



Power contactor  
BF38

Product designation

Product type designation

**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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 | $\leq 24\text{V}$ |
| 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 |  | $\leq 24\text{V}$ |
|  | 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 | $\leq 24\text{V}$ |

|  |            |            |     |
|--|------------|------------|-----|
|  | 48V        | A          | 34  |
|  | 75V        | A          | 33  |
|  | 110V       | A          | 34  |
|  | 220V       | A          | 30  |
| <hr/>  |            |            |     |
| IEC max current $I_e$ in DC1 with L/R $\leq$ 1ms with 4 poles in series      |            |            |     |
|  | $\leq$ 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 $\leq$ 15ms with 1 poles in series |            |            |     |
|  | $\leq$ 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 $\leq$ 15ms with 2 poles in series |            |            |     |
|  | $\leq$ 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 $\leq$ 15ms with 3 poles in series |            |            |     |
|  | $\leq$ 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 $\leq$ 15ms with 4 poles in series |            |            |     |
|  | $\leq$ 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)  |            | m $\Omega$ | 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        | lbin       | 1.8 |
|  | max        | lbin       | 2.2 |
| <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                             |                    | 6        |
| Flexible w/o lug conductor section                  | min                             | mm <sup>2</sup>    | 2.5      |
|   | max                             | mm <sup>2</sup>    | 16       |
| Flexible c/w lug conductor section                  | min                             | mm <sup>2</sup>    | 1        |
|   | max                             | mm <sup>2</sup>    | 10       |
| Flexible with insulated spade lug conductor section | min                             | mm <sup>2</sup>    | 1        |
|   | max                             | mm <sup>2</sup>    | 10       |
| Power terminal protection according to IEC/EN 60529 | IP20 when wired                 |                    |          |
| <b>Mechanical features</b>                          |                                 |                    |          |
| Operating position                                  | normal allowable                | Vertical plan ±30° |          |
| Fixing  | Screw / DIN rail 35mm           |                    |          |
| Weight  |                                 | g                  | 423      |
| Conductor section                                   | AWG/kcmil conductor section     |                    |          |
|   | max                             |                    | 6        |
| <b>Operations</b>                                   |                                 |                    |          |
| Mechanical life                                     |                                 | cycles             | 20000000 |
| Electrical life                                     |                                 | cycles             | 1400000  |
| <b>Safety related data</b>                          |                                 |                    |          |
| 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                             |                    |          |
| <b>AC coil operating</b>                            |                                 |                    |          |
| Rated AC voltage at 50/60Hz                         |                                 | V                  | 110      |
| 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                | 20       |
|   | max                             | %Us                | 55       |

AC average coil consumption 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  $\leq 20^\circ\text{C}$  50Hz

|   |     |
|---|-----|
| W | 2.5 |
|---|-----|

Max cycles frequency

Mechanical operation

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

Operating times

Average time for  $U_s$  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 |

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

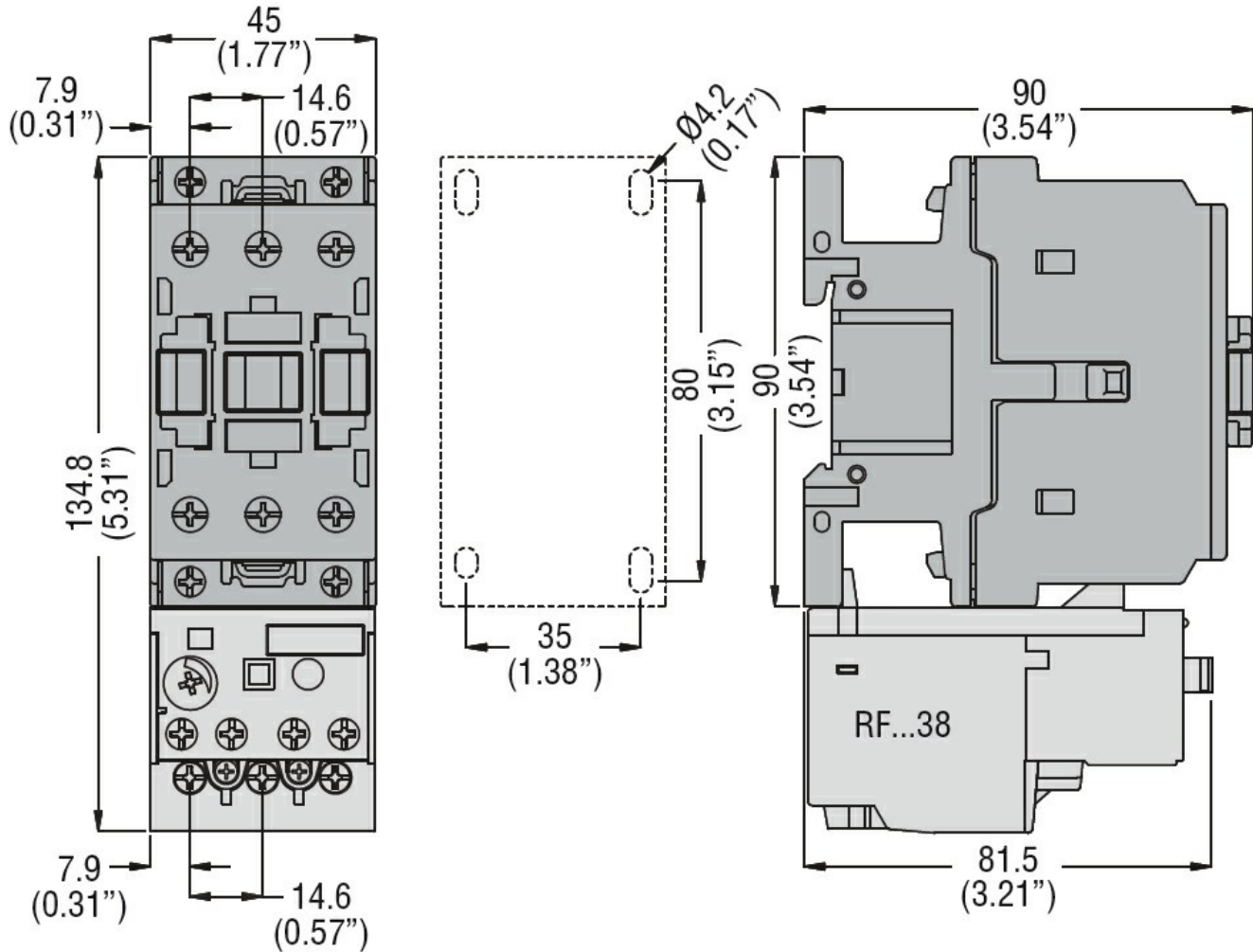
|   |      |
|---|------|
| m | 3000 |
|---|------|

**Resistance & Protection**

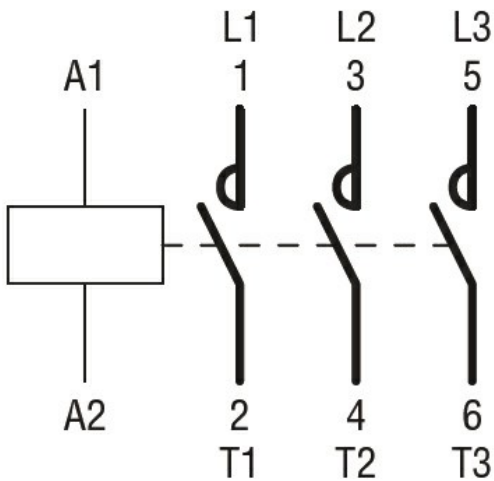
Pollution degree

3

**Dimensions**



**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

EAC

**ETIM classification**

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching