



4 Electromechanical starters and enclosures

Reversing and changeover contactor assemblies

Reversing contactor



11BGR...



BFA...



11BGT...



11BGT...

Changeover contactor assemblies 4 poles



11BGC09 ...

new



BFC150T4A230

Order code	IEC le (AC3)	Max. IEC power	Built-in auxiliary contacts		Qty per pkg	Wt
	≤440V ≤55°C	AC3 400V at ≤55°C	NO	NC		
	[A]	[kW]	NO	NC	n°	[kg]

AC COIL.
Terminals: clamp screw.
External interlock with power and auxiliary wiring.

11BGR0901A	9	4	0	1	1	0.394
11BGR1201A	12	5.7	0	1	1	0.394
BFA0942	9	4.2	0	1	1	0.760
BFA01242	12	5.7	0	1	1	0.760
BFA01842	18	7.5	0	1	1	0.760
BFA02542	25	12.5	0	1	1	0.760

Built-in interlock with power wiring only.

11BGT0910A	9	4	1	0	1	0.380
11BGT1210A	12	5.7	1	0	1	0.380

Rear terminals: PCB solder pins.
Built-in interlock only.

11BGT0901A	9	4	0	1	1	0.400
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DC COIL.
Terminals: clamp screw.
External interlock with power and auxiliary wiring.

11BGR0901D	9	4	0	1	1	0.460
11BGR1201D	12	5.7	0	1	1	0.460

Built-in interlock with power wiring only.

11BGT0910D	9	4	1	0	1	0.445
11BGT1210D	12	5.7	1	0	1	0.445

Rear terminals: PCB solder pins.
Built-in interlock only.

11BGT0901D	9	4	0	1	1	0.460
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Order code	IEC Operating current (AC1)			UL/CSA General Use	Qty per pkg	Wt
	≤40°C	≤55°C	≤60°C			
	[A]	[A]	[A]	[A]	n°	[kg]

AC COIL.
Terminals: clamp screw.
Built-in interlock only.

11BGC09T4A	20	18	15	20	1	0.365
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AC COIL 230V 50/60HZ.
Terminals: screw.
Side mount mechanical interlock with 2NC contacts.

BFC18T4A230	32	26	23	20	1	0.786
BFC38T4A230	56	45	40	20	1	1.068
BFC80T4A230	115	95	80	20	1	2.532
BFC95T4A230	140	115	100	20	1	4.892
BFC150T4A230	165	135	118	20	1	4.892

DC COIL.
Terminals: clamp screw.
Built-in interlock only.

11BGC09T4D	20	18	15	20	1	0.450
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① 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 02460 / 04860 / 12060 / 22060 / 23060 / 46060 / 57560 (V).
Example: 11BGR0901A024 for reversing contactor assembly with 2 mini-contactors BG09 having 1 NC auxiliary contact each and 24VAC 50/60Hz coil.
11BGR0901A02460 for reversing contactor assembly with 2 mini-contactors BG09 having 1 NC auxiliary contact each and 24VAC 60Hz coil.

② Complete order code with coil voltage digit.
Standard voltages are:
- DC 012 / 024 / 048 / 060 / 110 / 125 / 220V.
Example: 11BGC09T4D012 is a changeover contactor assembly with 2 mini-contactors BG09 having 4 main poles each and 12VDC coil.

③ One auxiliary contact for each contactor.
④ Maximum voltage is limited at 300V for UL. For certified type up to 600V, consult Technical support; see contact details inside front cover.

General characteristics

REVERSING CONTACTOR ASSEMBLIES

Supplied complete, ready for quick mounting.

The various versions are composed as follows:

BGR... Screw termination, external mechanical interlock BGX5000, power and auxiliary wiring.

BGT... Screw termination, built-in mechanical interlock and power wiring only.

BGTP... Rear PCB solder pin termination, built-in mechanical interlock only.

No thermal overload relay can be directly mounted to BG... reversing contactor assemblies.

BFA... Screw termination, external mechanical interlock BFX5002 and power wiring.

The thermal overload relay RF38... can be directly mounted to BFA... reversing contactor assemblies; for selection, refer to section 3.

CHANGEOVER CONTACTOR ASSEMBLIES 4 POLES

Supplied complete, ready for quick mounting as follows:

11BGC... with built-in mechanical interlock, BFC... with side mounting mechanical interlock including NC contacts for electrical interlock. The changeover contactor assemblies are made with four-pole contactors.

No power or auxiliary wiring included.

No power or auxiliary wiring included.

Operational characteristics

Type	Maximum IEC operational power at ≤55°C (AC3)					
	230V [kW]	400V [kW]	415V [kW]	440V [kW]	500V [kW]	690V [kW]
BGR09	2.2	4	4.3	4.5	5	5
BGT09	2.2	4	4.3	4.5	5	5
BGTP09	2.2	4	4.3	4.5	5	-
BGR12	3.2	5.7	6.2	5.5	5	5
BGT12	3.2	5.7	6.2	5.5	5	5
BFA009	2.2	4.2	4.5	4.8	5.5	7.2
BFA012	3.2	5.7	6.2	6.2	7.5	10
BFA018	4	7.5	9	9	10	10
BFA025	7	12.5	13.4	13.4	15	11

BGC09 T4	at ≤40°C (AC1)					
	8	14	14	15	16	22
	Maximum UL/CSA horsepower rating					
	Single phase		Three phase			
	120V [HP]	240V [HP]	208V [HP]	240V [HP]	480V [HP]	600V [HP]
BGR09	1/2	1/2	2	3	5	5
BGT09	1/2	1/2	2	3	5	5
BGTP09	1/2	1/2	2	3	5	-
BGR12	1/2	1/2	3	3	7 1/2	10
BGT12	1/2	1/2	3	3	7 1/2	10
BFA009	3/4	2	3	3	5	7 1/2
BFA012	1	2	5	5	7 1/2	10
BFA018	1	3	5	5	10	15
BFA025	2	3	7 1/2	7 1/2	15	15

NOTE: BGR09, BGT09, BGR12, BGT12... types are UL Listed for USA and Canada as "Magnetic Motor Controller - Reversing Contactors". All these are rated 20A general purpose use and suitable for use on a circuit capable of delivering more than 5kA symmetrical amps at 600V max when protected by fuses class K5 rated no more than 30A.
BGTP09 type is UL Recognized for USA and Canada as "Magnetic Motor Controller - Component - reversing contactors". Max HP rating up to 300VAC only; rated 20A general purpose use.
BGC... types are UL Listed for USA and Canada as "Magnetic Motor Controller - Changeover contactor".
No coil change or replacement is possible for any BG... types.

Add-on blocks

Refer to section 2, page 2-18 and page 2-20.

Special add-on auxiliary contacts 11BGX1111 or 11BGX1112 must be used on the left-side contactor of the BGT reversing assemblies. For the right-side contactor, normal 11BGX10... types of auxiliary contacts can be used instead. Refer to page 2-16 for details.

Certifications and compliance

Certifications obtained: UL Listed for USA and Canada (File E93602) for BGR09, BGT09, BGR12, BGT12, BFA... and BGC... (see NOTE above), EAC.

UL Recognized, for USA and Canada (cULus - File E93602 Component), for BGTP09; products having this type of marking are intended for use as components of complete workshop-assembled equipment.

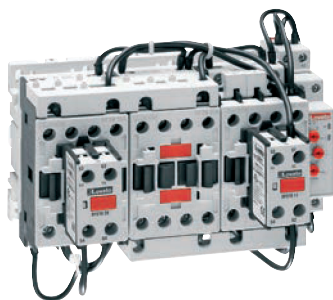
Compliant with standards UL 60947-1, UL 60947-4-1, IEC/EN/BS 60947-1, IEC/EN/BS 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.



4 Electromechanical starters and enclosures

Star-delta starters

Open frame



BFA009...BFA025

Order code	Three-phase motor control. Max IEC operating current ($\leq 440V$)	Thermal overload relay	Qty per pkg	Wt [kg]
	[A]		n°	[kg]

Complete star-delta starters, open frame, for starting time up to 12s and a maximum of 30 operations/hour.

BFA0097000	16	No	1	1.700
BFA0127000	22	No	1	1.700
BFA0187000	28	No	1	1.700
BFA0257000	35	No	1	1.800
BFA0267000	43	No	1	1.800
BFA0327000	50	No	1	1.900
BFA0387000	60	No	1	1.900
BFA0507000	85	No	1	5.200
BFA0657000	110	No	1	5.200
BFA0807000	140	No	1	6.265
BFA0957000	160	No	1	6.900
BFA1157000	195	No	1	7.500
BFA1507000	225	No	1	7.500

Thermal relay adjustment range

Choose the thermal relay adjustment range considering a value equal to 58% of rated motor current (Ie).

Example: Ie=100A; 58% Ie=58A.

The suitable relay range is 46-65A.

During the setup, the relay is to be regulated at 58A.

Operational characteristics

IEC standard motor powers

	230V [kW]	400V [kW]	440V [kW]	500V [kW]
4		7.5	7.5	7.5
5.5		11	11	11
7.5		15	11	11
11		18.5	18.5	22
11		22	22	25
15		25	25	25
15		30	30	30
25		45	45	59
30		55	55	75
45		75	75	90
45		90	90	110
55		110	110	132
75		132	132	160

1 Complete order code with the coil voltage digit or the coil voltage digit followed by 60 if 60Hz. Standard voltage are as follows:

- AC 50/60Hz 024 / 048 / 110 / 230 / 400V
- AC 60Hz 024 60 / 048 60 / 120 60 / 220 60 / 230 60 (V).

Example: BFA00970024 for BFA009 star-delta starter with 24VAC 50/60Hz power supply.

BFA0097002460 for BFA009 star-delta starter with 24VAC 60Hz power supply.

- 2 The thermal overload relay is not included and must be purchased separately. Refer to the example given under Thermal relay adjustment range, for a correct choice and then to page 3-4 for the order code.
- 3 TMST with auxiliary supply 24...240VAC. TMSTA440 with auxiliary supply 380...440VAC.
- 4 For motors with rated current >115A connect the line side with 50mm² wires crimped with pin terminals or with 2x25mm² wires connected in parallel.
- 5 For motors with rated current >175A connect the line side with insulated flexible copper bars or with 2x35mm² wires in parallel.

NOTE: for higher powers and voltages, or suitable for heavy-duty starting (centrifugal fans, mills, crushers) that is with starting time exceeding 12s, consult Technical support; see contact details inside front cover.

Components

Starter	Contactors			Thermal overload relay	Time relay	Auxiliary contacts fitted on contactor:			Rigid connections
	Line	Delta	Star			Line	Delta	Star	
BFA00970	BF0910A	BF0901A	BF0910A	RF38	TMST	BFX1020	—	BFX1011	BFX3131
BFA01270	BF1210A	BF1201A	BF0910A	RF38	TMST	BFX1020	—	BFX1011	BFX3131
BFA01870	BF1810A	BF1801A	BF1210A	RF38	TMST	BFX1020	—	BFX1011	BFX3131
BFA02570	BF2510A	BF2501A	BF1810A	RF38	TMST	BFX1020	—	BFX1011	BFX3131
BFA02670	BF2600A	BF2600A	BF1810A	RF38	TMST	BFX1020	BFX1011	BFX1011	BFX3232
BFA03270	BF3200A	BF3200A	BF2510A	RF38	TMST	BFX1020	BFX1011	BFX1011	BFX3232
BFA03870	BF3800A	BF3800A	BF2510A	RF38	TMST	BFX1020	BFX1011	BFX1011	BFX3232
BFA05070	BF5000A	BF5000A	BF32 00A	RF82	TMST	BFX1020	BFX1011	BFX1011	BFX3332
BFA06570	BF6500A	BF6500A	BF3200A	RF82	TMST	BFX1020	BFX1011	BFX1011	BFX3332
BFA08070	BF8000A	BF8000A	BF5000A	RF82	TMST	BFX1020	BFX1011	BFX1011	BFX3331
BFA09570	BF9500A	BF9500A	BF6500A	RF110	TMST	BFX1020	BFX1011	BFX1011	BFX3432
BFA11570	BF11500A	BF11500A	BF8000A	RF200	TMST	BFX1020	BFX1011	BFX1011	BFX3432
BFA15070	BF15000A	BF15000A	BF8000A	RF200	TMST	BFX1020	BFX1011	BFX1011	BFX3432

Certifications and compliance

Certifications obtained: EAC.

Compliant with standards: IEC/EN/BS 60947-1, IEC/EN/BS 60947-4-1.