



Product designation  
Product type designation

Power contactor  
BF230

**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   | 350    |
| Operational current $I_e$  |   |        |
|  | AC-1 ( $\leq 40^\circ\text{C}$ )                  | A 350  |
|  | AC-1 ( $\leq 55^\circ\text{C}$ )                  | A 290  |
|  | AC-1 ( $\leq 70^\circ\text{C}$ )                  | A 250  |
|  | AC-3 ( $\leq 440\text{V} \leq 55^\circ\text{C}$ ) | A 230  |
|  | AC-4 (400V)                                       | A 110  |
| Rated operational current AC-3 ( $T \leq 55^\circ\text{C}$ )                   |   |        |
|  | 230V  | A 230  |
|  | 400V  | A 230  |
|  | 415V  | A 230  |
|  | 440V  | A 230  |
|  | 500V  | A 184  |
|  | 690V  | A 165  |
|  | 1000V   | A 100  |
| Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )                     |   |        |
|  | 230V  | kW 132 |
|  | 400V  | kW 230 |
|  | 500V  | kW 253 |
|  | 690V  | kW 397 |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series |   |        |
|  | $\leq 24\text{V}$                                 | A 350  |
|  | 48V   | A 350  |
|  | 75V   | A 350  |
|  | 110V  | A 145  |
|  | 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 350  |
|  | 48V   | A 350  |
|  | 75V   | A 350  |
|  | 110V  | A 270  |
|  | 220V  | A 225  |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series |   |        |
|  | $\leq 24\text{V}$                                 | A 350  |
|  | 48V   | A 350  |
|  | 75V   | A 350  |

|  |          |      |      |
|--|----------|------|------|
|  | 110V     | A    | 270  |
|  | 220V     | A    | 270  |
|  | 330V     | A    | 225  |
| IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series      |          |      |      |
|  | ≤24V     | A    | 350  |
|  | 48V      | A    | 350  |
|  | 75V      | A    | 350  |
|  | 110V     | A    | 350  |
|  | 220V     | A    | 350  |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |          |      |      |
|  | ≤24V     | A    | 350  |
|  | 48V      | A    | 350  |
|  | 75V      | A    | 250  |
|  | 110V     | A    | 135  |
|  | 220V     | A    | –    |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |          |      |      |
|  | ≤24V     | A    | 350  |
|  | 48V      | A    | 350  |
|  | 75V      | A    | 250  |
|  | 110V     | A    | 225  |
|  | 220V     | A    | 180  |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |          |      |      |
|  | ≤24V     | A    | 350  |
|  | 48V      | A    | 350  |
|  | 75V      | A    | 250  |
|  | 110V     | A    | 250  |
|  | 220V     | A    | 225  |
|  | 330V     | A    | 180  |
| IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |          |      |      |
|  | ≤24V     | A    | 350  |
|  | 48V      | A    | 350  |
|  | 75V      | A    | 250  |
|  | 110V     | A    | 250  |
|  | 220V     | A    | 225  |
|  | 330V     | A    | 210  |
|  | 460V     | A    | 180  |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |          | A    | 1840 |
| Protection fuse  |          |      |      |
|  | gG (IEC) | A    | 400  |
|  | aM (IEC) | A    | 250  |
| Making capacity (RMS value)  |          | A    | 2300 |
| Breaking capacity at voltage   |          |      |      |
|  | 440V     | A    | 1840 |
|  | 500V     | A    | 1472 |
|  | 690V     | A    | 1296 |
| Resistance per pole (average value)                                  |          | mΩ   | 0.18 |
| Power dissipation per pole (average value)                           |          |      |      |
|  | Ith      | W    | 21   |
|  | AC-3     | W    | 9.3  |
| Tightening torque for terminals                                      |          |      |      |
|  | min      | Nm   | 18   |
|  | max      | Nm   | 18   |
|  | min      | Ibin | 159  |
|  | max      | Ibin | 159  |

Tightening torque for coil terminal

|     |    |     |
|-----|----|-----|
| min | Nm | 0.8 |
| max | Nm | 1   |

Power terminal protection according to IEC/EN 60529

IP00

### Mechanical features

Operating position

|                     |                       |
|---------------------|-----------------------|
| normal<br>allowable | Vertical plan<br>±30° |
|---------------------|-----------------------|

Fixing

Screw

Weight

|   |      |
|---|------|
| g | 4000 |
|---|------|

### Operations

Mechanical life

|        |          |
|--------|----------|
| cycles | 10000000 |
|--------|----------|

Electrical life

|        |         |
|--------|---------|
| cycles | 1000000 |
|--------|---------|

### Safety related data

Performance level B10d according to EN/ISO 13489-1

|            |        |         |
|------------|--------|---------|
| rated load | cycles | 1000000 |
|------------|--------|---------|

EMC compatibility

yes

### AC coil operating

Rated AC voltage at 50/60Hz, 60Hz

|     |   |     |
|-----|---|-----|
| min | V | 60  |
| max | V | 130 |

AC operating voltage

of 50/60Hz coil powered at 50Hz  
pick-up

|     |     |            |
|-----|-----|------------|
| min | %Us | 80 Us min  |
| max | %Us | 110 Us max |

drop-out

|     |     |            |
|-----|-----|------------|
| max | %Us | ≤70 Us min |
|-----|-----|------------|

of 50/60Hz coil powered at 60Hz  
pick-up

|     |     |            |
|-----|-----|------------|
| min | %Us | 80 Us min  |
| max | %Us | 110 Us max |

drop-out

|     |     |            |
|-----|-----|------------|
| max | %Us | ≤70 Us min |
|-----|-----|------------|

AC average coil consumption at 20°C

of 50/60Hz coil powered at 50Hz

|         |    |           |
|---------|----|-----------|
| in-rush | VA | 160...230 |
| holding | VA | 1.5...3.0 |

of 50/60Hz coil powered at 60Hz

|         |    |           |
|---------|----|-----------|
| in-rush | VA | 160...230 |
| holding | VA | 1.5...3.0 |

of 60Hz coil powered at 60Hz

|         |    |           |
|---------|----|-----------|
| in-rush | VA | 160...230 |
| holding | VA | 1.5...3.0 |

Dissipation at holding ≤20°C 50Hz

|   |           |
|---|-----------|
| W | 1.5...3.0 |
|---|-----------|

### DC coil operating

DC rated control voltage

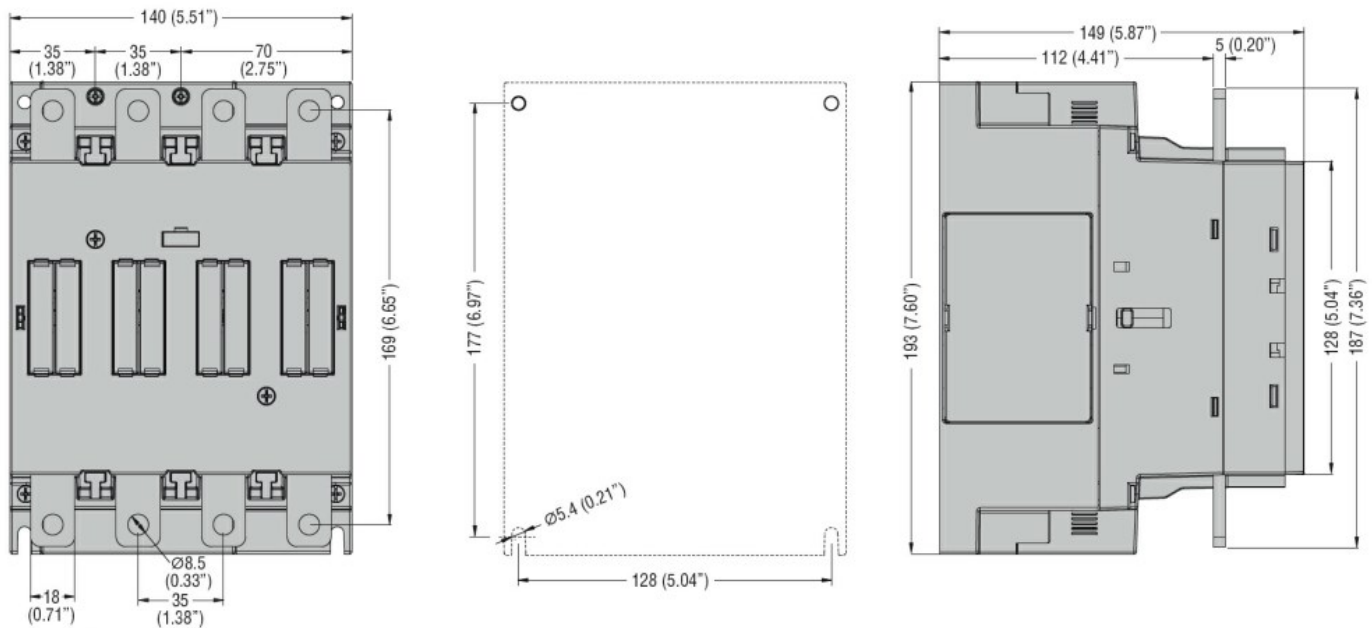
|     |   |     |
|-----|---|-----|
| min | V | 60  |
| max | V | 130 |

DC operating voltage

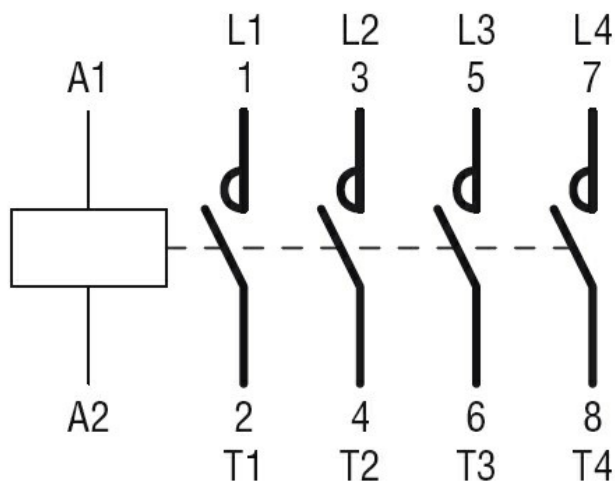
pick-up

|     |     |            |
|-----|-----|------------|
| min | %Us | 85 Us min  |
| max | %Us | 110 Us max |

|   |  |  |                      |                        |           |
|---|--|--|----------------------|------------------------|-----------|
| drop-out  |  | max  | %Us                  | ≤70 Us min             |           |
| Average coil consumption ≤20°C                          |  | in-rush holding                              | W<br>W               | 160...230<br>1.5...3.0 |           |
| Max cycles frequency                                    |  |  |                      |                        |           |
| Mechanical operation                                    |  |  | cycles/h             | 1000                   |           |
| Operating times   |  |  |                      |                        |           |
| Average time for Us control in AC                       |  | Closing NO                                   | min<br>max           | ms<br>ms               | 50<br>100 |
|   |  | Opening NO                                   | min<br>max           | ms<br>ms               | 30<br>75  |
| UL technical data                                       |  |  |                      |                        |           |
| Yielded mechanical performance for three-phase AC motor |  | 200/208V<br>220/230V<br>460/480V<br>575/600V | HP<br>HP<br>HP<br>HP | 75<br>75<br>150<br>200 |           |
| General USE   |  |  |                      |                        |           |
| Contactor   |  | AC current                                   | A                    | 350                    |           |
| Short-circuit protection fuse, 600V                     |  | Short circuit current                        | kA                   | 100                    |           |
| High fault  |  | Fuse rating                                  | A                    | 400                    |           |
|   |  | Fuse class                                   |                      | J                      |           |
| Standard fault  |  | Short circuit current                        | kA                   | 10                     |           |
|   |  | Fuse rating                                  | A                    | 400                    |           |
|   |  | Fuse class                                   |                      | RK5                    |           |
| Ambient conditions                                      |  |  |                      |                        |           |
| Temperature   |  | Operating temperature                        | min<br>max           | °C<br>°C               | -40<br>70 |
|   |  | Storage temperature                          | min<br>max           | °C<br>°C               | -50<br>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

cULus

#### ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching