



| | | | | |
|--|--|-------------------|------|-----------------|
| Product designation | | | | Power contactor |
| Product type designation | | | | BF38 |
| Contact characteristics | | | | |
| Number of poles | Nr. | | | 3 |
| Rated insulation voltage U_i IEC/EN | V | | | 690 |
| Rated impulse withstand voltage U_{imp} | kV | | | 6 |
| Operational frequency | min | Hz | 25 | |
| | max | Hz | 400 | |
| IEC Conventional free air thermal current I_{th} | A | | | 56 |
| Operational current I_e | AC-1 ($\leq 40^\circ\text{C}$) | A | 56 | |
| | AC-1 ($\leq 40^\circ\text{C}$) with 16mm ² wire and fork end lug | A | 60 | |
| | AC-1 ($\leq 55^\circ\text{C}$) | A | 45 | |
| | AC-1 ($\leq 55^\circ\text{C}$) with 16mm ² wire and fork end lug | A | 48 | |
| | AC-1 ($\leq 70^\circ\text{C}$) | A | 40 | |
| | AC-1 ($\leq 70^\circ\text{C}$) with 16mm ² wire and fork end lug | A | 42 | |
| | AC-3 ($\leq 440\text{V } \leq 55^\circ\text{C}$) | A | 38 | |
| Rated operational power AC-3 ($T \leq 55^\circ\text{C}$) | AC-4 (400V) | A | 15.5 | |
| | 230V | kW | 11 | |
| | 400V | kW | 18.5 | |
| | 415V | kW | 18.5 | |
| | 440V | kW | 18.5 | |
| | 500V | kW | 20 | |
| | 690V | kW | 22 | |
| Rated operational power AC-1 ($T \leq 40^\circ\text{C}$) | 230V | kW | 21 | |
| | 400V | kW | 36 | |
| | 500V | kW | 45 | |
| | 690V | kW | 62 | |
| | IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$ | A | 35 |
| 48V | | A | 30 | |
| 75V | | A | 23 | |
| 110V | | A | 8 | |
| 220V | | A | - | |
| IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series | | $\leq 24\text{V}$ | A | 36 |
| | 48V | A | 34 | |
| | 75V | A | 29 | |
| | 110V | A | 32 | |
| | 220V | A | 4 | |
| | IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$ | A | 36 |

| | | | |
|--|-----------------|------------------|-----|
| | 48V | A | 34 |
| | 75V | A | 33 |
| | 110V | A | 34 |
| | 220V | A | 30 |
| <hr/> | | | |
| IEC max current I _e in DC1 with L/R ≤ 1ms with 4 poles in series | | | |
| | ≤24V | A | 36 |
| | 48V | A | 34 |
| | 75V | A | 33 |
| | 110V | A | 34 |
| | 220V | A | 38 |
| <hr/> | | | |
| IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | | | |
| | ≤24V | A | 24 |
| | 48V | A | 20 |
| | 75V | A | 17 |
| | 110V | A | 2,5 |
| | 220V | A | – |
| <hr/> | | | |
| IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | | | |
| | ≤24V | A | 28 |
| | 48V | A | 25 |
| | 75V | A | 22 |
| | 110V | A | 18 |
| | 220V | A | 3 |
| <hr/> | | | |
| IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | | | |
| | ≤24V | A | 32 |
| | 48V | A | 28 |
| | 75V | A | 28 |
| | 110V | A | 23 |
| | 220V | A | 25 |
| <hr/> | | | |
| IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | | | |
| | ≤24V | A | 32 |
| | 48V | A | 28 |
| | 75V | A | 28 |
| | 110V | A | 23 |
| | 220V | A | 15 |
| <hr/> | | | |
| Short-time allowable current for 10s (IEC/EN60947-1) | | A | 320 |
| <hr/> | | | |
| Protection fuse | | | |
| | gG (IEC) | A | 63 |
| | aM (IEC) | A | 40 |
| <hr/> | | | |
| Making capacity (RMS value) | | A | 380 |
| <hr/> | | | |
| Breaking capacity at voltage | | | |
| | 440V | A | 304 |
| | 500V | A | 240 |
| | 690V | A | 192 |
| <hr/> | | | |
| Resistance per pole (average value) | | mΩ | 2 |
| <hr/> | | | |
| Power dissipation per pole (average value) | | | |
| | I _{th} | W | 6 |
| | AC3 | W | 2.9 |
| <hr/> | | | |
| Tightening torque for terminals | | | |
| | min | Nm | 2.5 |
| | max | Nm | 3 |
| | min | I _{bin} | 1.8 |
| | max | I _{bin} | 2.2 |
| <hr/> | | | |
| Tightening torque for coil terminal | | | |

| | | | |
|--|-----|------|------|
| | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | Ibin | 0.8 |
| | max | Ibin | 0.74 |

| | | |
|--|-----|---|
| Max number of wires simultaneously connectable | Nr. | 2 |
|--|-----|---|

| | | | |
|-------------------|-----------|-----|---|
| Conductor section | AWG/Kcmil | | |
| | | max | 6 |

| | | | |
|------------------------------------|-----|-----------------|-----|
| Flexible w/o lug conductor section | min | mm ² | 2.5 |
| | max | mm ² | 16 |

| | | | |
|------------------------------------|-----|-----------------|----|
| Flexible c/w lug conductor section | min | mm ² | 1 |
| | max | mm ² | 10 |

| | | | |
|---|-----|-----------------|----|
| Flexible with insulated spade lug conductor section | min | mm ² | 1 |
| | max | mm ² | 10 |

| | |
|---|--------------------------|
| Power terminal protection according to IEC/EN 60529 | IP20 when properly wired |
|---|--------------------------|

Mechanical features

| | | |
|--------------------|------------------|--------------------|
| Operating position | normal allowable | Vertical plan ±30° |
|--------------------|------------------|--------------------|

| | |
|--------|-----------------------|
| Fixing | Screw / DIN rail 35mm |
|--------|-----------------------|

| | | |
|--------|---|-----|
| Weight | g | 554 |
|--------|---|-----|

| | | | |
|-------------------|-----------------------------|-----|---|
| Conductor section | AWG/kcmil conductor section | | |
| | | max | 6 |

Operations

| | | |
|-----------------|--------|---------|
| Mechanical life | cycles | 2000000 |
|-----------------|--------|---------|

| | | |
|-----------------|--------|---------|
| Electrical life | cycles | 1400000 |
|-----------------|--------|---------|

Safety related data

| | | | |
|--|----------------------------|--------|----------|
| Performance level B10d according to EN/ISO 13489-1 | rated load mechanical load | cycles | 1400000 |
| | | cycles | 20000000 |

| | |
|---|-----|
| Mirror contacts according to IEC/EN 60947-4-1 | yes |
|---|-----|

| | |
|-------------------|-----|
| EMC compatibility | yes |
|-------------------|-----|

DC coil operating

| | | |
|--------------------------|---|----|
| DC rated control voltage | V | 24 |
|--------------------------|---|----|

| | | | |
|----------------------|-----|-----|-----|
| DC operating voltage | | | |
| pick-up | min | %Us | 70 |
| | max | %Us | 125 |

| | | | |
|----------|-----|-----|----|
| drop-out | min | %Us | 10 |
| | max | %Us | 40 |

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

Max cycles frequency

| | | |
|----------------------|----------|------|
| Mechanical operation | cycles/h | 3600 |
|----------------------|----------|------|

Operating times

Average time for Us control
in AC

| | | | |
|------------|-----|----|----|
| Closing NO | min | ms | 8 |
| | max | ms | 24 |
| Opening NO | min | ms | 5 |
| | max | ms | 15 |
| Closing NC | min | ms | 9 |
| | max | ms | 20 |
| Opening NC | min | ms | 9 |
| | max | ms | 17 |

in DC

| | | | |
|------------|-----|----|----|
| Closing NO | min | ms | 54 |
| | max | ms | 66 |
| Opening NO | min | ms | 14 |
| | max | ms | 17 |

UL technical data

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

| | | |
|---------|---|----|
| at 480V | A | 40 |
| at 600V | A | 32 |

Yielded mechanical performance

for single-phase AC motor

| | | |
|----------|----|-----|
| 110/120V | HP | 3 |
| 230V | HP | 7.5 |

for three-phase AC motor

| | | |
|----------|----|----|
| 200/208V | HP | 10 |
| 220/230V | HP | 15 |
| 460/480V | HP | 30 |
| 575/600V | HP | 30 |

General USE

Contactor

| | | |
|------------|---|----|
| AC current | A | 55 |
|------------|---|----|

Short-circuit protection fuse, 600V

High fault

| | | |
|-----------------------|----|-----|
| Short circuit current | kA | 100 |
| Fuse rating | A | 100 |
| Fuse class | | J |

Standard fault

| | | |
|-----------------------|----|-----|
| Short circuit current | kA | 5 |
| Fuse rating | A | 150 |

Ambient conditions

Temperature

Operating temperature

| | | |
|-----|----|-----|
| min | °C | -50 |
| max | °C | 70 |

Storage temperature

| | | |
|-----|----|-----|
| min | °C | -60 |
| max | °C | 80 |

Max altitude

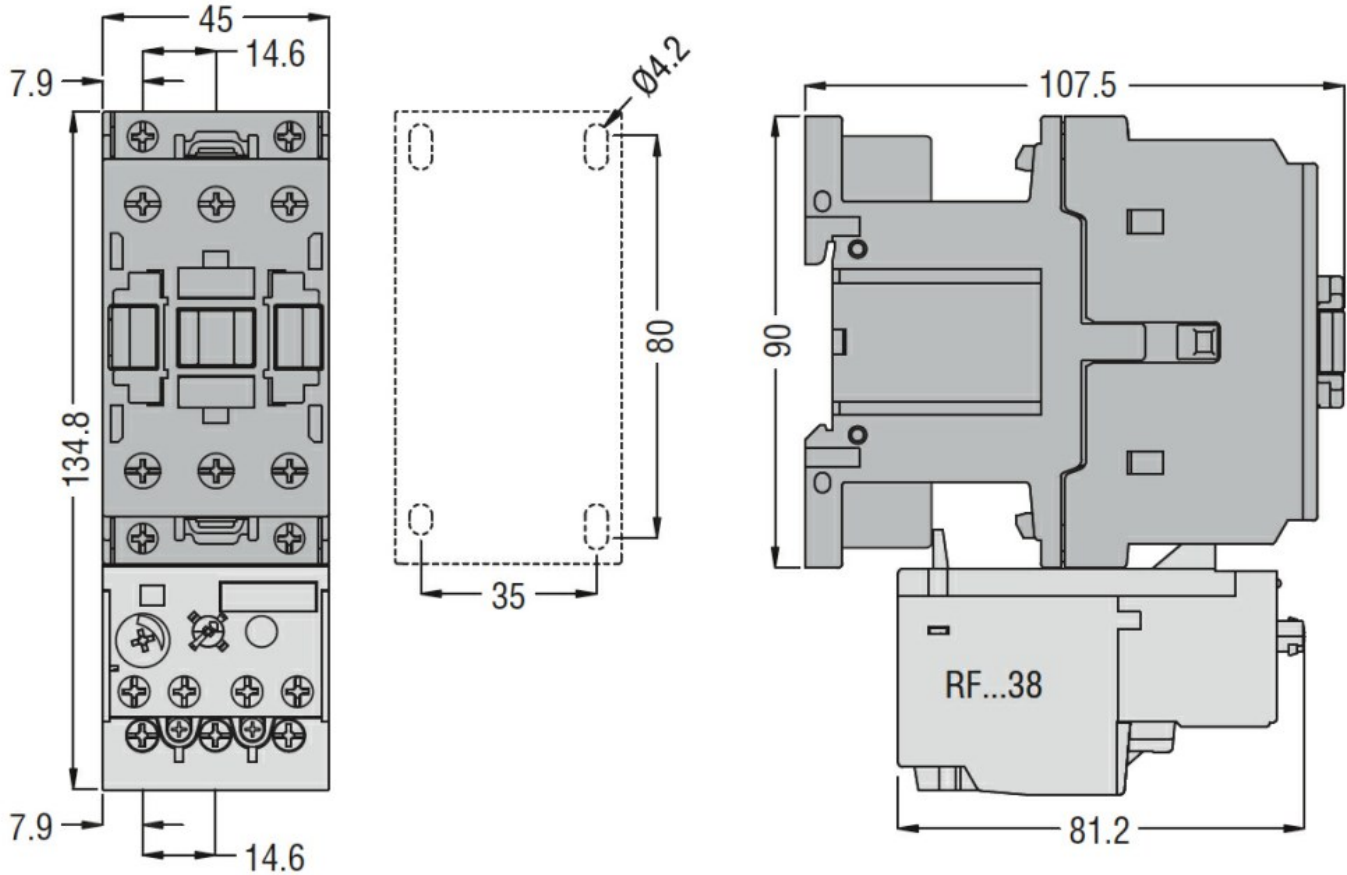
| | |
|---|------|
| m | 3000 |
|---|------|

Resistance & Protection

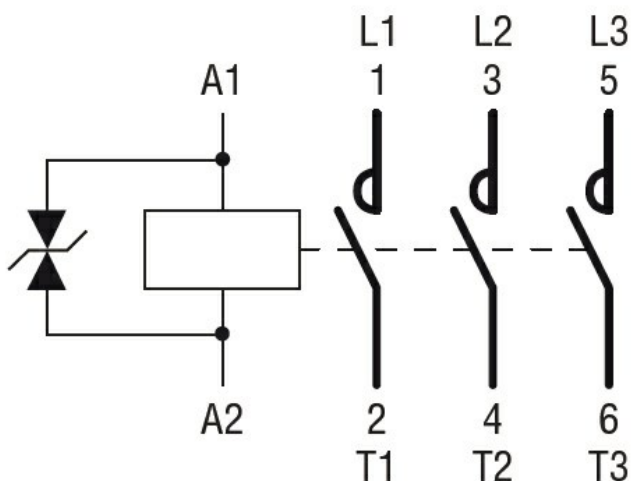
Pollution degree

3

Dimensions [mm (in)]



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