



Product designation

Power contactor

Product type designation

BF65

**Contact characteristics**

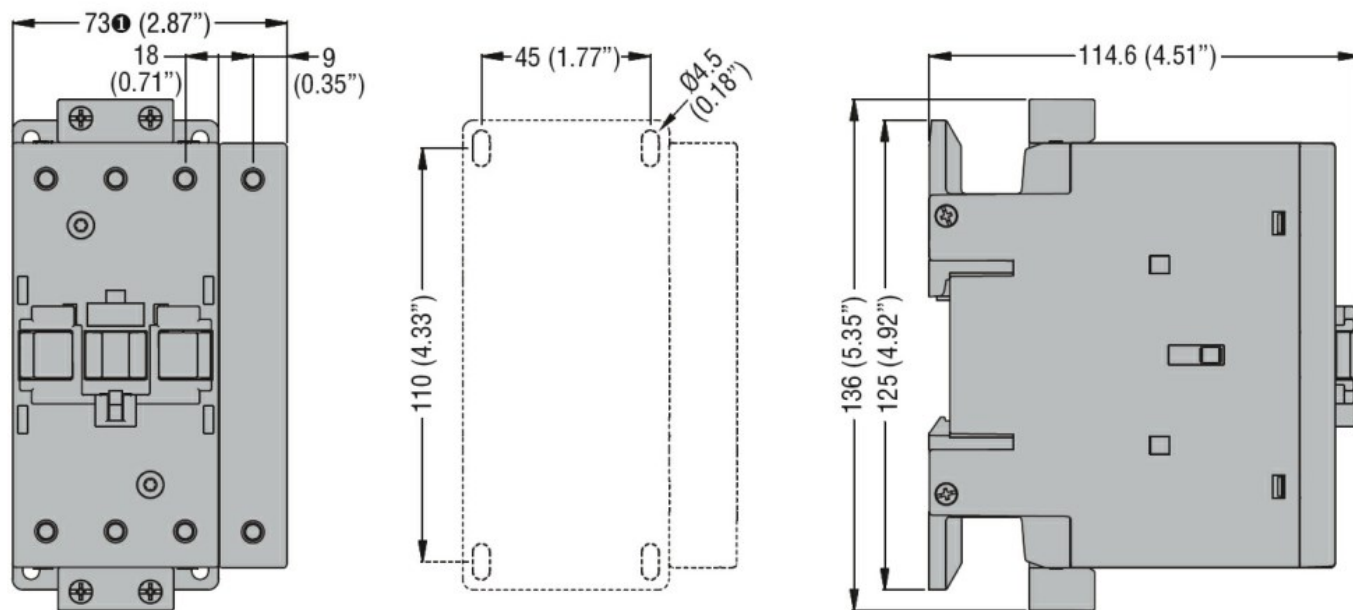
|                                                                                |                                                    |        |
|--------------------------------------------------------------------------------|----------------------------------------------------|--------|
| Number of poles                                                                | Nr.                                                | 4      |
| 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                                                  | 100    |
| Operational current $I_e$                                                      | AC-1 ( $\leq 40^\circ\text{C}$ )                   | A 100  |
|                                                                                | AC-1 ( $\leq 55^\circ\text{C}$ )                   | A 80   |
|                                                                                | AC-1 ( $\leq 70^\circ\text{C}$ )                   | A 70   |
|                                                                                | AC-3 ( $\leq 440\text{V } \leq 55^\circ\text{C}$ ) | A 65   |
|                                                                                | AC-4 (400V)                                        | A 31   |
| Rated operational current AC-3 ( $T \leq 55^\circ\text{C}$ )                   | 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 ( $T \leq 40^\circ\text{C}$ )                     | 230V                                               | kW 38  |
|                                                                                | 400V                                               | kW 65  |
|                                                                                | 500V                                               | kW 82  |
|                                                                                | 690V                                               | kW 114 |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$                                  | A 50   |
|                                                                                | 48V                                                | A 50   |
|                                                                                | 75V                                                | A 50   |
|                                                                                | 110V                                               | A 8    |
|                                                                                | 220V                                               | A –    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series | $\leq 24\text{V}$                                  | A 70   |
|                                                                                | 48V                                                | A 70   |
|                                                                                | 75V                                                | A 70   |
|                                                                                | 110V                                               | A 60   |
|                                                                                | 220V                                               | A 9    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$                                  | A 70   |
|                                                                                | 48V                                                | A 70   |
|                                                                                | 75V                                                | A 70   |

|                                                                      |          |      |      |
|----------------------------------------------------------------------|----------|------|------|
|                                                                      | 110V     | A    | 60   |
|                                                                      | 220V     | A    | 90   |
| IEC max current Ie 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  |
| IEC max current Ie 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    | –    |
| IEC max current Ie 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    |
| IEC max current Ie 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   |
| IEC max current Ie 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   |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |          | A    | 640  |
| Protection fuse                                                      |          |      |      |
|                                                                      | gG (IEC) | A    | 125  |
|                                                                      | aM (IEC) | A    | 80   |
| Making capacity (RMS value)                                          |          | A    | 650  |
| Breaking capacity at voltage                                         |          |      |      |
|                                                                      | 440V     | A    | 520  |
|                                                                      | 500V     | A    | 425  |
|                                                                      | 690V     | A    | 376  |
| Resistance per pole (average value)                                  |          | mΩ   | 0.8  |
| Power dissipation per pole (average value)                           |          |      |      |
|                                                                      | Ith      | W    | 8    |
|                                                                      | AC-3     | W    | 3.4  |
| 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              | 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                  |
| <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              |
| 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                         | min              | %U <sub>s</sub>  | 80                    |
|                                                     |                                 | max              | %U <sub>s</sub>  | 110                   |
|                                                     | drop-out                        | min              | %U <sub>s</sub>  | 20                    |
|                                                     |                                 | max              | %U <sub>s</sub>  | 55                    |
|                                                     | of 50/60Hz coil powered at 60Hz |                  |                  |                       |
|                                                     | pick-up                         | min              | %U <sub>s</sub>  | 85                    |
|                                                     |                                 | max              | %U <sub>s</sub>  | 110                   |
|                                                     | drop-out                        | min              | %U <sub>s</sub>  | 40                    |
|                                                     |                                 | max              | %U <sub>s</sub>  | 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                   |

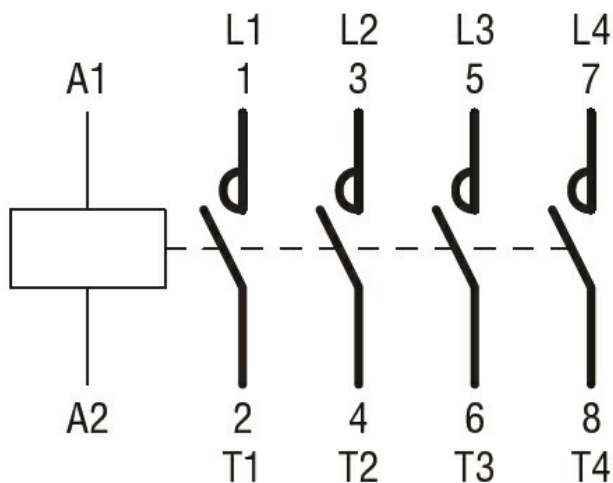
|                                                  |                       |          |      |
|--------------------------------------------------|-----------------------|----------|------|
|                                                  | holding               | VA       | 15   |
| Dissipation at 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                                |                       |          |      |
| Rated operational voltage AC (UL)                |                       | V        | 600  |
| 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



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