



Product designation  
Product type designation

Power contactor  
BF65

**Contact characteristics**

|   |                    |        |
|---|--------------------|--------|
| Number of poles   | Nr.                | 4      |
| Rated insulation voltage U <sub>i</sub> IEC/EN                              | V                  | 1000   |
| Rated impulse withstand voltage U <sub>imp</sub>                            | kV                 | 8      |
| Operational frequency   | min                | Hz 25  |
|   | max                | Hz 400 |
| IEC Conventional free air thermal current I <sub>th</sub>                   | A                  | 100    |
| Operational current I <sub>e</sub>  | AC-1 (≤40°C)       | A 100  |
|   | AC-1 (≤55°C)       | A 80   |
|   | AC-1 (≤70°C)       | A 70   |
|   | AC-3 (≤440V ≤55°C) | A 65   |
|   | AC-4 (400V)        | A 31   |
| Rated operational current AC-3 (T≤55°C)                                     | 230V               | A 65   |
|   | 400V               | A 65   |
|   | 415V               | A 65   |
|   | 440V               | A 65   |
|   | 500V               | A 53   |
|   | 690V               | A 47   |
|   | 1000V              | A 25   |
| Rated operational power AC-1 (T≤40°C)                                       | 230V               | kW 38  |
|   | 400V               | kW 65  |
|   | 500V               | kW 82  |
|   | 690V               | kW 114 |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 1 poles in series | ≤24V               | A 50   |
|   | 48V                | A 50   |
|   | 75V                | A 50   |
|   | 110V               | A 8    |
|   | 220V               | A –    |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 2 poles in series | ≤24V               | A 70   |
|   | 48V                | A 70   |
|   | 75V                | A 70   |
|   | 110V               | A 60   |
|   | 220V               | A 9    |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 3 poles in series | ≤24V               | A 70   |
|   | 48V                | A 70   |
|   | 75V                | A 70   |

|  |                 |                  |      |
|--|-----------------|------------------|------|
|  | 110V            | A                | 60   |
|  | 220V            | A                | 90   |
| <hr/>  |                 |                  |      |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 4 poles in series      |                 |                  |      |
|  | ≤24V            | A                | 70   |
|  | 48V             | A                | 70   |
|  | 75V             | A                | 70   |
|  | 110V            | A                | 70   |
|  | 220V            | A                | 110  |
| <hr/>  |                 |                  |      |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |                 |                  |      |
|  | ≤24V            | A                | 35   |
|  | 48V             | A                | 25   |
|  | 75V             | A                | 25   |
|  | 110V            | A                | 3    |
|  | 220V            | A                | –    |
| <hr/>  |                 |                  |      |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |                 |                  |      |
|  | ≤24V            | A                | 45   |
|  | 48V             | A                | 40   |
|  | 75V             | A                | 40   |
|  | 110V            | A                | 30   |
|  | 220V            | A                | 5    |
| <hr/>  |                 |                  |      |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |                 |                  |      |
|  | ≤24V            | A                | 55   |
|  | 48V             | A                | 50   |
|  | 75V             | A                | 50   |
|  | 110V            | A                | 35   |
|  | 220V            | A                | 52   |
| <hr/>  |                 |                  |      |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |                 |                  |      |
|  | ≤24V            | A                | 60   |
|  | 48V             | A                | 60   |
|  | 75V             | A                | 60   |
|  | 110V            | A                | 50   |
|  | 220V            | A                | 65   |
| <hr/>  |                 |                  |      |
| Short-time allowable current for 10s (IEC/EN60947-1)                             |                 | A                | 640  |
| <hr/>  |                 |                  |      |
| Protection fuse  |                 |                  |      |
|  | gG (IEC)        | A                | 125  |
|  | aM (IEC)        | A                | 80   |
| <hr/>  |                 |                  |      |
| Making capacity (RMS value)  |                 | A                | 650  |
| <hr/>  |                 |                  |      |
| Breaking capacity at voltage   |                 |                  |      |
|  | 440V            | A                | 520  |
|  | 500V            | A                | 425  |
|  | 690V            | A                | 376  |
| <hr/>  |                 |                  |      |
| Resistance per pole (average value)  |                 | mΩ               | 0.8  |
| <hr/>  |                 |                  |      |
| Power dissipation per pole (average value)                                       |                 |                  |      |
|  | I <sub>th</sub> | W                | 8    |
|  | AC-3            | W                | 3.4  |
| <hr/>  |                 |                  |      |
| Tightening torque for terminals  |                 |                  |      |
|  | min             | Nm               | 4    |
|  | max             | Nm               | 5    |
|  | min             | I <sub>bin</sub> | 2.95 |
|  | max             | I <sub>bin</sub> | 3.69 |
| <hr/>  |                 |                  |      |
| Tightening torque for coil terminal  |                 |                  |      |
|  | min             | Nm               | 0.8  |
|  | max             | Nm               | 1    |

|   |                  |                  |                       |
|---|------------------|------------------|-----------------------|
|   | min              | I <sub>bin</sub> | 0.8                   |
|   | max              | I <sub>bin</sub> | 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            |
| <b>Mechanical features</b>                          |                  |                  |                       |
| Operating position                                  |                  |                  |                       |
|   | normal allowable |                  | Vertical plan ±30°    |
| Fixing  |                  |                  | Screw / DIN rail 35mm |
| Weight  |                  | g                | 1240                  |
| Conductor section                                   |                  |                  |                       |
| AWG/kcmil conductor section                         |                  |                  |                       |
|   | max              |                  | 2                     |
| <b>Operations</b>                                   |                  |                  |                       |
| Mechanical life                                     |                  | cycles           | 15000000              |
| 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           | 15000000              |
| 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                | 48                    |
| 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 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**

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

|         |   |    |
|---------|---|----|
| at 480V | A | 65 |
| at 600V | A | 62 |

Yielded mechanical performance

for three-phase AC motor

|          |    |    |
|----------|----|----|
| 200/208V | HP | 20 |
| 220/230V | HP | 25 |
| 460/480V | HP | 50 |
| 575/600V | HP | 60 |

General USE

Contactor

|            |   |     |
|------------|---|-----|
| AC current | A | 100 |
|------------|---|-----|

Short-circuit protection fuse, 600V

High fault

|                       |    |     |
|-----------------------|----|-----|
| Short circuit current | kA | 100 |
| Fuse rating           | A  | 200 |
| Fuse class            |    | J   |

Standard fault

|                       |    |     |
|-----------------------|----|-----|
| Short circuit current | kA | 10  |
| Fuse rating           | A  | 200 |
| Fuse class            |    | RK5 |

**Ambient conditions**

Temperature

Operating temperature

|     |                    |     |
|-----|--------------------|-----|
| min | $^{\circ}\text{C}$ | -50 |
| max | $^{\circ}\text{C}$ | 70  |

Storage temperature

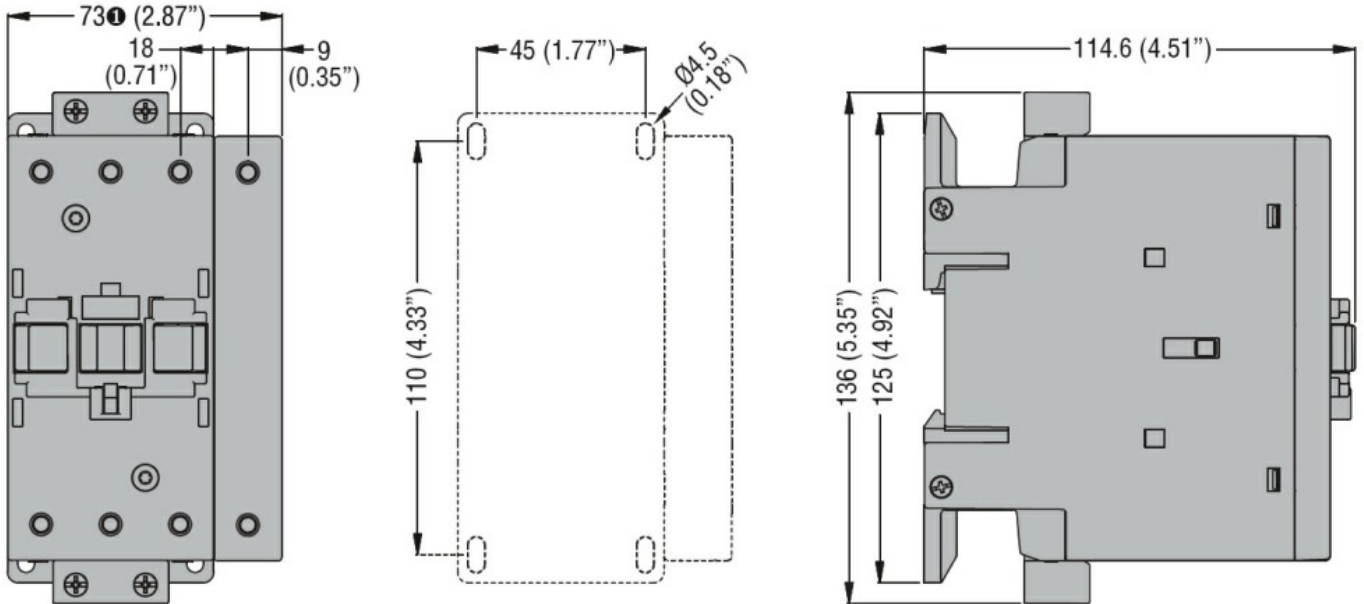
|     |                    |     |
|-----|--------------------|-----|
| min | $^{\circ}\text{C}$ | -60 |
|-----|--------------------|-----|

|              |     |    |      |
|--------------|-----|----|------|
| Max altitude | max | °C | 80   |
|              |     | m  | 3000 |

**Resistance & Protection**

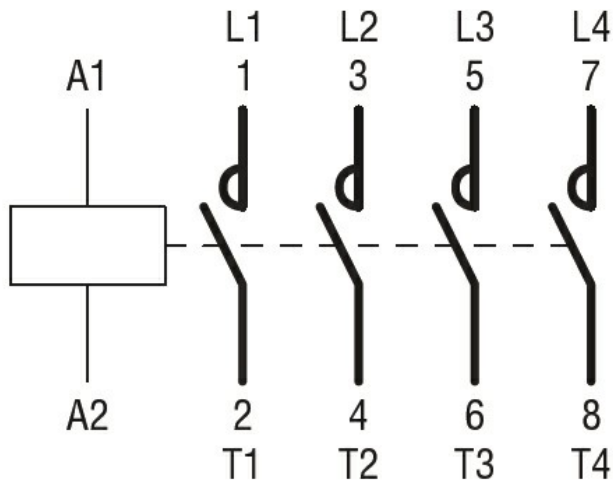
|                  |   |
|------------------|---|
| Pollution degree | 3 |
|------------------|---|

**Dimensions**



① BF80T2 82mm/3.23''

**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