



Product designation

Power contactor

Product type designation

BF25

**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 25    |
|                                                                                | AC-4 (400V)                                        | A 10    |
| Rated operational power AC-3 ( $T \leq 55^\circ\text{C}$ )                     | 230V                                               | kW 7    |
|                                                                                | 400V                                               | kW 12.5 |
|                                                                                | 415V                                               | kW 13.4 |
|                                                                                | 440V                                               | kW 13.4 |
|                                                                                | 500V                                               | kW 15   |
|                                                                                | 690V                                               | kW 11   |
| 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 20    |
|                                                                                | 48V                                                | A 18    |
|                                                                                | 75V                                                | A 18    |
|                                                                                | 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 23    |
|                                                                                | 48V                                                | A 23    |
|                                                                                | 75V                                                | A 23    |
|                                                                                | 110V                                               | A 16    |
|                                                                                | 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 23    |
|                                                                                | 48V                                                | A 23    |
|                                                                                | 75V                                                | A 23    |
|                                                                                | 110V                                               | A 18    |

|                                                                                  |                 |                  |     |
|----------------------------------------------------------------------------------|-----------------|------------------|-----|
|                                                                                  | 220V            | A                | 12  |
| IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 4 poles in series      |                 |                  |     |
|                                                                                  | ≤24V            | A                | —   |
|                                                                                  | 48V             | A                | —   |
|                                                                                  | 75V             | A                | —   |
|                                                                                  | 110V            | A                | —   |
|                                                                                  | 220V            | A                | —   |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |                 |                  |     |
|                                                                                  | ≤24V            | A                | 15  |
|                                                                                  | 48V             | A                | 13  |
|                                                                                  | 75V             | A                | 13  |
|                                                                                  | 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                | 18  |
|                                                                                  | 48V             | A                | 18  |
|                                                                                  | 75V             | A                | 16  |
|                                                                                  | 110V            | A                | 10  |
|                                                                                  | 220V            | A                | 2   |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |                 |                  |     |
|                                                                                  | ≤24V            | A                | 22  |
|                                                                                  | 48V             | A                | 22  |
|                                                                                  | 75V             | A                | 18  |
|                                                                                  | 110V            | A                | 15  |
|                                                                                  | 220V            | A                | 8   |
| IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |                 |                  |     |
|                                                                                  | ≤24V            | A                | —   |
|                                                                                  | 48V             | A                | —   |
|                                                                                  | 75V             | A                | —   |
|                                                                                  | 110V            | A                | —   |
|                                                                                  | 220V            | A                | —   |
| Short-time allowable current for 10s (IEC/EN60947-1)                             |                 | A                | 200 |
| Protection fuse                                                                  |                 |                  |     |
|                                                                                  | gG (IEC)        | A                | 50  |
|                                                                                  | aM (IEC)        | A                | 25  |
| Making capacity (RMS value)                                                      |                 | A                | 250 |
| Breaking capacity at voltage                                                     |                 |                  |     |
|                                                                                  | 440V            | A                | 200 |
|                                                                                  | 500V            | A                | 184 |
|                                                                                  | 690V            | A                | 102 |
| Resistance per pole (average value)                                              |                 | mΩ               | 2.5 |
| Power dissipation per pole (average value)                                       |                 |                  |     |
|                                                                                  | I <sub>th</sub> | W                | 2.6 |
|                                                                                  | AC-3            | W                | 1.6 |
| 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                | 362                                     |
| <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           | 1200000                                 |
| <b>Safety related data</b>                          |                  |                  |                                         |
| Performance level B10d according to EN/ISO 13489-1  | rated load       | cycles           | 1200000                                 |
|                                                     | mechanical load  | cycles           | 20000000                                |
| 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      | 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    | 21  |
| at 600V                             |                                                  |          | A        | 17   |     |
| Yielded mechanical performance      |                                                  |          |          |      |     |
| for single-phase AC motor           |                                                  |          |          |      |     |
|                                     |                                                  | 110/120V | HP       | 2    |     |
|                                     |                                                  | 230V     | HP       | 3    |     |
| for three-phase AC motor            |                                                  |          |          |      |     |
|                                     |                                                  | 200/208V | HP       | 7.5  |     |
|                                     |                                                  | 220/230V | HP       | 7.5  |     |
|                                     |                                                  | 460/480V | HP       | 15   |     |
|                                     |                                                  | 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 100

## 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

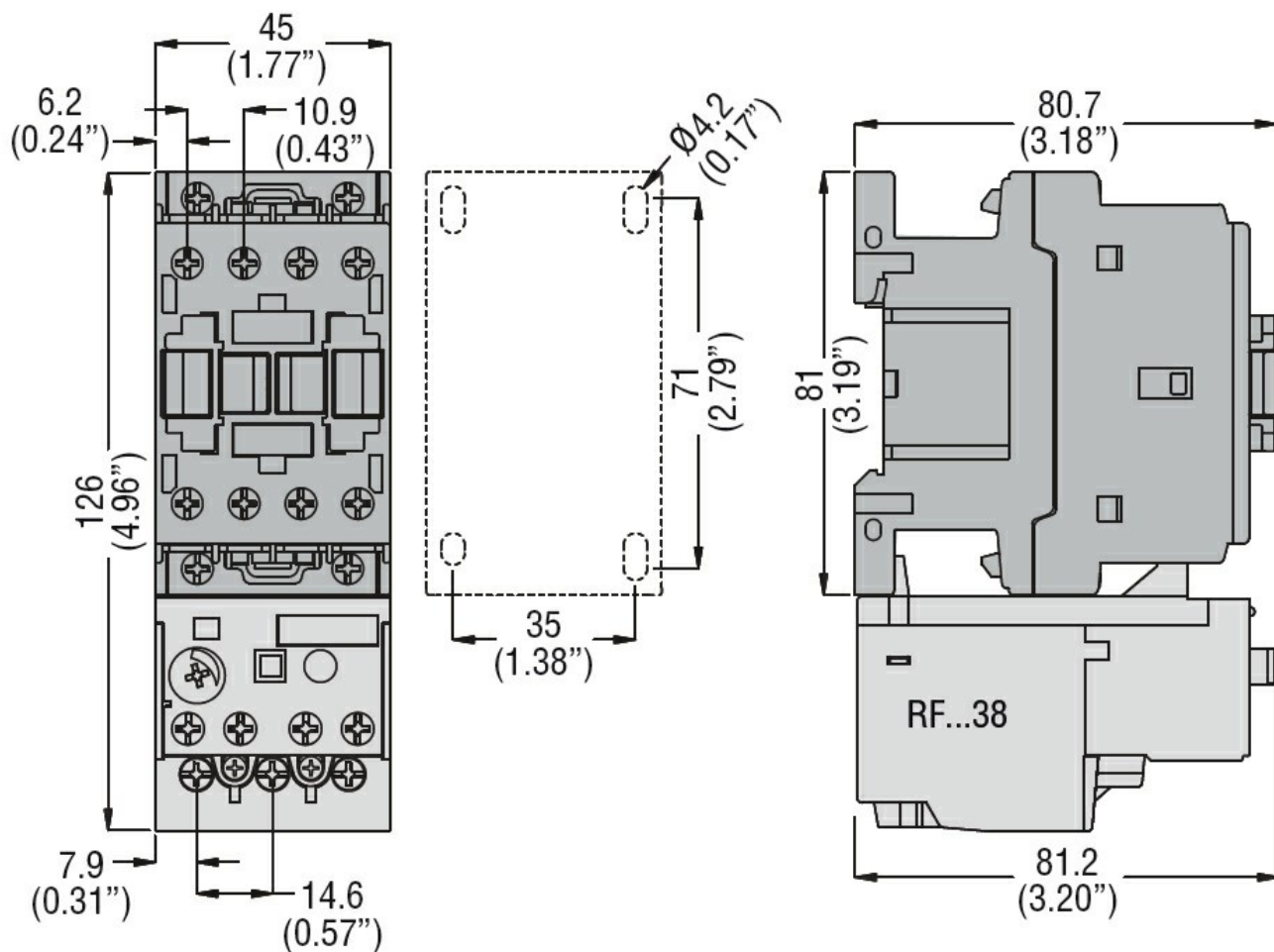
m 3000

## Resistance & Protection

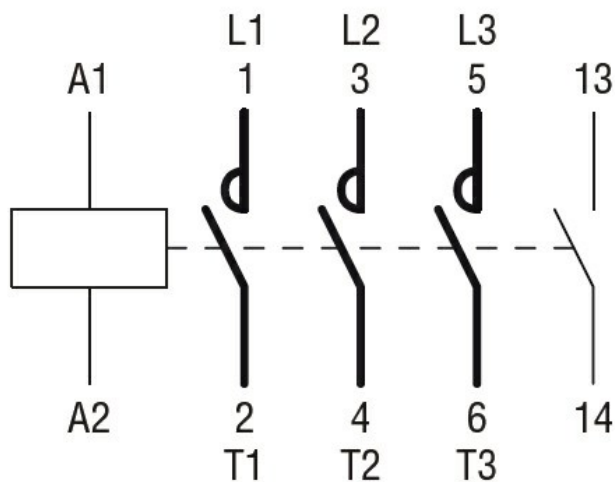
### Pollution degree

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

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 25A, AC COIL 50/60HZ,  
48VAC, 1NO AUXILIARY CONTACT

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cULus

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EAC

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching