# THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 40A, AC COIL 50/60HZ, 230VAC



| Product designation                            |  |      | Power contactor |
|--|--|------|-----------------|
| Product type designation                       |  |      | BF40            |
| Contact characteristics                        |  |      |                 |
| Number of poles                                |  | nr.  | 3               |
| Rated insulation voltage Ui                    |  | V    | 1000            |
| Rated impulse withstand voltage Uimp           |  | kV   | 8               |
| Operating frequency                            |  |      |                 |
|  | Operational frequency min                  | Hz   | 25              |
|  | Operational frequency max                  | Hz   | 400             |
| Conventional free air thermal current Ith      |  | Α    | 70              |
| Operating current                              |  |      |                 |
|  | Operational current AC1 (≤40°C)            | Α    | 70              |
|  | Operational current AC3 (≤440V ≤55°C)      | Α    | 40              |
|  | Operational current AC4 (400V)             | Α    | 24              |
| Rated operational power AC1 (T≤40°C)           | <del></del>                                |      |                 |
|  | 230V                                       | kW   | 26              |
|  | 400V                                       | kW   | 46              |
|  | 500V                                       | kW   | 58              |
|  | 690V                                       | kW   | 79              |
| Rated operational power AC3 (T≤55°C)           |  |      |                 |
|  | 230V                                       | kW   | 11              |
|  | 400V                                       | kW   | 18.5            |
|  | 415V                                       | kW   | 22              |
|  | 440V                                       | kW   | 22              |
|  | 500V                                       | kW   | 22              |
|  | 690V                                       | kW   | 30              |
|  | 1000V                                      | kW   | 18.5            |
| Short-time allowable current for 10s (IEC/EN60 | 0947-1)                                    | Α    | 400             |
| Protection fuse                                |  |      |                 |
|  | gG (IEC)                                   | Α    | 100             |
|  | aM (IEC)                                   | Α    | 50              |
| Making capacity (RMS value)                    |  | Α    | 400             |
| Breaking capacity at voltage                   | <del></del>                                |      |                 |
|  | Breaking capacity 440V                     | Α    | 320             |
|  | Breaking capacity 500V                     | Α    | 265             |
|  | Breaking capacity 690V                     | Α    | 256             |
| Resistance per pole (average value)            |  | mΩ   | 0.8             |
| Power dissipation per pole (average value)     |  |      |                 |
|  | Power dissipation pole (average value) Ith | W    | 3.9             |
|  | AC3  | W    | 1.3             |
| Tightening torque for terminals                |  |      |                 |
|  | min  | Nm   | 4               |
|  | max  | Nm   | 5               |
|  | min  | lbft | 2.95            |
|  |  | lbft | 3.69            |

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| Tightening torque for c  | oil terminal                             |                  |        |                          |
|--------------------------|--|------------------|--------|--------------------------|
|                          |  | min              | Nm     | 0.8                      |
|                          |  | max              | Nm     | 1                        |
|                          |  | min              | lbft   | 8.0                      |
|                          |  | max              | lbft   | 0.74                     |
| max number of wires s    | simultaneously connectable               |                  | nr.    | 2                        |
| Conductor section        |  |                  |        |                          |
|                          | AWG                                      |                  |        |                          |
|                          |  | min              |        | 14                       |
|                          |  | max              |        | 2                        |
|                          | Flexible w/o lug conductor section       |                  |        |                          |
|                          | 3  | min              | mm²    | 1.5                      |
|                          |  | max              | mm²    | 35                       |
|                          | Flexible c/w lug conductor section       |                  |        |                          |
|                          | Tioxible of Wildy confederal coolien     | min              | mm²    | 1.5                      |
|                          |  | max              | mm²    | 35                       |
| Power terminal protect   | tion according to IEC/EN 60529           | IIIdx            | 111111 | IP20 front               |
| Auxiliary contact chara  |  |                  |        | 11 20 110111             |
| Operational current AC   |  |                  | А      | 70                       |
| Operational current AC   | • • •                                    |                  | Α      | 10                       |
| Operating current DC1    | 3  |                  |        | Canana / DIM nail        |
|                          |  | 110V             | Α      | Screw / DIN rail<br>35mm |
| Amphicut conditions      |  |                  |        | 3311111                  |
| Ambient conditions       |  |                  |        |                          |
| Temperature              |  |                  |        |                          |
|                          | Operating temperature                    |                  | 2.0    |                          |
|                          |  | min              | °C     | -50                      |
|                          |  | max              | °C     | 70                       |
|                          | Storage temperature                      |                  |        |                          |
|                          |  | min              | °C     | -60                      |
|                          |  | max              | °C     | 80                       |
| Max altitude             |  |                  | m      | 3000                     |
| Operating position       |  |                  |        |                          |
|                          |  | normal           |        | Vertical plan            |
|                          |  | allowable        |        | ±30°                     |
| Mounting                 |  |                  |        | Screw / DIN rail         |
|                          |  |                  |        | 35mm                     |
| Weight                   |  |                  | g      | 1.02                     |
| Operations               |  |                  |        |                          |
| Mechanical life          |  |                  | Cycles | 15000000                 |
| Electrical life          |  |                  | Cycles | 1500000                  |
| Safety related data      |  |                  | -      |                          |
|                          | 0d according to EN/ISO 13489-1           |                  |        |                          |
|                          | <b>5</b>                                 | rated load       | Cicli  | 1500000                  |
|                          |  | mechanical load  | Cicli  | 15000000                 |
| Mirror contats according | ng to IEC/EN 609474-4-1                  | ss.iailisai isaa | 0.000  | yes                      |
| EMC compatibility        | 19 10 10 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |                  |        | yes                      |
| AC coil operating        |  |                  |        | y 0.3                    |
|                          |  |                  |        |                          |
| AC operating voltage     | -f-50/00H                                |                  |        |                          |
|                          | of 50/60Hz coil powered at 50Hz          |                  |        |                          |
|                          | pick-up                                  |                  | 0/17   |                          |
|                          |  | min              | %Us    | 0.8                      |
|                          |  | max              | %Us    | 1.1                      |
|                          | drop-out                                 |                  |        |                          |
|                          |  |                  |        |                          |



## THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 40A, AC COIL 50/60HZ, 230VAC

|  |  | min  | %Us                      | 0.2   |
|--|--|--|--------------------------|---|
|  |  | max  | %Us                      | 0.55  |
|  | of 50/60Hz coil powered at 60Hz  |  | ,,,,,                    |   |
|  | pick-up  |  |                          |   |
|  | ριοιν αρ   | min  | %Us                      | 0.85  |
|  |  | max  | %Us                      | 1.1   |
|  | drop-out   | IIIdx  | 7003                     | 1.1   |
|  | drop-out   | min  | %Us                      | 0.4   |
|  |  |  | %Us                      | 0.55  |
|  | . ( 0011   | max  | %08                      | 0.55  |
|  | of 60Hz coil powered at 60Hz   |  |                          |   |
|  | pick-up  |  | 0/11                     | 0.0   |
|  |  | min  | %Us                      | 0.8   |
|  |  | max  | %Us                      | 1.1   |
|  | drop-out   |  |                          |   |
|  |  | min  | %Us                      | 0.2   |
|  |  | max  | %Us                      | 0.55  |
| AC operating voltage   |  |  |                          | _   |
|  | of 50/60Hz coil powered at 50Hz  |  |                          |   |
|  | -  | in-rush  | VA                       | 210   |
|  |  | holding  | VA                       | 15  |
|  | of 50/60Hz coil powered at 60Hz  | <u>_</u>   |                          |   |
|  | o. oo, oo oo. poo. ou a. oo  | in-rush  | VA                       | 195   |
|  |  | holding  | VA                       | 13  |
|  | of 60Hz coil powered at 60Hz   | Holding  | ٧, ١                     |   |
|  | of doll 12 coll powered at doll 12   | in-rush  | VA                       | 210   |
|  |  |  |                          |   |
| Dissipation at halding   | <00°O 5011-  | holding  | VA                       | 15  |
| Dissipation at holding   | ≤20°C 50HZ   |  | W                        | 5.0   |
| A A A A A A A A A A A A A A A A A A A  |  |  |                          |   |
| Max cycles frequency   |  |  | 0 1 "                    | 2222  |
| Mechanical operations  |  |  | Cycles/h                 | 3600  |
| Mechanical operations Operating times  |  |  | Cycles/h                 | 3600  |
| Mechanical operations  | ontrol   |  | Cycles/h                 | 3600  |
| Mechanical operations Operating times  | ontrol<br>in AC  |  | Cycles/h                 | 3600  |
| Mechanical operations Operating times  | ontrol   |  | Cycles/h                 | 3600  |
| Mechanical operations Operating times  | ontrol<br>in AC  | min  | Cycles/h                 | 12  |
| Mechanical operations Operating times  | ontrol<br>in AC  |  |                          |   |
| Mechanical operations Operating times  | ontrol<br>in AC  | min  | ms                       | 12  |
| Mechanical operations Operating times  | ontrol<br>in AC<br>Closing NO  | min  | ms                       | 12  |
| Mechanical operations Operating times  | ontrol<br>in AC<br>Closing NO  | min<br>max   | ms<br>ms                 | 12<br>28                                    |
| Mechanical operations Operating times Average time for Us co   | ontrol<br>in AC<br>Closing NO  | min<br>max<br>min  | ms<br>ms                 | 12<br>28<br>8                               |
| Mechanical operations Operating times Average time for Us co   | ontrol<br>in AC<br>Closing NO<br>Opening NO  | min<br>max<br>min  | ms<br>ms                 | 12<br>28<br>8                               |
| Mechanical operations Operating times Average time for Us co   | ontrol<br>in AC<br>Closing NO  | min<br>max<br>min<br>max   | ms<br>ms<br>ms           | 12<br>28<br>8<br>22                         |
| Mechanical operations Operating times Average time for Us co   | ontrol<br>in AC<br>Closing NO<br>Opening NO  | min<br>max<br>min<br>max<br>at 480V  | ms<br>ms<br>ms<br>ms     | 12<br>28<br>8<br>22                         |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of three-phase AC motor   | min<br>max<br>min<br>max   | ms<br>ms<br>ms           | 12<br>28<br>8<br>22                         |
| Mechanical operations Operating times Average time for Us co   | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance  | min<br>max<br>min<br>max<br>at 480V  | ms<br>ms<br>ms<br>ms     | 12<br>28<br>8<br>22                         |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of three-phase AC motor   | min<br>max<br>min<br>max<br>at 480V<br>at 600V   | ms<br>ms<br>ms<br>ms     | 12<br>28<br>8<br>22<br>40<br>32             |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance  | min<br>max<br>min<br>max<br>at 480V<br>at 600V   | ms<br>ms<br>ms<br>A<br>A | 12<br>28<br>8<br>22<br>40<br>32             |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance for single-phase AC motor                      | min<br>max<br>min<br>max<br>at 480V<br>at 600V   | ms<br>ms<br>ms<br>ms     | 12<br>28<br>8<br>22<br>40<br>32             |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance  | min<br>max<br>min<br>max<br>at 480V<br>at 600V<br>at 110/120V<br>at 230V                   | ms<br>ms<br>ms<br>A<br>A | 12<br>28<br>8<br>22<br>40<br>32<br>3<br>7.5 |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance for single-phase AC motor                      | min max min max  at 480V at 600V  at 110/120V at 230V  at 200/208V                         | ms<br>ms<br>ms<br>ms     | 12<br>28<br>8<br>22<br>40<br>32<br>3<br>7.5 |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance for single-phase AC motor                      | min max min max  at 480V at 600V  at 110/120V at 230V  at 200/208V at 220/230V             | ms<br>ms<br>ms<br>A<br>A | 12<br>28<br>8<br>22<br>40<br>32<br>3<br>7.5 |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance for single-phase AC motor                      | min max min max  at 480V at 600V  at 110/120V at 230V  at 220/230V at 220/230V at 460/480V | ms<br>ms<br>ms<br>ms     | 12<br>28<br>8<br>22<br>40<br>32<br>3<br>7.5 |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance for single-phase AC motor                      | min max min max  at 480V at 600V  at 110/120V at 230V  at 200/208V at 220/230V             | ms<br>ms<br>ms<br>A<br>A | 12<br>28<br>8<br>22<br>40<br>32<br>3<br>7.5 |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)                        | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance for single-phase AC motor                      | min max min max  at 480V at 600V  at 110/120V at 230V  at 220/230V at 220/230V at 460/480V | ms<br>ms<br>ms<br>A<br>A | 12<br>28<br>8<br>22<br>40<br>32<br>3<br>7.5 |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)  Yielded mechanical pe | Closing NO Opening NO Opening NO Of three-phase AC motor  erformance for single-phase AC motor  for three-phase AC motor | min max min max  at 480V at 600V  at 110/120V at 230V  at 220/230V at 220/230V at 460/480V | ms<br>ms<br>ms<br>A<br>A | 12<br>28<br>8<br>22<br>40<br>32<br>3<br>7.5 |
| Mechanical operations Operating times Average time for Us of  UL technical data Full-load current (FLA)  Yielded mechanical pe | ontrol in AC Closing NO Opening NO of for three-phase AC motor erformance for single-phase AC motor                      | min max min max  at 480V at 600V  at 110/120V at 230V  at 220/230V at 220/230V at 460/480V | ms<br>ms<br>ms<br>A<br>A | 12<br>28<br>8<br>22<br>40<br>32<br>3<br>7.5 |

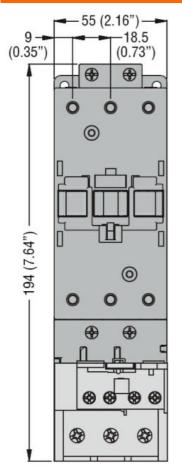


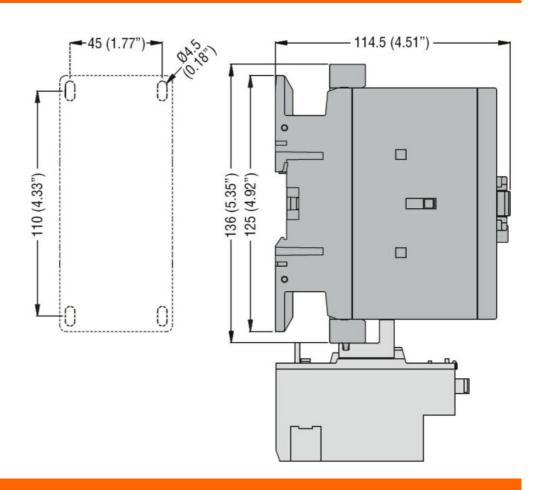
**ENERGY AND AUTOMATION** 

## Other features

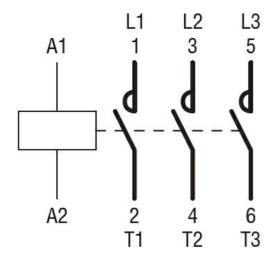
Pollution degree 3

#### **Dimensions**





#### Wiring diagrams



#### Certifications and compliance

#### Certifications

CSA C22.2 n° 60947-1

CSA C22.2 n° 60947-4-1

IEC/EN 60947-1

IEC/EN 60947-4-1

UL 60947-1





### THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 40A, AC COIL 50/60HZ,

UL 60947-4-1

Compliance

cULus

ETIM 6 classification

EC000066 - Power contactor, AC switching