



Product designation

Power contactor

Product type designation

BF18

**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                                                  | 32     |
| Operational current $I_e$                                                      | AC-1 ( $\leq 40^\circ\text{C}$ )                   | A 32   |
|                                                                                | AC-1 ( $\leq 55^\circ\text{C}$ )                   | A 26   |
|                                                                                | AC-1 ( $\leq 70^\circ\text{C}$ )                   | A 23   |
|                                                                                | AC-3 ( $\leq 440\text{V } \leq 55^\circ\text{C}$ ) | A 18   |
|                                                                                | AC-4 (400V)                                        | A 8.5  |
| Rated operational power AC-3 ( $T \leq 55^\circ\text{C}$ )                     | 230V                                               | kW 4   |
|                                                                                | 400V                                               | kW 7.5 |
|                                                                                | 415V                                               | kW 9   |
|                                                                                | 440V                                               | kW 9   |
|                                                                                | 500V                                               | kW 10  |
|                                                                                | 690V                                               | kW 10  |
| Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )                     | 230V                                               | kW 12  |
|                                                                                | 400V                                               | kW 21  |
|                                                                                | 500V                                               | kW 26  |
|                                                                                | 690V                                               | kW 36  |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$                                  | A 17   |
|                                                                                | 48V                                                | A 15   |
|                                                                                | 75V                                                | A 15   |
|                                                                                | 110V                                               | A 6    |
|                                                                                | 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 20   |
|                                                                                | 48V                                                | A 20   |
|                                                                                | 75V                                                | A 20   |
|                                                                                | 110V                                               | A 13   |
|                                                                                | 220V                                               | A 1    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$                                  | A 22   |
|                                                                                | 48V                                                | A 22   |
|                                                                                | 75V                                                | A 20   |
|                                                                                | 110V                                               | A 16   |

|                                                                                  |                 |                  |     |
|----------------------------------------------------------------------------------|-----------------|------------------|-----|
|                                                                                  | 220V            | A                | 11  |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 4 poles in series      |                 |                  |     |
|                                                                                  | ≤24V            | A                | 22  |
|                                                                                  | 48V             | A                | 22  |
|                                                                                  | 75V             | A                | 20  |
|                                                                                  | 110V            | A                | 18  |
|                                                                                  | 220V            | A                | 13  |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |                 |                  |     |
|                                                                                  | ≤24V            | A                | 12  |
|                                                                                  | 48V             | A                | 11  |
|                                                                                  | 75V             | A                | 11  |
|                                                                                  | 110V            | A                | 2   |
|                                                                                  | 220V            | A                | –   |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |                 |                  |     |
|                                                                                  | ≤24V            | A                | 15  |
|                                                                                  | 48V             | A                | 13  |
|                                                                                  | 75V             | A                | 13  |
|                                                                                  | 110V            | A                | 8   |
|                                                                                  | 220V            | A                | 2   |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |                 |                  |     |
|                                                                                  | ≤24V            | A                | 18  |
|                                                                                  | 48V             | A                | 18  |
|                                                                                  | 75V             | A                | 16  |
|                                                                                  | 110V            | A                | 12  |
|                                                                                  | 220V            | A                | 6   |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |                 |                  |     |
|                                                                                  | ≤24V            | A                | 18  |
|                                                                                  | 48V             | A                | 18  |
|                                                                                  | 75V             | A                | 16  |
|                                                                                  | 110V            | A                | 13  |
|                                                                                  | 220V            | A                | 8   |
| Short-time allowable current for 10s (IEC/EN60947-1)                             |                 | A                | 200 |
| Protection fuse                                                                  |                 |                  |     |
|                                                                                  | gG (IEC)        | A                | 32  |
|                                                                                  | aM (IEC)        | A                | 20  |
| Making capacity (RMS value)                                                      |                 | A                | 180 |
| Breaking capacity at voltage                                                     |                 |                  |     |
|                                                                                  | 440V            | A                | 144 |
|                                                                                  | 500V            | A                | 120 |
|                                                                                  | 690V            | A                | 94  |
| Resistance per pole (average value)                                              |                 | mΩ               | 2.5 |
| Power dissipation per pole (average value)                                       |                 |                  |     |
|                                                                                  | I <sub>th</sub> | W                | 2.6 |
|                                                                                  | AC-3            | W                | 0.8 |
| Tightening torque for terminals                                                  |                 |                  |     |
|                                                                                  | min             | Nm               | 1.5 |
|                                                                                  | max             | Nm               | 1.8 |
|                                                                                  | min             | I <sub>bin</sub> | 1.1 |
|                                                                                  | max             | I <sub>bin</sub> | 1.5 |
| 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                                     |                  | 10                       |
| Flexible w/o lug conductor section                  | min                                     | mm <sup>2</sup>  | 1                        |
|                                                     | max                                     | mm <sup>2</sup>  | 6                        |
| Flexible c/w lug conductor section                  | min                                     | mm <sup>2</sup>  | 1                        |
|                                                     | max                                     | mm <sup>2</sup>  | 4                        |
| Flexible with insulated spade lug conductor section | min                                     | mm <sup>2</sup>  | 1                        |
|                                                     | max                                     | mm <sup>2</sup>  | 4                        |
| Power terminal protection according to IEC/EN 60529 |                                         |                  | IP20 when properly wired |
| <b>Mechanical features</b>                          |                                         |                  |                          |
| Operating position                                  | normal allowable                        |                  | Vertical plan ±30°       |
| Fixing                                              |                                         |                  | Screw / DIN rail 35mm    |
| Weight                                              |                                         | g                | 359                      |
| <b>Auxiliary contact characteristics</b>            |                                         |                  |                          |
| Thermal current I <sub>th</sub>                     |                                         | A                | 10                       |
| IEC/EN 60947-5-1 designation                        |                                         |                  | A600 - P600              |
| Operating current AC15                              | 230V                                    | A                | 3                        |
|                                                     | 400V                                    | A                | 1.9                      |
|                                                     | 500V                                    | A                | 1.4                      |
| Operating current DC12                              | 110V                                    | A                | 5.7                      |
| Operating current DC13                              | 24V                                     | A                | 5.7                      |
|                                                     | 48V                                     | A                | 2.9                      |
|                                                     | 60V                                     | A                | 2.3                      |
|                                                     | 110V                                    | A                | 1.25                     |
|                                                     | 125V                                    | A                | 1.1                      |
|                                                     | 220V                                    | A                | 0.55                     |
|                                                     | 600V                                    | A                | 0.2                      |
| <b>Operations</b>                                   |                                         |                  |                          |
| Mechanical life                                     |                                         | cycles           | 20000000                 |
| Electrical life                                     |                                         | cycles           | 1600000                  |
| <b>Safety related data</b>                          |                                         |                  |                          |
| Performance level B10d according to EN/ISO 13489-1  | rated load                              | cycles           | 1600000                  |
|                                                     | mechanical load                         | cycles           | 20000000                 |
| 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 ≤20°C 50Hz                |                                 |          | W        | 2.5  |
| Max cycles frequency                             |                                 |          |          |      |
| Mechanical operation                             |                                 |          | cycles/h | 3600 |
| Operating times                                  |                                 |          |          |      |
| Average time for Us control                      |                                 |          |          |      |
| in AC                                            |                                 |          |          |      |
|                                                  | Closing NO                      | min      | ms       | 8    |
|                                                  |                                 | max      | ms       | 24   |
|                                                  | Opening NO                      | min      | ms       | 10   |
|                                                  |                                 | max      | ms       | 20   |
|                                                  | Closing NC                      | min      | ms       | 14   |
|                                                  |                                 | max      | ms       | 28   |
|                                                  | Opening NC                      | min      | ms       | 7    |
|                                                  |                                 | max      | ms       | 18   |
| UL technical data                                |                                 |          |          |      |
| Rated operational voltage AC (UL)                |                                 |          | V        | 600  |
| Full-load current (FLA) for three-phase AC motor |                                 |          |          |      |
|                                                  |                                 | at 480V  | A        | 14   |
|                                                  |                                 | at 600V  | A        | 17   |
| Yielded mechanical performance                   |                                 |          |          |      |
| for single-phase AC motor                        |                                 |          |          |      |
|                                                  |                                 | 110/120V | HP       | 1    |
|                                                  |                                 | 230V     | HP       | 3    |
| for three-phase AC motor                         |                                 |          |          |      |
|                                                  |                                 | 200/208V | HP       | 5    |
|                                                  |                                 | 220/230V | HP       | 5    |
|                                                  |                                 | 460/480V | HP       | 10   |
|                                                  |                                 | 575/600V | HP       | 15   |
|                                                  |                                 |          |          |      |

## General USE

### Contactor

AC current A 32

### Auxiliary contacts

AC voltage V 600

AC current A 10

DC voltage V 250

DC current A 1

## Short-circuit protection fuse, 600V

### High fault

Short circuit current kA 100

Fuse rating A 60

Fuse class J

### Standard fault

Short circuit current kA 5

Fuse rating A 80

## Contact rating of auxiliary contacts according to UL

A600 - P600

## Ambient conditions

### Temperature

#### Operating temperature

min °C -50

max °C 70

#### Storage temperature

min °C -60

max °C 80

### Max altitude

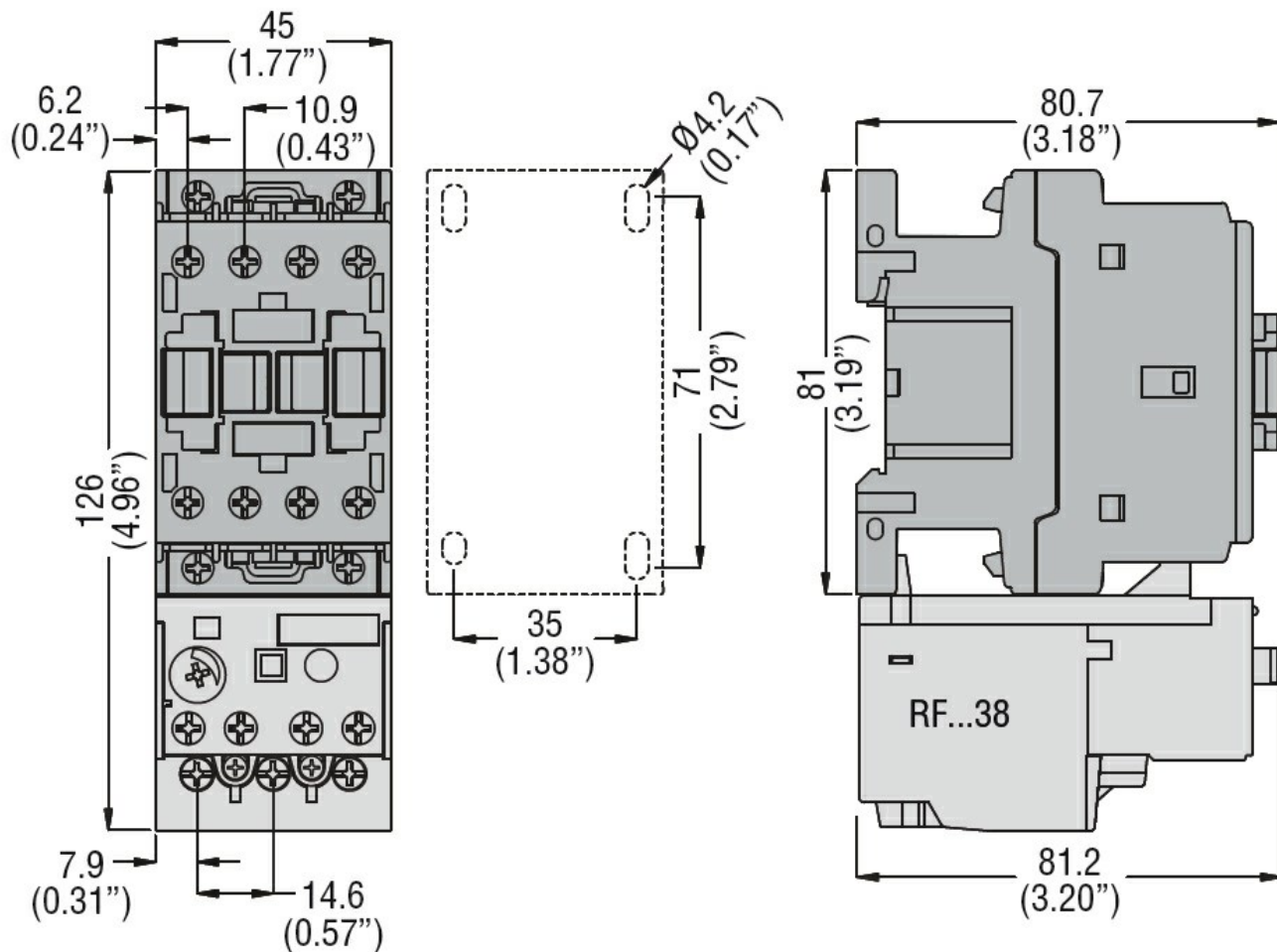
m 3000

## Resistance & Protection

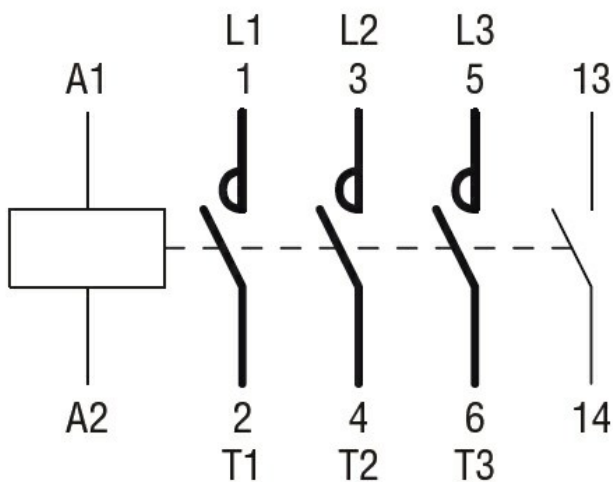
### Pollution degree

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

---

EAC

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching