



| Product designation  |                    |     | Power contactor |
|--|--------------------|-----|-----------------|
| Product type designation   |                    |     | BF50            |
| Contact characteristics  |                    |     |                 |
| Number of poles  |                    | Nr. | 4               |
| Rated insulation voltage Ui IEC/EN                                   |                    | V   | 1000            |
| Rated impulse withstand voltage Uimp                                 |                    | kV  | 8               |
| Operational frequency  |                    |     | •               |
|  | min                | Hz  | 25              |
|  | max                | Hz  | 400             |
| IEC Conventional free air thermal current Ith                        | THO/               | A   | 90              |
| Operational current le   |                    |     |                 |
|  | AC-1 (≤40°C)       | А   | 90              |
|  | AC-1 (≤55°C)       | A   | 75              |
|  | AC-1 (≤70°C)       | A   | 65              |
|  | AC-3 (≤440V ≤55°C) | A   | 50              |
|  | AC-4 (400V)        | A   | 28              |
| Rated operational current AC-3 (T≤55°C)                              | 710 + (+001)       | 7.  | 20              |
|  | 230V               | А   | 50              |
|  | 400V               | A   | 50<br>50        |
|  | 400V<br>415V       | A   | 50              |
|  | 440V               | A   | 50              |
|  | 500V               | A   | 44              |
|  | 690V               | A   | 39              |
|  | 1000V              | A   | 23              |
| Rated operational power AC-1 (T≤40°C)                                | 10001              |     | 20              |
|  | 230V               | kW  | 34              |
|  | 400V               | kW  | 59              |
|  | 500V               | kW  | 74              |
|  | 690V               | kW  | 102             |
| IEC max current le in DC1 with $L/R \le 1$ ms with 1 poles in series | 0001               |     | 102             |
|  | ≤24V               | А   | 45              |
|  | 48V                | A   | 40              |
|  | 75V                | A   | 40              |
|  | 110V               | A   | 8               |
|  | 220V               | A   | _               |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series      |                    |     |                 |
|  | ≤24V               | А   | 60              |
|  | 48V                | A   | 60              |
|  | 75V                | A   | 60              |
|  | 110V               | A   | 50              |
|  | 220V               | A   | 7               |
| IEC max current le in DC1 with $L/R \le 1$ ms with 3 poles in series | 2201               |     | -               |
|  | ≤24V               | А   | 60              |
|  | 48V                | A   | 60              |
|  | 46V<br>75V         | A   | 60              |
|  | 750                |     | 00              |

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FOUR-POLE CONTACTOR, IEC OPERATING CURRENT ITH (AC1) = 90A, AC COIL 50/60HZ, 48VAC

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|   | 110V     | А    | 55   |
|---|----------|------|------|
|   | 220V     | А    | 75   |
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series           |          |      |      |
|   | ≤24V     | А    | 60   |
|   | 48V      | А    | 60   |
|   | 75V      | А    | 60   |
|   | 110V     | А    | 60   |
|   | 220V     | А    | 90   |
| IEC max current le in DC3-DC5 with $L/R \le 15$ ms with 1 poles in series |          |      |      |
|   | ≤24V     | А    | 30   |
|   | 48V      | А    | 25   |
|   | 75V      | А    | 22   |
|   | 110V     | А    | 3    |
|   | 220V     | А    | -    |
| IEC max current le in DC3-DC5 with $L/R \le 15$ ms with 2 poles in series |          |      |      |
|   | ≤24V     | А    | 35   |
|   | 48V      | А    | 35   |
|   | 75V      | А    | 30   |
|   | 110V     | А    | 25   |
|   | 220V     | А    | 5    |
| IEC max current le in DC3-DC5 with $L/R \le 15$ ms with 3 poles in series |          |      |      |
|   | ≤24V     | А    | 50   |
|   | 48V      | А    | 50   |
|   | 75V      | А    | 45   |
|   | 110V     | А    | 30   |
|   | 220V     | А    | 40   |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series      |          |      |      |
|   | ≤24V     | А    | 55   |
|   | 48V      | А    | 55   |
|   | 75V      | А    | 55   |
|   | 110V     | А    | 45   |
|   | 220V     | А    | 50   |
| Short-time allowable current for 10s (IEC/EN60947-1)                      |          | А    | 400  |
| Protection fuse   |          |      |      |
|   | gG (IEC) | А    | 100  |
|   | aM (IEC) | А    | 50   |
| Making capacity (RMS value)   |          | А    | 500  |
| Breaking capacity at voltage  |          |      |      |
|   | 440V     | А    | 400  |
|   | 500V     | А    | 352  |
|   | 690V     | А    | 312  |
| Resistance per pole (average value)                                       |          | mΩ   | 0.8  |
| Power dissipation per pole (average value)                                |          |      |      |
| · · · · · · · · · · · · · · · · · · ·                                     | lth      | W    | 6.5  |
|   | AC-3     | W    | 2    |
| 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    |
|   | max      |      |      |

