



| Product designation Product type designation                    |     | Power contactor<br>BF18 |
|---|-----|-------------------------|
| Contact characteristics   |     |                         |
| Number of poles   | Nr. | 3                       |
| Rated insulation voltage Ui IEC/EN                              | V   | 690                     |
| Rated impulse withstand voltage Uimp                            | kV  | 6                       |
| Operational frequency   |     |                         |
| min   | Hz  | 25                      |
| max   | Hz  | 400                     |
| IEC Conventional free air thermal current Ith                   | Α   | 32                      |
| Operational current le  |     |                         |
| AC-1 (≤40°C)  | Α   | 32                      |
| AC-1 (≤55°C)  | Α   | 26                      |
| AC-1 (≤70°C)  | Α   | 23                      |
| AC-3 (≤440V ≤55°C)  | Α   | 18                      |
| AC-4 (400V)   | Α   | 8.5                     |
| Rated operational power AC-3 (T≤55°C)                           |     |                         |
| 230V  | kW  | 4                       |
| 400V  | kW  | 7.5                     |
| 415V  | kW  | 9                       |
| 440V  | kW  | 9                       |
| 500V  | kW  | 10                      |
| 690V  | kW  | 10                      |
| Rated operational power AC-1 (T≤40°C)                           |     |                         |
| 230V  | kW  | 12                      |
| 400V  | kW  | 21                      |
| 500V  | kW  | 26                      |
| 690V  | kW  | 36                      |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series |     |                         |
| ≤24V  | Α   | 17                      |
| 48V   | Α   | 15                      |
| 75V   | Α   | 15                      |
| 110V  | Α   | 6                       |
| 220V  | Α   |                         |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | _   |                         |
| ≤24V  | A   | 20                      |
| 48V   | A   | 20                      |
| 75V   | A   | 20                      |
| 110V  | A   | 13                      |
| 220V  | A   |                         |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series | Δ.  | 00                      |
| ≤24V  | A   | 22                      |
| 48V   | A   | 22                      |
| 75V<br>110V   | A   | 20<br>16                |
| 110V  | Α   | 10                      |





|  | 220V          | Α     | 11       |
|--|---------------|-------|----------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series      |               |       |          |
|  | ≤24V          | Α     | 22       |
|  | 48V           | Α     | 22       |
|  | 75V           | Α     | 20       |
|  | 110V          | Α     | 18       |
|  | 220V          | Α     | 13       |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |               |       |          |
| ·  | ≤24V          | Α     | 12       |
|  | 48V           | Α     | 11       |
|  | 75V           | Α     | 11       |
|  | 110V          | Α     | 2        |
|  | 220V          | A     | <u>-</u> |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | 220 V         |       |          |
| The max current le in boo-boo with bit 2 followith 2 poles in series | ≤24V          | Α     | 15       |
|  | 48V           | A     | 13       |
|  | 46 V<br>75 V  |       |          |
|  |               | A     | 13       |
|  | 110V          | A     | 8        |
| 150  | 220V          | A     | 2        |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | . <del></del> |       | 4.0      |
|  | ≤24V          | A     | 18       |
|  | 48V           | Α     | 18       |
|  | 75V           | Α     | 16       |
|  | 110V          | Α     | 12       |
|  | 220V          | Α     | 6        |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |               |       |          |
|  | ≤24V          | Α     | 18       |
|  | 48V           | Α     | 18       |
|  | 75V           | Α     | 16       |
|  | 110V          | Α     | 13       |
|  | 220V          | Α     | 8        |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |               | Α     | 200      |
| Protection fuse  |               |       |          |
|  | gG (IEC)      | Α     | 32       |
|  | aM (IEC)      | Α     | 20       |
| Making capacity (RMS value)  | , ,           | Α     | 180      |
| Breaking capacity at voltage   |               |       |          |
|  | 440V          | Α     | 144      |
|  | 500V          | A     | 120      |
|  | 690V          | A     | 94       |
| Resistance per note (average value)                                  | 090 v         | mΩ    | 2.5      |
| Resistance per pole (average value)                                  |               | 11177 | ۷.ن      |
| Power dissipation per pole (average value)                           | 141           | 107   | 2.0      |
|  | Ith           | W     | 2.6      |
| Till to die to en a forte estado                                     | AC3           | W     | 0.8      |
| Tightening torque for terminals                                      |               |       | 4.5      |
|  | min           | Nm    | 1.5      |
|  | max           | Nm    | 1.8      |
|  | min           | Ibin  | 1.1      |
|  | max           | Ibin  | 1.5      |
| Tightening torque for coil terminal                                  |               |       |          |
|  | min           | Nm    | 0.8      |
|  | max           | Nm    | 1        |
|  | min           | Ibin  | 0.8      |
|  |               |       |          |



|  |  | max   | Ibin                                      | 0.74  |
|--|--|---|---|---|
|  | simultaneously connectable   |   | Nr.                                       | 2   |
| Conductor section  | 1110/16  |   |   |   |
|  | AWG/Kcmil  |   |   | 4.0   |
|  | Clavible w/s live panely star paction  | max   |   | 10  |
|  | Flexible w/o lug conductor section   | min   | mm²                                       | 1   |
|  |  | min   | mm²<br>mm²                                | 1<br>6  |
|  | Flexible c/w lug conductor section   | max   | 111111                                    | 0   |
|  | r lexible 6/w rug corrudctor section   | min   | mm²                                       | 1   |
|  |  | max   | mm²                                       | 4   |
|  | Flexible with insulated spade lug conductor section  |   |   | •   |
|  | - Total of the control of the contro | min   | mm²                                       | 1   |
|  |  | max   | mm²                                       | 4   |
| D (  | ('   |   |   | IP20 when   |
| Power terminal protect   | tion according to IEC/EN 60529   |   |   | properly wired  |
| Mechanical features  |  |   |   |   |
| Operating position   |  |   |   |   |
|  |  | normal  |   | Vertical plan   |
|  |  | allowable   |   | ±30°  |
| Fixing   |  |   |   | Screw / DIN rail  |
|  |  |   |   | 35mm  |
| Weight   |  |   | g   | 365   |
| Conductor section  | ANA(O/I) - 11 - 1 - 1 - 1  |   |   |   |
|  | AWG/kcmil conductor section  |   |   | 4.0   |
| Auxiliary contact chara  | noto viotico   | max   |   | 10  |
|  |  |   |   |   |
| •  | 3001101100   |   | Δ   | 10  |
| Thermal current Ith  |  |   | Α   | 10<br>A600 - P600   |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  |   | Α   | 10<br>A600 - P600   |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  | 230V  |   | A600 - P600   |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  | 230V<br>400V  | A   | A600 - P600<br>3  |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  | 400V  |   | A600 - P600<br>3<br>1.9   |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC   | signation<br>15  |   | A<br>A                                    | A600 - P600<br>3  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC   | signation<br>15  | 400V  | A<br>A                                    | A600 - P600<br>3<br>1.9   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC   | signation<br>15  | 400V<br>500V  | A<br>A<br>A                               | 3<br>1.9<br>1.4   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC   | signation<br>15  | 400V<br>500V  | A<br>A<br>A                               | 3<br>1.9<br>1.4   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC   | signation<br>15  | 400V<br>500V<br>110V  | A<br>A<br>A                               | 3<br>1.9<br>1.4<br>5.7  |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC   | signation<br>15  | 400V<br>500V<br>110V<br>24V   | A<br>A<br>A                               | 3<br>1.9<br>1.4<br>5.7  |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC   | signation<br>15  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V                         | A<br>A<br>A<br>A                          | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC   | signation<br>15  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A<br>A<br>A                | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC   | signation<br>15  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A                           | 3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55                                |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC   | signation<br>15  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A<br>A<br>A                | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC  | signation<br>15  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A           | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC  | signation<br>15  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life   | signation<br>15  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A           | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data   | signation 15 12 13   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data   | signation<br>15  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | 3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000             |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data   | signation 12 13 Od according to EN/ISO 13489-1   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000                      |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1                        | signation  12  13  Od according to EN/ISO 13489-1  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 16000000             |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accordi | signation 12 13 Od according to EN/ISO 13489-1   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 1600000 20000000 yes |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC  Operating current DC  Operating current DC  Operating current DC  Operating current DC  Electrical life Safety related data Performance level B1                         | signation  12  13  Od according to EN/ISO 13489-1  | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 16000000             |



| Rated AC voltage at   | 50/60Hz   |   | V                                | 24   |
|---|---|---|----------------------------------|--|
| C operating voltage   | )   |   |                                  |  |
|   | of 50/60Hz coil powered at 50Hz   |   |                                  |  |
|   | pick-up   |   | 0/11                             |  |
|   |   | min   | %Us                              | 80   |
|   | drop out  | max   | %Us                              | 110  |
|   | drop-out  | min   | %Us                              | 20   |
|   |   | max   | %Us                              | 55   |
|   | of 50/60Hz coil powered at 60Hz   | IIIax   | 7003                             | 33   |
|   | pick-up   |   |                                  |  |
|   | ριοίζαρ   | min   | %Us                              | 85   |
|   |   | max   | %Us                              | 110  |
|   | drop-out  |   | ,,,,,                            |  |
|   | т. Ср. Са.  | min   | %Us                              | 20   |
|   |   | max   | %Us                              | 55   |
| C average coil cons   | sumption at 20°C  |   |                                  |  |
| -   | of 50/60Hz coil powered at 50Hz   |   |                                  |  |
|   | ·   | in-rush                                       | VA                               | 75   |
|   |   | holding                                       | VA                               | 9  |
|   | of 50/60Hz coil powered at 60Hz   |   |                                  |  |
|   |   | in-rush                                       | VA                               | 70   |
|   |   | holding                                       | VA                               | 6.5  |
|   | of 60Hz coil powered at 60Hz  |   |                                  |  |
|   |   | in-rush                                       | VA                               | 75   |
|   |   | holding                                       | VA                               | 9  |
| Dissipation at holding  |   |   | W                                | 2.5  |
|   |   |   |                                  |  |
|   |   |   |                                  | 2222                                       |
| Mechanical operation  |   |   | cycles/h                         | 3600                                       |
| Mechanical operation Operating times  |   |   | cycles/h                         | 3600                                       |
| Mechanical operation Operating times  | control   |   | cycles/h                         | 3600                                       |
| Mechanical operation Operating times  | control<br>in AC  |   | cycles/h                         | 3600                                       |
| Mechanical operation Operating times  | control   | min   |                                  |  |
| Mechanical operation Operating times  | control<br>in AC  | min<br>max                                    | ms                               | 8  |
| Mechanical operation Operating times  | control in AC Closing NO  | min<br>max                                    |                                  |  |
| Mechanical operation Operating times  | control<br>in AC  | max   | ms<br>ms                         | 8<br>24                                    |
| Mechanical operation Operating times  | control in AC Closing NO  | max<br>min                                    | ms<br>ms                         | 8<br>24<br>10                              |
| Mechanical operation Operating times  | control in AC Closing NO Opening NO   | max   | ms<br>ms                         | 8<br>24                                    |
| Mechanical operation Operating times  | control in AC Closing NO  | max<br>min                                    | ms<br>ms                         | 8<br>24<br>10                              |
| Mechanical operation Operating times  | control in AC Closing NO Opening NO   | max<br>min<br>max                             | ms<br>ms<br>ms<br>ms             | 8<br>24<br>10<br>20                        |
| Mechanical operatior Operating times  | control in AC Closing NO Opening NO   | max<br>min<br>max<br>min                      | ms<br>ms<br>ms<br>ms             | 8<br>24<br>10<br>20                        |
| Mechanical operatior Operating times  | control in AC Closing NO Opening NO Closing NC  | max<br>min<br>max<br>min                      | ms<br>ms<br>ms<br>ms             | 8<br>24<br>10<br>20                        |
| Mechanical operation Derating times Average time for Us   | control in AC Closing NO Opening NO Closing NC  | max<br>min<br>max<br>min<br>max               | ms<br>ms<br>ms<br>ms             | 8<br>24<br>10<br>20<br>14<br>28            |
| Mechanical operation Operating times Average time for Us  JL technical data   | control in AC  Closing NO  Opening NO  Closing NC  Opening NC   | max<br>min<br>max<br>min<br>max<br>min        | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28            |
| Mechanical operation Dperating times Average time for Us  JL technical data   | control in AC Closing NO Opening NO Closing NC  | max<br>min<br>max<br>min<br>max<br>min<br>max | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Operating times Average time for Us  JL technical data   | control in AC  Closing NO  Opening NO  Closing NC  Opening NC   | max min max min max min max at 480V           | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Derating times Average time for Us  JL technical data Full-load current (FL  | control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC   | max<br>min<br>max<br>min<br>max<br>min<br>max | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequence Mechanical operation Departing times Average time for Us  JL technical data Full-load current (FLA  Tielded mechanical p | control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC   | max min max min max min max at 480V           | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Decrating times Average time for Us  JL technical data Full-load current (FL)  | control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC   | max min max min max min max at 480V at 600V   | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Derating times Average time for Us  JL technical data Full-load current (FL  | control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC   | max min max min max min max at 480V at 600V   | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Derating times Average time for Us  JL technical data Full-load current (FL  | control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC  A) for three-phase AC motor  Derformance for single-phase AC motor | max min max min max min max at 480V at 600V   | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Operating times Everage time for Us  JL technical data  Full-load current (FL  | control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC   | max min max min max min max at 480V at 600V   | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |

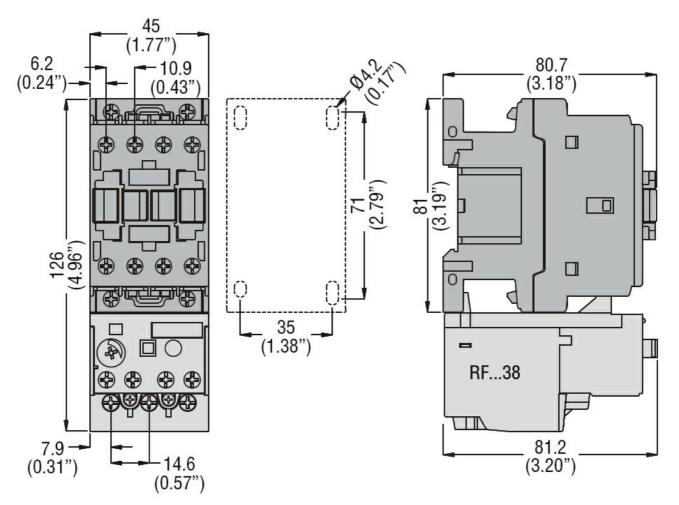




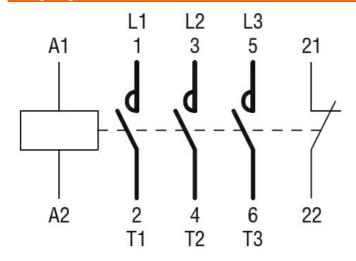
|                        |                                 | 220/230V              | HP | 5           |
|------------------------|---------------------------------|-----------------------|----|-------------|
|                        |                                 | 460/480V              | HP | 10          |
|                        |                                 | 575/600V              | HP | 15          |
| General USE            |                                 |                       |    |             |
|                        | Contactor                       |                       |    |             |
|                        |                                 | AC current            | Α  | 32          |
|                        | Auxiliary contacts              |                       |    |             |
|                        | •                               | AC voltage            | V  | 600         |
|                        |                                 | AC current            | Α  | 10          |
|                        |                                 | DC voltage            | V  | 250         |
|                        |                                 | DC current            | Α  | 1           |
| Short-circuit protecti | on fuse, 600V                   |                       |    |             |
| ·                      | High fault                      |                       |    |             |
|                        | 3                               | Short circuit current | kA | 100         |
|                        |                                 | Fuse rating           | Α  | 60          |
|                        |                                 | Fuse class            |    | J           |
|                        | Standard fault                  |                       |    |             |
|                        |                                 | Short circuit current | kA | 5           |
|                        |                                 | Fuse rating           | Α  | 80          |
| Contact rating of aux  | iliary contacts according to UL |                       |    | A600 - P600 |
| Ambient conditions     | ,                               |                       |    |             |
| Temperature            |                                 |                       |    |             |
| •                      | Operating temperature           |                       |    |             |
|                        | , 3 ,                           | min                   | °C | -50         |
|                        |                                 | max                   | °C | 70          |
|                        | Storage temperature             |                       |    |             |
|                        | 3 1                             | min                   | °C | -60         |
|                        |                                 | max                   | °C | 80          |
| Max altitude           |                                 |                       | m  | 3000        |
| Resistance & Protect   | etion                           |                       |    |             |
| Pollution degree       |                                 |                       |    | 3           |
| Dimensions             |                                 |                       |    |             |
|                        |                                 |                       |    |             |

**ENERGY AND AUTOMATION** 

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 24VAC, 1NC AUXILIARY CONTACT



### Wiring diagrams



#### Certifications and compliance

Compliance

CSA C22.2 n° 60947-1

CSA C22.2 n° 60947-4-1

IEC/EN/BS 60947-1

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UL 60947-1

UL 60947-4-1

#### Certificates



#### BF1801A024

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 24VAC, 1NC AUXILIARY CONTACT

| CCC   |  |  |
|-------|--|--|
| cULus |  |  |
| EAC   |  |  |

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching





| Product designation Product type designation Contact that rectanglish (and in the product type designation)  Sate of poles Rated insulation voltage Ui IEC/EN Rated insulation voltage Uimp Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated Conventional free air thermal current Ith  Rac-1 (≤40°C) Rac-1 (≤55°C) Rac-2 (≤40°C) Rac-3 (≤40°C) Rac-3 (≤40°C) Rac-3 (≤440°S5°C) Rac-3 (≤440°S5°C) Rac-3 (≤440°S5°C) Rac-3 (≤440°S5°C) Rac-3 (≤440°S5°C) Rated operational power AC-3 (T≤55°C)  Rated operational power AC-3 (T≤55°C)  Rated operational power AC-3 (T≤40°C) Rated operational power AC-1 (T≤40°C) Rated operational power AC-3 (T≤40°C) Rated operati |   |              |              | ***             |
|---|---|--------------|--------------|-----------------|
| Product type designation  | Product designation   |              |              | Power contactor |
| Contact characteristics         Number of poles         Nr. 3         3           Rated insulation voltage Ui IEC/EN         V 690         60           Rated insulation voltage Uimp         kV 6         6           Operational frequency         min Hz 25 max         25 max         Hz 400           IEC Conventional free air thermal current Ith         A 32         A 32           Operational current Ie         AC-1 (\$40°C)         A 32           AC-1 (\$45°C)         A 26 AC-1 (\$70°C)         A 28 AC-3 (\$440V \$55°C)         A 18 AC-4 (400V)           AC-3 (\$440V \$55°C)         A 18 AC-4 (400V)         A 8.5         AC-4 (400V)         A 9 AC-4 (400V)  | •   |              |              |                 |
| Number of poles         Nr.         3           Rated insulation voltage Ui IEC/EN         V         690           Rated insulation voltage Uimp         kV         6           Operational frequency         min         Hz         25           max         Hz         400         1           IEC Conventional free air thermal current Ith         A         32           Operational current Ie         AC-1 (≤40°C)         A         32           AC-1 (555°C)         A         26         AC-1 (570°C)         A         23           AC-3 (≤440°V S5°C)         A         28         AC-4 (400°V)         A         8.5           Rated operational power AC-3 (T≤55°C)         230V         kW         4         400V         kW         9           440V         kW         9         440V         kW         9         440V         kW         9           440V         kW         9         500V         kW         10         690V         kW         10           Rated operational power AC-1 (T≤40°C)         230V         kW         12         40V         kW         21         500V         kW         22         690V         kW         26         690V <td< td=""><td>7.7</td><td></td><td></td><td></td></td<>  | 7.7   |              |              |                 |
| Rated insulation voltage UirEC/EN         V         690           Rated impulse withstand voltage Uimp         kV         6           Operational frequency         min         Hz         25           imax         Hz         400           IEC Conventional free air thermal current lth         A         32           Operational current le         AC-1 (≤40°C)         A         22           AC-1 (≤55°C)         A         26         AC-1 (≤70°C)         A         23           AC-3 (≤440V ≤55°C)         A         18         AC-4 (400V)         A         8.5           Rated operational power AC-3 (T≤55°C)         230V         kW         7.5         415V         kW         9           440V         kW         7.5         415V         kW         9         440V         kW         9           500V         kW         10         690V         kW         10 </td <td></td> <td></td> <td>Nr.</td> <td>3</td>  |   |              | Nr.          | 3               |
| Rated impulse withstand voltage Ulimp   | ·   |              |              |                 |
| Operational frequency           min max         Hz hz Hz Hz         400           IEC Conventional free air thermal current lth         A 32           Operational current le           AC-1 (≤40°C) A 32 AC-1 (≤55°C) A 26 AC-1 (≤70°C) A 23 AC-3 (≤4400 ≤55°C) A 18 AC-4 (4000V) A 8.5           Rated operational power AC-3 (T≤55°C)           230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10           Rated operational power AC-1 (T≤40°C)           230V kW 12 400V kW 21 50V kW 21 50V kW 21 50V kW 26 690V kW 36           IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series           ≤24V A 17 48 AR A 15 75V A 15 110V A 6 220V A -           IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series           ≤24V A 20 48 A 20 48 AR A 20 AR AR A 20 AR AR A 20 AR AR AR A 20 AR AR AR A 20 AR  |   |              |              |                 |
| EC Conventional free air thermal current lth  |   |              |              |                 |
| EC Conventional free air thermal current lth  | oporational requestoy   | min          | Hz           | 25              |
| EC Conventional free air thermal current lth  |   |              |              |                 |
| Operational current le         AC-1 (≤40°C)       A       32         AC-1 (≤55°C)       A       26         AC-1 (≤70°C)       A       23         AC-3 (≤440V ≤55°C)       A       18         AC-4 (400V)       A       8.5         Rated operational power AC-3 (T≤5°C)         230V       kW       4         440V       kW       9         440V       kW       9         500V       kW       10         690V       kW       10         80V       kW       21         500V       kW       21         500V       kW       26         690V       kW       26         690V       kW       36         IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series         \$24V       A       15         110V       A       6         220V       A       -         IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series         \$24V       A       20         48V       A       20         75V       A       20         48V       A       20 </td <td>IEC Conventional free air thermal current Ith</td> <td></td> <td></td> <td></td>  | IEC Conventional free air thermal current Ith                   |              |              |                 |
| AC-1 (≤40°C)  |   |              |              |                 |
| AC-1 (≤55°C)  | Sporditorial outron to  | AC-1 (<40°C) | Α            | 32              |
| AC-1 (≤70°C) A 23 AC-3 (≤440V ≤55°C) A 18 AC-4 (400V) A 8.5  Rated operational power AC-3 (T≤55°C)  Rated operational power AC-3 (T≤55°C)  230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10 690V kW 10  800V kW 10  800V kW 21 400V kW 21 500V kW 21 690V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 17 48V A 15 75V A 15 110V A 6 220V A -  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 75V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series   |   |              |              |                 |
| AC-3 (≤440V ≤55°C) A 18 AC-4 (400V) A 8.5  Rated operational power AC-3 (T≤55°C)  230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 550V kW 10 690V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 12 400V kW 21 500V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 15 75V A 15 110V A 6 220V A -  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 75V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  |   |              |              |                 |
| Rated operational power AC-3 (T≤55°C)  230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 12 400V kW 21 500V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 17 48V A 15 75V A 15 110V A 6 220V A −  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  |   | ,            |              |                 |
| Rated operational power AC-3 (T≤55°C)  230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10 690V kW 10  Rated operational power AC-1 (T≤40°C)  Rated operational power AC-1 (T≤40°C)  230V kW 12 400V kW 21 500V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 17 48V A 15 75V A 15 110V A 6 220V A -  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 75V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  |   | •            |              |                 |
| 230V   kW   4   400V   kW   7.5   415V   kW   9   440V   kW   9   500V   kW   10   690V   kW   10   690V   kW   10   690V   kW   10   690V   kW   21   500V   kW   26   690V   kW   36   690V   kW   30   690V    | Rated operational power AC-3 (T<55°C)                           | AC-4 (400V)  |              | 0.5             |
| 400V   kW   7.5   415V   kW   9   440V   kW   9   440V   kW   9   440V   kW   9   690V   kW   10   690V   kW   10   690V   kW   10   690V   kW   10   690V   kW   21   500V   kW   21   500V   kW   26   690V   kW   36   690V     | rtated operational power 70-0 (1=00 0)                          | 230\/        | <b>ل</b> \\\ | 1               |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  |   |              |              |                 |
| A40V   kW   9   500V   kW   10   690V   kW   12   400V   kW   21   500V   kW   26   690V   kW   36   690V   40   690V   4   |   |              |              |                 |
| Soov   kW   10   690V   kW   10   10   690V   kW   12   400V   kW   21   500V   kW   26   690V   kW   36    |   |              |              |                 |
| Rated operational power AC-1 (T≤40°C)   230V   kW   12   400V   kW   21   500V   kW   26   690V   kW   36   |   |              |              |                 |
| Rated operational power AC-1 (T≤40°C)  230V kW 12 400V kW 21 500V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 17 48V A 15 75V A 15 110V A 6 220V A −  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 75V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  ≤24V A 20 48V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  |   |              |              |                 |
|   | Pated aparational power AC 1 (T<10°C)                           | 090 V        | KVV          | 10              |
|   | Rated operational power AC-1 (1540 C)                           | 2201/        | LANA         | 10              |
| Soov   kW   26   690V   kW   36   |   |              |              |                 |
| EC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  |   |              |              |                 |
| SEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series   S24V  |   |              |              |                 |
|   | 150   | 6907         | KVV          | 36              |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  | IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | 40 AV /      |              | 4-              |
| T5V   A   15   110V   A   6   220V   A   -  |   |              |              |                 |
| 110V   A   6   220V   A   -   |   |              |              |                 |
| EC max current le in DC1 with L/R $\leq$ 1ms with 2 poles in series   $\leq$ 24V   A   20   48V   A   20   75V   A   20   110V   A   13   220V   A   1  |   |              |              |                 |
| Section   Sec   |   |              |              | 6               |
|   |   | 220V         | A            | _               |
|   | IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series |              |              |                 |
|   |   |              |              |                 |
|   |   |              |              |                 |
|   |   |              |              |                 |
| IEC max current le in DC1 with L/R $\leq$ 1ms with 3 poles in series $ \leq 24V \qquad A \qquad 22 \\ 48V \qquad A \qquad 22 \\ 75V \qquad A \qquad 20 $  |   |              |              |                 |
| ≤24V A 22<br>48V A 22<br>75V A 20   |   | 220V         | Α            | 1               |
| 48V A 22<br>75V A 20  | IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series |              |              |                 |
| 75V A 20  |   |              | Α            | 22              |
|   |   | 48V          | Α            | 22              |
| 110V A 16   |   | 75V          | Α            | 20              |
|   |   | 110V         | Α            | 16              |





|  | 220V                                    | Α      | 11  |
|--|---|--------|-----|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series      |   |        |     |
|  | ≤24V                                    | Α      | 22  |
|  | 48V                                     | Α      | 22  |
|  | 75V                                     | Α      | 20  |
|  | 110V                                    | Α      | 18  |
|  | 220V                                    | Α      | 13  |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |   |        |     |
| 120 max current to in 200 200 with 2/1/2 forms with 1 polos in conco | ≤24V                                    | Α      | 12  |
|  | 48V                                     | A      | 11  |
|  | 75V                                     | A      | 11  |
|  | 110V                                    | A      | 2   |
|  |   |        |     |
| 150 DOO DOO 111 L/D 4.45 111 O L 1 1 1                               | 220V                                    | Α      | _   |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series |   | _      |     |
|  | ≤24V                                    | Α      | 15  |
|  | 48V                                     | Α      | 13  |
|  | 75V                                     | Α      | 13  |
|  | 110V                                    | Α      | 8   |
|  | 220V                                    | Α      | 2   |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series |   |        |     |
|  | ≤24V                                    | Α      | 18  |
|  | 48V                                     | Α      | 18  |
|  | 75V                                     | Α      | 16  |
|  | 110V                                    | Α      | 12  |
|  | 220V                                    | A      | 6   |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | 220 V                                   |        | 0   |
| TEC max current le in DC3-DC3 with E/N = 13ms with 4 poles in series | ≤24V                                    | Α      | 18  |
|  | ≤24 V<br>48 V                           |        |     |
|  |   | Α      | 18  |
|  | 75V                                     | A      | 16  |
|  | 110V                                    | Α      | 13  |
|  | 220V                                    | Α      | 8   |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |   | Α      | 200 |
| Protection fuse  |   |        |     |
|  | gG (IEC)                                | Α      | 32  |
|  | aM (IEC)                                | Α      | 20  |
| Making capacity (RMS value)  |   | Α      | 180 |
| Breaking capacity at voltage   |   |        |     |
|  | 440V                                    | Α      | 144 |
|  | 500V                                    | Α      | 120 |
|  | 690V                                    | Α      | 94  |
| Resistance per pole (average value)                                  | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | mΩ     | 2.5 |
| Power dissipation per pole (average value)                           |   | 22     | 2.0 |
|  | Ith                                     | W      | 2.6 |
|  | AC3                                     | W      | 0.8 |
| Tightoning targue for terminals                                      | A03                                     | V V    | 0.0 |
| Tightening torque for terminals                                      |   | N I.a. | 1 E |
|  | min                                     | Nm     | 1.5 |
|  | max                                     | Nm     | 1.8 |
|  | min                                     | lbin   | 1.1 |
|  | max                                     | Ibin   | 1.5 |
| Tightening torque for coil terminal                                  |   |        |     |
|  | min                                     | Nm     | 0.8 |
|  | max                                     | Nm     | 1   |
|  | min                                     | lbin   | 0.8 |
|  |   |        |     |



| NA   | simultan annah anna atab la                         | max   | Ibin                                      | 0.74  |
|--|---|---|---|---|
|  | simultaneously connectable                          |   | Nr.                                       | 2   |
| Conductor section  | A)A(O///: I   |   |   |   |
|  | AWG/Kcmil   | may   |   | 10  |
|  | Flovible w/e lug conductor coetien                  | max   |   | 10  |
|  | Flexible w/o lug conductor section                  | min   | mm²                                       | 1   |
|  |   | max   | mm²                                       | 6   |
|  | Flexible c/w lug conductor section                  | max   | 111111                                    | 0   |
|  | Trexible 6/W lug contactor section                  | min   | mm²                                       | 1   |
|  |   | max   | mm²                                       | 4   |
|  | Flexible with insulated spade lug conductor section | max   |   | •   |
|  | r ionicio minimosicios operas lag conductor cocion  | min   | mm²                                       | 1   |
|  |   | max   | mm²                                       | 4   |
|  |   |   |   | IP20 when   |
| Power terminal prote   | ction according to IEC/EN 60529                     |   |   | properly wired  |
| Mechanical features  |   |   |   |   |
| Operating position   |   |   |   |   |
|  |   | normal  |   | Vertical plan   |
|  |   | allowable   |   | ±30°  |
| Fixing   |   |   |   | Screw / DIN rail  |
|  |   |   |   | 35mm  |
| Weight   |   |   | g   | 364   |
| Conductor section  |   |   |   |   |
|  | AWG/kcmil conductor section                         |   |   |   |
|  |   |   |   |   |
|  |   | max   |   | 10  |
| ·  | racteristics  | max   | ^   |   |
| Thermal current Ith  |   | max   | A   | 10  |
| Thermal current Ith<br>IEC/EN 60947-5-1 de   | esignation  | max   | A   |   |
| Thermal current Ith<br>IEC/EN 60947-5-1 de   | esignation  |   |   | 10<br>A600 - P600   |
| Auxiliary contact char<br>Thermal current Ith<br>IEC/EN 60947-5-1 de<br>Operating current AC   | esignation  | 230V  | A   | 10<br>A600 - P600   |
| Thermal current Ith<br>IEC/EN 60947-5-1 de   | esignation  | 230V<br>400V  | A<br>A                                    | 10<br>A600 - P600<br>3<br>1.9   |
| Thermal current Ith<br>IEC/EN 60947-5-1 de<br>Operating current AC   | esignation<br>:15                                   | 230V  | A   | 10<br>A600 - P600   |
| Thermal current Ith<br>IEC/EN 60947-5-1 de<br>Operating current AC   | esignation<br>:15                                   | 230V<br>400V<br>500V  | A<br>A<br>A                               | 10<br>A600 - P600<br>3<br>1.9<br>1.4  |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC  | esignation<br>:15                                   | 230V<br>400V  | A<br>A                                    | 10<br>A600 - P600<br>3<br>1.9   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC  | esignation<br>:15                                   | 230V<br>400V<br>500V  | A<br>A<br>A                               | 10<br>A600 - P600<br>3<br>1.9<br>1.4  |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC  | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V  | A<br>A<br>A                               | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7   |
| Thermal current lth IEC/EN 60947-5-1 do Operating current AC Operating current DC  | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V  | A<br>A<br>A<br>A                          | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7  |
| Thermal current lth IEC/EN 60947-5-1 do Operating current AC Operating current DC  | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V                                 | A<br>A<br>A<br>A<br>A                     | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3  |
| Thermal current lth IEC/EN 60947-5-1 do Operating current AC Operating current DC  | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V                         | A<br>A<br>A<br>A<br>A                     | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC  | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A<br>A<br>A                | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1                                       |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC  | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A                           | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55                               |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC   | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A<br>A<br>A                | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1                                       |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC  | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A           | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2                        |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC  | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2                        |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC Operating current DC Electrical life                          | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A           | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2                        |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data                     | esignation<br>212<br>213                            | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2                        |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data                     | esignation<br>:15                                   | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2                        |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data                     | esignation 212 213 10d according to EN/ISO 13489-1  | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B | esignation 212 213 10d according to EN/ISO 13489-1  | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | 10 A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 1600000                               |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B | esignation 212 213 10d according to EN/ISO 13489-1  | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000 |



| Rated AC voltage at   |   |   | V                                      | 48   |
|---|---|---|--|--|
| AC operating voltage  |   |   |  |  |
|   | of 50/60Hz coil powered at 50Hz   |   |  |  |
|   | pick-up   |   |  |  |
|   |   | min   | %Us                                    | 80   |
|   | L   | max   | %Us                                    | 110  |
|   | drop-out  |   | 0/11-                                  | 00   |
|   |   | min   | %Us                                    | 20   |
|   | of FO/COLLE coil novement of COLLE  | max   | %Us                                    | 55   |
|   | of 50/60Hz coil powered at 60Hz   |   |  |  |
|   | pick-up   | min   | %Us                                    | 85   |
|   |   | max   | %Us                                    | 110  |
|   | drop-out  | Illax   | /005                                   | 110  |
|   | diop-out  | min   | %Us                                    | 20   |
|   |   | max   | %Us                                    | 55   |
| C average coil cons   | sumption at 20°C  | max   | 7000                                   |  |
| a average con cons  | of 50/60Hz coil powered at 50Hz   |   |  |  |
|   | 51 50/001 12 6011 powered at 501 12   | in-rush   | VA                                     | 75   |
|   |   | holding   | VA                                     | 9  |
|   | of 50/60Hz coil powered at 60Hz   | neiding   | */ 1                                   |  |
|   | 01 00,001 12 0011 powerou at 001 12   | in-rush   | VA                                     | 70   |
|   |   | holding   | VA                                     | 6.5  |
|   | of 60Hz coil powered at 60Hz  | 3   |  |  |
|   | 1   | in-rush   | VA                                     | 75   |
|   |   | holding   | VA                                     | 9  |
| Dissipation at holding  | 1 < 20°C 50Hz   |   | W                                      | 2.5  |
|   | 1 -20 0 001 12  |   | v v                                    |  |
| Max cycles frequency  |   |   | VV                                     | 2.0  |
| Max cycles frequency<br>Mechanical operation  | /   |   | cycles/h                               |  |
| /lechanical operation   | /   |   |  |  |
| Mechanical operation Operating times  | /   |   |  |  |
| Mechanical operation Operating times  | /   |   |  |  |
| Mechanical operation Operating times  | control   |   | cycles/h                               | 3600   |
| Mechanical operation Operating times  | control<br>in AC  | )<br>min  | cycles/h<br>ms                         | 3600   |
| Mechanical operation Operating times  | control<br>in AC<br>Closing NC  | min<br>max  | cycles/h                               | 3600   |
| Mechanical operation Operating times  | control<br>in AC  | min<br>max<br>O   | cycles/h<br>ms<br>ms                   | 3600<br>8<br>24                                    |
| Mechanical operation Operating times  | control<br>in AC<br>Closing NC  | min<br>max<br>O<br>min  | cycles/h  ms  ms  ms                   | 3600<br>8<br>24<br>10                              |
| Mechanical operation Operating times  | control in AC Closing NC Opening No   | min<br>max<br>O<br>min<br>max   | cycles/h<br>ms<br>ms                   | 3600<br>8<br>24                                    |
| Mechanical operation Operating times  | control<br>in AC<br>Closing NC  | min<br>max<br>O<br>min<br>max   | cycles/h  ms  ms  ms  ms               | 3600<br>8<br>24<br>10<br>20                        |
| Mechanical operation Operating times  | control in AC Closing NC Opening No   | min max O min max c min max c min                                     | ms<br>ms<br>ms<br>ms<br>ms             | 3600<br>8<br>24<br>10<br>20                        |
| Mechanical operation Operating times  | control in AC Closing NC Opening NC   | min max O min max c min max c min max                                 | cycles/h  ms  ms  ms  ms               | 3600<br>8<br>24<br>10<br>20                        |
|   | control in AC Closing NC Opening No   | min max  O min max  c min max  C                                      | ms<br>ms<br>ms<br>ms<br>ms             | 3600<br>8<br>24<br>10<br>20<br>14<br>28            |
| Mechanical operation Operating times  | control in AC Closing NC Opening NC   | min max O min max C min max C min                                     | ms<br>ms<br>ms<br>ms<br>ms<br>ms       | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7       |
| Mechanical operation Derating times Everage time for Us o   | control in AC Closing NC Opening NC   | min max  O min max  c min max  C                                      | ms<br>ms<br>ms<br>ms<br>ms             | 3600<br>8<br>24<br>10<br>20<br>14<br>28            |
| Mechanical operation Dperating times Average time for Us of   | control in AC Closing NC Opening NC Closing NC  | min max O min max C min max C min                                     | ms<br>ms<br>ms<br>ms<br>ms<br>ms       | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7       |
| Mechanical operation Dperating times Average time for Us of   | control in AC Closing NC Opening NC   | min max O min max C min max C min max C                               | ms<br>ms<br>ms<br>ms<br>ms<br>ms       | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Operating times Average time for Us of   | control in AC Closing NC Opening NC Closing NC  | min max O min max C min max C min max C at 480V                       | ms<br>ms<br>ms<br>ms<br>ms<br>ms<br>ms | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Dperating times Average time for Us of  JL technical data Full-load current (FLA | control in AC Closing NC Opening NC Closing NC Closing NC Opening Nc Opening Nc   | min max O min max C min max C min max C                               | ms<br>ms<br>ms<br>ms<br>ms<br>ms       | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Dperating times Average time for Us of   | control in AC  Closing NC  Opening NC  Closing NC  Closing NC  Opening Nc  Opening Nc  A) for three-phase AC motor  | min max O min max C min max C min max C at 480V                       | ms<br>ms<br>ms<br>ms<br>ms<br>ms<br>ms | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Dperating times Average time for Us of JL technical data Full-load current (FLA  | control in AC Closing NC Opening NC Closing NC Closing NC Opening Nc Opening Nc   | min max  min max  min max  min max  min max  at 480V at 600V          | ms<br>ms<br>ms<br>ms<br>ms<br>ms<br>ms | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Dperating times Average time for Us of  JL technical data Full-load current (FLA | control in AC  Closing NC  Opening NC  Closing NC  Closing NC  Opening Nc  Opening Nc  A) for three-phase AC motor  | min max  min max  min max  min max  min max  min max  at 480V at 600V | ms ms ms ms ms A A                     | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Dperating times Average time for Us of JL technical data Full-load current (FLA  | control in AC  Closing NC  Opening NC  Closing NC  Closing NC  Opening NC  Opening NC  A) for three-phase AC motor  Derformance for single-phase AC motor | min max  min max  min max  min max  min max  at 480V at 600V          | ms<br>ms<br>ms<br>ms<br>ms<br>ms<br>ms | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Mechanical operation Dperating times Average time for Us of JL technical data Full-load current (FLA  | control in AC  Closing NC  Opening NC  Closing NC  Closing NC  Opening Nc  Opening Nc  A) for three-phase AC motor  | min max  min max  min max  min max  min max  min max  at 480V at 600V | ms ms ms ms ms A A                     | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |

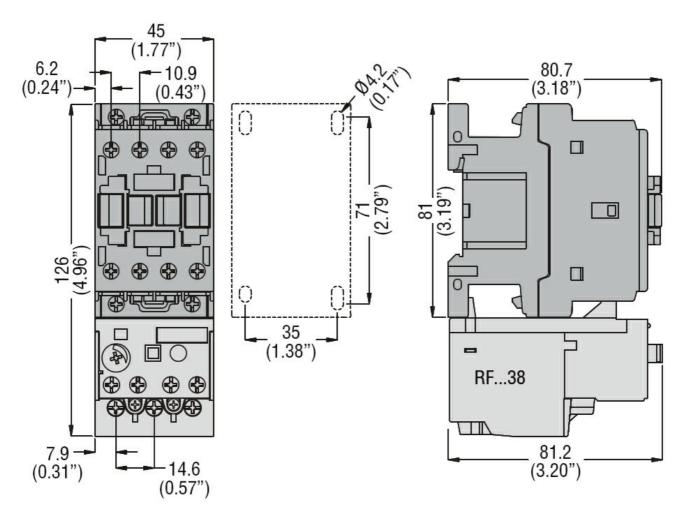




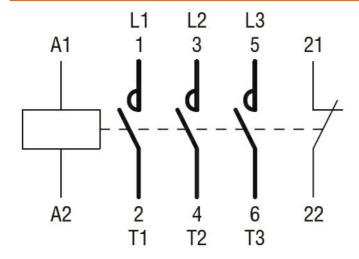
|                       |                                   | 220/230V              | HP | 5           |
|-----------------------|-----------------------------------|-----------------------|----|-------------|
|                       |                                   | 460/480V              | HP | 10          |
|                       |                                   | 575/600V              | HP | 15          |
| General USE           |                                   |                       |    |             |
|                       | Contactor                         |                       |    |             |
|                       |                                   | AC current            | Α  | 32          |
|                       | Auxiliary contacts                |                       |    |             |
|                       |                                   | AC voltage            | V  | 600         |
|                       |                                   | AC current            | Α  | 10          |
|                       |                                   | DC voltage            | V  | 250         |
|                       |                                   | DC current            | Α  | 1           |
| Short-circuit protect | tion fuse, 600V                   |                       |    |             |
|                       | High fault                        |                       |    |             |
|                       | · ·                               | Short circuit current | kA | 100         |
|                       |                                   | Fuse rating           | Α  | 60          |
|                       |                                   | Fuse class            |    | J           |
|                       | Standard fault                    |                       |    |             |
|                       |                                   | Short circuit current | kA | 5           |
|                       |                                   | Fuse rating           | Α  | 80          |
| Contact rating of au  | ixiliary 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 & Prote    | ection                            |                       |    |             |
| Pollution degree      |                                   |                       |    | 3           |
| Dimensions            |                                   |                       |    |             |
|                       |                                   |                       |    |             |

**ENERGY AND AUTOMATION** 

### THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 48VAC, 1NC AUXILIARY CONTACT



### 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



#### BF1801A048

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 48VAC, 1NC AUXILIARY CONTACT

| CCC   |  |  |
|-------|--|--|
| cULus |  |  |
| EAC   |  |  |

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching







| Product designation   |                    |     | Power contactor |
|---|--------------------|-----|-----------------|
| Product type designation  |                    |     | BF18            |
| Contact characteristics   |                    |     |                 |
| Number of poles   |                    | Nr. | 3               |
| Rated insulation voltage Ui IEC/EN  |                    | V   | 690             |
| Rated impulse withstand voltage Uimp  |                    | kV  | 6               |
| Operational frequency   |                    |     | <del>-</del>    |
| .,,   | min                | Hz  | 25              |
|   | max                | Hz  | 400             |
| IEC Conventional free air thermal current Ith   |                    | Α   | 32              |
| Operational current le  |                    |     | <del>-</del>    |
|   | AC-1 (≤40°C)       | Α   | 32              |
|   | AC-1 (≤55°C)       | Α   | 26              |
|   | AC-1 (≤70°C)       | Α   | 23              |
|   | AC-3 (≤440V ≤55°C) | Α   | 18              |
|   | AC-4 (400V)        | Α   | 8.5             |
| Rated operational power AC-3 (T≤55°C)   | 7.0 . ()           |     |                 |
| Training of the second of the | 230V               | kW  | 4               |
|   | 400V               | kW  | 7.5             |
|   | 415V               | kW  | 9               |
|   | 440V               | kW  | 9               |
|   | 500V               | kW  | 10              |
|   | 690V               | kW  | 10              |
| Rated operational power AC-1 (T≤40°C)   |                    |     |                 |
| Traise sporasonal power (1210 c)  | 230V               | kW  | 12              |
|   | 400V               | kW  | 21              |
|   | 500V               | kW  | 26              |
|   | 690V               | kW  | 36              |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series   |                    |     |                 |
| TEC MAX can six to in ECT man ETC = time man + police in conse  | ≤24V               | Α   | 17              |
|   | 48V                | Α   | 15              |
|   | 75V                | A   | 15              |
|   | 110V               | Α   | 6               |
|   | 220V               | Α   | _               |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series   |                    |     |                 |
|   | ≤24V               | Α   | 20              |
|   | 48V                | A   | 20              |
|   | 75V                | Α   | 20              |
|   | 110V               | Α   | 13              |
|   | 220V               | Α   | 1               |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series   |                    |     | •               |
| can one to in Bo t mai bit = mio mai o poloo iii dolloo   | ≤24V               | Α   | 22              |
|   | 48V                | A   | 22              |
|   | 75V                | A   | 20              |
|   | 110V               | A   | 16              |
|   | 1100               | ^   | 10              |





| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series  IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | 220V<br>≤24V<br>48V<br>75V<br>110V<br>220V | A<br>A<br>A | 22<br>22<br>22 |
|---|--|-------------|----------------|
|   | 48V<br>75V<br>110V                         | Α           | 22             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 48V<br>75V<br>110V                         | Α           | 22             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 75V<br>110V                                |             |                |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 110V                                       | Α           | 20             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |  |             | 20             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 220V                                       | Α           | 18             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |  | Α           | 13             |
|   |  |             |                |
|   | ≤24V                                       | Α           | 12             |
|   | 48V  | Α           | 11             |
|   | 75V  | Α           | 11             |
|   | 110V                                       | Α           | 2              |
|   | 220V                                       | Α           | _              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series  |  |             |                |
|   | ≤24V                                       | Α           | 15             |
|   | 48V  | Α           | 13             |
|   | 75V  | Α           | 13             |
|   | 110V                                       | Α           | 8              |
|   | 220V                                       | Α           | 2              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series  |  |             |                |
| · ·   | ≤24V                                       | Α           | 18             |
|   | 48V  | Α           | 18             |
|   | 75V  | Α           | 16             |
|   | 110V                                       | Α           | 12             |
|   | 220V                                       | Α           | 6              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series  | 2201                                       | ,,          |                |
| 120 max canonic to in 200 200 mai 2/1/2 folio with 1 poloo in conco   | ≤24V                                       | Α           | 18             |
|   | 48V  | Α           | 18             |
|   | 75V  | A           | 16             |
|   | 110V                                       | A           | 13             |
|   | 220V                                       | A           | 8              |
| Short-time allowable current for 10s (IEC/EN60947-1)  | 2201                                       | A           | 200            |
| Protection fuse   |  |             |                |
| 1 Totalian Tuda   | gG (IEC)                                   | Α           | 32             |
|   | aM (IEC)                                   | A           | 20             |
| Making capacity (RMS value)   | aivi (ILO)                                 | A           | 180            |
| Breaking capacity (NWS value)   |  |             | 100            |
| Broaking dapaoity at voltage  | 440V                                       | Α           | 144            |
|   | 500V                                       | A           | 120            |
|   | 690V                                       | A           | 94             |
| Desigtance per pela (average value)   | 090 V                                      |             | 2.5            |
| Resistance per pole (average value)   |  | mΩ          | 2.5            |
| Power dissipation per pole (average value)  | 141  | 147         | 2.0            |
|   | Ith  | W           | 2.6            |
| Tightoning to serve for to recipal:   | AC3  | W           | 0.8            |
| Tightening torque for terminals   |  | N.I.        | 4.5            |
|   | min  | Nm          | 1.5            |
|   | max  | Nm          | 1.8            |
|   | min  | Ibin        | 1.1            |
| <del></del>   | max  | Ibin        | 1.5            |
| Tightening torque for coil terminal   |  |             |                |
|   | min  | Nm          | 0.8            |
|   |  |             |                |
|   | max<br>min                                 | Nm<br>Ibin  | 1<br>0.8       |





|  |  | max   | Ibin                                      | 0.74  |
|--|--|---|---|---|
|  | simultaneously connectable                           |   | Nr.                                       | 2   |
| Conductor section  | A1440/44 11  |   |   |   |
|  | AWG/Kcmil  |   |   | 40  |
|  | Clavible w/s has senductor costion                   | max   |   | 10  |
|  | Flexible w/o lug conductor section                   | min   | mm²                                       | 1   |
|  |  | min   | mm²<br>mm²                                | 1<br>6  |
|  | Flexible c/w lug conductor section                   | max   | 111111                                    | 0   |
|  | r lexible 6/w rug conductor section                  | min   | mm²                                       | 1   |
|  |  | max   | mm²                                       | 4   |
|  | Flexible with insulated spade lug conductor section  |   |   | •   |
|  | r loxiloto mar modilatos opaso lag contactor cocacin | min   | mm²                                       | 1   |
|  |  | max   | mm²                                       | 4   |
| D  | (''  |   |   | IP20 when   |
| Power terminal protect   | tion according to IEC/EN 60529                       |   |   | properly wired  |
| Mechanical features  |  |   |   |   |
| Operating position   |  |   |   |   |
|  |  | normal  |   | Vertical plan   |
|  |  | allowable   |   | ±30°  |
| Fixing   |  |   |   | Screw / DIN rail  |
|  |  |   |   | 35mm  |
| Weight   |  |   | g   | 358   |
| Conductor section  |  |   |   |   |
|  | AWG/kcmil conductor section                          |   |   |   |
| A 111 A 1  |  | max   |   | 10  |
| IALIVIIIary contact chara  | ACTAPISTICS  |   |   |   |
| Auxiliary contact chara  | 20101101100  |   | ۸   | 10  |
| Thermal current Ith  |  |   | Α   | 10<br>4600 B600   |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  |   | Α   | 10<br>A600 - P600   |
| ·  | signation  | 2301/   |   | A600 - P600   |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  | 230V<br>400V  | A   | A600 - P600<br>3  |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  | 400V  | A<br>A                                    | A600 - P600<br>3<br>1.9   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1  | signation<br>15                                      |   | A   | A600 - P600<br>3  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1  | signation<br>15                                      | 400V<br>500V  | A<br>A<br>A                               | 3<br>1.9<br>1.4   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V  | A<br>A                                    | A600 - P600<br>3<br>1.9   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V<br>110V  | A<br>A<br>A                               | 3<br>1.9<br>1.4<br>5.7  |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V  | A<br>A<br>A                               | 3<br>1.9<br>1.4   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V   | A<br>A<br>A                               | A600 - P600<br>3<br>1.9<br>1.4<br>5.7   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V  | A<br>A<br>A<br>A                          | A600 - P600  3 1.9 1.4  5.7  5.7 2.9  |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V                                 | A<br>A<br>A<br>A<br>A                     | 3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3   |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A                     | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25   |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC   | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A<br>A<br>A                | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1   |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A           | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC   | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3 Operations Mechanical life Electrical life   | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A           | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data   | signation 15 12 13                                   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data   | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 16000000                     |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data   | signation 15 12 13 Od according to EN/ISO 13489-1    | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000                      |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1                            | signation  12  13  Od according to EN/ISO 13489-1    | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 1600000              |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3 Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accordi | signation 15 12 13 Od according to EN/ISO 13489-1    | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 1600000 20000000 yes |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1                            | signation  12  13  Od according to EN/ISO 13489-1    | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 1600000              |



| Rated AC voltage at 5   | 50/60Hz  |  | V                                | 110  |
|---|--|--|----------------------------------|--|
| AC operating voltage  |  |  | <u> </u>                         |  |
|   | of 50/60Hz coil powered at 50Hz  |  |                                  |  |
|   | pick-up  |  |                                  |  |
|   |  | min  | %Us                              | 80   |
|   |  | max  | %Us                              | 110  |
|   | drop-out   |  | 0/11-                            | 0.0  |
|   |  | min  | %Us<br>%Us                       | 20<br>55                                   |
|   | of 50/60Hz coil powered at 60Hz  | max  | 7008                             | 33   |
|   | pick-up  |  |                                  |  |
|   | pion ap  | min  | %Us                              | 85   |
|   |  | max  | %Us                              | 110  |
|   | drop-out   |  |                                  |  |
|   |  | min  | %Us                              | 20   |
|   |  | max  | %Us                              | 55   |
| AC average coil cons  | •  |  |                                  |  |
|   | of 50/60Hz coil powered at 50Hz  |  |                                  |  |
|   |  | in-rush  | VA                               | 75   |
|   | (TO/0011 III III III III III III III III III   | holding  | VA                               | 9  |
|   | of 50/60Hz coil powered at 60Hz  | in much  | \                                | 70   |
|   |  | in-rush<br>holding   | VA<br>VA                         | 70<br>6.5                                  |
|   | of 60Hz coil powered at 60Hz   | Holding  | VA                               | 0.5  |
|   | or our iz con powered at our iz  | in-rush  | VA                               | 75   |
|   |  | holding  | VA                               | 9  |
| Dissipation at holding  | ≤20°C 50Hz   | 3  | W                                | 2.5  |
| Max cycles frequency  |  |  |                                  |  |
|   |  |  |                                  |  |
| Mechanical operation  |  |  | cycles/h                         | 3600                                       |
| Operating times   |  |  | cycles/h                         | 3600                                       |
|   | ontrol   |  | cycles/h                         | 3600                                       |
| Operating times   | ontrol<br>in AC  |  | cycles/h                         | 3600                                       |
| Operating times   | ontrol   |  |                                  |  |
| Operating times   | ontrol<br>in AC  | min  | ms                               | 8  |
| Operating times   | ontrol<br>in AC<br>Closing NO  | min<br>max   |                                  |  |
| Operating times   | ontrol<br>in AC  | min<br>max<br>O  | ms<br>ms                         | 8<br>24                                    |
| Operating times   | ontrol<br>in AC<br>Closing NO  | min<br>max   | ms                               | 8  |
| Operating times   | ontrol<br>in AC<br>Closing NO  | min<br>max<br>O<br>min                                       | ms<br>ms                         | 8<br>24<br>10                              |
| Operating times   | ontrol in AC Closing NO Opening NO   | min<br>max<br>O<br>min                                       | ms<br>ms                         | 8<br>24<br>10                              |
| Operating times   | ontrol in AC Closing NO Opening NO Closing NC  | min<br>max<br>O<br>min<br>max<br>min<br>max                  | ms<br>ms<br>ms                   | 8<br>24<br>10<br>20                        |
| Operating times   | ontrol in AC Closing NO Opening NO   | min max  min max  min max  min max                           | ms<br>ms<br>ms<br>ms             | 8<br>24<br>10<br>20<br>14<br>28            |
| Operating times   | ontrol in AC Closing NO Opening NO Closing NC  | min max  min max  min max  min max  min max  min max         | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28            |
| Operating times Average time for Us of  | ontrol in AC Closing NO Opening NO Closing NC  | min max  min max  min max  min max                           | ms<br>ms<br>ms<br>ms             | 8<br>24<br>10<br>20<br>14<br>28            |
| Operating times Average time for Us of the control | ontrol in AC Closing NO Opening NO Closing NC Opening NC   | min max  min max  min max  min max  min max  min max         | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28            |
| Operating times Average time for Us of the control | ontrol in AC Closing NO Opening NO Closing NC  | min max  min max  min max  min max  min max  max             | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Operating times Average time for Us of the control | ontrol in AC Closing NO Opening NO Closing NC Opening NC   | min max  min max  min max  min max  min max  at 480V         | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Operating times Average time for Us of the control | ontrol in AC Closing NO Opening NO Closing NO Opening NO Opening NO Opening NO   | min max  min max  min max  min max  min max  max             | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Operating times Average time for Us of the control | ontrol in AC Closing NO Opening NO Closing NC Opening NO Opening NO Opening NO Opening NO Opening NO Opening NO  | min max  min max  min max  min max  min max  at 480V         | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Operating times Average time for Us of the control | ontrol in AC Closing NO Opening NO Closing NO Opening NO Opening NO Opening NO   | min max  min max  min max  min max  min max  at 480V         | ms<br>ms<br>ms<br>ms<br>ms       | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Operating times Average time for Us of the control | ontrol in AC Closing NO Opening NO Closing NC Opening NO Opening NO Opening NO Opening NO Opening NO Opening NO  | min max  min max  min max  min max  min max  at 480V at 600V | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Operating times Average time for Us of the control | ontrol in AC Closing NO Opening NO Closing NC Opening NO Opening NO Opening NO Opening NO Opening NO Opening NO  | min max  min max  min max  min max  min max  at 480V at 600V | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Operating times Average time for Us of the control | ontrol in AC  Closing NO  Opening NO  Closing NO  Opening NO | min max  min max  min max  min max  min max  at 480V at 600V | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |

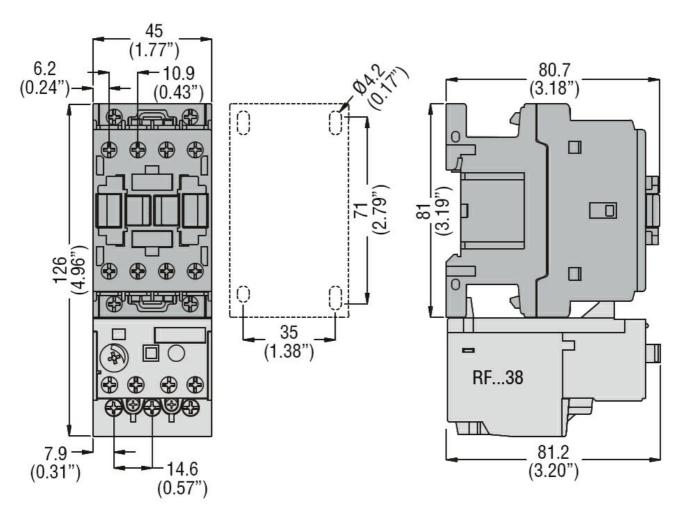




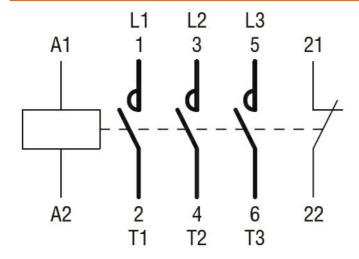
|                       |                                   | 220/230V              | HP | 5           |
|-----------------------|-----------------------------------|-----------------------|----|-------------|
|                       |                                   | 460/480V              | HP | 10          |
|                       |                                   | 575/600V              | HP | 15          |
| General USE           |                                   |                       |    |             |
|                       | Contactor                         |                       |    |             |
|                       |                                   | AC current            | Α  | 32          |
|                       | Auxiliary contacts                |                       |    |             |
|                       |                                   | AC voltage            | V  | 600         |
|                       |                                   | AC current            | Α  | 10          |
|                       |                                   | DC voltage            | V  | 250         |
|                       |                                   | DC current            | Α  | 1           |
| Short-circuit protect | tion fuse, 600V                   |                       |    |             |
|                       | High fault                        |                       |    |             |
|                       | · ·                               | Short circuit current | kA | 100         |
|                       |                                   | Fuse rating           | Α  | 60          |
|                       |                                   | Fuse class            |    | J           |
|                       | Standard fault                    |                       |    |             |
|                       |                                   | Short circuit current | kA | 5           |
|                       |                                   | Fuse rating           | Α  | 80          |
| Contact rating of au  | ixiliary 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 & Prote    | ection                            |                       |    |             |
| Pollution degree      |                                   |                       |    | 3           |
| Dimensions            |                                   |                       |    |             |
|                       |                                   |                       |    |             |

**ENERGY AND AUTOMATION** 

### THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 110VAC, 1NC AUXILIARY CONTACT



### 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



#### BF1801A110

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 110VAC, 1NC AUXILIARY CONTACT

| CCC   |  |  |
|-------|--|--|
| cULus |  |  |
| EAC   |  |  |

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching





|   |                    |     | •               |
|---|--------------------|-----|-----------------|
| Product designation   |                    |     | Power contactor |
| Product type designation  |                    |     | BF18            |
| Contact characteristics   |                    |     |                 |
| Number of poles   |                    | Nr. | 3               |
| Rated insulation voltage Ui IEC/EN                              |                    | V   | 690             |
| Rated impulse withstand voltage Uimp                            |                    | kV  | 6               |
| Operational frequency   |                    |     |                 |
|   | min                | Hz  | 25              |
|   | max                | Hz  | 400             |
| IEC Conventional free air thermal current Ith                   |                    | Α   | 32              |
| Operational current le  |                    |     |                 |
|   | AC-1 (≤40°C)       | Α   | 32              |
|   | AC-1 (≤55°C)       | Α   | 26              |
|   | AC-1 (≤70°C)       | Α   | 23              |
|   | AC-3 (≤440V ≤55°C) | Α   | 18              |
|   | AC-4 (400V)        | Α   | 8.5             |
| Rated operational power AC-3 (T≤55°C)                           |                    |     |                 |
|   | 230V               | kW  | 4               |
|   | 400V               | kW  | 7.5             |
|   | 415V               | kW  | 9               |
|   | 440V               | kW  | 9               |
|   | 500V               | kW  | 10              |
|   | 690V               | kW  | 10              |
| Rated operational power AC-1 (T≤40°C)                           |                    |     |                 |
|   | 230V               | kW  | 12              |
|   | 400V               | kW  | 21              |
|   | 500V               | kW  | 26              |
|   | 690V               | kW  | 36              |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series |                    |     |                 |
|   | ≤24V               | Α   | 17              |
|   | 48V                | Α   | 15              |
|   | 75V                | Α   | 15              |
|   | 110V               | Α   | 6               |
|   | 220V               | Α   | _               |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series |                    |     |                 |
|   | ≤24V               | Α   | 20              |
|   | 48V                | Α   | 20              |
|   | 75V                | Α   | 20              |
|   | 110V               | Α   | 13              |
|   | 220V               | Α   | 1               |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series |                    |     |                 |
|   | ≤24V               | Α   | 22              |
|   | 48V                | Α   | 22              |
|   | 75V                | Α   | 20              |
|   | 110V               | Α   | 16              |
|   |                    |     |                 |



|  | 220V          | Α     | 11       |
|--|---------------|-------|----------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series      |               |       |          |
|  | ≤24V          | Α     | 22       |
|  | 48V           | Α     | 22       |
|  | 75V           | Α     | 20       |
|  | 110V          | Α     | 18       |
|  | 220V          | Α     | 13       |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |               |       |          |
| ·  | ≤24V          | Α     | 12       |
|  | 48V           | Α     | 11       |
|  | 75V           | Α     | 11       |
|  | 110V          | Α     | 2        |
|  | 220V          | A     | <u>-</u> |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | 220 V         |       |          |
| The max current le in boo-boo with bit 2 followith 2 poles in series | ≤24V          | Α     | 15       |
|  | 48V           | A     | 13       |
|  | 46 V<br>75 V  |       |          |
|  |               | A     | 13       |
|  | 110V          | A     | 8        |
| 150  | 220V          | A     | 2        |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | . <del></del> |       | 4.0      |
|  | ≤24V          | A     | 18       |
|  | 48V           | Α     | 18       |
|  | 75V           | Α     | 16       |
|  | 110V          | Α     | 12       |
|  | 220V          | Α     | 6        |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series |               |       |          |
|  | ≤24V          | Α     | 18       |
|  | 48V           | Α     | 18       |
|  | 75V           | Α     | 16       |
|  | 110V          | Α     | 13       |
|  | 220V          | Α     | 8        |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |               | Α     | 200      |
| Protection fuse  |               |       |          |
|  | gG (IEC)      | Α     | 32       |
|  | aM (IEC)      | Α     | 20       |
| Making capacity (RMS value)  | , ,           | Α     | 180      |
| Breaking capacity at voltage   |               |       |          |
|  | 440V          | Α     | 144      |
|  | 500V          | A     | 120      |
|  | 690V          | A     | 94       |
| Resistance per note (average value)                                  | 090 v         | mΩ    | 2.5      |
| Resistance per pole (average value)                                  |               | 11177 | ۷.ن      |
| Power dissipation per pole (average value)                           | 141           | 107   | 2.0      |
|  | Ith           | W     | 2.6      |
| Till to die to en a forte estado                                     | AC3           | W     | 0.8      |
| Tightening torque for terminals                                      |               |       | 4.5      |
|  | min           | Nm    | 1.5      |
|  | max           | Nm    | 1.8      |
|  | min           | Ibin  | 1.1      |
|  | max           | Ibin  | 1.5      |
| Tightening torque for coil terminal                                  |               |       |          |
|  | min           | Nm    | 0.8      |
|  | max           | Nm    | 1        |
|  | min           | Ibin  | 0.8      |
|  |               |       |          |



|  |  | max   | Ibin                                      | 0.74  |
|--|--|---|---|---|
|  | simultaneously connectable                           |   | Nr.                                       | 2   |
| Conductor section  | A1440/44 11  |   |   |   |
|  | AWG/Kcmil  |   |   | 40  |
|  | Clavible w/s has senductor costion                   | max   |   | 10  |
|  | Flexible w/o lug conductor section                   | min   | mm²                                       | 1   |
|  |  | min   | mm²<br>mm²                                | 1<br>6  |
|  | Flexible c/w lug conductor section                   | max   | 111111                                    | 0   |
|  | r lexible 6/w rug conductor section                  | min   | mm²                                       | 1   |
|  |  | max   | mm²                                       | 4   |
|  | Flexible with insulated spade lug conductor section  |   |   | •   |
|  | r loxiloto mar modilatos opaso lag contactor cocacin | min   | mm²                                       | 1   |
|  |  | max   | mm²                                       | 4   |
| D  | (''  |   |   | IP20 when   |
| Power terminal protect   | tion according to IEC/EN 60529                       |   |   | properly wired  |
| Mechanical features  |  |   |   |   |
| Operating position   |  |   |   |   |
|  |  | normal  |   | Vertical plan   |
|  |  | allowable   |   | ±30°  |
| Fixing   |  |   |   | Screw / DIN rail  |
|  |  |   |   | 35mm  |
| Weight   |  |   | g   | 358   |
| Conductor section  |  |   |   |   |
|  | AWG/kcmil conductor section                          |   |   |   |
| A 111 A 1  |  | max   |   | 10  |
| IALIVIIIary contact chara  | ACTAPISTICS  |   |   |   |
| Auxiliary contact chara  | 20101101100  |   | ۸   | 10  |
| Thermal current Ith  |  |   | Α   | 10<br>4600 B600   |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  |   | Α   | 10<br>A600 - P600   |
| ·  | signation  | 2301/   |   | A600 - P600   |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  | 230V<br>400V  | A   | A600 - P600<br>3  |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation  | 400V  | A<br>A                                    | A600 - P600<br>3<br>1.9   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1  | signation<br>15                                      |   | A   | A600 - P600<br>3  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1  | signation<br>15                                      | 400V<br>500V  | A<br>A<br>A                               | 3<br>1.9<br>1.4   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V  | A<br>A                                    | A600 - P600<br>3<br>1.9   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V<br>110V  | A<br>A<br>A                               | 3<br>1.9<br>1.4<br>5.7  |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V  | A<br>A<br>A                               | 3<br>1.9<br>1.4   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V   | A<br>A<br>A                               | A600 - P600<br>3<br>1.9<br>1.4<br>5.7   |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V  | A<br>A<br>A<br>A                          | A600 - P600  3 1.9 1.4  5.7  5.7 2.9  |
| Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V                                 | A<br>A<br>A<br>A<br>A                     | 3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3   |
| Thermal current Ith IEC/EN 60947-5-1 de  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A                     | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25   |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC   | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A<br>A<br>A                | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1   |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3  | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A           | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC   | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3 Operations Mechanical life Electrical life   | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A           | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data   | signation 15 12 13                                   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data   | signation<br>15                                      | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 16000000                     |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data   | signation 15 12 13 Od according to EN/ISO 13489-1    | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000                      |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1                            | signation  12  13  Od according to EN/ISO 13489-1    | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 1600000              |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3 Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accordi | signation 15 12 13 Od according to EN/ISO 13489-1    | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 1600000 20000000 yes |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1                            | signation  12  13  Od according to EN/ISO 13489-1    | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 1600000              |



| Nateu AC voltage a   | t 50/60Hz  |   | V                                | 230  |
|--|--|---|----------------------------------|--|
| C operating voltag   | ge   |   |                                  |  |
|  | of 50/60Hz coil powered at 50Hz  |   |                                  |  |
|  | pick-up  |   |                                  |  |
|  |  | min   | %Us                              | 80   |
|  | dram and   | max   | %Us                              | 110  |
|  | drop-out   |   | 0/116                            | 20   |
|  |  | min   | %Us                              | 20   |
|  | of 50/60Hz coil powered at 60Hz  | max   | %Us                              | 55   |
|  | pick-up  |   |                                  |  |
|  | ріск-ир  | min   | %Us                              | 85   |
|  |  | max   | %Us                              | 110  |
|  | drop-out   | max   | 7003                             | 110  |
|  | diop out   | min   | %Us                              | 20   |
|  |  | max   | %Us                              | 55   |
| C average coil coil  | nsumption at 20°C  |   |                                  |  |
| <b>J J</b>   | of 50/60Hz coil powered at 50Hz  |   |                                  |  |
|  | ,  | in-rush                                       | VA                               | 75   |
|  |  | holding                                       | VA                               | 9  |
|  | of 50/60Hz coil powered at 60Hz  | <u> </u>                                      |                                  |  |
|  | ·  | in-rush                                       | VA                               | 70   |
|  |  | holding                                       | VA                               | 6.5  |
|  | of 60Hz coil powered at 60Hz   |   |                                  |  |
|  |  | in-rush                                       | VA                               | 75   |
|  |  | holding                                       | VA                               | 9  |
| Dissipation at holdir  | na ≤20°C 50Hz  |   | W                                | 2.5  |
|  |  |   | VV                               | 2.0  |
| Max cycles frequen   | cy   |   |                                  |  |
| Max cycles frequen<br>Mechanical operation   | cy   |   | cycles/h                         |  |
| Max cycles frequen Mechanical operation Decrating times  | cy<br>on   |   |                                  |  |
| Max cycles frequen  Mechanical operation  Operating times  | on<br>s control  |   |                                  |  |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | cy<br>on<br>s control<br>in AC   |   |                                  |  |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | on<br>s control  |   | cycles/h                         | 3600   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | cy<br>on<br>s control<br>in AC   | min   | cycles/h                         | 3600   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | cy<br>on<br>s control<br>in AC<br>Closing NO   | min<br>max                                    | cycles/h                         | 3600   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | cy<br>on<br>s control<br>in AC   | max   | cycles/h<br>ms<br>ms             | 3600<br>8<br>24                                    |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | cy<br>on<br>s control<br>in AC<br>Closing NO   | max<br>min                                    | cycles/h  ms  ms  ms             | 3600<br>8<br>24<br>10                              |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | cy on s control in AC Closing NO Opening NO  | max   | cycles/h<br>ms<br>ms             | 3600<br>8<br>24                                    |
| Max cycles frequen Mechanical operation Decrating times  | cy<br>on<br>s control<br>in AC<br>Closing NO   | max<br>min<br>max                             | ms<br>ms<br>ms<br>ms             | 3600<br>8<br>24<br>10<br>20                        |
| Max cycles frequen  Mechanical operation  Operating times  | cy on s control in AC Closing NO Opening NO  | max<br>min<br>max<br>min                      | ms<br>ms<br>ms<br>ms             | 3600<br>8<br>24<br>10<br>20                        |
| Max cycles frequen  Mechanical operation  Operating times  | cy on s control in AC Closing NO Opening NO Closing NC   | max<br>min<br>max                             | ms<br>ms<br>ms<br>ms             | 3600<br>8<br>24<br>10<br>20                        |
| Max cycles frequen   | cy on s control in AC Closing NO Opening NO  | max<br>min<br>max<br>min<br>max               | ms<br>ms<br>ms<br>ms<br>ms       | 3600<br>8<br>24<br>10<br>20<br>14<br>28            |
| Max cycles frequen  Mechanical operation  Operating times  | cy on s control in AC Closing NO Opening NO Closing NC   | max<br>min<br>max<br>min<br>max<br>min        | ms<br>ms<br>ms<br>ms<br>ms       | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7       |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us  | cy on s control in AC Closing NO Opening NO Closing NC   | max<br>min<br>max<br>min<br>max               | ms<br>ms<br>ms<br>ms<br>ms       | 3600<br>8<br>24<br>10<br>20<br>14<br>28            |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>May and the May and the M   | cy on s control in AC  Closing NO  Opening NO  Closing NC  Opening NC                                      | max<br>min<br>max<br>min<br>max<br>min        | ms<br>ms<br>ms<br>ms<br>ms       | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7       |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>May and the May and the M   | cy on s control in AC Closing NO Opening NO Closing NC   | max<br>min<br>max<br>min<br>max<br>min<br>max | ms<br>ms<br>ms<br>ms<br>ms       | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Exverage time for Use<br>May be a second of the May be a second<br>May be a second of the May be a second of | cy on s control in AC  Closing NO  Opening NO  Closing NC  Opening NC                                      | max min max min max at 480V                   | ms ms ms ms ms ms                | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>Average time for Us<br>Tull-load current (Fi  | cy on s control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC                          | max<br>min<br>max<br>min<br>max<br>min<br>max | ms<br>ms<br>ms<br>ms<br>ms<br>ms | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>May and the May and the M   | cy on s control in AC Closing NO Opening NO Closing NC Opening NC Opening NC  LA) for three-phase AC motor | max min max min max at 480V                   | ms ms ms ms ms ms                | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>Average time for Us<br>Tull-load current (Fi  | cy on s control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC                          | max min max min max min max at 480V at 600V   | ms ms ms ms ms ms A              | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>Average time for Us<br>Tull-load current (Fi  | cy on s control in AC Closing NO Opening NO Closing NC Opening NC Opening NC  LA) for three-phase AC motor | max min max min max min max  at 480V at 600V  | ms ms ms ms ms A A               | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Everage time for Use<br>May be a supported to the support of the support   | cy on s control in AC Closing NO Opening NO Closing NC Opening NC Opening NC  LA) for three-phase AC motor | max min max min max min max at 480V at 600V   | ms ms ms ms ms ms A              | 3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |

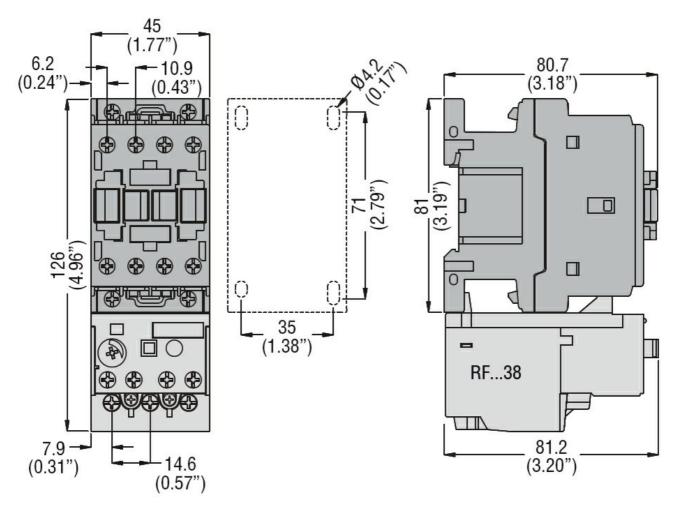




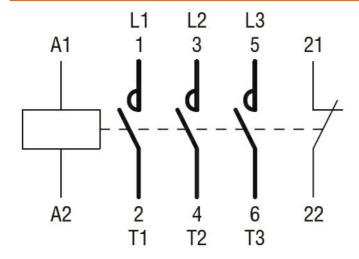
|                       |                                   | 220/230V              | HP | 5           |
|-----------------------|-----------------------------------|-----------------------|----|-------------|
|                       |                                   | 460/480V              | HP | 10          |
|                       |                                   | 575/600V              | HP | 15          |
| General USE           |                                   |                       |    |             |
|                       | Contactor                         |                       |    |             |
|                       |                                   | AC current            | Α  | 32          |
|                       | Auxiliary contacts                |                       |    |             |
|                       |                                   | AC voltage            | V  | 600         |
|                       |                                   | AC current            | Α  | 10          |
|                       |                                   | DC voltage            | V  | 250         |
|                       |                                   | DC current            | Α  | 1           |
| Short-circuit protect | tion fuse, 600V                   |                       |    |             |
|                       | High fault                        |                       |    |             |
|                       | · ·                               | Short circuit current | kA | 100         |
|                       |                                   | Fuse rating           | Α  | 60          |
|                       |                                   | Fuse class            |    | J           |
|                       | Standard fault                    |                       |    |             |
|                       |                                   | Short circuit current | kA | 5           |
|                       |                                   | Fuse rating           | Α  | 80          |
| Contact rating of au  | ixiliary 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 & Prote    | ection                            |                       |    |             |
| Pollution degree      |                                   |                       |    | 3           |
| Dimensions            |                                   |                       |    |             |
|                       |                                   |                       |    |             |

**ENERGY AND AUTOMATION** 

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 230VAC, 1NC AUXILIARY CONTACT



### 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

BF1801A230



#### BF1801A230

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 230VAC, 1NC AUXILIARY CONTACT

| CCC   |  |  |
|-------|--|--|
| cULus |  |  |
| EAC   |  |  |

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching







| Product designation Product type designation                    |                    |     | Power contactor<br>BF18 |
|---|--------------------|-----|-------------------------|
| Contact characteristics   |                    |     |                         |
| Number of poles   |                    | Nr. | 3                       |
| Rated insulation voltage Ui IEC/EN                              |                    | V   | 690                     |
| Rated impulse withstand voltage Uimp                            |                    | kV  | 6                       |
| Operational frequency   |                    |     |                         |
| .,  | min                | Hz  | 25                      |
|   | max                | Hz  | 400                     |
| IEC Conventional free air thermal current Ith                   |                    | Α   | 32                      |
| Operational current le  |                    |     |                         |
|   | AC-1 (≤40°C)       | Α   | 32                      |
|   | AC-1 (≤55°C)       | Α   | 26                      |
|   | AC-1 (≤70°C)       | Α   | 23                      |
|   | AC-3 (≤440V ≤55°C) | Α   | 18                      |
|   | AC-4 (400V)        | Α   | 8.5                     |
| Rated operational power AC-3 (T≤55°C)                           | - ( /              |     |                         |
| 1 1 ( /   | 230V               | kW  | 4                       |
|   | 400V               | kW  | 7.5                     |
|   | 415V               | kW  | 9                       |
|   | 440V               | kW  | 9                       |
|   | 500V               | kW  | 10                      |
|   | 690V               | kW  | 10                      |
| Rated operational power AC-1 (T≤40°C)                           |                    |     | _                       |
|   | 230V               | kW  | 12                      |
|   | 400V               | kW  | 21                      |
|   | 500V               | kW  | 26                      |
|   | 690V               | kW  | 36                      |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series |                    |     |                         |
| ·   | ≤24V               | Α   | 17                      |
|   | 48V                | Α   | 15                      |
|   | 75V                | Α   | 15                      |
|   | 110V               | Α   | 6                       |
|   | 220V               | Α   | _                       |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series |                    |     |                         |
|   | ≤24V               | Α   | 20                      |
|   | 48V                | Α   | 20                      |
|   | 75V                | Α   | 20                      |
|   | 110V               | Α   | 13                      |
|   | 220V               | Α   | 1                       |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series |                    |     |                         |
|   | ≤24V               | Α   | 22                      |
|   | 48V                | Α   | 22                      |
|   | 75V                | Α   | 20                      |
|   | 110V               | Α   | 16                      |
|   |                    |     |                         |





| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series  IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | 220V<br>≤24V<br>48V<br>75V<br>110V | A<br>A<br>A  | 11<br>22<br>22 |
|---|------------------------------------|--------------|----------------|
|   | 48V<br>75V<br>110V                 | Α            |                |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 48V<br>75V<br>110V                 | Α            |                |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 75V<br>110V                        |              | 22             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 110V                               | Λ            |                |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |                                    | ^            | 20             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |                                    | Α            | 18             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 220V                               | Α            | 13             |
|   |                                    |              |                |
|   | ≤24V                               | Α            | 12             |
|   | 48V                                | Α            | 11             |
|   | 75V                                | Α            | 11             |
|   | 110V                               | Α            | 2              |
|   | 220V                               | Α            | _              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series  |                                    |              |                |
|   | ≤24V                               | Α            | 15             |
|   | 48V                                | Α            | 13             |
|   | 75V                                | Α            | 13             |
|   | 110V                               | Α            | 8              |
|   | 220V                               | Α            | 2              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series  |                                    |              |                |
| <b>'</b>  | ≤24V                               | Α            | 18             |
|   | 48V                                | Α            | 18             |
|   | 75V                                | Α            | 16             |
|   | 110V                               | Α            | 12             |
|   | 220V                               | Α            | 6              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series  |                                    |              |                |
| 120 max canonic to in 200 200 with 2/11 - Tome with 1 poloc in conce  | ≤24V                               | Α            | 18             |
|   | 48V                                | A            | 18             |
|   | 75V                                | A            | 16             |
|   | 110V                               | A            | 13             |
|   | 220V                               | A            | 8              |
| Short-time allowable current for 10s (IEC/EN60947-1)  |                                    | A            | 200            |
| Protection fuse   |                                    |              | 200            |
| 1 Totalian Tuda   | gG (IEC)                           | Α            | 32             |
|   | aM (IEC)                           | A            | 20             |
| Making capacity (RMS value)   | aivi (ILO)                         | A            | 180            |
| Breaking capacity (NWS value)   |                                    |              | 100            |
| Distanting supposity at voltage   | 440V                               | Α            | 144            |
|   | 500V                               | A            | 120            |
|   | 690V                               | A            | 94             |
| Pacietanea par pala (avarage value)   | 0907                               |              | 2.5            |
| Resistance per pole (average value)   |                                    | mΩ           | ۷.ن            |
| Power dissipation per pole (average value)  | 141                                | 147          | 2.0            |
|   | Ith                                | W            | 2.6            |
| Tightonia a tous vo fou tous in al-   | AC3                                | W            | 0.8            |
| Tightening torque for terminals   |                                    | <b>k</b> I . | 4.5            |
|   | min                                | Nm           | 1.5            |
|   | max<br>·                           | Nm           | 1.8            |
|   | min                                | lbin         | 1.1            |
| <del></del>   | max                                | Ibin         | 1.5            |
| Tightening torque for coil terminal   |                                    |              |                |
|   | min                                | Nm           | 0.8            |
|   |                                    |              |                |
|   | max<br>min                         | Nm<br>Ibin   | 1<br>0.8       |



|  |  | max   | lbin                                 | 0.74  |
|--|--|---|--------------------------------------|---|
|  | simultaneously connectable                           |   | Nr.                                  | 2   |
| Conductor section  |  |   |                                      |   |
|  | AWG/Kcmil  |   |                                      |   |
|  |  | max   |                                      | 10  |
|  | Flexible w/o lug conductor section                   |   | 2                                    |   |
|  |  | min   | mm²                                  | 1   |
|  | Flavible a/v. lug conductor costion                  | max   | mm²                                  | 6   |
|  | Flexible c/w lug conductor section                   | min   | mana <sup>2</sup>                    | 4   |
|  |  | min   | mm²<br>mm²                           | 1<br>4  |
|  | Flexible with insulated spade lug conductor section  | max   | 111111                               | 4   |
|  | r lexible with insulated space lug conductor section | min   | mm²                                  | 1   |
|  |  | max   | mm²                                  | 4   |
|  |  | max   |                                      | IP20 when   |
| Power terminal prote   | ction according to IEC/EN 60529                      |   |                                      | properly wired  |
| Mechanical features  |  |   |                                      |   |
| Operating position   |  |   |                                      |   |
|  |  | normal  |                                      | Vertical plan   |
|  |  | allowable   |                                      | ±30°  |
| Fixing   |  |   |                                      | Screw / DIN rail<br>35mm  |
| Weight   |  |   | g                                    | 358   |
| Conductor section  |  |   |                                      |   |
|  | AWG/kcmil conductor section                          |   |                                      |   |
|  |  | max   |                                      | 10  |
| Auxiliary contact char   | acteristics  |   |                                      |   |
| Thermal current Ith  |  |   | Α                                    | 10  |
| IEC/EN 60947-5-1 de  | esignation   |   |                                      | A600 - P600   |
| Operating current AC   | :15  |   |                                      |   |
|  |  | 230V  | Α                                    | 3   |
|  |  | 400V  | Α                                    | 1.9   |
|  |  | E00\/   | Α                                    | 1.4   |
|  |  | 500V  |                                      |   |
| Operating current DC   | 212  |   |                                      |   |
|  |  | 110V  | А                                    | 5.7   |
|  |  | 110V  |                                      |   |
|  |  | 110V<br>24V   | Α                                    | 5.7   |
| · -  |  | 110V<br>24V<br>48V  | A<br>A                               | 5.7<br>2.9  |
| · -  |  | 110V<br>24V<br>48V<br>60V                                 | A<br>A<br>A                          | 5.7<br>2.9<br>2.3   |
| · -  |  | 110V<br>24V<br>48V<br>60V<br>110V                         | A<br>A<br>A                          | 5.7<br>2.9<br>2.3<br>1.25   |
|  |  | 110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A                     | 5.7<br>2.9<br>2.3<br>1.25<br>1.1  |
|  |  | 110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A                     | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55  |
| Operating current DC   |  | 110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A                     | 5.7<br>2.9<br>2.3<br>1.25<br>1.1  |
| Operating current DC   |  | 110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A                | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operating current DC  Operations  Mechanical life  |  | 110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>cycles | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data     |  | 110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A                | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operating current DC  Operations  Mechanical life  Electrical life  Safety related data                      | 213  | 110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>cycles | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operating current DC  Operations  Mechanical life  Electrical life  Safety related data                      |  | 110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A<br>A<br>A<br>A<br>A<br>A<br>cycles | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                        |
| Operating current DC  Operations  Mechanical life  Electrical life  Safety related data                      | 10d according to EN/ISO 13489-1                      | 110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A Cycles cycles            | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                        |
| Operating current DC  Operations  Mechanical life  Electrical life  Safety related data  Performance level B | 10d according to EN/ISO 13489-1                      | 110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A<br>A<br>A<br>A<br>A<br>A<br>cycles | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000<br>1600000<br>20000000 |
| Operating current DC  Operations  Mechanical life  Electrical life  Safety related data  Performance level B | 10d according to EN/ISO 13489-1                      | 110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A Cycles cycles            | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                        |



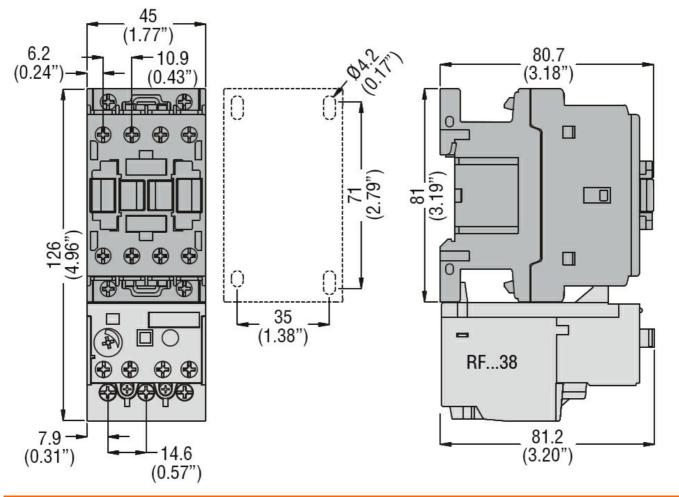


| Rated AC voltage at 60Hz                         |            | V        | 230  |
|--|------------|----------|------|
| AC operating voltage                             |            |          |      |
| of 60Hz coil powered at 60Hz                     |            |          |      |
| ,<br>pick-up                                     |            |          |      |
| ·  | 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       | 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                      |            |          |      |
| 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                                |            |          |      |
| Full-load current (FLA) for three-phase AC motor |            |          |      |
|  | at 480V    | Α        | 14   |
| <del></del>                                      | at 600V    | Α        | 17   |
| Yielded mechanical performance                   |            |          |      |
| for single-phase AC motor                        |            |          |      |
|  | 110/120V   | HP       | 1    |
|  | 230V       | HP       | 3    |
| for three-phase AC motor                         | 000/0001   |          | _    |
|  | 200/208V   | HP       | 5    |
|  | 220/230V   | HP       | 5    |
|  | 460/480V   | HP       | 10   |
| 0.000011105                                      | 575/600V   | HP       | 15   |
| General USE                                      |            |          |      |
| Contactor  | A.O        | ۸        | 20   |
| A. William 1 85 - 44-                            | AC current | Α        | 32   |
| Auxiliary contacts                               | A O 14     | W        | 600  |
|  | AC voltage | V        | 600  |
|  | AC current | A        | 10   |
|  | DC voltage | V        | 250  |
| Chart aircuit protection fues COOV               | DC current | Α        | 1    |
| Short-circuit protection fuse, 600V              |            |          |      |
| High fault                                       |            |          |      |



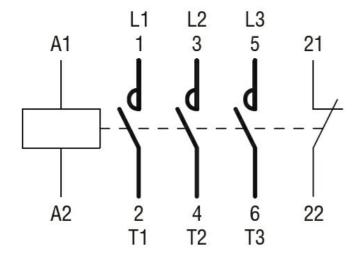


|  | Short circuit current | kA | 100         |
|--|-----------------------|----|-------------|
|  | Fuse rating           | Α  | 60          |
|  | Fuse class            |    | J           |
| Standard fault                                       |                       |    |             |
|  | Short circuit current | kA | 5           |
|  | Fuse rating           | Α  | 80          |
| 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 60335-1

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







| Product designation Product type designation Contact that rectanglish (and in the product type designation)  Sate of poles Rated insulation voltage Ui IEC/EN Rated insulation voltage Uimp Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated insulation voltage Uimp  Rated Conventional free air thermal current Ith  Rac-1 (≤40°C) Rac-1 (≤55°C) Rac-2 (≤40°C) Rac-3 (≤40°C) Rac-3 (≤40°C) Rac-3 (≤440°S5°C) Rac-3 (≤440°S5°C) Rac-3 (≤440°S5°C) Rac-3 (≤440°S5°C) Rac-3 (≤440°S5°C) Rated operational power AC-3 (T≤55°C)  Rated operational power AC-3 (T≤55°C)  Rated operational power AC-3 (T≤40°C) Rated operational power AC-1 (T≤40°C) Rated operational power AC-3 (T≤40°C) Rated operati |   |              |              |                 |
|---|---|--------------|--------------|-----------------|
| Product type designation  | Product designation   |              |              | Power contactor |
| Contact characteristics         Number of poles         Nr. 3         3           Rated insulation voltage Ui IEC/EN         V 690         60           Rated insulation voltage Uimp         kV 6         6           Operational frequency         min Hz 25 max         25 max         Hz 400           IEC Conventional free air thermal current Ith         A 32         A 32           Operational current Ie         AC-1 (\$40°C)         A 32           AC-1 (\$45°C)         A 26 AC-1 (\$70°C)         A 28 AC-3 (\$440V \$55°C)         A 18 AC-4 (400V)           AC-3 (\$440V \$55°C)         A 18 AC-4 (400V)         A 8.5         AC-4 (400V)         A 9 AC-4 (400V)  | •   |              |              |                 |
| Number of poles         Nr.         3           Rated insulation voltage Ui IEC/EN         V         690           Rated insulation voltage Uimp         kV         6           Operational frequency         min         Hz         25           max         Hz         400         1           IEC Conventional free air thermal current Ith         A         32           Operational current Ie         AC-1 (≤40°C)         A         32           AC-1 (555°C)         A         26         AC-1 (570°C)         A         23           AC-3 (≤440°V S5°C)         A         28         AC-4 (400°V)         A         8.5           Rated operational power AC-3 (T≤55°C)         230V         kW         4         400V         kW         9           440V         kW         9         440V         kW         9         440V         kW         9           440V         kW         9         500V         kW         10         690V         kW         10           Rated operational power AC-1 (T≤40°C)         230V         kW         12         40V         kW         21         500V         kW         22         690V         kW         26         690V <td< td=""><td>,, ·</td><td></td><td></td><td></td></td<>   | ,, ·  |              |              |                 |
| Rated insulation voltage UirEC/EN         V         690           Rated impulse withstand voltage Uimp         kV         6           Operational frequency         min         Hz         25           imax         Hz         400           IEC Conventional free air thermal current lth         A         32           Operational current le         AC-1 (≤40°C)         A         22           AC-1 (≤55°C)         A         26         AC-1 (≤70°C)         A         23           AC-3 (≤440V ≤55°C)         A         18         AC-4 (400V)         A         8.5           Rated operational power AC-3 (T≤55°C)         230V         kW         7.5         415V         kW         9           440V         kW         7.5         415V         kW         9         440V         kW         9           500V         kW         10         690V         kW         10 </td <td></td> <td></td> <td>Nr.</td> <td>3</td>  |   |              | Nr.          | 3               |
| Rated impulse withstand voltage Ulimp   |   |              |              |                 |
| Operational frequency           min max         Hz hz Hz Hz         400           IEC Conventional free air thermal current lth         A 32           Operational current le           AC-1 (≤40°C) A 32 AC-1 (≤55°C) A 26 AC-1 (≤70°C) A 23 AC-3 (≤4400 ≤55°C) A 18 AC-4 (4000V) A 8.5           Rated operational power AC-3 (T≤55°C)           230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10           Rated operational power AC-1 (T≤40°C)           230V kW 12 400V kW 21 50V kW 21 50V kW 21 50V kW 26 690V kW 36           IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series           ≤24V A 17 48 AR A 15 75V A 15 110V A 6 220V A -           IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series           ≤24V A 20 48 A 20 48 AR A 20 AR AR A 20 AR AR A 20 AR AR AR A 20 AR AR AR A 20 AR  |   |              |              |                 |
| EC Conventional free air thermal current lth  |   |              |              |                 |
| EC Conventional free air thermal current lth  | oporational inequation  | min          | Hz           | 25              |
| EC Conventional free air thermal current lth  |   |              |              |                 |
| Operational current le         AC-1 (≤40°C)       A       32         AC-1 (≤55°C)       A       26         AC-1 (≤70°C)       A       23         AC-3 (≤440V ≤55°C)       A       18         AC-4 (400V)       A       8.5         Rated operational power AC-3 (T≤5°C)         230V       kW       4         440V       kW       9         440V       kW       9         500V       kW       10         690V       kW       10         80V       kW       21         500V       kW       21         500V       kW       26         690V       kW       26         690V       kW       36         IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series         \$24V       A       15         110V       A       6         220V       A       -         IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series         \$24V       A       20         48V       A       20         75V       A       20         48V       A       20 </td <td>IEC Conventional free air thermal current Ith</td> <td></td> <td></td> <td></td>  | IEC Conventional free air thermal current Ith                   |              |              |                 |
| AC-1 (≤40°C)  |   |              |              |                 |
| AC-1 (≤55°C)  | oporational outron to   | AC-1 (<40°C) | Α            | 32              |
| AC-1 (≤70°C) A 23 AC-3 (≤440V ≤55°C) A 18 AC-4 (400V) A 8.5  Rated operational power AC-3 (T≤55°C)  Rated operational power AC-3 (T≤55°C)  230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10 690V kW 10  800V kW 10  800V kW 21 400V kW 21 500V kW 21 690V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 17 48V A 15 75V A 15 110V A 6 220V A -  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 75V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series   |   |              |              |                 |
| AC-3 (≤440V ≤55°C) A 18 AC-4 (400V) A 8.5  Rated operational power AC-3 (T≤55°C)  230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 550V kW 10 690V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 12 400V kW 21 500V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 15 75V A 15 110V A 6 220V A -  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 75V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  |   |              |              |                 |
| Rated operational power AC-3 (T≤55°C)  230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 12 400V kW 21 500V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 17 48V A 15 75V A 15 110V A 6 220V A −  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  |   | , ,          |              |                 |
| Rated operational power AC-3 (T≤55°C)  230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10 690V kW 10  Rated operational power AC-1 (T≤40°C)  Rated operational power AC-1 (T≤40°C)  230V kW 12 400V kW 21 500V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 17 48V A 15 75V A 15 110V A 6 220V A -  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 75V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  |   | •            |              |                 |
| 230V   kW   4   400V   kW   7.5   415V   kW   9   440V   kW   9   500V   kW   10   690V   kW   10   690V   kW   10   690V   kW   10   690V   kW   21   500V   kW   26   690V   kW   36   690V   kW   30   690V    | Rated operational power AC-3 (T<55°C)                           | AO-4 (400V)  |              | 0.0             |
| 400V   kW   7.5   415V   kW   9   440V   kW   9   440V   kW   9   440V   kW   9   690V   kW   10   690V   kW   10   690V   kW   10   690V   kW   10   690V   kW   21   500V   kW   21   500V   kW   26   690V   kW   36   690V     | Trated operational power 70-0 (1200 0)                          | 230\/        | <b>L</b> \// | 1               |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  |   |              |              |                 |
| A40V   kW   9   500V   kW   10   690V   kW   12   400V   kW   21   500V   kW   26   690V   kW   36   690V   40   690V   4   |   |              |              |                 |
| Soov   kW   10   690V   kW   10   10   690V   kW   12   400V   kW   21   500V   kW   26   690V   kW   36    |   |              |              |                 |
| Rated operational power AC-1 (T≤40°C)   230V   kW   12   400V   kW   21   500V   kW   26   690V   kW   36   |   |              |              |                 |
| Rated operational power AC-1 (T≤40°C)  230V kW 12 400V kW 21 500V kW 26 690V kW 36  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 17 48V A 15 75V A 15 110V A 6 220V A −  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 20 48V A 20 75V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  ≤24V A 20 48V A 20 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  |   |              |              |                 |
|   | Pated aparational power AC 1 /T<10°C)                           | 090 V        | KVV          | 10              |
|   | Rated operational power AC-1 (1540 C)                           | 2201/        | LAAA         | 10              |
| Soov   kW   26   690V   kW   36   |   |              |              |                 |
| EC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  |   |              |              |                 |
| SEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series   S24V  |   |              |              |                 |
|   | 150   | 6907         | KVV          | 36              |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  | IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | 40.437       | •            | 4 7             |
| T5V   A   15   110V   A   6   220V   A   -  |   |              |              |                 |
| 110V   A   6   220V   A   -   |   |              |              |                 |
| EC max current le in DC1 with L/R $\leq$ 1ms with 2 poles in series   $\leq$ 24V   A   20   48V   A   20   75V   A   20   110V   A   13   220V   A   1  |   |              |              |                 |
| Section   Sec   |   |              |              | 6               |
|   |   | 220V         | A            | _               |
|   | IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series |              |              |                 |
|   |   |              |              |                 |
|   |   |              |              |                 |
|   |   |              |              |                 |
| IEC max current le in DC1 with L/R $\leq$ 1ms with 3 poles in series $ \leq 24V \qquad A \qquad 22 \\ 48V \qquad A \qquad 22 \\ 75V \qquad A \qquad 20 $  |   |              |              |                 |
| ≤24V A 22<br>48V A 22<br>75V A 20   |   | 220V         | Α            | 1               |
| 48V A 22<br>75V A 20  | IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series |              |              |                 |
| 75V A 20  |   |              | Α            | 22              |
|   |   | 48V          | Α            | 22              |
| 110V A 16   |   | 75V          | Α            | 20              |
|   |   | 110V         | Α            | 16              |





|   | 220V       | Α            | 11       |
|---|------------|--------------|----------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series       |            |              |          |
|   | ≤24V       | Α            | 22       |
|   | 48V        | Α            | 22       |
|   | 75V        | Α            | 20       |
|   | 110V       | Α            | 18       |
|   | 220V       | Α            | 13       |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |            |              |          |
|   | ≤24V       | Α            | 12       |
|   | 48V        | Α            | 11       |
|   | 75V        | Α            | 11       |
|   | 110V       | Α            | 2        |
|   | 220V       | Α            | _        |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series  |            |              |          |
| ·   | ≤24V       | Α            | 15       |
|   | 48V        | Α            | 13       |
|   | 75V        | Α            | 13       |
|   | 110V       | Α            | 8        |
|   | 220V       | Α            | 2        |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series  |            |              |          |
|   | ≤24V       | Α            | 18       |
|   | 48V        | A            | 18       |
|   | 75V        | A            | 16       |
|   | 110V       | A            | 12       |
|   | 220V       | A            | 6        |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series  | 220 V      | ,,           | <u> </u> |
| 120 max sarrone to in 200 200 with Err = Torns with 4 polos in series | ≤24V       | Α            | 18       |
|   | 48V        | A            | 18       |
|   | 75V        | A            | 16       |
|   | 110V       | A            | 13       |
|   | 220V       | A            | 8        |
| Short-time allowable current for 10s (IEC/EN60947-1)                  | 220 V      | A            | 200      |
| Protection fuse   |            | ,,           |          |
|   | gG (IEC)   | Α            | 32       |
|   | aM (IEC)   | A            | 20       |
| Making capacity (RMS value)   | aivi (ILO) |              | 180      |
| Breaking capacity at voltage  |            |              | 100      |
| Disaking supusity at voltage  | 440V       | Α            | 144      |
|   | 500V       | A            | 120      |
|   | 690V       | A            | 94       |
| Resistance per pole (average value)                                   | 030 (      | mΩ           | 2.5      |
| Power dissipation per pole (average value)                            |            | 11122        | 2.0      |
| 1 Ower dissipation per pole (average value)                           | Ith        | W            | 2.6      |
|   | AC3        | W            | 0.8      |
| Tightening torque for terminals                                       | AUS        | v v          | 0.0      |
| rightening torque for terminals                                       | min        | Nlm          | 1.5      |
|   | min        | Nm<br>Nm     | 1.5      |
|   | max        | Nm<br>Ibin   | 1.8      |
|   | min        | lbin<br>Ibin | 1.1      |
| Tightoning torque for coil torminal                                   | max        | Ibin         | 1.5      |
| Tightening torque for coil terminal                                   | :          | Nima         | 0.0      |
|   | min        | Nm<br>Nm     | 0.8      |
|   | max        | Nm           | 1        |
|   | min        | lbin         | 0.8      |
|   |            |              |          |



| NA  | San Managarah ang san sahila                        | max   | Ibin                                      | 0.74   |
|---|---|---|---|--|
|   | simultaneously connectable                          |   | Nr.                                       | 2  |
| Conductor section   | AVACO/IX area il                                    |   |   |  |
|   | AWG/Kcmil   | may   |   | 10   |
|   | Elevible w/e lug conductor coction                  | max   |   | 10   |
|   | Flexible w/o lug conductor section                  | min   | mm²                                       | 1  |
|   |   | max   | mm²                                       | 6  |
|   | Flexible c/w lug conductor section                  | Παχ   | 111111                                    | 0  |
|   | Tioxible of windy contractor section                | min   | mm²                                       | 1  |
|   |   | max   | mm²                                       | 4  |
|   | Flexible with insulated spade lug conductor section |   |   | <u> </u>   |
|   | - ionation initialization operation and continuous  | min   | mm²                                       | 1  |
|   |   | max   | mm²                                       | 4  |
| D   | (''   |   |   | IP20 when  |
| Power terminal protec   | ction according to IEC/EN 60529                     |   |   | properly wired   |
| Mechanical features   |   |   |   |  |
| Operating position  |   |   |   |  |
|   |   | normal  |   | Vertical plan  |
|   |   | allowable   |   | ±30°   |
| Fixing  |   |   |   | Screw / DIN rail   |
|   |   |   |   | 35mm   |
| Weight  |   |   | g   | 368  |
| Conductor section   |   |   |   |  |
|   | AWG/kcmil conductor section                         |   |   |  |
|   |   | max   |   | 10   |
| A   | and a distance                                      |   |   |  |
|   | acteristics   |   | Δ   |  |
| Thermal current Ith   |   |   | Α   | 10   |
| Thermal current Ith<br>EC/EN 60947-5-1 de   | esignation  |   | Α   |  |
| Thermal current Ith<br>IEC/EN 60947-5-1 de  | esignation  |   |   | 10<br>A600 - P600  |
| Thermal current Ith<br>IEC/EN 60947-5-1 de  | esignation  | 230V  | A   | 10<br>A600 - P600  |
| Thermal current Ith<br>IEC/EN 60947-5-1 de  | esignation  | 230V<br>400V  | A<br>A                                    | 10<br>A600 - P600<br>3<br>1.9  |
| Thermal current Ith<br>IEC/EN 60947-5-1 de<br>Operating current AC  | esignation<br>15                                    | 230V  | A   | 10<br>A600 - P600  |
| Thermal current Ith<br>IEC/EN 60947-5-1 de<br>Operating current AC  | esignation<br>15                                    | 230V<br>400V<br>500V  | A<br>A<br>A                               | 10<br>A600 - P600<br>3<br>1.9<br>1.4   |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC   | esignation<br>15                                    | 230V<br>400V  | A<br>A                                    | 10<br>A600 - P600<br>3<br>1.9  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC   | esignation<br>15                                    | 230V<br>400V<br>500V  | A<br>A<br>A                               | 10<br>A600 - P600<br>3<br>1.9<br>1.4   |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC   | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V  | A<br>A<br>A                               | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7  |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC   | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V  | A<br>A<br>A<br>A                          | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7   |
| Thermal current Ith EC/EN 60947-5-1 de Operating current AC Operating current DC  | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V                                 | A<br>A<br>A<br>A<br>A                     | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3                               |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC   | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V                         | A<br>A<br>A<br>A<br>A                     | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25                       |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC   | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V                                 | A<br>A<br>A<br>A<br>A                     | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3                               |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC   | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A<br>A<br>A                | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1                |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC  | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A                           | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55        |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC   | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A                           | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55        |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC  | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A           | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operating current DC  Operating current DC Electrical life                          | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data                      | esignation<br>15                                    | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data                      | esignation 15 12 13                                 | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A<br>Cycles | 10<br>A600 - P600<br>3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2 |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data                      | esignation  12  13  Od according to EN/ISO 13489-1  | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | 10 A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000                |
|   | esignation  12  13  Od according to EN/ISO 13489-1  | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | 10 A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000                |
| Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | od according to EN/ISO 13489-1                      | 230V<br>400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A A Cycles cycles             | 10 A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2  20000000 1600000 16000000       |



| Rated AC voltage a   |   |  | V   | 400   |
|--|---|--|---|---|
| AC operating voltag  | ge  |  |   |   |
|  | of 50/60Hz coil powered at 50Hz   |  |   |   |
|  | pick-up   | _  |   |   |
|  |   | min  | %Us   | 80  |
|  | dua   | max  | %Us   | 110   |
|  | drop-out  | i-   | 0/116   | 20  |
|  |   | min  | %Us<br>%Us  | 20  |
|  | of 50/60Hz coil powered at 60Hz   | max  | %US   | 55  |
|  | pick-up   |  |   |   |
|  | ρισκ-αρ   | min  | %Us   | 85  |
|  |   | max  | %Us   | 110   |
|  | drop-out  | IIIdA  | 7003  | 110   |
|  | drop out  | min  | %Us   | 20  |
|  |   | max  | %Us   | 55  |
| .C average coil coi  | nsumption at 20°C   |  | ,,,,,   |   |
|  | of 50/60Hz coil powered at 50Hz   |  |   |   |
|  | 2. 30,00 <u> </u>   | in-rush  | VA  | 75  |
|  |   | holding  | VA  | 9   |
|  | of 50/60Hz coil powered at 60Hz   |  |   |   |
|  | ·   | in-rush  | VA  | 70  |
|  |   | holding  | VA  | 6.5   |
|  | of 60Hz coil powered at 60Hz  |  |   |   |
|  | ·   | in-rush  | VA  | 75  |
|  |   |  |   |   |
|  |   | holding  | VA  | 9   |
| Dissipation at holdin  | ng ≤20°C 50Hz   | holding  | VA<br>W   | 9 2.5   |
| Dissipation at holdin  |   | holding  | W   | 2.5   |
| Max cycles frequen<br>Mechanical operation   | су  | holding  |   | 2.5   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | on  | holding  | W   | 2.5   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | on<br>s control   | holding  | W   | 2.5   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | s control<br>in AC  | holding  | W   | 2.5   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | on<br>s control   |  | W<br>cycles/h                                     | 2.5<br>3600   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | s control<br>in AC  | min  | W<br>cycles/h<br>ms                               | 2.5<br>3600   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | s control in AC Closing NO  |  | W<br>cycles/h                                     | 2.5<br>3600   |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | s control<br>in AC  | min<br>max   | W<br>cycles/h<br>ms<br>ms                         | 2.5<br>3600<br>8<br>24                                    |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | s control in AC Closing NO  | min<br>max<br>min  | W cycles/h ms ms                                  | 2.5<br>3600<br>8<br>24<br>10                              |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | s control in AC Closing NO Opening NO   | min<br>max   | W<br>cycles/h<br>ms<br>ms                         | 2.5<br>3600<br>8<br>24                                    |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | s control in AC Closing NO  | min<br>max<br>min<br>max                                     | W cycles/h ms ms ms                               | 2.5<br>3600<br>8<br>24<br>10<br>20                        |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | s control in AC Closing NO Opening NO   | min<br>max<br>min<br>max<br>min                              | W cycles/h ms ms ms ms                            | 2.5<br>3600<br>8<br>24<br>10<br>20                        |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | on s control in AC Closing NO Opening NO Closing NC                                     | min<br>max<br>min<br>max                                     | W cycles/h ms ms ms                               | 2.5<br>3600<br>8<br>24<br>10<br>20                        |
| Max cycles frequen Mechanical operation Decrating times  | s control in AC Closing NO Opening NO   | min<br>max<br>min<br>max<br>min<br>max                       | w<br>cycles/h<br>ms<br>ms<br>ms<br>ms             | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28            |
| Max cycles frequen<br>Mechanical operation<br>Operating times  | on s control in AC Closing NO Opening NO Closing NC                                     | min<br>max<br>min<br>max<br>min                              | W cycles/h ms ms ms ms                            | 2.5<br>3600<br>8<br>24<br>10<br>20                        |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Everage time for Us  | on s control in AC Closing NO Opening NO Closing NC                                     | min<br>max<br>min<br>max<br>min<br>max<br>min                | w<br>cycles/h<br>ms<br>ms<br>ms<br>ms<br>ms       | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28            |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>May and the May and the M | on s control in AC Closing NO Opening NO Closing NC                                     | min<br>max<br>min<br>max<br>min<br>max<br>min                | w<br>cycles/h<br>ms<br>ms<br>ms<br>ms<br>ms       | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28            |
| Max cycles frequent<br>Mechanical operation<br>Derating times<br>Exverage time for Use<br>May be a seen of the May be a seen o | on s control in AC  Closing NO  Opening NO  Closing NC  Opening NC                      | min<br>max<br>min<br>max<br>min<br>max<br>min                | w<br>cycles/h<br>ms<br>ms<br>ms<br>ms<br>ms       | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28            |
| Max cycles frequent<br>Mechanical operation<br>Derating times<br>Exverage time for Use<br>May be a seen of the May be a seen o | on s control in AC  Closing NO  Opening NO  Closing NC  Opening NC                      | min<br>max<br>min<br>max<br>min<br>max<br>min<br>max         | w<br>cycles/h<br>ms<br>ms<br>ms<br>ms<br>ms       | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>May and the May and the M | s control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC             | min<br>max<br>min<br>max<br>min<br>max<br>min<br>max         | w cycles/h ms ms ms ms ms ms A                    | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>Average time for Us<br>Tull-load current (Fi  | s control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC             | min<br>max<br>min<br>max<br>min<br>max<br>min<br>max         | w cycles/h ms ms ms ms ms ms A                    | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Exverage time for Use<br>May be a supported to the support of the suppor | on s control in AC Closing NO Opening NO Closing NC Opening NC Opening NC I performance | min<br>max<br>min<br>max<br>min<br>max<br>min<br>max         | w cycles/h ms ms ms ms ms ms A                    | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Average time for Us<br>Average time for Us<br>Tull-load current (Fi  | on s control in AC Closing NO Opening NO Closing NC Opening NC Opening NC I performance | min<br>max<br>min<br>max<br>min<br>max<br>at 480V<br>at 600V | w<br>cycles/h<br>ms<br>ms<br>ms<br>ms<br>ms<br>ms | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |
| Max cycles frequent<br>Mechanical operation<br>Operating times<br>Exverage time for Use<br>May be a supported to the support of the suppor | on s control in AC Closing NO Opening NO Closing NC Opening NC Opening NC I performance | min max min max min max at 480V at 600V                      | W cycles/h ms ms ms ms ms A A HP                  | 2.5<br>3600<br>8<br>24<br>10<br>20<br>14<br>28<br>7<br>18 |

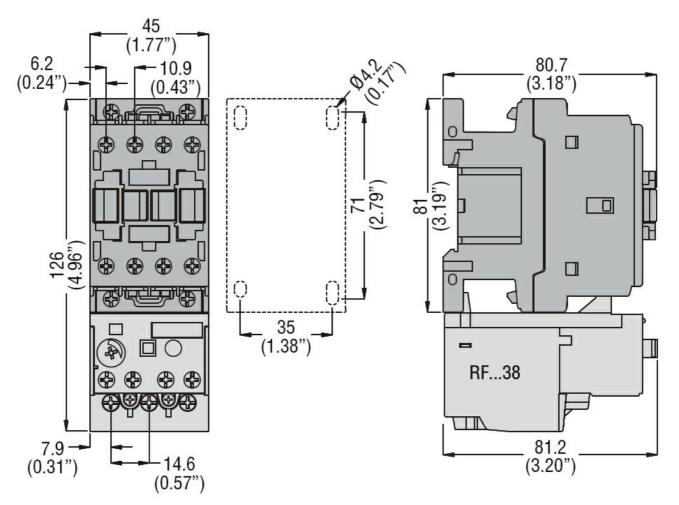




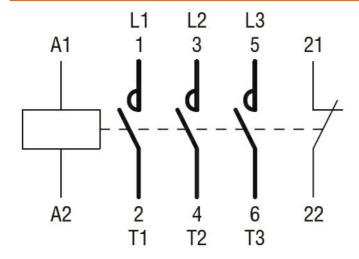
|                       |                                   | 220/230V              | HP | 5           |
|-----------------------|-----------------------------------|-----------------------|----|-------------|
|                       |                                   | 460/480V              | HP | 10          |
|                       |                                   | 575/600V              | HP | 15          |
| General USE           |                                   |                       |    |             |
|                       | Contactor                         |                       |    |             |
|                       |                                   | AC current            | Α  | 32          |
|                       | Auxiliary contacts                |                       |    |             |
|                       |                                   | AC voltage            | V  | 600         |
|                       |                                   | AC current            | Α  | 10          |
|                       |                                   | DC voltage            | V  | 250         |
|                       |                                   | DC current            | Α  | 1           |
| Short-circuit protect | tion fuse, 600V                   |                       |    |             |
|                       | High fault                        |                       |    |             |
|                       | •                                 | Short circuit current | kA | 100         |
|                       |                                   | Fuse rating           | Α  | 60          |
|                       |                                   | Fuse class            |    | J           |
|                       | Standard fault                    |                       |    |             |
|                       |                                   | Short circuit current | kA | 5           |
|                       |                                   | Fuse rating           | Α  | 80          |
| Contact rating of au  | ixiliary 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 & Prote    | ection                            |                       |    |             |
| Pollution degree      |                                   |                       |    | 3           |
| Dimensions            |                                   |                       |    |             |
|                       |                                   |                       |    |             |

**ENERGY AND AUTOMATION** 

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 400VAC, 1NC AUXILIARY CONTACT



### 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

BF1801A400



### BF1801A400

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 50/60HZ, 400VAC, 1NC AUXILIARY CONTACT

| CCC   |  |  |
|-------|--|--|
| cULus |  |  |
| EAC   |  |  |

ETIM classification

ETIM 8.0

BF1801A400

EC000066 -Power contactor, AC switching







Product designation Power contactor Product type designation **BF18** Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency min Нъ 25 Hz 400 max IEC Conventional free air thermal current Ith 32 Α Operational current le AC-1 (≤40°C) Α 32 AC-1 (≤55°C) Α 26 AC-1 (≤70°C) Α 23 AC-3 (≤440V ≤55°C) Α 18 AC-4 (400V) 8.5 Rated operational power AC-3 (T≤55°C) 230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10 Rated operational power AC-1 (T≤40°C) 230V kW 12 400V kW 21 500V kW 26 690V kW 36 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V Α 17 48V Α 15 75V Α 15 110V Α 6 220V Α IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V Α 20 48V Α 20 75V 20 Α 110V Α 13 220V Α 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V 22 Α 22 48V Α 75V Α 20 110V 16





|  | 220V        | Α        | 11                                      |
|--|-------------|----------|---|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series      | 220 V       | , ,      | • |
| ·  | ≤24V        | Α        | 22                                      |
|  | 48V         | Α        | 22                                      |
|  | 75V         | Α        | 20                                      |
|  | 110V        | Α        | 18                                      |
|  | 220V        | Α        | 13                                      |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series |             |          |   |
|  | ≤24V        | Α        | 12                                      |
|  | 48V         | Α        | 11                                      |
|  | 75V         | Α        | 11                                      |
|  | 110V        | Α        | 2                                       |
|  | 220V        | Α        | _                                       |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series | .0.43.4     |          |   |
|  | ≤24V        | A        | 15                                      |
|  | 48V         | A        | 13                                      |
|  | 75V         | A        | 13                                      |
|  | 110V        | A        | 8                                       |
| IEC may current to in DC3 DC5 with 1/D < 15mg with 3 males in series | 220V        | Α        | 2                                       |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series | ≤24V        | ۸        | 10                                      |
|  | ≥24V<br>48V | A<br>A   | 18<br>18                                |
|  | 75V         | A        | 16                                      |
|  | 110V        | A        | 12                                      |
|  | 220V        | A        | 6                                       |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series | 220 V       |          |   |
| TEO HIGA GUITORIA DO DOO WILL ETT = TOTALO WILL A POICO III SONOS    | ≤24V        | Α        | 18                                      |
|  | 48V         | Α        | 18                                      |
|  | 75V         | Α        | 16                                      |
|  | 110V        | Α        | 13                                      |
|  | 220V        | Α        | 8                                       |
| Short-time allowable current for 10s (IEC/EN60947-1)                 |             | Α        | 200                                     |
| Protection fuse  |             |          |   |
|  | gG (IEC)    | Α        | 32                                      |
|  | aM (IEC)    | Α        | 20                                      |
| Making capacity (RMS value)  |             | Α        | 180                                     |
| Breaking capacity at voltage   |             |          |   |
|  | 440V        | Α        | 144                                     |
|  | 500V        | Α        | 120                                     |
|  | 690V        | Α        | 94                                      |
| Resistance per pole (average value)                                  |             | mΩ       | 2.5                                     |
| Power dissipation per pole (average value)                           |             |          |   |
|  | Ith         | W        | 2.6                                     |
|  | AC3         | W        | 0.8                                     |
| Tightening torque for terminals                                      |             |          |   |
|  | min         | Nm       | 1.5                                     |
|  | max         | Nm       | 1.8                                     |
|  | min         | lbin<br> | 1.1                                     |
| <del>-</del>   | max         | lbin     | 1.5                                     |
| Tightening torque for coil terminal                                  |             |          | 2.2                                     |
|  | min         | Nm       | 0.8                                     |
|  | max         | Nm       | 1                                       |
|  | min         | lbin     | 0.8                                     |





|  |   | max   | lbin                                 | 0.74  |
|--|---|---|--------------------------------------|---|
|  | s simultaneously connectable                        |   | Nr.                                  | 2   |
| Conductor section  |   |   |                                      |   |
|  | AWG/Kcmil   |   |                                      |   |
|  | =   | max   |                                      | 10  |
|  | Flexible w/o lug conductor section                  |   | 2                                    |   |
|  |   | min   | mm²                                  | 1   |
|  |   | max   | mm²                                  | 6   |
|  | Flexible c/w lug conductor section                  |   | •                                    |   |
|  |   | min   | mm²                                  | 1   |
|  |   | max   | mm²                                  | 4   |
|  | Flexible with insulated spade lug conductor section | _   |                                      |   |
|  |   | min   | mm²                                  | 1   |
|  |   | max   | mm²                                  | 4   |
| Power terminal prote   | ection according to IEC/EN 60529                    |   |                                      | IP20 when   |
|  |   |   |                                      | properly wired  |
| Mechanical features Operating position   |   |   |                                      |   |
| Operating position   |   | normal  |                                      | Vertical plan   |
|  |   | allowable   |                                      | ±30°  |
|  |   | allowable   |                                      | Screw / DIN rail  |
| Fixing   |   |   |                                      | 35mm  |
| Weight   |   |   | g                                    | 358   |
| Conductor section  |   |   | 9                                    | 000   |
| Solidación section   | AWG/kcmil conductor section                         |   |                                      |   |
|  | AVVO/Rettill conductor section                      | max   |                                      | 10  |
| Auxiliary contact cha  | racteristics  | max   |                                      | 10  |
| Thermal current Ith  | racionolico   |   | А                                    | 10  |
| EC/EN 60947-5-1 d  | esignation  |   | ,,                                   | A600 - P600   |
| Operating current AC   |   |   |                                      | 7.000 1 000   |
| oporating ourroint / to  | ,10   | 230V  | Α                                    | 3   |
|  |   | 400V  | A                                    | 1.9   |
|  |   | 500V  | A                                    | 1.4   |
| Operating current DO   |   | 0001  | ,,                                   | ***   |
| oporating ourrorn De   | > · =   |   |                                      |   |
|  |   | 110\/   | Δ                                    | 5.7   |
| Operating current DC   | 113   | 110V  | Α                                    | 5.7   |
| Operating current DO   | 213   |   |                                      |   |
| Operating current DO   | C13   | 24V   | Α                                    | 5.7   |
| Operating current D0   | D13   | 24V<br>48V  | A<br>A                               | 5.7<br>2.9  |
| Operating current DO   | C13   | 24V<br>48V<br>60V                                 | A<br>A<br>A                          | 5.7<br>2.9<br>2.3   |
| Operating current DO   | C13   | 24V<br>48V<br>60V<br>110V                         | A<br>A<br>A                          | 5.7<br>2.9<br>2.3<br>1.25   |
| Operating current DO   | C13   | 24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A                     | 5.7<br>2.9<br>2.3<br>1.25<br>1.1  |
| Operating current DO   | C13   | 24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A                     | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55  |
|  | C13   | 24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A                     | 5.7<br>2.9<br>2.3<br>1.25<br>1.1  |
| Operations   | C13   | 24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A                | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operations<br>Mechanical life  | C13   | 24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>cycles | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operations<br>Mechanical life<br>Electrical life   | C13   | 24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A                | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operations<br>Mechanical life<br>Electrical life<br>Safety related data                        |   | 24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>cycles | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operations<br>Mechanical life<br>Electrical life<br>Safety related data                        | 10d according to EN/ISO 13489-1                     | 24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A<br>A<br>A<br>A<br>A<br>A<br>cycles | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                        |
| Operations<br>Mechanical life<br>Electrical life<br>Safety related data                        | 10d according to EN/ISO 13489-1                     | 24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A Cycles cycles            | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                        |
| Operations<br>Mechanical life<br>Electrical life<br>Safety related data<br>Performance level B | 10d according to EN/ISO 13489-1                     | 24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A<br>A<br>A<br>A<br>A<br>A<br>cycles | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000<br>1600000<br>20000000 |
|  | 10d according to EN/ISO 13489-1                     | 24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A Cycles cycles            | 5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                        |



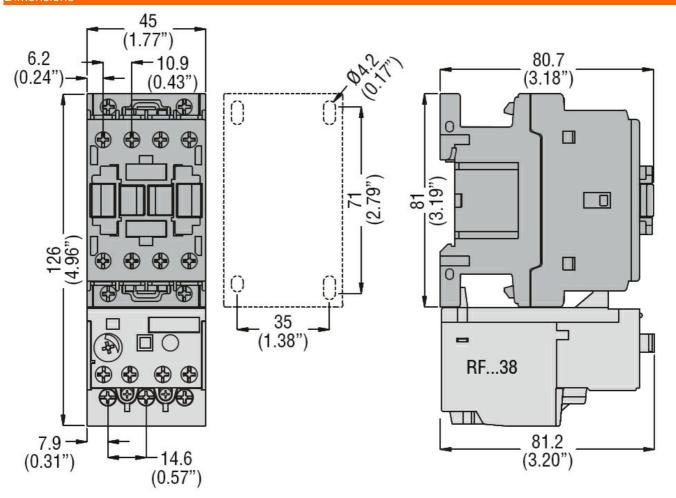


| Rated AC voltage at 6   | 60Hz                         |                          | V        | 24           |
|-------------------------|------------------------------|--------------------------|----------|--------------|
| AC operating voltage    |                              |                          |          |              |
|                         | 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 cons    | •                            |                          |          |              |
|                         | 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 o   | control                      |                          |          |              |
| -                       | in AC                        |                          |          |              |
|                         | Closing NO                   |                          |          |              |
|                         | · ·                          | min                      | ms       | 8            |
|                         |                              | max                      | ms       | 24           |
|                         | Opening NO                   |                          |          |              |
|                         | , c                          | min                      | ms       | 10           |
|                         |                              | max                      | ms       | 20           |
|                         | Closing NC                   |                          |          |              |
|                         | <b>S</b>                     | min                      | ms       | 14           |
|                         |                              | max                      | ms       | 28           |
|                         | Opening NC                   |                          |          |              |
|                         |                              | min                      | ms       | 7            |
|                         |                              | max                      | ms       | 18           |
| UL technical data       |                              |                          |          |              |
| Full-load current (FLA  | A) for three-phase AC motor  |                          |          |              |
| `                       | ,                            | at 480V                  | Α        | 14           |
|                         |                              | at 600V                  | Α        | 17           |
| Yielded mechanical p    | erformance                   |                          |          |              |
|                         | for single-phase AC motor    |                          |          |              |
|                         |                              | 110/120V                 | HP       | 1            |
|                         |                              | 230V                     | HP       | 3            |
|                         | for three-phase AC motor     |                          |          |              |
|                         | and phase / to motor         | 200/208V                 | HP       | 5            |
|                         |                              | 220/230V                 | HP       | 5            |
|                         |                              | 460/480V                 | HP       | 10           |
|                         |                              | 575/600V                 | HP       | 15           |
| General USE             |                              | 2. 0, 000 V              |          | <del>-</del> |
|                         | Contactor                    |                          |          |              |
|                         | - Commonder                  | AC current               | Α        | 32           |
|                         | Auxiliary contacts           | / Council                | / \      | <u> </u>     |
|                         | Additional y Contacto        | AC voltage               | V        | 600          |
|                         |                              | AC current               | A        | 10           |
|                         |                              | DC voltage               | V        | 250          |
|                         |                              | DC voltage<br>DC current | v<br>A   | 250<br>1     |
| Short circuit protectio | on fuce, 600V                | DC current               | Α        | ı            |
| Short-circuit protectio |                              |                          |          |              |
|                         | High fault                   |                          |          |              |





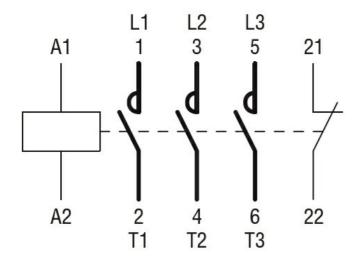
|  | Short circuit current | kA | 100         |
|--|-----------------------|----|-------------|
|  | Fuse rating           | Α  | 60          |
|  | Fuse class            |    | J           |
| Standard fault                                       |                       |    |             |
|  | Short circuit current | kA | 5           |
|  | Fuse rating           | Α  | 80          |
| 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

**ENERGY AND AUTOMATION** 

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 60HZ, 24VAC, 1NC AUXILIARY CONTACT



### 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







| Product type designation  Contact characteristics  Number of poles  Rated insulation voltage Ui IEC/EN |          | BF18      |
|--|----------|-----------|
| Number of poles  |          |           |
| ·  | N I∞     | 2         |
| Saleo insulation voltage ut inc./mi  | Nr.<br>V | 3         |
|  | kV       | 690       |
| Rated impulse withstand voltage Uimp   | KV       | 6         |
| Operational frequency  | LI-      | 0.E       |
| min  | Hz<br>⊔- | 25        |
| EC Conventional free air thermal current Ith   | Hz<br>A  | 400<br>32 |
| Operational current le   | A        | 32        |
| AC-1 (≤40°C)   | Α        | 32        |
| AC-1 (≤40 C)<br>AC-1 (≤55°C)   | A        | 26        |
| AC-1 (≤03 C)<br>AC-1 (≤70°C)   | A        | 23        |
| AC-3 (≤440V ≤55°C)   | A        | 18        |
| AC-4 (400V)  | A        | 8.5       |
| Rated operational power AC-3 (T≤55°C)  | - , ,    | 0.0       |
| 230V   | kW       | 4         |
| 400V   | kW       | 7.5       |
| 415V   | kW       | 9         |
| 440V   | kW       | 9         |
| 500V   | kW       | 10        |
| 690V   | kW       | 10        |
| Rated operational power AC-1 (T≤40°C)  |          |           |
| 230V   | kW       | 12        |
| 400V   | kW       | 21        |
| 500V   | kW       | 26        |
| 690V   | kW       | 36        |
| EC max current le in DC1 with L/R ≤ 1ms with 1 poles in series   |          |           |
| ≤24V   | Α        | 17        |
| 48V  | Α        | 15        |
| 75V  | Α        | 15        |
| 110V   | Α        | 6         |
| 220V   | Α        | _         |
| EC max current le in DC1 with L/R ≤ 1ms with 2 poles in series   |          |           |
| ≤24V   | Α        | 20        |
| 48V  | Α        | 20        |
| 75V  | Α        | 20        |
| 110V   | Α        | 13        |
| 220V   | Α        | 1         |
| EC max current le in DC1 with L/R ≤ 1ms with 3 poles in series   | _        |           |
| ≤24V   | A        | 22        |
| 48V  | Α        | 22        |
| 75V  | A        | 20        |
| 110V   | Α        | 16        |





| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series  IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | 220V<br>≤24V<br>48V<br>75V<br>110V<br>220V | A<br>A<br>A | 22<br>22<br>22 |
|---|--|-------------|----------------|
|   | 48V<br>75V<br>110V                         | Α           | 22             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 48V<br>75V<br>110V                         | Α           | 22             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 75V<br>110V                                |             |                |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 110V                                       | Α           | 20             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |  |             | 20             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 220V                                       | Α           | 18             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |  | Α           | 13             |
|   |  |             |                |
|   | ≤24V                                       | Α           | 12             |
|   | 48V  | Α           | 11             |
|   | 75V  | Α           | 11             |
|   | 110V                                       | Α           | 2              |
|   | 220V                                       | Α           | _              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series  |  |             |                |
|   | ≤24V                                       | Α           | 15             |
|   | 48V  | Α           | 13             |
|   | 75V  | Α           | 13             |
|   | 110V                                       | Α           | 8              |
|   | 220V                                       | Α           | 2              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series  |  |             |                |
| · ·   | ≤24V                                       | Α           | 18             |
|   | 48V  | Α           | 18             |
|   | 75V  | Α           | 16             |
|   | 110V                                       | Α           | 12             |
|   | 220V                                       | Α           | 6              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series  | 2201                                       | ,,          |                |
| 120 max carrone to in 200 200 mar 2/12 forms with 1 polos in conce  | ≤24V                                       | Α           | 18             |
|   | 48V  | Α           | 18             |
|   | 75V  | A           | 16             |
|   | 110V                                       | A           | 13             |
|   | 220V                                       | A           | 8              |
| Short-time allowable current for 10s (IEC/EN60947-1)  | 2201                                       | A           | 200            |
| Protection fuse   |  |             |                |
| 1 Totalian Tuda   | gG (IEC)                                   | Α           | 32             |
|   | aM (IEC)                                   | A           | 20             |
| Making capacity (RMS value)   | aivi (ILO)                                 | A           | 180            |
| Breaking capacity (NWS value)   |  |             | 100            |
| Broaking dapaoity at voltage  | 440V                                       | Α           | 144            |
|   | 500V                                       | A           | 120            |
|   | 690V                                       | A           | 94             |
| Desigtance per pela (average value)   | 090 V                                      |             | 2.5            |
| Resistance per pole (average value)   |  | mΩ          | 2.5            |
| Power dissipation per pole (average value)  | 141  | 147         | 2.0            |
|   | Ith  | W           | 2.6            |
| Tightoning to serve for to recipal:   | AC3  | W           | 0.8            |
| Tightening torque for terminals   |  | N.I.        | 4.5            |
|   | min  | Nm          | 1.5            |
|   | max<br>·                                   | Nm          | 1.8            |
|   | min  | Ibin        | 1.1            |
| <del></del>   | max  | Ibin        | 1.5            |
| Tightening torque for coil terminal   |  |             |                |
|   | min  | Nm          | 0.8            |
|   |  |             |                |
|   | max<br>min                                 | Nm<br>Ibin  | 1<br>0.8       |





|   |   | max   | Ibin                            | 0.74  |
|---|---|---|---------------------------------|---|
|   | simultaneously connectable                          |   | Nr.                             | 2   |
| Conductor section   | ANA/O/I/Compil                                      |   |                                 |   |
|   | AWG/Kcmil   | may   |                                 | 10  |
|   | Flexible w/o lug conductor section                  | max   |                                 | 10  |
|   | Trexible w/o lug coriductor section                 | min   | mm²                             | 1   |
|   |   | max   | mm²                             | 6   |
|   | Flexible c/w lug conductor section                  | Παχ   | 111111                          |   |
|   | Trexible 6/W rag conductor section                  | min   | mm²                             | 1   |
|   |   | max   | mm²                             | 4   |
|   | Flexible with insulated spade lug conductor section |   |                                 | <del>`</del>  |
|   | - 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1             | min   | mm²                             | 1   |
|   |   | max   | mm²                             | 4   |
| Dawar tarminal prata  | etion according to IFC/FN COFOO                     |   |                                 | IP20 when   |
| Power terminal protec   | ction according to IEC/EN 60529                     |   |                                 | properly wired  |
| Mechanical features   |   |   |                                 |   |
| Operating position  |   |   |                                 |   |
|   |   | normal  |                                 | Vertical plan   |
|   |   | allowable   |                                 | ±30°  |
| Fixing  |   |   |                                 | Screw / DIN rail  |
|   |   |   |                                 | 35mm  |
| Weight  |   |   | g                               | 364   |
| Conductor section   | AMO (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1          |   |                                 |   |
|   | AWG/kcmil conductor section                         |   |                                 | 4.0   |
| A !!!   |   | max   |                                 | 10  |
| Auxiliary contact char  | acteristics   |   | ۸                               | 10  |
| Thermal current Ith<br>IEC/EN 60947-5-1 de  | onignation  |   | Α                               | A600 - P600   |
| Operating current AC  | ~   |   |                                 | A000 - P000   |
|   |   |   |                                 |   |
| Operating current AC  |   | 2201/   | ۸                               | 2   |
| Operating current AC  |   | 230V  | A                               | 3   |
| Operating current AC  |   | 400V  | Α                               | 1.9   |
|   |   |   |                                 |   |
|   |   | 400V<br>500V  | A<br>A                          | 1.9<br>1.4  |
| Operating current DC  | :12   | 400V  | Α                               | 1.9   |
| Operating current DC  | :12   | 400V<br>500V<br>110V  | A<br>A                          | 1.9<br>1.4<br>5.7   |
| Operating current DC  | :12   | 400V<br>500V<br>110V<br>24V   | A<br>A<br>A                     | 1.9<br>1.4<br>5.7<br>5.7  |
| Operating current DC  | :12   | 400V<br>500V<br>110V<br>24V<br>48V  | A<br>A                          | 1.9<br>1.4<br>5.7<br>5.7<br>2.9   |
| Operating current DC  | :12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V                                 | A<br>A<br>A                     | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3  |
| Operating current DC  | :12   | 400V<br>500V<br>110V<br>24V<br>48V  | A<br>A<br>A<br>A<br>A           | 1.9<br>1.4<br>5.7<br>5.7<br>2.9   |
| Operating current DC  | :12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V                         | A<br>A<br>A<br>A<br>A           | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25  |
| Operating current DC  | :12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A<br>A<br>A      | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1   |
| Operating current DC Operating current DC   | :12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A                   | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55   |
| Operating current DC Operating current DC   | :12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A                   | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55   |
| Operating current DC Operating current DC Operations Mechanical life  | :12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>A<br>A | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2  |
| Operating current DC Operating current DC Operations Mechanical life Electrical life  | :12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A Cycles          | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2  |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data                      | :12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A Cycles          | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2  |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data                      | 213   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A Cycles          | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2  |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data                      | 10d according to EN/ISO 13489-1                     | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A Cycles cycles     | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                         |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 10d according to EN/ISO 13489-1                     | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A Cycles cycles     | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                         |
| Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 10d according to EN/ISO 13489-1                     | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A Cycles cycles     | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000<br>1600000<br>200000000 |



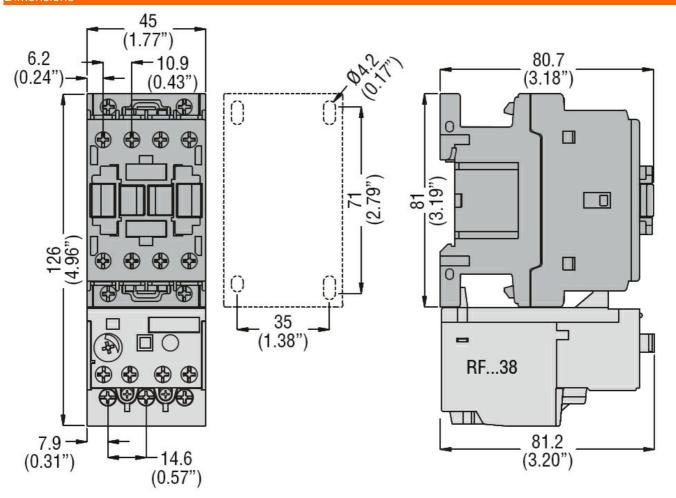


| Rated AC voltage at 60Hz                         |  | V          | 48        |
|--|--|------------|-----------|
| AC operating voltage                             |  |            |           |
| of 60Hz coil powered at 60Hz                     |  |            |           |
| pick-up  |  |            |           |
|  | min                                    | %Us        | 80        |
|  | max                                    | %Us        | 110       |
| drop-out   |  | 0/11-      | 0.0       |
|  | min                                    | %Us        | 20        |
| AC average coil consumption at 20°C              | max                                    | %Us        | 55        |
| ·  |  |            |           |
| of 60Hz coil powered at 60Hz                     | in-rush                                | VA         | 75        |
|  | holding                                | VA<br>VA   | 9         |
| Dissipation at holding ≤20°C 50Hz                | riolaling                              | W          | 2.5       |
| Max cycles frequency                             |  | VV         | 2.5       |
| Mechanical operation                             |  | cycles/h   | 3600      |
| Operating times                                  |  | Jy 0100/11 |           |
| Average time for Us control                      |  |            |           |
| in AC  |  |            |           |
| Closing NO                                       |  |            |           |
| 5.555  | 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                                |  |            |           |
| Full-load current (FLA) for three-phase AC motor |  | _          |           |
|  | at 480V                                | A          | 14        |
|  | at 600V                                | Α          | 17        |
| Yielded mechanical performance                   |  |            |           |
| for single-phase AC motor                        | 440/4007                               | LID        | 4         |
|  | 110/120V                               | HP         | 1         |
| for three whose AC                               | 230V                                   | HP         | 3         |
| for three-phase AC motor                         | 200/2007                               | ПD         | 5         |
|  | 200/208V<br>220/230V                   | HP<br>HP   | 5<br>5    |
|  | 460/480V                               | HP         | 10        |
|  | 575/600V                               | HP         | 15        |
| General USE                                      | 373/000V                               | - ' ' '    | 10        |
| Contactor  |  |            |           |
|  | AC ourrent                             | Α          | 32        |
|  | AC, CHITEDI                            | , ,        | <u> </u>  |
|  | AC current                             |            |           |
| Auxiliary contacts                               |  | V          | 600       |
|  | AC voltage                             | V<br>A     | 600<br>10 |
|  | AC voltage<br>AC current               | Α          | 10        |
|  | AC voltage<br>AC current<br>DC voltage | A<br>V     | 10<br>250 |
|  | AC voltage<br>AC current               | Α          | 10        |





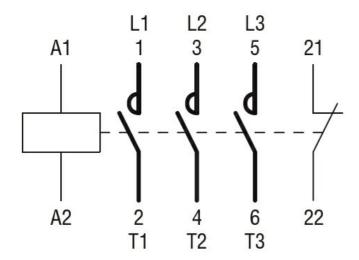
|  | Short circuit current | kA | 100         |
|--|-----------------------|----|-------------|
|  | Fuse rating           | Α  | 60          |
|  | Fuse class            |    | J           |
| Standard fault                                       |                       |    |             |
|  | Short circuit current | kA | 5           |
|  | Fuse rating           | Α  | 80          |
| 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

**ENERGY AND AUTOMATION** 

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 60HZ, 48VAC, 1NC AUXILIARY CONTACT



### 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







| Product designation   |                    |     | Power contactor |
|---|--------------------|-----|-----------------|
| Product type designation  |                    |     | BF18            |
| Contact characteristics   |                    |     |                 |
| Number of poles   |                    | Nr. | 3               |
| Rated insulation voltage Ui IEC/EN                              |                    | V   | 690             |
| Rated impulse withstand voltage Uimp                            |                    | kV  | 6               |
| Operational frequency   |                    |     |                 |
|   | min                | Hz  | 25              |
|   | max                | Hz  | 400             |
| IEC Conventional free air thermal current Ith                   |                    | Α   | 32              |
| Operational current le  |                    |     |                 |
|   | AC-1 (≤40°C)       | Α   | 32              |
|   | AC-1 (≤55°C)       | Α   | 26              |
|   | AC-1 (≤70°C)       | Α   | 23              |
|   | AC-3 (≤440V ≤55°C) | Α   | 18              |
|   | AC-4 (400V)        | Α   | 8.5             |
| Rated operational power AC-3 (T≤55°C)                           |                    |     |                 |
|   | 230V               | kW  | 4               |
|   | 400V               | kW  | 7.5             |
|   | 415V               | kW  | 9               |
|   | 440V               | kW  | 9               |
|   | 500V               | kW  | 10              |
|   | 690V               | kW  | 10              |
| Rated operational power AC-1 (T≤40°C)                           |                    |     |                 |
|   | 230V               | kW  | 12              |
|   | 400V               | kW  | 21              |
|   | 500V               | kW  | 26              |
|   | 690V               | kW  | 36              |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series |                    |     |                 |
|   | ≤24V               | Α   | 17              |
|   | 48V                | Α   | 15              |
|   | 75V                | Α   | 15              |
|   | 110V               | Α   | 6               |
|   | 220V               | Α   | _               |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series |                    |     |                 |
|   | ≤24V               | Α   | 20              |
|   | 48V                | Α   | 20              |
|   | 75V                | Α   | 20              |
|   | 110V               | Α   | 13              |
|   | 220V               | Α   | 1               |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series |                    |     |                 |
|   | ≤24V               | Α   | 22              |
|   | 48V                | Α   | 22              |
|   | 75V                | Α   | 20              |
|   | 110V               | Α   | 16              |
|   |                    |     |                 |





|  | 220V         | Α      | 11         |
|--|--------------|--------|------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series  |              |        |            |
|  | ≤24V         | Α      | 22         |
|  | 48V          | Α      | 22         |
|  | 75V          | Α      | 20         |
|  | 110V         | Α      | 18         |
|  | 220V         | Α      | 13         |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series   |              |        |            |
|  | ≤24V         | Α      | 12         |
|  | 48V          | Α      | 11         |
|  | 75V          | Α      | 11         |
|  | 110V         | Α      | 2          |
|  | 220V         | Α      | _          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series   |              |        |            |
| ·  | ≤24V         | Α      | 15         |
|  | 48V          | Α      | 13         |
|  | 75V          | Α      | 13         |
|  | 110V         | Α      | 8          |
|  | 220V         | Α      | 2          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series   |              |        |            |
|  | ≤24V         | Α      | 18         |
|  | 48V          | A      | 18         |
|  | 75V          | A      | 16         |
|  | 110V         | A      | 12         |
|  | 220V         | A      | 6          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series   | 220 V        | ,,     | <u> </u>   |
| 120 max darrone to in 200 200 with Err = forms with 4 points in defices  | ≤24V         | Α      | 18         |
|  | 48V          | A      | 18         |
|  | 75V          | A      | 16         |
|  | 110V         | A      | 13         |
|  | 220V         | A      | 8          |
| Short-time allowable current for 10s (IEC/EN60947-1)   | 220 V        | A      | 200        |
| Protection fuse  |              | А      | 200        |
| 1 10.000.011 10.00   | gG (IEC)     | Α      | 32         |
|  | aM (IEC)     | A      | 20         |
| Making capacity (RMS value)  | aivi (IEC)   | A      | 180        |
| Breaking capacity at voltage   |              | А      | 100        |
| breaking capacity at voltage   | 440\/        | ۸      | 1 1 1      |
|  | 440V<br>500V | A<br>A | 144<br>120 |
|  | 690V         | A      | 94         |
| Posistance per pole (average value)  | 0907         |        |            |
| Resistance per pole (average value)  Power dissipation per pole (average value)  |              | mΩ     | 2.5        |
| rowei dissipation per pole (average value)   | حلدا         | 14/    | 2.6        |
|  | Ith          | W      | 2.6        |
| Tightoning torque for terminals  | AC3          | W      | 0.8        |
| Tightening torque for terminals  | !            | Nime   | 4 5        |
|  | min          | Nm     | 1.5        |
|  | max          | Nm     | 1.8        |
|  | min          | lbin   | 1.1        |
| This control of the state of th | max          | lbin   | 1.5        |
| Tightening torque for coil terminal  |              |        | 2.2        |
|  | min          | Nm     | 0.8        |
|  | max          | Nm     | 1          |
|  | min          | lbin   | 0.8        |
|  |              |        |            |





| AWG/Kcmil  |   |  | max   | Ibin                        | 0.74   |
|--|---|--|---|-----------------------------|--|
| AWG/Kcmil Flexible w/o lug conductor section Flexible c/w lug conductor section Flexible c/w lug conductor section Flexible c/w lug conductor section Flexible with insulated spade lug conductor section Flexible with insulated  |   | simultaneously connectable                           |   | Nr.                         | 2  |
| Pexible w/o lug conductor section  | Conductor section   | A1110 # 4 11   |   |                             |  |
| Flexible w/o lug conductor section   |   | AWG/Kcmil  |   |                             | 4.0  |
| Flexible c/w lug conductor section   min   |   | Flacible w/s has an electron and the                 | max   |                             | 10   |
| Flexible c/w lug conductor section   |   | Flexible w/o lug conductor section                   | min   | mama <sup>2</sup>           | 4  |
| Flexible c/w lug conductor section   |   |  |   |                             |  |
| Please   P   |   | Florible of what conductor coefficial                | Шах   | IIIII-                      | б  |
| Flexible with insulated spade lug conductor section   Flexible with insulated spade lug conductor section   min max mm²   1    |   | Flexible C/W lug conductor Section                   | min   | mm²                         | 1  |
| Flexible with insulated spade lug conductor section   min   mm²    |   |  |   |                             |  |
| Min max  |   | Flavible with insulated spade lug conductor section  | IIIax   | 111111                      | <del></del>  |
| Power terminal protection according to IEC/EN 60529   IP20 when properly wired Mechanical features   Operating position  |   | r lexible with insulated space lug conductor section | min   | mm²                         | 1  |
| Power terminal protection according to IEC/EN 60529   Power terminal protection according to IEC/EN 60529   Power terminal protection according to IEC/EN 60529   Power terminal protection allowable   \$30°  |   |  |   |                             |  |
| Proper ferminal protection according to IEC/EN 60929   Mechanical features   |   |  | max   |                             |  |
| Mechanical features   Poperating position   Poperating poperating current PC12   Poperating current DC13   Poperating current DC13   Poperating current DC13   Poperating pour poperation pour pour pour pour pour pour pour pour  | Power terminal protection   | ction according to IEC/EN 60529                      |   |                             |  |
| Operating position         normal allowable         Vertical plan allowable         30°           Fixing         grew / DIN rail 35mm         35mm           Weight         g         356           Conductor section         max         10           Auxiliary contact characteristics         max         10           IEC/EN 60947-5-1 designation         A 10           Operating current AC15         230V A 3         3           Querating current DC12         230V A 1.9         3           Operating current DC12         110V A 5.7           Operating current DC13         24V A 5.7           Operating current DC13         24V A 5.7           Operating current DC13         24V A 5.7           Operating current DC14         110V A 1.25           Operating current DC15         25V A 5.7           Operating current DC16         25V A 5.7           Operating current DC18         48V A 2.9           Operating current DC19         60V A 2.3           Electric current DC19         25V A 1.1           Current DC19         25V A 2.5           Current DC19   | Mechanical features   |  |   |                             |  |
| Normal allowable   Normal 130°   Normal 130°   | Operating position  |  |   |                             |  |
| Screw  | <b>-</b> .  |  | normal  |                             | Vertical plan  |
| FixIng  Weight g 356  Conductor section  AWG/kcmil conductor section  AWG/kcmil conductor section  max 10  Auxiliary contact characteristics  Thermal current lth A 10  EC/EN 60947-5-1 designation  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 5.7  48V A 2.9 60V A 2.3 110V A 1.25 125V A 1.1 220V A 0.55 60V A 0.5 600V A 0.2  Operations  Mechanical life cycles 20000000  Electrical life cycles 1600000  Safety related data  Performance level B10d according to EN/ISO 13489-1  Frated load mechanical load cycles 1600000  Mirror contats according to IEC/EN 609474-4-1  Mirror contats according to IEC/EN 609474-4-1  Mirror contats according to IEC/EN 609474-4-1   |   |  | allowable   |                             |  |
| Weight   | Eiving  |  |   |                             | Screw / DIN rail   |
| AWG/kcmil conductor section   max  |   |  |   |                             | 35mm   |
| AWG/kcmil conductor section max 10  Auxiliary contact characteristics  Thermal current Ith A 10 IEC/EN 60947-5-1 designation A600 - P600  Operating current AC15  Performan current DC15  Operating current DC12  Operating current DC12  1100 A 5.7  Operating current DC13  240 A 1.4  Operating current DC13  250 A 1.4  Operating current DC13  240 A 5.7  A80 5. | Weight  |  |   | g                           | 356  |
| Max   10   Auxiliary contact characteristics   | Conductor section   |  |   |                             |  |
| Auxiliary contact characteristics  |   | AWG/kcmil conductor section                          |   |                             |  |
| Thermal current Ith  |   |  | max   |                             | 10   |
| EC/EN 60947-5-1 designation  | •   | acteristics  |   |                             |  |
| Comparising current AC15   230V   A   3   400V   A   1.9   500V   A   1.4  |   |  |   | A                           |  |
| 230V   |   | _ •  |   |                             | A600 - P600  |
| A 00   | Operating current AC  | 1 <i>5</i>   |   |                             |  |
| S00V   A   1.4   A   5.7   | . •   | 10   |   |                             |  |
| Operating current DC12   |   | 15   |   |                             |  |
| 110V   A   5.7   |   | 15   | 400V  | Α                           | 1.9  |
| Comparison of the content DC13   |   |  | 400V  | Α                           | 1.9  |
| 24V   A   5.7   48V   A   2.9   60V   A   2.3   110V   A   1.25   125V   A   1.1   1.5   1.25V   A   0.55   600V   A   0.2   0.2   0.2   0.2   0.2   0.2   0.2   0.2   0.2   0.2   0.3   0.2   0.3     |   |  | 400V<br>500V  | A<br>A                      | 1.9<br>1.4   |
| A8V   A   2.9   60V   A   2.3   110V   A   1.25   125V   A   1.1   | Operating current DC  | 12   | 400V<br>500V  | A<br>A                      | 1.9<br>1.4   |
| 60V  | Operating current DC  | 12   | 400V<br>500V<br>110V  | A<br>A                      | 1.9<br>1.4<br>5.7  |
| 110V A 1.25   125V A 1.1   125V A 0.55   125V A 0.55   1220V A 0.55   1220V A 0.55   1220V A 0.2   1220V A 0.55   1220V A 0.2   1220V A 0.55   1220V A 0.5   | Operating current DC  | 12   | 400V<br>500V<br>110V<br>24V   | A<br>A<br>A                 | 1.9<br>1.4<br>5.7<br>5.7   |
| 125V A 1.1   220V A 0.55   600V A 0.2  | Operating current DC  | 12   | 400V<br>500V<br>110V<br>24V<br>48V  | A<br>A<br>A                 | 1.9<br>1.4<br>5.7<br>5.7<br>2.9  |
| 220V A 0.55  | Operating current DC  | 12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V                                 | A<br>A<br>A<br>A            | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3   |
| Operations         Cycles         20000000           Mechanical life         cycles         20000000           Electrical life         cycles         1600000           Safety related data           Performance level B10d according to EN/ISO 13489-1           rated load cycles         1600000 mechanical load cycles         20000000           Mirror contats according to IEC/EN 609474-4-1         yes           EMC compatibility         yes   | Operating current DC  | 12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V                         | A A A A A                   | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25   |
| Mechanical life cycles 20000000  Electrical life cycles 1600000  Safety related data  Performance level B10d according to EN/ISO 13489-1  rated load cycles 1600000  mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility yes   | Operating current DC  | 12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V                 | A<br>A<br>A<br>A<br>A<br>A  | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1  |
| Mechanical life         cycles         20000000           Electrical life         cycles         1600000           Safety related data           Performance level B10d according to EN/ISO 13489-1           rated load cycles         1600000 mechanical load cycles         20000000           Mirror contats according to IEC/EN 609474-4-1         yes           EMC compatibility         yes  | Operating current DC  | 12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A               | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55  |
| Electrical life cycles 1600000  Safety related data  Performance level B10d according to EN/ISO 13489-1  rated load cycles 1600000  mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility yes  | Operating current DC Operating current DC   | 12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A               | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55  |
| Safety related data  Performance level B10d according to EN/ISO 13489-1  rated load cycles 1600000 mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility  yes  | Operating current DC Operating current DC   | 12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A               | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Performance level B10d according to EN/ISO 13489-1  rated load cycles 1600000 mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility  yes   | Operating current DC Operating current DC Operations Mechanical life  | 12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A Cycles      | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| rated load cycles 1600000 mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility  rated load cycles 20000000  yes  yes  | Operating current DC Operating current DC  Operations Mechanical life Electrical life   | 12   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A Cycles      | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1 yes  EMC compatibility yes  | Operating current DC Operating current DC  Operations Mechanical life Electrical life Safety related data                     | 13   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V         | A A A A A A A A Cycles      | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes  | Operating current DC Operating current DC  Operations Mechanical life Electrical life Safety related data                     | 13   | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A Cycles cycles | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                                |
| EMC compatibility yes  | Operating current DC Operating current DC  Operations Mechanical life Electrical life Safety related data                     | 12 13 10d according to EN/ISO 13489-1                | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A Cycles cycles | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                                |
| • •  | Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 12 13  10d according to EN/ISO 13489-1               | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A Cycles cycles | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000<br>1600000<br>200000000        |
|  | Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 12 13  10d according to EN/ISO 13489-1               | 400V<br>500V<br>110V<br>24V<br>48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A A A Cycles cycles | 1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000<br>1600000<br>200000000<br>yes |



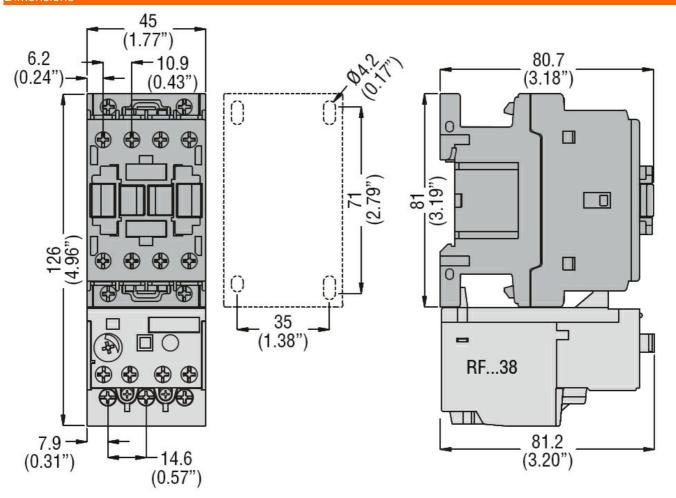


| AC operating voltage  of 60Hz coil powered at 60Hz pick-up  min ysus 80 max ysus 110  drop-out  min ysus 20 max ysus 25  AC average coil consumption at 20°C of 60Hz coil powered at 60Hz  in-rush yA 75 holding VA 9  Dissipation at holding \$20°C 50Hz  Max yedges frequency Mechanical operation Operating times  Average time for Us control in AC  Closing NO  min ms 8 max ms 24  Opening NO  min ms 10 max ms 20  Closing NC  min ms 110 max ms 20  Closing NC  min ms 14 max ms 20  Closing NC  Time 1 ms 10 max ms 20  Opening NC  Min min ms 10 max ms 20  Closing NC  min ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 20  Opening NC  Time 3 ms 14 max ms 20  Opening NC  Time 4 max ms 20  Opening NC  Time 4 max ms 20  Opening NC  Time 4 max ms 20  Opening NC  Time 5 ms 14 max ms 20  Opening NC  Time 6 ms 11 max ms 20  Opening NC  Time 7 ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 1 ms 14 max ms 20  Opening NC  Time 1 ms 10 max ms 10 max ms 20  Opening NC  Time 1 ms 10 max ms 10 max ms 20  Opening NC  Time 1 ms 10 max ms 10 max ms 20  Opening NC  Time 1 ms 10 ma | Rated AC voltage at 60Hz                         |         |            | V        | 120      |
|---|--|---------|------------|----------|----------|
| Pick-up   Pick-up   Pick        | AC operating voltage                             |         |            |          |          |
| Mary       | of 60Hz coil powered at 60Hz                     | Z       |            |          |          |
| Max   Wus   110   Min   Mus   20   Min   Mus   55   Min   Mus   Mus   55   Min   Mus   55   Min   Mus   Mus   55   Min   Mus   Mu     | pick-  | -up     |            |          |          |
| AC average coil consumption at 20°C   76 0Hz coil powered at 60Hz   75   75   75   75   75   75   75   7  |  |         | min        |          |          |
| Min   Multiple   Mu     |  |         | max        | %Us      | 110      |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz  AC average coil consumption at 20°C of 60Hz coil powered at 60Hz    In-rush   VA   75   | drop-  | -out    |            |          |          |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz  |  |         |            |          |          |
| 1   | 10000  |         | max        | %Us      | 55       |
| In-rush   NA   75   holding   VA   9  |  |         |            |          |          |
| Notiding   VA   9   | of 60Hz coil powered at 60Hz                     | Z       | :          | ١/٨      | 75       |
| Dissipation at holding ≤20°C 50Hz   W   2.5   |  |         |            |          |          |
| Max cycles frequency           Mechanical operation         cycles/h         3600           Operating times           Average time for Us control in AC         min         ms         8           Closing NO         min         ms         24           Opening NO         min         ms         10           Closing NC         min         ms         14           Max         ms         28           Opening NC         min         ms         14           Max         ms         14           max         ms         28           Opening NC         min         ms         14           max         ms         28           Opening NC         min         ms         7           max   | Dissipation at holding <20°C FOLIZ               |         | noiding    |          |          |
| Mechanical operation   Cycles/h   3600  |  |         |            | VV       | 2.5      |
| Closing NO  |  |         |            | ovoloo/b | 2600     |
| Average time for Us control    In AC  |  |         |            | cycles/n | 3000     |
| in AC  Closing NO  min ms 8 max ms 24  Opening NO  min ms 10 max ms 20  Closing NC  min ms 10 max ms 20  Closing NC  min ms 14 max ms 28  Opening NC  min ms 7 ms 14 max ms 28  Opening NC  min ms 7 max ms 18  UL technical data  Full-load current (FLA) for three-phase AC motor  at 480V A 14 at 600V A 17  Yielded mechanical performance for single-phase AC motor  110/120V HP 1 230V HP 3  for three-phase AC motor  200/208V HP 3  for three-phase AC motor  200/208V HP 5 220/230V HP 5 220/230V HP 5 220/230V HP 10 575/600V HP 10 575/600V HP 10 575/600V 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 10 DC voltage V 250 DC current A 10   |  |         |            |          |          |
| Closing NO  |  |         |            |          |          |
| Opening NO    Min   Mis   24   24   24   24   24   24   24   2  |  | ina NO  |            |          |          |
| Opening NO  | Clos   |         | min        | ms       | 8        |
| Opening NO  |  |         |            |          |          |
| Min max ms   10 max ms   20   | Oper   | ning NO |            |          |          |
| Closing NC  | ·  | Ū       | min        | ms       | 10       |
| Min ms   14 max ms   28   |  |         | max        | ms       | 20       |
| Opening NC    Min   | Closi  | ing NC  |            |          |          |
| Opening NC  |  |         | min        | ms       | 14       |
| Min ms 7 ms 18  |  |         | max        | ms       | 28       |
| Max   | Oper   | ning NC |            |          |          |
| September   Contactor   Full-load current (FLA) for three-phase AC motor   at 480V   A   14   at 600V   A   17  |  |         | min        |          |          |
| Full-load current (FLA) for three-phase AC motor  at 480V A 14 at 600V A 17  Yielded mechanical performance for single-phase AC motor  110/120V HP 1 230V HP 3  for three-phase AC motor  200/208V HP 5 220/230V HP 5 460/480V HP 10 575/600V 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  |  |         | max        | ms       | 18       |
| At 480V   A   14   at 600V   A   17   |  |         |            |          |          |
| At 600V   A   17  | Full-load current (FLA) for three-phase AC motor |         | -1.400\/   | Δ.       | 4.4      |
| Yielded mechanical performance   for single-phase AC motor   110/120V   HP   1   230V   HP   3  |  |         |            |          |          |
| for single-phase AC motor  110/120V HP 1 230V HP 3  for three-phase AC motor  200/208V HP 5 220/230V HP 5 460/480V HP 10 575/600V 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  | Violded we also visal newfarms and               |         | at 600V    | A        | 17       |
| 110/120V  | •  |         |            |          |          |
| 230V HP 3   | ior single-phase AC motor                        |         | 110/120\/  | ЦD       | 1        |
| For three-phase AC motor   200/208V   |  |         |            |          |          |
| 200/208V   HP   5   220/230V   HP   5   460/480V   HP   10   575/600V   HP   15   15   15   15   15   15   15   1   | for three-phase AC motor                         |         | 230 V      | 111      | <u> </u> |
| 220/230V   HP   5   460/480V   HP   10   575/600V   HP   15   | ioi tilloo pilase Ao illotoi                     |         | 200/208\/  | HP       | 5        |
| 460/480V   HP   10   575/600V   HP   15   |  |         |            |          |          |
| Seneral USE   Contactor   AC current   A   32   |  |         |            |          |          |
| Contactor   AC current   A   32   |  |         |            |          |          |
| Contactor           AC current         A 32           Auxiliary contacts         AC voltage         V 600           AC current         A 10           DC voltage         V 250           DC current         A 1   | General USE                                      |         |            |          |          |
| AC current A 32  Auxiliary contacts  AC voltage V 600 AC current A 10 DC voltage V 250 DC current A 1   |  |         |            |          |          |
| AC voltage V 600 AC current A 10 DC voltage V 250 DC current A 1  |  |         | AC current | Α        | 32       |
| AC voltage V 600 AC current A 10 DC voltage V 250 DC current A 1  | Auxiliary contacts                               |         |            |          |          |
| DC voltage V 250<br>DC current A 1  |  |         | AC voltage | V        | 600      |
| DC current A 1  |  |         | _          | Α        | 10       |
|   |  |         | DC voltage | V        | 250      |
| Short-circuit protection fuse, 600V   |  |         | DC current | Α        | 1        |
|   | Short-circuit protection fuse, 600V              |         |            |          |          |





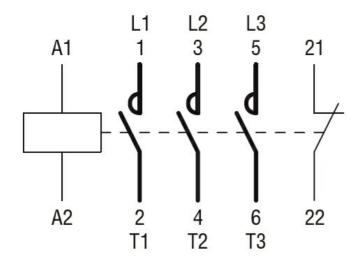
|  | Short circuit current | kA | 100         |
|--|-----------------------|----|-------------|
|  | Fuse rating           | Α  | 60          |
|  | Fuse class            |    | J           |
| Standard fault                                       |                       |    |             |
|  | Short circuit current | kA | 5           |
|  | Fuse rating           | Α  | 80          |
| 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

**ENERGY AND AUTOMATION** 

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 60HZ, 120VAC, 1NC AUXILIARY CONTACT



### 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







Product designation Power contactor Product type designation **BF18** Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency Нъ 25 min Hz 400 max IEC Conventional free air thermal current Ith 32 Α Operational current le AC-1 (≤40°C) Α 32 AC-1 (≤55°C) Α 26 AC-1 (≤70°C) Α 23 AC-3 (≤440V ≤55°C) Α 18 AC-4 (400V) 8.5 Rated operational power AC-3 (T≤55°C) 230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10 Rated operational power AC-1 (T≤40°C) 230V kW 12 400V kW 21 500V kW 26 690V kW 36 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V Α 17 48V Α 15 75V Α 15 110V Α 6 220V Α IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V Α 20 48V Α 20 75V 20 Α 110V Α 13 220V Α 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V 22 Α

22

20

16

Α

Α

48V

75V

110V





|  | 220V         | Α      | 11         |
|--|--------------|--------|------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series  |              |        |            |
|  | ≤24V         | Α      | 22         |
|  | 48V          | Α      | 22         |
|  | 75V          | Α      | 20         |
|  | 110V         | Α      | 18         |
|  | 220V         | Α      | 13         |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series   |              |        |            |
|  | ≤24V         | Α      | 12         |
|  | 48V          | Α      | 11         |
|  | 75V          | Α      | 11         |
|  | 110V         | Α      | 2          |
|  | 220V         | Α      | _          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series   |              |        |            |
| ·  | ≤24V         | Α      | 15         |
|  | 48V          | Α      | 13         |
|  | 75V          | Α      | 13         |
|  | 110V         | Α      | 8          |
|  | 220V         | Α      | 2          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series   |              |        |            |
|  | ≤24V         | Α      | 18         |
|  | 48V          | A      | 18         |
|  | 75V          | A      | 16         |
|  | 110V         | A      | 12         |
|  | 220V         | A      | 6          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series   | 220 V        | ,,     |            |
| 120 max carrent to in 200 200 with Lift - forms with 4 polos in series   | ≤24V         | Α      | 18         |
|  | 48V          | A      | 18         |
|  | 75V          | A      | 16         |
|  | 110V         | A      | 13         |
|  | 220V         | A      | 8          |
| Short-time allowable current for 10s (IEC/EN60947-1)   | 220 V        | A      | 200        |
| Protection fuse  |              | А      | 200        |
| 1 10.000.011 10.00   | gG (IEC)     | Α      | 32         |
|  | aM (IEC)     | A      | 20         |
| Making capacity (RMS value)  | aivi (IEC)   | A      | 180        |
| Breaking capacity at voltage   |              | А      | 100        |
| breaking capacity at voltage   | 440\/        | ۸      | 1 1 1      |
|  | 440V<br>500V | A<br>A | 144<br>120 |
|  | 690V         | A      | 94         |
| Posistance per pole (average value)  | 0907         |        |            |
| Resistance per pole (average value)  Power dissipation per pole (average value)  |              | mΩ     | 2.5        |
| rowei dissipation per pole (average value)   | حلدا         | 14/    | 2.6        |
|  | Ith          | W      | 2.6        |
| Tightoning torque for terminals  | AC3          | W      | 0.8        |
| Tightening torque for terminals  | !            | Nime   | 4 5        |
|  | min          | Nm     | 1.5        |
|  | max          | Nm     | 1.8        |
|  | min          | lbin   | 1.1        |
| This control of the state of th | max          | lbin   | 1.5        |
| Tightening torque for coil terminal  |              |        | 2.2        |
|  | min          | Nm     | 0.8        |
|  | max          | Nm     | 1          |
|  | min          | lbin   | 0.8        |
|  |              |        |            |





| Max number of wires  |  | max  | Ibin                            | 0.74   |
|--|--|--|---------------------------------|--|
|  | simultaneously connectable                           |  | Nr.                             | 2  |
| Conductor section  |  |  |                                 |  |
|  | AWG/Kcmil  |  |                                 |  |
|  | <del></del>  | max  |                                 | 10   |
|  | Flexible w/o lug conductor section                   | _  |                                 |  |
|  |  | min  | mm²                             | 1  |
|  | = -  | max  | mm²                             | 6  |
|  | Flexible c/w lug conductor section                   |  | 2                               |  |
|  |  | min  | mm²                             | 1  |
|  | Florible with insulated and do have and other action | max  | mm²                             | 4  |
|  | Flexible with insulated spade lug conductor section  | min  | na na 2                         | 4  |
|  |  | min  | mm²<br>mm²                      | 1<br>4   |
|  |  | max  | 111111                          | IP20 when  |
| Power terminal prote   | ction according to IEC/EN 60529                      |  |                                 | properly wired   |
| Mechanical features  |  |  |                                 | properly wired   |
| Operating position   |  |  |                                 |  |
| - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1  |  | normal                                     |                                 | Vertical plan  |
|  |  | allowable                                  |                                 | ±30°   |
| Fixing   |  |  |                                 | Screw / DIN rail<br>35mm   |
| Weight   |  |  | g                               | 348  |
| Conductor section  |  |  | 9                               | 340  |
| Conductor Section  | AWG/kcmil conductor section                          |  |                                 |  |
|  | AWO/Keriii conductor section                         | max  |                                 | 10   |
| Auxiliary contact chai   | racteristics   | тах  |                                 | 10   |
| Thermal current Ith  |  |  | Α                               | 10   |
| IEC/EN 60947-5-1 de  | esignation   |  |                                 | A600 - P600  |
| Operating current AC   |  |  |                                 |  |
|  |  | 230V                                       | Α                               | 3  |
|  |  | 400V                                       | Α                               | 1.9  |
|  |  | 500V                                       | Α                               | 1.4  |
| Operating current DC   | C12  |  |                                 |  |
|  |  | 110V                                       | Α                               | 5.7  |
|  |  |  |                                 |  |
| Operating current DC   | C13  |  |                                 |  |
| Operating current DC   | 213  | 24V  | Α                               | 5.7  |
| Operating current DC   | 213  | 24V<br>48V                                 | A<br>A                          | 5.7<br>2.9   |
| Operating current DC   | 213  |  |                                 |  |
| Operating current DC   | 213  | 48V  | Α                               | 2.9  |
| Operating current DC   | 213  | 48V<br>60V<br>110V<br>125V                 | A<br>A                          | 2.9<br>2.3   |
| Operating current DC   | 213  | 48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A                     | 2.9<br>2.3<br>1.25<br>1.1<br>0.55  |
|  | 213  | 48V<br>60V<br>110V<br>125V                 | A<br>A<br>A                     | 2.9<br>2.3<br>1.25<br>1.1  |
| Operations   | 213  | 48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A                | 2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operations<br>Mechanical life  | 213  | 48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>cycles | 2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operations<br>Mechanical life<br>Electrical life   | 213  | 48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A                | 2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operating current DC  Operations  Mechanical life  Electrical life  Safety related data                  |  | 48V<br>60V<br>110V<br>125V<br>220V         | A<br>A<br>A<br>A<br>A<br>cycles | 2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2   |
| Operations Mechanical life Electrical life Safety related data   | 10d according to EN/ISO 13489-1                      | 48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A Cycles                | 2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                                |
| Operations Mechanical life Electrical life Safety related data   | 10d according to EN/ISO 13489-1                      | 48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A Cycles cycles         | 2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                                |
| Operations<br>Mechanical life<br>Electrical life<br>Safety related data<br>Performance level B           | 10d according to EN/ISO 13489-1                      | 48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A Cycles                | 2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000                                |
| Operations Mechanical life Electrical life Safety related data Performance level B Mirror contats accord | 10d according to EN/ISO 13489-1                      | 48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A Cycles cycles         | 2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000<br>1600000<br>200000000<br>yes |
| Operations<br>Mechanical life<br>Electrical life<br>Safety related data<br>Performance level B           | 10d according to EN/ISO 13489-1                      | 48V<br>60V<br>110V<br>125V<br>220V<br>600V | A A A A A Cycles cycles         | 2.9<br>2.3<br>1.25<br>1.1<br>0.55<br>0.2<br>20000000<br>1600000<br>1600000<br>20000000         |



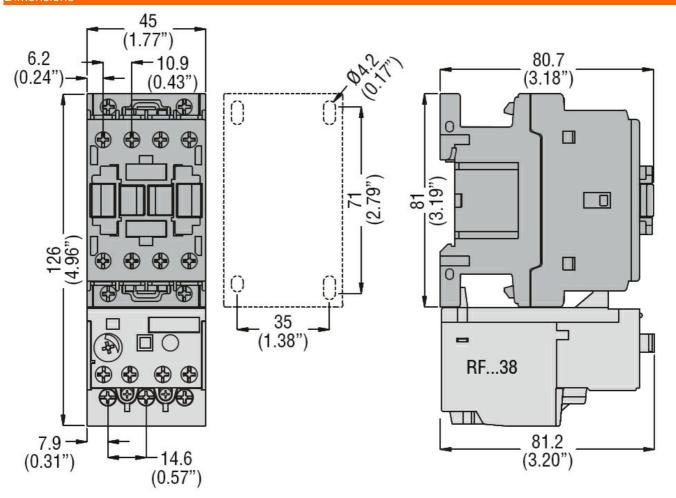


| for three-phase AC motor   | min max min-rush holding min max min max min max min max | %Us %Us %Us %Us %Us W VA VA W cycles/h ms ms        | 80<br>110<br>20<br>55<br>75<br>9<br>2.5<br>3600            |
|--|--|---|--|
| pick-up  drop-out  AC average coil consumption at 20°C     of 60Hz coil powered at 60Hz  Dissipation at holding ≤20°C 50Hz  Max cycles frequency  Mechanical operation Operating times  Average time for Us control     in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance     for single-phase AC motor | max min max in-rush holding min max min max              | %Us %Us %Us VA VA W cycles/h ms ms                  | 110<br>20<br>55<br>75<br>9<br>2.5<br>3600<br>8<br>24<br>10 |
| AC average coil consumption at 20°C  | max min max in-rush holding min max min max              | %Us %Us %Us VA VA W cycles/h ms ms                  | 110<br>20<br>55<br>75<br>9<br>2.5<br>3600<br>8<br>24<br>10 |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz  Dissipation at holding ≤20°C 50Hz  Max cycles frequency  Mechanical operation Operating times  Average time for Us control in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor                                | max min max in-rush holding min max min max              | %Us %Us %Us VA VA W cycles/h ms ms                  | 110<br>20<br>55<br>75<br>9<br>2.5<br>3600<br>8<br>24<br>10 |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz  Dissipation at holding ≤20°C 50Hz  Max cycles frequency  Mechanical operation Operating times  Average time for Us control in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor                                | min max  in-rush holding  min max  min max               | %Us<br>%Us<br>VA<br>VA<br>W<br>cycles/h<br>ms<br>ms | 20<br>55<br>75<br>9<br>2.5<br>3600                         |
| AC average coil consumption at 20°C of 60Hz coil powered at 60Hz  Dissipation at holding ≤20°C 50Hz  Max cycles frequency  Mechanical operation Operating times  Average time for Us control in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor                                | in-rush holding  min max  min max                        | %Us  VA  VA  W  cycles/h  ms  ms                    | 55<br>75<br>9<br>2.5<br>3600<br>8<br>24<br>10              |
| of 60Hz coil powered at 60Hz  Dissipation at holding ≤20°C 50Hz  Max cycles frequency  Mechanical operation  Operating times  Average time for Us control  in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance  for single-phase AC motor   | in-rush holding  min max  min max                        | %Us  VA  VA  W  cycles/h  ms  ms                    | 55<br>75<br>9<br>2.5<br>3600<br>8<br>24<br>10              |
| of 60Hz coil powered at 60Hz  Dissipation at holding ≤20°C 50Hz  Max cycles frequency  Mechanical operation  Operating times  Average time for Us control  in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance  for single-phase AC motor   | in-rush<br>holding<br>min<br>max<br>min<br>max           | VA<br>VA<br>W<br>cycles/h<br>ms<br>ms               | 75<br>9<br>2.5<br>3600<br>8<br>24                          |
| of 60Hz coil powered at 60Hz  Dissipation at holding ≤20°C 50Hz  Max cycles frequency  Mechanical operation  Operating times  Average time for Us control  in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance  for single-phase AC motor   | min<br>max<br>min<br>max                                 | VA<br>W<br>cycles/h<br>ms<br>ms                     | 9<br>2.5<br>3600<br>8<br>24<br>10                          |
| Dissipation at holding ≤20°C 50Hz  Max cycles frequency  Mechanical operation  Operating times  Average time for Us control  in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance  for single-phase AC motor   | min<br>max<br>min<br>max                                 | VA<br>W<br>cycles/h<br>ms<br>ms                     | 9<br>2.5<br>3600<br>8<br>24<br>10                          |
| Max cycles frequency Mechanical operation Operating times Average time for Us control in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  | min<br>max<br>min<br>max                                 | VA<br>W<br>cycles/h<br>ms<br>ms                     | 9<br>2.5<br>3600<br>8<br>24<br>10                          |
| Max cycles frequency Mechanical operation Operating times Average time for Us control in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  | min<br>max<br>min<br>max                                 | W cycles/h ms ms                                    | 2.5<br>3600<br>8<br>24<br>10                               |
| Max cycles frequency Mechanical operation Operating times Average time for Us control in AC  Closing NO  Opening NO  Closing NC  Opening NC  UL technical data Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  | max<br>min<br>max  | cycles/h  ms ms ms                                  | 3600<br>8<br>24<br>10                                      |
| Mechanical operation  Operating times  Average time for Us control in AC  Closing NO  Opening NO  Closing NC  Closing NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  | max<br>min<br>max  | ms<br>ms  | 8<br>24<br>10  |
| Average time for Us control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC  UL technical data Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  | max<br>min<br>max  | ms<br>ms  | 8<br>24<br>10  |
| Average time for Us control in AC  Closing NO  Opening NO  Closing NC  Opening NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor   | max<br>min<br>max  | ms<br>ms  | 10   |
| in AC Closing NO Opening NO Closing NC Opening NC Opening NC  UL technical data Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor   | max<br>min<br>max  | ms<br>ms  | 10   |
| in AC Closing NO Opening NO Closing NC Opening NC Opening NC  UL technical data Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor   | max<br>min<br>max  | ms<br>ms  | 10   |
| Closing NO  Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  | max<br>min<br>max  | ms<br>ms  | 10   |
| Opening NO  Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  | max<br>min<br>max  | ms<br>ms  | 10   |
| Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor  | max<br>min<br>max  | ms<br>ms  | 10   |
| Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor  | min<br>max   | ms  | 10   |
| Closing NC  Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor  | max  |   |  |
| Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor  | max  |   |  |
| Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor  |  |   |  |
| Opening NC  UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor  | min  |   |  |
| UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor  |  | ms  | 14   |
| UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor  | max  | ms  | 28   |
| UL technical data  Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor  | max  |   | 20   |
| Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor   | min  | ms  | 7  |
| Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor   | max  | ms  | 18   |
| Full-load current (FLA) for three-phase AC motor  Yielded mechanical performance for single-phase AC motor  for three-phase AC motor   | THOOK  | 1110  |  |
| Yielded mechanical performance for single-phase AC motor  for three-phase AC motor   |  |   |  |
| for single-phase AC motor  for three-phase AC motor  | at 480V  | Α   | 14   |
| for single-phase AC motor  for three-phase AC motor  | at 600V  | A   | 17   |
| for single-phase AC motor  for three-phase AC motor  | at 000 v   |   | - 17   |
| for three-phase AC motor   |  |   |  |
| for three-phase AC motor   | 110/120V   | HP  | 1  |
|  | 230V   | HP<br>HP  | 1  |
|  | 2307   | חר  | 3  |
| ·  | 200/2021   | LID   | E  |
|  | 200/208V   | HP  | 5  |
|  | 220/230V   | HP  | 5  |
|  | 460/480V   | HP  | 10   |
|  | 575/600V   | HP  | 15   |
| General USE  |  |   |  |
| Contactor  | _  |   |  |
|  | C current  | Α   | 32   |
| Auxiliary contacts   |  |   |  |
|  |  |   | 600  |
|  | C voltage  | V   |  |
|  | C current  | Α   | 10   |
|  | C current<br>C voltage                                   |   | 10<br>250  |
| Short-circuit protection fuse, 600V  | C current  | Α   |  |
| High fault   | C current<br>C voltage                                   | A<br>V  | 250  |



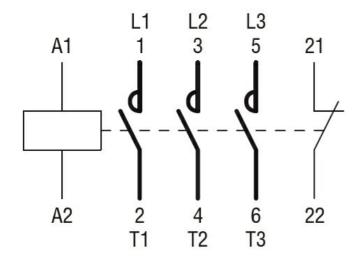


|  | Short circuit current | kA | 100         |
|--|-----------------------|----|-------------|
|  | Fuse rating           | Α  | 60          |
|  | Fuse class            |    | J           |
| Standard fault                                       |                       |    |             |
|  | Short circuit current | kA | 5           |
|  | Fuse rating           | Α  | 80          |
| 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







| Product designation   |                    |     | Power contactor |
|---|--------------------|-----|-----------------|
| Product type designation  |                    |     | BF18            |
| Contact characteristics   |                    |     |                 |
| Number of poles   |                    | Nr. | 3               |
| Rated insulation voltage Ui IEC/EN                              |                    | V   | 690             |
| Rated impulse withstand voltage Uimp                            |                    | kV  | 6               |
| Operational frequency   |                    |     |                 |
|   | min                | Hz  | 25              |
|   | max                | Hz  | 400             |
| IEC Conventional free air thermal current Ith                   |                    | Α   | 32              |
| Operational current le  |                    |     |                 |
|   | AC-1 (≤40°C)       | Α   | 32              |
|   | AC-1 (≤55°C)       | Α   | 26              |
|   | AC-1 (≤70°C)       | Α   | 23              |
|   | AC-3 (≤440V ≤55°C) | Α   | 18              |
|   | AC-4 (400V)        | Α   | 8.5             |
| Rated operational power AC-3 (T≤55°C)                           |                    |     |                 |
|   | 230V               | kW  | 4               |
|   | 400V               | kW  | 7.5             |
|   | 415V               | kW  | 9               |
|   | 440V               | kW  | 9               |
|   | 500V               | kW  | 10              |
|   | 690V               | kW  | 10              |
| Rated operational power AC-1 (T≤40°C)                           |                    |     |                 |
|   | 230V               | kW  | 12              |
|   | 400V               | kW  | 21              |
|   | 500V               | kW  | 26              |
|   | 690V               | kW  | 36              |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series |                    |     |                 |
|   | ≤24V               | Α   | 17              |
|   | 48V                | Α   | 15              |
|   | 75V                | Α   | 15              |
|   | 110V               | Α   | 6               |
|   | 220V               | Α   | _               |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series |                    |     |                 |
|   | ≤24V               | Α   | 20              |
|   | 48V                | Α   | 20              |
|   | 75V                | Α   | 20              |
|   | 110V               | Α   | 13              |
|   | 220V               | Α   | 1               |
| IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series |                    |     |                 |
|   | ≤24V               | Α   | 22              |
|   | 48V                | Α   | 22              |
|   | 75V                | Α   | 20              |
|   | 110V               | Α   | 16              |
|   |                    |     |                 |





|  | 220V         | Α      | 11         |
|--|--------------|--------|------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series  |              |        |            |
|  | ≤24V         | Α      | 22         |
|  | 48V          | Α      | 22         |
|  | 75V          | Α      | 20         |
|  | 110V         | Α      | 18         |
|  | 220V         | Α      | 13         |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series   |              |        |            |
|  | ≤24V         | Α      | 12         |
|  | 48V          | Α      | 11         |
|  | 75V          | Α      | 11         |
|  | 110V         | Α      | 2          |
|  | 220V         | Α      | _          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series   |              |        |            |
| ·  | ≤24V         | Α      | 15         |
|  | 48V          | Α      | 13         |
|  | 75V          | Α      | 13         |
|  | 110V         | Α      | 8          |
|  | 220V         | Α      | 2          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series   |              |        |            |
|  | ≤24V         | Α      | 18         |
|  | 48V          | A      | 18         |
|  | 75V          | A      | 16         |
|  | 110V         | A      | 12         |
|  | 220V         | A      | 6          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series   | 220 V        | ,,     |            |
| 120 max carrent to in 200 200 with Lift - forms with 4 polos in series   | ≤24V         | Α      | 18         |
|  | 48V          | A      | 18         |
|  | 75V          | A      | 16         |
|  | 110V         | A      | 13         |
|  | 220V         | A      | 8          |
| Short-time allowable current for 10s (IEC/EN60947-1)   | 220 V        | A      | 200        |
| Protection fuse  |              | А      | 200        |
| 1 10.000.011 10.00   | gG (IEC)     | Α      | 32         |
|  | aM (IEC)     | A      | 20         |
| Making capacity (RMS value)  | aivi (IEC)   | A      | 180        |
| Breaking capacity at voltage   |              | А      | 100        |
| breaking capacity at voltage   | 440\/        | ۸      | 1 1 1      |
|  | 440V<br>500V | A<br>A | 144<br>120 |
|  | 690V         | A      | 94         |
| Posistance per pole (average value)  | 0907         |        |            |
| Resistance per pole (average value)  Power dissipation per pole (average value)  |              | mΩ     | 2.5        |
| rowei dissipation per pole (average value)   | حلدا         | 14/    | 2.6        |
|  | Ith          | W      | 2.6        |
| Tightoning torque for terminals  | AC3          | W      | 0.8        |
| Tightening torque for terminals  | !            | Nime   | 4 5        |
|  | min          | Nm     | 1.5        |
|  | max          | Nm     | 1.8        |
|  | min          | lbin   | 1.1        |
| This control of the state of th | max          | lbin   | 1.5        |
| Tightening torque for coil terminal  |              |        | 2.2        |
|  | min          | Nm     | 0.8        |
|  | max          | Nm     | 1          |
|  | min          | lbin   | 0.8        |
|  |              |        |            |





| Conductor section  AWG/Kcmil    max  |                        |   | max             | lbin   | 0.74           |
|--|------------------------|---|-----------------|--------|----------------|
| Name   |                        | simultaneously connectable                          |                 | Nr.    | 2              |
| Plexible w/o lug conductor section   | Conductor section      |   |                 |        |                |
| Flexible w/o lug conductor section   |                        | AWG/Kcmil   |                 |        |                |
| Plexible c/W lug conductor section   |                        | =             | max             |        | 10             |
| Flexible c/w lug conductor section   |                        | Flexible w/o lug conductor section                  |                 | 2      |                |
| Flexible c/w lug conductor section   |                        |   |                 |        |                |
| Pickible with insulated spade lug conductor section  |                        |   | max             | mm²    | 6              |
| Flexible with insulated spade lug conductor section  |                        | Flexible c/w lug conductor section                  |                 |        |                |
| Flexible with insulated spade lug conductor section  |                        |   |                 |        |                |
| Min m  |                        |   |                 | mm²    | 4              |
| Page      |                        | Flexible with insulated spade lug conductor section |                 |        |                |
| Page      |                        |   |                 |        |                |
| Property wired   Prop   |                        |   | max             | mm²    |                |
| Mechanical features  | Power terminal prote   | ction according to IEC/EN 60529                     |                 |        |                |
| Departing position   |                        |   |                 |        | properly wired |
| Normal allowable   Screw / DIN rail allowable   #30°   Screw / DIN rail 35mm   |                        |   |                 |        |                |
| Section  | operating position     |   | normal          |        | Vertical plan  |
| Screw / DIN rail   35mm   35   |                        |   |                 |        |                |
| Meight   g   354     Conductor section   |                        |   | allowable       |        |                |
| Weight         g         354           Conductor section           AWG/kcmil conductor sectio  | Fixing                 |   |                 |        |                |
| AWG/kcmil conductor section  | Weight                 |   |                 | n      |                |
| AWG/kcmil conductor section  Auxiliary contact characteristics  EC/EN 60947-5-1 designation  Departing current AC15  Coperating current DC15  Coperating current DC12  Coperating current DC12  Coperating current DC13  Cope |                        |   |                 | 9      | 004            |
| Maxiliary contact characteristics  | Solidación Section     | AWG/kemil conductor section                         |                 |        |                |
| Auxiliary contact characteristics  Thermal current Ith  EC/EN 60947-5-1 designation  Departing current AC15  230V A 3 400V A 1.9 500V A 1.4  Departing current DC12  110V A 5.7  Departing current DC13  24V A 5.7  48V A 2.9 60V A 2.3 110V A 2.3 110V A 2.9 60V A 2.3 110V A 2.3 110V A 5.7  48V A 2.9 60V A 2.3 110V A 1.25 125V A 1.1 220V A 0.55 600V B 0.55  |                        | AVVG/RCITIII CONDUCTOR Section                      | may             |        | 10             |
| Thermal current Ith  | Auviliary contact char | ractoristics  | IIIax           |        | 10             |
| EC/EN 60947-5-1 designation  |                        | acicione  |                 | Δ      | 10             |
| Comparising current AC15   230V   A   3   400V   A   1.9   500V   A   1.4  |                        | esignation  |                 | ,,     |                |
| 230V   |                        |   |                 |        | 7,000 1 000    |
| A 00V   A 1.9   500V   A 1.4   1.9   500V   A 1.4   1.9   500V   A 1.4   1.9   500V   A 1.4   5.7   500V   A 5.7   | operating current AC   | ,10   | 2201/           | ۸      | 2              |
| Soov   A   1.4   Coperating current DC12   |                        |   |                 |        |                |
| Departing current DC12   |                        |   |                 |        |                |
| 110V   A   5.7   | Operating current DC   | 212   | 300 V           |        | 1.4            |
| Departing current DC13   | Operating current DC   | ,12   | 110\/           | ٨      | 5.7            |
| 24V  | Operating ourrent DC   | M2  | 1100            | ^      | 5.7            |
| A8V   A   2.9   60V   A   2.3   110V   A   1.25   125V   A   1.1   | operating current be   | 713   | 24\/            | ٨      | F 7            |
| 60V   A   2.3   110V   A   1.25   125V   A   1.1   125V   A   0.55   600V   A   0.2   0.   |                        |   |                 |        |                |
| 110V   |                        |   |                 |        |                |
| 125V A 1.1   220V A 0.55   600V A 0.2  |                        |   |                 |        |                |
| 220V A 0.55  |                        |   |                 |        |                |
| Comparitions   |                        |   |                 |        |                |
| Mechanical life cycles 20000000  Electrical life cycles 1600000  Safety related data  Performance level B10d according to EN/ISO 13489-1  rated load cycles 1600000  mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility yes   |                        |   |                 |        |                |
| Mechanical life cycles 20000000  Electrical life cycles 1600000  Safety related data  Performance level B10d according to EN/ISO 13489-1  rated load cycles 1600000  mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility yes   | Operations             |   | ۷۵۵۷            | A      | U.Z            |
| Electrical life cycles 1600000  Safety related data  Performance level B10d according to EN/ISO 13489-1  rated load cycles 1600000  mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility yes  | •                      |   |                 | cycles | 20000000       |
| Performance level B10d according to EN/ISO 13489-1  rated load cycles 1600000 mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility  yes   |                        |   |                 |        |                |
| Performance level B10d according to EN/ISO 13489-1  rated load cycles 1600000 mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility  yes   |                        |   |                 | cycles | 1000000        |
| rated load cycles 1600000 mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1  EMC compatibility  rated load cycles 20000000  yes   |                        | 10d according to EN/ISO 42490 4                     |                 |        |                |
| mechanical load cycles 20000000  Mirror contats according to IEC/EN 609474-4-1 yes  EMC compatibility yes  | renormance level B     | Tod according to EN/ISO 13489-1                     |                 |        | 4000000        |
| Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes  |                        |   |                 | -      |                |
| EMC compatibility yes  |                        |   | mechanical load | cycles |                |
| · · ·  |                        | ling to IEC/EN 609474-4-1                           |                 |        |                |
|  |                        |   |                 |        | yes            |
|  |                        |   |                 |        |                |



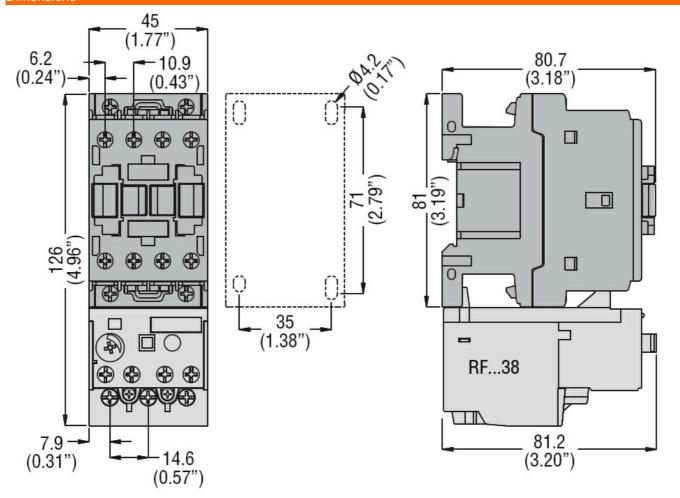


| Rated AC voltage at 6    | 0Hz                          |                    | V         | 230  |
|--------------------------|------------------------------|--------------------|-----------|------|
| AC operating voltage     |                              |                    |           |      |
|                          | of 60Hz coil powered at 60Hz |                    |           |      |
|                          | pick-up                      |                    |           |      |
|                          |                              | min                | %Us       | 80   |
|                          |                              | max                | %Us       | 110  |
|                          | drop-out                     |                    | 0/11      |      |
|                          |                              | min                | %Us       | 20   |
| A O                      |                              | max                | %Us       | 55   |
| AC average coil consu    |                              |                    |           |      |
|                          | of 60Hz coil powered at 60Hz | in-rush            | VA        | 75   |
|                          |                              | holding            | VA<br>VA  | 9    |
| Dissipation at holding   | <20°C E0∐-7                  | Holding            | W         | 2.5  |
| Max cycles frequency     | 320 C 30Hz                   |                    | VV        | 2.5  |
| Mechanical operation     |                              |                    | cycles/h  | 3600 |
| Operating times          |                              |                    | Cycles/II | 3000 |
| Average time for Us o    | ontrol                       |                    |           |      |
|                          | 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    |
| III taabulaal data       |                              | max                | ms        | 18   |
| UL technical data        | for three phase AC mater     |                    |           |      |
| rull-load current (FLA)  | ) for three-phase AC motor   | ot 490\/           | ٨         | 14   |
|                          |                              | at 480V<br>at 600V | A<br>A    | 17   |
| Yielded mechanical pe    | orformanco                   | at 000 v           | ^         | 17   |
| nolueu mechanicai pe     | for single-phase AC motor    |                    |           |      |
|                          | ioi single-phase AO motor    | 110/120V           | HP        | 1    |
|                          |                              | 230V               | HP        | 3    |
|                          | for three-phase AC motor     | 2001               |           |      |
|                          | and product to motor         | 200/208V           | HP        | 5    |
|                          |                              | 220/230V           | HP        | 5    |
|                          |                              | 460/480V           | HP        | 10   |
|                          |                              | 575/600V           | HP        | 15   |
| General USE              |                              |                    |           |      |
|                          | Contactor                    |                    |           |      |
|                          |                              | AC current         | Α         | 32   |
|                          | Auxiliary contacts           |                    |           |      |
|                          |                              | AC voltage         | V         | 600  |
|                          |                              | AC current         | Α         | 10   |
|                          |                              | DC voltage         | V         | 250  |
|                          |                              | DC current         | Α         | 1    |
| Short-circuit protection |                              |                    |           |      |
|                          | High fault                   |                    |           |      |

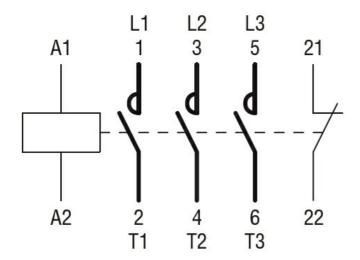




|  | Short circuit current | kA | 100         |
|--|-----------------------|----|-------------|
|  | Fuse rating           | Α  | 60          |
|  | Fuse class            |    | J           |
| Standard fault                                       |                       |    | _           |
|  | Short circuit current | kA | 5           |
|  | Fuse rating           | Α  | 80          |
| 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







Product designation Power contactor Product type designation **BF18** Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency Нъ 25 min Hz 400 max IEC Conventional free air thermal current Ith 32 Α Operational current le AC-1 (≤40°C) Α 32 AC-1 (≤55°C) Α 26 AC-1 (≤70°C) Α 23 AC-3 (≤440V ≤55°C) Α 18 AC-4 (400V) 8.5 Rated operational power AC-3 (T≤55°C) 230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10 Rated operational power AC-1 (T≤40°C) 230V kW 12 400V kW 21 500V kW 26 690V kW 36 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V Α 17 48V Α 15 75V Α 15 110V Α 6 220V Α IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V Α 20 48V Α 20 75V 20 Α 110V Α 13 220V Α 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V 22 Α 22 48V Α 75V Α 20 110V 16





| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series  IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series | 220V<br>≤24V<br>48V<br>75V<br>110V | A<br>A<br>A | 11<br>22<br>22 |
|---|------------------------------------|-------------|----------------|
|   | 48V<br>75V<br>110V                 | Α           |                |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 48V<br>75V<br>110V                 | Α           |                |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 75V<br>110V                        |             | 22             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 110V                               | Λ           |                |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |                                    | ^           | 20             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |                                    | Α           | 18             |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  | 220V                               | Α           | 13             |
|   |                                    |             |                |
|   | ≤24V                               | Α           | 12             |
|   | 48V                                | Α           | 11             |
|   | 75V                                | Α           | 11             |
|   | 110V                               | Α           | 2              |
|   | 220V                               | Α           | _              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series  |                                    |             |                |
|   | ≤24V                               | Α           | 15             |
|   | 48V                                | Α           | 13             |
|   | 75V                                | Α           | 13             |
|   | 110V                               | Α           | 8              |
|   | 220V                               | Α           | 2              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series  |                                    |             |                |
| <b>'</b>  | ≤24V                               | Α           | 18             |
|   | 48V                                | Α           | 18             |
|   | 75V                                | Α           | 16             |
|   | 110V                               | Α           | 12             |
|   | 220V                               | Α           | 6              |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series  | 220 V                              |             |                |
| 120 max canonic to in 200 200 with 2/11 - Tome with 1 poloc in conce  | ≤24V                               | Α           | 18             |
|   | 48V                                | A           | 18             |
|   | 75V                                | A           | 16             |
|   | 110V                               | A           | 13             |
|   | 220V                               | A           | 8              |
| Short-time allowable current for 10s (IEC/EN60947-1)  |                                    | A           | 200            |
| Protection fuse   |                                    |             |                |
| 1 Totalian Tuda   | gG (IEC)                           | Α           | 32             |
|   | aM (IEC)                           | A           | 20             |
| Making capacity (RMS value)   | aivi (ILO)                         | A           | 180            |
| Breaking capacity (NWS value)   |                                    |             | 100            |
| Distanting supposity at voltage   | 440V                               | Α           | 144            |
|   | 500V                               | A           | 120            |
|   | 690V                               | A           | 94             |
| Desigtance per pela (average value)   | 090 v                              |             | 2.5            |
| Resistance per pole (average value)   |                                    | mΩ          | 2.5            |
| Power dissipation per pole (average value)  | 141                                | 147         | 2.0            |
|   | Ith                                | W           | 2.6            |
| Tightonia a tous vo fou tous in al-   | AC3                                | W           | 0.8            |
| Tightening torque for terminals   |                                    | <b>k</b> 1. | 4.5            |
|   | min                                | Nm          | 1.5            |
|   | max<br>·                           | Nm          | 1.8            |
|   | min                                | lbin        | 1.1            |
| <del></del>   | max                                | Ibin        | 1.5            |
| Tightening torque for coil terminal   |                                    |             |                |
| J - 1 - 1   | min                                | Nm          | 0.8            |
| <u> </u>  |                                    |             |                |
| O   | max<br>min                         | Nm<br>Ibin  | 1<br>0.8       |





|  |   | max          | Ibin             | 0.74                     |
|--|---|--------------|------------------|--------------------------|
|  | s simultaneously connectable                        |              | Nr.              | 2                        |
| Conductor section                          | AMAGUE  |              |                  |                          |
|  | AWG/Kcmil   | may          |                  | 10                       |
|  | Clavible w/e lug conductor acction                  | max          |                  | 10                       |
|  | Flexible w/o lug conductor section                  | min          | mm²              | 1                        |
|  |   | max          | mm²              | 6                        |
|  | Flexible c/w lug conductor section                  | IIIdx        | 111111           | 0                        |
|  | Tiexible 6/W lag conductor section                  | min          | mm²              | 1                        |
|  |   | max          | mm²              | 4                        |
|  | Flexible with insulated spade lug conductor section |              |                  |                          |
|  | эр эн           | min          | mm²              | 1                        |
|  |   | max          | mm²              | 4                        |
| Davier terminal prote                      | action according to IEC/EN COECO                    |              |                  | IP20 when                |
| Power terminal prote                       | ection according to IEC/EN 60529                    |              |                  | properly wired           |
| Mechanical features                        |   |              |                  |                          |
| Operating position                         |   |              |                  |                          |
|  |   | normal       |                  | Vertical plan            |
|  |   | allowable    |                  | ±30°                     |
| Fixing                                     |   |              |                  | Screw / DIN rail<br>35mm |
| Weight                                     |   |              | g                | 352                      |
| Conductor section                          |   |              |                  |                          |
|  | AWG/kcmil conductor section                         |              |                  |                          |
|  |   | max          |                  | 10                       |
| Auxiliary contact cha                      | racteristics  |              |                  |                          |
| Thermal current Ith                        |   |              | A                | 10                       |
| IEC/EN 60947-5-1 d                         |   |              |                  | A600 - P600              |
| Operating current AC                       | 215   |              |                  |                          |
|  |   | 230V         | Α                | 3                        |
|  |   | 400V         | A                | 1.9                      |
| 0  |   | 500V         | Α                | 1.4                      |
| Operating current DO                       | J12   | 440)/        | ^                | <i>-</i>                 |
| 0  |   | 110V         | A                | 5.7                      |
| Operating current DO                       | J13   | 0.417        | ^                | <i>-</i>                 |
|  |   | 24V          | A                | 5.7                      |
|  |   | 48V<br>60V   | A                | 2.9<br>2.3               |
|  |   | 110V         | A<br>A           | 2.3<br>1.25              |
|  |   | 110V<br>125V | A                | 1.25                     |
|  |   | 220V         | A                | 0.55                     |
|  |   | 600V         | A                | 0.2                      |
| Operations                                 |   |              |                  |                          |
| Mechanical life                            |   |              | cycles           | 20000000                 |
| -  |   |              | cycles           | 1600000                  |
| Electrical life                            |   |              | <i>y</i>         |                          |
| Electrical life Safety related data        |   |              |                  |                          |
| Safety related data                        | 110d according to EN/ISO 13489-1                    |              |                  |                          |
| Safety related data                        | 310d according to EN/ISO 13489-1                    | rated load   | cycles           | 1600000                  |
| Safety related data                        | -   | rated load   | cycles<br>cycles | 1600000<br>20000000      |
| Safety related data<br>Performance level B | m   |              | cycles<br>cycles | 20000000                 |
| Safety related data<br>Performance level B | -   |              | -                |                          |



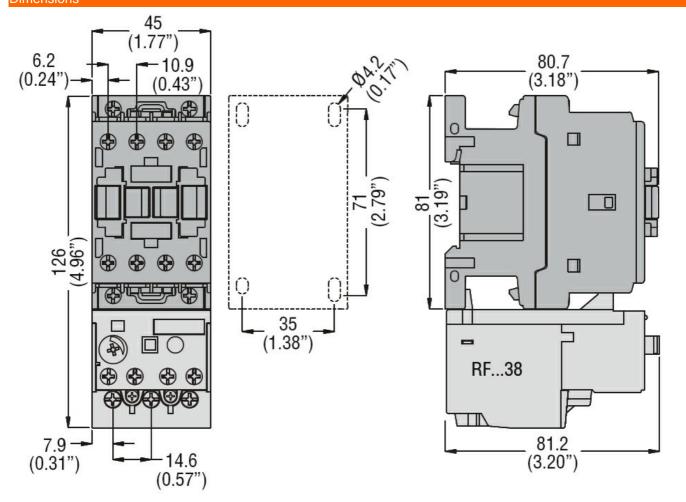


| Rated AC voltage at 60Hz                         |            | V        | 460         |
|--|------------|----------|-------------|
| AC operating voltage                             |            |          |             |
| of 60Hz coil powered at 60Hz                     |            |          |             |
| pick-up  |            |          |             |
|  | min        | %Us      | 80          |
| drop out   | max        | %Us      | 110         |
| drop-out   | min        | %Us      | 20          |
|  | max        | %Us      | 55          |
| AC average coil consumption at 20°C              | тих        | 7003     |             |
| of 60Hz coil powered at 60Hz                     |            |          |             |
| γ  | 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                      |            |          |             |
| in AC  |            |          |             |
| Closing NO                                       | min        | ms       | 8           |
|  | max        | ms       | 24          |
| Opening NO                                       | max        | 1110     | <b>2</b> -T |
| Sporming its                                     | min        | ms       | 10          |
|  | max        | ms       | 20          |
| Closing NC                                       |            |          |             |
|  | min        | ms       | 14          |
|  | max        | ms       | 28          |
| Opening NC                                       |            |          | _           |
|  | min        | ms       | 7           |
| UL technical data                                | max        | ms       | 18          |
| Full-load current (FLA) for three-phase AC motor |            |          |             |
| Tuil-load current (LA) for three-phase AC motor  | at 480V    | Α        | 14          |
|  | at 600V    | A        | 17          |
| Yielded mechanical performance                   | 4.0001     |          | ••          |
| for single-phase AC motor                        |            |          |             |
| 5 1  | 110/120V   | HP       | 1           |
|  | 230V       | HP       | 3           |
| for three-phase AC motor                         |            |          |             |
|  | 200/208V   | HP       | 5           |
|  | 220/230V   | HP       | 5           |
|  | 460/480V   | HP       | 10          |
| 0  | 575/600V   | HP       | 15          |
| General USE                                      |            |          |             |
| Contactor  | AC current | Α        | 32          |
| Auxiliary contacts                               | AC current | ^        | JZ          |
| Addition Contacts                                | AC voltage | V        | 600         |
|  | AC current | Ā        | 10          |
|  | DC voltage | V        | 250         |
|  | DC current | A        | 1           |
| Short-circuit protection fuse, 600V              |            |          |             |
| High fault                                       |            |          |             |





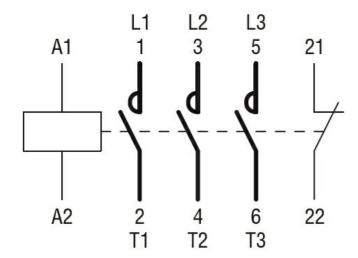
|  |                 | Short circuit current | kA | 100         |
|--|-----------------|-----------------------|----|-------------|
|  |                 | Fuse rating           | Α  | 60          |
|  |                 | Fuse class            |    | J           |
| Standard fa                            | ıult            |                       |    |             |
|  |                 | Short circuit current | kA | 5           |
|  |                 | Fuse rating           | Α  | 80          |
| Contact rating of auxiliary contacts a | according to UL |                       |    | A600 - P600 |
| Ambient conditions                     |                 |                       |    |             |
| Temperature                            |                 |                       |    |             |
| Operating t                            | emperature      |                       |    |             |
|  |                 | min                   | °C | -50         |
|  |                 | max                   | °C | 70          |
| Storage ter                            | nperature       |                       |    |             |
|  |                 | min                   | °C | -60         |
|  |                 | max                   | °C | 80          |
| Max altitude                           |                 |                       | m  | 3000        |
| Resistance & Protection                |                 |                       |    |             |
| Pollution degree                       |                 |                       |    | 3           |
| Dimensions                             |                 |                       |    |             |



Wiring diagrams

**ENERGY AND AUTOMATION** 

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 18A, AC COIL 60HZ, 460VAC, 1NC AUXILIARY CONTACT



### 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







Product designation Power contactor Product type designation **BF18** Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency min Нъ 25 Hz 400 max IEC Conventional free air thermal current Ith 32 Α Operational current le AC-1 (≤40°C) Α 32 AC-1 (≤55°C) Α 26 AC-1 (≤70°C) Α 23 AC-3 (≤440V ≤55°C) Α 18 AC-4 (400V) 8.5 Rated operational power AC-3 (T≤55°C) 230V kW 4 400V kW 7.5 415V kW 9 440V kW 9 500V kW 10 690V kW 10 Rated operational power AC-1 (T≤40°C) 230V kW 12 400V kW 21 500V kW 26 690V kW 36 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V Α 17 48V Α 15 75V Α 15 110V Α 6 220V Α IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V Α 20 48V Α 20 75V 20 Α 110V Α 13 220V Α 1 IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V 22 Α 22 48V Α 75V Α 20 110V 16





|   | 220V       | Α     | 11         |
|---|------------|-------|------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series         |            |       |            |
|   | ≤24V       | Α     | 22         |
|   | 48V        | Α     | 22         |
|   | 75V        | Α     | 20         |
|   | 110V       | Α     | 18         |
|   | 220V       | Α     | 13         |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series    |            |       |            |
|   | ≤24V       | Α     | 12         |
|   | 48V        | Α     | 11         |
|   | 75V        | Α     | 11         |
|   | 110V       | Α     | 2          |
|   | 220V       | Α     | _          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series    |            |       |            |
| ·   | ≤24V       | Α     | 15         |
|   | 48V        | Α     | 13         |
|   | 75V        | Α     | 13         |
|   | 110V       | Α     | 8          |
|   | 220V       | Α     | 2          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series    |            |       |            |
|   | ≤24V       | Α     | 18         |
|   | 48V        | Α     | 18         |
|   | 75V        | A     | 16         |
|   | 110V       | A     | 12         |
|   | 220V       | A     | 6          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series    | 220 V      | / \   | <u> </u>   |
| 120 max darrone to in 200 200 with Err = forms with 4 points in defices | ≤24V       | Α     | 18         |
|   | 48V        | A     | 18         |
|   | 75V        | A     | 16         |
|   | 110V       | A     | 13         |
|   | 220V       | A     | 8          |
| Short-time allowable current for 10s (IEC/EN60947-1)                    | 220 V      | A     | 200        |
| Protection fuse   |            | / \   |            |
|   | gG (IEC)   | Α     | 32         |
|   | aM (IEC)   | A     | 20         |
| Making capacity (RMS value)   | aivi (ILO) |       | 180        |
| Breaking capacity at voltage  |            |       | 100        |
| broaking capacity at voltage  | 440V       | Α     | 144        |
|   | 500V       | A     | 120        |
|   | 690V       | A     | 94         |
| Resistance per pole (average value)                                     | 0907       | mΩ    | 2.5        |
| Power dissipation per pole (average value)                              |            | 11177 | ۷.5        |
| i ower dissipation per pole (average value)                             | Ith        | W     | 2.6        |
|   | AC3        | W     | 2.6<br>0.8 |
| Tightoning torque for terminals   | AU3        | VV    | 0.0        |
| Tightening torque for terminals   |            | Nlms  | 1 5        |
|   | min        | Nm    | 1.5        |
|   | max        | Nm    | 1.8        |
|   | min        | Ibin  | 1.1        |
| Tightonian tour to favority to  | max        | Ibin  | 1.5        |
| Tightening torque for coil terminal                                     |            | NI    | 0.0        |
|   | min        | Nm    | 0.8        |
|   | max        | Nm    | 1          |
|   | min        | Ibin  | 0.8        |
|   |            |       |            |





|   |  | max             | lbin   | 0.74                     |
|---|--|-----------------|--------|--------------------------|
| Max number of wires                     | simultaneously connectable                           |                 | Nr.    | 2                        |
| Conductor section                       |  |                 |        |                          |
|   | AWG/Kcmil  |                 |        |                          |
|   |  | max             |        | 10                       |
|   | Flexible w/o lug conductor section                   | _               |        |                          |
|   |  | min             | mm²    | 1                        |
|   | = -  | max             | mm²    | 6                        |
|   | Flexible c/w lug conductor section                   |                 | 2      |                          |
|   |  | min             | mm²    | 1                        |
|   | Florible with insulated and delice and house a still | max             | mm²    | 4                        |
|   | Flexible with insulated spade lug conductor section  |                 |        | 4                        |
|   |  | min             | mm²    | 1                        |
|   |  | max             | mm²    | 4<br>IP20 when           |
| Power terminal proted                   | ction according to IEC/EN 60529                      |                 |        | properly wired           |
| Mechanical features                     |  |                 |        | property wired           |
| Operating position                      |  |                 |        |                          |
| - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 |  | normal          |        | Vertical plan            |
|   |  | allowable       |        | ±30°                     |
| Fixing                                  |  |                 |        | Screw / DIN rail<br>35mm |
| Weight                                  |  |                 | g      | 368                      |
| Conductor section                       |  |                 | 9      | 300                      |
| Conductor Section                       | AWG/kcmil conductor section                          |                 |        |                          |
|   | AVVG/REITIII COTIQUETOI SECTION                      | max             |        | 10                       |
| Auxiliary contact char                  | acteristics  | Hax             |        | 10                       |
| Thermal current Ith                     | action 61100   |                 | А      | 10                       |
| IEC/EN 60947-5-1 de                     | esignation   |                 |        | A600 - P600              |
| Operating current AC                    |  |                 |        |                          |
| 3                                       |  | 230V            | Α      | 3                        |
|   |  | 400V            | Α      | 1.9                      |
|   |  | 500V            | Α      | 1.4                      |
| Operating current DC                    | 12   |                 |        |                          |
|   |  | 110V            | Α      | 5.7                      |
| Operating current DC                    | 13   |                 |        |                          |
|   |  | 24V             | Α      | 5.7                      |
|   |  | 48V             | Α      | 2.9                      |
|   |  | 60V             | Α      | 2.3                      |
|   |  | 110V            | Α      | 1.25                     |
|   |  | 125V            | Α      | 1.1                      |
|   |  | 220V            | Α      | 0.55                     |
|   |  | 600V            | Α      | 0.2                      |
| Operations                              |  |                 |        |                          |
| Mechanical life                         |  |                 | cycles | 20000000                 |
| Electrical life                         |  |                 | cycles | 1600000                  |
| Safety related data                     |  |                 |        |                          |
| Performance level B1                    | 0d according to EN/ISO 13489-1                       |                 |        |                          |
|   |  | rated load      | cycles | 1600000                  |
|   |  | mechanical load | cycles | 20000000                 |
|   | ing to IEC/EN 609474-4-1                             |                 |        | yes                      |
| EMC compatibility                       |  |                 |        | yes                      |
| AC coil operating                       |  |                 |        |                          |
|   |  |                 |        |                          |



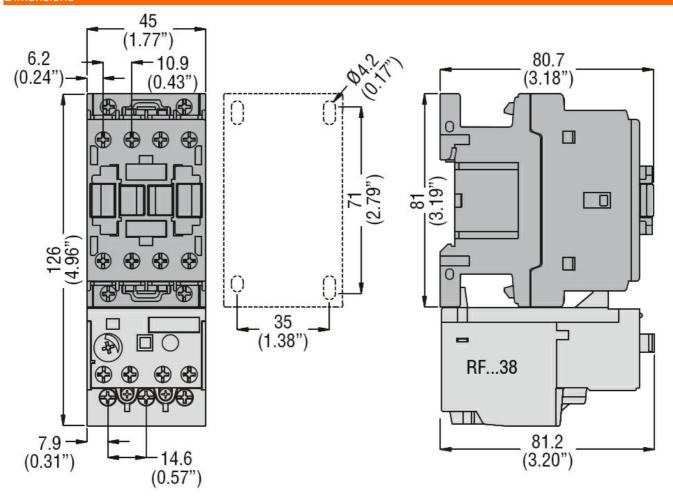


| Rated AC voltage at 60Hz                         |             | V         | 575      |
|--|-------------|-----------|----------|
| AC operating voltage                             |             |           |          |
| of 60Hz coil powered at 60Hz                     |             |           |          |
| pick-up  |             | 0/11      |          |
|  | min         | %Us       | 80       |
| dana aut   | max         | %Us       | 110      |
| drop-out   | min         | 0/116     | 20       |
|  | min         | %Us       | 20<br>55 |
| AC average coil consumption at 20°C              | max         | %Us       | 33       |
| of 60Hz coil powered at 60Hz                     |             |           |          |
| of doffiz con powered at doffiz                  | in-rush     | VA        | 75       |
|  | holding     | VA        | 9        |
| Dissipation at holding ≤20°C 50Hz                | Holding     | W         | 2.5      |
| Max cycles frequency                             |             | VV        | 2.0      |
| Mechanical operation                             |             | cycles/h  | 3600     |
| Operating times                                  |             | 3,3,00,11 |          |
| Average time for Us control                      |             |           |          |
| in AC  |             |           |          |
| Closing NO                                       |             |           |          |
| 3.10   | 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        |
| III Asabadaal data                               | max         | ms        | 18       |
| UL technical data                                |             |           |          |
| Full-load current (FLA) for three-phase AC motor | at 480V     | ۸         | 1.4      |
|  | at 600V     | A<br>A    | 14<br>17 |
| Yielded mechanical performance                   | at 000 v    |           | 17       |
| for single-phase AC motor                        |             |           |          |
| ioi siligie-pliase AC motol                      | 110/120V    | HP        | 1        |
|  | 230V        | HP        | 3        |
| for three-phase AC motor                         | 200 V       |           |          |
| ioi ando pilado No motor                         | 200/208V    | HP        | 5        |
|  | 220/230V    | HP        | 5        |
|  | 460/480V    | HP        | 10       |
|  | 575/600V    | HP        | 15       |
| General USE                                      |             |           |          |
| Contactor  |             |           |          |
|  | AC current  | Α         | 32       |
| Auxiliary contacts                               |             |           |          |
| •  | AC voltage  | V         | 600      |
|  | AC current  | Α         | 10       |
|  | DC voltage  | V         | 250      |
|  | DC current  | Α         | 1        |
| Short-circuit protection fuse, 600V              | <del></del> |           |          |
| High fault                                       |             |           |          |



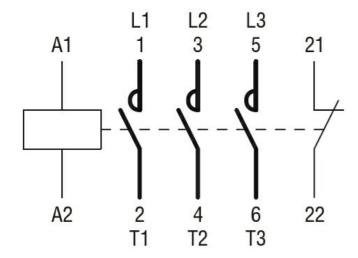


|  | Short circuit current | kA | 100         |
|--|-----------------------|----|-------------|
|  | Fuse rating           | Α  | 60          |
|  | Fuse class            |    | J           |
| Standard fault                                       |                       |    | _           |
|  | Short circuit current | kA | 5           |
|  | Fuse rating           | Α  | 80          |
| 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