



|   |                    |    |      |                 |
|---|--------------------|----|------|-----------------|
| Product designation   |                    |    |      | Power contactor |
| Product type designation  |                    |    |      | BF65            |
| <b>Contact characteristics</b>  |                    |    |      |                 |
| Number of poles   | Nr.                |    |      | 3               |
| 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 power AC-3 (T≤55°C)                                       | 230V               | kW | 18.5 |                 |
|   | 400V               | kW | 30   |                 |
|   | 415V               | kW | 37   |                 |
|   | 440V               | kW | 37   |                 |
|   | 500V               | kW | 37   |                 |
|   | 690V               | kW | 45   |                 |
|   | 1000V              | kW | 30   |                 |
| 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  | —    |                 |
|   | —                  | A  | —    |                 |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 2 poles in series | ≤24V               | A  | 70   |                 |
|   | —                  | A  | —    |                 |

|  |                 |    |     |
|--|-----------------|----|-----|
|  | 48V             | A  | 70  |
|  | 75V             | A  | 70  |
|  | 110V            | A  | 60  |
|  | 220V            | A  | 9   |
| <hr/>  |                 |    |     |
| 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              | Ibin            | 2.95                  |
|  | max              | Ibin            | 3.69                  |
| <b>Tightening torque for coil terminal</b>                 |                  |                 |                       |
|  | min              | Nm              | 0.8                   |
|  | max              | Nm              | 1                     |
|  | min              | Ibin            | 0.8                   |
|  | max              | Ibin            | 0.74                  |
| <b>Max number of wires simultaneously connectable</b>      |                  |                 | Nr. 2                 |
| <b>Conductor section</b>                                   |                  |                 |                       |
| AWG/Kcmil  | max              |                 | 2                     |
| <b>Flexible w/o lug conductor section</b>                  |                  |                 |                       |
|  | min              | mm <sup>2</sup> | 1.5                   |
|  | max              | mm <sup>2</sup> | 35                    |
| <b>Flexible c/w lug conductor section</b>                  |                  |                 |                       |
|  | min              | mm <sup>2</sup> | 1.5                   |
|  | max              | mm <sup>2</sup> | 35                    |
| <b>Power terminal protection according to IEC/EN 60529</b> |                  |                 | IP20 front            |
| <b>Mechanical features</b>                                 |                  |                 |                       |
| <b>Operating position</b>                                  |                  |                 |                       |
|  | normal allowable |                 | Vertical plan ±30°    |
| <b>Fixing</b>  |                  |                 | Screw / DIN rail 35mm |
| <b>Weight</b>  |                  |                 | g 1020                |
| <b>Conductor section</b>                                   |                  |                 |                       |
| AWG/kcmil conductor section                                | max              |                 | 2                     |
| <b>Operations</b>  |                  |                 |                       |
| <b>Mechanical life</b>                                     |                  | cycles          | 15000000              |
| <b>Electrical life</b>                                     |                  | cycles          | 1400000               |
| <b>Safety related data</b>                                 |                  |                 |                       |
| <b>Performance level B10d according to EN/ISO 13489-1</b>  |                  |                 |                       |
|  | rated load       | cycles          | 1400000               |
|  | mechanical load  | cycles          | 15000000              |
| <b>Mirror contacts according to IEC/EN 60947-4-1</b>       |                  |                 | yes                   |
| <b>EMC compatibility</b>                                   |                  |                 | yes                   |
| <b>AC coil operating</b>                                   |                  |                 |                       |
| <b>Rated AC voltage at 50/60Hz</b>                         |                  | V               | 400                   |
| <b>AC operating voltage</b>                                |                  |                 |                       |
| 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 ≤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

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 | °C | -50 |
| max | °C | 70  |

Storage temperature

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

Max altitude

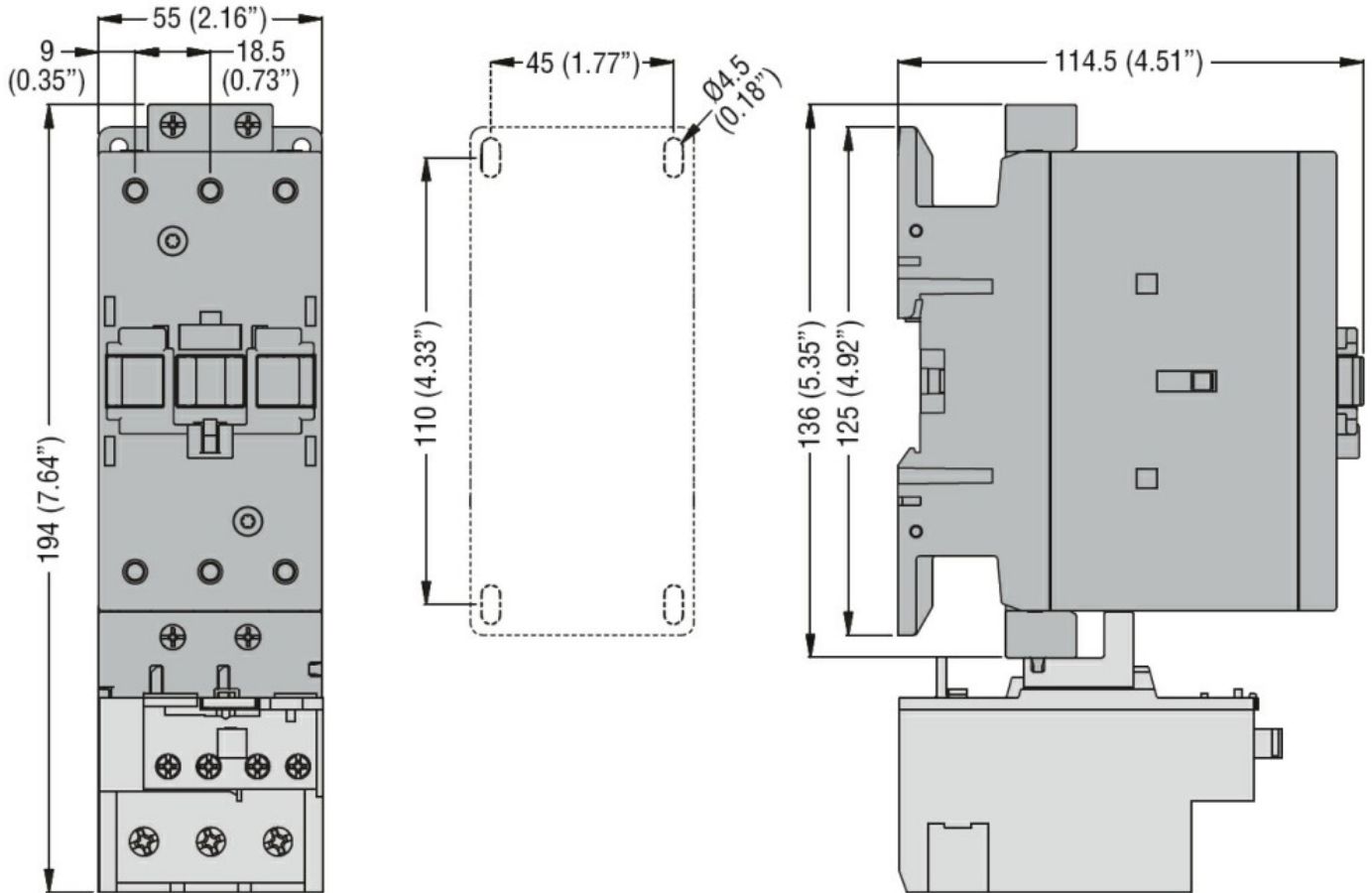
|   |      |
|---|------|
| m | 3000 |
|---|------|

**Resistance & Protection**

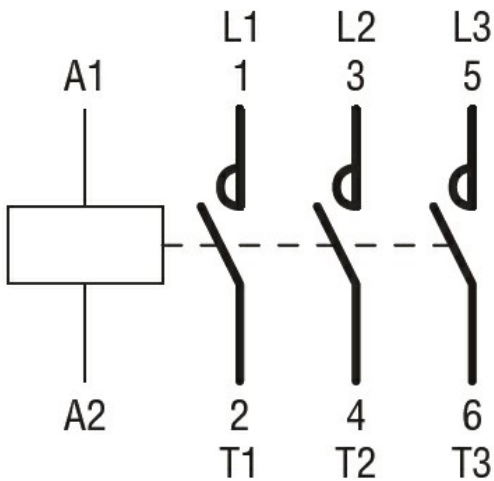
Pollution degree

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

cULus

**ETIM classification**

ETIM 8.0

EC000066 -  
 Power contactor,  
 AC switching