



| | | | | |
|--------------------------------------------------------------------------------|---------------------------------------------------|----|------|-----------------|
| Product designation | | | | Power contactor |
| Product type designation | | | | BF40 |
| 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 | | | 70 |
| Operational current I_e | AC-1 ($\leq 40^\circ\text{C}$) | A | 70 | |
| | AC-1 ($\leq 55^\circ\text{C}$) | A | 60 | |
| | AC-1 ($\leq 70^\circ\text{C}$) | A | 50 | |
| | AC-3 ($\leq 440\text{V} \leq 55^\circ\text{C}$) | A | 40 | |
| | AC-4 (400V) | A | 24 | |
| Rated operational power AC-3 ($T \leq 55^\circ\text{C}$) | 230V | kW | 11 | |
| | 400V | kW | 18.5 | |
| | 415V | kW | 22 | |
| | 440V | kW | 22 | |
| | 500V | kW | 22 | |
| | 690V | kW | 30 | |
| | 1000V | kW | 18.5 | |
| Rated operational power AC-1 ($T \leq 40^\circ\text{C}$) | 230V | kW | 26 | |
| | 400V | kW | 46 | |
| | 500V | kW | 58 | |
| | 690V | kW | 79 | |
| IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$ | A | 40 | |
| | 48V | A | 35 | |
| | 75V | A | 30 | |
| | 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 | 48 | |
| | 48V | A | 48 | |
| | 75V | A | 45 | |
| | 110V | A | 42 | |
| | 220V | A | 5 | |
| IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$ | A | 48 | |
| | 48V | A | 48 | |
| | 75V | A | 48 | |

| | | | |
|------------------------------------------------------------------------------|------------|------------|------|
| | 110V | A | 44 |
| | 220V | A | 56 |
| <hr/> | | | |
| IEC max current I_e in DC1 with L/R \leq 1ms with 4 poles in series | | | |
| | \leq 24V | A | – |
| | 48V | A | – |
| | 75V | A | – |
| | 110V | A | – |
| | 220V | A | 70 |
| <hr/> | | | |
| IEC max current I_e in DC3-DC5 with L/R \leq 15ms with 1 poles in series | | | |
| | \leq 24V | A | 27 |
| | 48V | A | 23 |
| | 75V | A | 19 |
| | 110V | A | 3 |
| | 220V | A | – |
| <hr/> | | | |
| IEC max current I_e in DC3-DC5 with L/R \leq 15ms with 2 poles in series | | | |
| | \leq 24V | A | 32 |
| | 48V | A | 30 |
| | 75V | A | 27 |
| | 110V | A | 22 |
| | 220V | A | 5 |
| <hr/> | | | |
| IEC max current I_e in DC3-DC5 with L/R \leq 15ms with 3 poles in series | | | |
| | \leq 24V | A | 40 |
| | 48V | A | 40 |
| | 75V | A | 38 |
| | 110V | A | 27 |
| | 220V | A | 32 |
| <hr/> | | | |
| IEC max current I_e in DC3-DC5 with L/R \leq 15ms with 4 poles in series | | | |
| | \leq 24V | A | – |
| | 48V | A | – |
| | 75V | A | – |
| | 110V | A | – |
| | 220V | A | 40 |
| <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 | 400 |
| <hr/> | | | |
| Breaking capacity at voltage | | | |
| | 440V | A | 320 |
| | 500V | A | 265 |
| | 690V | A | 256 |
| <hr/> | | | |
| Resistance per pole (average value) | | m Ω | 0.8 |
| <hr/> | | | |
| Power dissipation per pole (average value) | | | |
| | I_{th} | W | 3.9 |
| | AC3 | W | 1.3 |
| <hr/> | | | |
| Tightening torque for terminals | | | |
| | min | Nm | 4 |
| | max | Nm | 5 |
| | min | lbin | 2.95 |
| | max | lbin | 3.69 |
| <hr/> | | | |
| Tightening torque for coil terminal | | | |
| | min | Nm | 0.8 |
| | max | Nm | 1 |

| | | | | |
|-----------------------------------------------------|---------------------------------|------------------|-----------------|-----------------------|
| | | min | lbin | 0.8 |
| | | max | lbin | 0.74 |
| Max number of wires simultaneously connectable | | | Nr. | 2 |
| Conductor section | AWG/Kcmil | | | |
| | | max | | 2 |
| Flexible w/o lug conductor section | | min | mm ² | 1.5 |
| | | max | mm ² | 35 |
| Flexible c/w lug conductor section | | min | mm ² | 1.5 |
| | | max | mm ² | 35 |
| Power terminal protection according to IEC/EN 60529 | | | | IP20 front |
| Mechanical features | | | | |
| Operating position | | normal allowable | | Vertical plan ±30° |
| Fixing | | | | Screw / DIN rail 35mm |
| Weight | | | g | 1020 |
| Conductor section | AWG/kcmil conductor section | | | |
| | | max | | 2 |
| Operations | | | | |
| Mechanical life | | | cycles | 15000000 |
| Electrical life | | | cycles | 1500000 |
| Safety related data | | | | |
| Performance level B10d according to EN/ISO 13489-1 | | rated load | cycles | 1500000 |
| | | mechanical load | cycles | 15000000 |
| Mirror contacts according to IEC/EN 60947-4-1 | | | | yes |
| EMC compatibility | | | | yes |
| AC coil operating | | | | |
| Rated AC voltage at 50/60Hz | | | V | 24 |
| AC operating voltage | 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 | 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 $\leq 20^\circ\text{C}$ 50Hz

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

Max cycles frequency

Mechanical operation

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

Operating times

Average time for U_s control

in AC

Closing NO

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

Opening NO

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

in DC

Closing NO

| | | |
|-----|----|----|
| min | ms | 40 |
| max | ms | 85 |

Opening NO

| | | |
|-----|----|----|
| min | ms | 20 |
| max | ms | 55 |

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 | 70 |
|------------|---|----|

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

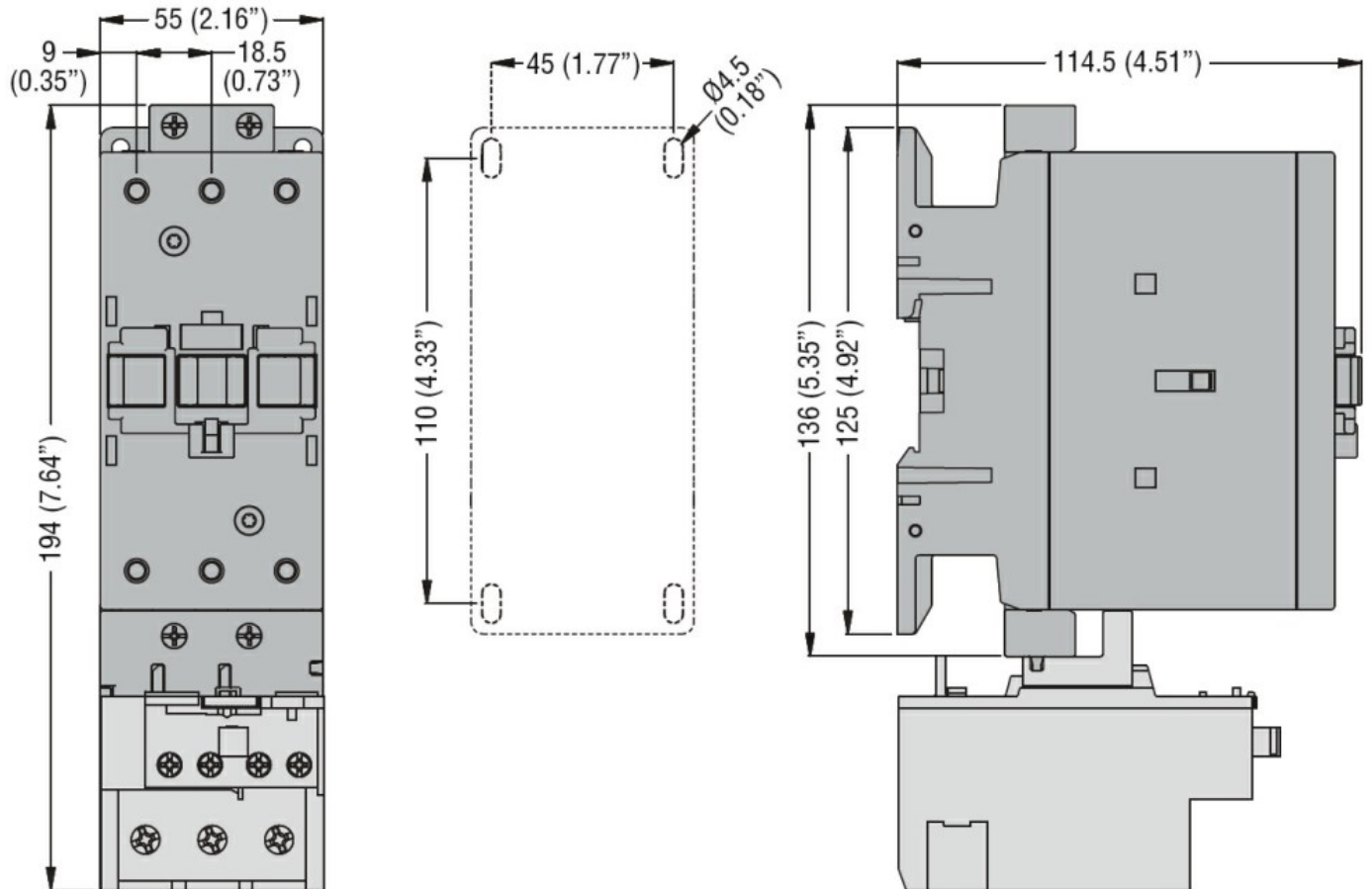
| | | |
|-----|------------------|-----|
| min | $^\circ\text{C}$ | -50 |
|-----|------------------|-----|

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

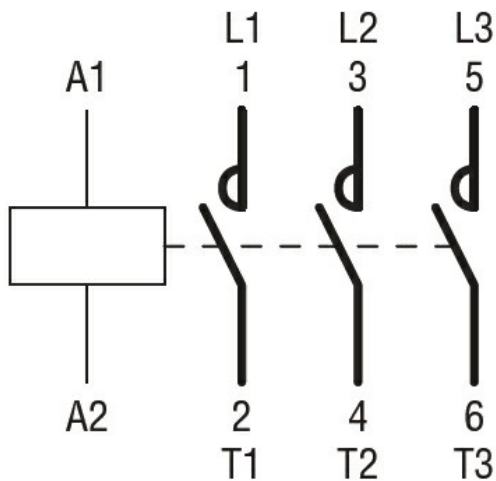
Resistance & Protection

| | |
|------------------|---|
| 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 60947-1

IEC/EN 60947-4-1

UL 60947-1

UL 60947-4-1

Certificates

CCC

cULus

ETIM classification

ETIM 8.0

EC000066 -
Power contactor,
AC switching