Contactors

- Three-pole versions up to 630A in IEC AC3 duty
- Four-pole versions up to 1600A in IEC AC1 duty
- Versions for power factor correction up to 100kvar at 400VAC
- Four-pole versions with 2NO+2NC or 4NC main poles
- Versions for photovoltaic application
- Versions with AC, AC/DC or DC control
- Low-consumption versions with DC control circuit for control relays and 9-38A contactors in IEC AC3 duty
- Extensive choice of add-on blocks and accessories
- Certified by primary international authorities.

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THREE-POLE CONTACTORS
- IEC Ith ratings in AC1 duty at ≤40°C: 16 to 1600A
- IEC Ie ratings in AC3 440V duty: 6 to 630A
- IEC Power ratings in AC3 400V duty: 2.2 to 335kW
- UL/CSA ratings: 3 to 500HP at 480V and 600V
- AC, AC/DC, DC and DC low-consumption coil.

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FOUR-POLE CONTACTORS
- IEC Ith ratings in AC1 duty at ≤40°C: 20 to 1600A
- IEC Power ratings in AC1 400V duty: 14 to 950kW
- UL/CSA general use: 16 to 1000A
- AC, AC/DC, DC and DC low-consumption coil.

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FOUR-POLE CONTACTORS WITH 2NO+2NC MAIN POWER POLES
- IEC Ith ratings in AC1 duty at ≤40°C: 20 to 115A
- UL/CSA general use: 20 to 115A
- AC, AC/DC, DC and DC low-consumption coil.

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FOUR-POLE CONTACTORS WITH 4 NC POLES FOR PHOTOVOLTAIC APPLICATIONS
- IEC Ith ratings in AC1 duty at ≤40°C: 25 to 40A
- UL/CSA general use: 20 to 55A for 4NC types
- Operational current up to 125A (DC1 at ≤55°C with 4 NO poles in series) for photovoltaic applications.
- AC, AC/DC, DC and DC low-consumption coil.

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CONTACTORS FOR POWER FACTOR CORRECTION
- With limiting resistors included
- IEC Power ratings at 400V: 7.5 to 100kvar
- UL/CSA ratings: 9 to 100kvar at 480V; 10 to 120kvar at 600V
- AC coil.

Page 2-15

CONTROL RELAYS
- AC, DC and DC low-consumption coil
- Screw or Faston termination
- 4, 8 or 11 auxiliary contact composition.

IE3 READY

LOVATO Electric contactors are suitable for new motors with high IE3 efficiency values

Lovato electric

BG series mini-contactors

- Highly conductive auxiliary contacts with four contact points
- AC and DC versions of same size
- Quick connect - snap on accessory mounting
- Distinct contact status indication
- Up to four auxiliary contacts can be mounted
- Mechanical interlock only 5mm deep
- Positive (force) guided contacts (mechanically-linked per IEC)

- Three-pole mini-contactors, 6 to 12A IEC AC3 duty / 3 to 7.5HP 480V - 3 to 10HP 600V UL/CSA
- Four-pole mini-contactors, 20A IEC AC1 duty
- Versions with 2NO+2NC main power poles
- Highly conductive auxiliary contacts
- Coils with AC or DC supply
- Low-consumption DC versions
- Screw, faston and rear PCB solder pin termination.

	3 poles			4 poles		
	Ie (AC3)	AC	DC	Ith (AC1)	AC	DC
BG06	6A	●	●	—	—	—
BG09	9A	●	●	20A	●	●
BGF09	9A	●	●	20A	●	●
BGP09	9A	●	●	20A	●	●
BG12	12A	●	●	—	—	—

BF series contactors

- Highly conductive auxiliary contacts
- Quick connect - snap on accessory mounting
- Distinct contact status indication
- Up to four auxiliary contacts can be mounted
- Mechanical interlock only 5mm deep
- Positive (force) guided contacts (mechanically-linked per IEC)

- Three-pole contactors, 9 to 150A IEC AC3 duty / 5 to 75HP 480V - 7.5 to 100HP 600V UL/CSA
- Four-pole contactors, 25 to 165A in AC1 duty
- Power factor correction contactors, 7.5 to 100kvar at 400V IEC / 9 to 110kvar at 480V UL/CSA
- Types with 2NO+2NC or 4NC main power poles
- Types for photovoltaic applications
- Highly conductive auxiliary contacts
- Coils with AC or DC supply
- Wide-range coils with electronic control for contactors from 40 to 150A AC3
- Low-consumption versions for control relays and 9-38A contactors in IEC AC3 duty.

	3 poles				
	Ie AC3	AC	DC	DC❶	AC/DC❷
BF09	9A	●	●	●	—
BF12	12A	●	●	●	—
BF18	18A	●	●	●	—
BF25	25A	●	●	●	—
BF26	26A	●	●	●	—
BF32	32A	●	●	●	—
BF38	38A	●	●	●	—
BF40	40A	●	—	—	●
BF50	50A	●	—	—	●
BF65	65A	●	—	—	●
BF80	80A	●	—	—	●
BF94	95A	●	—	—	●
BF95	95A	●	—	—	●
BF115	115A	●	—	—	●
BF150	150A	●	—	—	●

	4 poles				
	Ith AC1	AC	DC	DC❶	AC/DC❷
BF09	25A	●	●	●	—
BF12	28A	●	—	—	—
BF18	32A	●	●	●	—
BF26	45A	●	●	●	—
BF38	56A	●	●	●	—
BF40	70A	●	—	—	—
BF50	90A	●	—	—	—
BF65	100A	●	—	—	●
BF80	115A	●	—	—	●
BF95	140A	●	—	—	●
BF115	160A	●	—	—	●
BF150	165A	●	—	—	●

❶ Low-consumption version.
❷ Wide-range coil with electronic control.

B series contactors

- 3 frame sizes offering 11 different contactors
- Coil operates indifferently on AC or DC supply voltage
- Coil with low in-rush and holding
- Coil removable without disconnecting power wiring
- Red indicator when contactor is energised
- Unique right-angle magnet design - limits contact bounce
- Safety feature prevents contactor to be energised without arc chute in place and locked
- Convertible auxiliary contact block (2NO + 1NC or 1NO + 2NC), maximum of 4 blocks per contactor for a total of 12 contacts
- Contactor terminals with bolt, washer and nut
- Simple horizontal or vertical interlock
- Positive (force) guided contacts (mechanically-linked per IEC)

- Three-pole contactors, 150A to 630A IEC AC3 duty
- Four-pole contactors, 250A to 1600A IEC AC1 duty
- 100 to 500HP 600V UL/CSA
- Coils with AC/DC supply
- Screw termination.

	3 poles			4 poles		
	Ie (AC3)	AC	DC	Ith (AC1)	AC	DC
B145	150A	●	●	250A	●	●
B180	185A	●	●	275A	●	●
B250	265A	●	●	350A	●	●
B310	320A	●	●	450A	●	●
B400	420A	●	●	550A	●	●
B500	520A	●	●	700A	●	●
B630	630A	●	●	800A	●	●
B630 1000	❶	●	●	1000A	●	●
B1250	❶	●	—	1250A	●	—
B1600	❶	●	—	1600A	●	—

❶ For AC1 / general use duty only.

THE IDEAL SOLUTION!

45mm WIDE CONTACTORS
Ratings up to 38A in AC3 (18.5kW) 400V 30HP 480V UL - merely 45mm wide: exceptional benefit for electric panel dimensions.

55mm WIDE CONTACTORS
Ratings up to 95A in AC3 (45kW) 400V / 60HP 480V UL - merely 55mm wide: exceptional benefit for electric panel dimensions.

75mm WIDE CONTACTORS
Ratings up to 150A in AC3 (75kW) 400V / 100HP 480V UL - merely 75mm wide: exceptional benefit for electric panel dimensions.

COILS WITH WIDE OPERATING RANGE
BF...D contactors are equipped with a wide operating range coil and are particularly useful in applications subject to considerable voltage variations, such as in electric traction railway equipment.

4-TERMINAL COIL
Connecting cables can be coupled to the coil both on the line and load ends of the contactor.

ELECTRONIC COIL
Contactors from 40 to 150A AC3 can be equipped with AC/DC electronic coil with wide operating range.
Example: single 100 to 250V AC/DC coil.

BUILT-IN SURGE SUPPRESSOR
BF series contactors up to 150A AC3 with voltages in DC or AC/DC already have a built-in surge suppressor.

LOW-CONSUMPTION COILS
The BF...L contactors feature a 2.4W low consumption. This characteristic widely allows their direct control by PLC outputs.

SIDE ADD-ON FOURTH POLE
For the 45A to 165A AC1 ratings, a side-mount fourth power pole can be snapped on the three-pole contactor.
This solution permits the optimisation of inventory.

MECHANICAL INTERLOCK
Smaller-size contactors, 9 to 25A in AC3, can be mechanically and electrically interlocked with larger-size contactors, 9 to 38A AC3.
The BFX50 01 and BFX53 01 mechanical interlock comprises two built-in NC auxiliary contacts to make the electrical interlock as well.

35MM IN RAIL MOUNTING AND FIXING

Contactor mounting on and removal from a 35mm DIN rail are tool-less operations and are done by simply applying pressure on the contactor.

STARTER ASSEMBLY

The assembly and wiring of electromechanical starters is extremely fast and reliable. Versatile electrical and mechanical connecting systems provide easy and foolproof assembly of compact starters.

EFFORTLESS THERMAL OVERLOAD RELAY LINK RF38, RF82 AND RF110 TYPES

During the connection of the thermal overload relay to the contactor, its auxiliary contact is simultaneously linked to the contactor coil terminal rigid connector.
The complete overload relay fixing is obtained with one single operation and without other connections.

TERMINAL ADAPTABILITY
Terminals are suitable for every type of cable: flexible, rigid, according to AWG standards and interlocked with any type of cable terminal.
For BF09...BF38 contactors, a single type of screwdriver tightens the screws for the power contacts, auxiliary contacts and coil.

SNAP-ON INSTALLATION

On the contactors, it's quick and easy to fit and remove auxiliary contacts and accessories, without using tools; the same applies to replacing the coil in the AC BF09…BF38 contactors.

RUBBER PAD INSERT TO PREVENT DIN RAIL SLIDING

A rubber insert prevents the contactors from sliding on the 35mm DIN rail even when out of tolerance or mounted vertically.

BREAKER-CONTACTOR CONNECTIONS
The rigid connections between breaker and contactor allow complete compact starters to be created easily, quickly and with less space used in the panel.
It is fitted on a single DIN rail.

IP20 CONNECTION SECURITY

For BF09...BF38 contactors, the easy access and space for the terminals is combined with IP20 protection, preventing accidental contact with live parts.

DOUBLE LUG TERMINALS
40 to 150A AC3 contactors are equipped with double lug terminals for easy, functional access for power cables.
It is extremely simple to create star-delta starters, reversing switches, changeovers and arrange parallel supply for several contactors.

ELECTRONIC COIL
Contactors from 40 to 150A AC3 can be equipped with AC/DC electronic coil with the following advantages:
- wide operating range: 20...48V, 60...110V, 100...250V
- low consumption in service
- no chattering in the event of irregular voltage.

BG06 A…BG12 A

BF09 A…BF25 A

BF26 A…BF38 A

BF40 A…BF94 A

new

BF95 A…BF150 A

B145…B180

B250…B400

	Three-phase motor control in AC3 duty											UL/CSA details					
Order code	IEC operating current Ith (AC1)			Ie (AC3)	Maximum IEC power at ≤55°C (AC3)							Maximum UL/CSA horsepower ratings Single phase		Three phase			
AC coil	≤40°C	≤55°C	≤70°C	≤440V at ≤55°C	230V	400V	415V	440V	500V	690V	1000V	120V	240V	200V	240V	480V	600V
[A]	[A]	[A]	[A]	[A]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[HP]	[HP]	[HP]	[HP]	[HP]	[HP]
11 BG06 01 A❶	16	14	12	6	1.5	2.2	2.4	2.5	3	3	—	1/3	1	1 1/2	2	3	3
11 BG06 10 A❶																	
11 BG09 01 A❶	20	18	15	9	2.2	4	4.3	4.5	5	5	—	1/2	1 1/2	2	3	5	5
11 BG09 10 A❶																	
11 BGF09 01 A❶	20	18	15	9	2.2	4	4.3	4.5	5	5	—	1/2	1 1/2	2	3	5	5
11 BGF09 10 A❶																	
11 BGP09 01 A❶	20	18	15	9	2.2	4❼	4.3❼	4.5❼	5❼	—	—	1/2	1 1/2	2	3	5❼	—
11 BGP09 10 A❶																	
11 BG12 01 A❶⓬	20	18	15	12	3.2	5.7	6.2	5.5	5	5	—	1/2	1 1/2	3	3	7 1/2	10
11 BG12 10 A❶⓬																	
BF09 01 A❶⓬	25	20	18	9	2.2	4.2	4.5	4.8	5.5	7.5	—	3/4	2	3	3	5	7 1/2
BF09 10 A❶⓬																	
BF12 01 A❶⓬	28	23	20	12	3.2	5.7	6.2	6.2	7.5	10	—	1	2	5	5	7 1/2	10
BF12 10 A❶⓬																	
BF18 01 A❶⓬	32	26	23	18	4	7.5	9	9	10	10	—	1	3	5	5	10	15
BF18 10 A❶⓬																	
BF25 01 A❶	32	26	23	25	7	12.5	13.4	13.4	15	11	—	2	3	7 1/2	7 1/2	15	15
BF25 10 A❶																	
BF26 00 A❶⓬	45	36	32	26	7.3	13	14	14	15.6	18.5	—	2	5	7 1/2	7 1/2	15	20
BF32 00 A❶⓬	56	45	40	32	8.8	16	17	17	20	22	—	3	7 1/2	10	10	20	25
BF38 00 A❶	56 (60❿)	45 (48❿)	40 (42❿)	38	11	18.5	18.5	18.5	20	22	—	3	7 1/2	10	15	30	30
BF40 00A ❶	70	60	50	40	11	18.5	22	22	22	30	18.5	3	7 1/2	10	15	30	40
BF50 00A ❶⓬	90	75	65	50	15	22	30	30	30	37	22	5	10	15	20	40	40
BF65 00A ❶⓬	100	80	70	65	18.5	30	37	37	37	45	30	—	—	20	25	50	60
BF80 00A ❶	115	95	80	80	22	45	45	45	55	55	37	—	—	25	30	60	75
BF94 00A ❶	115	95	80	95	30	55	55	55	55	55	37	—	—	25	30	60	75
BF95 00A ❶	140	115	100	95	30	55	55	55	75	90	45	—	—	30	30	60	75
BF115 00A ❶	160	130	115	115	37	55	55	55	75	110	55	—	—	40	40	75	100
BF150 00A ❶	165	135	118	150	45	75	75	75	90	110	55	—	—	50	50	100	125
11 B145 00❷❸	250	235	190	150	46	80	88	93	100	120	75	—	—	50	50	100	125
11 B180 00❷❸	275	250	200	185	57	100	108	115	123	144	103	—	—	60	75	150	150
11 B250 00❷❸	350	300	250	265	83	140	155	164	176	212	156	—	—	75	100	200	250
11 B310 00❷❺	450	370	300	320	100	170	188	200	213	256	180	—	—	100	125	250	300
11 B400 00❷❸	550	430	360	420	130	225	247	263	271	352	208	—	—	125⓫	150⓫	350⓫	400⓫
11 B500 00❷❸	700	550	500	520	156	290	306	328	367	416	312	—	—	150⓫	200⓫	400⓫	450⓫
11 B630 00❷❸	800	640	540	630	198	355	368	368	368	440	368	—	—	200	250	500	500
11 B630 1000 00❷❺	1000	850	700	—	For AC1/Resistive duty only, see page 2-8.							—	—	—	—	—	—
11 B1250 24❺❻	1250	1050	880	—	For AC1/Resistive duty only, see page 2-8.							No UL	—	—	—	—	—
11 B1600 24❺❻	1600	1360	1120	—	For AC1/Resistive duty only, see page 2-8.							No UL	—	—	—	—	—

❶ Complete order code with coil voltage digit or with voltage digit followed by 60 (if 60Hz).
Standard voltages are as follows:
– AC 50/60Hz 024 / 048 / 110 / 230 / 400V
– AC 60Hz 024 60 / 048 60 / 120 60 / 220 60 / 230 60 / 460 60 / 575 60 (V).
Example: 11 BG06 10 A230 for mini-contactor BG06, three poles, with one NO contact and 230VAC 50/60Hz coil.
11 BG06 10 A460 60 for mini-contactor BG06 with one NO contact and 460VAC 60Hz coil.

❷ The coil of the contactor can be powered indifferently in AC or DC. Complete the order code only with the digit of the coil voltage. Standard voltages are:
– AC/DC 24 / 48 / 60 / 110-125 (indicate 110) / 220-240 (indicate 220) / 380-415 (indicate 380) / 440-480V (indicate 440).
Example: 11 B145 00 110 for contactor B145, three poles, without auxiliary contacts and with 110-125VAC/DC coil.
The 24VAC/DC voltage is not possible for B500-B630 1000 contactors.
Other voltages available on request.

❸ If predisposed for mechanical latch (G495), the order code becomes 11 B…SL.00 ❷
If already fitted with mechanical latch (G495), the order code becomes 11 B…L.00 ❷ ❹.

❹ Indicate rated voltage of the mechanical latch, preceded by the letter C if in DC. Available voltages are:
– AC 50/60Hz 48 / 110-125 indicate 110 / 220-240 indicate 220 / 380-415V indicate 380
– DC 48 / 110-125 indicate 110 / 220-240V indicate 220.
Example: 11 B145L 00 110 220 for contactor B145 without auxiliary contacts, with 110-125VAC/DC coil and mechanical latch powered at 220-240VAC.

❺ G495 mechanical latch cannot be mounted.

❻ Complete the order code with the digit of the coil voltage. For 110-125VAC (50/60Hz) indicate 110 or 220-240VAC (50/60Hz) indicate 220.
Example: 11 B1250 24 110 for contactor B1250, three poles, with 2NO+4NC auxiliary contacts and 110-125VAC 50/60Hz coil.

❼ Maximum voltage is limited at 300V for UL. For certified type up to 600V, consult Technical support for information; see contact details on inside front cover.

❽ For voltages 024 / 230 / 400VAC 50-60Hz: 10 pieces/package.
For all other voltages: 1 piece/package.

❾ Highly conductive auxiliary contact.

❿ For use at this other current value, a 16mm² cable, headed with a fork terminal, must be used.

⓫ No UL/CSA ratings; data given for indication and reference purposes only.

⓬ Definite-purpose (DP) contactors are available. Consult Technical support for information; see contact details on inside front cover.

B500-B630

B630 1000

B1250-B1600

	UL/CSA General (purpose) use	UL/CSA Fuse class	Short circuit current RMS sym. 600VAC	Type of terminal	Incorporated auxiliary contacts		Quantity per pkg	Weight
	[A]	Type/[A]	[kA] UL/CSA		NO	NC	n°	[kg]
	16	K5/30	5	Clamp-screw	—	1⑨	10	0.180
					1⑨	—	10	0.180
	20	K5/30	5	Clamp-screw	—	1⑨	10	0.180
					1⑨	—	10	0.180
	20	K5/30	5	Faston	—	1⑨	10	0.180
					1⑨	—	10	0.180
	20	K5/30	5	Rear PCB solder pin	—	1⑨	10	0.197
					1⑨	—	10	0.197
	20	K5/30	5	Clamp-screw	—	1⑨	10	0.180
					1⑨	—	10	0.180
	25	RK5/60	5	Clamp-screw	—	1⑨	1	0.367
					1⑨	—	⑧	0.367
	28	RK5/70	5	Clamp-screw	—	1⑨	1	0.367
					1⑨	—	⑧	0.367
	32	RK5/80	5	Clamp-screw	—	1⑨	1	0.367
					1⑨	—	⑧	0.367
	32	RK5/100	5	Clamp-screw	—	1⑨	1	0.367
					1⑨	—	⑧	0.367
	45	RK5/100	5	Clamp-screw	—	—	1	0.437
	55	RK5/125	5	Clamp-screw	—	—	1	0.437
	55	RK5/150	5	Clamp-screw	—	—	1	0.437
	70	RK5/150	10	Lug-clamp⑬	—	—	1	1.020
	90	RK5/150	10	Lug-clamp⑬	—	—	1	1.020
	100	RK5/200	10	Lug-clamp⑬	—	—	1	1.020
	115	RK5/200	10	Lug-clamp⑬	—	—	1	1.020
	115	RK5/200	10	Lug-clamp⑬	—	—	1	1.020
	140	RK5/250	10	Lug-clamp⑬	—	—	1	2.020
	160	RK5/250	10	Lug-clamp⑬	—	—	1	2.020
	165	RK5/250	10	Lug-clamp⑬	—	—	1	2.020
	250	RK5/500	5	Screw-nut	—	—	1	5.400
	275	RK5/500	10	Screw-nut	—	—	1	5.400
	350	L/800	18	Screw-nut	—	—	1	9.575
	450	L/800	18	Screw-nut	—	—	1	9.575
	550	L/800 ⑪	18⑪	Screw-nut	—	—	1	9.575
	700	L/1200 ⑪	18⑪	Screw-nut	—	—	1	18.000
	800	L/1500 ⑪	18⑪	Screw-nut	—	—	1	18.620
	1000	L/1500	18	Screw-nut	—	—	1	21.400
	No UL	—	—	Screw-nut	2	4	1	48.000
	No UL	—	—	Screw-nut	2	4	1	50.000

⑬ IEC/EN 60947-1 designation: Pillar terminal.

Certifications and compliance
Certifications obtained:

Type	cULus	UL	CSA	EAC	CCC	Register of shipping RINA	Register of shipping LROS
BG06 A	●			●	●		
BG09 A	●			●	●		
BG12 A	●			●	●		
BGF09 A	●			●	●		
BGP... A❼	cULus			●	●		
BF09 A	●		●	●	●	●	
BF12 A	●		●⑭	●	●	●	
BF18 A	●		●	●	●	●	
BF25 A	●		●⑭	●	●	●	
BF26 A	●		●	●	●	●	
BF32 A	●		●	●	●	●	
BF38 A	●		●⑭	●	●	●	
BF40 A	●			●	●		
BF50 A	●			●	●		
BF65 A	●			●	●		
BF80 A	●			●	●		
BF94 A	⑮						
BF95 A	●						
BF115 A	●						
BF150 A	●						
B145		●	●	●	●	●	●
B180		●	●	●	●	●	●
B250		●	●	●	●	●	●
B310		●	●	●	●	●	●
B400		●	●	●	●	●	●
B500	●			●			
B630	●			●			
B630 1000	●			●			
B1250				●			
B1600				●			

● Certified products.

UL - UL Listed, for USA and Canada (cULus - File E93602) for BG…BF150 types indicated, as Motor Controllers – Contactors, except for BGP09… types which are UL Recognized, for USA and Canada (cULus File E93602 – Component - Products having this type of marking are intended for use as components of complete workshop-assembled equipment).
BGP is UL rated up to 300V; for type with rating up to 600V, consult Technical support for information – see contact details on inside front cover.
UL Listed for USA only (File E93602) for B145…B400 types indicated, as Motor Controllers – Contactors.
UL Listed for USA and Canada (cULus - File E172189) for B500... B630 1000 and B500 SL... B630 SL types as Industrial Control Switches.

CSA - BF09…BF95 and B145…B400 contactors are also CSA certified, for Canada only (File 54332).
In addition, BF12…, BF25… and BF38… types are CSA certified as "Elevator Equipment" (File 54332, class 2411); BF65 is UL certified as "Elevator Equipment (File E 93602).
See technical characteristics on page 2-63 for BF12-BF38 and page 2-65 for BF65.

⑭ This contactor has also achieved CSA elevator equipment certification.

⑮ cULus pending.

Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, UL508, CSA C22.2 n° 14; UL 60947-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.
Plastic materials are compliant with standards IEC/EN 60335; for all BF09…BF38 versions only, add suffix V260 to the standard product order code.
Example: BF09 10 A230V260 for BF09, three poles, with one NO contact and 230V 50/60Hz coil with compliant plastic materials.

BG06 D…BG12 D
BG09 L

BF09 D…BF25 D
BF09 L…BF25 L

BF26 D-BF38 D
BF26 L-BF38 L

BF40 E…BF94 E

new

BF95 E…BF150 E

B145…B180

B250…B400

Order code DC coil	DC coil Low consumption	Three-phase motor control: IEC operating current Ith (AC1) ≤40°C	≤55°C	≤70°C	Ie (AC3) ≤440V at ≤55°C	Maximum IEC power at ≤55°C (AC3) 230V	400V	415V	440V	500V	690V	1000V	UL/CSA details: Maximum UL/CSA horsepower ratings Single phase 120V	240V	Three phase 200V	240V	480V	600V
		[A]	[A]	[A]	[A]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[HP]	[HP]	[HP]	[HP]	[HP]	[HP]
11 BG06 01 D❶	—	16	14	12	6	1.5	2.2	2.4	2.5	3	3	—	1/3	1	1 1/2	2	3	3
11 BG06 10 D❶	—																	
11 BG09 01 D❶	**11 BG09 01 L❷**	20	18	15	9	2.2	4	4.3	4.5	5	5	—	1/2	1 1/2	2	3	5	5
11 BG09 10 D❶	**11 BG09 10 L❷**																	
11 BGF09 01 D❶	**11 BGF09 01 L❷**	20	18	15	9	2.2	4	4.3	4.5	5	5	—	1/2	1 1/2	2	3	5	5
11 BGF09 10 D❶	**11 BGF09 10 L❷**																	
11 BGP09 01 D❶	—	20	18	15	9	2.2	4❽	4.3❽	4.5❽	5❽	—	—	1/2	1 1/2	2	3	5❽	—
11 BGP09 10 D❶	—																	
11 BG12 01 D❶⓬	—	20	18	15	12	3.2	5.7	6.2	5.5	5	5	—	1/2	1 1/2	3	3	7 1/2	10
11 BG12 10 D❶⓬	—																	
BF09 01 D❶⓬	**BF09 01 L❷⓬**	25	20	18	9	2.2	4.2	4.5	4.8	5.5	7.5	—	3/4	2	3	3	5	7 1/2
BF09 10 D❶⓬	**BF09 10 L❷⓬**																	
BF12 01 D❶⓬	**BF12 01 L❷⓬**	28	23	20	12	3.2	5.7	6.2	6.2	7.5	10	—	1	2	5	5	7 1/2	10
BF12 10 D❶⓬	**BF12 10 L❷⓬**																	
BF18 01 D❶⓬	**BF18 01 L❷⓬**	32	26	23	18	4	7.5	9	9	10	10	—	1	3	5	5	10	15
BF18 10 D❶⓬	**BF18 10 L❷⓬**																	
BF25 01 D❶	**BF25 01 L❷**	32	26	23	25	7	12.5	13.4	13.4	15	11	—	2	3	7 1/2	7 1/2	15	15
BF25 10 D❶	**BF25 10 L❷**																	
BF26 00 D❶⓬	**BF26 00 L❷⓬**	45	36	32	26	7.3	13	14	14	15.6	18.5	—	2	5	7 1/2	7 1/2	15	20
BF32 00 D❶⓬	**BF32 00 L❷⓬**	56	45	40	32	8.8	18	17	17	20	22	—	3	7 1/2	10	10	20	25
BF38 00 D❶	**BF38 00 L❷**	56 (60❿)	45 (48❿)	40 (42❿)	38	11	18.5	18.5	18.5	20	22	—	3	7 1/2	10	15	30	30
BF40 00 E❸	—	70	60	50	40	11	18.5	22	22	22	30	18.5	3	7 1/2	10	15	30	30
BF50 00 E❸⓬	—	90	75	65	50	15	22	30	30	30	37	22	5	10	15	20	40	40
BF65 00 E❸⓬	—	100	80	70	65	18.5	30	37	37	37	45	30	—	—	20	25	50	60
BF80 00 E❸	—	115	95	80	80	22	45	45	45	55	55	37	—	—	25	30	60	75
BF94 00 E ❸	—	115	95	80	95	30	55	55	55	55	55	37	—	—	25	30	60	75
BF95 00 E ❸	—	140	115	100	95	30	55	55	55	75	90	45	—	—	30	30	60	75
BF115 00 E ❸	—	160	130	115	115	37	55	55	55	75	110	55	—	—	40	40	75	100
BF150 00 E ❸	—	165	135	118	150	45	75	75	75	90	110	55	—	—	50	50	100	125
11 B145 00❹❺	—	250	235	190	150	46	80	88	93	100	120	75	—	—	50	50	100	125
11 B180 00❹❺	—	275	250	200	185	57	100	108	115	123	144	103	—	—	60	75	150	150
11 B250 00❹❺	—	350	300	250	265	83	140	155	164	176	212	156	—	—	75	100	200	250
11 B310 00❹❼	—	450	370	300	320	100	170	188	200	213	256	180	—	—	100	125	250	300
11 B400 00❹❺	—	550	430	360	420	130	225	247	263	271	352	208	—	—	125	150	350	400
11 B500 00❹❺	—	700	550	500	520	156	290	306	328	367	416	312	—	—	150⓫	200⓫	400⓫	450⓫
11 B630 00❹❺	—	800	640	540	630	198	335	368	368	368	440	368	—	—	200⓫	250⓫	500⓫	500⓫
11 B630 1000 00❹❼	—	1000	850	700	—	For AC1/Resisteve duty only, see page 2-8.							—	—	—	—	—	—

❶ Complete order code with coil voltage digit.
For BG09…D 24VDC version complete with built-in surge suppressor, add suffix **V120** to the standard order code.
The BF09-BF38D types already have a standard supplied built-in TVS (Transient Voltage Suppressor).
Standard voltages are as follows:
– DC 012 / 024 / 048 / 060 / 110 / 125 / 220V.
Example: 11 BG06 10 D012 for mini-contactor BG06, three poles, with one NO contact and 12VDC coil.
11 BG09 10 D024 V120 for mini-contactor BG09, three poles, with one NO contact and 24VDC coil, complete with built-in TVS (diode) suppressor.

❷ Low-consumption version.
No add-on auxiliary contacts or mechanical interlock can be mounted on BG... type contactors.
Complete order code with coil voltage digit.
The BF09-BF38L types already have a standard supplied built-in TVS (Transient Voltage Suppressor).
Standard voltages are as follows:
– DC 024 / 048V.
Example: 11 BG09 01 L024 for mini-contactor BG09, three poles, with one NC contact and 24VDC low-consumption coil.

❸ The contactor coil is controlled electronically; it can have either an AC or a DC supply and has a wide operating range.
The order code must be completed with the coil voltage digit.
The standard voltages are as follows:
– AC/DC 024 = 20...48V; 110 = 60...110V; 230 = 100...250V.

❹ The coil of the contactor can be powered indifferently in AC or DC. Complete the order code only with the digit of the coil voltage.
Standard voltages are:
– AC/DC 24 / 48 / 60 / 110-125 (indicate 110) / 220-240 (indicate 220) / 380-415 (indicate 380) / 440-480V (indicate 440).
Example: 11 B145 00 110 for contactor B145, three poles, without auxiliary contacts and with 110-125VAC/DC coil.
The 24VAC/DC voltage is not possible for B500-B630 1000 contactors.
Other voltages available on request.

❺ If predisposed for mechanical latch (G495), the order code becomes 11 B…SL.00 ❹.
If already fitted with mechanical latch (G495), the order code becomes 11 B…L.00 ❹ ❻.

❻ Indicate rated voltage of the mechanical latch, preceded by the letter C if in DC.
Standard voltages are:
– AC 50/60Hz 48 / 110-125 indicate 110 / 220-240 indicate 220 / 380-415V indicate 380
– DC 48 / 110-125 indicate 110 / 220-240V indicate 220.
Example: 11 B145L 00 110 C48 for contactor B145, three poles, without auxiliary contacts, with 110-125VAC/DC coil and mechanical latch powered at 48VDC.

❼ G495 mechanical latch cannot be mounted.

❽ Maximum voltage is limited at 300V for UL. For certified type up to 600V, consult Technical support for information; see contact details on inside front cover.

❾ Highly conductive auxiliary contact.

B500-B630

B630 1000

	UL/CSA General (purpose) use	UL/CSA Fuse class	Short circuit current RMS sym. 600VAC	Type of terminal	Incorporated auxiliary contacts		Quantity per pkg	Weight
	[A]	Type/[A]	[kA] UL/CSA		NO	NC	n°	[kg]
	16	K5/30	5	Clamp-screw	—	1⑨	10	0.214
					1⑨	—	10	0.214
	20	K5/30	5	Clamp-screw	—	1⑨	10	0.214
					1⑨	—	10	0.214
	20	K5/30	5	Faston	—	1⑨	10	0.210
					1⑨	—	10	0.210
	20	K5/30	5	Rear PCB solder pin	—	1⑨	10	0.240
					1⑨	—	10	0.240
	20	K5/30	5	Clamp-screw	—	1⑨	10	0.214
					1⑨	—	10	0.214
	25	RK5/60	5	Clamp-screw	—	1⑨	1	0.494
					1	—	1	0.494
	28	RK5/70	5	Clamp-screw	—	1⑨	1	0.494
					1	—	1	0.494
	32	RK5/80	5	Clamp-screw	—	1⑨	1	0.494
					1	—	1	0.494
	32	RK5/100	5	Clamp-screw	—	1⑨	1	0.494
					1	—	1	0.494
	45	RK5/100	5	Clamp-screw	—	—	1	0.559
	55	RK5/125	5	Clamp-screw	—	—	1	0.559
	55	RK5/150	5	Clamp-screw	—	—	1	0.559
	70	RK5/150	5	Lug-clamp ⑬	—	—	1	1.050
	90	RK5/150	5	Lug-clamp ⑬	—	—	1	1.050
	100	RK5/200	10	Lug-clamp ⑬	—	—	1	1.050
	115	RK5/200	10	Lug-clamp ⑬	—	—	1	1.050
	115	RK5/200	10	Lug-clamp ⑬	—	—	1	1.050
	140	RK5/250	10	Lug-clamp ⑬	—	—	1	2.060
	160	RK5/250	10	Lug-clamp ⑬	—	—	1	2.060
	165	RK5/250	10	Lug-clamp ⑬	—	—	1	2.060
	250	RK5/500	10	Screw-nut	—	—	1	5.400
	275	RK5/500	10	Screw-nut	—	—	1	5.400
	350	L/800	18	Screw-nut	—	—	1	9.635
	450	L/800	18	Screw-nut	—	—	1	9.635
	500 ⑬	L/800	18	Screw-nut	—	—	1	9.635
	700 ⑬	L/1200 ⑪	18 ⑪	Screw-nut	—	—	1	18.060
	800 ⑬	L/1500 ⑪	18 ⑪	Screw-nut	—	—	1	18.620
	1000	L/1500	18	Screw-nut	—	—	1	21.400

⑩ For use at this other current value, a 16mm² cable, headed with a fork terminal, must be used.
⑪ No UL/CSA ratings; data given for indication and reference purposes only.
⑫ Definite-purpose (DP) contactors are available. Consult Technical support for information; see contact details on inside front cover.
⑬ IEC/EN 60947-1 designation: Pillar terminal.

Certifications and compliance
Certifications obtained:

Type	cULus	UL	CSA	EAC	CCC	RINA
BG06 D	●			●	●	
BG09 D	●			●	●	
BG12 D	●			●	●	
BGF09 D	●			●	●	
BGP09 D⑧	●	●	●			
BF09 D - BF09 L	●		●	●	●	●
BF12 D - BF12 L	●		●⑭	●	●	●
BF18 D - BF18 L	●		●	●	●	●
BF25 D - BF25 L	●		●⑭	●	●	●
BF26 D - BF26 L	●		●	●	●	●
BF32 D - BF32 L	●		●	●	●	●
BF38 D - BF38 L	●		●⑭	●	●	●
BF40 E	●			●	●	
BF50 E	●			●	●	
BF65 E	●			●	●	
BF80 E	●			●	●	
BF94 E	⑮					
BF95 E	●					
BF115 E	●					
BF150 E	●					
B145		●	●	●	●	●
B180		●	●	●	●	●
B250		●	●	●	●	●
B310		●	●	●	●	●
B400		●	●	●	●	●
B500	●			●		
B630	●			●	●	
B630 1000	●			●		

● Certified products.

UL - UL Listed, for USA and Canada (cULus File E93602) for BG…BF110 types indicated, as Motor Controllers – Contactors, except for BGP09… types which are UL Recognized, for USA and Canada (cULus File E93602 – Component). Products having this type of marking are intended for use as components of complete workshop-assembled equipment.
BGP is UL rated up to 300V; for type with rating up to 600V, consult Technical support for information – see contact details on inside front cover.
UL Listed for USA only (File E93602) for B145…B400 types indicated, as Motor Controllers – Contactors.
UL Listed for USA and Canada (cULus - File E172189) for B500... B630 1000 and B500 SL... B630 SL types as Industrial Control Switches.

CSA - BF09…BF95 and B145…B400 contactors are also CSA certified, for Canada only (File 54332).
In addition, BF12…, BF25… and BF38… types are CSA certified as "Elevator Equipment" (File 54332, class 2411); BF65 is UL certified as "Elevator Equipment (File E 93602).
See technical characteristics on page 2-63 for BF12-BF38 and page 2-65 for BF65.

⑭ This contactor has also achieved CSA elevator equipment certification.

⑮ cULus pending.

Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, UL508, CSA C22.2 n° 14; UL 60947-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.
Plastic materials are compliant with standards IEC/EN 60335; for all BF09…BF38 versions only, add suffix V260 to the standard product order code.
Example: BF09 10 D024 V260 for BF09, three poles, with one NO contact and 24VDC coil with compliant plastic materials.

BG09 T4 A

BF09A T4 A…BF18 T4 A

BF26 T4 A…BF38 T4 A

BF40 T4 A…BF80 T4 A

new

BF95 T4 A…BF150 T4 A

B145 4…B180 4

B250 4…B400 4

Resistive load control												UL/CSA details
Order code	IEC operating current				Maximum IEC power at ≤40°C (AC1)							UL/CSA
AC coil	Ith (AC1) ≤40°C	≤55°C	≤70°C	Ie (AC3) ≤440V at ≤55°C	230V	400V	415V	440V	500V	690V	1000V	General (purpose) use
	[A]	[A]	[A]	[A]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[A]
11 BG09 T4 A❶⑩	20	18	15	9	8	14	14	15	16	22	—	20
11 BGF09 T4 A❶	20	18	15	9	8	14	14	15	16	22	—	20
11 BGP09 T4 A❶	20	18	15	9	8	14❼	14❼	15❼	16❼	—	—	20
BF09 T4 A❶⑩	25	20	18	9	9.5	16	17	18	21	27	—	25
BF12 T4 A❶⑩	28	23	20	12	10	18	19	20	23	32	—	28
BF18 T4 A❶⑩	32	26	23	18	12	21	22	23	26	36	—	32
BF26 T4 A❶❽⑩	45	36	32	26	17	30	31	33	37	51	—	45
BF38 T4 A❶❽	56 (60❾)	45 (48❾)	40 (42❾)	38	21	36	38	40	45	62	—	55
BF40 T4 A❶	70	60	50	40	26	46	48	51	58	79	115	70
BF50 T4 A❶	90	75	65	50	34	59	61	65	74	102	148	90
BF65 T4 A❶	100	80	70	65	38	65	68	72	82	114	165	100
BF80 T4 A❶	115	95	80	80	43	76	79	83	95	120	185	115
BF95 T4 A❶	140	115	100	95	53	92	96	101	115	159	230	140
BF115 T4 A❶	160	130	115	115	61	105	109	116	132	182	263	160
BF150 T4 A❶	165	135	118	150	62	110	113	119	136	187	271	165
11 B145 4 00❷❸	250	235	190	150	91	150	162	180	196	270	390	250
11 B180 4 00❷❸	275	250	200	185	95	160	177	200	213	298	430	275
11 B250 4 00❷❸	350	300	250	265	124	214	234	255	282	380	560	350
11 B310 4 00❷❺	450	370	300	320	158	270	293	325	350	488	700	450
11 B400 4 00❷❸	550	430	360	420	200	345	377	400	452	598	870	550
11 B500 4 00❷❸	700	550	500	520	252	438	478	500	575	755	1100	700
11 B630 4 00❷❸	800	640	540	630	288	500	545	580	655	860	1250	800
11 B630 1000 4 00❷❺	1000	850	700	—	350	600	630	725	750	1000	1600	1000
11 B1250 4 24❺❻	1250	1050	880	—	480	830	900	905	1100	1450	2000	No UL/CSA
11 B1600 4 24❺❻	1600	1360	1120	—	550	950	1000	1160	1200	1650	2500	No UL/CSA

❶ Complete order code with coil voltage digit or voltage digit followed by 60 if 60Hz.
Standard voltages are as follows:
– AC 50/60Hz 024 / 048 / 110 / 230 / 400V
– AC 60Hz 024 60 / 048 60 / 120 60 / 220 60 / 230 60 / 460 60 / 575 60 (V).
Example: 11 BG09 T4 A230 for mini-contactor BG09, four poles, with 230VAC 50/60Hz coil.
11 BG09 T4 A460 60 for mini-contactor BG09, four poles, with 460VAC 60Hz coil.

❷ The coil of the contactor can be powered indifferently in AC or DC. Complete the order code only with the digit of the coil voltage. Standard voltages are:
– AC/DC 24 / 48 / 60 / 110-125 (indicate 110) / 220-240 (indicate 220) / 380-415 (indicate 380) / 440-480V (indicate 440).
Example: 11 B145 4 00 110 for contactor B145, four poles, without auxiliary contacts and with 110-125VAC/DC coil.
The 24VAC/DC voltage is not possible for B500-B630 1000 contactors.
Other voltages available on request.

❸ If predisposed for mechanical latch (G495), the order code becomes 11 B…4SL 00 ❷.
If already fitted with mechanical latch (G495), the order code becomes 11 B…4L.00 ❷ ❹.

❹ Indicate rated voltage of the mechanical latch, preceded by the letter C if in DC.
Standard voltages are:
– AC 50/60Hz 48 / 110-125 indicate 110 / 220-240 indicate 220 / 380-415V indicate 380
– DC 48 / 110-125 indicate 110 / 220-240V indicate 220.
Example: 11 B145 4L 00 110 C220 for contactor B145, four poles, without auxiliary contacts, with 110-125VAC/DC coil and mechanical latch powered at 220-240VDC.

❺ G495 mechanical latch cannot be mounted.

❻ Complete the order code with the digit of the coil voltage. For 110-125VAC 50/60 Hz indicate 110 or 220-240VAC 50/60 Hz indicate 220.
Example: 11 B1250 4 24 110 for contactor B1250, four poles, with 2NO+4NC auxiliary contacts and 110-125VAC/DC 50/60Hz coil.

❼ Maximum voltage is limited at 300V for UL. For certified type up to 600V. Consult Technical support for information; see contact details on inside front cover.

❽ Whenever the BF26 T4 or BF38 T4 types need to be mechanically interlocked with either the BFX50 00 or BFX50 01, the add-on fourth pole of one of the contactors needs to be removed from the right side and fitted on the left side.

❾ For use at this other current value, a 16mm² cable, headed with a fork terminal, must be used.

❿ Definite-purpose (DP) contactors are available. Consult Technical support for information; see contact details on inside front cover.

B500 4-B630 4

B630 1000 4

B1250-B1600 4

	UL/CSA Fuse class	Short circuit current RMS sym. 600VAC	Type of terminal	Incorporated auxiliary contacts		Quantity per pkg	Weight
	Type / [A]	[kA] UL/CSA		NO	NC	n°	[kg]
	K5 / 30	5	Clamp-screw	none	none	10	0.180
	K5 / 30	5	Faston	none	none	10	0.180
	K5 / 30	5	Rear PCB solder pin	none	none	10	0.197
	RK5 / 60	5	Clamp-screw	none	none	1	0.367
	RK5 / 70	5	Clamp-screw	none	none	1	0.367
	RK5 / 80	5	Clamp-screw	none	none	1	0.367
	RK5 / 100	5	Clamp-screw	none	none	1	0.508
	RK5 / 150	5	Clamp-screw	none	none	1	0.508
	RK5 / 150	5	Lug-clamp ⓫	—	—	1	1.240
	RK5 / 150	5	Lug-clamp ⓫	—	—	1	1.240
	RK5 / 200	10	Lug-clamp ⓫	—	—	1	1.240
	RK5 / 200	10	Lug-clamp ⓫	—	—	1	1.240
	RK5 / 250	10	Lug-clamp ⓫	—	—	1	2.420
	RK5 / 250	10	Lug-clamp ⓫	—	—	1	2.420
	RK5 / 250	10	Lug-clamp ⓫	—	—	1	2.420
	RK5 / 500	10	Screw-nut	none	none	1	6.340
	RK5 / 500	10	Screw-nut	none	none	1	6.340
	L/800	18	Screw-nut	none	none	1	11.195
	L/800	18	Screw-nut	none	none	1	11.195
	L/800 ⓬	18 ⓬	Screw-nut	none	none	1	11.195
	L/1200 ⓬	18 ⓬	Screw-nut	none	none	1	20.910
	L/1500 ⓬	18 ⓬	Screw-nut	none	none	1	21.880
	L/1500	18	Screw-nut	none	none	1	25.620
	—	—	Screw-nut	2	4	1	57.500
	—	—	Screw-nut	2	4	1	58.400

⓫ IEC/EN 60947-1 designation: Pillar terminal.
⓬ No UL/CSA ratings; data given for indication and reference purposes only.

IEC utilisation current with poles in parallel
If the poles of the contactors are arranged in parallel, the operating current is the one indicated in the table multiplied by the **K** factor given below, which account for the unequal distribution of the current in the various poles.
To limit distribution inequality, it is advisable to use paralleling links (see pages 2-16, 2-21 and 2-26).

2 POLES in parallel: **K** = 1.6
3 POLES in parallel: **K** = 2.2
4 POLES in parallel: **K** = 2.8

Certifications and compliance
Certifications obtained:

Type	cULus	UL	CSA	EAC	CCC	RINA
BG09 T4 A	●			●	●	
BGF09 T4 A	●			●	●	
BGP09 T4 A❼	cULus			●	●	
BF09 T4 A	●		●	●	●	●
BF12 T4 A	●		●⓯	●	●	●
BF18 T4 A	●		●	●	●	●
BF26 T4 A	●		●⓯	●	●	●
BF38 T4 A	●		●⓯	●	●	●
BF40 T4 A	●			●	●	
BF50 T4 A	●			●	●	
BF65 T4 A	●			●	●	
BF80 T4 A	●			●	●	
BF95 T4 A	●					
BF115 T4 A	●					
BF150 T4 A	●					
B145 4		●	●	●	●	
B180 4		●	●	●	●	
B250 4		●	●	●	●	
B310 4		●	●	●	●	
B400 4		●	●	●	●	
B500 4	●			●		
B630 4	●			●	●	
B630 1000 4	●			●		
B1250 4				●		
B1600 4				●		

● Certified products.

UL - UL Listed, for USA and Canada (cULus File E93602) for BG…BF150 types indicated, as Motor Controllers – Contactors, except for BGP09… types which are UL Recognized, for USA and Canada (cULus File E93602 – Component). Products having this type of marking are intended for use as components of complete workshop-assembled equipment.
BGP is UL rated up to 300V; for type with rating up to 600V, consult Technical support for information – see contact details on inside front cover.
UL Listed for USA only (File E93602) for B145…B400 types indicated, as Motor Controllers – Contactors.
UL Listed for USA and Canada (cULus - File E172189) for B500 4... B630 1000 4 and B500 4SL... B630 4SL types as Industrial Control Switches.

CSA - BF09…BF80 and B145…B400 contactors are also CSA certified, for Canada only (File 54332).
In addition, BF12…, BF25…, BF38… and BF65… types are CSA certified as "Elevator Equipment" (File 54332, class 2411).
See technical characteristics on page 2-63 for BF12-BF38 and page 2-65 for BF65.

⓯ This contactor has also achieved CSA elevator equipment certification.

Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, UL508, CSA C22.2 n° 14; UL 60947-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.
Plastic materials are compliant with standards IEC/EN 60335; for all BF09…BF38 versions only, add suffix V260 to the standard product order code.
Example: BF09 T4 A230 V260 for BF09, four poles, 230V 50/60Hz coil with compliant plastic materials.

BG09 T4 D

BF09 T4 D-BF18 T4 D
BF09 T4 L-BF18 T4 L

BF26 T4 D-BF38 T4 D
BF26 T4 L-BF38 T4 L

BF65 T4 E
BF80 T4 E

new

BF95 T4 E…BF150 T4 E

B145 4…B180 4

B250 4…B400 4

Resistive load control													UL/CSA details
Order code DC coil	DC coil Low consumption	IEC operating current Ith (AC1) ≤40°C	≤55°C	≤70°C	Ie (AC3) ≤440V at ≤55°C	Maximum IEC power at ≤40°C (AC1) 230V	400V	415V	440V	500V	690V	1000V	UL/CSA General (purpose) use
		[A]	[A]	[A]	[A]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	[A]
11 BG09 T4 D❶	—	20	18	15	9	8	14	14	15	16	22	—	20
11 BGF09 T4 D❶	—	20	18	15	9	8	14	14	15	16	22	—	20
11 BGP09 T4 D❶	—	20	18	15	9	8	14❽	14❽	15❽	16❽	—	—	20
BF09 T4 D❶	**BF09 T4 L❷**	25	20	18	9	9.5	16	17	18	21	27	—	25
BF18 T4 D❶	**BF18 T4 L❷**	32	26	23	18	12	21	22	23	26	36	—	32
BF26 T4 D❶	**BF26 T4 L❷**	45	36	32	26	17	30	31	33	37	51	—	45
BF38 T4 D❶	**BF38 T4 L❷**	56 (60❾)	45 (48❾)	40 (42❾)	38	21	26	38	40	45	62	—	55
BF65 T4 E❸	—	100	80	70	65	38	65	68	72	82	114	165	100
BF80 T4 E❸	—	115	95	80	80	43	76	79	83	95	120	185	115
BF95 T4 E❸	—	140	115	100	95	53	92	96	101	115	159	230	140
BF150 T4 E❸	—	165	135	118	150	62	110	113	119	136	187	271	165
11 B145 4 00❹❺	—	250	235	190	150	91	150	162	180	196	270	390	250
11 B180 4 00❹❺	—	275	250	200	185	95	160	177	200	213	298	430	275
11 B250 4 00❹❺	—	350	300	250	265	124	214	234	255	282	380	560	350
11 B310 4 00❹❼	—	450	370	300	320	158	270	293	325	350	488	700	450
11 B400 4 00❹❺	—	550	430	360	420	200	345	377	400	452	598	870	550
11 B500 4 00❹❺	—	700	550	500	520	252	438	478	500	575	755	1100	700
11 B630 4 00❹❺	—	800	640	540	630	288	500	545	580	655	860	1250	800
11 B630 1000 4 00❹❼	—	1000	850	700	—	350	600	630	725	750	1000	1600	1000

❶ Complete order code with coil voltage digit.
The BF09-BF38D types already have a standard supplied built-in TVS (Transient Voltage Suppressor).
Standard voltages are as follows:
– DC 012 / 024 / 048 / 060 / 110 / 125 / 220VDC.
Example: 11 BG09 T4 D012 for mini-contactor BG09, four poles, with 12VDC coil.

❷ Low consumption version. Complete the order code with coil voltage digit.
The BF09-BF38L types already have a standard supplied built-in TVS (Transient Voltage Suppressor).
Standard voltages are as follows:
– DC 024 / 048V
Example: BF09 T4 L024 for contactor BF09, four poles, with 24VDC low-consumption coil.

❸ The contactor coil is controlled electronically; it can have either an AC or a DC supply and has a wide operating range.
Complete the order code only with the digit of the coil voltage.
Standard voltages are:
– AC/DC 024 = 20...48V; 110 = 60...110V; 230 = 100...250V.

❹ The coil of the contactor can be powered indifferently in AC or DC. Complete the order code only with the digit of the coil voltage.
Standard voltages are:
– AC/DC 24 / 48 / 60 / 110-125 indicate 110 / 220-240 indicate 220 / 380-415 indicate 380 / 440-480V indicate 440.
Example: 11 B145 00 110 for contactor B145, four poles, without auxiliary contacts and with 110-125VAC/DC coil.
The 24VAC/DC voltage is not possible for B500-B630 1000 contactors.
The 24V voltage is not possible for B500-B630 1000 contactors.
Other voltages available on request.

❺ If predisposed for mechanical latch (G495), the order code becomes 11 B…4SL 00 ❹.
If already fitted with mechanical latch (G495), the order code becomes 11 B…4L.00 ❹ ❻.

❻ Indicate rated voltage of the mechanical latch, preceded by the letter C if in DC.
Standard voltages are:
– AC 50/60Hz 48 / 110-125 indicate 110 / 220-240 indicate 220 / 380-415V indicate 380
– DC 48 / 110-125 indicate 110 / 220-240V indicate 220.
Example: 11 B145L 00 110 C48 for contactor B145, four poles, without auxiliary contacts, with 110-125VAC/DC coil and mechanical latch powered at 48VDC.

❼ G495 mechanical latch cannot be mounted.

❽ Maximum voltage is limited at 300V for UL. For certified type up to 600V consult Technical support for information; see contact details on inside front cover.

❾ For use at this other current value, a 16mm² cable, headed with a fork terminal, must be used.

B500 4-B630 4

B630 1000 4

	UL/CSA Fuse class	Short circuit RMS sym. 600VAC	Type of terminal	Incorporated auxiliary contacts		Quantity per pkg	Weight
	Type / [A]	[kA] UL/CSA		NO	NC	n°	[kg]
	K5 / 30	5	Clamp-screw	—	—	10	0.220
	K5 / 30	5	Faston	—	—	10	0.220
	K5 / 30	5	Rear PCB solder pin	—	—	10	0.242
	RK5 / 60	5	Clamp-screw	—	—	1	0.498
	RK5 / 80	5	Clamp-screw	—	—	1	0.498
	RK5 / 100	5	Clamp-screw	—	—	1	0.665
	RK5 / 150	5	Clamp-screw	—	—	1	0.665
	RK5 / 225	10	Lug-clamp⑩⑪	—	—	1	1.280
	RK5 / 250	10	Lug-clamp⑩⑪	—	—	1	1.280
	RK5 / 250	10	Lug-clamp⑩⑪	—	—	1	2.460
	RK5 / 250	10	Lug-clamp⑩⑪	—	—	1	2.460
	RK5 / 500	10	Screw-nut	—	—	1	6.340
	RK5 / 500	10	Screw-nut	—	—	1	6.340
	L/800	18	Screw-nut	—	—	1	11.195
	L/800	18	Screw-nut	—	—	1	11.195
	L/800	18	Screw-nut	—	—	1	11.195
	L/1200 ⑩	18 ⑩	Screw-nut	—	—	1	20.910
	L/1200 ⑩	18 ⑩	Screw-nut	—	—	1	21.880
	L/1500 ⑩	18 ⑩	Screw-nut	—	—	1	25.600

⑩ No UL/CSA ratings; data given for indication and reference purposes only.
⑪ IEC/EN 60947-1 designation: Pillar terminal.

IEC utilisation current with poles in parallel
If the poles of the contactors are arranged in parallel, the operating current is the one indicated in the table multiplied by the **K** factor given below, which account for the unequal distribution of the current in the various poles.
To limit distribution inequality, it is advisable to use paralleling links (see pages 2-16, 2-21 and 2-26).

2 POLES in parallel: **K** = 1.6
3 POLES in parallel: **K** = 2.2
4 POLES in parallel: **K** = 2.8

Certifications and compliance
Certifications obtained:

Type	cULus	UL	CSA	EAC	CCC	RINA
BG09 T4 D	●			●	●	
BGF09 T4 D	●			●	●	
BGP09 T4 D❼	cULus			●	●	
BF09 T4 D - BF09 T4 L	●		●	●	●	●
BF18 T4 D - BF18 T4 L	●		●	●	●	●
BF26 T4 D - BF26 T4 L	●		●⑫	●	●	●
BF38 T4 D - BF38 T4 L	●		●⑫	●	●	●
BF65 T4 E	●			●	●	
BF80 T4 E	●			●	●	
BF95 T4 E	●					
BF150 T4 E	●					
B145 4		●	●	●	●	
B180 4		●	●	●	●	
B250 4		●	●	●	●	
B310 4		●	●	●	●	
B400 4		●	●	●	●	
B500 4	●			●		
B630 4	●			●	●	
B630 1000 4	●			●		

● Certified products.

UL - UL Listed, for USA and Canada (cULus File E93602) for BG…BF150 types indicated, as Motor Controllers – Contactors, except for BGP09… types which are UL Recognized, for USA and Canada (cULus File E93602 – Component). Products having this type of marking are intended for use as components of complete workshop-assembled equipment.
BGP is UL rated up to 300V; for type with rating up to 600V, consult Technical support for information – see contact details on inside front cover.
UL Listed for USA only (File E93602) for B145…B400 types indicated, as Motor Controllers – Contactors.
UL Listed for USA and Canada (cULus - File E172185) for B500 4... B630 1000 4 and B500 4SL... B630 4SL types as Industrial Control Switches.

CSA - BF09…BF95 and B145…B400 contactors are also CSA certified, for Canada only (File 54332).
In addition, BF12…, BF25…, BF38… and BF65… types are CSA certified as "Elevator Equipment" (File 54332, class 2411).
See technical characteristics on page 2-63 for BF12-BF38 and page 2-65 for BF65.

⑫ This contactor has also achieved CSA elevator equipment certification.

Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, UL508, CSA C22.2 n° 14; UL 60947-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.
Plastic materials are compliant with standards IEC/EN 60335; for all BF09…BF38 versions only, add suffix V260 to the standard product order code.
Example: BF09 T4 D024 V260 for BF09, four poles, 24VDC coil with compliant plastic materials.

Mini-contactor four power poles, 2 NO and 2 NC BG series

11 BG09 T2...

Order code	IEC rated conventional free air thermal current Ith ≤40°C	≤55°C	≤60°C	Qty per pkg	Wt
	[A]	[A]	[A]	n°	[kg]
AC COIL. Terminals: clamp screw.					
11 BG09 T2 A❶	20	18	15	1	0.170
DC COIL. Terminals: clamp screw.					
11 BG09 T2 D❷	20	18	15	1	0.175

Operational characteristics

Type	UL/CSA General use	Protection fuse IEC gG	UL K5	Conductor section	
	[A]	[A]	[A]	[mm²]	[AWG]
BG09...T2	20	20	30	0.75-2.5	18-12

Certifications and compliance
Certifications obtained: CCC, EAC; UL Listed, for USA and Canada (cULus - File E93602), as Motor Controllers - Contactors.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.

Contactors four power poles, 2 NO and 2 NC BF series

BF09 T2...

Order code	IEC rated conventional free air thermal current Ith ≤40°C	≤55°C	≤60°C	Qty per pkg	Wt
	[A]	[A]	[A]	n°	[kg]
AC COIL. Terminals: clamp screw.					
BF09 T2 A❶	25	20	18	1	0.340
BF18 T2 A❶	32	26	23	1	0.340
BF26 T2 A❶	45	36	32	1	0.420
BF38 T2 A❶	56 (60❺)	45 (48❺)	40 (42❺)	1	0.420
BF80 T2 A❶	115	95	75	1	1.075
DC COIL. Terminals: clamp screw.					
BF18 T2 D❷❻	32	26	23	1	0.470
BF26 T2 D❷❻	45	36	32	1	0.540
BF38 T2 D❷❻	56 (60❺)	45 (48❺)	40 (42❺)	1	0.540
BF80 T2 E❹❼	115	95	75	1	1.125
DC COIL. Low consumption (2.4W). Terminals: clamp screw.					
BF18 T2 L❸❻	32	26	23	1	0.470
BF26 T2 L❸❻	45	36	32	1	0.540
BF38 T2 L❸❻	56 (60❺)	45 (48❺)	40 (42❺)	1	0.540

❶ Complete with coil voltage digit if 50/60Hz or with voltage digit followed by 60 if 60Hz. N.B.: For BF80 T2, 50/60Hz coils are suitable for 50Hz only.
Standard voltages are:
– AC 50/60Hz 024 / 048 /110 / 230 / 400V
– AC 60Hz 024 60 / 048 60 / 120 60 / 220 60 / 230 60 / 460 60 / 575 60 (V).

Example:
– 11 BG09 T2 A230 for mini-contactor BG09 T2, 2 poles NO and 2 poles NC, with 230VAC 50/60Hz coil.
– 11 BG09 T2 A460 60 for mini-contactor BG09 T2, 2 poles NO and 2 poles NC, with 460VAC 60Hz coil.

❷ Complete the order code with coil voltage digit.
Standard voltages are:
– DC 012 / 024 / 048 / 060 / 110 / 125 / 220V.
The BF18-BF26-BF38 T2D types already have a standard supplied built-in TVS (Transient Voltage Suppressor).
Example:
– 11 BG09 T2 D012 for mini-contactor BG09 T2, 2 poles NO and 2 poles NC, with 12VDC coil.

❸ Low consumption version with built-in TVS. Complete the order code with coil voltage digit.
Standard voltages are:
– DC 024 / 048V.
Example:
– BF18 T2 L024 for contactor BF18 T2, 2 poles NO and 2 poles NC, with 24VDC low-consumption coil, supplied with TVS.

❹ The contactor coil is controlled electronically; it can have either an AC or a DC supply and has a wide operating range.
Complete the order code with coil voltage digit.
Standard voltages are:
– AC/DC 024 = 20...48V; 110 = 60...110V; 230 = 100...250V.

❺ For use at this other current value, a 16mm² cable, headed with a fork terminal, must be used.

❻ Maximum combinations of add-on blocks are given on page 2-19.

❼ For BF80 T2 E... contactors supply voltage must be AC or smoothed DC. For pulsating DC please consult our Technical support.

Operational characteristics

Type	UL/CSA General use	Protection fuse IEC gG	UL RK5	Conductor section	
	[A]	[A]	[A]	[mm²]	[AWG]
BF09 T2	25	32	60	1-6	16-10
BF18 T2	32	40	80	1-6	16-10
BF26 T2	45	50	100	1.5-10	14-6
BF38 T2	55	80	150	2.5-16	14-6
BF80 T2	115	115	250	6-50	18-2

Certifications and compliance
Certifications obtained: EAC, CCC, RINA; UL Listed for USA and Canada (cULus - File E93602) and CSA certified for Canada (File 54332), as Motor Controllers - Contactors.
Compliant with standards: IEC/EN 60947-1,IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.
Plastic materials are compliant with standards IEC/EN 60335; for all BF09...BF38 versions only, add suffix V260 to the standard product order code.
Example: BF09 T2 A230 V260 for BF09, 2NO+2NC main poles, 230V 50/60Hz coil with compliant plastic materials).

Contactors four power poles, 4 NC BF series

BF18 T0...

Order code	IEC rated conventional free air thermal current Ith ≤40°C	≤55°C	≤60°C	Qty per pkg	Wt
	[A]	[A]	[A]	n°	[kg]
AC COIL. Terminals: clamp screw.					
BF18 T0 A❶	32	26	23	1	0.340
BF26 T0 A❶	45	36	32	1	0.420
DC COIL. Terminals: clamp screw.					
BF18 T0 D❷❻	32	26	23	1	0.470
BF26 T0 D❷❻	45	36	32	1	0.540
DC COIL. Low consumption (2.4W). Terminals: clamp screw.					
BF18 T0 L❸❻	32	26	23	1	0.470

Operational characteristics

Type	UL/CSA General use	Protection fuse IEC gG	UL RK5	Conductor section	
	[A]	[A]	[A]	[mm²]	[AWG]
BF18 T0	32	40	80	1-6	16-10
BF26 T0	45	50	150	1.5-10	14-6

Certifications and compliance

Certifications obtained: EAC, CCC, RINA; UL Listed for USA and Canada (cULus - File E93602) and CSA certified for Canada (File 54332), as Motor Controllers - Contactors.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.
Plastic materials are compliant with standards IEC/EN 60335; for BF18 and BF26 versions only, add suffix V260 to the standard product order code.
Example: BF18 T0 A230 V260 for BF18, four NC main poles, 230VAC 50/60Hz coil with compliant plastic materials).

NOTE: The BF18-BF26 T0D and BF18 T0L types have a standard supplied built-in TVS (Transient Voltage Suppressor).

Contactors four NO power poles to connect in series for photovoltaic applications BF series

BFD80 T4...

BFD150 T4 E

new

Order code	Operational current at 600V in DC1 ≤55°C with 4 poles in series	Qty per pkg	Wt
	[A]	n°	[kg]
AC COIL. Terminals: lug clamp❺.			
BFD80 T4 A❶	100	1	1.100
AC/DC COIL. Terminals: lug clamp❺.			
BFD80 T4 E❹	100	1	1.100
BFD150 T4 E❹	165	1	2.550

❶ Complete with coil voltage digit if 50/60Hz or with voltage digit followed by 60 if 60Hz. Standard voltages are:
– AC 50/60Hz 024 / 048 /110 / 230 / 400V
– AC 60Hz 024 60 / 048 60 / 120 60 / 220 60 / 230 60 / 460 60 / 575 60 (V).
Example:
– BF18 T0 A230 for contactor BF18 T0, 4 NC power poles, with 230VAC 50/60Hz.
– 11 BFD80 40 024 for contactor BFD80 40, 4 NO power poles, with 24V 50/60Hz for photovoltaic application.
❷ Complete the order code with coil voltage digit.
Standard voltages are:
– DC 012 / 024 / 048 / 060 / 110 / 125 / 220V.
Example:
– BF18 T0 D012 for micro-contactor BF18 T0, 4 NC power poles, with 12VDC coil.
❸ Low-consumption version. Complete the order code with coil voltage digit.
Standard voltages are:
– DC 024 / 048V.
Example:
– BF18 T2 L024 (low-consumption BF18 T2 contactor with 2 NO poles and 2 NC poles supplied at 24VDC).
❹ The contactor coil is controlled electronically; it can have either an AC or a DC supply and has a wide operating range.
Complete the order code with coil voltage digit.
Standard voltages are:
– AC/DC 024 = 20...48V; 110 = 60...110V; 230 = 100...250V.
❺ IEC/EN 60947-1 designation: Pillar terminal.
❻ Maximum combinations of add-on blocks are given on page 2-19.

General characteristics

The contactors are specifically made with magnetic elements in the arc extinction chambers to obtain high DC load operational capabilities. They are used to disconnect and isolate the load between the photovoltaic panel and the AC/DC inverter.
For add-on contact blocks, accessories and spare parts, consider indications of the corresponding standard (BF80 T4 A..., BF80 T4 E... and BF150 T4 E...).

Italian Fire Department Directives

These directives provide for a disconnecting device for all current-carrying elements, that can be operated by remote control switch, placed in an easily reached and marked position, in order to safely isolate each part of the installation within the fire system compartment including the photovoltaic (PV) generator.
As an alternative, the PV generator must be installed, either externally of the fire system compartment or internally but in a dedicated compartment with adequate fire-resistant features. For such function, specifically designed contactors for on-load use in IEC DC1 duty up to 1000VDC are available.

Operational characteristics

Use in IEC DC1 duty

Type	IEC operational voltage Ue			
	400V	600V	800V	1000V
	IEC max current Ie in DC1 with L/R ≤1ms with 4 poles in series			
	[A]	[A]	[A]	[A]
BFD80 T4 A...	100	100	76	60
BFD80 T4 E...	100	100	76	60
BFD150 T4 E...	165	165	125	100

Wiring scheme

4 poles

Certification and compliance

Certification obtained: cULus for BFD80 T4 A.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.

BFK contactors (including limiting resistors)

BFK...

new

Order code	Maximum IEC operational power at ≤50°C (AC-6b)❶ 240V	400V	440V 480V	690V	❷	Qty per pkg	Wt
	[kvar]	[kvar]	[kvar]	[kvar]	NO	n°	[kg]
AC COIL.							
BFK09 10A❸	4.5	7.5	9	10	1	10	0.413
BFK12 10A❸	7	12.5	14	16	1	10	0.413
BFK18 10A❸	9	15	17	20	1	10	0.413
BFK26 00A❸	11	20	22	25	–	10	0.472
BFK32 00A❸	14	25	27.5	30	–	10	0.472
BFK38 00A❸	17	30	33	36	–	10	0.472
BFK50 00A❸	22	40	41	46	–	5	1.080
BFK65 00A❸	26	45	50	56	–	5	1.080
BFK80 00A❸	30	50	56	65	–	5	1.080
BFK95 00A❸	34	60	75	80	–	5	2.095
BFK115 00A❸	45	75	85	135	–	5	2.095
BFK150 00A❸	50	100	115	150	–	5	2.095

❶ To use the contactor in the delta, consult our Technical support, see contact details on front cover.
❷ NO auxiliary contacts available.
❸ The order code must be completed either with the coil voltage digit if 50/60Hz or with the coil voltage digit followed by the number 60 if 60Hz.
Standard voltages are:
– AC 50-60Hz 024 / 048 / 110 / 230 / 400VAC
– AC 60Hz 024 60 / 048 60 / 120 60 / 220 60 / 230 60 / 460 60 / 575 60 (V).
Example: BFK09 10 A230 for contactor BFK09 with one NO contact and 230VAC 50/60Hz coil.
BFK09 10 A460 60 for contactor BFK09 with one NO contact and 460VAC 60Hz coil.
❹ Note: the maximum thermal current Ith of the BF110K contactor is 125A.

UL/CSA details
Maximum UL/CSA kvar ratings

	240V	480V	600V
	kVAR	kVAR	kVAR
BFK09 10A	4.5	9	10
BFK12 10A	7	14	16
BFK18 10A	9	17	20
BFK26 00A	11	22	27.5
BFK32 00A	14	27.5	32
BFK38 00A	17	33	36
BFK50 00A	22	41	46
BFK65 00A	26	50	56
BFK80 00A	30	60	75
BFK95 00A	40	80	100
BFK115 00A	45	90	120
BFK150 00A	50	100	125

Operational characteristics

Type	IEC rated operational current ≤440V	IEC - UL/CSA protection fuse gG-SC
	[A]	[A]
BFK09	12	16
BFK12	18	25
BFK18	23	40
BFK26	30	40
BFK32	36	63
BFK38	43	63
BFK50	58	80
BFK65	65	100
BFK80	75	125
BFK95	90	125
BFK115	115	160
BFK150	144	160

Ambient operating temperature: ≤50°C. For ambient temperatures higher than 50°C and up to 70°C, the maximum operating power values indicated in the table must be reduced by a percentage equal to the difference between the operating ambient temperature and 50°C.
E.g.: Using a BFK26 00 contactor at the ambient temperature of 60°C, the maximum operating power (at 400V) of the contactor will be equal to 20kvar – 10% = 18kvar.
Operating cycle: ≤120 cycles/h
Electrical life: ≥400,000 cycles.

Add-on auxiliary contacts
The following contact blocks, can be fitted on the BFK contactors: BFX12..., 11 G418..., 11 G481..., 11 G482... and 11 G218.

Certifications and compliance
Certification obtained:UL Listed for USA and Canada (cULus - File E93602), as Motor Controllers - Magnetic Capacitive Switches; CCC, EAC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, UL508, CSA C22.2 n° 14.
Plastic materials are compliant with standards IEC/EN 60335; for BFK versions only, add suffix V260 to the standard product order code.

Kit to assemble BFK contactors

Order code	For contactor	Qty per pkg	Wt
		n°	[kg]
11 G460	BF09 10A - BF12 10A - BF18 10A - BF26 00A - BF32 00A - BF38 00A	10	0.072
BFX10K3	BF50 00A - BF65 00A - BF80 00A	10	0.078
BFX10K4	BFK95 00A - BF115 00A - BF150 00A	10	0.080

new

General characteristics
To optimise contactor stock management, a kit is available to transform normal three-pole contactors into BFK types for power factor correction. The table to the left indicates which kits to purchase depending on the standard contactor in stock.

11 G46...

Control relays BG00 type

11 BG00...

11 BGF00...

Order code	Configuration and n°of contacts❺		Quantity per pkg.	Wt
	NO	NC	n°	[kg]
AC COIL. Terminals: clamp screw.				
11 BG00 40 A❶	4	0	1	0.170
11 BG00 31 A❶	3	1	1	0.170
11 BG00 22 A❶	2	2	1	0.170
Terminals: Faston.				
11 BGF00 40 A❶	4	0	1	0.160
11 BGF00 31 A❶	3	1	1	0.160
11 BGF00 22 A❶	2	2	1	0.160
DC COIL. Terminals: clamp screw.				
11 BG00 40 D❷	4	0	1	0.175
11 BG00 31 D❷	3	1	1	0.175
11 BG00 22 D❷	2	2	1	0.175
Terminals: Faston.				
11 BGF00 40 D❷	4	0	1	0.165
11 BGF00 31 D❷	3	1	1	0.165
11 BGF00 22 D❷	2	2	1	0.165
DC COIL. Low-consumption (2.3W). Terminals: clamp screw.				
11 BG00 40 L❸	4	0	1	0.175
11 BG00 31 L❸	3	1	1	0.175
11 BG00 22 L❸	2	2	1	0.175
Terminals: Faston.				
11 BGF00 40 L❸	4	0	1	0.165
11 BGF00 31 L❸	3	1	1	0.165
11 BGF00 22 L❸	2	2	1	0.165

Operational characteristics
- IEC rated insulation voltage Ui: 690V
- IEC rated conventional free air thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - BG types: A600-Q600
  - BF types: A600-P600
- Low-consumption version of BG types cannot accept additional contacts.

NOTE: No coil change or replacement is possible.

Certifications and compliance
Certification obtained: CCC, EAC, UL Listed for USA and Canada (cULus - File E93602), as Motor Controllers - Auxiliary contactors for all; RINA for BF00 types.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.
Plastic materials are compliant with standards IEC/EN 60335; for BF00 version only, add suffix V260 to the standard product order code.
Example: BF00 40 A230 V260 for BF00 control relay having 4 NO auxiliary contacts and 230VAC 50/60Hz coil with compliant plastic materials.

NOTE: The BF00...D and BF00...L types have a standard supplied built-in TVS (Transient Voltage Suppressor).

Control relays BF00 type

BF00... A...

BF00... D...
BF00... L...

Order code	Configuration and n°of contacts ❺		Quantity per pkg.	Wt
	NO	NC	n°	[kg]
AC COIL. Terminals: clamp screw.				
BF00 40 A❶	4	0	1	0.340
BF00 31 A❶	3	1	1	0.340
BF00 22 A❶	2	2	1	0.340
BF00 04 A❶	0	4	1	0.340
DC COIL. Terminals: clamp screw.				
BF00 40 D❷❹	4	0	1	0.470
BF00 31 D❷❹	3	1	1	0.470
BF00 22 D❷❹	2	2	1	0.470
BF00 04 D❷❹	0	4	1	0.470
DC COIL. Low consumption (2.4W). Terminals: clamp screw.				
BF00 40 L❸❹	4	0	1	0.470
BF00 31 L❸❹	3	1	1	0.470
BF00 22 L❸❹	2	2	1	0.470
BF00 04 L❸❹	0	4	1	0.470

❶ The order code must be completed either with the coil voltage digit if 50/60Hz or with the coil voltage digit followed by the number 60 if 60Hz.
Standard voltages are:
– AC 50760Hz 024 / 048 / 110 - 230 / 400V
– AC 60Hz 024 60 / 048 60 /- 120 60 / 220 60 / 230 60 / 460 60 / 575 60 (V).
Example: 11 BG00 40 A230 (auxiliary mini-contactor 4 NO auxiliary contacts supplied at 230VAC 50/60Hz).
BF00 40 A460 60 (auxiliary contactor with 4 NO auxiliary contacts supplied at 460VAC 60Hz).

❷ Complete the order code with coil voltage digit. Standard voltages are:
– DC 012 / 024 / 048 / 060 / 110 / 125 / 220V.
Example: BF00 40 D012 (auxiliary contactor with 4 NO auxiliary contacts supplied at 12VDC).

❸ Low-consumption version. Complete the order code with coil voltage digit.
Standard voltages are:
– DC 024 / 048V.
Example: 11 BG00 40 L024 (low-consumption auxiliary mini-contactor with 4 NO auxiliary contacts supplied at 24VDC).

❹ Maximum combinations of add-on blocks are given on page 2-19.

❺ All contacts are highly conductive.

11 BGX10... (20-11-02)
11 BGX11 11

11 BGX10... (40-31-22-13-04)
11 BGX11 22

11 BGXF...

11 BGX77... -
11 BGX78 225 -
11 BGX79...

11 BGX50 00

11 SMX90 21
11 SMX90 22

Order code	Characteristics	Max qty per contactor	Qty per pkg	Wt
		n°	n°	[kg]
Auxiliary contacts. Screw terminals.				
11 BGX10 02❶	2NC	1	10	0.021
11 BGX10 11❶	1NO + 1NC	1	10	0.021
11 BGX10 20❶	2NO	1	10	0.021
11 BGX10 04❷	4NC	1	10	0.028
11 BGX10 13❷	1NO + 3NC	1	10	0.028
11 BGX10 22❶	2NO + 2NC	1	10	0.028
11 BGX10 31❶	3NO + 1NC	1	10	0.028
11 BGX10 40❶	4NO	1	10	0.028
Auxiliary contacts for reversing and changeover assemblies. Screw terminals.				
11 BGX11 11❸	1NO + 1NC	1	10	0.021
11 BGX11 22❸	2NO + 2NC	1	10	0.028
Auxiliary contacts. Faston terminals.				
11 BGXF10 02❶	2NC	1	10	0.021
11 BGXF10 11❶	1NO + 1NC	1	10	0.021
11 BGXF10 20❶	2NO	1	10	0.021
11 BGXF10 04❷	4NC	1	10	0.028
11 BGXF10 13❷	1NO + 3NC	1	10	0.028
11 BGXF10 22❶	2NO + 2NC	1	10	0.028
11 BGXF10 31❶	3NO + 1NC	1	10	0.028
11 BGXF10 40❶	4NO	1	10	0.028
Mechanical interlock.				
11 BGX50 00❶	For BG...A and BG...D	1	10	0.008
Quick connect surge suppressors.				
11 BGX77 048	≤48VAC/DC (Varistor)		10	0.007
11 BGX77 125	48...125VAC/DC (Varistor)		10	0.007
11 BGX77 240	125...240VAC/DC (Varistor)		10	0.007
11 BGX78 225	≤225VDC (Diode)		10	0.007
11 BGX79 048	≤48VAC (Resistor-Capacitor)		10	0.007
11 BGX79 125	48...125VAC (Resistor-Capacitor)		10	0.007
11 BGX79 240	125...240VAC (Resistor-Capacitor)		10	0.007
11 BGX79 415	240...415VAC (Resistor-Capacitor)		10	0.007
Modular shroud.				
11 BGX80 00❹	IP40 front protection		20	0.006
Paralleling links.				
11 G323❺	For 2 poles		10	0.009
11 G324			10	0.009
11 G325❺	For 4 poles		10	0.014
11 G326			10	0.014
Rigid connecting kits.				
11 SMX90 21❻	Rigid connections for star-delta starter with BG... mini-contactors		10	0.040
11 SMX90 22❻	Rigid connections for reversing switches with BG... mini-contactors		1	0.026

❶ Cannot be used with BG...L types.
❷ Cannot be used with BG...D and BG...L types.
❸ Suitable for left-hand mini-contactor only of BGT and BGTP reversing and BGC changeover assemblies.
❹ The shroud can be used with BG... types with screw termination only and with no auxiliary contacts, surge suppressor or mechanical interlock mounted. It raises the front degree of protection of the mini-contactor when these are used in consumer switchboards.
❺ Cannot be used with BGX80 00 shroud.
❻ Contactors with one NC auxiliary contact, 01 type, are usually used.
The SM1 breaker can be directly fitted with rigid connector; type connection SM1X30 40P for SM1P... breaker and connection SM1X30 40R for SM1R... breaker.
The relay cannot be directly mounted on the contator. Use the RF38 type and the RFX38 04 independent mounting base.

Operational characteristics

Type		BGX10... BGX11...	BGXF10...
IEC rated conventional free air thermal current Ith	A	10	10
IEC rated insulation voltage Ui	V	690	690
Terminals Screw		M3	Faston 1x6.3mm 2x2.8mm
Width	mm	6.9	6.9
Tightening torque	Nm	0.8...1	—
	lbin	7...9	—
Conductor section maximum (with 1 or 2 cables)			
flexible without lug	mm²	2.5	2.5
flexible with lug	mm²	2.5	2.5
AWG	n°	14	14
UL/CSA and IEC/EN 60947-5-1 designation	AC	A600	A600
	DC	Q600	Q600
Mechanical life (million)	cycles	20	20

SM1 breaker - mini-contactor connecting kit
See page 1-5.

Certifications and compliance
Certifications obtained:

Type	UL	cULus	EAC	CCC
BGX10...	—	●	●	●
BGX11...	—	●	●	●
BGXF10...	—	●	●	—
BGX50 00	—	●	●	—
BGX7...	—	●	●	—
BGX80 00	—	—	●	—
G32...	—	—	●	—
SMX90...	℞	—	—	—

● Certified products;

℞ - UL Recognized for USA only (File E197069) as Panel and Switchboard Accessories - Component.
Products having this type of marking are intended for use as components of complete workshop-assembled equipment.
cULus - UL Listed for USA and Canada (cULus - File E93601) as Auxiliary Devices - Component.

Compliant with standards: UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1; IEC/EN 60947-1; IEC/EN 60947-5-1 for auxiliary contacts.

Combinations: mounting position on BG...A and BG...D mini-contactors

❶ Not suitable for mini-contactors BG... with auxiliaries contacts BGX10..., surge suppressor BGX7... and interlock BGX50 00.
❷ Not suitable for BG...D types.

Combinations: mounting position on BG...L mini-contactors

Combinations for reversing and changeover contactors assembled with BG...A and BG...D types

❷ Not suitable for BG...D types.
❸ For left-hand mini-contactor of BGT, BGTP and BGC contactor assemblies only.
See page 4-5.

Connections for reversing contactor assembly

Connections for star-delta assembly

BFX10...

11 G484...

BFX10...

11 G418...

11 G218

11 G481...
11 G482

BFX12...

11 G428...

11 G485...
11 G486...
11 G487

Order code	Characteristics	Max qty per cont.	Qty per pkg.	Wt
		n°	n°	[kg]
Auxiliary contacts with front center mounting ❷. Screw terminals.				
BFX10 02❶	2NC	1	5	0.030
BFX10 11❶	1NO + 1NC	1	5	0.030
BFX10 20❶	2NO	1	5	0.030
11 G484 03❶	3NC	1	5	0.039
11 G484 12❶	1NO + 2NC	1	5	0.039
11 G484 21❶	2NO + 1NC	1	5	0.039
11 G484 30❶	3NO	1	5	0.039
BFX10 04	4NC	1	5	0.048
BFX10 13	1NO + 3NC	1	5	0.048
BFX10 22	2NO + 2NC	1	5	0.048
BFX10 31	3NO + 1NC	1	5	0.048
BFX10 40	4NO	1	5	0.048
BFX10 11 11	1NO+1NC and 1EM+1LB❸❹	1	5	0.048
Auxiliary contacts with front lateral mounting. Screw terminals❽.				
11 G418 01	1NC	2	10	0.014
11 G418 01D	1LB❸	2	10	0.014
11 G418 10	1NO	2	10	0.014
11 G418 10A	1EM❶	2	10	0.014
Auxiliary contacts with front lateral mounting. Faston terminals❼.				
11 G218	1NO or 1NC reversible	2	10	0.011
11 G481 02	2NC	2	10	0.013
11 G481 11	1NO + 1NC	2	10	0.013
11 G481 20	2NO	2	10	0.013
11 G482❷❺	Changeover contact	2	10	0.013
Adapter for auxiliary contact side mounting.				
11 G280	for G218	2	10	0.008
11 G419	for G418	2	10	0.010
11 G483	for G481 and G482	2	10	0.010
Auxiliary contacts with low side mounting. Screw terminals.				
BFX12 02❷	2NC for BF00, BF09...BF94	2	5	0.044
BFX12 11❷	1NO+1NC for BF00, BF09...BF94	2	5	0.044
BFX12 20❷	2NO for BF00, BF09...BF94	2	5	0.044
11 G428 01	1NC	2	10	0.024
11 G428 01D	1LB❸	2	10	0.024
11 G428 10	1NO	2	10	0.024
11 G428 10A	1EM❶	2	10	0.024
Delayed auxiliary contacts 1NO + 1NC (pneumatic operation) on energisation for front center mounting ❶❽. Screw terminals.				
11 G485 3	3s	1	1	0.040
11 G485 6	6s	1	1	0.040
11 G485 15	15s	1	5	0.040
11 G485 30	30s	1	5	0.040
11 G485 60	60s	1	5	0.040
11 G485 120	120s	1	1	0.040
Delayed auxiliary contacts 1NO + 1NC (pneumatic operation) on de-energisation for front center mounting ❶❽. Screw terminals.				
11 G486 3	3s	1	1	0.040
11 G486 6	6s	1	1	0.040
11 G486 15	15s	1	5	0.040
11 G486 30	30s	1	5	0.040
11 G486 60	60s	1	5	0.040
11 G486 120	120s	1	1	0.040
11 G487	70ms	1	1	0.040

Operational characteristics for add-on auxiliary contacts

Type			G418❻ G428❻ G485❽ G486❽ G487❽	G484 BFX10 BFX12	G218❼ G481❼	G482❺
IEC conventional free air thermal current Ith		A	10	10	10	0.1❺
IEC rated insulation voltage Ui		V	690	690	690	690
Terminals	Screw		M3.5	M3	—	—
	Width	mm	7	7	—	—
	Faston		—	—	1x6.35 2x2.8	1x6.35 2x2.8
Tightening torque		Nm	0.8...1	0.8...1	—	—
		lbin	7...9	7...9	—	—
Conductor section maximum with (1 or 2 cables						
	flexible w/o lug	mm2	2.5	2.5	—	—
	flexible c/w lug	mm2	2.5	2.5	2.5	2.5
	AWG	n°	14	14	14	14
Terminal protection per IEC/EN60529			IP20 ❻❽	IP20	IP20❼	IP20❻
UL/CSA and IEC/EN 60947-5-1 designation		AC	A600	A600	A600	A600
		DC	P600❻	Q600	P600	P600
Mechanical life (million)		cycles	10❽	10	10	10

SM1 breaker - contactor connecting kit
See page 1-5.

Maximum assembly combination of add-on blocks
See pages 2-19 and 2-22...25.

Certifications and compliance
Certifications obtained:

Type	UL	cULus	CSA	EAC	CCC
BFX10...	—	●	—	●	●
BFX12...	—	●	—	●	—
G218	℞	—	●	●	—
G418..., G428...	℞	—	●	●	—
G481...	℞	—	●	●	—
G482	℞	—	●	●	—
G484...	℞	—	●	●	—
G485...	℞	—	●	●	—
G486...	℞	—	●	●	—
G487...	℞	—	●	●	—

● Certified products; pending for BFX10 1111
℞ - UL Recognized for USA only (File E93601) as Auxiliary Devices - Component.
Products having this type of marking are intended for use as components of complete workshop-assembled equipment.
cULus - UL Listed for USA and Canada (cULus - File E93601) as Auxiliary Devices.
CSA - CSA certified for Canada only (File 54332) as Auxiliary Devices for motor controllers.

Add-on auxiliary contacts are compliant with the following standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL 60947-1, UL 60947-5-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-5-1;

❶ The contacts can also be fitted on B type contactors using the adapter G358. See pages 2-26 and 2-28.
❷ Highly conductive contacts.
❸ Normally closed late-break contact.
❹ Normally open early-make contact.
❺ Gold-plated contacts inside tight casing for use in pollutant environments. The Ith value refers to 125VAC and 30VDC. IEC IP20 protection is warranted to equipment wired with insulated Faston terminals.
❻ IEC IP20 protection is warranted to equipment wired with minimum 0.75mm² conductor section. Designation in DC is Q600 for G418 and G419 types.
❼ IEC IP20 protection is warranted to equipment wired with insulated Faston terminals.
❽ IEC IP20 protection is warranted to equipment wired with minimum 1mm² conductor section. Mechanical life is 3 million cycles.

BF00 A, BF09 A...BF150 A, BF40 E...BF150 E

Maximum assembly combination for alternating-current contactors BF00 A, BF09 A...BF150.
Maximum assembly combination for alternating/direct-current contactors BF40 E...BF150 E.

			Front centre mount					Front lateral mount				Side mount	
			BFX10 02	BFX10 04	G485...		G222...❹	BFX50 02	BFX53 03		G418...	G428...	BFX12 02
			BFX10 11	BFX10 13	G486...		G272...❹	BFX50 03 ❶	BFX54 03 ❾		G218	G419+ G418...	BFX12 11
											G481...		
			BFX10 20	BFX10 22	G487		BFX64 1... ❹				G482	G280+ G218	BFX12 20
				BFX10 31								G483+ G481...	BFX50 00 ❸❽
				BFX10 40								G483+ G482	BFX50 01 ❸❽
			n° of blocks 1 type only				n° of blocks	n° of blocks 1 type only			n° of blocks	n° of blocks	n° of blocks
Contactors	Control relay	BF00 A	1	1	1		1 ❺	1	—		1 o 2 ❶	1 o 2 ❶	1 ❸
	Three poles	BF09 A...BF25 A	1	1	1		1 ❺	1	—		1 o 2 ❶	1 o 2 ❶	1 ❸
		BF26 A...BF38 A	1	1	1		1 ❺	1	—		1 o 2 ❶	1 o 2 ❶	1 ❸
		BF40 A...BF150 A	1	1	1	OR	1 ❻	—	1 ❿	OR	1 o 2 ❶	2	1 ❸
		BF40 E...BF150 E	1	1	1		1 ❻	—	1 ❿		1 o 2 ❶	2	1 ❸
	Four poles	BF09 A...BF25 A	1	1	1		1 ❺	1	—		1 o 2	1 o 2 ❶	1 ❸
		BF26 A...BF38 A	1	1	1		1 ❺	1 ❷	—		1 ❶	1 o 2 ❶	1 ❸
		BF40 A...BF150 A	1	1	1		1 ❻	—	1 ❿		1 o 2	2	1 ❸
		BF40 E...BF150 E	1	1	1		1 ❻	—	1 ❿		1 o 2	2	2

❶ Cannot be fitted with BFX10… with 4 contacts and G222.
❷ To fit the mechanical interlock, the add-on fourth pole needs to be mounted on the left side of the one of the contactors.
❸ One only side-mount block can be fitted on each contactor whenever the BFX50 0... interlock is mounted.
❹ One BFX10... or delayed G48... contact block can be mounted on the G222 or G272 mechanical latch.
❺ G222 mechanical latch.
❻ G272 mechanical latch.
❽ For BF40...BF94 code BFX53 00 or BFX53 01; for BF95...BF150 code BFX54 00 or BFX54 01.
❾ BFX53 03 for BF40...BF94; BFX54 03 for BF95...BF150.
❿ BFX5303 cannot be mounted if a contact block BFX10... with 4 contacts (BFX10 04, BFX10 13, BFX10 22, BFX10 31, BFX10 40) is installed.

BF00 D, BF09 D...BF38 D, BF00 L, BF09 L...BF38 L

Maximum assembly combination for direct-current contactors BF00 D, BF09 D...BF38 D
Maximum assembly combination for direct-current contactors BF00 L, BF09 L...BF38 L with low absorption

			Front centre mount										Front lateral mount		Side mount	
			BFX10...			BFX10...				G485...		G222... ❹	1 type only BFX50...			BFX12... ❸
			...02	...11	...20	...04	...13	...22	...31	40	G486...		...02	...03 ❶	...00 ...01	
											G487					
			n° of blocks 1 type only									n° of blocks	n° of blocks 1 type only			
Contactors	Control relay	BF00 D	1			1		1		1		1	1	1	1	1
		BF00 L	1			—		1		—		1	1	1	—	—
	Three poles	BF09 D-BF25 D	1			1		1		1		1	1	1	1	1
		BF26 D-BF38 D	1			1		1		1		1	1	1	1	1
		BF09 L-BF25 L	1			—		1		—	OR	1	1	1	—	—
		BF26 L-BF38 L	1			—		1		—		1	1	1	—	—
	Four poles	BF09 D-BF25 D	1			1		1		1		1	1	1	1	1
		BF26 D-BF38 D	—	1		—		—		—		1	1❼	1❼	1	1
		BF09 L-BF25 L	1			—		1		—		1	1	1	—	—
		BF26 L-BF38 L	—	1	—	—		—		—		—	1❼	1❼	—	—

❶ Mounting of BFX50 03 interlock is not possible when BFX10... block with 4 contacts and G222 latch are mounted.
❸ One only side-mount block can be fitted on each contactor whenever the BFX50 0... interlock is mounted.
❹ One BFX10... or delayed G48... contact block can be mounted on the G222 or G272 mechanical latch.
❼ To fit the mechanical interlock, the add-on fourth pole needs to be mounted on the left side of the one of the contactors.
For other assembly combination, consult Technical support (E-mail: service@LovatoElectric.com).

BFX42
BFXD42

BFX50 00
BFX53 00
BFX54 00

BFX50 01
BFX53 01
BFX54 01

BFX50 02

BFX50 03
BFX53 03
BFX54 03

11 G222...
11 G272...
BFX64 1...

BFX64 2

BFX77...
BFX79...

Order code	Characteristics	Max qty per cont.	Qty per pkg	Wt
		n°	n°	[kg]
Fourth pole.				
BFX42	For BF26 A, BF32 A, BF38 A	1	1	0.100
BFXD42	For BF26 D, BF32 D, BF38 D, BF26 L, BF32 L, BF38 L	1	1	0.108
BFX43	For BF40 A... BF94 A and BF40 E...BF94 E	1	1	0.150
BFX44	For BF95 A...BF150 A and BF95 E...BF150 E	1	1	0.500
Mechanical interlock.				
BFX50 00❶	Side mount for BF00, BF09...BF38	1	5	0.039
BFX50 01❶	Side mount with 2NC contacts for BF00, BF09...BF38	1	5	0.052
BFX50 02	Front mount, low profile for BF00, BF09...BF38	1	5	0.006
BFX50 03	Front mount for BF00, BF09...BF38	1	5	0.023
BFX89 10	Spacer for interlocking BF09...BF38 AC/DC with types in DC	1	10	0.017
BFX53 00	Side mount for BF40...BF94 A/E	1	5	0.039
BFX53 01	Side mount with 2NC contacts for BF40...BF94 A/E	1	5	0.052
BFX53 03	Front mount for BF40...BF94 A/E	1	5	0.034
BFX54 00	Side mount for BF95...BF150 A/E	1	5	0.039
BFX54 01	Side mount with 2NC contacts for BF95...BF150 A/E	1	5	0.052
BFX54 03	Front mount for BF95...BF150 A/E	1	5	0.034
Mechanical latch. Screw terminals				
11 G222❷	For BF00, BF09...BF38	1	1	0.070
11 G272❷	For BF40...BF94	1	1	0.070
BFX64 1...❷	For BF95...BF150	1	1	0.070
Manual closing mechanism.				
11 G454	For BF00, BF09...BF38	1	1	0.021
11 G455	For BF40...BF94	1	1	0.021
BFX64 2	For BF95...BF150	1	1	0.021
Quick connect surge suppressors for BF00A, BF09A...BF150A contactors.				
BFX77 048	≤48VAC/DC (Varistor)		5	0.012
BFX77 125	48...125VAC/DC (Varistor)		5	0.012
BFX77 240	125...240VAC/DC (Varistor)		5	0.012
BFX79 048	≤48VAC (Resistor-Capacitor)		5	0.012
BFX79 125	48...125VAC (Resistor-Capacitor)		5	0.012
BFX79 240	125...240VAC (Resistor-Capacitor)		5	0.012
BFX79 415	240...415VAC (Resistor-Capacitor)		5	0.012

❶ Different sized contactors can be interlocked.
Example: BF09...BF25 with BF26...BF38.
❷ Replace with the digit of the voltage if 50 or 60Hz and with the letter C followed by the digit of the voltage if DC.
Standard voltages are:
– AC 50/60Hz 24 (indicate 24) - 48 (indicate 48) - 110...125 (indicate 110) 220...240 (indicate 220) - 380...415V (indicate 380).
– DC 12 (indicate 12) - 24 (indicate 24) - 48 (indicate 48) 110...125 (indicate 110) - 220...240V (indicate 220).
NOTE: All contactors BF series, equipped with DC or AC/DC electronic coil, have built-in surge suppressor filter.

Operational characteristics

Type		BFX42 BFXD42	BFX43	BFX44	BFX50 01 BFX53 01 BFX54 01
IEC conventional free air thermal current Ith	A	56	115	165	10
IEC rated insulation voltage Ui	V	690	1000	1000	690
Terminals: Screw		M4	M6	M8	M3
Width	mm	12.5	9.6	14.5	7
Tightening torque	Nm	2.5...3	4...5	5.5...6.5	0.8...1
	lbin	21.6...26.4	35.4...44.2	48...57	7...9
Conductor section maximum with 1 or 2 cables flexible w/o lug	mm^2	16	35	70	2.5
flexible c/w lug	mm^2	16	35	70	2.5
AWG	n°	6	2	2/0	14
Terminal protection per IEC/EN60529		IP20❸	IP20❸	IP20❸	IP20
UL/CSA and IEC/EN 60947-5-1 designation	AC	—	—	—	A600
	DC	—	—	—	Q600
Mechanical life (million)	cycles	20	15	15	10

Type			G222...	G272...	BFX64 1
Rated control circuit voltage	AC (50/60Hz)	V	24...415	24...415	24...415
	DC	V	12...240	12...240	12...240
Power consumption with control:	AC	VA	40	40	40
	DC	W	70	70	70
Minimum energising:	drop-out	ms	10	10	10
	pick-up	ms	100	200	200
Tightening torque		Nm	0.8...1	0.8...1	0.8...1
		lbin	7...9	7...9	7...9
Conductor section Maximum with 1 or 2 cables flexible w/o lug		mm^2	4	4	4
flexible c/w lug		mm^2	2.5	2.5	2.5
AWG		n°	14...12	14...12	14...12

❸ The condition is front IP20 protection.

Maximum assembly combination of add-on blocks
See pages 2-19, 2-22...25.

Certifications and compliance
Certifications obtained:

Type	UL	cULus	CSA	EAC
BFX42 - BFXD42 - BFXD43	—	●	—	●
BFX50...	—	●	—	●
BFX77...	—	●	—	●
BFX79...	—	●	—	●
BFX5...	℞	—	—	—
G222...	℞	—	●	●
G272...	℞	—	●	●

● Certified products.
℞ - UL Recognized for USA only (File E93601) as Auxiliary Devices Component.
Products having this type of marking are intended for use as components of complete workshop-assembled equipment.
cULus - UL Listed for USA and Canada (cULus - File E93602) as Magnetic motor controllers.
CSA - CSA certified for Canada only (File 54332) as Auxiliary Devices for motor controllers.

Compliant with standards: IEC/EN 60947-1, UL 60947-1, CSA C22.2 n° 60947-1. IEC/EN 60947-5-1, UL 60947-5-1, CSA C22.2 n° 60947-5-1 for auxiliary contacts IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 n° 60947-4-1 for four poles.

BFX31...
BFX32...

BFX 80

BFX89 01

BFX89 02

11 BA135
11 BA235

11 BA435

11 G231
11 G232

Order code	Characteristics	Qty per pkg	Wt
		n°	[kg]
Rigid connecting kits for three-pole reversing contactor assembly.			
BFX31 01	For contactors BF09...BF25 side by side with BFX50 02 and BFX50 03 mechanical interlock	1	0.052
BFX31 02	For contactors BF09...BF25 side by side with BFX50 00 or BFX50 01 mechanical interlock	1	0.054
BFX32 01	For contactors BF26...BF38 side by side with BFX50... mechanical interlock	1	0.060
Rigid connecting kits for star-delta starters.			
BFX31 31	For contactors BF09...BF25	1	0.058
BFX32 31	For contactors BF26...BF38	1	0.064
BFX32 32	For contactors BF26...BF38 (L/Δ) BF09...BF25 (⅄)	1	0.064
Sealing cover.			
BFX80	Sealing cover for contactors BF00 and BF09 ... BF38	10	0.001
Screw fixing adapters for contactors.			
BFX89 01	Universal base to screw fix BF09...BF38 contactors	5	0.016
BFX89 02	Screw fixing brackets for BF09...BF38 contactors	10	0.002
Paralleling links.			
11 BA135	2 poles for contactors BF09...BF25 types	10	0.001
11 BA235	2 poles for contactors BF26...BF38 types	10	0.003
11 BA435	3 poles for contactors BF95...BF150 types	10	0.030
One-pole enlarged terminals.			
11 G231	1x6mm² for contactors BF09...BF25 types	12	0.009
11 G232	1x16mm² for contactors BF26...BF38 types	12	0.014
Marking element for BF00, BF09...BF150 contactors.			
BFX30	Blank label for writing	50	0.001

Operational characteristics

Type		G231	G232
Tightening torque	Nm	1.5-1.8	2.5-3
	lbin	13.2-18	7-9
Tool	Type	PH1	PH2

Certifications and compliance
Certifications obtained: GOST for all; UL Listed, for USA and Canada (cULus - File E93602), under Magnetic Motor Controllers for BFX31 01, BFX31 02, BFX32 01, BFX31 31, BFX32 31 and BFX32 32 as rigid kits, G271 and G288 as enlarged terminal kits; EAC for all.
Compliant with standards: IEC/EN 60947-1, UL 60947-1, CSA C22.2 n° 60947-1.

Add-on blocks for AC and AC/DC contactors

Combinations: mounting position on BF00 A and BF09 A...BF150 A contactors
Table with combinations: See page 2-19.

❶ Mounting is not possible if front lateral contacts or mechanical interlock BFX50 00 or BFX50 01 are mounted. BF00, BF09...38 cannot be fitted with BFX10 with 4 contacts or G222…
❷ Refer to the diagram below for use with G222… on contactors BF00 A and BF09 A...BF38 A and to the table of combinations on page 2-19.
❸ No add-on block can be mounted on front when the manual closing mechanism G454 or G455 is fitted.
❹ BFX53 03 cannot be mounted if a contact block BFX10... with 4 contacts (BFX10 04, BFX10 13, BFX10 22, BFX10 31, BFX10 40) is installed.

Combinations: mounting position on BF00 A and BF09 A-BF38 A contactors with mechanical latch G222 fitted.
Table with combinations: See page 2-19.

Combinations: mounting position on BF40 A..150 A, BF40 E...BF150 E, contactors with mechanical latch G272 fitted.
Table with combinations: See page 2-19.

❺ Mounting not possible if front lateral contacts are fitted.
❻ Mounting only for BF95...BF150

Add-on blocks for DC and DC low consumption contactors

Combinations: mounting position on BF00 and BF09-BF38, D and L versions
Table with combinations: See page 2-19.

❶ Mounting not possible when the G222 mechanical latch is fitted.
❷ The G222 mechanical latch cannot be fitted on BF26 L - BF38 L four-pole types.
❸ No add-on block can be mounted on front when the G454 manual closing mechanism is fitted.

Accessories for AC, DC and DC low consumption contactors

Combinations

Accessories for AC, DC and DC low consumption contactors

Connections for reversing contactors with contactors BF09...BF25

Connections for reversing contactors with contactors BF09...BF25 and mechanical interlock BFX50 00 or BFX50 01

Connections for reversing contactors with contactors BF26...BF38

Rigid star-delta starter assembly connecting kits for BF09...BF25 contactors

Rigid star-delta starter assembly connecting kits for BF26...BF38 contactors

Rigid star-delta starter assembly connecting kits for BF26...BF38 (line-delta) and BF09...BF25 (star) contactors

Add-on blocks

11 G350 - 11 G354

11 G358

Order code	Characteristics	Max qty per. contactor	Qty per pk	Wt sg
		n°	n°	[kg]
Auxiliary contacts. Faston terminals. Side mountinge.				
11 G350❶	2NO+1NC or 1NO+2NC reversible	4	1	0.082
11 G354❶	1NO+1NC	4	1	0.078
Adapter.				
11 G358	For fitting auxiliary contacts BFX10..., with 2 contacts, G484..., G485..., G486... and G487 on contactors B145...B630 1000 described on p. 2-26	4	5	0.050
Mechanical interlock.				
11 G355❷❸	Side by side	1	1	0.026
11 G356 1❷❹	One on top of other	1	1	0.120
11 G356 2❷❹	One on top of other	1	1	0.126
11 G356 3❷❹	One on top of other	1	1	0.132
11 G356 4❷❹	One on top of other	1	1	0.140
11 G356 5❷❹	One on top of other	1	1	0.146
11 G356 6❹❺	One on top of other	1	1	0.150
Mechanical latch.				
11 G495❻❼❽	For B145...B630❽	1	1	0.795

Accessories

11 G361 - 11 G363

11 G527 - 11 G528 - 11 G529
11 G530

11 G370

11 G371

Order code	Characteristics	Qty per pkg	Wt
		n°	[kg]
Power terminal protection.			
11 G361❾	For contactors B145-B180	6	0.026
11 G363❾	For contactors B250-B310-B400	6	0.046
11 G527	For contactor B500	1	0.238
11 G528	For contactor B500 4	1	0.265
11 G529	For contactor B630	1	0.238
11 G530	For contactor B630 4	1	0.266
3 pole star connecting bars.			
11 BA1595	For contactors B145-B180	1	0.065
11 BA1721	For contactors B250-B310-B400	1	0.140
11 BA1846	For contactors B500-B630	1	0.341
2 pole bars for parallel arrangement.			
11 BA1594	For contactors B145-B180	1	0.095
11 BA1720	For contactors B250-B310-B400	1	0.149
11 BA1845	For contactors B500-B630	1	0.322
Terminal adapter.			
11 G370	To transform Faston terminals of auxiliary contacts and coils into screw terminals	10	0.003
11 G371	To transform both coil Faston terminals into screw terminals	5	0.022

Operational characteristics of auxiliary contacts

Type			G350-G354
IEC conventional free-air thermal current Ith		A	16
IEC rated insulation voltage Ui		V	690
Terminals	Faston		1-6.35x0.8 2-2.8x0.8
Conductor section maximum (with 1 or 2 cables)	flexible c/w lug	mm^2	2.5
	AWG	n°	14
UL/CSA and IEC/EN 60947-5-1 designation		AC	A600
		DC	P600
Mechanical life (million)		cycles	5

Type			G495❼
Rated AC control circuit voltage	AC (50/60Hz)	V	48...480
	DC	V	48...480
Power consumption with control in:	AC	VA	1500
	DC	W	1100
Minimum energising:	drop-out	ms	40
	pick-up	ms	300
Terminals	Faston		1-6.3x0.8

Type		G370-G371
Tightening torque	Nm	1
	lbin	8.9
Tool	Type	PH2
Conductor section (with 1 or 2 cables)	mm^2	4
	AWG	10

Certifications and compliance
Certifications obtained:

Type	UL	CSA	EAC	CCC
G350	UL	●	●	●
G354	UL	●	●	—
G355	—	●	●	—
G356 ...	—	●	●	—
G361	—	●	●	—
G362	—	●	●	—
G363	—	●	●	—
G370	—	●	●	—

● Certified products.
UL - UL Recognized for USA only (File E93601) as Auxiliary Devices - Component.
Products having this type of marking are intended for use as components of complete workshop-assembled equipment.
CSA - CSA certified for Canada only (File 54332) as Auxiliary Devices for motor controllers.

Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-1, UL 60947-4-1, IEC/EN 60947-4-1, UL508, CSA C22.2 n° 14; add-on auxiliary contacts also comply with: IEC/EN 60947-5-1, UL 60947-5-1, CSA C22.2 n° 60947-5-1.

❶ Only for B145-B180-B250-B310-B400-B500-B630-B630 1000.
❷ Not suitable for B630 1000-B1250-B1600 ❺.
❸ For use with three-pole B630 1000, consult Technical support for information; see contact details on inside front cover.
❹ Allowed distances see page 2-68.
❺ For contactors B1250 and B1600, two G356 6 mechanical interlocks are required.
❻ Replace with the digit of the voltages if 50 or 60 Hz or with the letter C followed by voltage if DC. The standard voltages are:
– AC 50/60Hz 48 - 110...125 (indicate 110) - 220...240 (indicate 220) - 380...415 (indicate 380)
– DC 48 - 110...125 (indicate 110) - 220...240 (indicate 220).
❼ It can be mounted only in contactors if predisposed for it. Technical support for information; see contact details on inside front cover.
❽ Not suitable for B310 and B310 4.
❾ Provided for one pole terminal only. Example: For three-pole contactors, purchase 3 pieces for the upper terminals only or 6 pieces for all upper and lower terminals.
❿ Replace with the required alphanumeric symbol; each package contains 100 pieces of the same symbol.

Combinations: Mounting position on B145...B630 contactors

The add-on auxiliary contact blocks G350 and G354 can be applied to contactors B145-B630 1000 only up to a maximum of four pieces for each contactor, for a total of 12 contacts.
The contact block G350 provides a 2NO+1NC or 1NO+2NC combination depending on its mounting position; see the drawing below. The G354 block consists of 1NO+1NC.

Contact blocks, BFX10 with 2 contacts, G484, G485, G486 and G487 types, can be mounted using the G358 adapter, refer to page 2-18 for exact types and order codes of the blocks.
A maximum of four adapters can be possibly used per contactor and each adapter can hold one BFX10, G484, G485, G486 and G487.

AC coils

BFX91A...

BFX92A...

BFX93A...

BFX94 A...

new

Order code	Rated frequency and voltage		Qty per pkg	Wt
	[Hz]	[V]	n°	[kg]
For contactors BF00 A-BF09 A-BF12 A-BF18 A-BF25 A.				
BFX91 A024❶	50/60	24VAC	1	0.085
BFX91 A048❶		48VAC	1	0.085
BFX91 A110❶		110VAC	1	0.085
BFX91 A230❶		230VAC	1	0.085
BFX91 A400❶		400VAC	1	0.085
BFX91 A024 60❶	60	24VAC	1	0.085
BFX91 A048 60❶		48VAC	1	0.085
BFX91 A120 60❶		120VAC	1	0.085
BFX91 A220 60❶		220VAC	1	0.085
BFX91 A230 60❶		230VAC	1	0.085
BFX91 A460 60❶		460VAC	1	0.085
BFX91 A575 60❶		575VAC	1	0.085
For contactors BF26 A-BF32 A-BF38 A.				
BFX92A 024❶	50/60	24VAC	1	0.088
BFX92A 048❶		48VAC	1	0.088
BFX92A 110❶		110VAC	1	0.088
BFX92A 230❶		230VAC	1	0.088
BFX92A 400❶		400VAC	1	0.088
BFX92A 024 60❶	60	24VAC	1	0.088
BFX92A 048 60❶		48VAC	1	0.088
BFX92A 120 60❶		120VAC	1	0.088
BFX92A 220 60❶		220VAC	1	0.088
BFX92A 230 60❶		230VAC	1	0.088
BFX92A 460 60❶		460VAC	1	0.088
BFX92A 575 60❶		575VAC	1	0.088
For contactors BF40 A-BF50 A-BF65 A-BF80 A-BF94 A.				
BFX93 A024❶	50/60	24VAC	1	0.150
BFX93 A048❶		48VAC	1	0.150
BFX93 A110❶		110VAC	1	0.150
BFX93 A230❶		230VAC	1	0.150
BFX93 A400❶		400VAC	1	0.150
BFX93 A024 60❶	60	24VAC	1	0.150
BFX93 A048 60❶		48VAC	1	0.150
BFX93 A120 60❶		120VAC	1	0.150
BFX93 A220 60❶		220VAC	1	0.150
BFX93 A230 60❶		230VAC	1	0.150
BFX93 A460 60❶		460VAC	1	0.150
BFX93 A575 60❶		575VAC	1	0.150
For contactors BF95 A-BF115 A-BF150 A.				
BFX94 A024❶	50/60	24VAC	1	0.185
BFX94 A048❶		48VAC	1	0.185
BFX94 A110❶		110VAC	1	0.185
BFX94 A230❶		230VAC	1	0.185
BFX94 A400❶		400VAC	1	0.185
BFX94 A024 60❶	60	24VAC	1	0.185
BFX94 A048 60❶		48VAC	1	0.185
BFX94 A120 60❶		120VAC	1	0.185
BFX94 A220 60❶		220VAC	1	0.185
BFX94 A230 60❶		230VAC	1	0.185
BFX94 A460 60❶		460VAC	1	0.185
BFX94 A575 60❶		575VAC	1	0.185

❶ Four-terminal coil.

Operational characteristics for BFX91 A, BFX92 A, BFX93 A and BFX94 A coils
AC control

Rated voltage at 50/60, 60Hz			V	12...600	
Operating voltage limits					
50/60Hz coil powered at 50Hz		pick-up	% Us	80...110	
		drop-out	% Us	20...55	
	60Hz	pick-up	% Us	85...110	
		drop-out	% Us	20...55	
60Hz coil powered at 60Hz		pick-up	% Us	80...110	
		drop-out	% Us	20...55	
Average coil consumption at ≤20°C				BFX91 BFX92	BFX93 BFX94
50/60Hz coil powered at 50Hz		in-rush	VA	75	210 300
		holding	VA	9	15 20
	60Hz	in-rush	VA	70	195 275
		holding	VA	6.5	13 17
60Hz coil powered at 60Hz		in-rush	VA	75	210 300
		holding	VA	9	15 20
Dissipation	at 50Hz		W	2.5	5 6.5

Materials
Class F enamelled copper wire.

Special versions
For coils with non standard voltages, consult Technical support for information; see contact details on inside front cover.

AC/DC and DC coils

BFX93 E...

BFX94 E...

Order code	Rated voltage	Qty per pkg	Wt
	[V]	n°	[kg]
For contactors BF40 E-BF50 E-BF65 E-BF80 E-BF94 E❶.			
BFX93 E024❷	20...48V AC/DC	1	0.190
BFX93 E110❷	60...110V AC/DC	1	0.190
BFX93 E230❷	100...250V AC/DC	1	0.190
For contactors BF95 E-BF115 E-BF150 E.			
BFX94 E024❷	20...48V AC/DC	1	0.225
BFX94 E110❷	60...110V AC/DC	1	0.225
BFX94 E230❷	100...250V AC/DC	1	0.225

new

NOTE: no coil replacement for contactors BF00 D, BF09 D-BF38 D, BF00 L, BF09 L-BF38 L is possible.

❶ For BF80 T2 E... contactors the coil supply voltage must be AC or smoothed DC. For pulsating DC please consult our Technical support.
❷ Four-terminal coil.

Operational characteristics for BFX93 E coil
AC/DC control

Rated voltage		V	20...250
Operating voltage limits: 50/60 Hz coil powered at or in DC	pick-up	% Us	80...110❶
	drop-out	% Us	20...25❷
Average coil cons. at ≤20°C	in-rush	W	45...75
	holding	W	1.2...2.1

Operational characteristics for BFX94 E...
AC/DC control

Rated voltage		V	20...250
Operating voltage limits: 50/60 Hz coil powered at or in DC	pick-up	% Us	80...110❶
	drop-out	% Us	20...25❷
Average coil cons. at ≤20°C	in-rush	W	65...110
	holding	W	1.8...3

❶ For electronically controlled AC/DC coils 80% of Us min. and 110% of Us max.
❷ For electronically controlled AC/DC coils 20% of Us min. and 55% of Us max.

Materials
Class F enamelled copper wire.

Special versions
For coils with non standard voltages, consult Technical support for information; see contact details on inside front cover.

AC/DC coils

Coil

Bridge rectifier

Coil protection

Coil assembly

Order code	Rated voltage AC 50/60Hz and DC	Qty per pkg	Wt
	[V]	n°	[kg]
Coil for B145-B180 contactors.			
11 BA11574 24	24VAC/DC	1	0.800
11 BA11574 48	48VAC/DC	1	0.800
11 BA11574 60	60VAC/DC	1	0.800
11 BA11574 110	110...125VAC/DC	1	0.800
11 BA11574 220	220...240VAC/DC	1	0.800
11 BA11574 380	380...415VAC/DC	1	0.800
11 BA11574 440	440...480VAC/DC	1	0.800
Coil for B250-B310-B400 contactors.			
11 BA1699 24	24VAC/DC	1	1.800
11 BA1699 48	48VAC/DC	1	1.800
11 BA1699 60	60VAC/DC	1	1.800
11 BA1699 110	110...125VAC/DC	1	1.800
11 BA1699 220	220...240VAC/DC	1	1.800
11 BA1699 380	380...415VAC/DC	1	1.800
11 BA1699 440	440...480VAC/DC	1	1.800
Coil for B500-B630-B630 1000 contactors.			
11 BA1800 48	48VAC/DC	1	3.400
11 BA1800 60	60VAC/DC	1	3.400
11 BA1800 110	110...125VAC/DC	1	3.400
11 BA1800 220	220...240VAC/DC	1	3.400
11 BA1800 380	380...415VAC/DC	1	3.400
11 BA1800 440	440...480VAC/DC	1	3.400
Coil for B1250-B1600 contactors.			
11 BA1800 110❶	110...125VAC❶	1	3.400
11 BA1800 220❶	220...240VAC❶	1	3.400

Order code	For contactor	Qty per pkg	Wt
		n°	[kg]
Bridge rectifier (Faston terminals).			
11 BA1575 1❺	B145-B180	1	0.170
11 BA1700 1❺	B250-B310-B400	1	0.230
11 BA1799❺	B500-B630-B630 1000 B1250-B1600	1	0.520
Coil protection.			
11 BA1553	B145-B180	1	0.042
11 BA1678	B250-B310-B400	1	0.079
11 BA1803	B500-B630-B630 1000 B1250-B1600	1	0.164
Coil assembly (Coil, rectifier and coil protection).			
11 BA1546❷	B145-B180	1	1.220
11 BA1671❷	B250-B310-B400	1	2.290
11 BA1796❸	B500-B630-B630 1000 B1250-B1600	1	4.650

❶ Available for AC supply only.
❷ Add the coil voltage digit. Standard voltages are:
- AC/DC 24 - 48 - 60 - 110...125 (indicate 110) - 220...240 (indicate 220) - 380...415 (indicate 380) - 440...480V (indicate 440).
Example: 11 BA1546 110 for B145-B180 contactor coil assembly suitable for 110-125VAC/DC supply.

❸ Add the coil voltage digit. Standard voltages are:
- AC/DC 48 - 60 - 110...125 - 220...240 - 380...415 - 440...480V.
Example: 11 BA1796 110 for B500-B1600 contactor coil assembly suitable for 110-125VAC/DC supply.
For B1250 and B1600 only 110...125 and 220...240VAC voltages are available.

❹ When replacing the coil, retrieve the dampers (1 pair for B145...B180 and 2 pairs for B250...B1600) and the fixed core and refit them with the new coil.
❺ For contactors with coil voltage up to 415V. For higher voltages add suffix 440 to the code. E.G.: 11 BA1575 1 440.

Operational characteristics
AC and DC control

For contactor type			B145 - B180
Supply voltage			AC and DC
Rated control voltage		V	24...480
Operating limits	pick-up	% Us	80...110
	drop-out	% Us	20...60
Consumption	in-rush	VA/W	300
	holding	VA/W	10
Dissipation		W	10

For contactor type			B250 - B310 - B400
Supply voltage			AC and DC
Rated control voltage		V	24...480
Operating limits	pick-up	% Us	80...110
	drop-out	% Us	20...60
Consumption	in-rush	VA/W	300
	holding	VA/W	10
Dissipation		W	10

For contactor type			B500 - B630 - B630 1000
Supply voltage			AC and DC
Rated control voltage		V	48...480
Operating limits	pick-up	% Us	80...110
	drop-out	% Us	20...60
Consumption	in-rush	VA/W	400
	holding	VA/W	18
Dissipation		W	18

For contactor type			B1250 - B1600
Supply voltage			AC
Rated control voltage		V	110/240
Operating limits	pick-up	% Us	80...110
	drop-out	% Us	20...60
Consumption	in-rush	VA/W	800
	holding	VA/W	45
Dissipation		W	40

Materials
Class F enamelled copper wire.

Coil assembly
Comprises the coil, bridge rectifier, fixed core, coil protection, cross piece and fixing screws.

Special versions
For coils with non standard voltages, consult Techncial support for information; see contact details on inside front cover.

Main contacts for BF contactors

BFX99...

Order code	For contactor	Qty per pkg	Wt
		n°	[kg]
Main contacts. 3 or 4 pole set complete with screws.			
BFX99 026T	BF26 00	1	0.038
BFX99 026F	BF26 T4	1	0.051
BFX99 032T	BF32 00	1	0.070
BFX99 038T	BF38 00	1	0.070
BFX99 038F	BF38 T4	1	0.093
BFX99 040T	BF40 00	1	0.095
BFX99 040F	BF40T4	1	0.127
BFX99 050T	BF50 00	1	0.095
BFX99 050F	BF50 T4	1	0.127
BFX99 065T	BF65 00	1	0.095
BFX99 065F	BF65 T4	1	0.127
BFX99 080T	BF80 00	1	0.100
BFX99 080F	BF80 T4	1	0.130
BFX99 094T	BF94 00	1	0.100
BFX99 095T	BF95 00	1	0.210
BFX99 095F	BF95 T4	1	0.280
BFX99 115T	BF115 00	1	0.225
BFX99 115F	BF115 T4	1	0.300
BFX99 150T	BF150 00	1	0.225
BFX99 150F	BF150 T4	1	0.300

new

Special versions
For non standard spare contact configurations, contact Technical support; see contact details on inside front cover.

NOTE: For B1250 and B1600 contactor spares, consult Technical support for information; see contact details on inside front cover.

Main contacts and arc chutes for B contactors

11 G381... - 11 G382...
11 G383... - 11 G384... - 11 G385...
11 G525... - 11 G526... - 11 G537...

Order code	For contactor	Qty per pkg	Wt
		n°	[kg]
Main contacts. 3 or 4 pole set complete with Allen screws and key for contact replacement.			
11 G381	B145	1	0.440
11 G381 4	B145 4	1	0.580
11 G382	B180	1	0.440
11 G382 4	B180 4	1	0.580
11 G383	B250	1	0.770
11 G383 4	B250 4	1	1.030
11 G385	B310	1	0.770
11 G385 4	B310 4	1	1.030
11 G384	B400	1	0.770
11 G384 4	B400 4	1	1.030
11 G525	B500	1	2.520
11 G525 4	B500 4	1	3.360
11 G526	B630	1	2.660
11 G526 4	B630 4	1	3.550
11 G537	B630 1000	1	2.660
11 G537 4	B630 1000 4	1	3.550
11 G538	B1250 24	1	5.040
11 G538 4	B1250 4 24	1	6.720
11 G539	B1600 24	1	5.320
11 G539 4	B1600 4 24	1	7.100
Arc chutes.			
11 BA1588	B145-B180	1	0.755
11 BA1589	B145 4-B180 4	1	1.000
11 BA1713	B250-B310-B400	1	1.210
11 BA1714	B250 4-B310 4-B400 4	1	1.600
11 BA1838	B500-B630-B630 1000	1	1.910
11 BA1839	B500 4-B630 4-B630 1000 4	1	2.490

Arc chute

BG... MINI-CONTACTORS WITH AC OR DC SUPPLY VOLTAGE

BG... three poles with screw terminals and **RF...9** thermal overload relay

BG...T...
four poles, with screw terminals

BGP...
with rear PCB solder pins

BGF...
with Faston terminals

❶ Recommended PCB drillings 1.7-2mm.

BF... CONTACTORS WITH AC SUPPLY VOLTAGE

BF00 A... BF09 A... - BF12 A... - BF18 A... - BF25 A... three poles with **RF...38** thermal overload relay

BF09T... A... - BF12T... A... - BF18T... A... four poles

BF26 00A... - BF32 00A... - BF38 00A... three poles with **RF...38** thermal overload relay

BF26 T...A... - BF38 T...A... four poles

BF40 00A... - BF50 00A... - BF65 00A... - BF80 00A... - BF94 00A...
three poles with **RF82** thermal overload relay

BF40 T4...A... - BF50 T4...A... - BF65 T4...A... - BF80 T4...A... - BFD80 T4... four poles

❶ BF80T2 91mm/3.58"

BF95 00A... - BF115 00A... - BF150 00A... three poles with **RF110** thermal relay

9BF95 T4A... - BF115 T4A... - BF150 T4A... four poles

BF...CONTACTORS WITH DC SUPPLY VOLTAGE

BF00...D and **BF00...L - BF09... - BF12... - BF18... - BF25...D** and **L**
three poles with **RF...38** thermal overload relay

Control relays

BF00...D and **BF00...L**
BF09 T... - BF18 T... D and **L** four poles

BF26... - BF32... - BF38... D and **L** three poles with **RF...38** thermal overload relay

BF26 T... - BF38 T... D and **L** four poles

BF40 00E... - BF50 00E... - BF65 00E... - BF80 00E... - BF94 00E...
three poles with **RF82** thermal overload relay

BF65 T4 E... - BF80 T4 E... - BF80 T2 E... four poles

❶ BF80T2 91mm (3.58")

BF95 00E... - BF115 00E... - BF150 00E... three poles with **RF110** thermal relay

BF95 T4E... - BF115 T4E... - BF150 T4E... - BFD150 T4E... four poles

B... CONTACTORS WITH AC OR DC SUPPLY VOLTAGE

B145 - B180 three poles with **RF...200** thermal overload relay

CONTACTOR TYPE	A	B
B145	M8	20 (0.79")
B180	M8	20 (0.79")

B145 4 - B180 4 four poles

CONTACTOR TYPE	A	B
B145	M8	20 (0.79")
B180	M8	20 (0.79")

B250 - B310 - B400 three poles with **RF...420** thermal overload relay

B250 4 - B310 4 - B400 4 four poles

B500 - B630 three poles

CONTACTOR TYPE	A	B	C
B500	M10	35 (1.38")	265 (10.43")
B630	M12	40 (1.57")	270 (10.63")

B500 4 - B630 4 four poles

CONTACTOR TYPE	A	B	C
B500	M10	35 (1.38")	265 (10.43")
B630	M12	40 (1.57")	270 (10.63")

B630 1000 three poles

B630 1000 4 four poles

B1250 - B1600 three poles

B1250 4 - B1600 four poles

B145 - B180 - B250 - B310 - B400 - B500 - B630 - B630 1000 - B1250 - B1600

Minimum safety distance from metal parts.

Minimum space needed to replace the coil.

	B145-B180	B250-B310-B400	B500÷B630 1000
A	120 (4.72")	145 (5.71")	170 (6.69")
B	100 (3.94")	110 (4.33")	160 (6.30")

If dimension B is respected, coil replacement is possible without removing power wiring.

CONTACTORS FOR POWER FACTOR CORRECTION

BFK09 10A - BFK12 10A - BFK18 10A

BFK26 00A - BFK32 00A - BFK38 00A

BFK50 - BFK65 - BFK80

BFK95 - BFK115 - BFK150

ADD-ON BLOCKS WITH BG MINI-CONTACTORS

BGX10... - BGXF10...
auxiliary contacts ❶

❶ Valid for BGX11... contacts as well when mounted on left-hand contactor of BGT or BGC assembly (p. 4 and 5).

BGX50 00 interlock with **BGX10..., BGXF10...** contacts and **BGX77...** or **BGX78...** or **BGX79...** suppressor

BGX77..., BGX78... or **BGX79...**
suppressor only

BGX80 00 shroud

Paralleling links
G323, G324

G325, G326

ADD-ON BLOCKS WITH BF CONTACTORS

Auxiliary contacts **BFX10...**
w/2 contacts

BFX10... w/4 contacts

BFX12...

G484...

G418...

G218

G481..., G482

G280 with G218

G419, with G418..., **G428..., G483** with G481... or G482

G485..., G486..., G487 delayed contacts

Fourth pole
BFX42

BFXD42

BFX43

BFX44

Interlocks
BFX50 00, BFX50 01, BFX53 00, BFX53 01, BFX53 00, BFX53 01

BFX50 02

BFX50 03, BFX53 03, BFX54 03

Interlocks
BFX53 03 - BFX54 03

G222, G272, BFX64 1 mechanical latch

G454, G455 manual closing

BFX80 sealing cover

Rigid connecting kit
BFX31 01

Rigid connecting kit
90mm (3.54") with **BFX5000** and **BFX5001**
100mm (3.94") with **BFX5002** and **BFX5003**

G231 terminal
1-pole

G232 terminal
1-pole

BFX89 01 fixing base

BFX89 02 fixing brackets

ADD-ON BLOCKS WITH B CONTACTORS

Auxiliary contacts **G350, G354**

G358 adapter

G355 interlocks

G356...

❶ For dimensions, refer to page 2-68.

Terminal protection **G361**

Terminal protection
G363

G527, G529

G528, G530

BA1594, BA1720 parallel 2-pole bar

PARALLEL POLE BAR	A	B	C	D
BA1594	45 (1.77")	32 (1.26")	Ø14 (0.55")	16 (0.63")
BA1720	53 (2.09")	50 (1.97")	Ø18 (0.71")	20 (0.79")

G495 mechanical latch

CONTACTOR TYPE	A
B145 - B180	221 (8.70")
B250 - B400	255 (8.86")
B500 - B630	300 (11.81")

BA1845

THREE-POLE CONTACTORS IN AC

BG06 A - BG09 A - BGF09 A - BGP09 A - BG12 A
BF09 A - BF12 A - BF18 A - BF25 A

...10

...01

BF26 A - BF32 A - BF38 A
BF40 A - BF50 A - BF65 A - BF80 A
BF94 A - BF95 A - BF115 A - BF150 A
B145...B630

B1250 24 - B1600 24... ❶

❶ The input electronic circuit of the contactor coil is designed and tested according to IEEEC 62.41 standards and can withstand a 10kV impulse voltage (1.2/50µs) with 50 Joule energy.
The use of an auxiliary reduced voltage transformer is recommended for higher values.

THREE-POLE CONTACTORS IN DC (AC/DC for BF40E...BF150E)

BG06 D - BG09 D - BGF09 D - BGP09 D - BG12 D
BG06 L - BG09 L - BGF09 L - BGP09 L - BG12 L

...10

...01

BF09 D - BF12 D - BF18 D - BF25 D
BF09 L - BF12 L - BF18 L - BF25 L

...10

...01

BF26 D - BF32 D - BF38 D
BF26 L - BF32 L - BF38 L

BF40 E - BF50 E - BF65 E - BF80 E - BF94 E
BF95 E - BF115 E - BF150 E

CONTACTORS FOR POWER FACTOR CORRECTION

BFK09 A - BFK12 A - BFK18 A
BFK26 A - BFK32 A - BFK38 A - BFK50 A - BFK65 A - BFK80 A - BFK95 A - BFK115 A - BFK150 A

❷ Auxiliary contact 13-14 is found on BFK09 A - BFK12 A - BFK18 A types only.

FOUR-POLE CONTACTORS IN AC

BG09 T4 A - BGF09 T4 A - BGP09 T4 A
BF09 T4 A - BF38 T4 A
BF50 T4 A - BF65 T4 A - BF80 T4 A
BF95 T4 A - BF115 T4 A - BF150 T4 A
BFD80 T4 A
B145...B630 4

B1250 4 - B1600 4

FOUR-POLE CONTACTORS IN DC (AC/DC for BF40E...BF150E)

BG09 T4 D - BGF09 T4 D - BGP09 T4 D

BF09 T4 D - BF38 T4 D
BF09 T4 L - BF38 T4 L

BF65 T4 E - BF80 T4 E - BF95 T4 E - BF150 T4 E - BFD150 T4 E

FOUR-POLE CONTACTORS IN AC WITH 2NO AND 2NC POLES

BG09 T2 A

BF09 T2 A - BF18 T2 A - BF26 T2 A - BF38 T2 A
BF80 T2 A

WITH NC FOUR-POLES

BF18 T0 A - BF26 T0 A

FOUR-POLE CONTACTORS IN DC (AC/DC for BF80T2E) WITH 2NO AND 2NC POLES

BG09 T2 D

BF18 T2 D - BF26 T2 D - BF38 T2 D - BF80 T2 E
BF18 T2 L - BF26 T2 L - BF38 T2 L

BF80 T2 E

WITH NC FOUR-POLES

BF18 T0 D - BF26 T0 D
BF18 T0 L

CONTROL RELAY IN AC

BG00 40 A - BGF00 40 A
BF00 40 A

BG00 31 A - BGF00 31 A
BF00 31 A

BG00 22 A - BGF00 22 A
BF00 22 A

BF00 04 A

CONTROL RELAY IN DC

BG00 40 D - BGF00 40 D
BG00 40 L - BGF00 40 L

BG00 31 D - BGF00 31 D
BG00 31 L - BGF00 31 L

BG00 22 D - BGF00 22 D
BG00 22 L - BGF00 22 L

BF00 40 D
BF00 40 L

BF00 31 D
BF00 31 L

BF00 22 D
BF00 22 L

BF00 04 D
BF00 04 L

ADD-ON BLOCKS FOR BG MINI-CONTACTORS
Auxiliary contacts

BGX10 02
BGXF10 02

BGX10 11
BGXF10 11

BGX10 20
BGXF10 20

BGX10 04
BGXF10 04

BGX10 13
BGXF10 13

BGX10 22
BGXF10 22

BGX10 31
BGXF10 31

BGX10 40
BGXF10 40

Special auxiliary contacts

BGX11 11

BGX11 22

Surge suppressor

BGX77...

BGX78...

BGX79...

Rigid connections

SMX90 21

SMX90 22

ADD-ON BLOCKS FOR BF CONTACTORS
Auxiliary contacts

BFX10 02

BFX10 11

BFX10 20

G484 30

G484 21

G484 12

G484 03

BFX10 04

BFX10 13

BFX10 22

BFX10 31

BFX10 40

BFX10 11 11

Auxiliary contact

G218

The termination of the G218 auxiliary contact has more than one numbering due to the fact that the block can assume various mounting positions.
See the numbering in boldface for a correct interpretation.

Auxiliary contacts

BFX12 02

BFX12 11

BFX12 20

G418 10
G428 10

G418 10A
G428 10A

G418 01
G428 01

G418 01D
G428 01D

G481 20

G481 11

G481 02

G482

Mechanical latch
G222… - G272…

The termination of the BFX12... / G418... / G481... / G482 auxiliary contacts has more than one numbering due to the fact that the block can assume various mounting positions. See the numbering in boldface when the block is mounted on the left side of the contactor.

4th pole
BFX42
BFXD42

Interlock
BFX50 01

Delayed auxiliary contacts
G485…

G486… - G487

Rigid connecting kits
BFX31 01 - BFX31 02 - BFX32 01

BFX31 31 - BFX32 31 - BFX32 32

ADD-ON BLOCKS FOR B CONTACTORS
Auxiliary contacts
G350 - G354

Mechanical latch
G495

MOUNTING POSITION OF CONTACTORS

ON VERTICAL PLANE

The performances given in this catalogue have been established with contactors mounted on a vertical plane with line terminals facing upwards and load terminals facing downwards.
All contactors can be mounted with a ± 30° inclination to the vertical axis of the contactor without any derating.

For BF series contactors, this inclination can reach ± 90°, that is when the terminals are facing towards left and right.
For BG mini-contactors:
- Position A, with coil terminals A1-A2 facing downwards, is not recommended.
- The position with coil terminals A1-A2 facing upwards is not recommended for mini-contactors with NC contacts.

Pos. A

ON VERTICAL PLANE WITH 30° INCLINATION

All contactors can be mounted on a plane which varies in respect to the vertical up to ± 30° angle.
On the average, a 5% increase of the minimum pick-up voltage in -30° position can be noted.

This inclination is greater than the one prescribed by main naval registers.

ON HORIZONTAL PLANE (FOR BF SERIES CONTACTORS)

Considerable performance variations can be noted.
It is necessary to check the two possible mounting positions:
- when the contactor is energised, the movable equipment moves upwards.
- when the contactor is energised, the movable equipment moves downwards.

In the first case, it is difficult to close the contactor while in the second, to open it.

The variables which could influence the contactor performance, in addition to the two mounting positions, are:
- type of contactor
- type of control
- contact configuration
- number and type of add-on blocks
- permissible tolerance of auxiliary voltage variation
- ambient temperature.

NOTE: Position B is not recommendable.

Our Technical support (Tel. 035 4282422;
E-mail: service@LovatoElectric.com) can provide further information concerning operational performance of contactors mounted on a horizontal plane.

DYNAMIC TYPE TESTS

Our contactors have sustained dynamic testing, with contactor mounting position rotated ± 22.5° in respect to the three orthogonal axes.

IEC UTILISATION CATEGORY AC3
POLE CHARACTERISTICS
Squirrel-cage induction motors; breaking at rated motor current.

MAXIMUM IEC OPERATIONAL POWER at ambient temperature ≤55°C.

UL/CSA DUTY FOR AC MOTOR SWITCHING

Three-phase AC induction motors; breaking at rated motor current.
UL/CSA RATINGS at ambient temperature ≤55°C

Contactor type	IEC operational current (Ue ≤440V) [A]	IEC operational power 220/230V [kW]	380/400V [kW]	415V [kW]	440V [kW]	500V [kW]	660/690V [kW]	1000V [kW]	Maximum horsepower ratings (60Hz) Three phase 200-208V [HP]	240V [HP]	480V [HP]	600V [HP]
BG06	6	1.5	2.2	2.4	2.5	3	3	–	1½	2	3	3
BG09	9	2.2	4.0	4.3	4.5	5	5	–	2	3	5	5
BG12	12	3.2	5.7	6.2	5.5	5	5	–	3	3	7½	10
BF09	9	2.2	4.2	4.5	4.8	5.5	7.5	–	3	3	5	7 ½
BF12	12	3.2	5.7	6.2	6.2	7.5	10	–	5	5	7½	10
BF18	18	4	7.5	9	9	10	10	–	5	5	10	15
BF25	25	7.0	12.5	13.4	13.4	15	18	–	7½	7½	15	15
BF26	26	7.3	13	14	14	15.6	18.5	–	7½	7½	15	20
BF32	32	8.8	16	17	17	20	22	–	10	10	20	25
BF38	38	11	18.5	18.5	18.5	20	22	–	10	15	30	30
BF40	40	11	18.5	22	22	22	30	18	10	15	30	30
BF50	50	15	22	30	30	30	37	22	15	20	40	40
BF65	65	18.5	30	37	37	37	45	30	20	25	50	60
BF80	80	22	45	45	45	55	55	37	25	30	60	75
BF94	95	30	55	55	55	55	55	37	25	30	60	75
BF95	95	30	55	55	55	75	90	45	30	30	60	75
BF115	115	37	55	55	55	75	110	55	40	40	75	100
BF150	150	45	75	75	75	90	110	55	50	50	100	125
B145	150	46	80	88	93	100	120	75	50	50	100	125
B180	185	57	100	108	115	123	144	103	60	75	150	150
B250	265	83	140	155	164	176	212	156	75	100	200	250
B310	320	100	170	188	200	213	256	180	100	125	250	300
B400	420	130	225	247	263	271	352	208	125	150	350	400
B500	520	156	290	306	328	367	416	312	150 ❶	200 ❶	400 ❶	450 ❶
B630	630	198	335	368	368	368	440	368	200 ❶	250 ❶	500 ❶	500 ❶

❶ No UL/CSA ratings; data given for indication and reference purposes only.

ELECTRICAL IEC LIFE FOR MOTOR CONTROL AC3 ≤440V
Electrical life of contactors

IEC DC UTILISATION CATEGORY
POLE CHARACTERISTICS

MAXIMUM OPERATIONAL CURRENT

IEC Voltage Ue	Contactor Type	IEC Maximum current Ie [A] in categories: DC1 with L/R ≤ 1ms and poles in series 1	2	3	4	DC3 - DC5 with L/R ≤ 15ms and poles in series 1	2	3	4
≤ 24V	**BG06**	9	12	14	–	6	7	9	–
	BG09	12	15	16	16	7	8	10	10
	BG12	12	15	16	–	7	8	10	–
	BF09	15	18	20	20	10	13	15	15
	BF12	17	20	22	20	12	15	18	15
	BF18	17	20	22	22	12	15	18	18
	BF25	20	23	23	–	15	18	22	–
	BF26	25	28	28	28	18	20	25	30
	BF32	30	32	32	–	20	25	30	–
	BF38	35	36	36	36	24	28	32	32
	BF40	40	48	48	–	27	32	40	–
	BF50	45	60	60	60	30	35	50	55
	BF65	50	70	70	70	35	45	55	60
	BF80	70	100	100	100	40	60	80	90
	BF94	77	110	110	115	45	65	86	96
	BF95	140	140	140	140	140	140	140	140
	BF115	160	160	160	160	160	160	160	160
	BF150	165	165	165	165	165	165	165	165
48V	**BG06**	8	11	14	–	5	7	9	–
	BG09	10	14	16	16	6	8	10	10
	BG12	10	14	16	–	6	8	10	–
	BF09	13	18	20	20	9	11	15	15
	BF12	15	20	22	20	11	13	18	15
	BF18	15	20	22	22	11	13	18	18
	BF25	18	23	23	–	13	18	22	–
	BF26	21	28	28	28	15	20	25	30
	BF32	26	32	32	–	17	22	28	–
	BF38	30	34	34	34	20	25	28	28
	BF40	35	48	48	–	23	30	40	–
	BF50	40	60	60	60	25	35	50	55
	BF65	50	70	70	70	25	40	50	60
	BF80	60	100	100	100	30	50	70	90
	BF94	66	110	110	115	33	55	75	95
	BF95	140	140	140	140	44	63	115	110
	BF115	160	160	160	160	50	72	150	120
	BF150	165	165	165	165	60	82	195	130
75V	**BG06**	4	7	8	–	2	4	5	–
	BG09	4	9	10	10	2	5	6	6
	BG12	4	9	10	–	2	5	6	–
	BF09	12	17	20	20	8	10	13	15
	BF12	13	18	20	20	10	12	15	15
	BF18	15	20	20	20	11	13	16	16
	BF25	18	23	23	–	13	16	18	–
	BF26	18	25	25	25	13	18	20	25
	BF32	22	28	32	–	15	20	28	–
	BF38	23	29	33	33	17	22	28	28
	BF40	30	45	48	–	19	27	38	–
	BF50	40	60	60	60	22	30	45	55
	BF65	50	70	70	70	25	40	50	60
	BF80	60	100	100	100	30	50	70	90
	BF94	66	110	110	115	33	55	75	95
	BF95	100	140	155	155	36	60	90	110
	BF115	120	160	160	160	40	65	100	120
	BF150	150	165	165	165	44	70	110	130

POLE CHARACTERISTICS

MAXIMUM OPERATIONAL CURRENT

IEC Voltage Ue	Contactor Type	IEC Maximum current Ie [A] in categories: DC1 with L/R ≤ 1ms and poles in series 1	2	3	4	DC3 - DC5 with L/R ≤ 15ms and poles in series 1	2	3	4
110V	**BG06**	3	6	8	–	1	3	4	–
	BG09	3	8	10	10	1	4	5	5
	BG12	3	8	10	–	1	4	5	–
	BF09	6	12	15	16	2	7	11	12
	BF12	6	13	16	16	2	8	12	16
	BF18	6	13	16	18	2	8	12	13
	BF25	6	16	18	–	2	10	15	–
	BF26	6	22	24	24	2	13	18	20
	BF32	8	25	27	–	2,5	15	20	–
	BF38	8	32	34	34	2,5	18	23	23
	BF40	8	42	44	–	3	22	27	–
	BF50	8	50	55	60	3	25	30	45
	BF65	8	60	60	70	3	30	35	50
	BF80	8	80	85	100	3	40	60	75
	BF94	8	90	93	110	3	43	64	80
	BF95	10	110	120	140	6	55	85	105
	BF115	10	130	140	160	6	65	100	125
	BF150	10	150	160	165	6	80	120	150
220V	**BG06**	–	–	1	–	–	–	0,5	–
	BG09	–	–	2	2	–	–	0,8	0,8
	BG12	–	–	2	–	–	–	0,8	–
	BF09	–	1	10	12	–	2	6	7
	BF12	–	1	11	12	–	2	6	7
	BF18	–	1	11	13	–	2	6	8
	BF25	–	1	12	–	–	2	8	–
	BF26	–	2	20	26	–	3	19	15
	BF32	–	3	23	–	–	3	23	–
	BF38	–	4	30	38	–	3	25	15
	BF40	–	5	56	70	–	5	32	40
	BF50	–	7	75	90	–	5	40	50
	BF65	–	9	90	110	–	5	52	65
	BF80	–	9	95	115	–	5	64	80
	BF94	–	9	95	115	–	5	64	80
	BF95	–	12	125	140	–	7	76	95
	BF115	–	14	145	160	–	7	92	115
	BF150	–	14	150	165	–	7	120	150

IEC DC UTILISATION CATEGORY
POLE CHARACTERISTICS

MAXIMUM OPERATIONAL CURRENT

IEC Voltage Ue	Contactor Type	IEC Maximum current Ie [A] in categories: DC1 with L/R ≤ 1ms and poles in series 1	2	3	4	DC3 - DC5 with L/R ≤ 15ms and poles in series 1	2	3	4
75V	**B145**	220	220	220	220	160	160	160	160
	B180	260	260	260	260	180	180	180	180
	B250	350	350	350	350	280	280	280	280
	B310	375	375	375	375	310	310	310	310
	B400	400	400	400	400	350	350	350	350
	B500	650	650	650	650	550	550	550	550
	B630	800	800	800	800	800	800	800	800
110V	**B145**	110	150	150	150	80	120	140	140
	B180	120	170	170	170	90	140	160	160
	B250	160	300	300	300	150	250	280	280
	B310	195	350	350	350	170	290	310	310
	B400	250	400	400	400	200	350	350	350
	B500	320	550	600	600	320	550	550	550
	B630	460	800	800	800	460	800	800	800
220V	**B145**	–	130	150	150	–	90	120	140
	B180	–	150	170	170	–	100	140	160
	B250	–	250	300	300	–	200	250	280
	B310	–	300	350	350	–	230	290	310
	B400	–	350	400	400	–	280	350	350
	B500	–	450	600	600	–	450	550	550
	B630	–	700	800	800	–	700	800	800
330V	**B145**	-	-	130	150	–	–	90	140
	B180	–	–	150	170	–	–	100	160
	B250	–	–	250	300	–	–	200	280
	B310	–	–	300	350	–	–	230	310
	B400	–	–	350	400	–	–	280	350
	B500	–	–	450	600	–	–	450	550
	B630	–	–	700	750	–	–	650	700
460V	**B145**	–	–	–	130	–	–	–	90
	B180	–	–	–	150	–	–	–	100
	B250	–	–	–	250	–	–	–	200
	B310	–	–	–	300	–	–	–	230
	B400	–	–	–	350	–	–	–	280
	B500	–	–	–	450	–	–	–	450
	B630	–	–	–	700	–	–	–	700

IEC UTILISATION CATEGORIES DC1, DC3 AND DC5.
POLE CHARACTERISTICS

CHOICE CRITERIA
The elements to be considered for the contactor choice are:
– Rated operational current Ie
– Rated operational voltage Ue
– Utilisation category and L/R time constant
– Eventual verification of electrical life.

OPERATING CONDITIONS
Indicated current is valid for:
– Ambient temperature ≤ 55°C
– Operating cycles: up to 120 cy/h with 60% on-load factor
up to 250 cy/h with 30% on-load factor.

POLES IN SERIES
It is important to use contactors with the indicated number of poles in series depending on operating voltage.
The poles in series can be connected to one single polarity or divided between the two polarities of the circuit indifferently.
NOTE. For voltages lower than 30V, the diagrams given in figures 3 and 4 are not recommendable since voltage drops can take place. In these cases, it is better to use poles in parallel considering the notes given in the following section.

Examples of poles in series:

Fig. 1 Fig. 2 Fig. 3 Fig. 4

POLES IN PARALLEL
It is possible to increase the electrical life by placing poles in series when using voltages which require 1 or 2 poles in parallel.
Poles in parallel do not increase the maximum operational current given in the previous pages; that is, if one pole has a maximum operational current in DC5 of 8A, two poles in parallel, it will always be 8A.
With poles in parallel, it is possible to increase the rated contact capacity (Ith) only if the contactor opens and closes in no-load conditions or when used as resistance shunts.
In this case, the contact capacity can be increased.

The value can be obtained by multiplying the rated current of one pole by the K factor given below; e.g.: if one pole carries 10A, three poles in parallel can carry 10 x 2.2 = 22A.
Therefore, the operating current is the one indicated in the tables, multiplied by the K factor given below which takes into consideration the unequal current division on the various poles.
2 POLES in parallel K = 1.6
3 POLES in parallel K = 2.2
4 POLES in parallel K = 2.8

Examples of poles in parallel:

Fig. 5 Fig. 6 Fig. 7 Fig. 8

MAXIMUM OPERATIONAL CURRENT
See tables on pages 2-50 to 2-52.

OTHER CONDITIONS
For different operating conditions or voltage not included among those indicated in the tables, on pages 2-50 to 2-52, consult Technical support (Tel. 035 4282422; E-mail: service@LovatoElectric.com).

IEC SELECTION GUIDE FOR LIGHTING CIRCUIT SWITCHING

GENERAL INFORMATION

The elements which are to be considered for the contactor choice are:
- Type of lamp
- Power factor (cosφ)
- With or without power factor correction
- Value of current when switching on and in running conditions.

Depending on the number and type of lamps, it is also important to bear in mind the main discriminating characteristics given below for the contactor choice:
- Incandescent lamps → contactor making capacity
- Lamps not corrected → rated contactor current in AC1
- Lamps corrected → rated contactor current in AC3

The table below summarises the major characteristics depending on the more commonly used type of lamps:

Type of lamps	Switching on Multiple of In❶	cosφ	Switching off Multiple of In❶	cosφ
Incandescent	15	1	1	1
Mixed light	1.3	1	1	1
Fluorescent	1.15 - 1.3	0.2	1	0.3 - 0.5 (not corrected) 1 (corrected)
High-pressure mercury vapour	1.5 - 1.75	0.2	1	0.45 - 0.7 (not corrected)
High-pressure sodium vapour	1.3 - 1.5	0.2	1	0.3 - 0.5 (not corrected)
Low-pressure sodium vapour	1	0.2 - 0.5	1	0.2 - 0.5 (not corrected)
Metal halide	1.7 - 2.1	0.2	1	0.4 - 0.5 (not corrected)
LED	20...40 ❺	0.6...0.95	1	0.6...0.95

Lamp features		Lamp power [W]	Rated current [A]	Capacitor capacity [µF]	Maximum number [n] of lamps for each contactor pole ❷ BG06 BG09 BG12	BF09 BF12 BF18	BF25	BF26 BF32	BF38	BF40 BF50	BF65 BF80 BF94	BF95	BF115 BF150	B145	B180
LED 220...240V 50/60Hz	See note ❻				Each pole can carry 67% of the rated current AC3 ❻										
INCANDESCENT 220...240V	50/60Hz	60	0.27	-	30	48	92	118	129	203	240	296	370	425	462
		100	0.45	-	18	28	55	71	77	122	144	177	222	255	277
		200	0.91	-	8	14	27	35	38	60	71	87	109	126	137
		300	1.4	-	5	9	17	22	25	39	46	57	71	82	89
		500	2.3	-	3	5	10	13	15	23	28	34	43	50	54
		1000	4.6	-	1	2	5	6	7	11	14	17	21	25	27
MIXED LIGHT 220...240V	50/60Hz	100	0.45	-	20	33	57	77	88	122	144	177	244	311	377
		160	0.72	-	12	20	36	48	55	76	90	111	152	194	236
		250	1.13	-	8	13	23	30	35	48	57	70	97	123	150
		500	2.3	-	4	6	11	15	17	23	28	34	47	60	73
		1000	4.6	-	1	3	5	7	8	11	14	17	23	30	36
ELECTRONIC BALLAST FLUORESCENT	Single mounting	16 / 18	0.1	(6.8) ❸	48	80	160	220	220	400	450	500	750	1050	1200
		32 / 36	0.18	(6.8) ❸	27	44	88	122	122	222	250	277	416	583	666
220...240V 50/60Hz (EVG)		50 / 58	0.27	(10) ❸	17	29	59	82	82	148	166	185	277	388	444
	Dual mounting	2x16 / 18	0.18	(10) ❸	26	44	88	122	122	222	250	277	416	583	666
		2x32 / 36	0.35	(10) ❸	13	22	45	62	62	114	128	142	214	300	342
		2x50 / 58	0.52	(22) ❸	9	15	30	42	42	76	86	96	144	201	230
STANDARD FLUORESCENT 220...240V 50/60Hz	Not corrected Single mounting	15	0.35	-	25	42	74	100	114	157	185	228	314	400	485
		20	0.37	-	24	40	70	94	108	148	175	216	297	378	459
		40	0.44	-	20	34	59	79	90	125	147	181	250	318	386
		65	0.7	-	12	21	37	50	57	78	92	114	157	200	242
		115	1.5	-	6	10	17	23	26	36	43	53	73	93	113
		140	1.5	-	6	10	17	23	26	36	43	53	73	93	113
	Corrected Single mounting	15	0.11	4.5	24	40	62	94	94	200	200	200	533	533	533
		20	0.16	4.5	24	40	62	94	94	200	200	200	533	533	533
		40	0.24	4.5	24	40	62	94	94	200	200	200	458	500	520
		65	0.4	7	15	25	40	50	57	125	128	128	275	300	312
		115	0.7	18	6	10	15	23	23	50	50	50	133	133	133
		140	0.7	18	6	10	15	23	23	50	50	50	133	133	133
	DUO circuit	2 x 20	0.26 ❹	-	54	57	100	153	153	211	250	307	423	538	653
		2 x 40	0.46 ❹	-	19	32	56	86	86	119	141	173	239	304	369
		2 x 65	0.7 ❹	-	12	21	37	57	57	78	92	114	157	200	242
		2 x 115	1.3 ❹	-	6	11	20	30	30	42	50	61	84	107	130
		2 x 140	1.5 ❹	-	6	10	17	26	26	36	43	53	73	93	113

❶ In = Rated lamp current.
❷ For 220/240V circuits, either single-phase (between phase and neutral) or 2-wire (between phase and phase), the maximum number of lamps is as per the table.
For three-phase circuits with neutral 380/415V or 220/240V, the maximum number of lamps controlled by the same contactor is n • 3.
For three-phase 380/415V circuits without neutral, the maximum number of lamps controlled by the same contactor is n • √3.
Electrical life is 100,000 cycles up to 55°C.
❸ Incorporated capacitor.
❹ Total.
❺ With reference to the AC side of the power supplies.
❻ Usually, each light has its own power supply. If a power supply controls several lights, the number of power supplies must be factored into the calculation. The sum of the rated currents of the power supplies connected to each pole of the contact must not exceed 67% of the rated current AC-3 of the contactor indicated on page 2-4.
e.g. BF18 has a rated current AC-3 of 18A; it can control 18x0.67=12.06A per pole at most.

Lamp features		Lamp power [W]	Rated current [A]	Capacitor capacity [µF]	Maximum number [n] of lamps for each contactor pole❶ BG06 BG09 BG12	BF09 BF12 BF18	BF25	BF26 BF32	BF38	BF40 BF50	BF65 BF80 BF94	BF95	BF115 BF150	B145	B180
HIGH-PRESSURE MERCURY VAPOUR 220/240V 50/60Hz	Not corrected	50	0.61	-	10	16	26	36	44	65	73	82	122	172	196
		80	0.8	-	7	12	20	27	33	50	56	62	93	131	150
		125	1.2	-	5	8	13	18	22	33	37	41	62	87	100
		250	2.2	-	3	4	7	10	12	18	20	22	34	47	54
		400	3.4	-	2	3	5	6	7	11	13	14	22	30	35
		700	5.5	-		1	3	4	4	7	8	9	13	19	21
		1000	8	-		1	2	2	3	5	5	6	9	13	15
	Corrected	50	0.29	7	15	25	40	60	60	128	128	128	258	342	342
		80	0.42	8	13	22	35	52	53	95	107	112	178	250	285
		125	0.7	10	8	14	22	31	35	57	64	71	107	150	171
		250	1.3	18	4	7	12	16	19	30	34	38	57	80	92
		400	2.1	25	2	4	7	10	11	19	21	23	35	50	57
		700	3.6	40	-	2	4	6	6	11	12	13	20	29	33
		1000	5.3	60	-	1	3	4	4	7	8	9	14	19	22
380/415V 50/60Hz	Not corrected	2000	8	-		-	1	2	2	3	3	4	5	8	9
	Corrected	2000	5.5	35		-	1	2	2	4	5	5	8	11	13
HIGH-PRESSURE SODIUM VAPOUR 220/240V 50/60Hz	Not corrected	150	1.8	-	3	5	8	12	15	22	25	27	41	58	66
		250	3	-	2	3	5	7	9	13	15	16	25	35	40
		400	4.7	-	1	2	3	4	5	8	9	10	15	22	25
		600	7.1	-	-	1	2	3	3	5	6	6	10	15	16
		1000	10.4	-		-	1	2	2	3	4	4	7	10	11
	Corrected	150	0.83	20	-	9	14	19	21	45	45	45	90	120	120
		250	1.5	36	-	5	7	10	11	25	25	25	50	66	66
		400	2.4	48	-	3	5	6	7	16	18	18	31	43	50
		600	3.5	68	-	2	3	4	4	10	12	12	20	28	34
		1000	6.3	120	-	1	1	2	2	6	7	7	11	16	19
LOW-PRESSURE SODIUM VAPOUR 220/240V 50/60Hz	Not corrected	35	1.5	-	4	6	10	14	18	26	30	33	50	70	80
		55	1.5	-	4	6	10	14	18	26	30	33	50	70	80
		90	2.4	-	3	4	6	9	11	16	18	20	31	43	50
		135	3.1	-	2	3	5	7	8	12	14	16	24	33	38
		150	3.2	-	2	3	5	6	8	12	14	15	23	32	37
		180	3.3	-	2	3	4	6	8	12	13	15	22	31	36
	Corrected	35	0.31	20	-	6	10	14	18	45	45	45	120	120	120
		55	0.42	20	-	6	10	14	18	45	45	45	120	120	120
		90	0.63	30	-	4	6	9	11	30	30	30	80	80	80
		135	0.94	40	-	3	5	7	8	22	22	22	60	60	60
		150	1	40	-	3	5	6	8	22	22	22	60	60	60
		180	1.2	40	-	3	4	6	8	22	22	22	60	60	60
METAL HALIDE 220/240V 50/60Hz	Not corrected	35	0.3	-	-	28	50	66	80	100	150	167	250	330	400
		70	0.5	-	-	16	28	40	50	60	90	100	150	200	240
		150	1	-	-	8	14	20	25	30	45	50	75	100	120
		250	3	-	-	3	5	7	9	13	15	16	25	35	40
		400	3.5	-	-	2	4	6	7	11	12	14	21	30	34
		1000	10	-	-	1	1	2	2	4	4	5	7	10	12
		2000	17	-		-	-	1	1	2	2	2	4	6	7
	Corrected	35	0.17	6	-	33	60	65	65	200	240	260	400	420	440
		70	0.28	12	-	20	36	40	40	120	145	155	240	255	265
		150	0.6	20	-	9	17	18	18	56	68	74	112	118	120
		250	1.5	32	-	5	7	8	10	26	28	28	46	50	53
		400	2	35	-	4	5	6	7	20	22	25	35	37	40
		1000	5.8	95	-	1	1	2	2	6	7	8	12	12	13
		2000	11.5	148	-	-	-	1	1	3	3	4	6	6	6
380/415V 50/60Hz	Not corrected	2000	10.3	-	-	-	-	1	1	2	2	3	4	6	7
		3500	18	-	-	-	-	-	-	1	1	1	2	3	4
	Corrected	2000	6.6	60	-	-	1	1	1	3	3	4	6	7	7
		3500	11.6	100	-	-	-	-	-	2	2	2	3	3	4

❶ For 220/240V circuits, either single-phase (between phase and neutral) or 2-wire (between phase and phase), the maximum number of lamps is as per the table.
For three-phase circuits with neutral 380/415V or 220/240V, the maximum number of lamps controlled by the same contactor is n • 3.
For three-phase 380/415V circuits without neutral, the maximum number of lamps controlled by the same contactor is n • √3.
Electrical life is 100,000 cycles up to 55°C.

POWER FACTOR CORRECTION CAPACITORS

CHOICE CRITERIA

The contactor during the closing transition is influenced by electrical currents having high frequencies and high amplitudes.
The frequencies of these currents range between 1 and 10kHz; the amplitudes must have values lower than the maximum permissible current peak of the contactor to be used.

AMBIENT OPERATING CONDITIONS

Ambient temperature: ≤ 50 °C.
For temperatures higher than 50°C up to 70 °C, stated maximum operational power ratings are to be reduced by a percentage equal to the difference between the ambient temperature and 50°C.
Operating cycle: ≤ 120 cy/h
Electrical life: ≥ 100,000 cycles.

Contactor	IEC rated current ≤400V	Maximum permissible peak current	IEC maximum operational voltage	Fuse gG	IEC maximum operational power (AC-6b) 220V 230V 240V	380V 400V	415V 440V	500V 660/690V
Type	[A]	[A]	[V]	[A]	[kvar]	[kvar]	[kvar]	[kvar]
BF09 A	12	500	690	16	4.5	7.5	9	10
BF12 A	18	550	690	25	7	12.5	12	14
BF18 A	23	1000	690	32	9	15	16	18
BF25 A	23	1000	690	32	9	15	16	18
BF26 A	30	1400	690	40	11	20	22	22
BF32 A	36	1700	690	50	14	25	27	30
BF38 A	43	1900	690	63	17	30	30	34
BF40 A	50	2500	1000	100	20	35	40	45
BF50 A	58	2500	1000	80	22	40	41	45
BF65 A	65	2500	1000	100	26	45	50	52
BF80 A	75	2500	1000	125	30	50	56	70
BF94 A	75	2500	1000	125	30	50	56	70
BF95 A	90	3000	1000	125	34	60	75	80
BF115 A	115	3000	1000	160	45	75	85	135
BF150 A	144	3000	1000	160	50	100	115	150
B145	150	3400	1000	200	57	100	108	130
B180	170	3600	1000	250	65	112	122	150
B250	240	5100	1000	315	91	158	172	210
B310	265	5900	1000	315	105	184	200	245
B400	320	7500	1000	400	122	211	230	280
B500	500	9000	1000	630	190	330	360	430
B630	610	11000	1000	800	230	400	432	520

The use of contactors with the above operational powers is allowable only when the peak current, in the installation point of the power factor correction board, is lower than the values stated in the table.
If this condition is not verified, it is necessary to use limiting inductances or specific contactors stated on page 2-14. Consult Technical support (see contact details on inside front cover) to obtain detailed information on the correct use of contactors without limiting inductances.

LIMITING INDUCTANCES

The use of limiting inductances is imperative when the system inductances (line transformer and cables), upstream of the power factor correction panel, are not able to maintain the maximum connecting current within the limit value of the contactor used.

FAST DISCHARGE RESISTANCES OF CAPACITORS

The use of the contactor, according to the wiring diagram given, allows the fast discharge of the capacitors as well as the instantaneous disconnection of the capacitors from the mains when the coil is de-energised.
The resistances, indicated in the following table, guarantee the discharge within a maximum time of 2 seconds.

Capacitor power	Voltage 220...230V		Voltage 380...500V	
[kvar]	[Ω]	[W]	[Ω]	[W]
2.5-5	3900	12	8200	12
10-15	1800	25	4300	25
20-50	1000	50	2200	50

SPECIAL CONTACTORS FOR POWER FACTOR CORRECTION CAPACITORS

GENERAL CHARACTERISTICS

These contactors are equipped with early-make contacts. This special type of contact has the purpose of connecting for a very brief interval, 2-3ms, during the contactor closing, resistors which limit the connecting current of the capacitors. These resistors are then excluded when the closing operation is complete and the current capacity is conveyed to the main contacts. With this type of circuit, it is possible to obtain minor wear of all the components of the system especially fuses and capacitors ensuring a longer life and better reliability.
The contactors are particularly suitable for use in automatic power factor correction panels since there is no need of limiting inductances and a source of heat has been eliminated. In this way, these modular electric switchboards can be more compact.

The BFK version, figure 1, is designed for three-phase switching. The peculiarity of this type is in the contacts, suitable to connect limiting resistors, which close only for the time needed to limit any in-rush current peak and then reopen to avoid eventual flow of residual currents through the resistors.

AMBIENT OPERATING CONDITIONS

Ambient temperature: ≤ 50 °C
For ambient temperature higher than 50°C up to 70°C, maximum operational power ratings, indicated in the table, are to be reduced by a percentage equal to the difference between the ambient temperature and 50°C.
Operating cycles: ≤ 120 cy/h.
Electrical life: ≥ 400,000 cycles.

Fig. 1

❷ Auxiliary contact 13-14 is found on BFK09 A - BFK12 A - BFK18 A types only.

Contactor	Built-in auxiliary contacts NO	IEC rated operational current ≤440V	IEC fuse gG	Maximum IEC power at ≤50°C (AC6b) ❶ 220V 230V 240V	380V 400V	415V 440V	500V 690V
Type	n°	[A]	[A]	[kvar]	[kvar]	[kvar]	[kvar]
BFK09 A	1	12	16	4.5	7.5	9	10
BFK12 A	1	18	25	7	12.5	14	16
BFK18 A	1	23	40	9	15	17	20
BFK26 A	—	30	40	11	20	22	25
BFK32 A	—	36	63	14	25	27.5	30
BFK38 A	—	43	63	17	30	33	36
BFK50 A	—	58	80	22	40	41	46
BFK65 A	—	65	100	26	45	50	56
BFK80 A	—	75	125	30	50	56	65
BFK95 A	—	90	125	34	60	75	80
BFK115 A	—	115	160	45	75	85	135
BFK150 A	—	144	160	50	100	115	150

NOTE: See page 2-14 for order codes.
❶Consult Technical support (Tel. 035 4282422; E-mail: service@LovatoElectric.com) for the use of contactors to switch within delta connection.
❷ The maximum thermal current Ith of the BF110K contactor is 125A

CHOICE OF CONTACTORS TYPE BFK/BF..K ACCORDING TO cULus LISTING

Contactor	Built-in auxiliary contacts NO (SPST)	UL/CSA rated current ≤440V	UL/CSA protection fuse SC/gG	Maximum UL/CSA operational power at voltage: 240V	480V	600V
Type	n°	[A]	[A]	[kvar]	[kvar]	[kvar]
BFK09 A	1	12	16	4.5	9	10
BFK12 A	1	18	25	7	14	16
BFK18 A	1	23	40	9	17	20
BFK26 A	—	30	40	11	22	27.5
BFK32 A	—	36	63	14	27.5	32
BFK38 A	—	43	63	17	33	36
BFK50 A	—	58	80	22	41	46
BFK65 A	—	70	100	26	50	56
BFK80 A	—	75	125	30	60	75
BFK95 A	—	100	125	40	80	100
BFK115 A	—	115	160	45	90	120
BFK150 A	—	121	160	50	100	125

NOTE: See page 2-14 for order codes.
❶ Consult Technical support (see contact details on inside front cover) for information about the use of contactors to switch within delta/wye connection.

IEC OPERATIONAL CHARACHERISTICS BG00 AND BF00

TYPE			BG00	BF00 A	BF00 D	BF00 L
POLE CONTACT CHARACTERISTICS						
Poles❶		n°	4			
Conventional free air thermal current Ith (≤40°C)		A	10			
Rated insulation voltage Ui		V	690			
Frequency limit		Hz	25...400 ❷			
UL/CSA and IEC/EN 60947-5-1 auxiliary contact designation		AC	A600			
		DC	Q600	P600		
Terminals		A	7.5	8.3		
		B	4	3.5		
		Screw	M3	M3.5		
		Phillips	2	2		
Quick-connect		Faston	1x6.35 - 2x2.8	—		
Tightening torque for contact terminals min-max		Nm	0.8...1	1.5...1.8		
		lbft	0.59-0...74	1.03...1.33		
Tightening torque for coil terminals min-max		Nm	0.8...1			
		lbft	0.59...0.74			
		Phillips	2			
Conductor section connectable with 1 or 2 wires min ... max	AWG stranded	n°	18...12	16...10		
	Flexible w/o lug	mm²	0.75...2.5	1...6		
	Flexible c/w boot-lace ferrule	mm²	2x1.5 or 1x2.5	1...4		
	Flexible c/w spade lug	mm²	2x1.5 or 1x2.5	1...4		
Terminal protection according to IEC/EN 60529			IP20❸			
AMBIENT CONDITIONS						
Operating temperature		°C	-40...+60	-50...+70		
Storage temperature		°C	-55...+70	-60...+80		
Maximum altitude		m	3000			
Operation position	Normal		On vertical plane			
	Allowable		±30°			
Fixing			Screw or on 35mm DIN rail			

❶ The built-in auxiliary contacts are high-conductivity
❷ Derating for use at 61-400 Hz. Consult Technical support for information (Tel. 035 4282422; E-mail: service@LovatoElectric.com).
❸ IP20 protection warranted by wired equipment; minimum 0.75mm² conductor section for BG00 or 1mm² for BF00.

ELECTRICAL RATINGS BASED ON IEC/EN 60947-5-1 UTILIZATION CATEGORIES AND UL508/CSA C22.2 n°14

IEC/EN designation	IEC/EN utilization category	Conventional enclosed thermal current Ithe	Rated operational current Ie [A] at rated operational voltage Ue										VA rating	
UL designation	—	Thermal continuous test current	Maximum Amperes (AC) 60Hz										Maximum VA	
			120VAC		240VAC		380VAC		480VAC		600VAC			
Alternating current		[A]	Make	Break	Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
A600	AC-15	10	60	6	30	3	19	1.9	15	1.5	12	1.2	7200	720
Direct current			Maximum Amperes (DC) Make or Break											
			125VDC		250VDC	301VDC	400VDC		500VDC		600VDC		300V or less ❺	
P600	DC-13	5	1.1		0.55	0.2 ❹	0.31 ❹		0.27 ❹		0.2		138	138
Q600	DC-13	2.5	0.55		0.27	0.1 ❹	0.15 ❹		0.13 ❹		0.1		69	69

❹ Value at 301V is valid for UL/CSA up to 600VDC; the others are valid for IEC/EN.
❺ Voltage valid for UL/CSA only.

TYPE				BG00	BF00 A	BF00 D	BF00 L
AC CONTROL							
Rated control voltage at 50/60Hz or 60Hz			V	12...575	12...600	—	—
Operating voltage limits							
50/60Hz coil powered at	50Hz	pick-up	% Us	75...115	80...110	—	—
		drop-out	% Us	20...55	20...55	—	—
	60Hz	pick-up	% Us	80...115	80...110	—	—
		drop-out	% Us	20...55	20...55	—	—
60Hz coil powered at	60Hz	pick-up	% Us	75...115	80...110	—	—
		drop-out	% Us	20...55	20...55	—	—
Average coil consumption at ≤20°C							
50/60Hz coil powered at	50Hz	in-rush	VA	30	75	—	—
		holding	VA	4	9	—	—
	60Hz	in-rush	VA	25	70	—	—
		holding	VA	3	6.5	—	—
60Hz coil powered at	60Hz	in-rush	VA	30	75	—	—
		holding	VA	4	9	—	—
Dissipation at holding ≤20°C		50Hz	W	0.95	2.5	—	—
DC CONTROL							
Rated control voltage			V	6...250	—	6...415	6...415
Operating voltage limits		pick-up	% Us	75...115	—	70...125	80...110
		drop-out	% Us	10...20	—	10...40	10...40
Average consumption at ≤20°C (in-rush/holding)			W	3.2❶	—	5.4	2.4
OPERATING TIMES							
Average time for Us control in	AC	closing NO	ms	12...21	8...24	—	—
		opening NO	ms	9...18	10...20	—	—
		closing NC	ms	17...26	17...30	—	—
		opening NC	ms	7...17	7...18	—	—
	DC	closing NO	ms	18...25	—	54...66	75...91
		opening NO	ms	2...3	—	14...17	15...19
		closing NC	ms	3...5	—	24...30❷	24...30❸
		opening NC	ms	11...17	—	47...57❷	67...81❸
LIFE							
Mechanical		AC control	cycles	20 million			
		DC control	cycles	20 million			
MAXIMUM OPERATING RATE							
Mechanical operations			cycles/h	3600			

❶ 2.3W for low-consumption BG00...L version.
❷ NC closing time for BF00 04D is 23...29ms while NC opening time is 40...49ms.
❸ NC closing time for BF00 04L is 25...31ms while NC opening time is 56...68ms.

IEC OPERATIONAL CHARACTERISTICS BG06..., BG09... AND BG12...

TYPE			BG06	BG09	BG12
POLE CHARACTERISTICS					
Power poles		n°	3	3-4	3
Rated insulation voltage Ui		V	690	690 ❶	690
Rated impulse withstand voltage Uimp		kV	6	6	6
Operational frequency		Hz	25...400 ❷	25...400 ❷	25...400 ❷
Operational current	Conventional free air thermal Ith (≤40°C)	A	16	20	20
	AC3 (≤440V ≤55°C)	A	6	9	12
	AC4 (400V) ❸	A	3.3	4.0	4.8
Short-time allowable current for 10s (IEC/EN 60947-1)		A	96	96	96
Maximum fuse size coordination Type 2 - 400V - 50kA	gG	A	16	20	20
	aM	A	6	10	16
Making capacity (RMS value)		A	92	92	120
Breaking capacity at voltage	≤ 440V	A	72	72	96
	500V	A	72	72	72
	690V	A	72	72	72
Consumption per pole and resistance (average values)		mΩ	10	10	10
	Ith	W	2.6	4	4
	AC3	W	0.36	0.81	1.44
Terminals		A [mm]	7.5	7.5	7.5
		B [mm]	4	4	4
		screw	M3	M3	M3
		Phillips	2	2	2
	Quick-connect	Faston	—	1x6.35 - 2x2.8	—
	Solder		—	PIN for PCB❹	—
Tightening torque for pole and coil terminals min-max		Nm	0.8...1	0.8...1	0.8...1
		lbft	0.59...0.74	0.59...0.74	0.59...0.74
		Phillips	2	2	2
Conductor section connectable with 1 or 2 wires min...max					
	AWG stranded	N°	18...12		
	Flexible w/o lug	mm^2	0.75...2.5		
	Flexible c/w boot-lace ferrule	mm^2	2x1.5 or 1x2.5		
	Flexible c/w spade lug	mm^2	2x1.5 or 1x2.5		
Terminal protection to IEC/EN 60529			IP20❺		
AUXILIARY CONTACT CHARACTERISTICS					
Type of contact		n°	1-NO or NC based on configuration❻		
Thermal current Ith		A	10		
IEC/EN 60947-5-1 designation		AC	A600		
		DC	Q600		
AMBIENT CONDITIONS					
Operating temperature		°C	-40...+60		
Storage temperature		°C	-55...+70		
Maximum altitude		m	3000		
Operating position	Normal		On vertical plane		
	Allowable		± 30°		
Fixing			Screw or on 35mm DIN rail		

❶ Rated voltage Ui for BGP... types is 500V.
❷ Derating for use at 61-400Hz. Consult Technical support for information (Tel. 035 4282422; E-mail: service@LovatoElectric.com).
❸ Current values guarantee an electrical life of about 50,000 cycles.
❹ Dimensions and drilling distances are given on page 2-32.
❺ IP20 protection warranted by wired equipment; minimum 0.75mm² conductor section.
❻ NO or NC auxiliary is highly conductive.
Other characteristics are the same as the mechanical characteristics of the poles.

TYPE					BG06	BG09	BG12
AC CONTROL							
Rated voltage at 50/60Hz, 60Hz				V	12...575		
Operating voltage limits							
50/60Hz coil powered at	50Hz	pick-up		% Us	75...115		
		drop-out		% Us	20...55		
	60Hz	pick-up		% Us	80...115		
		drop-out		% Us	20...55		
60Hz coil powered at	60Hz	pick-up		% Us	75...115		
		drop-out		% Us	20...55		
Average coil consumption at ≤20°C							
50/60Hz coil powered at	50Hz	in-rush		VA	30		
		holding		VA	4		
	60Hz	in-rush		VA	25		
		holding		VA	3		
60Hz coil powered at	60Hz	in-rush		VA	30		
		holding		VA	4		
Dissipation at ≤20°C	at 50Hz			W	0.95		
DC CONTROL							
Rated control voltage				V	6...250		
Operating voltage limits	pick-up			% Us	75...115		
	drop-out			% Us	10...25		
Average consumption at ≤20°C (in rush-holding)				W	3.2	3.2❶	3.2
OPERATING TIMES							
Average time for Us control in	AC	closing NO		ms	12...21	12...21	12...21
		opening NO		ms	9...18	9...18	9...18
		closing NC		ms	17...26	17...26	17...26
		opening NC		ms	7...17	7...17	7...17
	DC	closing NO		ms	18...25	18...25	18...25
		opening NO		ms	2...3	2...3	2...3
		closing NC		ms	3...5	3...5	3...5
		opening NC		ms	11...17	11...17	11...17
LIFE							
Mechanical	AC control			cycles	20 million		
	DC control			cycles	20 million		
Electrical (Ie at 400V AC3)				cycles	500,000		
MAXIMUM OPERATING RATE							
Mechanical operations				cy/h	3600		

❶ 2.3W for low-consumption type BG09...L.

ELECTRICAL RATINGS BASED ON IEC/EN 60947-5-1 UTILIZATION CATEGORIES AND UL508/CSA C22.2 n°14

IEC/EN designation	IEC/EN utilization category	Conventional enclosed thermal current Ithe	Rated operational current Ie [A] at rated operational voltage Ue										VA rating	
UL designation	—	Thermal continuous test current	Maximum Amperes (AC) 60Hz										Maximum VA	
			120VAC		240VAC		380VAC		480VAC		600VAC			
Alternating current		[A]	Make	Break	Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
A600	AC-15	10	60	6	30	3	19	1.9	15	1.5	12	1.2	7200	720
Direct current			Maximum Amperes (DC) Make or Break											
			125VDC		250VDC		301VDC		400VDC		500VDC		600VDC		300V or less ❸	
Q600	DC-13	2.5	0.55		0.27		0.1 ❷		0.15 ❷		0.13 ❷		0.1		69	69

❷ Value at 301V is valid for UL/CSA up to 600VDC; the others are valid for IEC/EN.
❸ Voltage valid for UL/CSA only.

IEC OPERATIONAL CHARACTERISTICS BF09-BF38

TYPE			BF09	BF12	BF18	BF25	BF26	BF32	BF38
POLE CHARACTERISTICS									
Power poles		n°	3-4	3-4	3-4	3	3-4	3	3-4
Rated insulation voltage Ui		V	690						
Rated impulse withstand votage Uimp		kV	6						
Operational frequency		Hz	25...400❶						
Operational current	Conventional free air thermal Ith (≤40°C)	A	25	28	32	32	45	56	56(60❺)
	AC3 (≤440V ≤55°C)	A	9	12	18	25	26	32	38
	AC4 (400V)❷	A	4.9	7.9	8.5	10	11.5	13.5	15.5
Short-time allowable current for 10s (IEC/EN 60947-1)		A	150	150	200	200	210	320	320
Max fuse size coordination Type 2 - 400V - 50kA	gG	A	25	32	32	50	50	63	63
	aM	A	10	12	20	25	32	32	40
Making capacity (RMS value)		A	90	120	180	250	260	320	380
Breaking capacity at voltage	≤440V	A	72	96	144	200	208	256	304
	500V	A	72	96	120	184	184	240	240
	690V	A	71	94	94	102	168	192	192
Consumption and resistance per pole (average values)		mΩ	2.5	2.5	2.5	2.5	2.0	2.0	2.0
	Ith	W	1.6	2.0	2.6	2.6	4.0	6.0	6.0
	AC3	W	0.2	0.4	0.8	1.6	1.4	2.0	2.9
Terminals		Type	Clamp-screw						
		A	9.5	9.5	9.5	9.5	13	13	13
		B	4.5	4.5	4.5	4.5	5.5	5.5	5.5
		Screw	M3.5	M3.5	M3.5	M3.5	M4	M4	M4
		Phillips	2	2	2	2	2	2	2
Tightening torque for pole terminal min-max		Nm	1.5...1.8	1,.5...1.8	1.5...1.8	1.5...1.8	2.5...3	2.5...3	2.5...3
		lbft	1.1...1.5	1.1...1.5	1.1...1.5	1.1...1.5	1.8...2.2	1.8...2.2	1.8...2.2
Tightening torque for coil terminals min-max		Nm	0.8-1	0.8-1	0.8-1	0.8-1	0.8-1	0.8-1	0.8-1
		lbft	0.59-0.74	0.59-0.74	0.59-0.74	0.59-0.74	0.59-0.74	0.59-0.74	0.59-0.74
		Phillips	2	2	2	2	2	2	2
Conductor section connectable with 1 or 2 wires min...max	AWG stranded	n°	16...10	16...10	16...10	16...10	14...6	14...6	14...6
	Flexible w/o lug	mm²	1...6	1...6	1...6	1...6	2.5...16	2.5...16	2.5...16
	Flexible c/w insulated boot-lace ferrule	mm²	1...4	1...4	1...4	1...4	1...10	1...10	1...10
	Flexible c/w insulated spade lug	mm²	1...4	1...4	1...4	1...4	1...10	1...10	1...10
Power terminal protection according to IEC/EN 60529			IP20❸	IP20❸	IP20❸	IP20❸	IP20❹	IP20❹	IP20❹
AUXILIARY CONTACT CHARACTERISTICS									
Type of contact		n°	1-NO or NC based on configuration❻				—		
Thermal current Ith		A	10				—		
IEC/EN 60947-5-1 designation		AC	A600				—		
		DC	P600				—		
AMBIENT CONDITIONS									
Operating temperature		°C	-50...+70						
Storage temperature		°C	-60...+80						
Maximum altitude		m	3000						
Operating position	Normal		On vertical plane						
	Allowable		± 30°						
Fixing			Screw or on 35mm DIN rail						

❶ Derating for use at 61-400Hz. Consult Technical support for information; see contact details on inside front cover.
❷ Current values guarantee an electrical life of about 200,000 cycles.
❸ IP20 protection warranted by wired equipment; minimum 1mm² conductor section.
❹ IP20 protection on front.
❺ For this other current value, use 16mm² wire with spade cable terminal.
❻ NO or NC auxiliary is highly conductive. Other characteristics are the same as the mechanical characteristics of the poles.

ELEVATOR EQUIPMENT - Magnetic Motor Controllers per CSA certification File 54332 - Class 2411-03, to requirements of B44.1-04/SME A17.5-2004.
Contactors, three or four poles, open type, operating coil 600VAC or less, 380VDC or less.

Type	Maximum horsepower ratings Single phase 120V	240V	Three phase 200-208V	240V	480V	600V	CSA General use
	[HP]	[HP]	[HP]	[HP]	[HP]	[HP]	[A]
BF12	1/2	1 1/2	3	3	7 1/2	7 1/2	28
BF25	1 1/2	3	5	7 1/2	15	15	32
BF38	3	5	10	10	20	20	55

TYPE				BF09	BF12	BF18	BF25	BF26	BF32	BF38
AC CONTROL										
Rated voltage at 50/60Hz, 60Hz			V	12...600						
Operating voltage limits										
50/60Hz coil powered at	50Hz	pick-up	% Us	80...110						
		drop-out	% Us	20...55						
	60Hz	pick-up	% Us	85...110						
		drop-out	% Us	20...55						
60Hz coil powered at	60Hz	pick-up	% Us	80...110						
		drop-out	% Us	20...55						
Average coil consumption at ≤20°C										
50/60Hz coil powered at	50Hz	in-rush	VA	75						
		holding	VA	9						
	60Hz	in-rush	VA	70						
		holding	VA	6.5						
60Hz coil powered at 60Hz	60Hz	in-rush	VA	75						
		holding	VA	9						
Dissipation at holding ≤20°C		50Hz	W	2.5						
DC CONTROL - normal and low consumption										
Rated control voltage			V	6...415						
Operating limits										
pick-up	three-pole BF...D	from	% Us	70						
		to	% Us	125						
	four-pole BF...D	from	%Us	70				80		
		to	%Us	125				125		
	three and four pole BF...L	from	% Us	80						
		to	% Us	110						
drop-out	for all versions	from	%Us	10						
		to	%Us	40						
Average coil consumption ≤20°C (in rush-holding)	BF...D		W	5.4						
	BF...L		W	2.4						
OPERATING TIMES										
Average time for Us control in	AC	closing NO	ms	8...24				8...24		
		opening NO	ms	10...20				5...15		
		closing NC	ms	14...28❶				9...20❷		
		opening NC	ms	7...18❶				9...17❷		
	DC BF...D types	closing NO	ms	54...66				53...65		
		opening NO	ms	14...17				14...18		
		closing NC	ms	24...30❸				23...28		
		opening NC	ms	47...57❸				46...56		
	DC BF...L types	closing NO	ms	75...91				76...92		
		opening NO	ms	15...19				16...20		
		closing NC	ms	24...30❹				25...31		
		opening NC	ms	67...81❹				63...77		
LIFE										
Mechanical (million)	AC control		cycles	20	20	20	20	20	20	20
	DC control		cycles	20	20	20	20	20	20	20
Electrical (Ie at 400V AC3) (million)			cycles	2.0	2.0	1.6	1.2	1.6	1.6	1.4
MAXIMUM OPERATING RATE										
Mechanical operations			cy/h	3600						

❶ NC closing time for BF...T0A types is 9...25ms while NC opening time is 9...15ms.
❷ NC closing time for BF...T0A types is 11...29ms while NC opening time is 6...14ms.
❸ NC closing time for BF...T0D types is 23...29ms while NC opening time is 40...49ms.
❹ NC closing time for BF...T0L types is 25...31ms while NC opening time is 56...68ms.

ELECTRICAL RATINGS BASED ON IEC/EN 60947-5-1 UTILIZATION CATEGORIES AND UL508/CSA C22.2 n°14

IEC/EN designation	IEC/EN utilization category	Conventional enclosed thermal current Ithe	Rated operational current Ie [A] at rated operational voltage Ue										VA rating	
UL designation	—	Thermal continuous test current	Maximum Amperes (AC) 60Hz										Maximum VA	
			120VAC		240VAC		380VAC		480VAC		600VAC			
Alternating current		[A]	Make	Break	Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
A600	AC-15	10	60	6	30	3	19	1.9	15	1.5	12	1.2	7200	720
Direct current			Maximum Amperes (DC) Make or Break											
			125VDC		250VDC		301VDC		400VDC		500VDC		600VDC	300V or less ❻
Q600	DC-13	2.5	0.55		0.27		0.1 ❺		0.15 ❺		0.13 ❺		0.1	69	69

❺ Value at 301V is valid for UL/CSA up to 600VDC; the others are valid for IEC/EN.
❻ Voltage valid for UL/CSA only.

IEC OPERATIONAL CHARACTERISTICS BF40...BF150...

TYPE			BF40	BF50	BF65	BF80	BF94	BF95	BF115	BF150
POLE CHARACTERISTICS										
Power poles		N°	3-4	3-4	3-4	3-4	3	3-4	3-4	3-4
Rated insulation voltage Ui		V	1000							
Rated impulse withstand voltage Uimp		kV	8							
Operational frequency		Hz	25 ... 400❶							
Operational current	Conventional free air thermal Ith (≤40°C)	A	70	90	100	115	115	140	160	165
	AC3 (≤440V ≤55°C)	A	40	50	65	80	95	95	115	150
	AC4 (400V)❷	A	24	28	31	38	45	45	54	70
Short-time allowable current for (IEC/EN 60947-1)	10s	A	400	400	640	640	640	760	920	1200
Maximum fuse size coordination Type 2 - 400V - 50kA	gG	A	100	100	125	125	125	160	200	250
	aM	A	50	50	80	80	100	100	125	160
Making capacity (RMS value)	A		400	500	650	800	950	1200	1500	1500
Breaking capacity at voltage	≤440V	A	320	400	520	640	760	1100	1200	1200
	500V	A	265	352	425	625	660	775	850	1025
	690V	A	256	312	376	456	475	745	905	905
Consumption and resistance per pole (average values)	mΩ		0.8	0.8	0.8	0.6	0.6	0.45	0.45	0.45
	Ith	W	3.9	6.5	8.0	7.9	7.9	8.8	11.5	12
	AC3	W	1.3	2.0	3.4	3.8	5.4	4.1	6.0	10.1
Terminals		Type	Double lug clamp terminal ❸							
		A [mm]	9.5					15		
		B [mm]	11					14.5		
		Screw	M6					M8		
		Metric Allen	4					4		
Tightening torque for pole terminal min-max		Nm	4...5					6...7		
		Ibft	2.95...3.69					4.4...5.2		
Tightening torque for coil terminals min-max		Nm	0.8...1							
		Ibft	0.59...0.74							
		Phillips	2							
Conductor section connectable with 1 or 2 wires min...max	AWG	N°	14...2					16...2/0		
	Flexible w/o lug	mm^2	1.5...35					1.5...70		
	Flexible c/w lug	mm^2	1.5...35					1.5...70		
Power terminal protection according to IEC/EN 60529			IP20 front							
AMBIENT CONDITIONS										
Operating temperature		°C	-50...+70❹							
Storage temperature		°C	-60...+80❺							
Maximum altitude		m	3000							
Operating position	Normal		On vertical plane							
	Allowable		± 30°							
Fixing			Screw or on 35mm DIN rail							

❶ Derating for use at 61-400 Hz. Consult Technical support for information; see contact details on inside front cover.
❷ Current values guarantee an electrical life of about 200,000 cycles.
❸ As per IEC/EN 60947-1 designation. In addition to the main terminal which has dimensions as mentioned above, there is a second terminal entry 12.3x3.8mm for flexible busbars.
❹ -40...+70 for BF40...150E.
❺ -50...+80 for BF40...150E.

❶ ELEVATOR EQUIPMENT - Magnetic Motor Controllers per CSA certification File 54332 - Class 2411-03, to requirements of B44.1-04/SME A17.5-2004.
Contactors, three or four poles, open type, operating coil 600VAC or less, 380VDC or less.

Type	Maximum horsepower ratings Single phase 120V	240V	Three phase 200-208V	240V	480V	600V	CSA General use
	[HP]	[HP]	[HP]	[HP]	[HP]	[HP]	[A]
BF65	3	10	15	15	40	50	110

TYPE				BF40	BF50	BF65	BF80	BF94	BF95	BF115	BF150
AC CONTROL											
Rated voltage at 50/60Hz, 60Hz			V	12...600 (20...250 electronically controlled AC/DC coil)							
Operating voltage limits											
50/60Hz coil powered at	50Hz	pick-up	% Us	80...110 ❶							
		drop-out	% Us	20...55 (≤70% electronically controlled AC/DC coil)							
	60Hz	pick-up	% Us	85...110 ❶							
		drop-out	% Us	40...55 (≤70% electronically controlled AC/DC coil)							
60Hz coil powered at	60Hz	pick-up	% Us	80...110							
		drop-out	% Us	20...55							
Average coil consumption at ≤20°C											
50/60Hz coil powered at	50Hz	in-rush	VA	210 (35...120 electronically controlled AC/DC coil)					300 (70...175 electronically controlled AC/DC coil)		
		holding	VA	15 (1.5...3.7 electronically controlled AC/DC coil)					20 (1.7...3.5 electronically controlled AC/DC coil)		
	60Hz	in-rush	VA	195 (35...120 electronically controlled AC/DC coil)					275 (70...175 electronically controlled AC/DC coil)		
		holding	VA	13 (1.5...3.7 electronically controlled AC/DC coil)					17 (1.7...3.5 electronically controlled AC/DC coil)		
60Hz coil powered at	60Hz	in-rush	VA	210					300		
		holding	VA	15					20		
Dissipation at ≤20°C	50Hz		W	5 (1...2.5 electronically controlled AC/DC coil)					6.5 (1.5...3 electronically controlled AC/DC coil)		
DC CONTROL											
Rated voltage			V	20...250							
Operating voltage limits	pick-up		% Us	80...110 ❶							
	drop-up		% Us	≤75% Us min							
Average consumption ≤20°C (in rush-holding)			W	23...68 / 1.2...1.9					70...80 / 1.3...1.5		
OPERATING TIMES											
Average time for Us control in	AC	closing NO	ms	12...28 (40...85 electronically controlled AC/DC coil)					16...32 (45...90 electronically controlled AC/DC coil)		
		opening NO	ms	8...22 (20...55 electronically controlled AC/DC coil)					9...24 (24...60 electronically controlled AC/DC coil)		
	DC	closing NO	ms	40...85 (electronically controlled AC/DC coil)					45...90 (electronically controlled AC/DC coil)		
		opening NO	ms	20...55 (electronically controlled AC/DC coil)					24...60 (electronically controlled AC/DC coil)		
LIFE											
Mechanical (million)	AC control		cycles	15	15	15	15	15	15	15	15
	DC control		cycles	15	15	15	15	15	15	15	15
Electrical (Ie at 400V in AC3) (million)			cycles	1.5	1.4	1.4	1.3	1.1	1.4	1.2	0.8
MAXIMUM OPERATING RATE											
Mechanical operations			cy/h	1500 (2000 for BF40...E...BF150...E...)							

❶ For electronically controlled AC/DC coils 80% of Us min. and 110% of Us max; for 20...48V coil powered in AC 85% of Us min.
❷ Electromagnetic compatibility: BF40...94E contactors with electronic coil 20...48VAC/DC are in compliance with IEC/EN60947-1 and IEC/EN 60947-1 standards for Environment B (domestic). The other devices are in compliance for Environment A (industrial) and can be upgraded to Environment B connecting proper filters; consult Technical support for information - see contact details on inside front cover.

IEC OPERATIONAL CHARACTERISTICS B145 - B1600...

TYPE			B145	B180	B250	B310	B400	B500	B630	B630 1000	B1250	B1600
POLE CHARACTERISTICS												
Power poles		n°	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4
Rated insulation voltage Ui		V	1000									
Rated impulse withstand votage Uimp		kV	8									
Operational frequency		Hz	25-400❶									
Operational current	Conventional free air thermal Ith (≤40°C)	A	250	275	350	450	550	700	800	1000	1250	1600
	AC3 (≤440V ≤55°C)	A	150	185	265	320	420	520	630	–	–	–
	AC4 (400V)❷	A	57	65	92	110	133	175	210	–	–	–
Short-time allowable current for 10s (IEC/EN 60947-1)		A	1300	1500	2200	2900	3600	4050	5040	5600	6500	8300
Maximum fuse size coordination Type 2 - 400V - 50kA	gG	A	250	315	400	500	630	800	1000	1000	1250	1600
	aM	A	160	200	250	400	400	500	630	–	–	–
Making capacity (RMS value)		A	1500	1850	2750	3150	4200	5000	6300	6300	6300	6300
Breaking capacity at voltage	≤440V	A	1500	1850	2500	3000	4000	5000	6300	6300	6300	6300
	500V	A	1400	1600	2250	2700	3400	4500	5600	5600	5600	5600
	690V	A	1200	1480	2200	2520	3360	4000	5000	5000	5000	5000
	1000V	A	800	1000	1500	1700	2300	2700	3400	3400	3400	3400
Consumption and resistance per pole (average values)		mΩ	0.30	0.30	0.20	0.20	0.20	0.14	0.14	0.14	0.07	0.07
	Ith	W	14.5	20.3	24.5	40.5	52.0	68.6	90	140	110	180
	AC3	W	6.8	9.7	12.5	20	32	35.0	56	–	–	–
Terminals		A mm	20 (0.8”)	20 (0.8”)	25 (1”)	25 (1”)	25 (1”)	35 (1.4”)	40 (1.6”)	60 (2.4”)	80 (3.1”)	80 (3.1”)
		B mm	4 (0.16”)	4 (0.16”)	5 (0.2”)	5 (0.2”)	5 (0.2”)	6 (0.23”)	6 (0.23”)	6 (0.23”)	10 (0.39”)	10 (0.39”)
		Screw + hex nut	M8	M8	M10	M10	M10	M10	M12	2-M12	2-M12	2-M12
		❸ mm	13 (0.51”)	13 (0.51”)	17 (0.67”)	17 (0.67”)	17 (0.67”)	17 (0.67”)	19 (0.75”)	19 (0.75”)	19 (0.75”)	19 (0.75”)
	Quick-connect (coil)	Faston	1x6.35mm (0.25”) or 2x2.8mm (0.11”)									
	Coil with G371❹	Phillips	2 (Ø7mm/0.3in)									
Pole tightening torque	Nm		18	18	35	35	35	35	55	55	55	55
		lbft	13.3	13.3	25.8	25.8	25.8	25.8	40.6	40.6	40.6	40.6
Coil tightening torque with G371❹ fitted		Nm	1									
		lbft	0.74									
Maximum conductor section	1 or 2 bars	mm	25x3 (1x0.12”)	25x3 (1x0.12”)	30x4 (1.2x0.16”)	30x5 (1.2x0.2”)	30x5 (1.2x0.2”)	50x5 (2x0.2”)	60x5 (2.4x0.2”)	60x5 (2.4x0.2”)	100x5 (4x0.2”)	100x5 (4x0.2”)
	N° 1 wire with lug	mm²	120	150	240	–	–	–	–	–	–	–
	N° 2 wire with lug	mm²	–	–	–	150	150	240	240	–	–	–
AMBIENT CONDITIONS												
Operating temperature		°C	-50...+70								-20...+60	
Storage temperature		°C	-60...+80								-30...+80	
Maximum altitude		m	3000									
Operating position	Normal		Vertical									
	Allowable		± 30°									
Fixing			Screw									

❶ Derating for use at 61-400 Hz. Consult Technical support for information (Tel. 035 4282422; E-mail: service@LovatoElectric.com).
❷ Current values guarantee an electrical life of about 200,000 cycles.
❸ Spanner/wrench size.
❹ G371: Adapter to transform coil faston terminals into screw type.

TYPE			B145	B180	B250	B310	B400	B500	B630	B630 1000	B1250	B1600
AC CONTROL												
Supply voltage			Either in AC/DC								Only AC	
Rated control voltage		V	24...480	24...480	24...480	24...480	24...480	48...480	48...480	48...480	110/240	110/240
Operating voltage limits	pick-up	% Us	80...110	80...110	80...110	80...110	80...110	80...110	80...110	80...110	80...110	80...110
	drop-out	% Us	20...60	20...60	20...60	20...60	20...60	20...60	20...60	20...60	20...60	20...60
Consumption at ≤20°C	in-rush	VA/W	300	300	300	300	300	400	400	400	800	800
	holding	VA/W	10	10	10	10	10	18	18	18	45	45
Dissipation at ≤20°C		W	10	10	10	10	10	18	18	18	40	40
OPERATING TIMES												
Making		ms	60...100	60...100	80...120	80...120	80...120	110...180	110...180	110...180	120...210	300...450
Breaking		ms	25...60	25...60	30...75	30...75	30...75	60...100	60...100	60...110	70...130	70...130
LIFE												
Mechanical (million)	AC/DC	cycles	10	10	10	10	10	5	5	5	5	5
Electrical (million) (Ie at 400V in AC3)		cycles	1,1	1	1	0,9	0,7	0,7	0,7	–	–	–
MAXIMUM OPERATING RATE												
Mechanical operations		cy/h	3600 (2000 for BF40...E, BF80...E)									
PARTICULAR CHARACTERISTICS												
Indicator			For contactor open or closed status									
Safety feature			Closing operations are prevented without arc chutes									

CONTROL CIRCUIT UTILISATION
The input electronic circuit of the contactor coil B145-B1600 is designed and tested according to IEEEC 62.41 and can withstand a 10 kV impulse voltage (1.2/50μs) with 50 Joule energy.
For higher values, the use of an auxiliary step-down voltage transformer is recommended.

CONTACTORS WITH MECHANICAL LATCH
Contactors B145-B630 type, can have mechanical latch included or can be predisposed, to be completed with mechanical latch, see pages 2-4 and 2-6 (3-pole version) or 2-8 and 2-10 (4-pole version).
Technical data of mechanical latch G495 type is stated on page 2-26.

MECHANICAL INTERLOCK BETWEEN CONTACTORS ONE ON TOP OF THE OTHER
B145.....B1600... (Fig. 1, 2 and 3)
It is G356... type, which is provided in six types to allow different fixing interaxis of contactors.
Contactors of the same size can be interlocked as well as different sizes.

The tables below indicate the interaxis which can be obtained with the various interlock types; with terminal protections (INTERAXIS A) and without terminal protection (INTERAXIS B).

INTERAXIS A [mm] - For contactors with terminal protection (Fig. 1)

KM1	B145-B180			B250-B310-B400			B500-B630		
KM2	B145 B180	B250 B310 B400	B500 B630	B145 B180	B250 B310 B400	B500 B630	B145 B180	B250 B310 B400	B500 B630
G356 1	–	–	–	–	–	–	–	–	–
G356 2	286...305	–	–	–	–	–	–	–	–
G356 3	305...345	330...345	–	330...345	–	–	–	–	–
G356 4	345...385	345...385	375...385	345...385	372...385	–	375...385	–	–
G356 5	390...425	390...425	390...425	390...425	390...425	420...425	390...425	420...425	–
G356 6	470...500	470...500	470...500	470...500	470...500	470...500	470...500	470...500	470...500

INTERAXIS B [mm] - For contactors without terminal protection (Fig. 2)

KM1	B145-B180			B250-B310-B400			B500-B630		
KM2	B145 B180	B250 B310 B400	B500 B630	B145 B180	B250 B310 B400	B500 B630	B145 B180	B250 B310 B400	B500 B630
G356 1	225...265	–	–	–	–	–	–	–	–
G356 2	265...305	265...305	–	265...305	265...305	–	–	–	–
G356 3	305...345	305...345	305...345	305...345	305...345	305...345	305...345	305...345	–
G356 4	345...385	345...385	345...385	345...385	345...385	345...385	345...385	345...385	345...385
G356 5	390...425	390...425	390...425	390...425	390...425	390...425	390...425	390...425	390...425
G356 6	470...500	470...500	470...500	470...500	470...500	470...500	470...500	470...500	470...500

To interlock two contactors B630 1000, use type G356 6 only.
To interlock two contactors B1250 or B1600, it is imperative to use two pieces of type G356 6 (fig. 3), one fixed on the left side and the other on the right.

Interaxis B is 470-500mm for B630 1000, B1250 or B1600.
The B1250 or B1600 cannot be interlocked with the other types of the B series.

Fig. 1

Fig. 2

Fig. 3

Horizontal interlock between contactors side by side B145 to B630 1000.
It is G355 type and can interlock both contactors of equal size and contactors of different sizes (e.g. B145 can be interlocked with B630).
For contactor B630 1000 (three-pole), contact our Technical support office.
This interlock cannot be applied to contactors B1250-B1600.

With mechanical interlock:

– horizontal G355

B145-B630

– vertical G356/...

B145-B180

B250-B400

B500-B630 1000

With mechanical interlock:

– horizontal G355

B145-B630

– vertical G356/...

B145-B180

B250-B400

B500-B630 1000