



|   |                                      |      |     |
|---|--------------------------------------|------|-----|
| Product designation   | Power contactor                      |      |     |
| Product type designation  | BF80                                 |      |     |
| <b>Contact characteristics</b>  |                                      |      |     |
| Number of poles   | Nr.                                  | 3    |     |
| 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                                    | 115  |     |
| Operational current $I_e$   |                                      |      |     |
|   | AC-1 ( $\leq 40^\circ C$ )           | A    | 115 |
|   | AC-1 ( $\leq 55^\circ C$ )           | A    | 95  |
|   | AC-1 ( $\leq 70^\circ C$ )           | A    | 80  |
|   | AC-3 ( $\leq 440V \leq 55^\circ C$ ) | A    | 80  |
|   | AC-4 (400V)                          | A    | 38  |
| Rated operational power AC-3 ( $T \leq 55^\circ C$ )                    | 230V                                 | kW   | 22  |
|   | 400V                                 | kW   | 45  |
|   | 415V                                 | kW   | 45  |
|   | 440V                                 | kW   | 45  |
|   | 500V                                 | kW   | 55  |
|   | 690V                                 | kW   | 55  |
|   | 1000V                                | kW   | 37  |
| Rated operational current AC-3 ( $T \leq 55^\circ C$ )                  | 230V                                 | A    | 80  |
|   | 400V                                 | A    | 80  |
|   | 415V                                 | A    | 80  |
|   | 440V                                 | A    | 80  |
|   | 500V                                 | A    | 78  |
|   | 690V                                 | A    | 57  |
|   | 1000V                                | A    | 28  |
| Rated operational power AC-1 ( $T \leq 40^\circ C$ )                    | 230V                                 | kW   | 43  |
|   | 400V                                 | kW   | 76  |
|   | 500V                                 | kW   | 95  |
|   | 690V                                 | kW   | 120 |
| IEC max current $I_e$ in DC1 with $L/R \leq 1ms$ with 1 poles in series | $\leq 24V$                           | A    | 70  |
|   | 48V                                  | A    | 60  |
|   | 75V                                  | A    | 60  |
|   | 110V                                 | A    | 8   |
|   | 220V                                 | A    | —   |
| IEC max current $I_e$ in DC1 with $L/R \leq 1ms$ with 2 poles in series | $\leq 24V$                           | A    | 100 |

|  |                 |    |     |
|--|-----------------|----|-----|
|  | 48V             | A  | 100 |
|  | 75V             | A  | 100 |
|  | 110V            | A  | 80  |
|  | 220V            | A  | 9   |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series      |                 |    |     |
|  | ≤24V            | A  | 100 |
|  | 48V             | A  | 100 |
|  | 75V             | A  | 100 |
|  | 110V            | A  | 85  |
|  | 220V            | A  | 95  |
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series      |                 |    |     |
|  | ≤24V            | A  | 100 |
|  | 48V             | A  | 100 |
|  | 75V             | A  | 100 |
|  | 110V            | A  | 100 |
|  | 220V            | A  | 115 |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |                 |    |     |
|  | ≤24V            | A  | 40  |
|  | 48V             | A  | 30  |
|  | 75V             | A  | 30  |
|  | 110V            | A  | 3   |
|  | 220V            | A  | —   |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |                 |    |     |
|  | ≤24V            | A  | 60  |
|  | 48V             | A  | 50  |
|  | 75V             | A  | 50  |
|  | 110V            | A  | 40  |
|  | 220V            | A  | 5   |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |                 |    |     |
|  | ≤24V            | A  | 80  |
|  | 48V             | A  | 70  |
|  | 75V             | A  | 70  |
|  | 110V            | A  | 60  |
|  | 220V            | A  | 64  |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |                 |    |     |
|  | ≤24V            | A  | 90  |
|  | 48V             | A  | 90  |
|  | 75V             | A  | 90  |
|  | 110V            | A  | 75  |
|  | 220V            | A  | 80  |
| 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  | 800 |
| Breaking capacity at voltage   |                 |    |     |
|  | 440V            | A  | 640 |
|  | 500V            | A  | 625 |
|  | 690V            | A  | 456 |
| Resistance per pole (average value)                                  |                 | mΩ | 0.6 |
| Power dissipation per pole (average value)                           |                 |    |     |
|  | I <sub>th</sub> | W  | 7.9 |
|  | AC-3            | W  | 3.8 |
| 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                 | Ibin            | 0.8                      |
|   | max                 | Ibin            | 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               |
| Mechanical features                                 |                     |                 |                          |
| Operating position                                  | normal<br>allowable |                 | Vertical plan<br>±30°    |
| Fixing  |                     |                 | Screw / DIN rail<br>35mm |
| Weight  | g                   | 1020            |                          |
| Operations  |                     |                 |                          |
| Mechanical life                                     | cycles              | 15000000        |                          |
| Electrical life                                     | cycles              | 1300000         |                          |
| Safety related data                                 |                     |                 |                          |
| Performance level B10d according to EN/ISO 13489-1  |                     |                 |                          |
|   | rated load          | cycles          | 1300000                  |
|   | mechanical load     | cycles          | 15000000                 |
| EMC compatibility                                   |                     |                 | yes                      |
| AC coil operating                                   |                     |                 |                          |
| Rated AC voltage at 60Hz                            | V                   | 220             |                          |
| 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                 |                     |                 |                          |
| 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 | 77 |
| at 600V | A | 77 |

 Yielded mechanical performance  
 for three-phase AC motor

|          |    |    |
|----------|----|----|
| 200/208V | HP | 25 |
| 220/230V | HP | 30 |
| 460/480V | HP | 60 |
| 575/600V | HP | 75 |

General USE

|                                     |                       |     |     |
|-------------------------------------|-----------------------|-----|-----|
| Contactor                           | AC current            | A   | 115 |
| 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  |

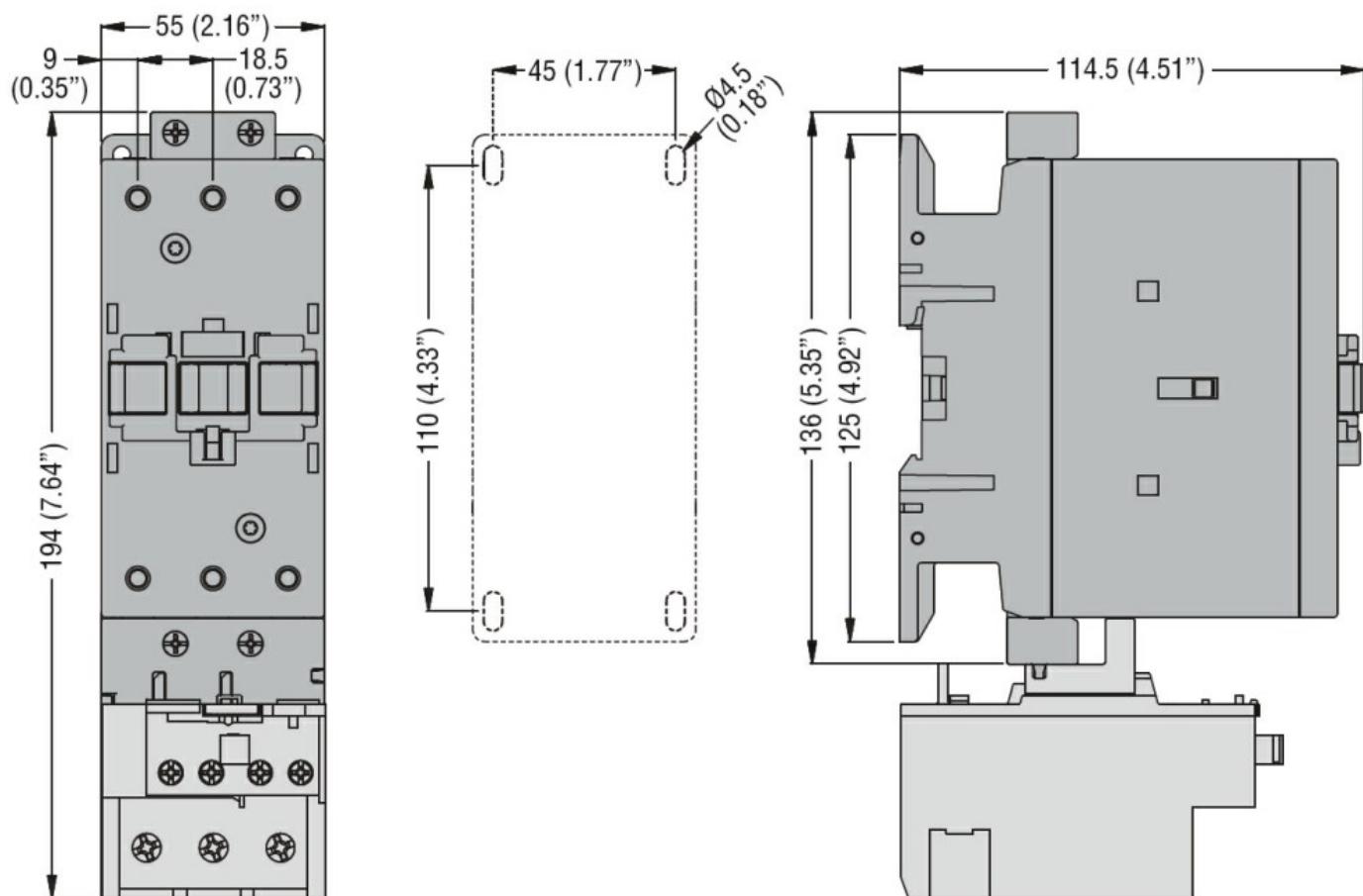
|                     |     |    |     |
|---------------------|-----|----|-----|
| Storage temperature | min | °C | -60 |
|                     | max | °C | 80  |

Max altitude m 3000

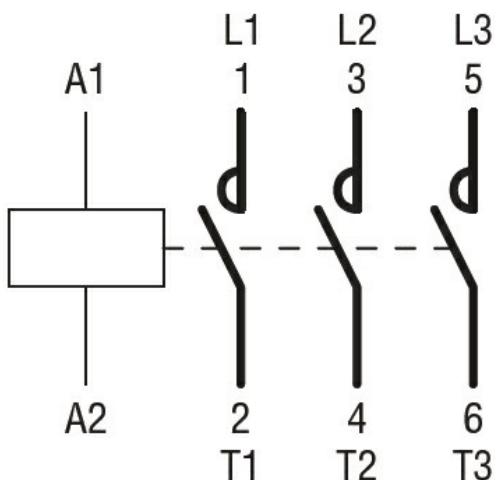
Resistance &amp; Protection

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

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cULus

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching