



Product designation  
Product type designation

Power contactor  
BF38

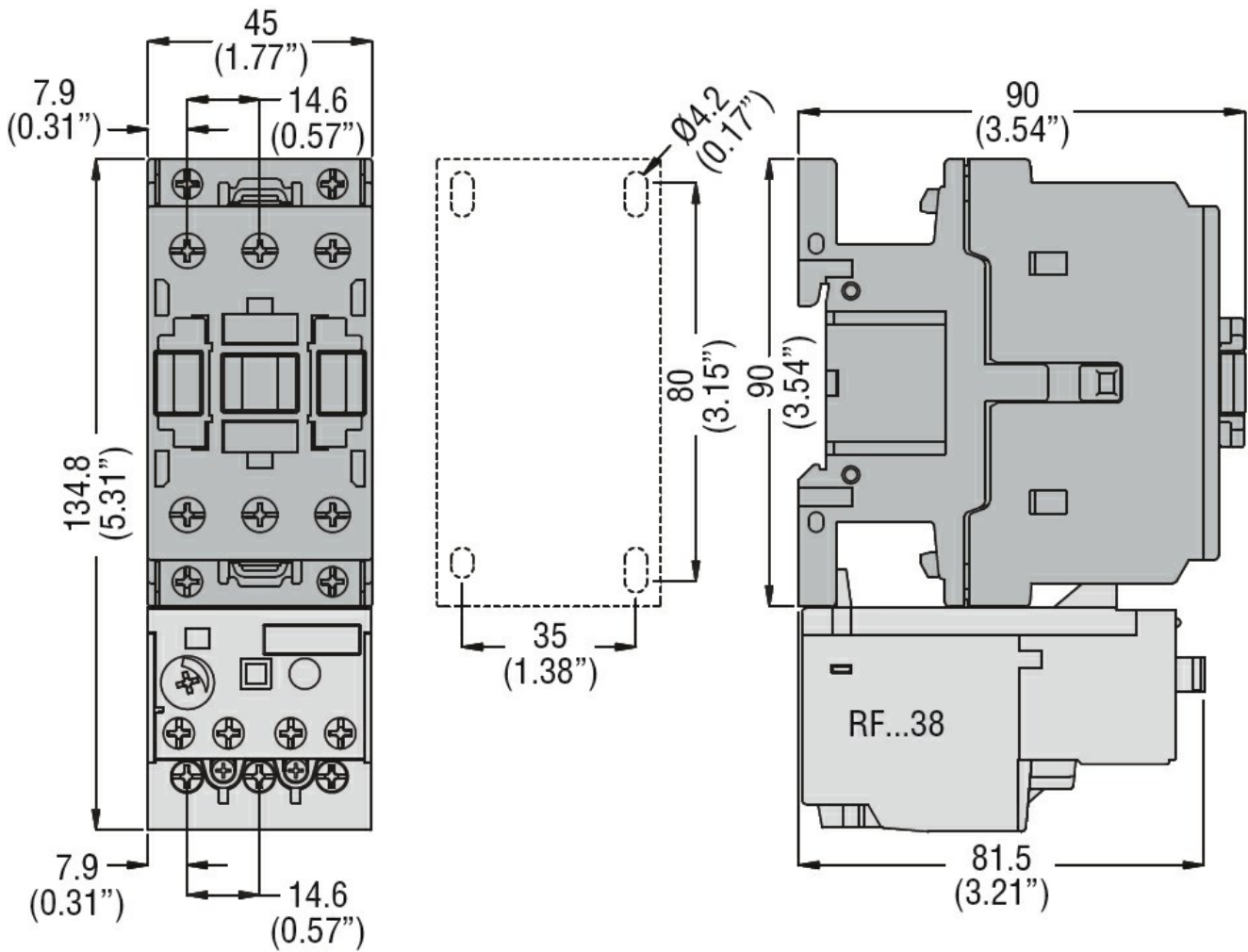
**Contact characteristics**

|   |   |         |
|---|---|---------|
| Number of poles   | nr.   | 3       |
| Rated insulation voltage U <sub>i</sub> IEC/EN                              | V   | 690     |
| Rated impulse withstand voltage U <sub>imp</sub>                            | kV  | 6       |
| Operational frequency   | min   | Hz 25   |
|   | max   | Hz 400  |
| IEC Conventional free air thermal current I <sub>th</sub>                   | A   | 56      |
| Operational current I <sub>e</sub>  | AC-1 (≤40°C)  | A 56    |
|   | AC-1 (≤40°C) with 16mm <sup>2</sup> wire and fork end lug | A 60    |
|   | AC-1 (≤55°C)  | A 45    |
|   | AC-1 (≤55°C) with 16mm <sup>2</sup> wire and fork end lug | A 48    |
|   | AC-1 (≤70°C)  | A 40    |
|   | AC-1 (≤70°C) with 16mm <sup>2</sup> wire and fork end lug | A 42    |
|   | AC-3 (≤440V ≤55°C)  | A 38    |
| Rated operational power AC-3 (T≤55°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   |
| Rated operational power AC-1 (T≤40°C)                                       | 690V  | kW 22   |
|   | 230V  | kW 21   |
|   | 400V  | kW 36   |
|   | 500V  | kW 45   |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 1 poles in series | 690V  | kW 62   |
|   | ≤24V  | A 35    |
|   | 48V   | A 30    |
|   | 75V   | A 23    |
|   | 110V  | A 8     |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 2 poles in series | 220V  | A –     |
|   | ≤24V  | A 36    |
|   | 48V   | A 34    |
|   | 75V   | A 29    |
|   | 110V  | A 32    |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 3 poles in series | 220V  | A 4     |
|   | ≤24V  | A 36    |

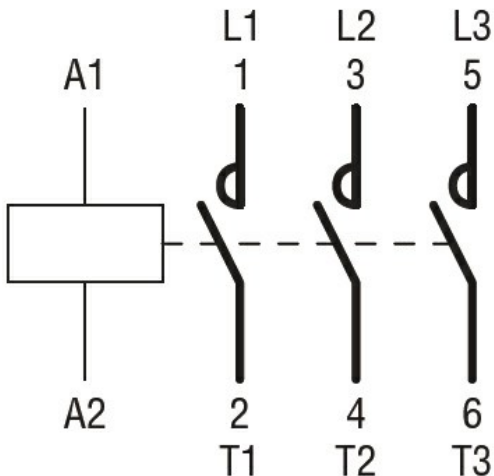
|  |                 |                  |     |
|--|-----------------|------------------|-----|
|  | 48V             | A                | 34  |
|  | 75V             | A                | 33  |
|  | 110V            | A                | 34  |
|  | 220V            | A                | 30  |
| <hr/>  |                 |                  |     |
| IEC max current I <sub>e</sub> 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 <sub>e</sub> 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 <sub>e</sub> 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 <sub>e</sub> 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 <sub>e</sub> 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 <sub>th</sub> | W                | 6   |
|  | AC3             | W                | 2.9 |
| <hr/>  |                 |                  |     |
| Tightening torque for terminals  |                 |                  |     |
|  | min             | Nm               | 2.5 |
|  | max             | Nm               | 3   |
|  | min             | I <sub>bin</sub> | 1.8 |
|  | max             | I <sub>bin</sub> | 2.2 |
| <hr/>  |                 |                  |     |
| Tightening torque for coil terminal  |                 |                  |     |

|   |   |                    |          |
|---|---|--------------------|----------|
|   | min   | Nm                 | 0.8      |
|   | max   | Nm                 | 1        |
|   | min   | lbft               | 0.8      |
|   | max   | lbft               | 0.74     |
| Max number of wires simultaneously connectable      |   | nr.                | 2        |
| Conductor section                                   | 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                  | 426      |
| <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  | cycles             | 1400000  |
|   | mechanical load                                     | 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                  | 230      |
| AC operating voltage                                | of 50/60Hz coil powered at 50Hz                     |                    |          |
|   | pick-up   |                    |          |
|   | 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 operating voltage 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 ≤20°C 50Hz                |            | W          | 2.5   |
| <b>Max cycles frequency</b>                      |            |            |       |
| Mechanical operation                             |            | cycles/h   | 3600  |
| <b>Operating times</b>                           |            |            |       |
| 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 |
| <b>UL technical data</b>                         |            |            |       |
| 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  |
| <b>Ambient conditions</b>                        |            |            |       |
| Temperature                                      |            |            |       |
| Operating temperature                            |            |            |       |
|  | min        | °C         | -50   |
|  | max        | °C         | 70    |
| Storage temperature                              |            |            |       |
|  | min        | °C         | -60   |
|  | max        | °C         | 80    |
| Max altitude                                     |            | m          | 3000  |
| <b>Resistance &amp; Protection</b>               |            |            |       |
| Pollution degree                                 |            |            | 3     |
| <b>Dimensions</b>                                |            |            |       |



**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

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UL 60947-4-1

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Certificates

CCC

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cULus

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EAC

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching