



Product designation

Power contactor

Product type designation

BF25

**Contact characteristics**

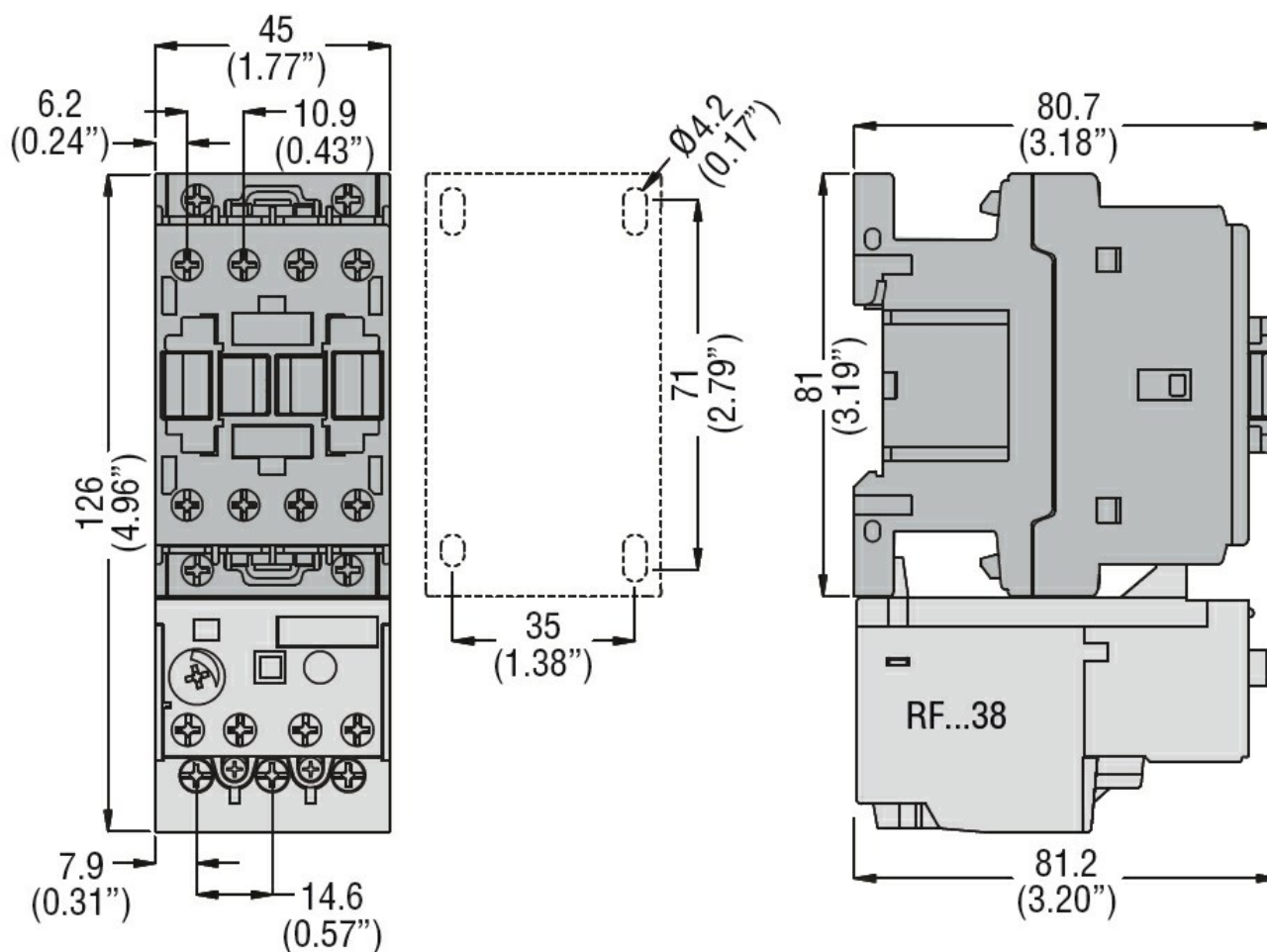
|                                                                                |                                                    |         |
|--------------------------------------------------------------------------------|----------------------------------------------------|---------|
| Number 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 $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series      |                   |            |     |
|                                                                                     | $\leq 24\text{V}$ | A          | —   |
|                                                                                     | 48V               | A          | —   |
|                                                                                     | 75V               | A          | —   |
|                                                                                     | 110V              | A          | —   |
|                                                                                     | 220V              | A          | —   |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 1 poles in series |                   |            |     |
|                                                                                     | $\leq 24\text{V}$ | A          | 15  |
|                                                                                     | 48V               | A          | 13  |
|                                                                                     | 75V               | A          | 13  |
|                                                                                     | 110V              | A          | 2   |
|                                                                                     | 220V              | A          | —   |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 2 poles in series |                   |            |     |
|                                                                                     | $\leq 24\text{V}$ | A          | 18  |
|                                                                                     | 48V               | A          | 18  |
|                                                                                     | 75V               | A          | 16  |
|                                                                                     | 110V              | A          | 10  |
|                                                                                     | 220V              | A          | 2   |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 3 poles in series |                   |            |     |
|                                                                                     | $\leq 24\text{V}$ | A          | 22  |
|                                                                                     | 48V               | A          | 22  |
|                                                                                     | 75V               | A          | 18  |
|                                                                                     | 110V              | A          | 15  |
|                                                                                     | 220V              | A          | 8   |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 4 poles in series |                   |            |     |
|                                                                                     | $\leq 24\text{V}$ | 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)                                                 |                   | m $\Omega$ | 2.5 |
| Power dissipation per pole (average value)                                          |                   |            |     |
|                                                                                     | $I_{th}$          | W          | 2.6 |
|                                                                                     | AC-3              | W          | 1.6 |
| Tightening torque for terminals                                                     |                   |            |     |
|                                                                                     | min               | Nm         | 1.5 |
|                                                                                     | max               | Nm         | 1.8 |
|                                                                                     | min               | lbin       | 1.1 |
|                                                                                     | max               | lbin       | 1.5 |
| Tightening torque for coil terminal                                                 |                   |            |     |
|                                                                                     | min               | Nm         | 0.8 |
|                                                                                     | max               | Nm         | 1   |
|                                                                                     | min               | lbin       | 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                | 352                          |
| <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                     |
| Mirror contacts according to IEC/EN 60947-4-1       |                  |                  | Yes                          |
| EMC compatibility                                   |                  |                  | yes                          |
| <b>AC coil operating</b>                            |                  |                  |                              |
| Rated AC voltage at 60Hz                            |                  | V                | 230                          |
| AC operating voltage                                |                  |                  | of 60Hz coil powered at 60Hz |

|                                                                     |                       |          |      |
|---------------------------------------------------------------------|-----------------------|----------|------|
| pick-up                                                             | min                   | %Us      | 80   |
|                                                                     | max                   | %Us      | 110  |
| drop-out                                                            | min                   | %Us      | 20   |
|                                                                     | max                   | %Us      | 55   |
| AC average coil consumption at 20°C<br>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<br>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

cULus

EAC

## ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching