kW | 6.2 |
| | 440V | kW | 5.5 |
| | 500V | kW | 5 |
| 7 | 690V | kW | 5 |
| Rated operational power AC-1 (T≤40°C) | | | |
| | 230V | kW | 10 |
| | 400V | kW | 18 |
| | 500V | kW | 23 |
| | 690V | kW | 32 |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | | | |
| | ≤24V | Α | 17 |
| | 48V | Α | 15 |
| | 75V | Α | 13 |
| | 110V | Α | 6 |
| | 220V | Α | _ |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 18 |
| | 110V | Α | 13 |
| | 220V | Α | 1 |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | | | |
| | ≤24V | Α | 22 |
| | 48V | Α | 22 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | | | |





| | 220V | Α | 11 |
|---|----------|------|---------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | _ |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| · | ≤24V | Α | 15 |
| | 48V | Α | 13 |
| | 75V | Α | 12 |
| | 110V | Α | 8 |
| | 220V | A | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | 220 V | | |
| | ≤24V | Α | 18 |
| | 48V | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| | 220V | A | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | 220 V | ^ | U |
| IEC Max current le in DC3-DC3 with E/N \$ 13ms with 4 poles in selles | ≤24V | Α | 15 |
| | 48V | A | 15 |
| | | | |
| | 75V | A | 15 |
| | 110V | A | 16 7 |
| Chart time allowable correct for 40s (IEC/ENCO047.4) | 220V | A | |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | ~C (IEC) | ۸ | 20 |
| | gG (IEC) | A | 32 |
| Mallian and it (DMO) at all | aM (IEC) | A | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | 4.40).4 | | |
| | 440V | A | 96 |
| | 500V | A | 96 |
| | 690V | Α | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | |
| | Ith | W | 2 |
| | AC3 | 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 | Ibin | 0.74 |
|--|--|---|---|--|
| | simultaneously connectable | | Nr. | 2 |
| Conductor section | AMA 0.11 | | | |
| | AWG/Kcmil | | | 4.0 |
| | Flavilla/a has an dastan a stica | max | | 10 |
| | Flexible w/o lug conductor section | | | 4 |
| | | min | mm² mm² | 1 6 |
| | Flexible c/w lug conductor section | max | ШШ | · · |
| | Flexible C/W lug colludctor Section | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | IIIax | 111111 | |
| | Trexible with insulated space by conductor section | min | mm² | 1 |
| | | max | mm² | 4 |
| | | max | | IP20 when |
| Power terminal protect | ction according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | , , , |
| Operating position | | | | |
| | | normal | | Vertical plan |
| | | allowable | | ±30° |
| Fixing a | | | | Screw / DIN rail |
| Fixing | | | | 35mm |
| Weight | | | g | 360 |
| | | | | |
| Conductor section | | | | |
| Conductor section | AWG/kcmil conductor section | | | |
| Conductor section | AWG/kcmil conductor section | max | | 10 |
| Conductor section Auxiliary contact chara | | max | | 10 |
| Auxiliary contact char Thermal current Ith | acteristics | max | A | 10 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de | acteristics esignation | max | A | |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de | acteristics esignation | max | A | 10 A600 - P600 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de | acteristics esignation | 230V | A | 10 A600 - P600 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de | acteristics esignation | 230V 400V | | 10 A600 - P600 3 1.9 |
| Auxiliary contact charanteermal current Ith IEC/EN 60947-5-1 de Operating current AC | esignation 15 | 230V | A | 10 A600 - P600 |
| Auxiliary contact charanteermal current Ith IEC/EN 60947-5-1 de Operating current AC | esignation 15 | 230V 400V 500V | A A A | 10 A600 - P600 3 1.9 1.4 |
| Auxiliary contact chart Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V | A A | 10 A600 - P600 3 1.9 |
| Auxiliary contact chart Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V | A A A | 10 A600 - P600 3 1.9 1.4 |
| Auxiliary contact chart Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V | A A A | 10 A600 - P600 3 1.9 1.4 5.7 |
| Auxiliary contact chart Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V | A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 |
| Auxiliary contact chart Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V | A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 |
| Auxiliary contact chart Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V | A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| Auxiliary contact chart Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| Auxiliary contact chart Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 |
| Auxiliary contact charanteemal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| Auxiliary contact charantermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Auxiliary contact charanteemal current Ith IEC/EN 60947-5-1 de Operating current ACOPerating current DCOPerating current DCOPerating current DCOPERATION COPERATION CURRENT COPERATION COPERATION COPERATION COPERATION COPERATION COPERATION CURRENT COPERATION COPERATION CURRENT COPERATION COPERATION COPERATION COPERATION CURRENT COPERATION CO | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Auxiliary contact charanteemal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Auxiliary contact charantermal current Ith IEC/EN 60947-5-1 de Operating current DC Operating current DC Operating current DC Operating current DC Operating current DC Second | esignation 15 12 13 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Auxiliary contact charantermal current Ith IEC/EN 60947-5-1 de Operating current DC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 2000000 |
| Auxiliary contact charantermal current Ith IEC/EN 60947-5-1 de Operating current DC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | esignation 15 12 13 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Auxiliary contact charantermal current Ith IEC/EN 60947-5-1 de Operating current DC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | esignation 15 12 13 10d according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 2000000 |
| Auxiliary contact charantermal current lth IEC/EN 60947-5-1 de Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | esignation 15 12 13 10d according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Auxiliary contact charantermal current Ith IEC/EN 60947-5-1 de Operating current DC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Electrical life Safety related data Performance level B1 | esignation 15 12 13 10d according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |



| Rated AC voltage at | | | V | 24 |
|---|---|--|-------------------------------------|--|
| AC operating voltage | | | | |
| | of 50/60Hz coil powered at 50Hz | | | |
| | pick-up | min | %Us | 80 |
| | | min max | %Us | 110 |
| | drop-out | Παλ | /603 | 110 |
| | diop 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 cons | • | | | |
| | of 50/60Hz coil powered at 50Hz | : | ١/٨ | 75 |
| | | in-rush | VA VA | 75 9 |
| | of 50/60Hz coil powered at 60Hz | holding | VA | 3 |
| | of 50/00112 coll powered at 00Hz | in-rush | VA | 70 |
| | | holding | VA | 6.5 |
| | of 60Hz coil powered at 60Hz | | | |
| | o. oo oo. poo. ou a. oo | in male | VA | 75 |
| | | in-rush | ٧A | 13 |
| | | in-rush holding | VA | 9 |
| Dissipation at holding | g ≤20°C 50Hz | | | |
| Dissipation at holding | | holding | VA W | 9 2.5 |
| Max cycles frequenc Mechanical operation | У | holding | VA | 9 2.5 |
| Max cycles frequenc Mechanical operatior Operating times | y N | holding | VA W | 9 2.5 |
| Max cycles frequenc Mechanical operatior Operating times | control | holding | VA W | 9 2.5 |
| Max cycles frequenc Mechanical operatior Operating times | control in AC | holding | VA W | 9 2.5 |
| Max cycles frequenc Mechanical operatior Operating times | control | holding | VA W cycles/h | 9 2.5 3600 |
| Max cycles frequenc Mechanical operatior Operating times | control in AC | holding | VA W cycles/h | 9 2.5 3600 |
| Max cycles frequenc Mechanical operatior Operating times | control in AC Closing NO | holding | VA W cycles/h | 9 2.5 3600 |
| Max cycles frequenc Mechanical operatior Operating times | control in AC | holding min max | VA W cycles/h ms ms | 9 2.5 3600 8 24 |
| Max cycles frequenc Mechanical operatior Operating times | control in AC Closing NO | holding | VA W cycles/h ms ms | 9 2.5 3600 8 24 10 |
| Max cycles frequenc Mechanical operatior Operating times | control in AC Closing NO | holding min max min | VA W cycles/h ms ms | 9 2.5 3600 8 24 |
| Max cycles frequenc Mechanical operation Operating times | control in AC Closing NO Opening NO | holding min max min | VA W cycles/h ms ms | 9 2.5 3600 8 24 10 |
| Max cycles frequenc Mechanical operatior Operating times | control in AC Closing NO Opening NO | min max min max | VA W cycles/h ms ms | 9 2.5 3600 8 24 10 20 |
| Max cycles frequenc Mechanical operation Operating times | control in AC Closing NO Opening NO | min max min max | VA W cycles/h ms ms ms ms | 9 2.5 3600 8 24 10 20 14 28 |
| Max cycles frequenc Mechanical operation Operating times | control in AC Closing NO Opening NO Closing NC | min max min max min max min max | W cycles/h ms ms ms ms ms ms | 9 2.5 3600 8 24 10 20 14 28 |
| Max cycles frequence Mechanical operation Operating times Average time for Us | control in AC Closing NO Opening NO Closing NC | min max min max | VA W cycles/h ms ms ms ms ms | 9 2.5 3600 8 24 10 20 14 28 |
| Max cycles frequence Mechanical operation Operating times Average time for Us UL technical data | control in AC Closing NO Opening NO Closing NC Opening NC | min max min max min max min max | W cycles/h ms ms ms ms ms ms | 9 2.5 3600 8 24 10 20 14 28 |
| Max cycles frequence Mechanical operation Operating times Average time for Us UL technical data | control in AC Closing NO Opening NO Closing NC | min max min max min max min max | VA W cycles/h ms ms ms ms ms ms | 9 2.5 3600 8 24 10 20 14 28 7 18 |
| Max cycles frequence Mechanical operation Operating times Average time for Us UL technical data | control in AC Closing NO Opening NO Closing NC Opening NC | min max min max min max min max ax min max | W cycles/h ms ms ms ms ms ms ms | 9 2.5 3600 8 24 10 20 14 28 7 18 |
| Max cycles frequence Mechanical operation Operating times Average time for Us UL technical data Full-load current (FLA | control in AC Closing NO Opening NO Closing NC Opening NC Opening NC | min max min max min max min max | VA W cycles/h ms ms ms ms ms ms | 9 2.5 3600 8 24 10 20 14 28 7 18 |
| Max cycles frequence Mechanical operation Operating times Average time for Us UL technical data Full-load current (FLA | control in AC Closing NO Opening NO Closing NC Opening NC Opening NC Opening NC | min max min max min max min max ax min max | W cycles/h ms ms ms ms ms ms ms | 9 2.5 3600 8 24 10 20 14 28 7 18 |
| Max cycles frequence Mechanical operation Operating times Average time for Us UL technical data Full-load current (FLA | control in AC Closing NO Opening NO Closing NC Opening NC Opening NC | min max min max min max at 480V at 600V | VA W cycles/h ms ms ms ms ms ms A A | 9 2.5 3600 8 24 10 20 14 28 7 18 |
| Max cycles frequence Mechanical operation Operating times Average time for Us UL technical data | control in AC Closing NO Opening NO Closing NC Opening NC Opening NC Opening NC | min max min max min max at 480V at 600V | W cycles/h ms ms ms ms ms ms A A | 9 2.5 3600 8 24 10 20 14 28 7 18 |
| Max cycles frequence Mechanical operation Operating times Average time for Us UL technical data Full-load current (FLA | control in AC Closing NO Opening NO Closing NC Opening NC Opening NC Opening NC | min max min max min max at 480V at 600V | VA W cycles/h ms ms ms ms ms ms A A | 9 2.5 3600 8 24 10 20 14 28 7 18 |

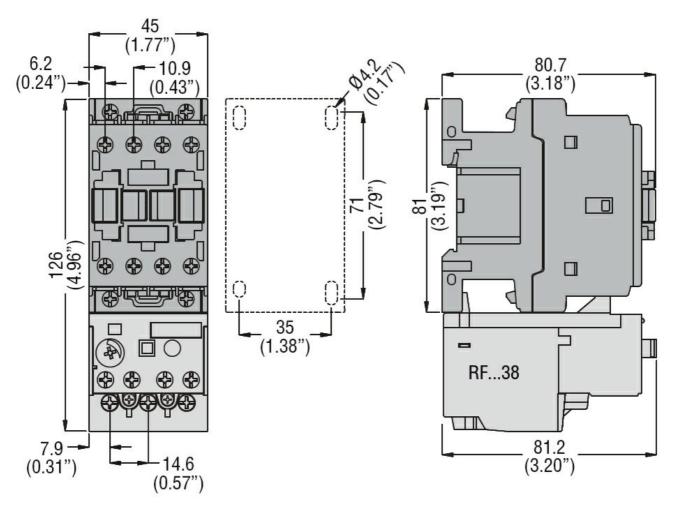




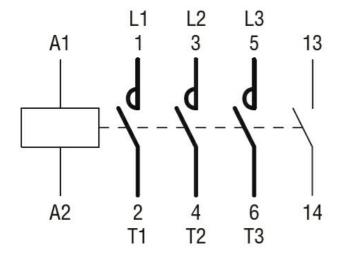
| | | 220/230V | HP | 5 |
|-----------------------|----------------------------------|-----------------------|----|-------------|
| | | 460/480V | HP | 7.5 |
| | | 575/600V | HP | 10 |
| General USE | | | | |
| | Contactor | | | |
| | | AC current | Α | 28 |
| | Auxiliary contacts | | | |
| | • | AC voltage | V | 600 |
| | | AC current | Α | 10 |
| | | DC voltage | V | 250 |
| | | DC current | Α | 1 |
| Short-circuit protect | tion fuse, 600V | | | |
| | High fault | | | |
| | | Short circuit current | kA | 100 |
| | | Fuse rating | Α | 30 |
| | | Fuse class | | J |
| | Standard fault | | | |
| | | Short circuit current | kA | 5 |
| | | Fuse rating | Α | 70 |
| Contact rating of au | xiliary 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 & Prote | ction | | | |
| Pollution degree | | | | 3 |
| Dimensions | | | | |
| | · | | | |

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 24VAC, 1NO AUXILIARY CONTACT



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



BF1210A024

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 24VAC, 1NO AUXILIARY CONTACT

| cULus | | | |
|-------|--|--|--|
| EAC | | | |

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching





| Product designation | | | Power contactor |
|---|--------------------|-----|-----------------|
| Product type designation | | | BF12 |
| Contact characteristics | | | |
| Number of poles | | Nr. | 3 |
| Rated insulation voltage Ui IEC/EN | | V | 690 |
| Rated impulse withstand voltage Uimp | | kV | 6 |
| Operational frequency | | | |
| | min | Hz | 25 |
| | max | Hz | 400 |
| IEC Conventional free air thermal current Ith | | Α | 28 |
| Operational current le | | | |
| | AC-1 (≤40°C) | Α | 28 |
| | AC-1 (≤55°C) | Α | 23 |
| | AC-1 (≤70°C) | Α | 20 |
| | AC-3 (≤440V ≤55°C) | Α | 12 |
| | AC-4 (400V) | Α | 7.9 |
| Rated operational power AC-3 (T≤55°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≤40°C) | | | |
| | 230V | kW | 10 |
| | 400V | kW | 18 |
| | 500V | kW | 23 |
| | 690V | kW | 32 |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | | | |
| | ≤24V | Α | 17 |
| | 48V | Α | 15 |
| | 75V | Α | 13 |
| | 110V | Α | 6 |
| | 220V | Α | _ |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 18 |
| | 110V | Α | 13 |
| | 220V | Α | 1 |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | | | |
| | ≤24V | Α | 22 |
| | 48V | Α | 22 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | | | |





| | 220V | Α | 11 |
|--|---------------|-----------|---------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| · | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | _ |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| 120 max sarronx to in 200 200 mar 27x = 10mb max 2 police in collect | ≤24V | Α | 15 |
| | 48V | Α | 13 |
| | 75V | A | 12 |
| | 110V | A | 8 |
| | 220V | A | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | 2201 | ^ | |
| TEC may content to in DC3-DC3 with E/K > 13ms with 3 poles in series | -24 17 | ۸ | 10 |
| | ≤24V 48V | A | 18 |
| | | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| | 220V | Α | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | _ | |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| | gG (IEC) | Α | 32 |
| | aM (IEC) | Α | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | | | |
| | 440V | Α | 96 |
| | 500V | Α | 96 |
| | 690V | Α | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | |
| \ | lth | W | 2 |
| | AC3 | W | 0.4 |
| Tightening torque for terminals | 7.00 | •• | |
| | min | Nm | 1.5 |
| | max | Nm | 1.8 |
| | min | Ibin | 1.1 |
| | | Ibin | 1.5 |
| Tightening torque for coil terminal | max | ווטו | 1.0 |
| rightening torque for contential | | Nima | 0.0 |
| | min | Nm Nas | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | | | |



| | | max | Ibin | 0.74 |
|--|--|---|---|--|
| | simultaneously connectable | | Nr. | 2 |
| Conductor section | ANA(O/I/C : 1) | | | |
| | AWG/Kcmil | | | 4.0 |
| | Florible w/o has producted posting | max | | 10 |
| | Flexible w/o lug conductor section | | | 4 |
| | | min | mm² mm² | 1 6 |
| | Flexible c/w lug conductor section | max | 111111 | O |
| | Flexible C/W lug colludctor section | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | | 111111 | |
| | r lexible with insulated space by conductor section | min | mm² | 1 |
| | | max | mm² | 4 |
| | | max | | IP20 when |
| Power terminal protect | tion according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | , , , , |
| Operating position | | | | |
| | | normal | | Vertical plan |
| | | allowable | | ±30° |
| Eiving | | | | Screw / DIN rail |
| Fixing | | | | 35mm |
| Weight | | | g | 364 |
| Conductor section | | | | |
| | | | | |
| | AWG/kcmil conductor section | | | |
| | AWG/kcmil conductor section | max | | 10 |
| Auxiliary contact chara | | max | | 10 |
| Auxiliary contact chara Thermal current lth | acteristics | max | A | 10 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de | acteristics | max | A | |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de | acteristics | max | A | 10 A600 - P600 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de | acteristics | 230V | A | 10 A600 - P600 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de | acteristics | 230V 400V | | 10 A600 - P600 3 1.9 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | signation 15 | 230V | A | 10 A600 - P600 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | signation 15 | 230V 400V 500V | A A A | 10 A600 - P600 3 1.9 1.4 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | signation 15 | 230V 400V | A A | 10 A600 - P600 3 1.9 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | signation 15 | 230V 400V 500V | A A A | 10 A600 - P600 3 1.9 1.4 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | signation 15 | 230V 400V 500V 110V | A A A | 10 A600 - P600 3 1.9 1.4 5.7 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | signation 15 | 230V 400V 500V 110V 24V 48V | A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | signation 15 | 230V 400V 500V 110V 24V 48V 60V | A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | signation 15 | 230V 400V 500V 110V 24V 48V 60V 110V | A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | signation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | signation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC | signation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC | signation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | signation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life | signation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | signation 15 12 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | signation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 2000000 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | signation 15 12 13 Od according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data Performance level B1 | signation 15 12 13 Od according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 2000000 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accordi | signation 15 12 13 Od according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Auxiliary contact chara Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data Performance level B1 | signation 15 12 13 Od according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |



| Rated AC voltage at 5 | 50/60Hz | | V | 48 |
|--|---|---|--|--|
| AC operating voltage | | | <u> </u> | |
| | 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 | | 0/11 | |
| | | min | %Us | 85 |
| | مريم مريد | max | %Us | 110 |
| | drop-out | min | 0/110 | 20 |
| | | min | %Us %Us | 55 |
| AC average coil cons | umption at 20°C | max | /008 | 33 |
| AU average con cons | of 50/60Hz coil powered at 50Hz | | | |
| | of 30/00112 coil powered at 30Hz | in-rush | VA | 75 |
| | | holding | VA | 9 |
| | of 50/60Hz coil powered at 60Hz | | ٧, ١ | |
| | 01 00700112 0011 poworod at 00112 | in-rush | VA | 70 |
| | | holding | VA | 6.5 |
| | of 60Hz coil powered at 60Hz | 3 | | |
| | 1 | in-rush | VA | 75 |
| | | holding | VA | 9 |
| Dissipation at holding | ≤20°C 50Hz | | W | 2.5 |
| Max cycles frequency | | | | |
| | | | | |
| Mechanical operation | | | cycles/h | 3600 |
| Mechanical operation Operating times | | | cycles/h | 3600 |
| Mechanical operation | ontrol | | cycles/h | 3600 |
| Mechanical operation Operating times | ontrol in AC | | cycles/h | 3600 |
| Mechanical operation Operating times | ontrol | | | |
| Mechanical operation Operating times | ontrol in AC | min | ms | 8 |
| Mechanical operation Operating times | ontrol in AC Closing | min max | | |
| Mechanical operation Operating times | ontrol in AC | min max NO | ms ms | 8 24 |
| Mechanical operation Operating times | ontrol in AC Closing | min max NO min | ms ms ms | 8 24 10 |
| Mechanical operation Operating times | ontrol in AC Closing I Opening | min max NO min max | ms ms | 8 24 |
| Mechanical operation Operating times | ontrol in AC Closing | min max NO min max | ms ms ms | 8 24 10 20 |
| Mechanical operation Operating times | ontrol in AC Closing I Opening | min max NO min max NC | ms ms ms ms | 8 24 10 20 |
| Mechanical operation Operating times | ontrol in AC Closing Opening Closing | min max NO min max NC min max | ms ms ms | 8 24 10 20 |
| Mechanical operation Operating times | ontrol in AC Closing I Opening | min max NO min max NC min max | ms ms ms ms | 8 24 10 20 |
| Mechanical operation Operating times | ontrol in AC Closing Opening Closing | Min max NO min max NC min max NC | ms ms ms ms | 8 24 10 20 14 28 |
| Mechanical operation Operating times | ontrol in AC Closing Opening Closing | min max NO min max NC min max NC min max max | ms ms ms ms ms | 8 24 10 20 14 28 |
| Mechanical operation Operating times Average time for Us of | ontrol in AC Closing Opening Closing | min max NO min max NC min max NC min max max | ms ms ms ms ms | 8 24 10 20 14 28 |
| Mechanical operation Operating times Average time for Us of the control of the co | ontrol in AC Closing Opening Closing | min max NO min max NC min max NC min max max | ms ms ms ms ms | 8 24 10 20 14 28 |
| Mechanical operation Operating times Average time for Us of the second o | ontrol in AC Closing Opening Closing Opening Opening | min max NO min max NC min max NC min max NC min max | ms ms ms ms ms | 8 24 10 20 14 28 7 18 |
| Mechanical operation Operating times Average time for Us of | ontrol in AC Closing Opening Closing Opening Opening | Min max NO min max NC min max NC min max NC at 480V | ms ms ms ms ms | 8 24 10 20 14 28 7 18 |
| Mechanical operation Operating times Average time for Us of the second o | ontrol in AC Closing Opening Closing Opening Opening | Min max NO min max NC min max NC min max NC at 480V | ms ms ms ms ms | 8 24 10 20 14 28 7 18 |
| Mechanical operation Operating times Average time for Us of the second o | ontrol in AC Closing Opening Closing Opening Opening Opening | NO min max NC min max NC min max NC min max NC at 480V at 600V | ms ms ms ms ms ms | 8 24 10 20 14 28 7 18 |
| Mechanical operation Operating times Average time for Us of the second o | ontrol in AC Closing Opening Closing Closing Opening Opening of three-phase AC motor erformance for single-phase AC motor | Min max NO min max NC min max NC Min max NC Min max MC Min max MC Min max Max Max Max Max Max Max Max | ms ms ms ms ms ms | 8 24 10 20 14 28 7 18 |
| Mechanical operation Operating times Average time for Us of the second o | ontrol in AC Closing Opening Closing Opening Opening Opening | min max NO min max NC min max NC min max NC at 480V at 600V 230V | ms ms ms ms ms ms hs | 8 24 10 20 14 28 7 18 |
| Mechanical operation Operating times Average time for Us of the control of the co | ontrol in AC Closing Opening Closing Closing Opening Opening of three-phase AC motor erformance for single-phase AC motor | NO min max NC min max NC min max NC min max NC at 480V at 600V | ms ms ms ms ms ms | 8 24 10 20 14 28 7 18 |

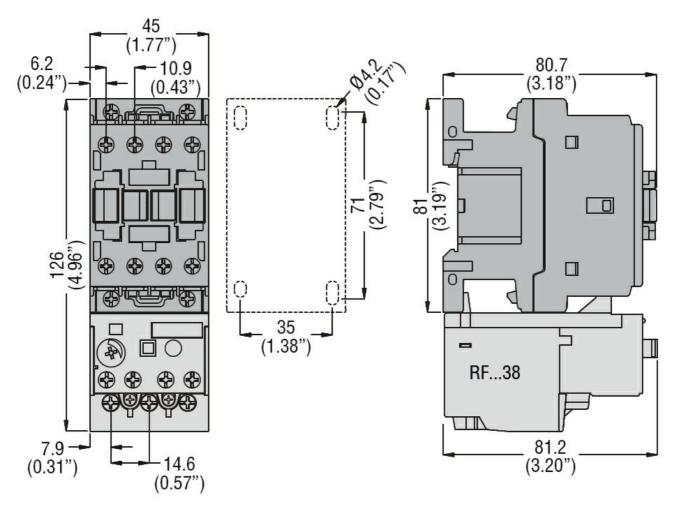




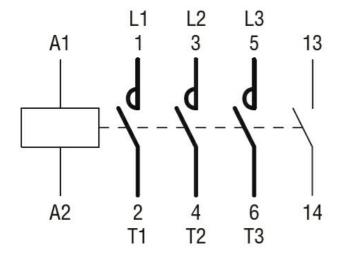
| | | 220/230V | HP | 5 |
|------------------------|----------------------------------|-----------------------|----|-------------|
| | | 460/480V | HP | 7.5 |
| | | 575/600V | HP | 10 |
| General USE | | | | |
| | Contactor | | | |
| | | AC current | Α | 28 |
| | Auxiliary contacts | | | |
| | • | AC voltage | V | 600 |
| | | AC current | Α | 10 |
| | | DC voltage | V | 250 |
| | | DC current | Α | 1 |
| Short-circuit protecti | on fuse, 600V | | | |
| | High fault | | | |
| | | Short circuit current | kA | 100 |
| | | Fuse rating | Α | 30 |
| | | Fuse class | | J |
| | Standard fault | | | |
| | | Short circuit current | kA | 5 |
| | | Fuse rating | Α | 70 |
| Contact rating of aux | ciliary 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 & Protect | etion | | | |
| Pollution degree | | | | 3 |
| Dimensions | | | | |

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 48VAC, 1NO AUXILIARY CONTACT



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



BF1210A048

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 48VAC, 1NO AUXILIARY CONTACT

| cULus | | | |
|-------|--|--|--|
| EAC | | | |

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching

BF1210A048







| Draduat designation | | | Dower contactor |
|--|-------------------------------------|--------|-------------------------|
| Product designation Product type designation | | | Power contactor BF12 |
| Contact characteristics | | | DE 12 |
| Number of poles | | Nr. | 3 |
| Rated insulation voltage Ui IEC/EN | | V | 690 |
| Rated impulse withstand voltage Uimp | | kV | 6 |
| Operational frequency | | K V | 0 |
| Operational frequency | min | Hz | 25 |
| | | Hz | 400 |
| IEC Conventional free air thermal current Ith | max | A | 28 |
| Operational current le | | ^ | 20 |
| Operational current le | AC 1 (<10°C) | ۸ | 28 |
| | AC-1 (≤40°C) AC-1 (≤55°C) | A A | 23 |
| | AC-1 (≤33°C) AC-1 (≤70°C) | A | 20 |
| | AC-3 (≤440V ≤55°C) | A | 12 |
| | AC-3 (\$440V \$33 C) AC-4 (400V) | A | 7.9 |
| Rated operational power AC-3 (T≤55°C) | AC-4 (400V) | ^ | 7.9 |
| Nated operational power AC-3 (1333 C) | 230V | kW | 3.2 |
| | 400V | kW | 5.7 |
| | 400 V 415 V | kW | 6.2 |
| | 440V | kW | 5.5 |
| | 500V | kW | 5.5 |
| | 690V | kW | 5 |
| Rated operational power AC-1 (T≤40°C) | 030 V | IXVV | <u> </u> |
| Nated operational power 70-1 (12-40-0) | 230V | kW | 10 |
| | 400V | kW | 18 |
| | 500V | kW | 23 |
| | 690V | kW | 32 |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | 0001 | | - 02 |
| 120 max current to in 201 with E/TC = 1mb with 1 poles in series | ≤24V | Α | 17 |
| | 48V | A | 15 |
| | 75V | A | 13 |
| | 110V | A | 6 |
| | 220V | Α | _ |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | | ,, | |
| The max carrent to in Bot with Eff This with 2 person in conice | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 18 |
| | 110V | A | 13 |
| | 220V | Α | 1 |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | | | • |
| | ≤24V | Α | 22 |
| | 48V | A | 22 |
| | 75V | A | 20 |
| | 110V | A | 16 |
| | 1100 | 77 | .0 |





| | 220V | Α | 11 |
|--|--------------|-------|----------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| · | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | <u>-</u> |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | 220 V | | |
| The max current to in 600-600 with E/N = 10m3 with 2 poics in 3cmc3 | ≤24V | Α | 15 |
| | 48V | A | 13 |
| | 46 V 75 V | | 13 |
| | | A | |
| | 110V | A | 8 |
| 150 | 220V | Α | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | .= : | | 4.0 |
| | ≤24V | A | 18 |
| | 48V | Α | 18 |
| | 75V | Α | 15 |
| | 110V | Α | 12 |
| | 220V | Α | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | | |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| | gG (IEC) | Α | 32 |
| | aM (IEC) | Α | 12 |
| Making capacity (RMS value) | · | Α | 120 |
| Breaking capacity at voltage | | | |
| | 440V | Α | 96 |
| | 500V | A | 96 |
| | 690V | A | 94 |
| Resistance per note (average value) | 090 v | mΩ | 2.5 |
| Resistance per pole (average value) | | 11177 | ۷.۵ |
| Power dissipation per pole (average value) | 141 | 107 | 0 |
| | Ith | W | 2 |
| Till to die teen et te teen de | AC3 | W | 0.4 |
| Tightening torque for terminals | | | 4 = |
| | min | Nm | 1.5 |
| | max | Nm | 1.8 |
| | min | lbin | 1.1 |
| | max | Ibin | 1.5 |
| Tightening torque for coil terminal | | | |
| | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | | | |





| | | max | Ibin | 0.74 |
|--|--|---|---|--|
| | simultaneously connectable | | Nr. | 2 |
| Conductor section | ANA(O/I/C - 1) | | | |
| | AWG/Kcmil | | | 4.0 |
| | Florible w/s has see dusten seeting | max | | 10 |
| | Flexible w/o lug conductor section | min | mama ² | 4 |
| | | min | mm² mm² | 1 6 |
| | Flexible c/w lug conductor section | max | 111111 | 0 |
| | r lexible 6/w rug conductor section | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | | | • |
| | Tionisis with insulated space tag solidation section | min | mm² | 1 |
| | | max | mm² | 4 |
| | | | | IP20 when |
| Power terminal protect | tion according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | |
| Operating position | | | | |
| | | normal | | Vertical plan |
| | | allowable | | ±30° |
| Fixing | | | | Screw / DIN rail |
| | | | | 35mm |
| Weight | | | g | 359 |
| Conductor section | | | | |
| | AWG/kcmil conductor section | | | |
| A 112 | | max | | 10 |
| Auxiliary contact chara | acteristics | | • | |
| | | | | |
| | aignation | | A | 10 4600 B600 |
| IEC/EN 60947-5-1 de | • | | A | 10 A600 - P600 |
| IEC/EN 60947-5-1 de | • | 2201/ | | A600 - P600 |
| IEC/EN 60947-5-1 de | • | 230V | A | A600 - P600 3 |
| IEC/EN 60947-5-1 de | • | 400V | A A | A600 - P600 3 1.9 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | 15 | | A | A600 - P600 3 |
| IEC/EN 60947-5-1 de Operating current AC | 15 | 400V 500V | A A A | 3 1.9 1.4 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V | A A | A600 - P600 3 1.9 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V | A A A | 3 1.9 1.4 5.7 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V | A A A | 3 1.9 1.4 5.7 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V | A A A | 3 1.9 1.4 5.7 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V | A A A A | 3 1.9 1.4 5.7 5.7 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V | A A A A A | 3 1.9 1.4 5.7 5.7 2.9 2.3 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V | A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Mechanical life | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Operations Mechanical life Electrical life | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 |
| Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data | 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |
| Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accordi | 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 yes |
| Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |





| | 50/60Hz | | V | 110 |
|---|---|---|--------------------------------------|---|
| C operating voltage | | | | |
| | of 50/60Hz coil powered at 50Hz | | | |
| | pick-up | | | |
| | | min | %Us | 80 |
| | draw and | max | %Us | 110 |
| | drop-out | min | %Us | 20 |
| | | min | %Us %Us | 55 |
| | of 50/60Hz coil powered at 60Hz | max | /005 | 33 |
| | pick-up | | | |
| | ριοίτ αρ | min | %Us | 85 |
| | | max | %Us | 110 |
| | drop-out | max | 7000 | |
| | 5.5p 553 | min | %Us | 20 |
| | | max | %Us | 55 |
| C average coil cons | sumption at 20°C | | | |
| Ü | 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 holdinເ | | | W | 2.5 |
| Max cycles frequency | | | | |
| Mechanical operation | | | cycles/h | 3600 |
| Operating times Average time for Us | | | | |
| verage inneror us | pontrol | | | |
| wordgo umo ron oo | | | | |
| wordgo umo ron Go | in AC | | | |
| wordge tillio for Go | | min | ms | 8 |
| wordgo tillio tor oo | in AC | min max | ms ms | 8 |
| volago umo lor do | in AC Closing NO | min max | ms ms | 8 24 |
| wordge time for ee | in AC | max | ms | 24 |
| werage ume ter ee | in AC Closing NO | | | |
| | in AC Closing NO | max min | ms ms | 10 |
| | in AC Closing NO Opening NO | max min | ms ms | 10 |
| | in AC Closing NO Opening NO | max min max | ms ms ms | 241020 |
| | in AC Closing NO Opening NO | max min max min | ms ms ms | 24102014 |
| | in AC Closing NO Opening NO Closing NC | max min max min | ms ms ms | 24 10 20 14 28 7 |
| | in AC Closing NO Opening NO Closing NC | max min max min max | ms ms ms ms | 24 10 20 14 28 |
| JL technical data | in AC Closing NO Opening NO Closing NC Opening NC | max min max min max min | ms ms ms ms ms | 24 10 20 14 28 7 |
| JL technical data | in AC Closing NO Opening NO Closing NC | max min max min max min max | ms ms ms ms ms | 24 10 20 14 28 7 18 |
| JL technical data | in AC Closing NO Opening NO Closing NC Opening NC | max min max min max min max at 480V | ms ms ms ms ms | 24 10 20 14 28 7 18 |
| JL technical data Full-load current (FL/ | in AC Closing NO Opening NO Closing NC Opening NC Opening NC | max min max min max min max | ms ms ms ms ms | 24 10 20 14 28 7 18 |
| JL technical data | in AC Closing NO Opening NO Closing NC Opening NC Opening NC A) for three-phase AC motor Derformance | max min max min max min max at 480V | ms ms ms ms ms | 24 10 20 14 28 7 18 |
| JL technical data Full-load current (FL/ | in AC Closing NO Opening NO Closing NC Opening NC Opening NC | min max min max min max min max at 480V at 600V | ms ms ms ms ms A A | 24 10 20 14 28 7 18 |
| JL technical data Full-load current (FL/ | in AC Closing NO Opening NO Closing NC Opening NC Opening NC A) for three-phase AC motor Derformance | min max min max min max min max at 480V at 600V | ms ms ms ms ms A A | 24 10 20 14 28 7 18 |
| JL technical data Full-load current (FL/ | in AC Closing NO Opening NO Closing NC Opening NC Opening NC A) for three-phase AC motor Derformance for single-phase AC motor | min max min max min max min max at 480V at 600V | ms ms ms ms ms A A | 24 10 20 14 28 7 18 |
| JL technical data Full-load current (FL/ | in AC Closing NO Opening NO Closing NC Opening NC Opening NC A) for three-phase AC motor Derformance | min max min max min max min max at 480V at 600V | ms ms ms ms ms A A | 24 10 20 14 28 7 18 |

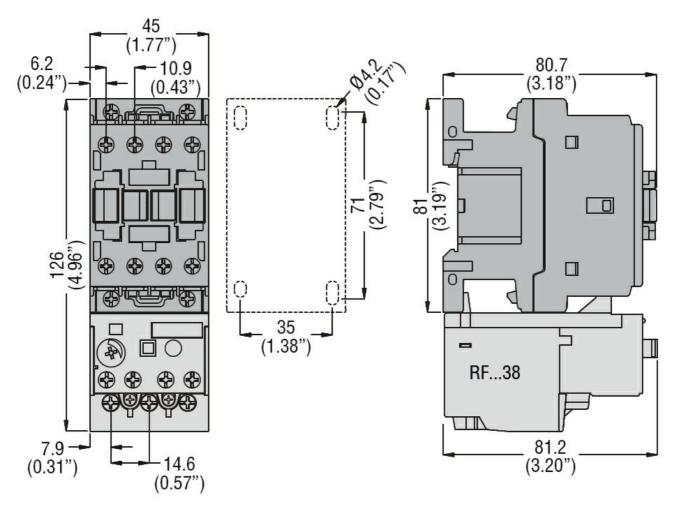




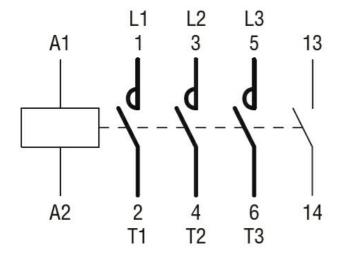
| | | 220/230V | HP | 5 |
|-----------------------|----------------------------------|-----------------------|----|-------------|
| | | 460/480V | HP | 7.5 |
| | | 575/600V | HP | 10 |
| General USE | | | | |
| | Contactor | | | |
| | | AC current | Α | 28 |
| | Auxiliary contacts | | | |
| | • | AC voltage | V | 600 |
| | | AC current | Α | 10 |
| | | DC voltage | V | 250 |
| | | DC current | Α | 1 |
| Short-circuit protect | tion fuse, 600V | | | |
| | High fault | | | |
| | | Short circuit current | kA | 100 |
| | | Fuse rating | Α | 30 |
| | | Fuse class | | J |
| | Standard fault | | | |
| | | Short circuit current | kA | 5 |
| | | Fuse rating | Α | 70 |
| Contact rating of au | xiliary 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 & Prote | ction | | | |
| Pollution degree | | | | 3 |
| Dimensions | | | | |
| | · | | | |

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 110VAC, 1NO AUXILIARY CONTACT



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



BF1210A110

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 110VAC, 1NO AUXILIARY CONTACT

| cULus | | | |
|-------|--|--|--|
| EAC | | | |

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching





| Product designation Product type designation | | | Power contactor BF12 |
|---|--------------------|-----|-------------------------|
| Contact characteristics | | | |
| Number of poles | | Nr. | 3 |
| Rated insulation voltage Ui IEC/EN | | V | 690 |
| Rated impulse withstand voltage Uimp | | kV | 6 |
| Operational frequency | | | |
| | min | Hz | 25 |
| | max | Hz | 400 |
| IEC Conventional free air thermal current Ith | | Α | 28 |
| Operational current le | | | |
| | AC-1 (≤40°C) | Α | 28 |
| | AC-1 (≤55°C) | Α | 23 |
| | AC-1 (≤70°C) | Α | 20 |
| | AC-3 (≤440V ≤55°C) | Α | 12 |
| | AC-4 (400V) | Α | 7.9 |
| Rated operational power AC-3 (T≤55°C) | () | | |
| Tallou operation perior, 7.0 o (1 = 00 o) | 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≤40°C) | | | |
| Training of the second of the | 230V | kW | 10 |
| | 400V | kW | 18 |
| | 500V | kW | 23 |
| | 690V | kW | 32 |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | | | |
| | ≤24V | Α | 17 |
| | 48V | Α | 15 |
| | 75V | Α | 13 |
| | 110V | A | 6 |
| | 220V | Α | _ |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | A | 18 |
| | 110V | A | 13 |
| | 220V | Α | 1 |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | | | • |
| | ≤24V | Α | 22 |
| | 48V | Α | 22 |
| | 75V | A | 20 |
| | 110V | A | 16 |
| | | - • | . • |



BF1210A230

| | 220V | Α | 11 |
|--|--------------|-------|----------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| · | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | <u>-</u> |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | 220 V | | |
| The max current to in 600-600 with E/N = 10m3 with 2 poics in 3cmc3 | ≤24V | Α | 15 |
| | 48V | A | 13 |
| | 46 V 75 V | | 13 |
| | | A | |
| | 110V | A | 8 |
| 150 | 220V | Α | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | .= : | | 4.0 |
| | ≤24V | A | 18 |
| | 48V | Α | 18 |
| | 75V | Α | 15 |
| | 110V | Α | 12 |
| | 220V | Α | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | | |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| | gG (IEC) | Α | 32 |
| | aM (IEC) | Α | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | | | |
| | 440V | Α | 96 |
| | 500V | A | 96 |
| | 690V | A | 94 |
| Resistance per note (average value) | 090 v | mΩ | 2.5 |
| Resistance per pole (average value) | | 11177 | ۷.۵ |
| Power dissipation per pole (average value) | 141 | 107 | 0 |
| | Ith | W | 2 |
| Till to die teen et te teen de | AC3 | W | 0.4 |
| Tightening torque for terminals | | | 4 = |
| | min | Nm | 1.5 |
| | max | Nm | 1.8 |
| | min | lbin | 1.1 |
| | max | Ibin | 1.5 |
| Tightening torque for coil terminal | | | |
| | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | | | |



| | | max | Ibin | 0.74 |
|---|---|---|---|--|
| | simultaneously connectable | | Nr. | 2 |
| Conductor section | AMO (14 | | | |
| | AWG/Kcmil | | | 4.0 |
| | Florible w/s han somewhat a section | max | | 10 |
| | Flexible w/o lug conductor section | | | 4 |
| | | min | mm² mm² | 1 6 |
| | Flexible c/w lug conductor section | max | 111111 | O |
| | Flexible C/W lug colludctor section | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | | 111111 | - |
| | Trexible with insulated space rug conductor section | min | mm² | 1 |
| | | max | mm² | 4 |
| | | max | | IP20 when |
| Power terminal prote | ction according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | , <u></u> |
| Operating position | | | | |
| . 01 | | normal | | Vertical plan |
| | | allowable | | ±30° |
| Fixing a | | | | Screw / DIN rail |
| Fixing | | | | 35mm |
| Weight | | | g | 356 |
| Conductor section | | | | |
| | AWG/kcmil conductor section | | | |
| | | | | 10 |
| | | max | | 10 |
| Auxiliary contact char | acteristics | max | | 10 |
| Auxiliary contact char Thermal current Ith | acteristics | max | A | 10 |
| Thermal current Ith | | max | A | |
| Thermal current Ith IEC/EN 60947-5-1 de | esignation | max | A | 10 |
| Thermal current Ith IEC/EN 60947-5-1 de | esignation | 230V | A | 10 A600 - P600 |
| Thermal current Ith IEC/EN 60947-5-1 de | esignation | 230V 400V | | 10 A600 - P600 3 1.9 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | esignation 15 | 230V | A | 10 A600 - P600 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC | esignation 15 | 230V 400V 500V | A A A | 10 A600 - P600 3 1.9 1.4 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V | A A | 10 A600 - P600 3 1.9 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V | A A A | 10 A600 - P600 3 1.9 1.4 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V | A A A | 10 A600 - P600 3 1.9 1.4 5.7 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V | A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V | A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V | A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| · · · · · · · · · · · · · · · · · · · | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | esignation 15 12 13 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | esignation 15 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A Cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 2000000 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | esignation 15 12 13 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Safety related data | esignation 15 12 13 10d according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 2000000 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B | esignation 15 12 13 10d according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC Electrical life Electrical life Safety related data Performance level B | esignation 15 12 13 10d according to EN/ISO 13489-1 | 230V 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 10 A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |



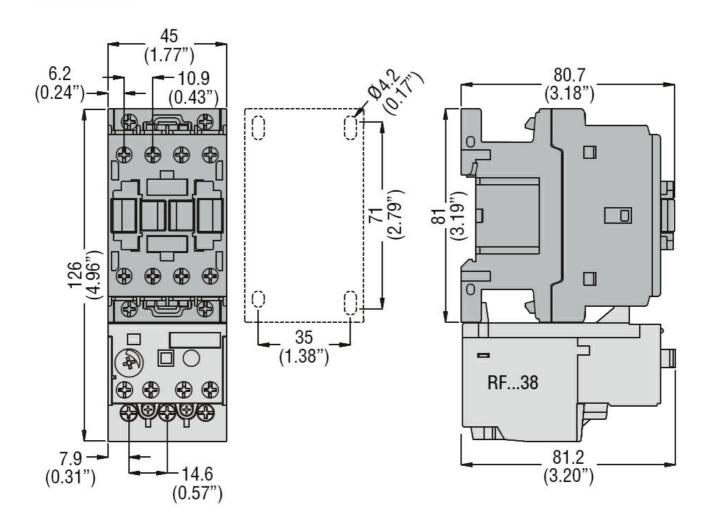
| | 50/60Hz | | V | 230 |
|---|---|---|--------------------------------------|---|
| C operating voltage | | | | |
| | of 50/60Hz coil powered at 50Hz | | | |
| | pick-up | | 0/11 | |
| | | min | %Us | 80 |
| | drop out | max | %Us | 110 |
| | drop-out | min | %Us | 20 |
| | | max | %Us | 55 |
| | of 50/60Hz coil powered at 60Hz | IIIdA | 7003 | 33 |
| | pick-up | | | |
| | plok up | min | %Us | 85 |
| | | max | %Us | 110 |
| | drop-out | | | - |
| | · | min | %Us | 20 |
| | | max | %Us | 55 |
| C average coil cons | sumption 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 | | | W | 2.5 |
| Max cycles frequenc | | | 1 / | 0000 |
| Mechanical operation | 1 | | cycles/h | 3600 |
| Operating times Average time for Us | control | | | |
| werage time for os | | | | |
| | | | | |
| | in AC | | | |
| | | min | ms | 8 |
| | in AC | min max | ms ms | 8 24 |
| | in AC Closing NO | min max | ms ms | 8 24 |
| | in AC | | | |
| | in AC Closing NO | max | ms | 24 |
| | in AC Closing NO | max min | ms ms | 10 |
| | in AC Closing NO Opening NO | max min | ms ms | 10 |
| | in AC Closing NO Opening NO Closing NC | max min max | ms ms ms | 241020 |
| | in AC Closing NO Opening NO | max min max min | ms ms ms | 24102014 |
| | in AC Closing NO Opening NO Closing NC | max min max min max min | ms ms ms ms ms | 24 10 20 14 28 7 |
| | in AC Closing NO Opening NO Closing NC | max min max min max | ms ms ms ms | 24 10 20 14 28 |
| | in AC Closing NO Opening NO Closing NC Opening NC | max min max min max min | ms ms ms ms ms | 24 10 20 14 28 7 |
| | in AC Closing NO Opening NO Closing NC | max min max min max min max | ms ms ms ms ms ms | 24 10 20 14 28 7 18 |
| | in AC Closing NO Opening NO Closing NC Opening NC | max min max min max min max at 480V | ms ms ms ms ms ms | 24 10 20 14 28 7 18 |
| Full-load current (FL | in AC Closing NO Opening NO Closing NC Opening NC Opening NC | max min max min max min max | ms ms ms ms ms ms | 24 10 20 14 28 7 18 |
| JL technical data Full-load current (FL/ | in AC Closing NO Opening NO Closing NC Opening NC Opening NC A) for three-phase AC motor performance | max min max min max min max at 480V | ms ms ms ms ms ms | 24 10 20 14 28 7 18 |
| Full-load current (FL | in AC Closing NO Opening NO Closing NC Opening NC Opening NC | min max min max min max at 480V at 600V | ms ms ms ms ms A A | 24 10 20 14 28 7 18 |
| Full-load current (FL | in AC Closing NO Opening NO Closing NC Opening NC Opening NC A) for three-phase AC motor performance | min max min max min max min max at 480V at 600V | ms ms ms ms ms ms | 24 10 20 14 28 7 18 |
| Full-load current (FL | in AC Closing NO Opening NO Closing NC Opening NC Opening NC A) for three-phase AC motor performance for single-phase AC motor | min max min max min max at 480V at 600V | ms ms ms ms ms A A | 24 10 20 14 28 7 18 |
| ull-load current (FL | in AC Closing NO Opening NO Closing NC Opening NC Opening NC A) for three-phase AC motor performance | min max min max min max min max at 480V at 600V | ms ms ms ms ms ms | 24 10 20 14 28 7 18 |



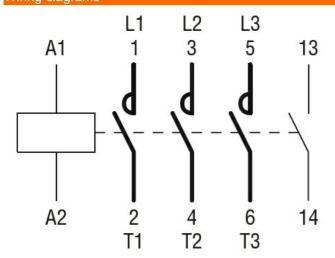


| | | 220/230V | HP | 5 |
|-----------------------|----------------------------------|-----------------------|----|-------------|
| | | 460/480V | HP | 7.5 |
| | | 575/600V | HP | 10 |
| General USE | | | | |
| | Contactor | | | |
| | | AC current | Α | 28 |
| | Auxiliary contacts | | | |
| | • | AC voltage | V | 600 |
| | | AC current | Α | 10 |
| | | DC voltage | V | 250 |
| | | DC current | Α | 1 |
| Short-circuit protect | tion fuse, 600V | | | |
| | High fault | | | |
| | | Short circuit current | kA | 100 |
| | | Fuse rating | Α | 30 |
| | | Fuse class | | J |
| | Standard fault | | | |
| | | Short circuit current | kA | 5 |
| | | Fuse rating | Α | 70 |
| Contact rating of au | xiliary 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 & Prote | ction | | | |
| 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



BF1210A230

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 230VAC, 1NO AUXILIARY CONTACT

| cULus | | | |
|-------|--|--|--|
| EAC | | | |

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching





| Product designation | | | Power contactor |
|---|--------------------|-----|-----------------|
| Product type designation | | | BF12 |
| Contact characteristics | | | |
| Number of poles | | Nr. | 3 |
| Rated insulation voltage Ui IEC/EN | | V | 690 |
| Rated impulse withstand voltage Uimp | | kV | 6 |
| Operational frequency | | | |
| | min | Hz | 25 |
| | max | Hz | 400 |
| IEC Conventional free air thermal current Ith | | Α | 28 |
| Operational current le | | | |
| | AC-1 (≤40°C) | Α | 28 |
| | AC-1 (≤55°C) | Α | 23 |
| | AC-1 (≤70°C) | Α | 20 |
| | AC-3 (≤440V ≤55°C) | Α | 12 |
| | AC-4 (400V) | Α | 7.9 |
| Rated operational power AC-3 (T≤55°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≤40°C) | | | |
| | 230V | kW | 10 |
| | 400V | kW | 18 |
| | 500V | kW | 23 |
| | 690V | kW | 32 |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | | | |
| | ≤24V | Α | 17 |
| | 48V | Α | 15 |
| | 75V | Α | 13 |
| | 110V | Α | 6 |
| | 220V | Α | _ |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 18 |
| | 110V | Α | 13 |
| | 220V | Α | 1 |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | | | |
| | ≤24V | Α | 22 |
| | 48V | Α | 22 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | | | |





| | 220V | Α | 11 |
|--|------------------------------------|-------|-----|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | _ |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| | ≤24V | Α | 15 |
| | 48V | Α | 13 |
| | 75V | A | 12 |
| | 110V | A | 8 |
| | 220V | A | 2 |
| IEC may current to in DC2 DC5 with L/D < 15mg with 2 polos in series | 220 V | Α | |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | ≤24V | Α | 18 |
| | ≤24 V 48 V | | |
| | | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| IFO | 220V | Α | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | -0.11.4 | | 4.5 |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| | gG (IEC) | Α | 32 |
| | aM (IEC) | Α | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | | | |
| | 440V | Α | 96 |
| | 500V | Α | 96 |
| | 690V | Α | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | |
| · · · · · · · · · · · · · · · · · · · | lth | W | 2 |
| | AC3 | W | 0.4 |
| Tightening torque for terminals | ================================== | | |
| | min | Nm | 1.5 |
| | max | Nm | 1.8 |
| | min | lbin | 1.1 |
| | max | Ibin | 1.5 |
| Tightening torque for coil terminal | Παλ | 10111 | 1.0 |
| Tightorning torque for our terminal | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | 1111/1 | IDIII | 0.0 |
| | | | |



| | max | Ibin | 0.74 |
|--|---|---|---|
| simultaneously connectable | | Nr. | 2 |
| A)MO#4 :1 | | | |
| AWG/Kcmil | | | 40 |
| Florible w/s has so advator a satisfic | max | | 10 |
| Flexible w/o lug conductor section | | | 4 |
| | | | 1 6 |
| Florible of white conductor agotion | IIIdX | 111111 | O |
| Flexible C/W lug colludctor section | min | mm² | 1 |
| | | | 4 |
| Flexible with insulated spade lug conductor section | | 111111 | - |
| r lexible with insulated space tog conductor section | | mm² | 1 |
| | | | 4 |
| | max | | IP20 when |
| tion according to IEC/EN 60529 | | | properly wired |
| | | | , <u></u> |
| | | | |
| | normal | | Vertical plan |
| | allowable | | ±30° |
| | | | Screw / DIN rail |
| | | | 35mm |
| | | g | 365 |
| | | | |
| AWG/kcmil conductor section | | | |
| | max | | 10 |
| acteristics | | | |
| | | | |
| | | Α | 10 |
| signation | | А | 10 A600 - P600 |
| signation 15 | | Α | |
| - | 230V | A | A600 - P600 3 |
| - | 400V | | A600 - P600 3 1.9 |
| 15 | | A | A600 - P600 3 |
| - | 400V 500V | A A A | 3 1.9 1.4 |
| 12 | 400V | A A | A600 - P600 3 1.9 |
| 15 | 400V 500V 110V | A A A | 3 1.9 1.4 5.7 |
| 12 | 400V 500V 110V 24V | A A A | 3 1.9 1.4 5.7 |
| 12 | 400V 500V 110V 24V 48V | A A A A | 3 1.9 1.4 5.7 5.7 |
| 12 | 400V 500V 110V 24V 48V 60V | A A A A A | 3 1.9 1.4 5.7 5.7 2.9 2.3 |
| 12 | 400V 500V 110V 24V 48V 60V 110V | A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| 12 | 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A A | 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 |
| 12 | 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 |
| 12 13 0d according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 |
| 12 13 0d according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |
| | AWG/kcmil conductor section | AWG/Kcmil AWG/Kcmil Flexible w/o lug conductor section Flexible c/w lug conductor section min max Flexible with insulated spade lug conductor section min max Flexible with insulated spade lug conductor section min max ction according to IEC/EN 60529 AWG/kcmil conductor section AWG/kcmil conductor section max | AWG/Kcmil Flexible w/o lug conductor section Flexible c/w lug conductor section Flexible c/w lug conductor section min mm² max mm² Flexible with insulated spade lug conductor section Flexible with insulated spade lug conductor section min mm² max mm² Flexible with insulated spade lug conductor section min mm² max mm² ction according to IEC/EN 60529 AWG/kcmil conductor section g AWG/kcmil conductor section max accteristics |



| AC operating voltage | 50/60Hz | | | V | 400 |
|--|--|-----------------|--|--------------------------------------|---|
| | | | | | |
| | of 50/60Hz coil powered at 50 | | | | |
| | pick-u | p | | 0/11 | |
| | | | min | %Us | 80 |
| | drop (| out. | max | %Us | 110 |
| | drop-o | Jul | min | %Us | 20 |
| | | | max | %Us | 55 |
| | of 50/60Hz coil powered at 60 | Hz | max | 7000 | 00 |
| | pick-u | | | | |
| | P.3 2 | | min | %Us | 85 |
| | | | max | %Us | 110 |
| | drop-o | out | | | |
| | | | min | %Us | 20 |
| | | | max | %Us | 55 |
| C average coil con | • | | | | _ |
| | of 50/60Hz coil powered at 50 | Hz | | | |
| | | | in-rush | VA | 75 |
| | | | holding | VA | 9 |
| | of 50/60Hz coil powered at 60 | Hz | | | |
| | | | in-rush | VA | 70 |
| | | | holding | VA | 6.5 |
| | of 60Hz coil powered at 60Hz | | |) /A | 7.5 |
| | | | in-rush | VA | 75 |
| Niceination at haldin | - <20°C FOLI- | | holding | VA | 9 |
| Dissipation at holdin Max cycles frequence | | | | W | 2.5 |
| Mechanical operatio | | | | cycles/h | 3600 |
| Operating times | | | | Cycles/11 | 3000 |
| Average time for Us | control | | | | |
| wordgo umo tor Go | in AC | | | | |
| | | | | | |
| | | ng NO | | | |
| | Closir | ng NO | min | ms | 8 |
| | | ng NO | min max | ms ms | 8 24 |
| | Closin | ng NO ing NO | | | |
| | Closin | | | | |
| | Closir Openi | ing NO | max | ms | 24 |
| | Closin | ing NO | max min | ms ms | 241020 |
| | Closir Openi | ing NO | max min | ms ms | 24102014 |
| | Closir Openi Closir | ing NO | max min max | ms ms ms | 241020 |
| | Closir Openi Closir | ing NO | max min max min max | ms ms ms | 2410201428 |
| | Closir Openi Closir | ing NO | max min max min max min | ms ms ms ms | 24102014287 |
| | Closir Openi Closir | ing NO | max min max min max | ms ms ms | 2410201428 |
| | Closir Openi Closir Openi | ing NO | max min max min max min | ms ms ms ms | 24102014287 |
| | Closir Openi Closir | ing NO | max min max min max min max | ms ms ms ms ms | 24 10 20 14 28 7 18 |
| | Closir Openi Closir Openi | ing NO | max min max min max at 480V | ms ms ms ms ms | 24 10 20 14 28 7 18 11 |
| Full-load current (FL | Closin Openi Closin Openi Openi A) for three-phase AC motor | ing NO | max min max min max min max | ms ms ms ms ms | 24 10 20 14 28 7 18 |
| JL technical data Full-load current (FL Yielded mechanical | Closin Openi Closin Openi A) for three-phase AC motor performance | ing NO | max min max min max at 480V | ms ms ms ms ms | 24 10 20 14 28 7 18 11 |
| Full-load current (FL | Closin Openi Closin Openi Openi A) for three-phase AC motor | ing NO | max min max min max at 480V at 600V | ms ms ms ms ms A | 24 10 20 14 28 7 18 |
| Full-load current (FL | Closin Openi Closin Openi A) for three-phase AC motor performance | ing NO | max min max min max min max at 480V at 600V | ms ms ms ms ms A A | 24 10 20 14 28 7 18 11 11 |
| Full-load current (FL | Closin Openi Closin Openi A) for three-phase AC motor performance for single-phase AC motor | ing NO | max min max min max at 480V at 600V | ms ms ms ms ms A | 24 10 20 14 28 7 18 |
| ull-load current (FL | Closin Openi Closin Openi A) for three-phase AC motor performance | ing NO | max min max min max min max at 480V at 600V | ms ms ms ms ms A A | 24 10 20 14 28 7 18 11 11 |

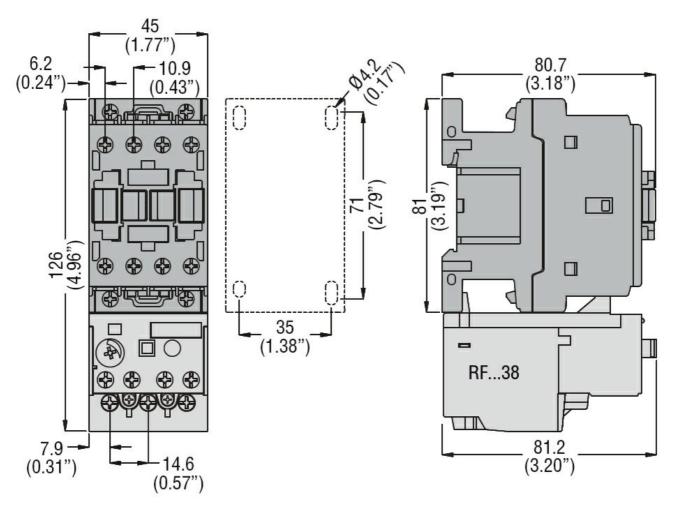




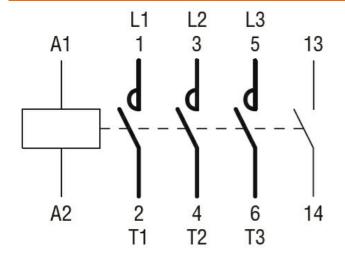
| | | 220/230V | HP | 5 |
|--------------------------|---------------------------------|-----------------------|----|-------------|
| | | 460/480V | HP | 7.5 |
| | | 575/600V | HP | 10 |
| General USE | | | | |
| | Contactor | | | |
| | | AC current | Α | 28 |
| | Auxiliary contacts | | | |
| | • | AC voltage | V | 600 |
| | | AC current | Α | 10 |
| | | DC voltage | V | 250 |
| | | DC current | Α | 1 |
| Short-circuit protection | on fuse, 600V | | | |
| · | High fault | | | |
| | · · | Short circuit current | kA | 100 |
| | | Fuse rating | Α | 30 |
| | | Fuse class | | J |
| | Standard fault | | | |
| | | Short circuit current | kA | 5 |
| | | Fuse rating | Α | 70 |
| Contact rating of aux | iliary 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 & Protec | tion | | | |
| Pollution degree | | | | 3 |
| Dimensions | | | | |
| | | | | |

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 400VAC, 1NO AUXILIARY CONTACT



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



BF1210A400

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 400VAC, 1NO AUXILIARY CONTACT

| cULus | | | |
|-------|--|--|--|
| EAC | | | |

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching







| | | | _ |
|--|---|----------|-----------------|
| Product designation | | | Power contactor |
| Product type designation Contact characteristics | | | BF12 |
| Number of poles | | Nle | 3 |
| Rated insulation voltage Ui IEC/EN | | Nr. V | 690 |
| Rated insulation voltage of IEC/EN Rated impulse withstand voltage Uimp | | kV | 6 |
| Operational frequency | | K V | 0 |
| Operational frequency | min | Hz | 25 |
| | | ⊓∠ Hz | 400 |
| IEC Conventional free air thermal current Ith | max | A | 28 |
| Operational current le | | | 20 |
| Operational current le | AC 1 (<10°C) | Α | 28 |
| | AC-1 (≤40°C) AC-1 (≤55°C) | A | 23 |
| | AC-1 (≤33 C) AC-1 (≤70°C) | A | 20 |
| | AC-1 (≤70 C) AC-3 (≤440V ≤55°C) | A | 12 |
| | AC-3 (\$440 \(\frac{1}{2}\) S55 (C) AC-4 (400 \(\frac{1}{2}\)) | A | 7.9 |
| Rated operational power AC-3 (T≤55°C) | AO-4 (400V) | | 7.9 |
| Nated operational power AC-3 (1233 C) | 230V | kW | 3.2 |
| | 400V | kW | 5.7 |
| | 415V | kW | 6.2 |
| | 440V | kW | 5.5 |
| | 500V | kW | 5.5 |
| | 690V | kW | 5 |
| Rated operational power AC-1 (T≤40°C) | | | |
| raisa sporational power ris in (1–16 G) | 230V | kW | 10 |
| | 400V | kW | 18 |
| | 500V | kW | 23 |
| | 690V | kW | 32 |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | | | |
| | ≤24V | Α | 17 |
| | 48V | Α | 15 |
| | 75V | Α | 13 |
| | 110V | Α | 6 |
| | 220V | Α | _ |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 18 |
| | 110V | Α | 13 |
| | 220V | Α | 1 |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | | | |
| | ≤24V | Α | 22 |
| | 48V | Α | 22 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | | | |





| | 220V | Α | 11 |
|---|---------------|------|-----|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| · | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| 120 max carroncio in 200 200 mai 2/10 Tomo mai i poloci in conco | ≤24V | Α | 12 |
| | 48V | A | 11 |
| | 75V | A | 10 |
| | 110V | A | 2 |
| | 220V | A | _ |
| IFC may current to in DC2 DC5 with L/D < 15 mg with 2 notes in corios | 220 V | A | |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | 2041 / | ۸ | 4.5 |
| | ≤24V | A | 15 |
| | 48V | Α | 13 |
| | 75V | Α | 12 |
| | 110V | Α | 8 |
| | 220V | Α | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | | | |
| | ≤24V | Α | 18 |
| | 48V | Α | 18 |
| | 75V | Α | 15 |
| | 110V | Α | 12 |
| | 220V | Α | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | | |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| Total distribution | gG (IEC) | Α | 32 |
| | aM (IEC) | A | 12 |
| Making capacity (RMS value) | aivi (ILO) | A | 120 |
| | | Α | 120 |
| Breaking capacity at voltage | 44017 | ۸ | 06 |
| | 440V | A | 96 |
| | 500V | A | 96 |
| | 690V | A | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | |
| | Ith | W | 2 |
| | AC3 | W | 0.4 |
| Tightening torque for terminals | | | |
| | min | Nm | 1.5 |
| | max | Nm | 1.8 |
| | min | lbin | 1.1 |
| | max | Ibin | 1.5 |
| Tightening torque for coil terminal | | | |
| | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | | | |





| | | max | Ibin | 0.74 |
|---|---|---|---------------------------------|---|
| | simultaneously connectable | | Nr. | 2 |
| Conductor section | AND #4 | | | |
| | AWG/Kcmil | | | 4.0 |
| | Florible w/o live conductor costice | max | | 10 |
| | Flexible w/o lug conductor section | min | mm² | 1 |
| | | max | mm² | 1 6 |
| | Flexible c/w lug conductor section | Παλ | 111111 | 0 |
| | r lexible 6/W lug conductor section | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | | | <u> </u> |
| | | min | mm² | 1 |
| | | max | mm² | 4 |
| Dower terminal prote | otion according to ICC/CN 60520 | | | IP20 when |
| Power terminal prote | ction according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | |
| Operating position | | | | |
| | | normal | | Vertical plan |
| | | allowable | | ±30° |
| Fixing | | | | Screw / DIN rail |
| | | | ~ | 35mm |
| Weight Conductor section | | | g | 360 |
| Conductor section | AWG/kcmil conductor section | | | |
| | AVVG/kcmii conductor section | max | | 10 |
| Auxiliary contact char | racteristics | IIIax | | 10 |
| Thermal current Ith | dotonono | | Α | 10 |
| IEC/EN 60947-5-1 de | esignation | | | A600 - P600 |
| | | | | |
| Operating current AC | - | | | |
| Operating current AC | - | 230V | А | 3 |
| Operating current AC | - | 230V 400V | A A | 3 1.9 |
| Operating current AC | - | | | |
| Operating current AC | 15 | 400V | Α | 1.9 |
| | 15 | 400V | Α | 1.9 |
| | 212 | 400V 500V | A A | 1.9 1.4 |
| Operating current DC | 212 | 400V 500V 110V 24V | A A A | 1.9 1.4 5.7 5.7 |
| Operating current DC | 212 | 400V 500V 110V 24V 48V | A A A A | 1.9 1.4 5.7 5.7 2.9 |
| Operating current DC | 212 | 400V 500V 110V 24V 48V 60V | A A A A A | 1.9 1.4 5.7 5.7 2.9 2.3 |
| Operating current DC | 212 | 400V 500V 110V 24V 48V 60V 110V | A A A A A | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| Operating current DC | 212 | 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| Operating current DC | 212 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 |
| Operating current DC Operating current DC | 212 | 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| Operating current DC Operating current DC Operations | 212 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Operating current DC Operations Mechanical life | 212 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A A Cycles | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Operating current DC Operations Mechanical life Electrical life | 212 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data | 212 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A A Cycles | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data | 212 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data | 10d according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A Cycles cycles | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B | 10d according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level BC Mirror contats accord | 10d according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A Cycles cycles | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 yes |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B | 10d according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A Cycles cycles | 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |



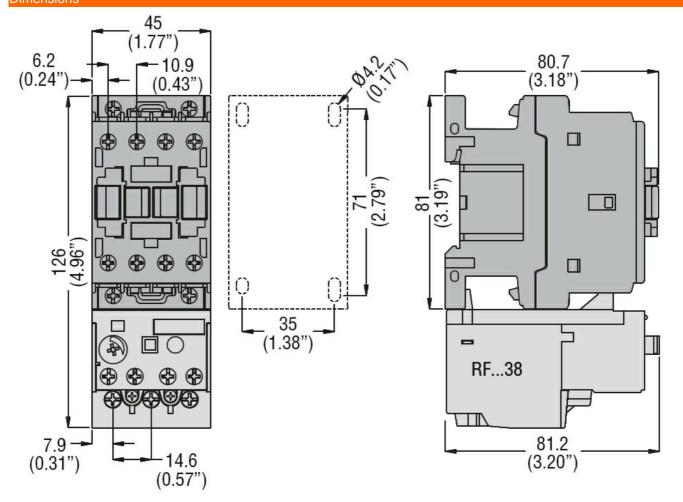


| Rated AC voltage at 60Hz | | V | 24 |
|--|--------------------|------------|----------|
| AC operating voltage | | | |
| of 60Hz coil powered at 60Hz | | | |
| pick-up | | 0/11 | |
| | min | %Us | 80 |
| dram and | max | %Us | 110 |
| drop-out | min | 0/116 | 20 |
| | min | %Us %Us | 20 55 |
| AC average coil consumption at 20°C | max | 7005 | 55 |
| of 60Hz coil powered at 60Hz | | | |
| or our iz con powered at our iz | in-rush | VA | 75 |
| | holding | VA | 9 |
| Dissipation at holding ≤20°C 50Hz | riolaling | W | 2.5 |
| Max cycles frequency | | VV | 2.0 |
| Mechanical operation | | cycles/h | 3600 |
| Operating times | | 2, 3100/11 | |
| 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 |
| III technical data | max | ms | 18 |
| UL technical data | | | |
| Full-load current (FLA) for three-phase AC motor | ot 490\/ | ۸ | 11 |
| | at 480V at 600V | A A | 11 11 |
| Yielded mechanical performance | at 600 v | Α | 11 |
| for single-phase AC motor | | | |
| ioi single-phase AC Motor | 110/120V | HP | 1 |
| | 230V | HP | 2 |
| for three-phase AC motor | 200 V | *** | |
| ioi ando pilado No motor | 200/208V | HP | 5 |
| | 220/230V | HP | 5 |
| | 460/480V | HP | 7.5 |
| | 575/600V | HP | 10 |
| General USE | | | |
| Contactor | | | |
| | AC current | Α | 28 |
| Auxiliary contacts | | | |
| | AC voltage | V | 600 |
| | AC current | Α | 10 |
| | DC voltage | V | 250 |
| | DC current | Α | 1 |
| Short-circuit protection fuse, 600V | | | |
| High fault | | | |





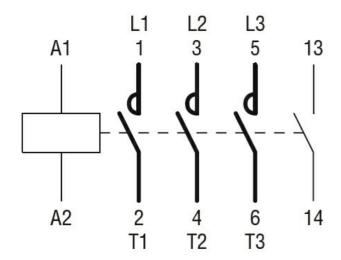
| | | Short circuit current | kA | 100 |
|---------------------------|------------------------------|-----------------------|----|-------------|
| | | Fuse rating | Α | 30 |
| | | Fuse class | | J |
| | Standard fault | | | |
| | | Short circuit current | kA | 5 |
| | | Fuse rating | Α | 70 |
| Contact rating of auxilia | ary 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 | n | | | |
| Pollution degree | | | | 3 |
| Dimensions | | | | |



Wiring diagrams

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 60HZ, 24VAC, 1NO AUXILIARY CONTACT



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







Product designation Power contactor Product type designation BF12 Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency min Нъ 25 Hz 400 max IEC Conventional free air thermal current Ith 28 Α Operational current le AC-1 (≤40°C) Α 28 AC-1 (≤55°C) Α 23 AC-1 (≤70°C) Α 20 AC-3 (≤440V ≤55°C) Α 12 AC-4 (400V) 7.9 Rated operational power AC-3 (T≤55°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≤40°C) 230V kW 10 400V kW 18 500V kW 23 690V kW 32 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V Α 17 48V Α 15 75V Α 13 110V Α 6 220V Α IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V Α 20 48V Α 20 75V 18 Α 110V Α 13 220V Α 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V 22 Α 22 48V Α 75V Α 20 110V 16





| | 220V | Α | 11 |
|--|-------------|--------------|----------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | _ |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| | ≤24V | Α | 15 |
| | 48V | Α | 13 |
| | 75V | A | 12 |
| | 110V | A | 8 |
| | 220V | A | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | 22U V | | |
| TEO MAX CUITETILIE III DOG-DOG WILLI LIN = 15HIS WILL 3 POLES III SELIES | ~2A\/ | ۸ | 10 |
| | ≤24V 48V | A | 18 |
| | | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| | 220V | A | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | _ | |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| | gG (IEC) | Α | 32 |
| | aM (IEC) | Α | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | | | |
| | 440V | Α | 96 |
| | 500V | Α | 96 |
| | 690V | Α | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | - - |
| . The shortest por port (artitago raido) | lth | W | 2 |
| | AC3 | W | 0.4 |
| Tightening torque for terminals | 7,00 | V V | J. 1 |
| rightening torque for terminals | min | Nm | 1.5 |
| | | Nm | 1.8 |
| | max | | |
| | min | lbin Ibin | 1.1 |
| Tightoning toyour for call town-in-1 | max | lbin | 1.5 |
| Tightening torque for coil terminal | · | | 0.0 |
| | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | | | |





| | | max | Ibin | 0.74 |
|--|---|-------------------------------|------------------|--------------------------|
| | simultaneously connectable | | Nr. | 2 |
| Conductor section | AVA(O/I/C :I | | | |
| | AWG/Kcmil | 200 0 | | 10 |
| | Florible w/e lug conductor coetion | max | | 10 |
| | Flexible w/o lug conductor section | min | mm² | 1 |
| | | max | mm² | 6 |
| | Flexible c/w lug conductor section | max | 111111 | |
| | Tioxible 0/W lag defladator destion | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | | | |
| | | min | mm² | 1 |
| | | max | mm² | 4 |
| Dowar tarminal protos | ation according to IEC/EN 60500 | | | IP20 when |
| Power terminal protec | ction according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | |
| Operating position | | | | |
| | | normal | | Vertical plan |
| | | allowable | | ±30° |
| Fixing | | | | Screw / DIN rail 35mm |
| Weight | | | g | 354 |
| Conductor section | | | | |
| | AWG/kcmil conductor section | | | |
| | | max | | 10 |
| Auxiliary contact chara | acteristics | | | |
| Thermal current Ith | | | Α | 10 |
| IEC/EN 60947-5-1 de | | | | A600 - P600 |
| Operating current AC | 15 | | _ | _ |
| | | 230V | A | 3 |
| | | 400V | A | 1.9 |
| Operating current DC | 12 | 500V | Α | 1.4 |
| Operating current DC | 12 | 110V | ٨ | 5.7 |
| Operating ourrent DC | 12 | 1100 | Α | 5.7 |
| Operating current DC | 10 | 24V | Α | 5.7 |
| | | 48V | A | 2.9 |
| | | 60V | A | 2.3 |
| | | 110V | A | 1.25 |
| | | 125V | A | 1.1 |
| | | 220V | Α | 0.55 |
| | | 600V | Α | 0.2 |
| Operations | | | | |
| Mechanical life | | | cycles | 20000000 |
| Electrical life | | | cycles | 2000000 |
| | | | | |
| Safety related data | | | | |
| • | 0d according to EN/ISO 13489-1 | | | |
| • | 0d according to EN/ISO 13489-1 | rated load | cycles | 2000000 |
| Performance level B1 | n | rated load nechanical load | cycles cycles | 2000000 20000000 |
| Performance level B1 Mirror contats accordi | | | - | |
| | n | | - | 20000000 |



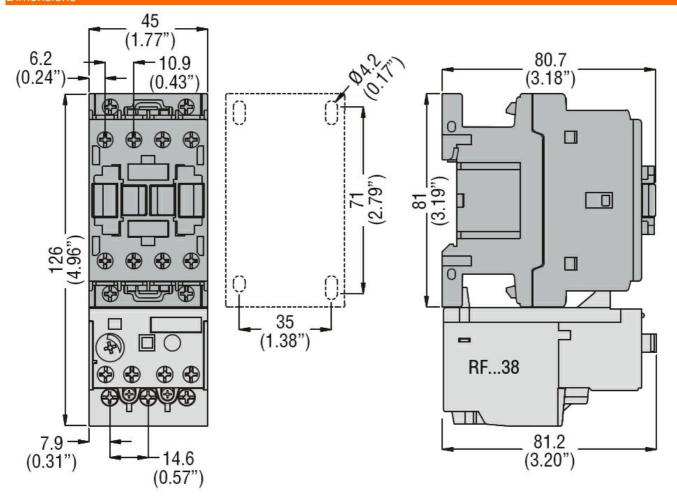


| Rated AC voltage at 60 |)Hz | | V | 48 |
|--------------------------|------------------------------|------------|----------|------|
| AC operating voltage | | | | |
| | of 60Hz coil powered at 60Hz | | | |
| | pick-up | | | |
| | | min | %Us | 80 |
| | | max | %Us | 110 |
| | drop-out | | | |
| | | min | %Us | 20 |
| | | max | %Us | 55 |
| AC average coil consu | | | | |
| | 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 co | | | | |
| | in AC | | | |
| | Closing NO | | | 0 |
| | | min | ms | 8 |
| | On oning NO | max | ms | 24 |
| | Opening NO | min | ma | 10 |
| | | min | ms | 20 |
| | Closing NC | max | ms | 20 |
| | Closing NC | min | ms | 14 |
| | | max | ms | 28 |
| | Opening NC | max | 1110 | 20 |
| | oper.m.g | min | ms | 7 |
| | | max | ms | 18 |
| UL technical data | | | | |
| Full-load current (FLA) | for three-phase AC motor | | | |
| | · | at 480V | Α | 11 |
| | | at 600V | Α | 11 |
| Yielded mechanical pe | erformance | | | |
| | 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 | Α | 28 |
| | Auxiliary contacts | | | |
| | | AC voltage | V | 600 |
| | | AC current | A | 10 |
| | | DC voltage | V | 250 |
| <u> </u> | | DC current | Α | 1 |
| Short-circuit protection | | | | |
| | High fault | | | |



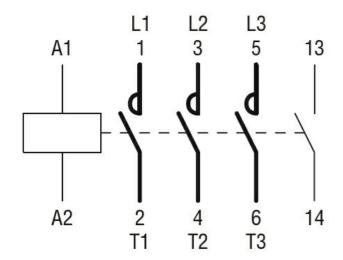


| | Short circuit current | kA | 100 |
|--|-----------------------|----|-------------|
| | Fuse rating | Α | 30 |
| | Fuse class | | J |
| Standard fault | | | · |
| | Short circuit current | kA | 5 |
| | Fuse rating | Α | 70 |
| Contact rating of auxiliary contacts according to UL | | | A600 - P600 |
| 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







Product designation Power contactor Product type designation BF12 Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency Нъ 25 min Hz 400 max IEC Conventional free air thermal current Ith 28 Α Operational current le AC-1 (≤40°C) Α 28 AC-1 (≤55°C) Α 23 AC-1 (≤70°C) Α 20 AC-3 (≤440V ≤55°C) Α 12 AC-4 (400V) 7.9 Rated operational power AC-3 (T≤55°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≤40°C) 230V kW 10 400V kW 18 500V kW 23 690V kW 32 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V Α 17 48V Α 15 75V Α 13 110V Α 6 220V Α IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V Α 20 48V Α 20 75V 18 Α 110V Α 13 220V Α 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V Α 22 22 48V Α 75V Α 20 110V 16





| | 220V | Α | 11 |
|---|----------|------|---------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | _ |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| · | ≤24V | Α | 15 |
| | 48V | Α | 13 |
| | 75V | Α | 12 |
| | 110V | Α | 8 |
| | 220V | A | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | 220 V | | |
| | ≤24V | Α | 18 |
| | 48V | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| | 220V | A | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | 220 V | ^ | U |
| IEC Max current le in DC3-DC3 with E/N \$ 13ms with 4 poles in selles | ≤24V | Α | 15 |
| | 48V | A | 15 |
| | | | |
| | 75V | A | 15 |
| | 110V | A | 16 7 |
| Chart time allowable correct for 40s (IEC/ENCO047.4) | 220V | A | |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | ~C (IEC) | ۸ | 20 |
| | gG (IEC) | A | 32 |
| Mallian and it (DMO) at all | aM (IEC) | A | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | 4.40).4 | | |
| | 440V | A | 96 |
| | 500V | A | 96 |
| | 690V | Α | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | |
| | Ith | W | 2 |
| | AC3 | 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 | Ibin | 0.74 |
|--|---|---|---|--|
| | simultaneously connectable | | Nr. | 2 |
| Conductor section | A.M.O. #4 | | | |
| | AWG/Kcmil | | | 40 |
| | Clavible w/o live an diretor anation | max | | 10 |
| | Flexible w/o lug conductor section | min | mm² | 1 |
| | | min | mm² mm² | 1 6 |
| | Flexible c/w lug conductor section | max | 111111 | 0 |
| | r lexible 6/w lug corluction section | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | | | • |
| | r loxilote mar inculated opade lag contactor cooler | min | mm² | 1 |
| | | max | mm² | 4 |
| D | ('' | | | IP20 when |
| Power terminal protect | etion according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | |
| Operating position | | | | |
| | | normal | | Vertical plan |
| | | allowable | | ±30° |
| Fixing | | | | Screw / DIN rail |
| | | | | 35mm |
| Weight | | | g | 359 |
| Conductor section | | | | |
| | AWG/kcmil conductor section | | | |
| A 10 | | max | | 10 |
| IALIXIIIary contact chara | ACTAPISTICS | | | |
| Auxiliary contact chara | 20101101100 | | ^ | 10 |
| Thermal current Ith | | | Α | 10 A600 D600 |
| Thermal current Ith IEC/EN 60947-5-1 de | signation | | Α | 10 A600 - P600 |
| Thermal current Ith IEC/EN 60947-5-1 de | signation | 2201/ | | A600 - P600 |
| Thermal current Ith IEC/EN 60947-5-1 de | signation | 230V | A | A600 - P600 3 |
| Thermal current Ith IEC/EN 60947-5-1 de | signation | 400V | A A | A600 - P600 3 1.9 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 | signation 15 | | A | A600 - P600 3 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 | signation 15 | 400V 500V | A A A | 3 1.9 1.4 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1 | signation 15 | 400V | A A | A600 - P600 3 1.9 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1 | signation 15 | 400V 500V 110V | A A A | 3 1.9 1.4 5.7 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1 | signation 15 | 400V 500V 110V 24V | A A A | A600 - P600 3 1.9 1.4 5.7 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1 | signation 15 | 400V 500V 110V | A A A | 3 1.9 1.4 5.7 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1 | signation 15 | 400V 500V 110V 24V 48V | A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1 | signation 15 | 400V 500V 110V 24V 48V 60V | A A A A A | 3 1.9 1.4 5.7 5.7 2.9 2.3 |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 | signation 15 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC | signation 15 | 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3 | signation 15 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC | signation 15 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3 Operations Mechanical life Electrical life | signation 15 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data | signation 15 12 13 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data | signation 15 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data | signation 15 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | signation 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3 Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accordi | signation 15 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 yes |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | signation 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |



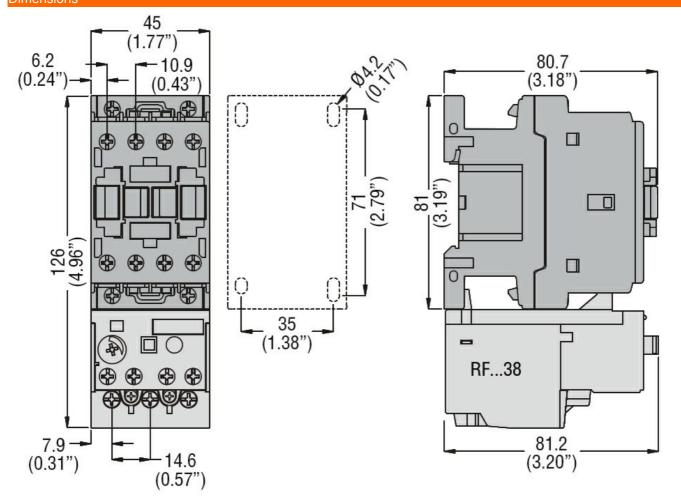


| Rated AC voltage at 6 | 0Hz | | V | 120 |
|--------------------------------------|------------------------------|--------------------|-----------|----------|
| AC operating voltage | | | | |
| | of 60Hz coil powered at 60Hz | | | |
| | pick-up | | | |
| | | min | %Us | 80 |
| | | max | %Us | 110 |
| | drop-out | _ | | |
| | | min | %Us | 20 |
| | | max | %Us | 55 |
| AC average coil consi | | | | |
| | of 60Hz coil powered at 60Hz | : | 1/4 | 75 |
| | | in-rush | VA | 75 |
| Dissipation at halding | <20°C 5011- | holding | VA | 9 |
| Dissipation at holding | | | W | 2.5 |
| Max cycles frequency | | | cycles/h | 3600 |
| Mechanical operation Operating times | | | Cycles/II | 3000 |
| Average time for Us c | ontrol | | | |
| , orago unio ioi os o | in AC | | | |
| | Closing NO | | | |
| | Closing 110 | 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 |) for these whose AC mater | | | |
| Full-load current (FLA |) for three-phase AC motor | at 100V | ۸ | 44 |
| | | at 480V at 600V | A | 11 11 |
| Yielded mechanical po | orformanco | at 600 v | Α | 11 |
| rielded mechanical po | for single-phase AC motor | | | |
| | ioi siligie-pliase AC motor | 110/120V | HP | 1 |
| | | 230V | HP | 2 |
| | for three-phase AC motor | 2001 | | |
| | | 200/208V | HP | 5 |
| | | 220/230V | HP | 5 |
| | | 460/480V | HP | 7.5 |
| | | 575/600V | HP | 10 |
| General USE | | | | |
| | Contactor | | | |
| | | AC current | Α | 28 |
| | Auxiliary contacts | | | |
| | | AC voltage | V | 600 |
| | | AC current | Α | 10 |
| | | DC voltage | V | 250 |
| - | | DC current | A | 1 |
| Short-circuit protection | | | | |
| | High fault | | | |



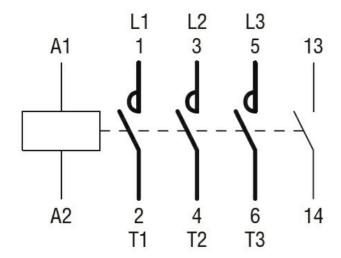


| | | Short circuit current | kA | 100 |
|---------------------------|------------------------------|-----------------------|----|-------------|
| | | Fuse rating | Α | 30 |
| | | Fuse class | | J |
| | Standard fault | | | |
| | | Short circuit current | kA | 5 |
| | | Fuse rating | Α | 70 |
| Contact rating of auxilia | ary 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 | n | | | |
| 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







| Product type designation Series | Product designation | | | Power contactor |
|---|---|-------------|-----|-----------------|
| Number of poles Nr. 3 Rated insulation voltage Ui IEC/EN V 690 Rated insulation voltage Withstand voltage Uimp kV 6 Operational frequency min Hz 25 max Hz 400 L IEC Conventional free air thermal current Ith A 28 Operational current Ie AC-1 (≤40°C) A 28 AC-1 (555°C) A 23 AC-1 (570°C) A 20 AC-3 (≤440°V 455°C) A 23 AC-1 (570°C) A 20 AC-3 (≤440°V 55°C) A 23 AC-1 (400°V) A 7.9 Rated operational power AC-3 (T≤55°C) 230V kW 3.2 400V kW 5.5 500V kW 5.5 500V kW 5.5 500V kW 5.5 Rated operational power AC-1 (T≤40°C) 230V kW 10 400V kW 18 500V kW 10 400V kW 18 500V kW | | | | BF12 |
| Rated insulation voltage Ui IEC/EN V 690 Rated impulse withstand voltage Uimp kV 6 Operational frequency min Hz 25 IEC Conventional free air thermal current Ith A 28 Operational current Ie AC-1 (≤40°C) A 28 AC-1 (≤55°C) A 23 AC-1 (≤70°C) A 20 AC-3 (≤440V ≤55°C) A 12 AC-4 (400V) A 7.9 Rated operational power AC-3 (T≤55°C) 230V kW 5.7 415V kW 6.2 440V kW 5.5 500V kW 5.5 500V kW 5.5 500V kW 5.5 500V kW 5.5 500V kW 2.2 4.0 kW 5.8 5.0 5.0 5.0 5.0 kW 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 | | | | • |
| Rated impulse withstand voltage Uimp | • | | | |
| Department Pize 25 Max Pize 400 EC Conventional free air thermal current lth | | | | |
| Figure | | | kV | 6 |
| EC Conventional free air thermal current lth | Operational frequency | | | |
| EC Conventional free air thermal current lith | | | | |
| Operational current le AC-1 (≤40°C) A 28 AC-1 (≤55°C) A 23 AC-1 (≤70°C) A 20 AC-3 (≤440V ≤55°C) A 12 AC-4 (400V) A 7.9 Rated operational power AC-3 (T≤55°C) 230V kW 3.2 400V kW 5.7 415V kW 5.5 500V kW 5 Rated operational power AC-1 (T≤40°C) 230V kW 10 400V kW 18 500V kW 23 690V kW 32 IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V A 20 75V A 18 110V A 10< | | max | | |
| AC-1 (≤40°C) | | | A | 28 |
| AC-1 (≤55°C) | Operational current le | | _ | |
| AC-1 (≤70°C) | | | | |
| AC-3 (≤440V ≤55°C) | | , | | |
| Rated operational power AC-3 (T≤55°C) 230V kW 3.2 400V kW 5.7 415V kW 6.2 444V kW 5.5 500V kW 1.0 400V kW 1.8 500V kW 2.3 690V kW 2.3 690V kW 3.2 6 | | , | | |
| Rated operational power AC-3 (T≤55°C) 230V kW 3.2 400V kW 5.7 415V kW 6.2 4440V kW 5.5 500V kW 5.6 690V kW 5 Rated operational power AC-1 (T≤40°C) Rated operational power AC-1 (T≤40°C) 230V kW 10 400V kW 18 500V kW 23 690V kW 32 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series \$\frac{\frac | | • | | |
| 230V kW 3.2 400V kW 5.7 415V kW 6.2 440V kW 5.5 500V kW 5 500V kW 18 500V kW 23 690V kW 32 500V k | | AC-4 (400V) | A | 7.9 |
| 400V kW 5.7 415V kW 6.2 4440V kW 5.5 500V kW 5 690V kW 5 690V kW 5 700V kW 5 690V kW 5 700V kW 10 400V kW 13 500V kW 23 690V kW 32 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | Rated operational power AC-3 (T≤55°C) | | | |
| A15V | | | | |
| A440V kW 5.5 | | | | |
| Soov kW 5 | | | | |
| Rated operational power AC-1 (T≤40°C) 230V kW 10 400V kW 18 500V kW 23 690V kW 32 20 20 20 20 20 20 | | | | |
| Rated operational power AC-1 (T≤40°C) 230V kW 10 400V kW 18 500V kW 23 690V kW 32 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V A 17 48V A 15 75V A 13 110V A 6 220V A - IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V A 20 48V A 20 75V A 18 110V A 13 220V A 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V A 20 48V A 20 75V A 18 110V A 13 220V A 1 | | | | |
| | | 690V | KVV | 5 |
| A00V kW 18 500V kW 23 690V kW 32 | Rated operational power AC-1 (T≤40°C) | | | |
| EC max current le in DC1 with L/R ≤ 1ms with 1 poles in series S24V A 17 48V A 15 75V A 13 110V A 6 220V A - IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series S24V A 20 48V A 20 75V A 18 110V A 18 110V A 13 220V A 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series S24V A 20 220V A 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series S24V A 22 48V A 22 48V A 22 75V A 20 20 48V A 20 20 48V A 22 75V A 20 48V A 20 | | | | |
| EC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V | | | | |
| SEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series S24V | | | | |
| | | 690V | KVV | 32 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | | _ | |
| T5V | | | | |
| 110V A 6 220V A - | | | | |
| EC max current le in DC1 with L/R \leq 1ms with 2 poles in series \leq 24V A 20 48V A 20 75V A 18 110V A 13 220V A 1 1 1 1 1 1 1 1 1 | | | | |
| IEC max current le in DC1 with L/R \leq 1ms with 2 poles in series | | | | 6 |
| | 150 | 220V | A | _ |
| | IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | | _ | |
| | | | | |
| | | | | |
| EC max current le in DC1 with L/R \leq 1ms with 3 poles in series \leq 24V | | | | |
| IEC max current le in DC1 with L/R \leq 1ms with 3 poles in series | | | | |
| ≤24V A 22 48V A 22 75V A 20 | | 220V | A | 1 |
| 48V A 22 75V A 20 | IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | | | |
| 75V A 20 | | | | |
| | | | | |
| 110V A 16 | | | | |
| | | 110V | Α | 16 |





| | 220V | Α | 11 |
|--|-------------|--------------|----------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | _ |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| | ≤24V | Α | 15 |
| | 48V | Α | 13 |
| | 75V | A | 12 |
| | 110V | A | 8 |
| | 220V | A | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | 22U V | | |
| TEO MAX CUITETILIE III DOG-DOG WILLI LIN = 15HIS WILL 3 POLES III SELIES | ~2A\/ | ۸ | 10 |
| | ≤24V 48V | A | 18 |
| | | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| | 220V | A | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | _ | |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| | gG (IEC) | Α | 32 |
| | aM (IEC) | Α | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | | | |
| | 440V | Α | 96 |
| | 500V | Α | 96 |
| | 690V | Α | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | - - |
| . The shortest por port (artitago raido) | lth | W | 2 |
| | AC3 | W | 0.4 |
| Tightening torque for terminals | 7,00 | V V | J. 1 |
| rightening torque for terminals | min | Nm | 1.5 |
| | | Nm | 1.8 |
| | max | | |
| | min | lbin Ibin | 1.1 |
| Tightoning toyour for call town-in-1 | max | lbin | 1.5 |
| Tightening torque for coil terminal | • | | 0.0 |
| | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | | | |





| | | max | Ibin | 0.74 |
|--|---|------------------------------|--------|--------------------------|
| | s simultaneously connectable | | Nr. | 2 |
| Conductor section | A1A/O///:1 | | | |
| | AWG/Kcmil | | | 10 |
| | Flavible w/s lug conductor coetion | max | | 10 |
| | Flexible w/o lug conductor section | min | mm² | 1 |
| | | max | mm² | 6 |
| | Flexible c/w lug conductor section | IIIax | 111111 | 0 |
| | Tiexible 6/W lug conductor section | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | | | |
| | эр эн | min | mm² | 1 |
| | | max | mm² | 4 |
| Dower terminal prote | action according to IEC/EN 60520 | | | IP20 when |
| Power terminal prote | ection according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | |
| Operating position | | | | |
| | | normal | | Vertical plan |
| | | allowable | | ±30° |
| Fixing | | | | Screw / DIN rail 35mm |
| Weight | | | g | 348 |
| Conductor section | | | | |
| | AWG/kcmil conductor section | | | |
| | | max | | 10 |
| Auxiliary contact cha | aracteristics | | | |
| Thermal current Ith | | | Α | 10 |
| IEC/EN 60947-5-1 c | | | | A600 - P600 |
| Operating current A | C15 | | | |
| | | 230V | Α | 3 |
| | | 400V | A | 1.9 |
| 0 | 040 | 500V | Α | 1.4 |
| Operating current Do | U12 | 440)/ | ^ | <i>-</i> - |
| O | 040 | 110V | A | 5.7 |
| Operating current Do | U13 | 0.41/ | ۸ | <i>-</i> 7 |
| | | 24V 48V | A | 5.7 |
| | | 46 V 60 V | A A | 2.9 2.3 |
| | | 110V | A | 2.3 1.25 |
| | | 110V 125V | A | 1.1 |
| | | 220V | A | 0.55 |
| | | 600V | A | 0.2 |
| | | | | |
| Operati <u>ons</u> | | | cycles | 20000000 |
| • | | | | |
| Mechanical life | | | cycles | 2000000 |
| Operations Mechanical life Electrical life Safety related data | | | | 2000000 |
| Mechanical life Electrical life Safety related data | 310d according to EN/ISO 13489-1 | | | 2000000 |
| Mechanical life Electrical life Safety related data | 310d according to EN/ISO 13489-1 | rated load | | 2000000 |
| Mechanical life Electrical life Safety related data | - | rated load echanical load | cycles | |
| Mechanical life Electrical life Safety related data Performance level E | - | | cycles | 2000000 |
| Mechanical life Electrical life Safety related data Performance level E | m | | cycles | 2000000 20000000 |



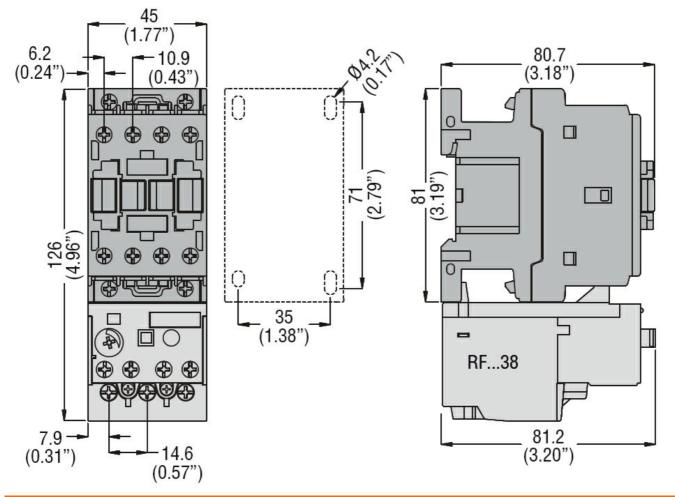


| Rated AC voltage at 60Hz | | V | 220 |
|--|------------|----------|------|
| AC operating voltage | | | |
| of 60Hz coil powered at 60Hz | | | |
| pick-up | _ | | |
| | min | %Us | 80 |
| | max | %Us | 110 |
| drop-out | _ | | |
| | min | %Us | 20 |
| | max | %Us | 55 |
| AC average coil consumption 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 | | | |
| ŭ | 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 | Α | 11 |
| | at 600V | Α | 11 |
| Yielded mechanical performance | | | |
| for single-phase AC motor | | | |
| ioi oiligio pilado / lo illotoi | 110/120V | HP | 1 |
| | 230V | HP | 2 |
| for three-phase AC motor | 2001 | | |
| for three phase Ao motor | 200/208V | HP | 5 |
| | 220/230V | HP | 5 |
| | 460/480V | HP | 7.5 |
| | 575/600V | HP | 10 |
| General USE | 37 3/000 V | - 111 | |
| Contactor | | | |
| COITACIOI | AC current | Α | 28 |
| Auviliany contacto | AC Current | Α | 20 |
| Auxiliary contacts | A C | 17 | 600 |
| | AC ourrent | V | 600 |
| | AC current | A | 10 |
| | DC voltage | V | 250 |
| 01 | DC current | Α | 1 |
| Short-circuit protection fuse, 600V High fault | | | |
| | | | |





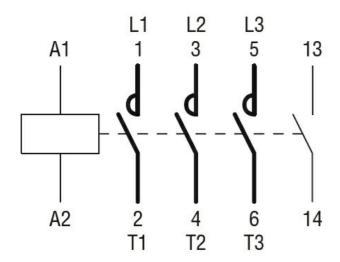
| | | Short circuit current | kA | 100 |
|---------------------------|------------------------------|-----------------------|----|-------------|
| | | Fuse rating | Α | 30 |
| | | Fuse class | | J |
| | Standard fault | | | |
| | | Short circuit current | kA | 5 |
| | | Fuse rating | Α | 70 |
| Contact rating of auxilia | ary 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 | n | | | |
| Pollution degree | | | | 3 |
| Dimensions | | | | |



Wiring diagrams

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 60HZ, 220VAC, 1NO AUXILIARY CONTACT



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







| Draduat designation | | | Dower contactor |
|---|--------------------|------------|-------------------------|
| Product designation Product type designation | | | Power contactor BF12 |
| Contact characteristics | | | DETZ |
| Number of poles | | Nr. | 3 |
| Rated insulation voltage Ui IEC/EN | | V | 690 |
| Rated impulse withstand voltage Uimp | | kV | 6 |
| Operational frequency | | K V | 0 |
| Operational frequency | min | Hz | 25 |
| | | ⊓∠ Hz | 400 |
| IEC Conventional free air thermal current Ith | max | <u>П</u> 2 | 28 |
| | | A | 20 |
| Operational current le | AC 1 (<10°C) | ۸ | 20 |
| | AC-1 (≤40°C) | A | 28 |
| | AC-1 (≤55°C) | A | 23 |
| | AC-1 (≤70°C) | A | 20 |
| | AC-3 (≤440V ≤55°C) | A | 12 |
| D. I. J. C. J. A.O.O. (T. (5500)) | AC-4 (400V) | Α | 7.9 |
| Rated operational power AC-3 (T≤55°C) | 2221 | | |
| | 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≤40°C) | | | |
| | 230V | kW | 10 |
| | 400V | kW | 18 |
| | 500V | kW | 23 |
| | 690V | kW | 32 |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | | | |
| | ≤24V | Α | 17 |
| | 48V | Α | 15 |
| | 75V | Α | 13 |
| | 110V | Α | 6 |
| | 220V | Α | - |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 18 |
| | 110V | Α | 13 |
| | 220V | Α | 1 |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | | | |
| | ≤24V | Α | 22 |
| | 48V | Α | 22 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | | | |





| | 220V | Α | 11 |
|--|-------------|--------------|----------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | _ |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| | ≤24V | Α | 15 |
| | 48V | Α | 13 |
| | 75V | A | 12 |
| | 110V | A | 8 |
| | 220V | A | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | 22U V | | |
| TEO MAX CUITETILIE III DOG-DOG WILLI LIN = 15HIS WILL 3 POLES III SELIES | ~2A\/ | ۸ | 10 |
| | ≤24V 48V | A | 18 |
| | | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| | 220V | A | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | _ | |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| | gG (IEC) | Α | 32 |
| | aM (IEC) | Α | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | | | |
| | 440V | Α | 96 |
| | 500V | Α | 96 |
| | 690V | Α | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | - - |
| . The shortest por port (artitago raido) | lth | W | 2 |
| | AC3 | W | 0.4 |
| Tightening torque for terminals | 7,00 | V V | J. 1 |
| rightening torque for terminals | min | Nm | 1.5 |
| | | Nm | 1.8 |
| | max | | |
| | min | lbin Ibin | 1.1 |
| Tightoning toyour for call town-in-1 | max | lbin | 1.5 |
| Tightening torque for coil terminal | • | | 0.0 |
| | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | | | |





| | | max | Ibin | 0.74 |
|--|---|----------------------------|-------------------|---|
| Max number of wires | simultaneously connectable | | Nr. | 2 |
| Conductor section | | | | |
| | AWG/Kcmil | | | |
| | | max | | 10 |
| | Flexible w/o lug conductor section | _ | | |
| | | min | mm² | 1 |
| | = - | max | mm² | 6 |
| | Flexible c/w lug conductor section | | 2 | |
| | | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | | 2 | 4 |
| | | min | mm² | 1 |
| | | max | mm² | 4 IP20 when |
| Power terminal prote | ction according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | properly whed |
| Operating position | | | | |
| Sporading position | | normal | | Vertical plan |
| | | allowable | | ±30° |
| | | 2.10114010 | | Screw / DIN rail |
| Fixing | | | | 35mm |
| Weight | | | g | 362 |
| Conductor section | | | <u> </u> | |
| | AWG/kcmil conductor section | | | |
| | | max | | 10 |
| Auxiliary contact char | acteristics | | | |
| Thermal current Ith | | | Α | 10 |
| IEC/EN 60947-5-1 de | esignation | | | A600 - P600 |
| Operating current AC | :15 | | | |
| | | 230V | Α | 3 |
| | | 400V | Α | 1.9 |
| | | 500V | Α | 1.4 |
| Operating current DC | :12 | | | |
| | | 110V | Α | 5.7 |
| Operating current DC | :13 | | | |
| | | 24V | Α | 5.7 |
| | | 48V | Α | 2.9 |
| | | 60V | Α | 2.3 |
| | | 110V | Α | 1.25 |
| | | | | 1.1 |
| | | 125V | Α | |
| | | 220V | Α | 0.55 |
| | | | | |
| | | 220V | A A | 0.55 0.2 |
| Mechanical life | | 220V | A A cycles | 0.55 0.2 20000000 |
| Mechanical life Electrical life | | 220V | A A | 0.55 0.2 |
| Mechanical life Electrical life Safety related data | | 220V | A A cycles | 0.55 0.2 20000000 |
| Mechanical life Electrical life Safety related data | 10d according to EN/ISO 13489-1 | 220V 600V | A A cycles | 0.55 0.2 20000000 2000000 |
| Mechanical life Electrical life Safety related data | | 220V 600V rated load | A A cycles cycles | 0.55 0.2 20000000 2000000 2000000 |
| Mechanical life Electrical life Safety related data Performance level B | me | 220V 600V | A A cycles | 0.55 0.2 20000000 2000000 |
| Mirror contats accord | | 220V 600V rated load | A A cycles cycles | 0.55 0.2 20000000 2000000 2000000 |
| Mechanical life Electrical life Safety related data Performance level B | me | 220V 600V rated load | A A cycles cycles | 0.55 0.2 20000000 2000000 2000000 20000000 |



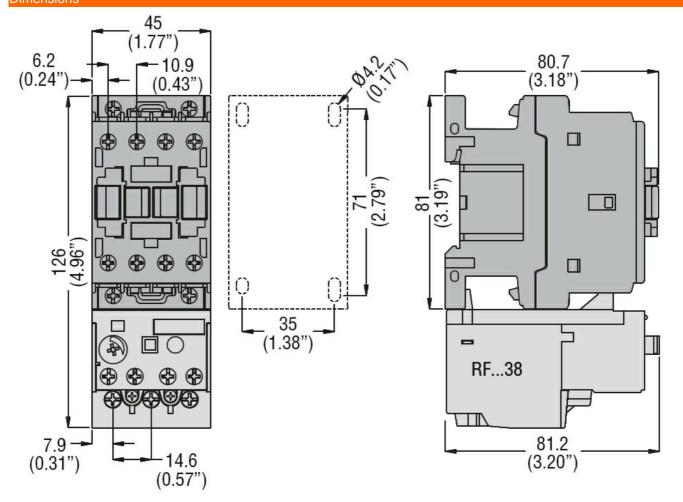


| AC operating voltage of 60Hz coil powered at 60Hz pick-up mi drop-out AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rus holdin Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Operating times Average time for Us control in AC Closing NO mi Closing NC mi Closing NC mi Machanical operation Opening NC mi Machanical operation Machanical operation Opening NC mi Machanical operation Machani | | V | 230 |
|--|-----------------|------------|---------|
| pick-up mi ma drop-out AC average coil consumption at 20°C of 60Hz coil powered at 60Hz Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Operating times Average time for Us control in AC Closing NO mi ma Opening NO mi ma Closing NC mi ma Opening NC mi ma Opening NC mi ma Opening NC for three-phase AC motor 110/120 230 for three-phase AC motor General USE Contactor Auxiliary contacts AC voltag AC currer Auxiliary contacts AC voltag AC currer | | | |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rus holdin Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Deperating times Average time for Us control in AC Closing NO mi ma Opening NO mi ma Ctosing NC mi ma Opening NC mi ma Opening NC for three-phase AC motor for single-phase AC motor 110/120 230 for three-phase AC motor General USE Contactor Auxiliary contacts AC voltag AC currer Auxiliary contacts AC voltag AC currer | | | |
| drop-out mi ma AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rus holdin Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Operating times Average time for Us control in AC Closing NO mi Closing NC mi ma Opening NC mi ma Opening NC mi ma Opening NC for three-phase AC motor 110/120 230 for three-phase AC motor Contactor Auxiliary contacts AC voltag AC currer Auxiliary contacts AC voltag AC currer CC voltag AC voltag AC voltag AC voltag AC currer AC currer | | | |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rus holdin Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Departing times Average time for Us control in AC Closing NO mi ma Opening NC for three-phase AC motor for three-phase AC motor for three-phase AC motor Closing NC mi ma Opening NC mi | | %Us | 80 |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rus holdin Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Departing times Average time for Us control in AC Closing NO mi Closing NC mi Closing NC mi The control opening NC The contro | 1X % | %Us | 110 |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rus holdin Dissipation at holding \$20°C 50Hz Max cycles frequency Mechanical operation Departing times Average time for Us control in AC Closing NO mi ma Closing NC mi ma Closing NC mi ma Opening NC mi ma Opening NC mi ma Opening NC for three-phase AC motor 110/120 230 General USE Contactor Auxiliary contacts AC currer AC currer AC currer Co totag | | 0/11 | |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rus holdin Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Departing times Average time for Us control in AC Closing NO mi ma Closing NC mi ma Closing NC mi ma Opening NC mi ma Opening NC for three-phase AC motor 110/120 230 for three-phase AC motor General USE Contactor AUxiliary contacts AC currer Covoltag AC currer DC voltag AC currer DC voltag In-rus in | | %Us | 20 |
| of 60Hz coil powered at 60Hz in-rus holdin Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Operating times Average time for Us control | <u>1X 9</u> | %Us | 55 |
| in-rus holdin Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Departing times Average time for Us control in AC Closing NO mi max Opening NO mi Closing NC mi max Opening NC mi Tull-load current (FLA) for three-phase AC motor At 480 at 600 Till-load current (FLA) for three-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor AC current AC voltag AC current AC voltag AC current Covoltag | | | |
| holdin Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Disperating times Average time for Us control in AC Closing NO mi max Opening NO mi max Closing NC mi max Opening NC m | . L. | ١/٨ | 75 |
| Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Departing times Average time for Us control in AC Closing NO mi ma Opening NC mi for three-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor AC currer Auxiliary contacts AC voltag AC currer DC voltag | | VA VA | 75 0 |
| Machanical operation Operating times Average time for Us control in AC Closing NO mi ma Opening NO mi ma Closing NC mi ma Opening NC | _ | W | 2.5 |
| Mechanical operation Departing times | | VV | 2.5 |
| Average time for Us control in AC Closing NO mi ADPENING NO Mi Closing NC Mi Closing NC Mi Ma Closing NC Mi Ma Opening NC Mi Ma At Not Opening NC Mi Ma Ac Not | CV | ycles/h | 3600 |
| Average time for Us control in AC Closing NO mi ma Opening NO mi ma Closing NC mi ma Opening NC | Сус | y UIC 3/11 | 3000 |
| in AC Closing NO mi Opening NO mi Closing NC mi Ma Closing NC mi Ma Opening | | | |
| Closing NO | | | |
| Minimal | | | |
| Opening NO mi Closing NC mi Closing NC mi Ma Opening NC mi Ma Tollation At 480 at 600 Tillo120 230 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor AC currer Auxiliary contacts AC voltag AC currer DC voltag | in [†] | ms | 8 |
| Opening NO | | ms | 24 |
| Closing NC mi max Opening NC mi max JL technical data Full-load current (FLA) for three-phase AC motor at 480 at 600 fielded mechanical performance for single-phase AC motor 110/120 230' for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor AC current Auxiliary contacts AC voltag AC current DC voltag | | | |
| Closing NC | in i | ms | 10 |
| Opening NC mi ma JL technical data Full-load current (FLA) for three-phase AC motor at 480 at 600 /ielded mechanical performance for single-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor AC current Auxiliary contacts AC voltag AC current DC voltag | aX [| ms | 20 |
| Opening NC mi ma JL technical data Full-load current (FLA) for three-phase AC motor at 480 at 600 /ielded mechanical performance for single-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor Ac currer Auxiliary contacts AC voltag AC currer DC voltag | | | |
| Opening NC mi ma JL technical data Full-load current (FLA) for three-phase AC motor at 480 at 600 Yielded mechanical performance for single-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor Ac current Auxiliary contacts AC voltag AC current DC voltag | in r | ms | 14 |
| Min | ax ! | ms | 28 |
| ### Contactor Contactor C | | | |
| UL technical data Full-load current (FLA) for three-phase AC motor at 480 at 600 Yielded mechanical performance for single-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor Auxiliary contacts AC currer Auxiliary contacts AC voltag AC currer DC voltag | in i | ms | 7 |
| Full-load current (FLA) for three-phase AC motor at 480 at 600 Yielded mechanical performance for single-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor Auxiliary contacts AC current Auxiliary contacts AC voltag AC current DC voltag | ıX I | ms | 18 |
| At 480 at 600 Yielded mechanical performance for single-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor AC currer Auxiliary contacts AC voltag AC currer DC voltag AC currer AC voltag AC currer AC voltag AC currer AC voltag AC currer DC voltag AC vo | | | |
| At 600 | | | 4.4 |
| Yielded mechanical performance for single-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor Auxiliary contacts AC currer Auxiliary contacts AC voltag AC currer DC voltag | | A | 11 |
| for single-phase AC motor 110/120 230 for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor AC currer Auxiliary contacts AC voltag AC currer DC voltag | V | Α | 11 |
| 110/120 230 | | | |
| 230 | V | HP | 1 |
| for three-phase AC motor 200/208 220/230 460/480 575/600 General USE Contactor AC currer Auxiliary contacts AC voltag AC currer DC voltag | | пР HP | 1 2 |
| 200/208 | <u>v</u> | - ' ' ' | |
| 220/230 460/480 575/600 General USE Contactor AC currer Auxiliary contacts AC voltag AC currer DC voltag | V | HP | 5 |
| General USE Contactor Auxiliary contacts AC currer Ac currer Contactor AC currer AC currer AC currer AC currer | | HP | 5 |
| General USE Contactor AC currer Auxiliary contacts AC voltag AC currer DC voltag | | HP | 7.5 |
| Contactor Contactor AC currer Auxiliary contacts AC voltag AC currer DC voltag | | HP | 10 |
| Contactor AC current Auxiliary contacts AC voltag AC current DC voltag | | | |
| AC currer Auxiliary contacts AC voltag AC currer DC voltag | | | |
| Auxiliary contacts AC voltag AC currer DC voltag | nt | Α | 28 |
| AC voltag AC currer DC voltag | | | |
| AC currer DC voltag | je | V | 600 |
| - | | Α | 10 |
| - | | V | 250 |
| DC currer | | Α | 1 |
| Short-circuit protection fuse, 600V | | | |





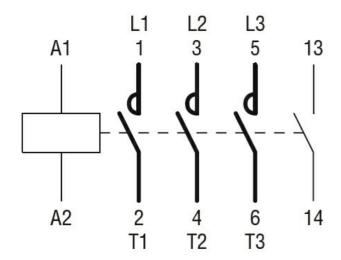
| | | Short circuit current | kA | 100 |
|---------------------------|------------------------------|-----------------------|----|-------------|
| | | Fuse rating | Α | 30 |
| | | Fuse class | | J |
| | Standard fault | | | |
| | | Short circuit current | kA | 5 |
| | | Fuse rating | Α | 70 |
| Contact rating of auxilia | ary 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 | n | | | |
| Pollution degree | | | | 3 |
| Dimensions | | | | |



Wiring diagrams

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 60HZ, 230VAC, 1NO AUXILIARY CONTACT



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







Product designation Power contactor Product type designation BF12 Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency Нъ 25 min Hz 400 max IEC Conventional free air thermal current Ith 28 Α Operational current le AC-1 (≤40°C) Α 28 AC-1 (≤55°C) Α 23 AC-1 (≤70°C) Α 20 AC-3 (≤440V ≤55°C) Α 12 AC-4 (400V) 7.9 Rated operational power AC-3 (T≤55°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≤40°C) 230V kW 10 400V kW 18 500V kW 23 690V kW 32 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V Α 17 48V Α 15 75V Α 13 110V Α 6 220V Α IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V Α 20 48V Α 20 75V 18 Α 110V Α 13 220V Α 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V 22 Α 22 48V Α 75V Α 20 110V 16





| | 220V | Α | 11 |
|--|---------------|----------|-------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| · | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | _ |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| 120 max sarronx to in 200 200 mar 27x = 10mb max 2 police in collect | ≤24V | Α | 15 |
| | 48V | Α | 13 |
| | 75V | A | 12 |
| | 110V | A | 8 |
| | 220V | A | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | 2201 | ^ | |
| TEO MAX current le in DO3-DO3 with E/K > 13MS with 3 poles in series | -24 17 | ٨ | 10 |
| | ≤24V 48V | A | 18 |
| | | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| | 220V | Α | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | _ | |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| | gG (IEC) | Α | 32 |
| | aM (IEC) | Α | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | | | |
| | 440V | Α | 96 |
| | 500V | Α | 96 |
| | 690V | Α | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | |
| \ | lth | W | 2 |
| | AC3 | W | 0.4 |
| Tightening torque for terminals | 7.00 | •• | U. . |
| | min | Nm | 1.5 |
| | max | Nm | 1.8 |
| | min | Ibin | 1.1 |
| | | Ibin | 1.5 |
| Tightening torque for coil terminal | max | ווטו | 1.0 |
| rightening torque for contential | | Nima | 0.0 |
| | min | Nm Næ | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | | | |





| AWG/Kcmil | | | max | Ibin | 0.74 |
|--|---|--|---|---|--|
| AWG/Kcmil Flexible w/o lug conductor section Flexible w/o lug conductor section Flexible w/o lug conductor section min max m | | simultaneously connectable | | Nr. | 2 |
| Peach Peac | Conductor section | | | | |
| Flexible w/o lug conductor section | | AWG/Kcmil | | | 40 |
| Plexible c/w lug conductor section | | Elevible w/e lon and destant and des | max | | 10 |
| Plexible c/w lug conductor section | | Flexible w/o lug conductor section | | · · 2 | 4 |
| Flexible c/w lug conductor section | | | | | |
| Properties Pro | | Florible of the panduster costion | max | 111111- | 0 |
| Flexible with insulated spade lug conductor section min max mm² 1 max | | Flexible C/w lug conductor section | min | mm² | 1 |
| Flexible with insulated spade lug conductor section | | | | | |
| Minimax Mini | | Flexible with insulated spade lug conductor section | IIIax | 111111 | <u> </u> |
| Power terminal protection according to IEC/EN 60529 IP20 when properly wired Power terminal protection according to IEC/EN 60529 IP20 when properly wired Mechanical features Power terminal protection according to IEC/EN 60529 IP20 when properly wired Power wired Wednamical features Power terminal protection allowable IP20 when properly wired IP20 | | r lexible with insulated space rug conductor section | min | mm² | 1 |
| Power terminal protection according to IEC/EN 60529 IP20 when properly wired IP20 when properly | | | | | |
| Property wired Prop | | | max | | |
| Mechanical features | Power terminal protect | ction according to IEC/EN 60529 | | | |
| Operating position normal allowable Vertical plan allowable ±30° Fixing g 354 Weight g 354 Conductor section max 10 AWG/kcmil conductor section max 10 Auxiliary contact characteristics Thermal current lth A 10 IEC/EN 60947-5-1 designation A 300 - P600 Operating current AC15 230V A 3 4 1.9 Operating current DC12 110V A 5.7 Operating current DC12 110V A 5.7 Operating current DC13 24V A 5.7 Operating current DC13 24V A 5.7 Operating current DC14 110V A 1.25 A 8 A 2.9 60V A 2.3 110V A 1.25 1.25V A 1.1 220V A 0.55 0.50 60V A 1.25 2.000000 125V A 1.1 2.20V A 0.55 60V A 0.2 2.000000 Coperations 2000 000 Mechanical life ycles 2000000 Electrical life ycles 2000000 Performance level B10d according to EN/ISO 13489-1 rated | Mechanical features | | | | , , , , , |
| Normal allowable 130° 13 | Operating position | | | | |
| Allowable \$\frac{\text{allowable}}{\text{Screw / DIN rail}} \\ \text{Screw / DIN rail} \\ \text{35mm} \\ \text{Weight} \\ \text{20} \\ \text{35mm} \\ \text{AWG/kcmil conductor section} \\ \text{AWG/kcmil conductor section} \\ \text{AWG/kcmil conductor section} \\ \text{Maxiliary contact characteristics} \\ \text{Thermal current lM} & A 10 \\ \text{10} \\ \text{200 Poperating current AC15} \\ \text{230V} & A 3 \\ \text{400V} & A 1.9 \\ \text{500V} & A 1.4 \\ \text{200V perating current DC12} \\ \text{200V} & A 1.4 \\ \text{200V perating current DC13} \\ \text{24V} & A 5.7 \\ \text{29} \\ \text{600} & A 2.3 \\ \text{48V} & A 2.9 \\ \text{600V} & A 1.25 \\ \text{200V} & A 1.5 \\ | | | normal | | Vertical plan |
| Meight | | | allowable | | |
| Weight | Eiving | | | | Screw / DIN rail |
| AWG/kcmil conductor section | | | | | 35mm |
| AWG/kcmil conductor section max 10 Auxiliary contact characteristics Thermal current Ith 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 Operating current DC13 24V A 5.7 48V A 2.9 60V A 2.3 110V A 1.25 110V A 2.3 110V A 1.25 110 | Weight | | | g | 354 |
| Max 10 Auxiliary contact characteristics | Conductor section | | | | |
| Auxiliary contact characteristics | | AWG/kcmil conductor section | | | |
| Thermal current Ith | | | max | | 10 |
| EC/EN 60947-5-1 designation | · | acteristics | | | |
| Comparising current AC15 230V A 3 400V A 1.9 500V A 1.4 | Thermal current Ith | | | Α | 10 |
| 230V | | | | | |
| A 00 | IEC/EN 60947-5-1 de | _ - | | | |
| S00V A 1.4 | IEC/EN 60947-5-1 de | _ - | | | A600 - P600 |
| Departing current DC12 | IEC/EN 60947-5-1 de | _ - | | A | A600 - P600 3 |
| 110V A 5.7 | IEC/EN 60947-5-1 de | _ - | 400V | A A | A600 - P600 3 1.9 |
| Departing current DC13 | IEC/EN 60947-5-1 de Operating current AC | 15 | 400V | A A | A600 - P600 3 1.9 |
| 24V A 5.7 48V A 2.9 60V A 2.3 110V A 1.25 125V A 1.1 125V A 0.55 600V A 0.2 | IEC/EN 60947-5-1 de Operating current AC | 15 | 400V 500V | A A A | 3 1.9 1.4 |
| 48V A 2.9 60V A 2.3 110V A 1.25 125V A 1.1 1.1 1.1 1.2 | IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V | A A A | 3 1.9 1.4 |
| 60V A 2.3 110V A 1.25 125V A 1.1 125V A 0.55 600V A 0.2 0.55 600V A 0.2 0.2 0.55 600V A 0.2 0. | IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V | A A A | 3 1.9 1.4 5.7 |
| 110V A 1.25 125V A 1.1 125V A 0.55 125V A 0.55 125V A 0.55 125V A 0.2 | IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V | A A A | A600 - P600 3 1.9 1.4 5.7 |
| 125V A 1.1 220V A 0.55 600V A 0.2 | IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V | A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 |
| 220V A 0.55 | IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V | A A A A A | 3 1.9 1.4 5.7 5.7 2.9 2.3 |
| Coperations | IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V | A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| Mechanical life cycles 20000000 Electrical life cycles 20000000 Safety related data Performance level B10d according to EN/ISO 13489-1 rated load cycles 2000000 mechanical load cycles 20000000 mechanical load cycles 20000000 Mirror contats according to IEC/EN 609474-4-1 EMC compatibility yes | IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| 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 contats according to IEC/EN 609474-4-1 yes EMC compatibility yes | IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 |
| 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 contats according to IEC/EN 609474-4-1 EMC compatibility yes | IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 |
| Safety related data Performance level B10d according to EN/ISO 13489-1 rated load cycles 2000000 mechanical load cycles 20000000 Mirror contats according to IEC/EN 609474-4-1 EMC compatibility yes | IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Performance level B10d according to EN/ISO 13489-1 rated load cycles 2000000 mechanical load cycles 20000000 Mirror contats according to IEC/EN 609474-4-1 EMC compatibility yes | IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| rated load cycles 2000000 mechanical load cycles 20000000 Mirror contats according to IEC/EN 609474-4-1 EMC compatibility rated load cycles 20000000 yes | Operating current DC Operations Mechanical life Electrical life | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| mechanical load cycles 20000000 Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes | Operating current DC Operations Mechanical life Electrical life Safety related data | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes | Operating current DC Operations Mechanical life Electrical life Safety related data | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 |
| EMC compatibility yes | Operating current DC Operations Mechanical life Electrical life Safety related data | 15 12 13 10d according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| · · · | Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 12 13 Od according to EN/ISO 13489-1 me | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |
| | Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accord | 12 13 Od according to EN/ISO 13489-1 me | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 yes |



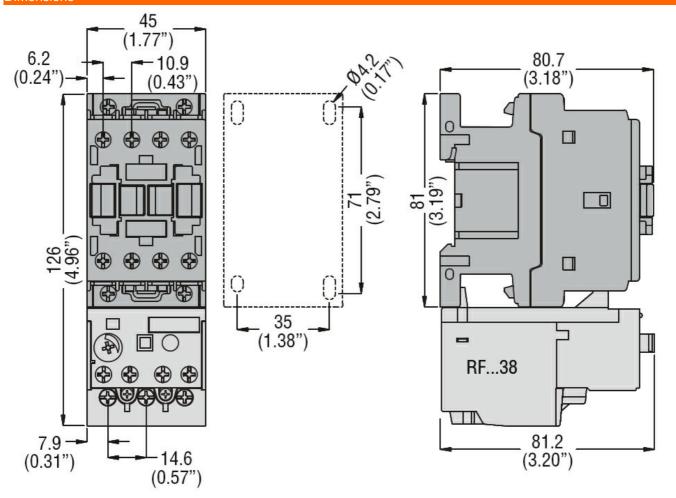


| Rated AC voltage at 6 | 0Hz | | V | 460 |
|---------------------------|------------------------------|------------|----------|------|
| AC operating voltage | | | | |
| | of 60Hz coil powered at 60Hz | | | |
| | pick-up | | | |
| | | min | %Us | 80 |
| | drap out | max | %Us | 110 |
| | drop-out | min | %Us | 20 |
| | | max | %Us | 55 |
| AC average coil cons | umption at 20°C | max | 7000 | |
| | of 60Hz coil powered at 60Hz | | | |
| | γ | 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 c | | | | |
| | in AC | | | |
| | Closing NO | min | ms | 8 |
| | | max | ms | 24 |
| | Opening NO | max | 1110 | 2 1 |
| | 5 F 2 9 | min | ms | 10 |
| | | max | ms | 20 |
| | Closing NC | | | |
| | | min | ms | 14 |
| | | max | ms | 28 |
| | Opening NC | | | _ |
| | | min | ms | 7 |
| UL technical data | | max | ms | 18 |
| |) for three-phase AC motor | | | |
| i dii-load culletit (i LA | i for three-phase Ao motor | at 480V | Α | 11 |
| | | at 600V | A | 11 |
| Yielded mechanical pe | erformance | | | |
| · | 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 |
| Conorol UCE | | 575/600V | HP | 10 |
| General USE | Contactor | | | |
| | Contactor | AC current | Α | 28 |
| | Auxiliary contacts | AO CUITEIR | / \ | |
| | | AC voltage | V | 600 |
| | | AC current | A | 10 |
| | | DC voltage | V | 250 |
| | | DC current | Α | 1 |
| Short-circuit protection | | | | |
| | High fault | | | |





| | Short circuit current | kA | 100 |
|--|-----------------------|----|-------------|
| | Fuse rating | Α | 30 |
| | Fuse class | | J |
| Standard fault | | | · |
| | Short circuit current | kA | 5 |
| | Fuse rating | Α | 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 | | | |

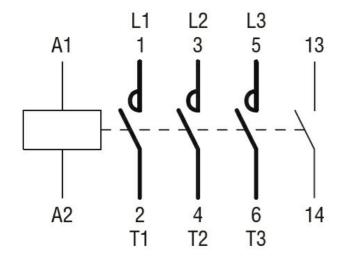


Wiring diagrams



ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 60HZ, 460VAC, 1NO AUXILIARY CONTACT



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

BF1210A46060

EC000066 -Power contactor, AC switching







| Product designation Product type designation | | | Power contactor BF12 |
|---|--------------------|--------|-------------------------|
| Contact characteristics | | | |
| Number of poles | | Nr. | 3 |
| Rated insulation voltage Ui IEC/EN | | V | 690 |
| Rated impulse withstand voltage Uimp | | kV | 6 |
| Operational frequency | | | |
| | min | Hz | 25 |
| | max | Hz | 400 |
| IEC Conventional free air thermal current Ith | | Α | 28 |
| Operational current le | | | |
| | AC-1 (≤40°C) | Α | 28 |
| | AC-1 (≤55°C) | Α | 23 |
| | AC-1 (≤70°C) | Α | 20 |
| | AC-3 (≤440V ≤55°C) | Α | 12 |
| | AC-4 (400V) | Α | 7.9 |
| Rated operational power AC-3 (T≤55°C) | | | _ |
| | 230V | kW | 3.2 |
| | 400V | kW | 5.7 |
| | 415V | kW | 6.2 |
| | 440V | kW | 5.5 |
| | 500V | kW | 5 |
| 7 | 690V | kW | 5 |
| Rated operational power AC-1 (T≤40°C) | | | |
| | 230V | kW | 10 |
| | 400V | kW | 18 |
| | 500V | kW | 23 |
| | 690V | kW | 32 |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | | | |
| | ≤24V | Α | 17 |
| | 48V | Α | 15 |
| | 75V | Α | 13 |
| | 110V | A | 6 |
| 150 | 220V | Α | |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | ·0.43.4 | | |
| | ≤24V | A | 20 |
| | 48V | A | 20 |
| | 75V | A | 18 |
| | 110V | A | 13 |
| IEC may current to in DC1 with 1/D < 1mg with 2 malas in paries | 220V | A | 1 |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | ~0.AV | ۸ | 22 |
| | ≤24V | A | 22 |
| | 48V 75V | A | 22 20 |
| | 75V 110V | A A | 20 16 |
| | 1100 | ^ | 10 |





| | 220V | Α | 11 |
|--|---------------|-------|-------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | Α | 20 |
| | 48V | Α | 20 |
| | 75V | Α | 20 |
| | 110V | Α | 16 |
| | 220V | Α | 12 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| · | ≤24V | Α | 12 |
| | 48V | Α | 11 |
| | 75V | Α | 10 |
| | 110V | Α | 2 |
| | 220V | Α | _ |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| 120 max carrent to in 200 200 mar 2/1 = 10mb mar 2 police in collect | ≤24V | Α | 15 |
| | 48V | A | 13 |
| | 75V | A | 12 |
| | 110V | A | 8 |
| | 220V | A | 2 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | 2200 | ^ | |
| TEO MAX current le in DO3-DO3 with E/K > 13MS with 3 poles in series | -24 17 | ۸ | 10 |
| | ≤24V 48V | A | 18 |
| | | A | 18 |
| | 75V | A | 15 |
| | 110V | A | 12 |
| | 220V | Α | 6 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | _ | |
| | ≤24V | Α | 15 |
| | 48V | Α | 15 |
| | 75V | Α | 15 |
| | 110V | Α | 16 |
| | 220V | Α | 7 |
| Short-time allowable current for 10s (IEC/EN60947-1) | | Α | 150 |
| Protection fuse | | | |
| | gG (IEC) | Α | 32 |
| | aM (IEC) | Α | 12 |
| Making capacity (RMS value) | | Α | 120 |
| Breaking capacity at voltage | | | |
| | 440V | Α | 96 |
| | 500V | Α | 96 |
| | 690V | Α | 94 |
| Resistance per pole (average value) | | mΩ | 2.5 |
| Power dissipation per pole (average value) | | | |
| \ | lth | W | 2 |
| | AC3 | W | 0.4 |
| Tightening torque for terminals | 7.00 | •• | U. . |
| | min | Nm | 1.5 |
| | max | Nm | 1.8 |
| | min | Ibin | 1.1 |
| | | lbin | 1.5 |
| Tightening torque for coil terminal | max | ווטוו | 1.0 |
| rightening torque for contential | | Nima | 0.0 |
| | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | lbin | 0.8 |
| | | | |





| May number of wines | | max | Ibin | 0.74 |
|--|---|---|---|--|
| | simultaneously connectable | | Nr. | 2 |
| Conductor section | AVA/C/Momil | | | |
| | AWG/Kcmil | max | | 10 |
| | Flexible w/o lug conductor section | IIIax | | 10 |
| | r lexible w/o lug corludctor section | min | mm² | 1 |
| | | max | mm² | 6 |
| | Flexible c/w lug conductor section | max | | |
| | Tiomble of Windy contactor coolien | min | mm² | 1 |
| | | max | mm² | 4 |
| | Flexible with insulated spade lug conductor section | | | • |
| | · · · · · · · · · · · · · · · · · · · | min | mm² | 1 |
| | | max | mm² | 4 |
| | | | | IP20 when |
| Power terminal protec | ction according to IEC/EN 60529 | | | properly wired |
| Mechanical features | | | | |
| Operating position | | | | |
| | | normal | | Vertical plan |
| | | allowable | | ±30° |
| Fixing | | | | Screw / DIN rail |
| ı ixiiig | | | | 35mm |
| Weight | | | g | 340 |
| Conductor section | | | | |
| | AWG/kcmil conductor section | | | |
| | | max | | 10 |
| Auxiliary contact char | acteristics | | | |
| | | | | |
| | | | Α | 10 |
| IEC/EN 60947-5-1 de | | | A | 10 A600 - P600 |
| IEC/EN 60947-5-1 de | | | Α | A600 - P600 |
| IEC/EN 60947-5-1 de | | 230V | A | A600 - P600 3 |
| IEC/EN 60947-5-1 de | | 400V | | A600 - P600 3 1.9 |
| IEC/EN 60947-5-1 de Operating current AC | 15 | | A | A600 - P600 3 |
| IEC/EN 60947-5-1 de Operating current AC | 15 | 400V 500V | A A A | 3 1.9 1.4 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V | A A | A600 - P600 3 1.9 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V | A A A | 3 1.9 1.4 5.7 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V | A A A | 3 1.9 1.4 5.7 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V | A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V | A A A A A | 3 1.9 1.4 5.7 5.7 2.9 2.3 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V | A A A A A A | 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V | A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Electrical life Safety related data | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V | A A A A A A A Cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 |
| Operating current DC Operations Mechanical life Electrical life Safety related data | 12 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 |
| Operating current DC Operations Mechanical life Electrical life Safety related data | 12 13 0d according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |
| Mirror contats accord | 12 13 0d according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 |
| Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 12 13 Od according to EN/ISO 13489-1 | 400V 500V 110V 24V 48V 60V 110V 125V 220V 600V | A A A A A A A A Cycles cycles | A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 |

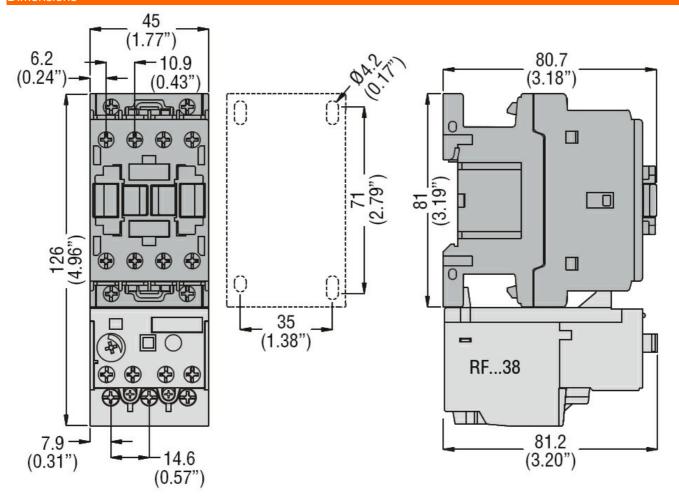


| Rated AC voltage at 60 |)H ₇ | | V | 575 |
|--------------------------|------------------------------|--------------------|------------|---------|
| AC operating voltage | 11 IL | | v | 010 |
| rio oporaning romago | of 60Hz coil powered at 60Hz | | | |
| | pick-u | 0 | | |
| | | mir | n %Us | 80 |
| | | max | wUs | 110 |
| | drop-o | out | | |
| | | mir | | 20 |
| | | max | %Us | 55 |
| AC average coil consu | | | | |
| | of 60Hz coil powered at 60Hz | in much | ١/٨ | 75 |
| | | in-rusl holding | | 75 9 |
| Dissipation at holding | 20°C 50Hz | Holalit | W W | 2.5 |
| Max cycles frequency | 20 0 30112 | | VV | 2.3 |
| Mechanical operation | | | cycles/h | 3600 |
| Operating times | | | 5, 5.55,11 | |
| Average time for Us co | ntrol | | | |
| - | in AC | | | |
| | Closin | g NO | | |
| | | mir | n ms | 8 |
| | | max | c ms | 24 |
| | Openir | _ | | |
| | | mir | | 10 |
| | Olasia | ma: | c ms | 20 |
| | Closin | _ | , ma | 14 |
| | | mir ma: | | 28 |
| | Openir | | 1113 | 20 |
| | GF3 | mir | n ms | 7 |
| | | max | | 18 |
| UL technical data | | | | |
| Full-load current (FLA) | for three-phase AC motor | | | |
| | | at 480\ | | 11 |
| | | at 600\ | <u>/ A</u> | 11 |
| Yielded mechanical pe | | | | |
| | for single-phase AC motor | 440/400 | / !!! | 4 |
| | | 110/120\ 230\ | | 1 2 |
| | for three phase AC motor | 2301 | пР | 2 |
| | for three-phase AC motor | 200/208\ | / HP | 5 |
| | | 220/230\ | | 5 |
| | | 460/480\ | | 7.5 |
| | | 575/600\ | | 10 |
| General USE | | | | |
| | Contactor | | | |
| | | AC curren | t A | 28 |
| | Auxiliary contacts | | | |
| | | AC voltage | | 600 |
| | | AC curren | | 10 |
| | | DC voltage | | 250 |
| Chart singuit a concert | fue 000V | DC curren | t A | 1 |
| Short-circuit protection | | | | |
| | High fault | | | |





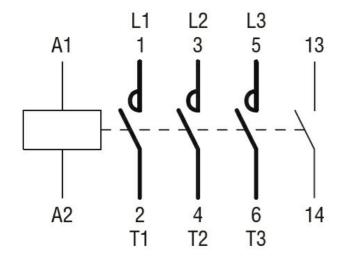
| | Short circuit current | kA | 100 |
|--|-----------------------|----|-------------|
| | Fuse rating | Α | 30 |
| | Fuse class | | J |
| Standard fault | | | · |
| | Short circuit current | kA | 5 |
| | Fuse rating | Α | 70 |
| Contact rating of auxiliary contacts according to UL | | | A600 - P600 |
| 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

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 575VAC, 1NO AUXILIARY CONTACT



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