



|   |                                      |      |      |
|---|--------------------------------------|------|------|
| Product designation   | Power contactor                      |      |      |
| Product type designation  | BF40                                 |      |      |
| <b>Contact characteristics</b>  |                                      |      |      |
| 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 ( $\leq 40^\circ C$ )           | A    | 70   |
|   | AC-1 ( $\leq 55^\circ C$ )           | A    | 60   |
|   | AC-1 ( $\leq 70^\circ C$ )           | A    | 50   |
|   | AC-3 ( $\leq 440V \leq 55^\circ C$ ) | A    | 40   |
|   | AC-4 (400V)                          | A    | 24   |
| Rated operational power AC-3 ( $T \leq 55^\circ C$ )                    |                                      |      |      |
|   | 230V                                 | kW   | 11   |
|   | 400V                                 | kW   | 18.5 |
|   | 415V                                 | kW   | 22   |
|   | 440V                                 | kW   | 22   |
|   | 500V                                 | kW   | 22   |
|   | 690V                                 | kW   | 30   |
|   | 1000V                                | kW   | 22   |
| Rated operational current AC-3 ( $T \leq 55^\circ C$ )                  |                                      |      |      |
|   | 230V                                 | A    | 40   |
|   | 400V                                 | A    | 40   |
|   | 415V                                 | A    | 40   |
|   | 440V                                 | A    | 40   |
|   | 500V                                 | A    | 33   |
|   | 690V                                 | A    | 32   |
|   | 1000V                                | A    | 21   |
| Rated operational power AC-1 ( $T \leq 40^\circ C$ )                    |                                      |      |      |
|   | 230V                                 | kW   | 26   |
|   | 400V                                 | kW   | 46   |
|   | 500V                                 | kW   | 58   |
|   | 690V                                 | kW   | 79   |
| IEC max current $I_e$ in DC1 with $L/R \leq 1ms$ with 1 poles in series |                                      |      |      |
|   | ≤24V                                 | A    | 40   |
|   | 48V                                  | A    | 35   |
|   | 75V                                  | A    | 30   |
|   | 110V                                 | A    | 8    |
|   | 220V                                 | A    | —    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1ms$ with 2 poles in series |                                      |      |      |
|   | ≤24V                                 | A    | 48   |

|  |                 |    |     |
|--|-----------------|----|-----|
|  | 48V             | A  | 48  |
|  | 75V             | A  | 45  |
|  | 110V            | A  | 42  |
|  | 220V            | A  | 5   |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series      |                 |    |     |
|  | ≤24V            | A  | 48  |
|  | 48V             | A  | 48  |
|  | 75V             | A  | 48  |
|  | 110V            | A  | 44  |
|  | 220V            | A  | 56  |
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series      |                 |    |     |
|  | ≤24V            | A  | —   |
|  | 48V             | A  | —   |
|  | 75V             | A  | —   |
|  | 110V            | A  | —   |
|  | 220V            | A  | 70  |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |                 |    |     |
|  | ≤24V            | A  | 27  |
|  | 48V             | A  | 23  |
|  | 75V             | A  | 19  |
|  | 110V            | A  | 3   |
|  | 220V            | A  | —   |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |                 |    |     |
|  | ≤24V            | A  | 32  |
|  | 48V             | A  | 30  |
|  | 75V             | A  | 27  |
|  | 110V            | A  | 22  |
|  | 220V            | A  | 5   |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |                 |    |     |
|  | ≤24V            | A  | 40  |
|  | 48V             | A  | 40  |
|  | 75V             | A  | 38  |
|  | 110V            | A  | 27  |
|  | 220V            | A  | 32  |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |                 |    |     |
|  | ≤24V            | A  | —   |
|  | 48V             | A  | —   |
|  | 75V             | A  | —   |
|  | 110V            | A  | —   |
|  | 220V            | A  | 40  |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |                 | A  | 400 |
| Protection fuse  |                 |    |     |
|  | gG (IEC)        | A  | 100 |
|  | aM (IEC)        | A  | 50  |
| Making capacity (RMS value)  |                 | A  | 400 |
| Breaking capacity at voltage   |                 |    |     |
|  | 440V            | A  | 320 |
|  | 500V            | A  | 265 |
|  | 690V            | A  | 256 |
| Resistance per pole (average value)                                  |                 | mΩ | 0.8 |
| Power dissipation per pole (average value)                           |                 |    |     |
|  | I <sub>th</sub> | W  | 3.9 |
|  | AC-3            | W  | 1.3 |
| Tightening torque for terminals                                      |                 |    |     |

|   |                     |                 |                          |
|---|---------------------|-----------------|--------------------------|
|   | min                 | Nm              | 4                        |
|   | max                 | Nm              | 5                        |
|   | min                 | Ibin            | 2.95                     |
|   | max                 | Ibin            | 3.69                     |
| 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                 |                 | 2                        |
| Flexible w/o lug conductor section                  |                     |                 |                          |
|   | min                 | mm <sup>2</sup> | 1.5                      |
|   | max                 | mm <sup>2</sup> | 35                       |
| Flexible c/w lug conductor section                  |                     |                 |                          |
|   | min                 | mm <sup>2</sup> | 1.5                      |
|   | max                 | mm <sup>2</sup> | 35                       |
| Power terminal protection according to IEC/EN 60529 |                     |                 | IP20 front               |
| Mechanical features                                 |                     |                 |                          |
| Operating position                                  | normal<br>allowable |                 | Vertical plan<br>±30°    |
| Fixing  |                     |                 | Screw / DIN rail<br>35mm |
| Weight  | g                   | 1020            |                          |
| 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                 |
| EMC compatibility                                   |                     |                 | yes                      |
| AC coil operating                                   |                     |                 |                          |
| 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              | 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 |

in DC

|  |            |     |    |    |
|--|------------|-----|----|----|
|  | Closing NO | min | ms | 40 |
|  |            | max | ms | 85 |
|  | Opening NO | min | ms | 20 |
|  |            | max | ms | 55 |

**UL technical data**

Rated operational voltage AC (UL) V 600

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 | °C | -50 |
| max | °C | 70  |

Storage temperature

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

Max altitude

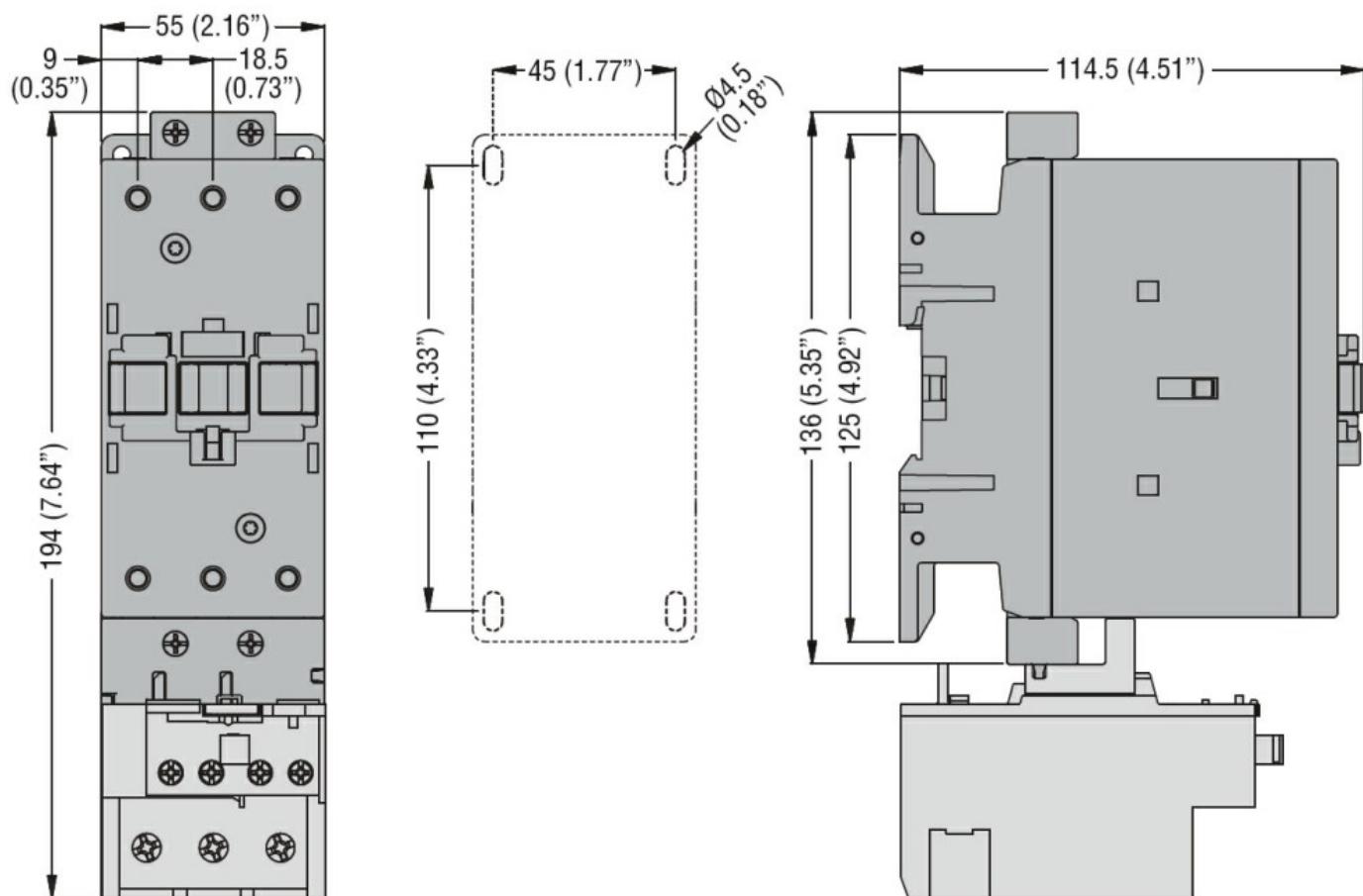
|   |      |
|---|------|
| m | 3000 |
|---|------|

**Resistance & Protection**

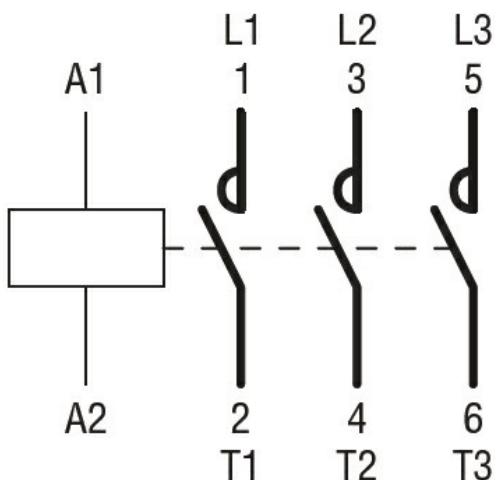
Pollution degree

|   |
|---|
| 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

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cULus

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching