



| | | | | |
|---|--------------------|----|-----|-----------------|
| Product designation | | | | Power contactor |
| Product type designation | | | | BF50 |
| Contact characteristics | | | | |
| Number of poles | Nr. | | | 3 |
| Rated insulation voltage U _i IEC/EN | V | | | 1000 |
| Rated impulse withstand voltage U _{imp} | kV | | | 8 |
| Operational frequency | min | Hz | 25 | |
| | max | Hz | 400 | |
| IEC Conventional free air thermal current I _{th} | A | | | 90 |
| Operational current I _e | AC-1 (≤40°C) | A | 90 | |
| | AC-1 (≤55°C) | A | 75 | |
| | AC-1 (≤70°C) | A | 65 | |
| | AC-3 (≤440V ≤55°C) | A | 50 | |
| | AC-4 (400V) | A | 28 | |
| Rated operational power AC-3 (T≤55°C) | 230V | kW | 11 | |
| | 400V | kW | 22 | |
| | 415V | kW | 22 | |
| | 440V | kW | 22 | |
| | 500V | kW | 22 | |
| | 690V | kW | 30 | |
| | 1000V | kW | 30 | |
| Rated operational current AC-3 (T≤55°C) | 230V | A | 50 | |
| | 400V | A | 50 | |
| | 415V | A | 50 | |
| | 440V | A | 50 | |
| | 500V | A | 44 | |
| | 690V | A | 39 | |
| | 1000V | A | 23 | |
| Rated operational power AC-1 (T≤40°C) | 230V | kW | 34 | |
| | 400V | kW | 59 | |
| | 500V | kW | 74 | |
| | 690V | kW | 102 | |
| IEC max current I _e in DC1 with L/R ≤ 1ms with 1 poles in series | ≤24V | A | 45 | |
| | 48V | A | 40 | |
| | 75V | A | 40 | |
| | 110V | A | 8 | |
| | 220V | A | — | |
| IEC max current I _e in DC1 with L/R ≤ 1ms with 2 poles in series | ≤24V | A | 60 | |

| | | | |
|--|-----------------|----|-----|
| | 48V | A | 60 |
| | 75V | A | 60 |
| | 110V | A | 50 |
| | 220V | A | 7 |
| <hr/> | | | |
| IEC max current I _e in DC1 with L/R ≤ 1ms with 3 poles in series | ≤24V | A | 60 |
| | 48V | A | 60 |
| | 75V | A | 60 |
| | 110V | A | 55 |
| | 220V | A | 75 |
| <hr/> | | | |
| IEC max current I _e in DC1 with L/R ≤ 1ms with 4 poles in series | ≤24V | A | 60 |
| | 48V | A | 60 |
| | 75V | A | 60 |
| | 110V | A | 60 |
| | 220V | A | 90 |
| <hr/> | | | |
| IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | ≤24V | A | 30 |
| | 48V | A | 25 |
| | 75V | A | 22 |
| | 110V | A | 3 |
| | 220V | A | – |
| <hr/> | | | |
| IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | ≤24V | A | 35 |
| | 48V | A | 35 |
| | 75V | A | 30 |
| | 110V | A | 25 |
| | 220V | A | 5 |
| <hr/> | | | |
| IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | ≤24V | A | 50 |
| | 48V | A | 50 |
| | 75V | A | 45 |
| | 110V | A | 30 |
| | 220V | A | 40 |
| <hr/> | | | |
| IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | ≤24V | A | 55 |
| | 48V | A | 55 |
| | 75V | A | 55 |
| | 110V | A | 45 |
| | 220V | A | 50 |
| <hr/> | | | |
| Short-time allowable current for 10s (IEC/EN60947-1) | | A | 400 |
| <hr/> | | | |
| Protection fuse | gG (IEC) | A | 100 |
| | aM (IEC) | A | 50 |
| <hr/> | | | |
| Making capacity (RMS value) | | A | 500 |
| <hr/> | | | |
| Breaking capacity at voltage | 440V | A | 400 |
| | 500V | A | 352 |
| | 690V | A | 312 |
| <hr/> | | | |
| Resistance per pole (average value) | | mΩ | 0.8 |
| <hr/> | | | |
| Power dissipation per pole (average value) | I _{th} | W | 6.5 |
| | AC-3 | W | 2 |
| <hr/> | | | |
| Tightening torque for terminals | | | |

| | | | |
|---|------------------|-----------------|-----------------------|
| | min | Nm | 4 |
| | max | Nm | 5 |
| | min | Ibin | 2.95 |
| | max | Ibin | 3.69 |
| <hr/> | | | |
| Tightening torque for coil terminal | | | |
| | min | Nm | 0.8 |
| | max | Nm | 1 |
| | min | Ibin | 0.8 |
| | max | Ibin | 0.74 |
| <hr/> | | | |
| Max number of wires simultaneously connectable | | | Nr. 2 |
| <hr/> | | | |
| Conductor section | | | |
| AWG/Kcmil | | | |
| | max | | 2 |
| <hr/> | | | |
| Flexible w/o lug conductor section | | | |
| | min | mm ² | 1.5 |
| | max | mm ² | 35 |
| <hr/> | | | |
| Flexible c/w lug conductor section | | | |
| | min | mm ² | 1.5 |
| | max | mm ² | 35 |
| <hr/> | | | |
| Power terminal protection according to IEC/EN 60529 | | | IP20 front |
| <hr/> | | | |
| Mechanical features | | | |
| Operating position | | | |
| | normal allowable | | Vertical plan ±30° |
| <hr/> | | | |
| Fixing | | | Screw / DIN rail 35mm |
| <hr/> | | | |
| Weight | | | g 1020 |
| <hr/> | | | |
| Conductor section | | | |
| AWG/kcmil conductor section | | | |
| | max | | 2 |
| <hr/> | | | |
| Operations | | | |
| Mechanical life | | | cycles 15000000 |
| Electrical life | | | cycles 1400000 |
| <hr/> | | | |
| Safety related data | | | |
| Performance level B10d according to EN/ISO 13489-1 | | | |
| | rated load | cycles | 1400000 |
| | mechanical load | cycles | 15000000 |
| <hr/> | | | |
| Mirror contacts according to IEC/EN 60947-4-1 | | | yes |
| EMC compatibility | | | yes |
| <hr/> | | | |
| AC coil operating | | | |
| Rated AC voltage at 50/60Hz | | | V 230 |
| <hr/> | | | |
| AC operating voltage | | | |
| of 50/60Hz coil powered at 50Hz | | | |
| pick-up | | | |
| | min | %Us | 80 |
| | max | %Us | 110 |
| <hr/> | | | |
| drop-out | | | |
| | min | %Us | 20 |
| | max | %Us | 55 |
| <hr/> | | | |
| of 50/60Hz coil powered at 60Hz | | | |
| pick-up | | | |
| | min | %Us | 85 |
| | max | %Us | 110 |

drop-out

| | | |
|-----|-----|----|
| min | %Us | 40 |
| max | %Us | 55 |

AC average coil consumption at 20°C

of 50/60Hz coil powered at 50Hz

| | | |
|---------|----|-----|
| in-rush | VA | 210 |
| holding | VA | 15 |

of 50/60Hz coil powered at 60Hz

| | | |
|---------|----|-----|
| in-rush | VA | 195 |
| holding | VA | 13 |

of 60Hz coil powered at 60Hz

| | | |
|---------|----|-----|
| in-rush | VA | 210 |
| holding | VA | 15 |

Dissipation at holding ≤20°C 50Hz

| | |
|---|---|
| W | 5 |
|---|---|

Max cycles frequency

Mechanical operation

| | |
|----------|------|
| cycles/h | 3600 |
|----------|------|

Operating times

Average time for Us control

in AC

Closing NO

| | | |
|-----|----|----|
| min | ms | 12 |
| max | ms | 28 |

Opening NO

| | | |
|-----|----|----|
| min | ms | 8 |
| max | ms | 22 |

UL technical data

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

| | | |
|---------|---|----|
| at 480V | A | 52 |
| at 600V | A | 41 |

Yielded mechanical performance

for single-phase AC motor

| | | |
|----------|----|----|
| 110/120V | HP | 5 |
| 230V | HP | 10 |

for three-phase AC motor

| | | |
|----------|----|----|
| 200/208V | HP | 15 |
| 220/230V | HP | 20 |
| 460/480V | HP | 40 |
| 575/600V | HP | 40 |

General USE

Contactors

| | | |
|------------|---|----|
| AC current | A | 90 |
|------------|---|----|

Short-circuit protection fuse, 600V

High fault

| | | |
|-----------------------|----|-----|
| Short circuit current | kA | 100 |
| Fuse rating | A | 150 |
| Fuse class | | J |

Standard fault

| | | |
|-----------------------|----|-----|
| Short circuit current | kA | 5 |
| Fuse rating | A | 150 |
| Fuse class | | RK5 |

Ambient conditions

Temperature

Operating temperature

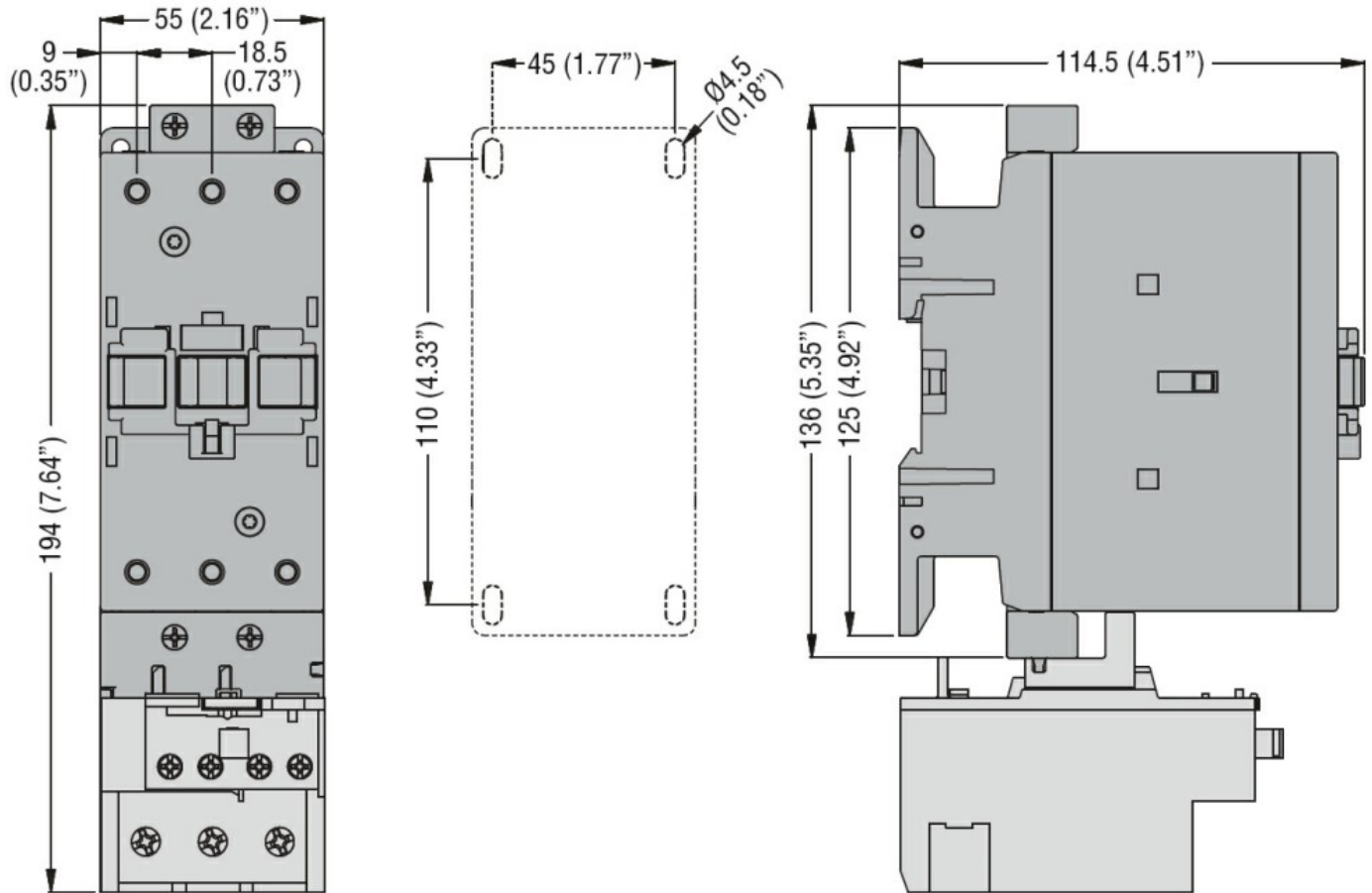
| | | |
|-----|----|-----|
| min | °C | -50 |
|-----|----|-----|

| | | | |
|---------------------|-----|----|------|
| Storage temperature | max | °C | 70 |
| | min | °C | -60 |
| Max altitude | max | °C | 80 |
| | | m | 3000 |

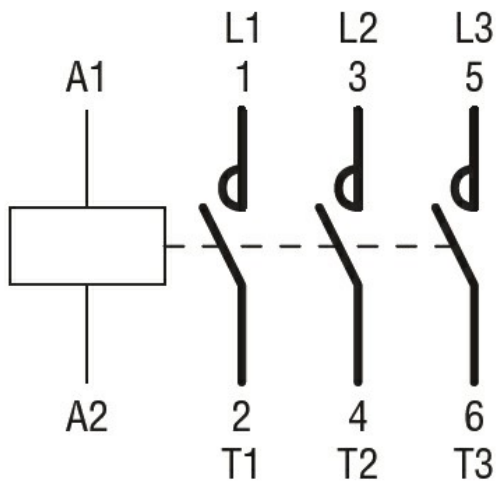
Resistance & Protection

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

ETIM classification

ETIM 8.0

EC000066 -
Power contactor,
AC switching