



## THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 575VAC, 1NO AUXILIARY CONTACT



| Product designation   |   |          | Power contactor |
|---|---|----------|-----------------|
| Product type designation  |   |          | BF12            |
| Contact characteristics   |   |          | 2               |
| Number of poles   |   | Nr.      | 3               |
| Rated insulation voltage Ui IEC/EN                              |   | V        | 690             |
| Rated impulse withstand voltage Uimp                            |   | kV       | 6               |
| Operational frequency   |   |          |                 |
| operational nequency  | min   | Hz       | 25              |
|   | max   | Hz       | 400             |
| IEC Conventional free air thermal current Ith                   | max   | A        | 28              |
| Operational current le  |   |          |                 |
| Operational darrent le  | AC-1 (≤40°C)  | Α        | 28              |
|   | AC-1 (≤55°C)  | A        | 23              |
|   | AC-1 (≤70°C)  | A        | 20              |
|   | AC-3 (≤440V ≤55°C)                                  | A        | 12              |
|   | AC-3 ( <u>\$440</u> V <u>\$55</u> C)<br>AC-4 (400V) | A        | 7.9             |
| Rated operational power AC-3 (T≤55°C)                           | AC-4 (400V)   |          | 1.5             |
| Nated operational power AC-3 (1300 C)                           | 230V  | kW       | 3.2             |
|   | 400V  | kW       | 5.7             |
|   | 400 V<br>415 V                                      | kW       | 6.2             |
|   | 440V  | kW       | 5.5             |
|   | 500V  |          |                 |
|   | 690V  | kW<br>kW | 5<br>5          |
| Pated enerational newer AC 1 /T<10°C)                           | 090 V   | KVV      |                 |
| Rated operational power AC-1 (T≤40°C)                           | 2201/   | LAAA     | 10              |
|   | 230V  | kW       | 10              |
|   | 400V  | kW       | 18              |
|   | 500V  | kW       | 23              |
| IFO   | 690V  | kW       | 32              |
| IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series | 40 AV /   |          | 47              |
|   | ≤24V  | A        | 17              |
|   | 48V   | A        | 15              |
|   | 75V   | A        | 13              |
|   | 110V  | A        | 6               |
| 150   | 220V  | Α        | _               |
| IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series | .0.43.4   |          |                 |
|   | ≤24V  | A        | 20              |
|   | 48V   | Α        | 20              |
|   | 75V   | Α        | 18              |
|   | 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              |
|   |   |          |                 |





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|   | 220V     | Α            | 11          |
|---|----------|--------------|-------------|
| IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series       |          |              |             |
|   | ≤24V     | Α            | 20          |
|   | 48V      | Α            | 20          |
|   | 75V      | Α            | 20          |
|   | 110V     | Α            | 16          |
|   | 220V     | Α            | 12          |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series  |          |              |             |
| ·   | ≤24V     | Α            | 12          |
|   | 48V      | Α            | 11          |
|   | 75V      | Α            | 10          |
|   | 110V     | Α            | 2           |
|   | 220V     | Α            | _           |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series  |          |              |             |
| 120 max carrent to in 200 200 mar 2/11 = 10 ma mar 2 poise in conse   | ≤24V     | Α            | 15          |
|   | 48V      | A            | 13          |
|   | 75V      | A            | 12          |
|   | 110V     | A            | 8           |
|   | 220V     | A            | 2           |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series  | ZZU V    |              |             |
| TEO MAX current le in 200-2003 with E/K > 13ms with 3 poles in series | ≤24V     | ۸            | 18          |
|   |          | A            |             |
|   | 48V      | A            | 18          |
|   | 75V      | A            | 15          |
|   | 110V     | A            | 12          |
|   | 220V     | Α            | 6           |
| IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series  |          | _            |             |
|   | ≤24V     | Α            | 15          |
|   | 48V      | Α            | 15          |
|   | 75V      | Α            | 15          |
|   | 110V     | Α            | 16          |
|   | 220V     | Α            | 7           |
| Short-time allowable current for 10s (IEC/EN60947-1)                  |          | Α            | 150         |
| Protection fuse   |          |              |             |
|   | gG (IEC) | Α            | 32          |
|   | aM (IEC) | Α            | 12          |
| Making capacity (RMS value)   |          | Α            | 120         |
| Breaking capacity at voltage  |          |              |             |
|   | 440V     | Α            | 96          |
|   | 500V     | Α            | 96          |
|   | 690V     | Α            | 94          |
| Resistance per pole (average value)                                   |          | mΩ           | 2.5         |
| Power dissipation per pole (average value)                            |          |              |             |
| 1 1 1 1 1 1   | lth      | W            | 2           |
|   | AC-3     | W            | 0.4         |
| Tightening torque for terminals                                       | , 10 0   | • •          | <b>U.</b> 1 |
| rightening torque for terminale                                       | min      | Nm           | 1.5         |
|   | max      | Nm           | 1.8         |
|   | min      | Ibin         | 1.1         |
|   |          |              |             |
| Tightoning targue for call terminal                                   | max      | lbin         | 1.5         |
| Tightening torque for coil terminal                                   |          | <b>N</b> I . | 0.0         |
|   | min      | Nm           | 0.8         |
|   | max      | Nm           | 1           |
|   | min      | lbin         | 0.8         |
|   |          |              |             |





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| May number of wines  |   | max   | Ibin                                      | 0.74   |
|--|---|---|---|--|
|  | simultaneously connectable                          |   | Nr.                                       | 2  |
| Conductor section  | AVA/C/I/ omil                                       |   |   |  |
|  | AWG/Kcmil   | max   |   | 10   |
|  | Flexible w/o lug conductor section                  | IIIax   |   | 10   |
|  | r lexible w/o lug corludctor section                | min   | mm²                                       | 1  |
|  |   | max   | mm²                                       | 6  |
|  | Flexible c/w lug conductor section                  | max   |   |  |
|  | Tiomble of Windy contactor coolien                  | min   | mm²                                       | 1  |
|  |   | max   | mm²                                       | 4  |
|  | Flexible with insulated spade lug conductor section |   |   | •  |
|  | · · · · · · · · · · · · · · · · · · ·               | min   | mm²                                       | 1  |
|  |   | max   | mm²                                       | 4  |
|  |   |   |   | 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   |
| ı ixiiig   |   |   |   | 35mm   |
| Weight   |   |   | g   | 340  |
| Conductor section  |   |   |   |  |
|  | AWG/kcmil conductor section                         |   |   |  |
|  |   | max   |   | 10   |
| Auxiliary contact char   | acteristics   |   |   |  |
|  |   |   |   |  |
|  |   |   | Α   | 10   |
| IEC/EN 60947-5-1 de  |   |   | A   | 10<br>A600 - P600  |
| IEC/EN 60947-5-1 de  |   |   | Α   | A600 - P600  |
| IEC/EN 60947-5-1 de  |   | 230V  | A   | A600 - P600<br>3   |
| IEC/EN 60947-5-1 de  |   | 400V  |   | A600 - P600<br>3<br>1.9  |
| IEC/EN 60947-5-1 de<br>Operating current AC  | 15  |   | A   | A600 - P600<br>3   |
| IEC/EN 60947-5-1 de<br>Operating current AC  | 15  | 400V<br>500V  | A<br>A<br>A                               | 3<br>1.9<br>1.4  |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC  | 12  | 400V  | A<br>A                                    | A600 - P600<br>3<br>1.9  |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC  | 12  | 400V<br>500V<br>110V  | A<br>A<br>A                               | 3<br>1.9<br>1.4<br>5.7   |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC  | 12  | 400V<br>500V<br>110V<br>24V   | A<br>A<br>A                               | 3<br>1.9<br>1.4<br>5.7   |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC  | 12  | 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   |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC  | 12  | 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  |
| IEC/EN 60947-5-1 de Operating current AC 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<br>A                | 3<br>1.9<br>1.4<br>5.7<br>5.7<br>2.9<br>2.3<br>1.25                                    |
| IEC/EN 60947-5-1 de Operating current AC 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                | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1                                      |
| IEC/EN 60947-5-1 de Operating current AC 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 A                           | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55                                 |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC 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                | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1                                      |
| IEC/EN 60947-5-1 de Operating current AC Operating current DC 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<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                             |
| Operating current DC   | 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<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                             |
| Operating current DC  | 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           | A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3 1.25 1.1 0.55 0.2                             |
| Operating current DC Electrical life Safety related data                            | 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<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                             |
| 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<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 20000000          |
| Operating current DC Operations Mechanical life Electrical life Safety related data | 12 13 0d 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 20000000          |
| Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 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 20000000 20000000 |
| Mirror contats accord  | 12 13 0d 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 20000000          |
| Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 | 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 20000000 20000000 |



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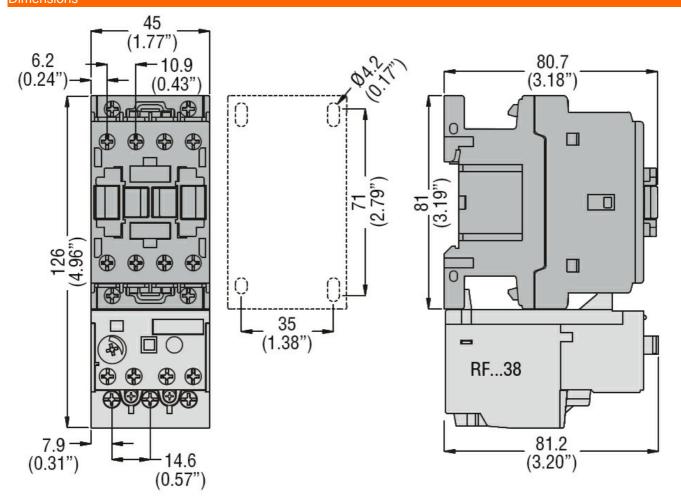
| Rated AC voltage at    | : 60Hz                       |            | V        | 575  |
|------------------------|------------------------------|------------|----------|------|
| AC operating voltage   |                              |            |          |      |
|                        | of 60Hz coil powered at 60Hz |            |          |      |
|                        | pick-up                      |            |          |      |
|                        |                              | min        | %Us      | 80   |
|                        |                              | max        | %Us      | 110  |
|                        | drop-out                     |            |          |      |
|                        |                              | min        | %Us      | 20   |
|                        |                              | max        | %Us      | 55   |
| AC average coil con    |                              |            |          |      |
|                        | of 60Hz coil powered at 60Hz |            |          |      |
|                        |                              | in-rush    | VA       | 75   |
| <b>5</b>               | 2000 5011                    | holding    | VA       | 9    |
| Dissipation at holdin  |                              |            | W        | 2.5  |
| Max cycles frequence   | •                            |            | 1 "      | 0000 |
| Mechanical operatio    | n                            |            | cycles/h | 3600 |
| Operating times        | control                      |            |          |      |
| Average time for Us    |                              |            |          |      |
|                        | in AC                        |            |          |      |
|                        | Closing NO                   | min        | me       | 8    |
|                        |                              | max        | ms<br>ms | 24   |
|                        | Opening NO                   | IIIdA      | 1113     | 24   |
|                        | Opening NO                   | min        | ms       | 10   |
|                        |                              | max        | ms       | 20   |
|                        | Closing NC                   | max        | 1110     | 20   |
|                        | 0.009                        | min        | ms       | 14   |
|                        |                              | max        | ms       | 28   |
|                        | Opening NC                   |            |          |      |
|                        |                              | min        | ms       | 7    |
|                        |                              | max        | ms       | 18   |
| UL technical data      |                              |            |          |      |
| Full-load current (FL  | .A) for three-phase AC motor |            |          |      |
|                        |                              | at 480V    | Α        | 11   |
|                        |                              | at 600V    | Α        | 11   |
| Yielded mechanical     | •                            |            |          |      |
|                        | for single-phase AC motor    |            |          |      |
|                        |                              | 110/120V   | HP       | 1    |
|                        |                              | 230V       | HP       | 2    |
|                        | for three-phase AC motor     |            |          | _    |
|                        |                              | 200/208V   | HP       | 5    |
|                        |                              | 220/230V   | HP       | 5    |
|                        |                              | 460/480V   | HP       | 7.5  |
| 0                      |                              | 575/600V   | HP       | 10   |
| General USE            | Contrator                    |            |          |      |
|                        | Contactor                    | A O        | ۸        | 20   |
|                        | Auxilians contacts           | AC current | Α        | 28   |
|                        | Auxiliary contacts           | ۸ ۰ الم    | W        | 600  |
|                        |                              | AC voltage | V        | 600  |
|                        |                              | AC current | A        | 10   |
|                        |                              | DC voltage | V        | 250  |
| Chart aircuit protect  | ion funo. 600V               | DC current | A        | 1    |
| Short-circuit protecti |                              |            |          |      |
|                        | High fault                   |            |          |      |





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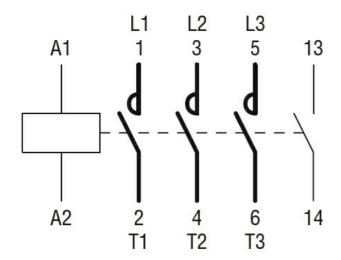
|                                |                         | Short circuit current | kA | 100         |
|--------------------------------|-------------------------|-----------------------|----|-------------|
|                                |                         | Fuse rating           | Α  | 30          |
|                                |                         | Fuse class            |    | J           |
| Sta                            | ndard fault             |                       |    |             |
|                                |                         | Short circuit current | kA | 5           |
|                                |                         | Fuse rating           | Α  | 70          |
| Contact rating of auxiliary co | ontacts according to UL |                       |    | A600 - P600 |
| Ambient conditions             |                         |                       |    |             |
| Temperature                    |                         |                       |    |             |
| Ope                            | erating temperature     |                       |    |             |
|                                |                         | min                   | °C | -50         |
|                                |                         | max                   | °C | 70          |
| Sto                            | rage 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) = 12A, AC COIL 50/60HZ, 575VAC, 1NO 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