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FOUR-POLE CONTACTOR, IEC OPERATING CURRENT ITH (AC1) = 90A, AC COIL 50/60HZ,

BF50T4A048 48VAC

|   |   | min                           | Ibin  | 0.8  |
|---|---|-------------------------------|---|--|
|   |   | max                           | Ibin  | 0.74   |
| Conductor section   | simultaneously connectable  |                               | Nr.   | 2  |
|   | AWG/Kcmil   |                               |   |  |
|   | AWG/Renin   | max                           |   | 2  |
|   | Flexible w/o lug conductor section  | max                           |   |  |
|   |   | min                           | mm²   | 1.5  |
|   |   | max                           | mm²   | 35   |
|   | Flexible c/w lug conductor section  |                               |   |  |
|   |   | min                           | mm²   | 1.5  |
|   |   | max                           | mm²   | 35   |
|   | ction according to IEC/EN 60529   |                               |   | IP20 front   |
| Mechanical features   |   |                               |   |  |
| Operating position  |   |                               |   |  |
|   |   | normal                        |   | Vertical plan  |
|   |   | allowable                     |   | ±30°<br>Screw / DIN rai  |
| Fixing  |   |                               |   | 35mm   |
| Weight  |   |                               | g   | 1240   |
| Conductor section   |   |                               | 3   |  |
|   | AWG/kcmil conductor section   |                               |   |  |
|   |   | max                           |   | 2  |
| Operations  |   |                               |   |  |
| Mechanical life   |   |                               | cycles  | 15000000   |
| Electrical life   |   |                               | cycles  | 1400000  |
| Safety related data   |   |                               |   |  |
| Performance level B1  | 10d according to EN/ISO 13489-1   |                               |   |  |
|   |   |                               |   |  |
|   |   | rated load                    | cycles  | 1400000  |
|   |   | rated load<br>mechanical load | cycles<br>cycles  | 15000000   |
|   | ling to IEC/EN 609474-4-1   |                               | •   | 15000000<br>yes  |
| EMC compatibility   | ling to IEC/EN 609474-4-1   |                               | •   | 15000000   |
| EMC compatibility<br>AC coil operating  |   |                               | cycles  | 15000000<br>yes<br>yes   |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz   |                               | •   | 15000000<br>yes  |
| EMC compatibility<br>AC coil operating  | 50/60Hz   |                               | cycles  | 15000000<br>yes<br>yes   |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz  |                               | cycles  | 15000000<br>yes<br>yes   |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz   | mechanical load               | V   | 15000000<br>yes<br>yes<br>48   |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz  | mechanical load               | v<br>v<br>%Us   | 15000000<br>yes<br>yes<br>48<br>80   |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up   | mechanical load               | V   | 15000000<br>yes<br>yes<br>48   |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz  | mechanical load               | v<br>v<br>%Us   | 15000000<br>yes<br>yes<br>48<br>80   |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up   | mechanical load               | v<br>v<br>%Us<br>%Us  | 15000000<br>yes<br>yes<br>48<br>80<br>110  |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up   | mechanical load               | v<br>v<br>%Us<br>%Us<br>%Us   | 15000000<br>yes<br>yes<br>48<br>80<br>110<br>20  |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at {                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up<br>drop-out   | mechanical load               | v<br>v<br>%Us<br>%Us<br>%Us   | 15000000<br>yes<br>yes<br>48<br>80<br>110<br>20  |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at {                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up<br>drop-out<br>of 50/60Hz coil powered at 60Hz                        | mechanical load               | v<br>v<br>%Us<br>%Us<br>%Us<br>%Us  | 15000000<br>yes<br>yes<br>48<br>48<br>80<br>110<br>20<br>55<br>85                          |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up<br>drop-out<br>of 50/60Hz coil powered at 60Hz<br>pick-up             | mechanical load               | v<br>v<br>%Us<br>%Us<br>%Us<br>%Us  | 15000000<br>yes<br>yes<br>48<br>80<br>110<br>20<br>55                                      |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up<br>drop-out<br>of 50/60Hz coil powered at 60Hz                        | mechanical load               | v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v | 15000000<br>yes<br>yes<br>48<br>48<br>80<br>110<br>20<br>55<br>85<br>110                   |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at {                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up<br>drop-out<br>of 50/60Hz coil powered at 60Hz<br>pick-up             | mechanical load               | v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v | 15000000<br>yes<br>yes<br>48<br>48<br>80<br>110<br>20<br>55<br>55<br>85<br>110<br>40       |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at<br>AC operating voltage | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up<br>drop-out<br>of 50/60Hz coil powered at 60Hz<br>pick-up<br>drop-out | mechanical load               | v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v | 15000000<br>yes<br>yes<br>48<br>48<br>80<br>110<br>20<br>55<br>85<br>110                   |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at t                       | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up<br>drop-out<br>of 50/60Hz coil powered at 60Hz<br>pick-up<br>drop-out | mechanical load               | v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v | 15000000<br>yes<br>yes<br>48<br>48<br>80<br>110<br>20<br>55<br>55<br>85<br>110<br>40       |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at<br>AC operating voltage | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up<br>drop-out<br>of 50/60Hz coil powered at 60Hz<br>pick-up<br>drop-out | mechanical load               | v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v | 15000000<br>yes<br>yes<br>48<br>48<br>80<br>110<br>20<br>55<br>55<br>85<br>110<br>40<br>55 |
| EMC compatibility<br>AC coil operating<br>Rated AC voltage at<br>AC operating voltage | 50/60Hz<br>of 50/60Hz coil powered at 50Hz<br>pick-up<br>drop-out<br>of 50/60Hz coil powered at 60Hz<br>pick-up<br>drop-out | mechanical load               | v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v<br>v | 15000000<br>yes<br>yes<br>48<br>48<br>80<br>110<br>20<br>55<br>55<br>85<br>110<br>40       |

BF50T4A048

electric ENERGY AND AUTOMATION

FOUR-POLE CONTACTOR, IEC OPERATING CURRENT ITH (AC1) = 90A, AC COIL 50/60HZ, 48VAC

BF50T4A048

|   | of 50/60Hz coil pow                          | vered at 60Hz |  |                               |   |
|---|--|---------------|--|-------------------------------|---|
|   |  |               | in-rush  | VA                            | 195   |
|   |  |               | holding  | VA                            | 13  |
|   | of 60Hz coil powere                          | ed at 60Hz    |  |                               |   |
|   | I  |               | in-rush  | VA                            | 210   |
|   |  |               | holding  | VA                            | 15  |
| Dissipation at holding s                | <20°C 50Hz                                   |               | lioiding   | W                             | 5   |
| Max cycles frequency                    |  |               |  |                               | 0   |
| Mechanical operation                    |  |               |  | cycles/h                      | 3600  |
| Operating times                         |  |               |  | Cyclc3/II                     | 3000  |
| Average time for Us co                  | ontrol                                       |               |  |                               |   |
| Average time for 03 cc                  | in AC  |               |  |                               |   |
|   | III AC                                       |               |  |                               |   |
|   |  | Closing NO    |  |                               | 40  |
|   |  |               | 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                       |  |               |  | -                             |   |
| Full-load current (FLA)                 | for three-phase AC r                         | notor         |  |                               |   |
|   |  |               | at 480V  | А                             | 52  |
|   |  |               | at 600V  | A                             | 41  |
| Yielded mechanical pe                   | rformanco                                    |               | 41.0001  |                               | - T I   |
| neideu mechanical pe                    |  | · ··· · · · · |  |                               |   |
|   | for single-phase AC                          | , motor       | 440/4001/  |                               | -   |
|   |  |               | 110/120V   | HP                            | 5   |
|   |  |               | 230V   | HP                            | 10  |
|   | for three-phase AC                           | motor         |  |                               |   |
|   |  |               | 200/2001/  | HP                            | 15  |
|   |  |               | 200/208V   |                               |   |
|   |  |               | 220/230V   | HP                            | 20  |
|   |  |               | 220/230V<br>460/480V   | HP<br>HP                      | 20<br>40  |
|   |  |               | 220/230V   | HP                            | 20  |
| General USE                             |  |               | 220/230V<br>460/480V   | HP<br>HP                      | 20<br>40  |
| General USE                             | Contactor                                    |               | 220/230V<br>460/480V   | HP<br>HP                      | 20<br>40  |
| General USE                             | Contactor                                    |               | 220/230V<br>460/480V   | HP<br>HP                      | 20<br>40  |
| General USE<br>Short-circuit protection |  |               | 220/230V<br>460/480V<br>575/600V   | HP<br>HP<br>HP                | 20<br>40<br>40  |
|   | n fuse, 600V                                 |               | 220/230V<br>460/480V<br>575/600V   | HP<br>HP<br>HP                | 20<br>40<br>40  |
|   |  |               | 220/230V<br>460/480V<br>575/600V<br>AC current   | HP<br>HP<br>HP                | 20<br>40<br>40<br>90                                      |
|   | n fuse, 600V                                 |               | 220/230V<br>460/480V<br>575/600V<br>AC current   | HP<br>HP<br>A<br>A            | 20<br>40<br>40<br>90<br>100                               |
|   | n fuse, 600V                                 |               | 220/230V<br>460/480V<br>575/600V<br>AC current<br>Short circuit current<br>Fuse rating   | HP<br>HP<br>HP                | 20<br>40<br>40<br>90<br>100<br>150                        |
|   | n fuse, 600V<br>High fault                   |               | 220/230V<br>460/480V<br>575/600V<br>AC current   | HP<br>HP<br>A<br>A            | 20<br>40<br>40<br>90<br>100                               |
|   | n fuse, 600V                                 |               | 220/230V<br>460/480V<br>575/600V<br>AC current<br>Short circuit current<br>Fuse rating<br>Fuse class   | HP<br>HP<br>A<br>A<br>kA<br>A | 20<br>40<br>40<br>90<br>100<br>150<br>J                   |
|   | n fuse, 600V<br>High fault                   |               | 220/230V<br>460/480V<br>575/600V<br>AC current<br>Short circuit current<br>Fuse rating<br>Fuse class<br>Short circuit current                | HP<br>HP<br>A<br>A<br>kA<br>A | 20<br>40<br>40<br>90<br>100<br>150<br>J<br>5              |
|   | n fuse, 600V<br>High fault                   |               | 220/230V<br>460/480V<br>575/600V<br>AC current<br>Short circuit current<br>Fuse rating<br>Fuse class<br>Short circuit current<br>Fuse rating | HP<br>HP<br>A<br>A<br>kA<br>A | 20<br>40<br>40<br>90<br>90<br>100<br>150<br>J<br>5<br>150 |
| Short-circuit protection                | n fuse, 600V<br>High fault                   |               | 220/230V<br>460/480V<br>575/600V<br>AC current<br>Short circuit current<br>Fuse rating<br>Fuse class<br>Short circuit current                | HP<br>HP<br>A<br>A<br>kA<br>A | 20<br>40<br>40<br>90<br>100<br>150<br>J<br>5              |
| Short-circuit protection                | n fuse, 600V<br>High fault                   |               | 220/230V<br>460/480V<br>575/600V<br>AC current<br>Short circuit current<br>Fuse rating<br>Fuse class<br>Short circuit current<br>Fuse rating | HP<br>HP<br>A<br>A<br>kA<br>A | 20<br>40<br>40<br>90<br>90<br>100<br>150<br>J<br>5<br>150 |
| Short-circuit protection                | n fuse, 600V<br>High fault<br>Standard fault |               | 220/230V<br>460/480V<br>575/600V<br>AC current<br>Short circuit current<br>Fuse rating<br>Fuse class<br>Short circuit current<br>Fuse rating | HP<br>HP<br>A<br>A<br>kA<br>A | 20<br>40<br>40<br>90<br>90<br>100<br>150<br>J<br>5<br>150 |
| Short-circuit protection                | n fuse, 600V<br>High fault                   | ure           | 220/230V<br>460/480V<br>575/600V<br>AC current<br>Short circuit current<br>Fuse rating<br>Fuse class<br>Short circuit current<br>Fuse rating | HP<br>HP<br>A<br>A<br>kA<br>A | 20<br>40<br>40<br>90<br>90<br>100<br>150<br>J<br>5<br>150 |

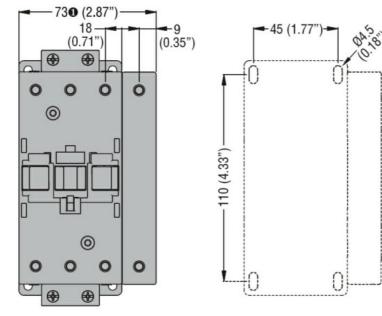
BF50T4A048

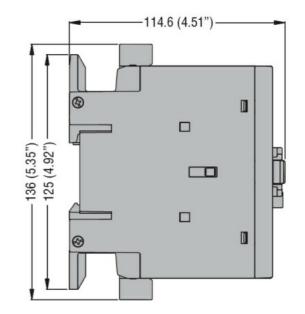
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**BF50T4A048** FOUR-POLE CONTACTOR, IEC OPERATING CURRENT ITH (AC1) = 90A, AC COIL 50/60HZ, 48VAC

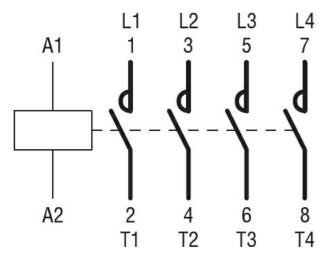
|                         | max | °C | 70   |
|-------------------------|-----|----|------|
| Storage temperature     |     |    |      |
|                         | min | °C | -60  |
|                         | max | °C | 80   |
| Max altitude            |     | m  | 3000 |
| Resistance & Protection |     |    |      |
| Pollution degree        |     |    | 3    |
| Dimensions              |     |    |      |





• BF80T2 82mm/3.23"

## Wiring diagrams



## Certifications and 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

Compliance

BF50T4A048

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ETIM 8.0

**BF50T4A048** FOUR-POLE CONTACTOR, IEC OPERATING CURRENT ITH (AC1) = 90A, AC COIL 50/60HZ, 48VAC

|                     | CCC   |            |
|---------------------|-------|------------|
|                     | cULus |            |
| ETIM classification |       |            |
|                     |       | EC000066 - |

EC000066 -Power contactor, AC switching