
BFX10C01

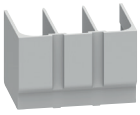
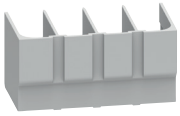

BFX10C10


BFX12C...


BFX5500


BFX5503
BFX5504


BFX815
BFX816



BFX835
BFX836
BFX845
BFX846


BFX805
BFX806




GLX500
GLX501
GMX500
GMX501


BFX3583
BFX3683


BFX3584
BFX3684


BFX8508
BFX8608

Order Code	Characteristics	Max qty per cont.	Qty per pkg	Wt
		n°	n°	[kg]
Auxiliary contacts with front-mounting. Screw terminals.				
BFX10C10	1NO	6	10	0.048
BFX10C01	1NC	6	10	0.048
Auxiliary contacts with low side-mounting. Screw terminals.				
BFX12C02	2NC	2	5	0.048
BFX12C11	1NO + 1NC	2	5	0.048
BFX12C20	2NO	2	5	0.048
Mechanical interlock.				
BFX5500	For contactors BF160...BF400. Side by side mounting.	1	1	0.050
new **BFX5503**	For contactors BF160...BF400. One on top of other mounting. Interaxis 305...345mm	1	1	0.150
BFX5504	For contactors BF160...BF400. One on top of other mounting. Interaxis: 345...385mm	1	1	0.200

Order Code	Characteristics	Qty per pkg	Wt
		n°	[kg]
Power terminal protection. One-pole terminal cover.			
new **BFX815** ❶	For BF160...BF230	6	0.026
new **BFX816** ❶	For BF265...BF400	6	0.035
Three-pole terminal cover.			
new **BFX835**	For BF160...BF230	1	0.050
new **BFX836**	For BF265...BF400	1	0.075
Four-pole terminal cover			
new **BFX845**	For BF160T4...BF230T4	1	0.070
new **BFX846**	For BF265T4...BF400T4	1	0.098
Phase barrier.			
new **BFX805** ❸	For BF160...BF230	1	0.021
new **BFX806** ❹	For BF265...BF400	1	0.030
Terminal clamp sets for rigid and flexible cables.			
GLX500	1-piece set. For AWG 6....kcmil 250 wires.	1	0.011
GLX501	3-piece set. For AWG 6....kcmil 250 wires.	1	0.011
GMX500 ❷	6-piece set. For AWG 14...2/0 wires.	1	0.200
GMX501	6-piece set. For AWG 4....kcmil 300 wires.	1	0.200
Connections and captive nut accessory. Terminal enlargement.			
new **BFX3583**	For BF160...BF230 three-pole	1	0.100
new **BFX3683**	For BF265...BF400 three-pole	1	0.140
new **BFX3584**	For BF160...BF230 four-pole	1	0.130
new **BFX3684**	For BF265...BF400 four-pole	1	0.180
Paralleling link.			
new **BFX3592**	Two-pole paralleling for BF160...BF230	1	0.050
new **BFX3692**	Two-pole paralleling for BF265...BF400	1	0.070
new **BFX3593**	Three-pole paralleling for BF160...BF230	1	0.070
new **BFX3693**	Three-pole paralleling for BF265...BF400	1	0.098
Connecting kit for reversing contactor assembly.			
BFX3501	Per BF160...BF230	1	1.000
BFX3601	Per BF265...BF400	1	1.400
Connecting kits for star-delta starter.			
BFX3531	For BF160...BF230	1	1.100
BFX3631	For BF265...BF400	1	1.500
Rigid connecting kit for changeover.			
new **BFX3561**	For BF160...BF230 three-pole	1	0.900
new **BFX3661**	For BF265...BF400 three-pole	1	1.250
new **BFX3571**	For BF160...BF230 four-pole	1	1.200
new **BFX3671**	For BF265...BF400 four-pole	1	1.700
Captive nut.			
new **BFX8508**	For BF160...BF230. 8-piece set	1	0.052
new **BFX8608**	For BF265...BF400. 8-piece set	1	0.073

Operational characteristics for add-on auxiliary contacts

Type			BFX10C10 BFX10C01	BFX12
IEC conventional free air thermal current Ith		A	10	10
IEC rated insulation voltage Ui		V	690	690
Terminals	Screw		M3.5	M3
	Width	mm	7	7
Tightening torque		Nm	0.8...1	0.8...1
		lb.in	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
	AWG	n°	14	14
Terminal protection per IEC/EN/BS 60529			IP20	IP20
IEC/EN/BS 60947-5-1 designation		AC	A600	A600
		DC	Q600	Q600
Mechanical life (million)		cycles	10	10

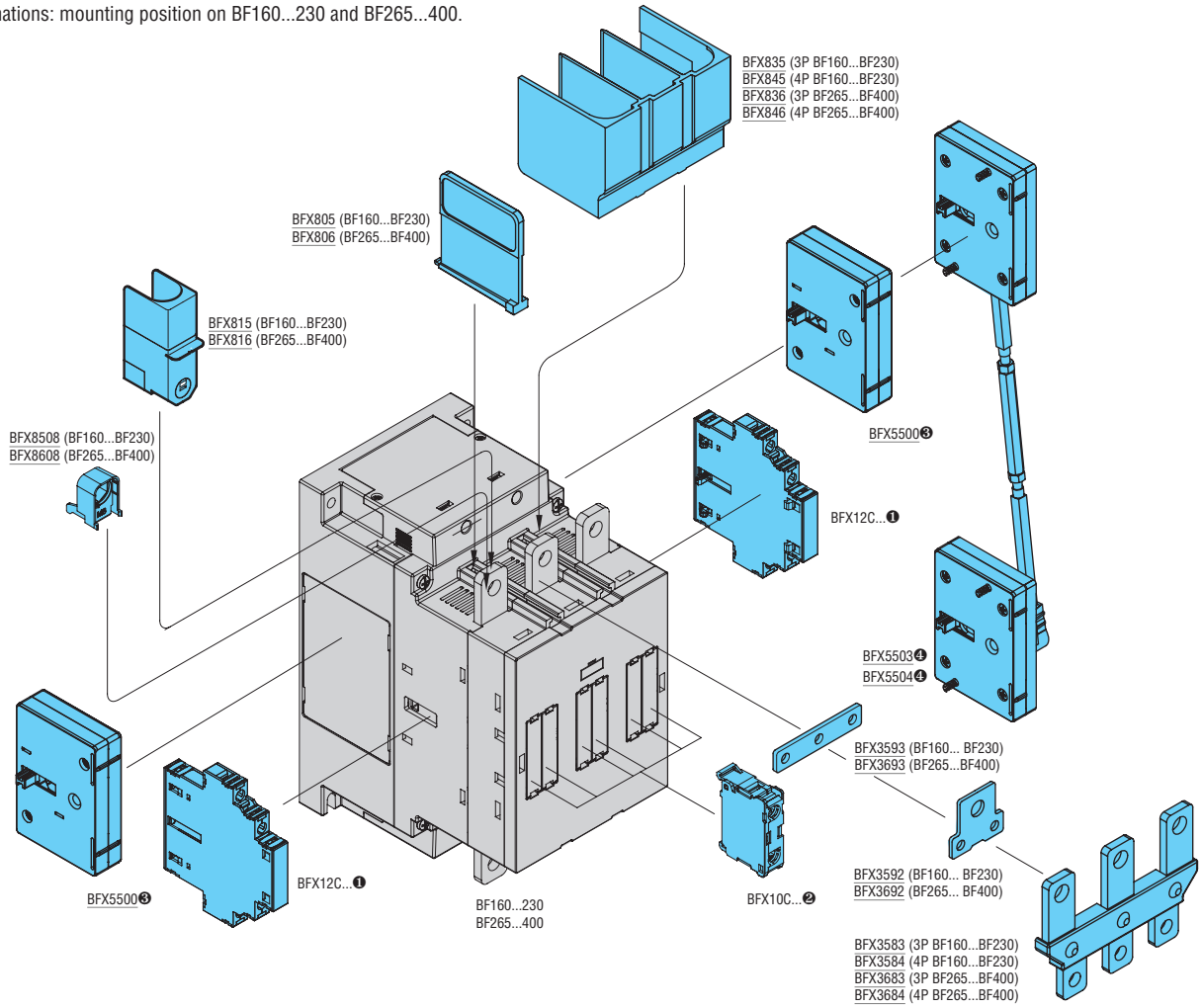
Certifications and compliance
Certifications obtained:

Type	cULus	EAC	CCC
BFX10C...	●	●	●
BFX12C...	●	●	●
BFX3...	●	–	–
BFX5...	●	–	–
BFX8...	●	–	–
GLX50...	●	–	–
GMX50...	●	–	–

Add-on auxiliary contacts are compliant with the following standards: IEC/EN/BS 60947-1, IEC/EN/BS 60947-5-1, UL 60947-1, UL 60947-5-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-5-1.
The add-on auxiliary contact blocks BFX10C... and BFX12C... comply with annex F of the IEC/EN/BS 60947-4-1 standard auxiliary contact linked with power contact" also known as mirror contact.
They also comply with Annex L of the IEC/EN/BS 60947-5-1 standard "mechanically linked contact elements".

❶ It is supplied for one terminal only. Example: for three-pole contactor, order 3 pieces for the upper terminals or 6 pieces for all the upper and lower terminals.
❷ For currents higher than 175A, 2 pieces can be mounted for each contactor terminal.
❸ Kit 4 pieces. For three-pole contactor order 1x BFX805; for four pole contactor order 2x BFX805.
❹ Kit 4 pieces. For three-pole contactor order 1x BFX806; for four pole contactor order 2x BFX806.

Combinations: mounting position on BF160...230 and BF265...400.



❶ Max 2 BFX12C... contact blocks per each contactor side.
❷ Max 6 BFX10C... contact blocks for three-pole contactors and 8 contact blocks for four-pole contactors.
❸ The BFX12C... contacts, in the presence of the BFX5500 mechanical interlock, can be mounted only on the opposite side of the contactor from that where the interlock is mounted.
❹ On the side of the contactor where the BFX5503 and BFX5504 vertical mechanical interlocks are mounted, the BFX12C... auxiliary contacts can also be mounted.

Add-on blocks



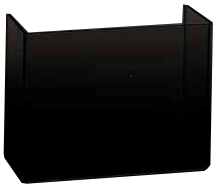
11G350 - 11G354



11G358

Order code	Characteristics	Max qty per. contactor	Qty per pkg	Wt
		n°	n°	[kg]
Auxiliary contacts. Faston terminals. Side mounting.				
11G350	2NO+1NC or 1NO+2NC reversible	4	1	0.082
11G354	1NO+1NC	4	1	0.078
Adapter.				
11G358❼	For fitting auxiliary contacts BFX10..., with 2 contacts, G484..., G485..., G486... and G487 on contactors B500...B6301000	4	5	0.050
Mechanical interlock.				
11G3551❷	Side by side	1	1	0.026
11G35641❸	One on top of other	1	1	0.140
11G35651❸	One on top of other	1	1	0.146
11G35663❹	One on top of other	1	1	0.150
Mechanical latch.				
11G4955❻	For B500...B630	1	1	0.795

Accessories



11G527 - 11G528 - 11G529
11G530



11G370



11G371

Order code	Characteristics	Qty per pkg	Wt
		n°	[kg]
Power terminal protection.			
11G527	For contactor B500	1	0.238
11G528	For contactor B5004	1	0.265
11G529	For contactor B630	1	0.238
11G530	For contactor B6304	1	0.266
3 pole star connecting bars.			
11BA1846	For contactors B500-B630	1	0.34
2 pole bars for parallel arrangement.			
11BA1845	For contactors B500-B630	1	0.322
Terminal adapter.			
11G370	To transform Faston terminals of auxiliary contacts and coils into screw terminals	10	0.003
11G371	To transform both coil Faston terminals into screw terminals	5	0.022

❶ Not suitable for B6301000-B1250-B1600 ❹.
❷ For use with three-pole B6301000, consult Technical support for information; see contact details on inside front cover.
❸ Allowed distances see page 2-76.
❹ For contactors B1250 and B1600, two G3566 mechanical interlocks are required.
❺ 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).
❻ It can be mounted only in contactors if predisposed for it. Technical support for information; see contact details on inside front cover.
❼ For use with mechanical interlock see page 2-79.

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	mm²	2.5
	AWG	n°	14
UL/CSA and IEC/EN/BS 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
Mechanical life (million)		cycles	0.1

Type		G370-G371
Tightening torque	Nm	1
	lb.in	8.9
Tool	Type	PH2
Conductor section (with 1 or 2 cables)	mm²	4
	AWG	10

Certifications and compliance
Certifications obtained:

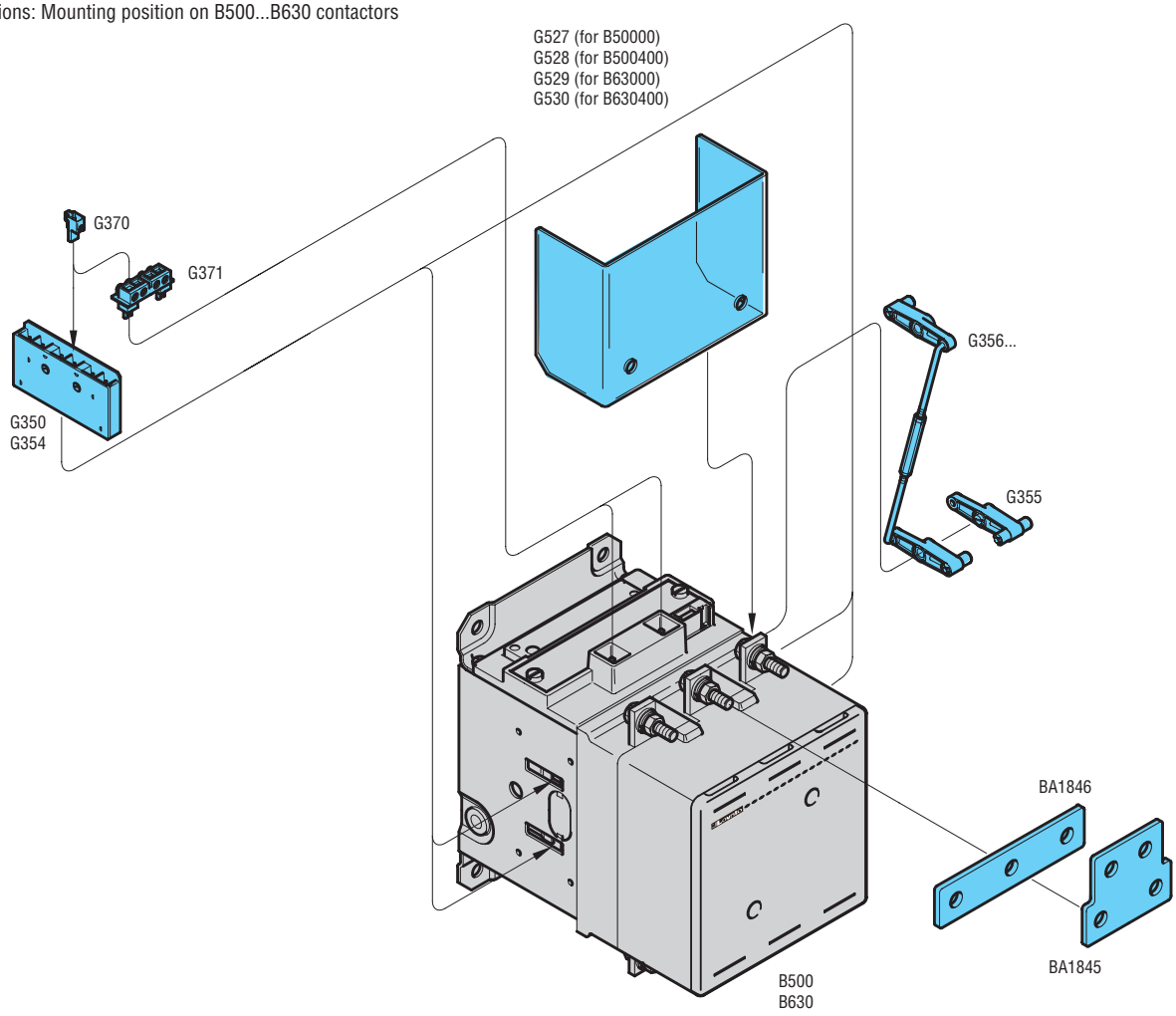
Type	UL	CSA	EAC	CCC
G350	●	●	●	●
G354	●	●	●	—
G355	—	●	●	—
G356 ...	—	●	●	—
G361	—	●	●	—
G362	—	●	●	—
G363	—	●	●	—
G370	—	●	●	—

● Certified products.

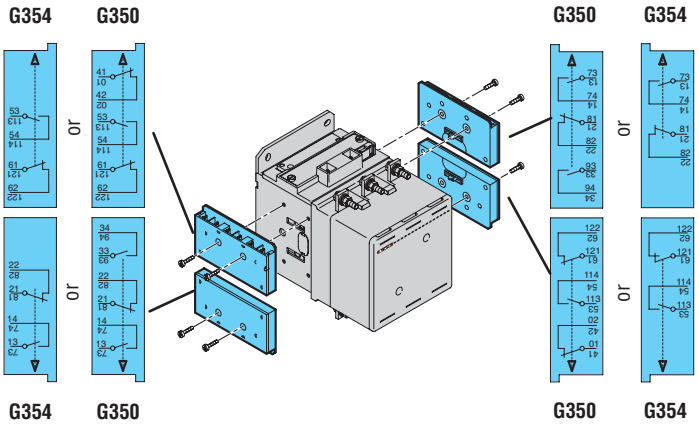
UL - UL Recognized for USA only (File E93601) as Auxiliary Devices - Component.
Products having this type of marking are intended for use as components of complete workshop-assembled equipment.
CSA - CSA certified for Canada only (File 54332) as Auxiliary Devices for motor controllers.

Compliant with standards: IEC/EN/BS 60947-1, IEC/EN/BS 60947-4-1, UL 60947-1, UL 60947-4-1, IEC/EN/BS 60947-4-1, UL508, CSA C22.2 n° 14; add-on auxiliary contacts also comply with: IEC/EN/BS 60947-5-1, UL 60947-5-1, CSA C22.2 n° 60947-5-1.
The add-on auxiliary contact blocks 11G350 and 11G354 comply with annex F of the IEC/EN/BS 60947-4-1 standard "auxiliary contact linked with power contact" also known as mirror contact.

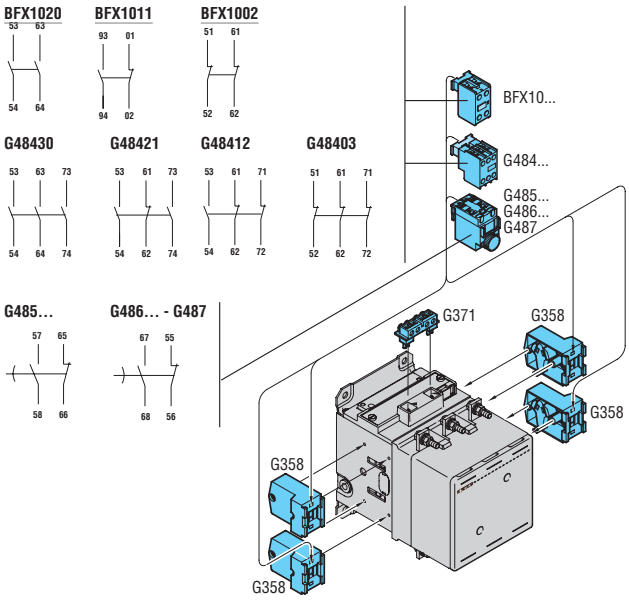
Combinations: Mounting position on B500...B630 contactors



The add-on auxiliary contact blocks G350 and G354 can be applied to contactors B500-B6301000 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 2-22 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...



BFX94A...

Order code	Rated frequency and voltage		Qty per pkg	Wt
	[Hz]	[V]	n°	[kg]
For contactors BF00A-BF09A-BF12A-BF18A-BF25A.				
BFX91A024❶	50/60	24VAC	1	0.085
BFX91A048❶		48VAC	1	0.085
BFX91A110❶		110VAC	1	0.085
BFX91A230❶		230VAC	1	0.085
BFX91A400❶		400VAC	1	0.085
BFX91A02460❶	60	24VAC	1	0.085
BFX91A04860❶		48VAC	1	0.085
BFX91A12060❶		120VAC	1	0.085
BFX91A22060❶		220VAC	1	0.085
BFX91A23060❶		230VAC	1	0.085
BFX91A46060❶		460VAC	1	0.085
BFX91A57560❶		575VAC	1	0.085
For contactors BF26A-BF32A-BF38A.				
BFX92A024❶	50/60	24VAC	1	0.088
BFX92A048❶		48VAC	1	0.088
BFX92A110❶		110VAC	1	0.088
BFX92A230❶		230VAC	1	0.088
BFX92A400❶		400VAC	1	0.088
BFX92A02460❶	60	24VAC	1	0.088
BFX92A04860❶		48VAC	1	0.088
BFX92A12060❶		120VAC	1	0.088
BFX92A22060❶		220VAC	1	0.088
BFX92A23060❶		230VAC	1	0.088
BFX92A46060❶		460VAC	1	0.088
BFX92A57560❶		575VAC	1	0.088
For contactors BF40A-BF50A-BF65A-BF80A-BF94A-BFD65A-BFD80A.				
BFX93A024❶	50/60	24VAC	1	0.150
BFX93A048❶		48VAC	1	0.150
BFX93A110❶		110VAC	1	0.150
BFX93A230❶		230VAC	1	0.150
BFX93A400❶		400VAC	1	0.150
BFX93A02460❶	60	24VAC	1	0.150
BFX93A04860❶		48VAC	1	0.150
BFX93A12060❶		120VAC	1	0.150
BFX93A22060❶		220VAC	1	0.150
BFX93A23060❶		230VAC	1	0.150
BFX93A46060❶		460VAC	1	0.150
BFX93A57560❶		575VAC	1	0.150
For contactors BF95A-BF115A-BF150A.				
BFX94A024❶	50/60	24VAC	1	0.185
BFX94A048❶		48VAC	1	0.185
BFX94A110❶		110VAC	1	0.185
BFX94A230❶		230VAC	1	0.185
BFX94A400❶		400VAC	1	0.185
BFX94A02460❶	60	24VAC	1	0.185
BFX94A04860❶		48VAC	1	0.185
BFX94A12060❶		120VAC	1	0.185
BFX94A22060❶		220VAC	1	0.185
BFX94A23060❶		230VAC	1	0.185
BFX94A46060❶		460VAC	1	0.185
BFX94A57560❶		575VAC	1	0.185

❶ Four-terminal coil.

Operational characteristics for BFX91A, BFX92A, BFX93A and BFX94A coils
AC control

Rated voltage at 50/60, 60Hz			V	12...600		
Operating voltage limits						
50/60Hz coil powered at 50Hz	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	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



BFX93E...



BFX94E...



BFX95E...



BFX96E...

Order code	Rated	Qty per pkg	Wt
	[V]	n°	[kg]
For contactors BF40E-BF50E-BF65E-BF80E-BF94E-BFD80E❶.			
BFX93E024❷	20...48V AC/DC	1	0.190
BFX93E110❷	60...110V AC/DC	1	0.190
BFX93E230❷	100...250V AC/DC	1	0.190
For contactors BF95E-BF115E-BF150E-BFD150E.			
BFX94E024❷	20...48V AC/DC	1	0.225
BFX94E110❷	60...110V AC/DC	1	0.225
BFX94E230❷	100...250V AC/DC	1	0.225
For contactors BF160E-BF195E-BF230E.			
BFX95E024	24...60VAC / 20...60VDC	1	0.400
BFX95E110	60...130VAC/DC	1	0.400
BFX95E230	100...250VAC/DC	1	0.400
BFX95E400	250...500VAC/DC	1	0.400
For contactors BF265E-BF330E-BF400E.			
BFX96E024	24...60VAC / 20...60VDC	1	0.560
BFX96E110	60...130VAC/DC	1	0.560
BFX96E230	100...250VAC/DC	1	0.560
BFX96E400	250...500VAC/DC	1	0.560

new

NOTE: no coil replacement for contactors BF00 D, BF09D-BF38D, BF00L, BF09L-BF38L is possible.

❶ For BF80T2E... 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 BFX93E 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	≤70% Us min
Average coil cons. at ≤20°C	in-rush	W	45...75
	holding	W	1.2...2.1

Operational characteristics for BFX94E... 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	≤70% Us min
Average coil cons. at ≤20°C	in-rush	W	65...110
	holding	W	1.8...3

Operational characteristics for BFX95E... 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	≤70% Us min
Average coil cons. at ≤20°C	in-rush	W	160...230
	holding	W	1.5...3

Operational characteristics for BFX96E... 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	≤70% Us min
Average coil cons. at ≤20°C	in-rush	W	160...320
	holding	W	3.5...8

❶ 80% of Us min. and 110% 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



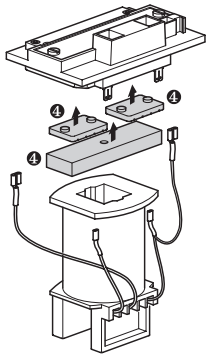
Bridge rectifier

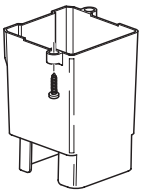


Coil protection



Coil assembly





Order code	Rated voltage AC 50/60Hz and DC	Qty per pkg	Wt
	[V]	n°	[kg]
Coil for B500-B630-B6301000 contactors.			
11BA180048	48VAC/DC	1	3.400
11BA180060	60VAC/DC	1	3.400
11BA1800110	110...125VAC/DC	1	3.400
11BA1800220	220...240VAC/DC	1	3.400
11BA1800380	380...415VAC/DC	1	3.400
11BA1800440	440...480VAC/DC	1	3.400
Coil for B1250-B1600 contactors.			
11BA1800110❶	110...125VAC❶	1	3.400
11BA1800220❶	220...240VAC❶	1	3.400

Order code	For contactor	Qty per pkg	Wt
		n°	[kg]
Bridge rectifier (Faston terminals).			
11BA1799❸	B500-B630-B6301000 B1250-B1600	1	0.520
Coil protection.			
11BA1803	B500-B630-B6301000 B1250-B1600	1	0.164
Coil assembly (Coil, rectifier and coil protection).			
11BA1796❷	B500-B630-B6301000 B1250-B1600	1	4.650

❶ Available for AC supply only.
❷ Add the coil voltage digit. Standard voltages are:
- AC/DC 48 - 60 - 110...125 - 220...240 - 380...415 - 440...480V.

Example: 11BA1671110 (coil assembly powered at 110VAC/DC complete with power supply and coil protection for B500...B1600 contactors).

For B1250 and B1600 only voltages 110...125 and 220...240VAC are available.
❸ For contactors with coil voltage up to 415V. For higher voltages add suffix 440 to the code. E.G.: 11BA1796440.

Operational characteristics

For contactor type			B500 - B630 - B6301000
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 Technical support for information; see contact details on inside front cover.

Main contacts for BF and B contactors



BFX99095T

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.			
BFX99026T	BF2600	1	0.038
BFX99026F	BF26T4	1	0.051
BFX99032T	BF3200	1	0.070
BFX99038T	BF3800	1	0.070
BFX99038F	BF38T4	1	0.093
BFX99040T	BF4000	1	0.095
BFX99040F	BF40T4	1	0.127
BFX99050T	BF5000	1	0.095
BFX99050F	BF50T4	1	0.127
BFX99065T	BF6500	1	0.095
BFX99065F	BF65T4	1	0.127
BFX99080T	BF8000	1	0.100
BFX99080F	BF80T4	1	0.130
BFX99094T	BF9400	1	0.100
BFX99095T	BF9500	1	0.210
BFX99095F	BF95T4	1	0.280
BFX99115T	BF11500	1	0.225
BFX99115F	BF115T4	1	0.300
BFX99150T	BF15000	1	0.225
BFX99150F	BF150T4	1	0.300
BFX99160T	BF16000	1	0.350
BFX99160F	BF160T4	1	0.450
BFX99195T	BF19500	1	0.350
BFX99195F	BF195T4	1	0.450
BFX99230T	BF23000	1	0.350
BFX99230F	BF230T4	1	0.450
BFX99265T	BF26500	1	0.490
BFX99265F	BF265T4	1	0.630
new BFX99330T	BF33000	1	0.490
BFX99330F	BF330T4	1	0.630
BFX99400T	BF40000	1	0.490
BFX99400F	BF400T4	1	0.630
11G525	B500	1	2.520
11G5254	B5004	1	3.360
11G526	B630	1	2.660
11G5264	B6304	1	3.550
11G537	B6301000	1	2.660
11G5374	B63010004	1	3.550
11G538	B125024	1	5.040
11G5384	B1250424	1	6.720
11G539	B160024	1	5.320
11G5394	B1600424	1	7.100

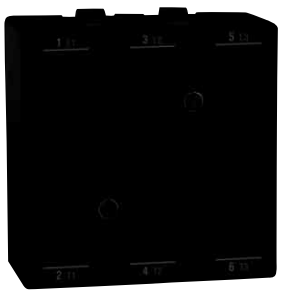


11G525... - 11G526... - 11G537...

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.

Arc chutes for BF and B contactors

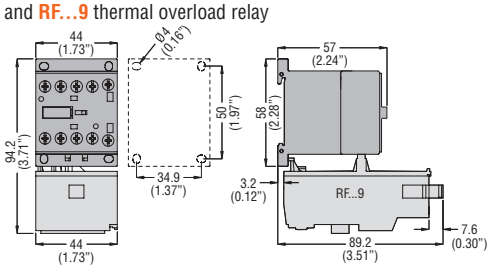


Arc chute 11BA1838

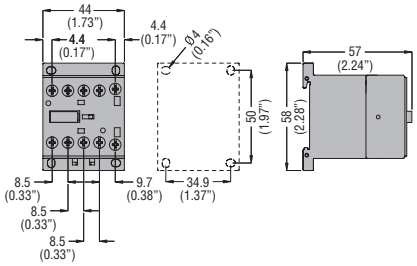
Order code	For contactor	Qty per pkg	Wt
		n°	[kg]
Arc chutes.			
BFX9805T	BF16000-BF19500-BF23000	1	1.000
BFX9805F	BF160T4-BF195T4-BF230T4	1	1.200
new BFX9806T	BF26500-BF33000-BF40000	1	1.400
BFX9806F	BF265T4-BF330T4-BF400T4	1	1.680
11BA1838	B500-B630-B6301000	1	1.910
11BA1839	B5004-B6304-B63010004	1	2.490

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

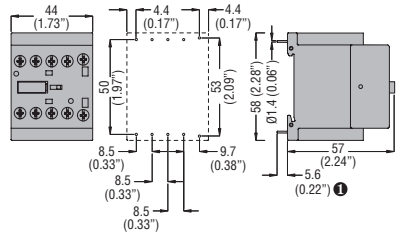
BG... three-poles with screw terminals
and **RF...9** thermal overload relay



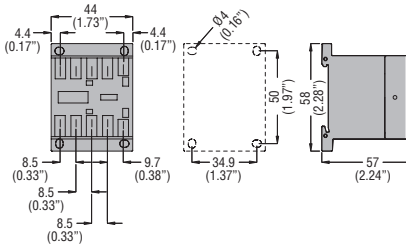
BG...T...
four-poles, with screw terminals



BGP...
with rear PCB solder pins



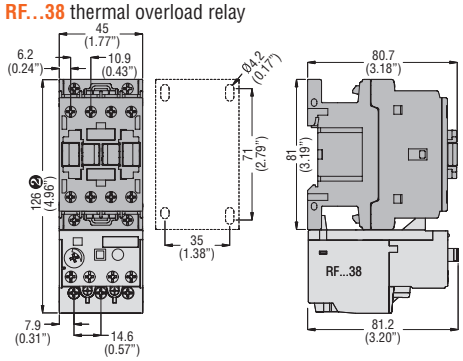
BGF...
with Faston terminals



❶ Recommended PCB drillings 1.7-2mm.

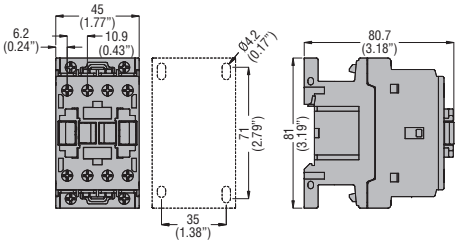
BF... CONTACTORS WITH AC SUPPLY VOLTAGE

BF00A... BF09 A... - BF12A... - BF18A... - BF25A... three-poles with
RF...38 thermal overload relay

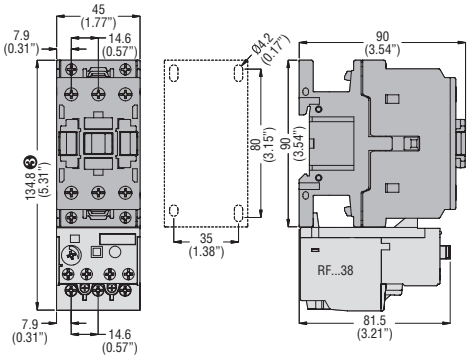


❷ 135mm/5.31" for RFE45

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

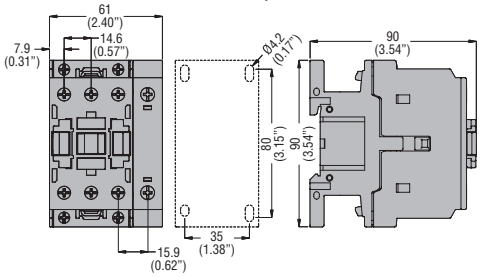


BF2600A... - BF3200A... - BF3800A... three-poles with **RF...38** thermal overload relay

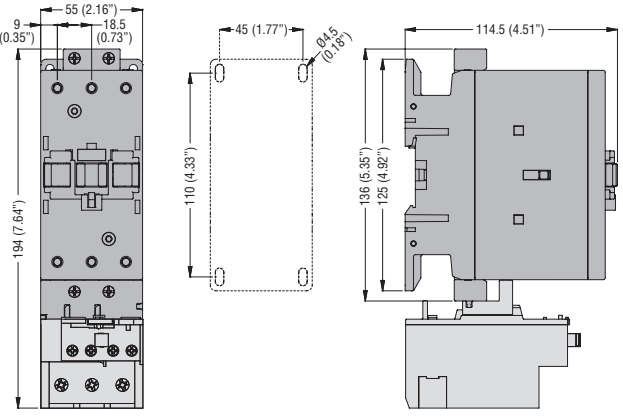


❸ 144mm/5.67" for RFE45

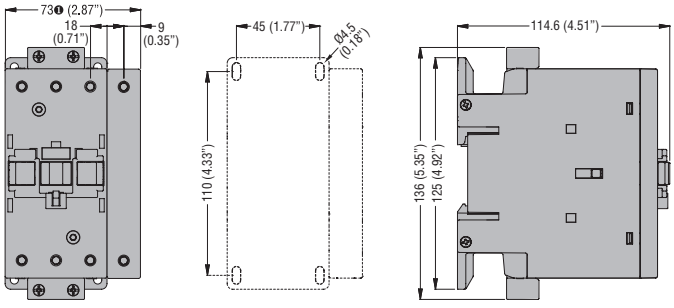
BF26T...A... - BF38T...A... four-poles



BF4000A... - BF5000A... - BF6500A... - BF8000A... - BF9400A...
three-poles with **RF82** thermal overload relay

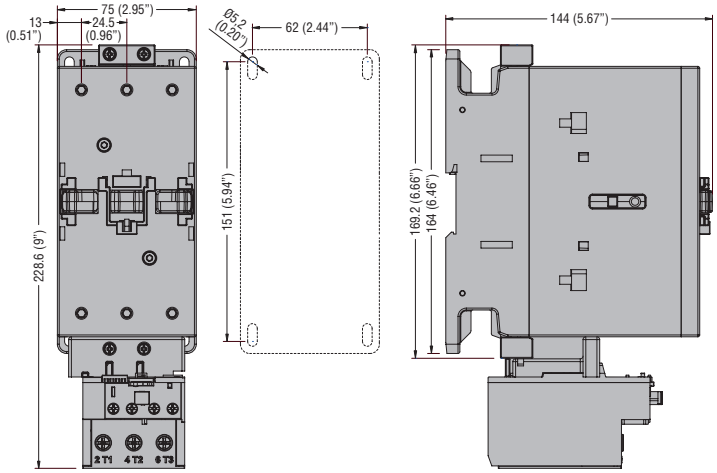


BF40T4...A... - BF50T4...A... - BF65T4...A... -
BF80T4...A... - BFD80T4... - BF80T2A... four-poles

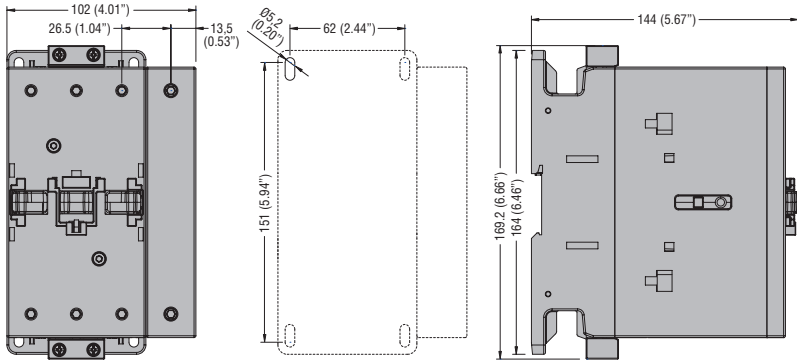


❶ BF80T2 91mm/3.58", BFD6500... - BFD8000... 55mm/2.16"

BF9500A... - BF11500A... - BF15000A... three-poles with **RF110** thermal relay

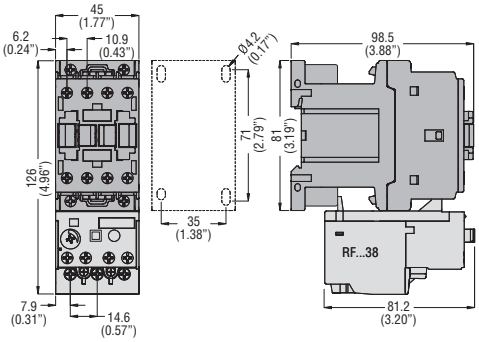


BF95T4A... - BF115T4A... - BF150T4A... four-poles



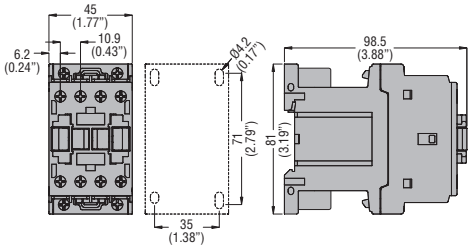
BF...CONTACTORS WITH DC SUPPLY VOLTAGE

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

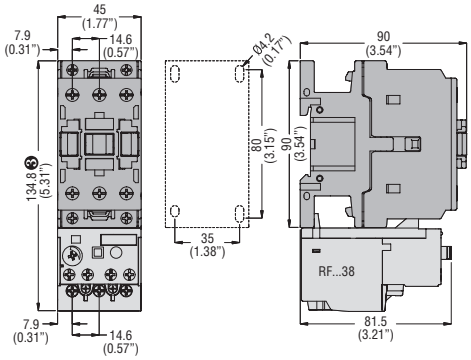


Control relays

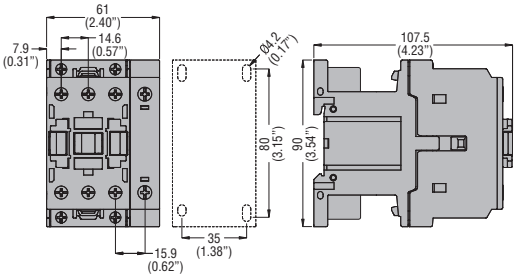
BF00...D and **BF00...L**
BF09T... - BF18T... D and **L** four-poles



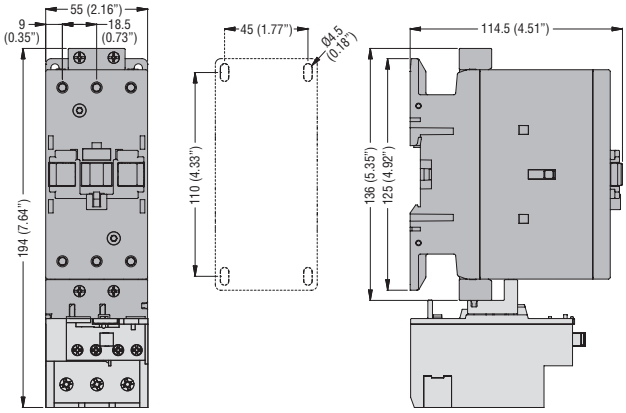
BF26... - BF32... - BF38...D and **L** three-poles with **RF...38** thermal overload relay



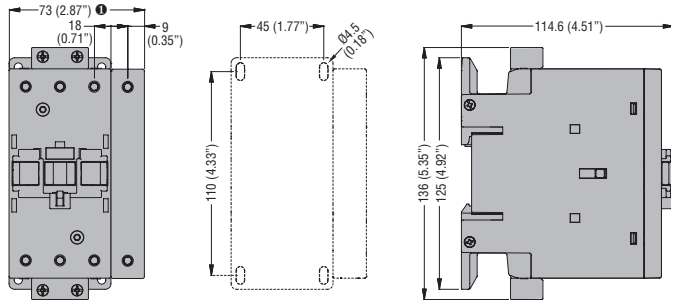
BF26T... - BF38 T...D and **L** four-poles



BF4000E... - BF5000E... - BF6500E... - BF8000E... - BF9400E...
three-poles with **RF82** thermal overload relay

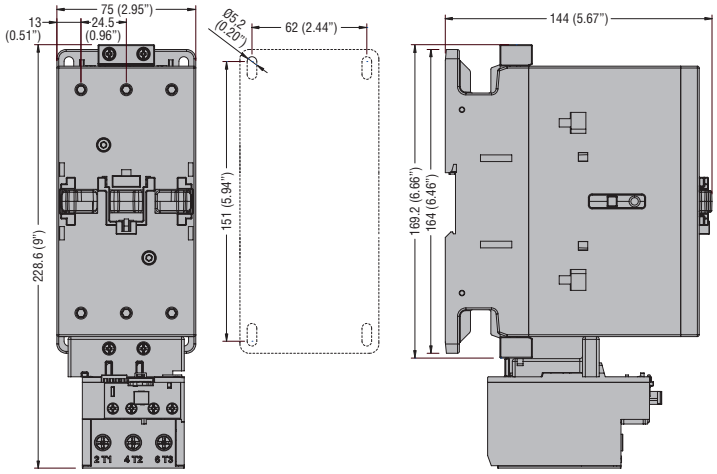


BF65T4E... - BF80T4E... - BF80T2E... four-poles

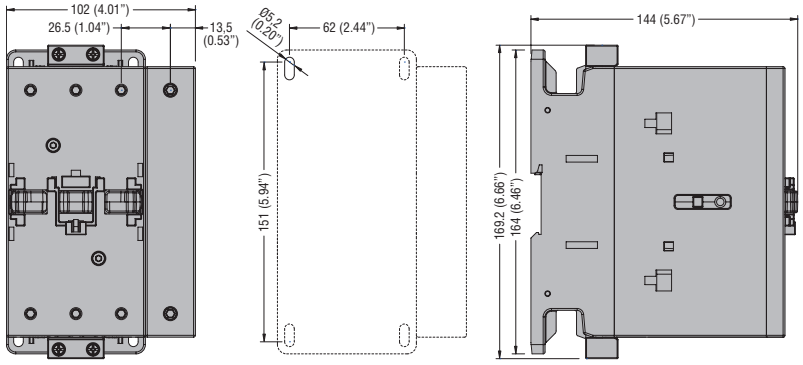


❶ BF80T2 91mm (3.58")

BF9500E... - BF11500E... - BF15000E... three-poles with RF110 thermal relay

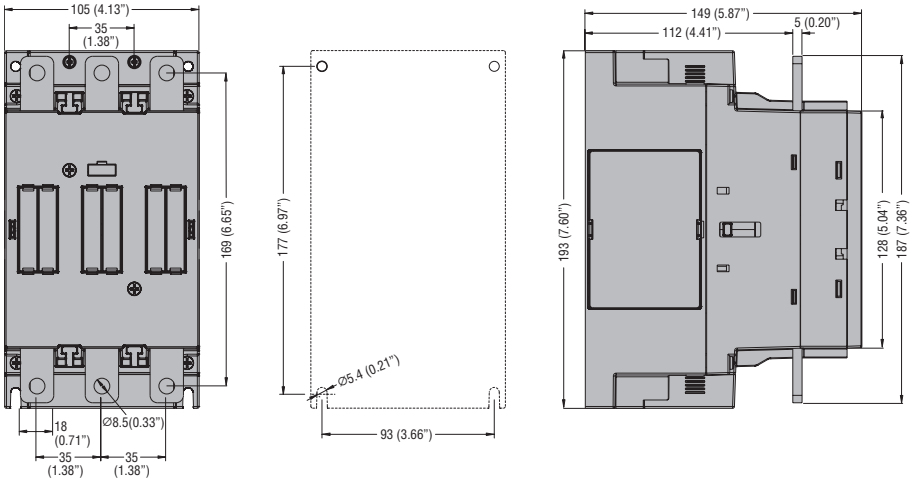


BF95T4E... - BF115T4E... - BF150T4E... - BFD150T4E... four-poles

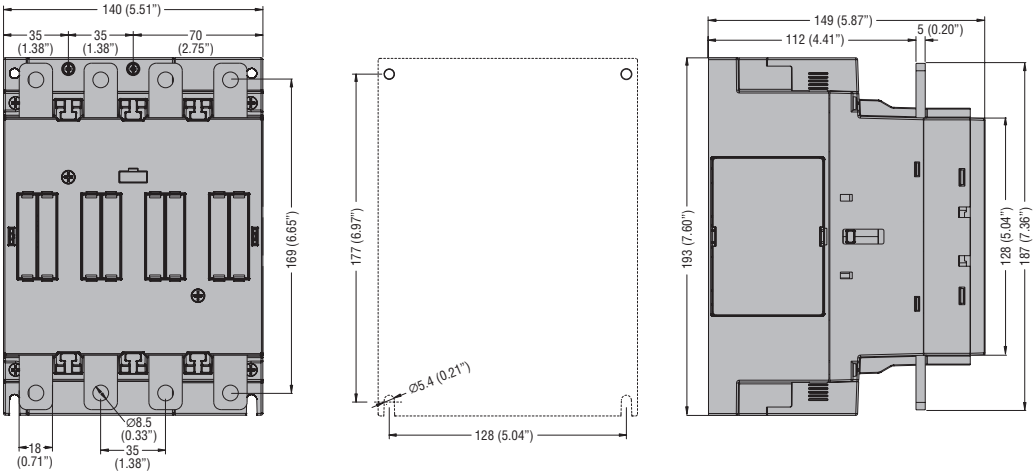


BF...CONTACTORS WITH AC/DC SUPPLY VOLTAGE

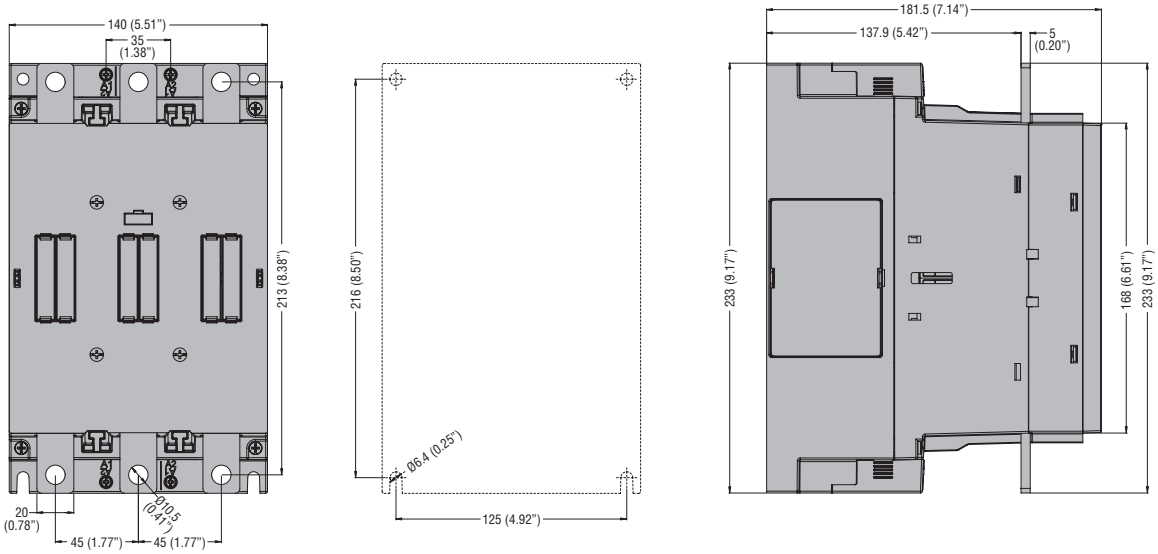
BF16000E... - BF19500E... - BF23000E... three-poles



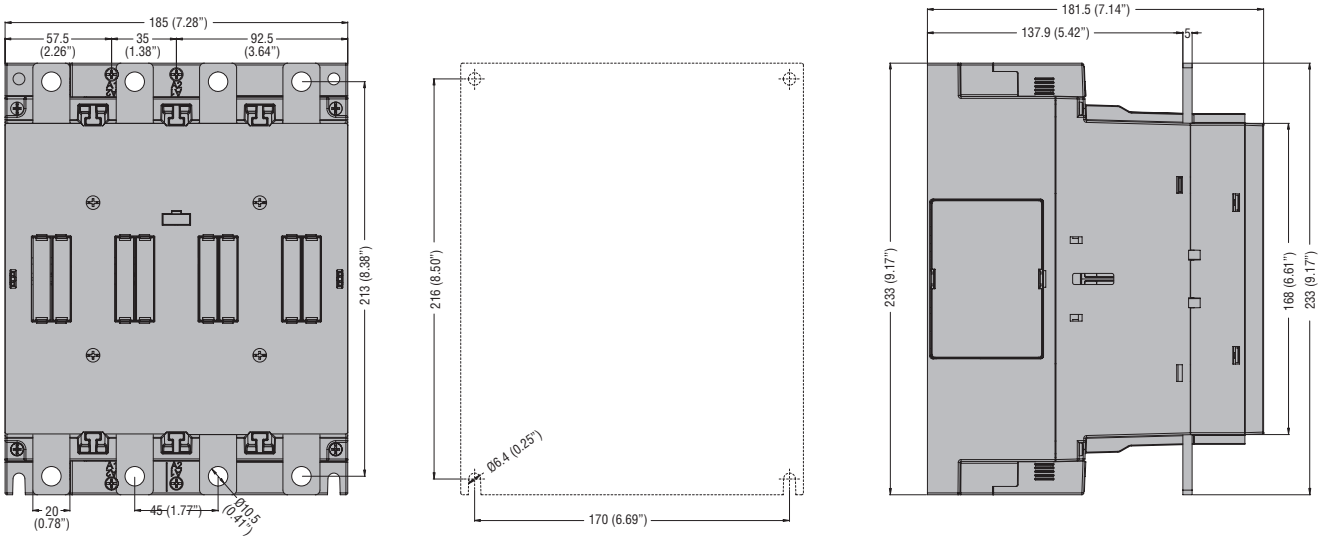
BF160T4E... - BF195T4E... - BF230T4E... four-poles



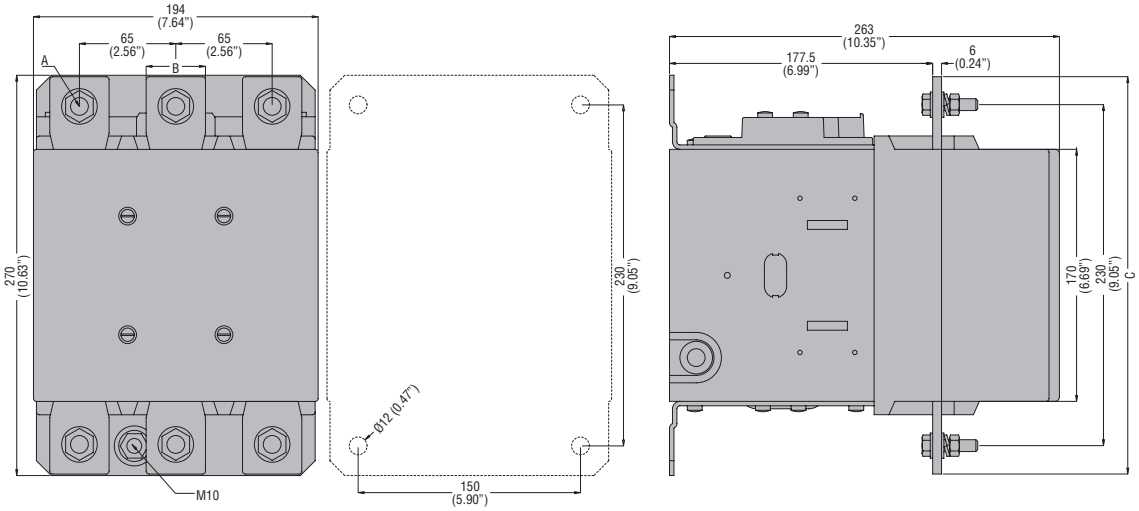
BF265... - BF330... - BF400... three-poles



BF265T4E... - BF330T4E... - BF400T4E... four-poles

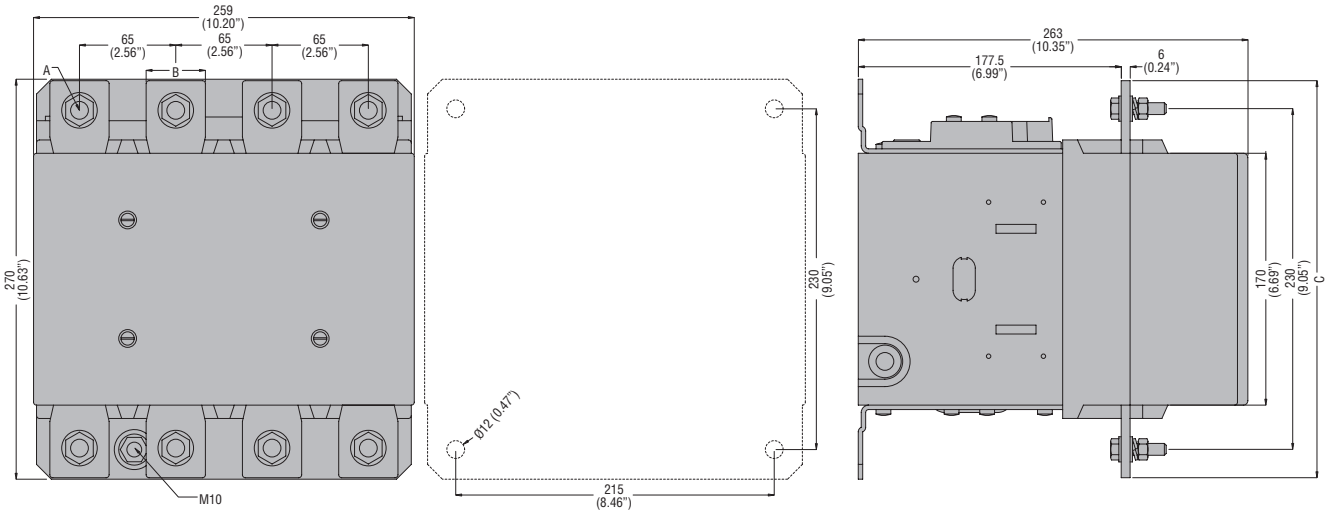


B500... - B630... three-poles



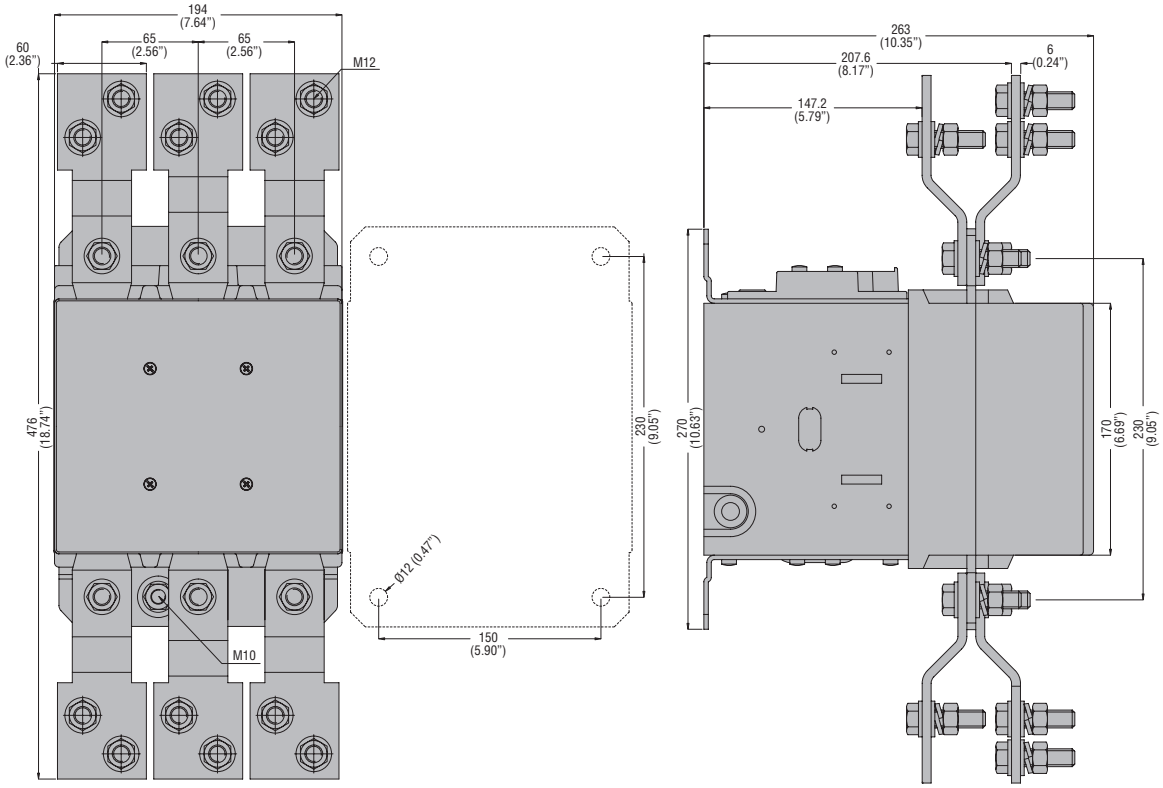
CONTACTOR TYPE	A	B	C
B500	M10	35 (1.38")	265 (10.43")
B630	M12	40 (1.57")	270 (10.63")

B5004... - B6304... four-poles

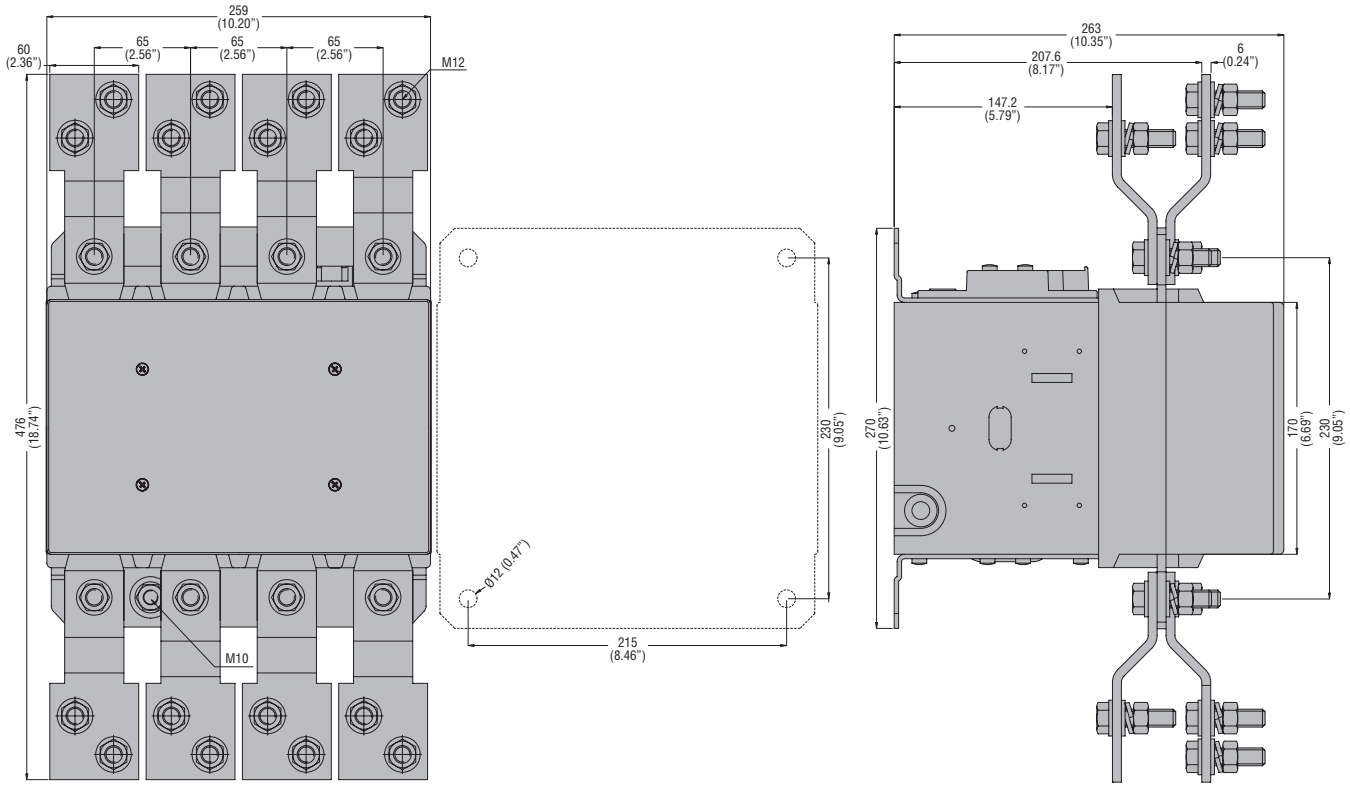


CONTACTOR TYPE	A	B	C
B5004	M10	35 (1.38")	265 (10.43")
B6304	M12	40 (1.57")	270 (10.63")

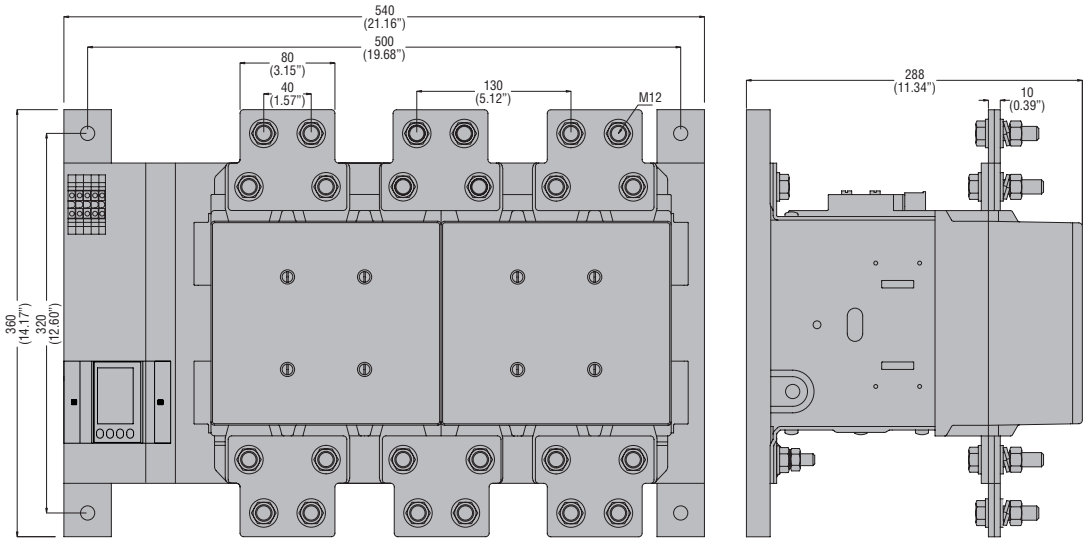
B6301000... three-poles



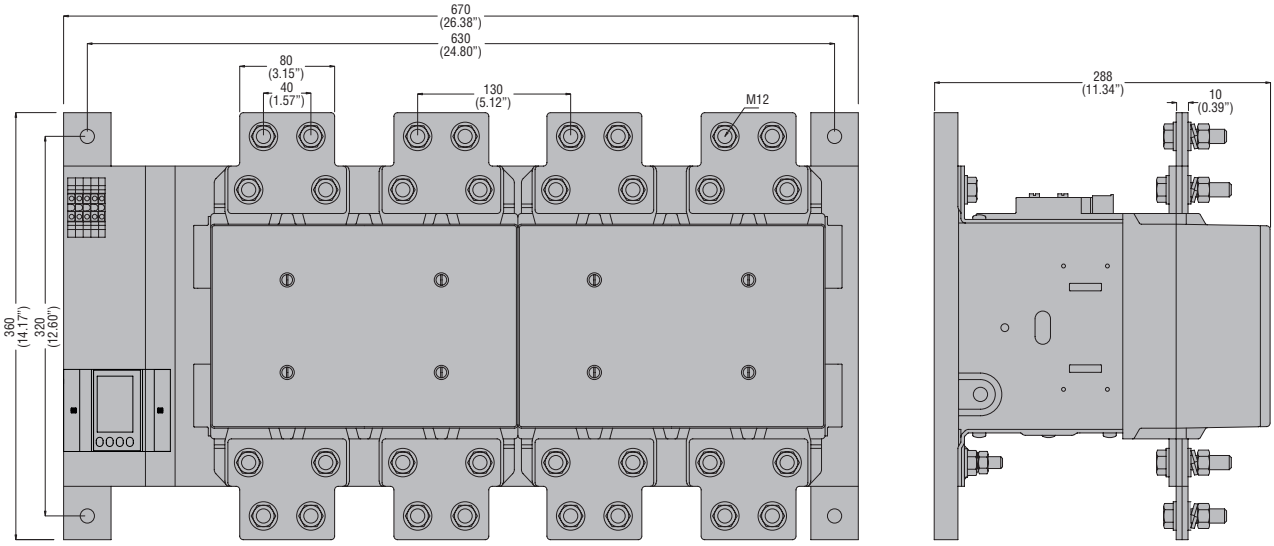
B63010004... four-poles



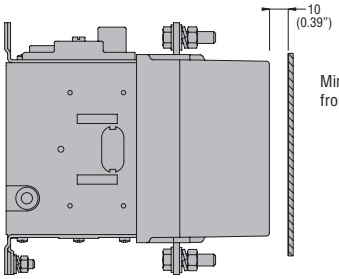
B1250… - B1600… three-poles



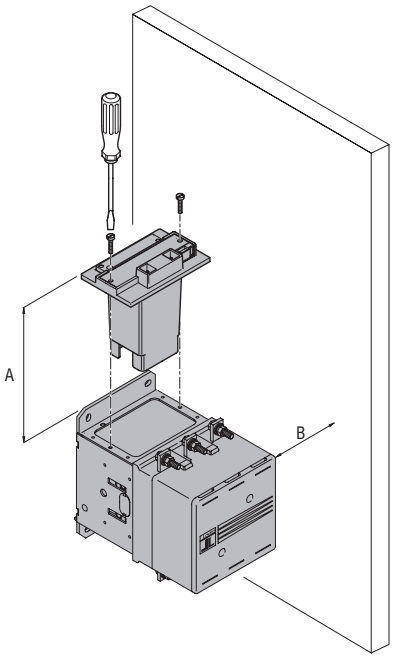
B12504… - B16004… four-poles



B500… - B630… - B6301000… - B1250… - B1600…



Minimum safety distance from metal parts.



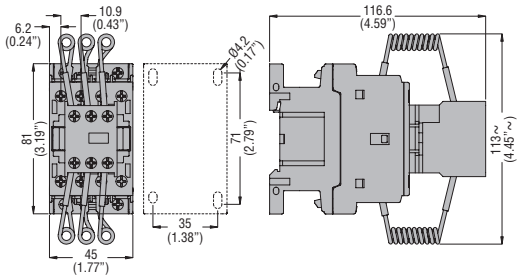
Minimum space needed to replace the coil.

	B500…B6301000
A	170 (6.69")
B	160 (6.30")

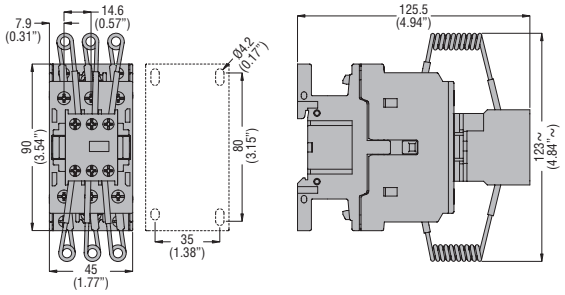
If dimension B is respected, coil replacement is possible without removing power wiring.

CONTACTORS FOR POWER FACTOR CORRECTION

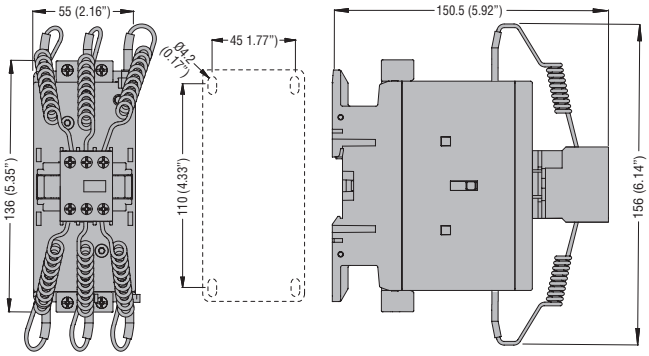
BFK0910A - BFK1210A - BFK1810A



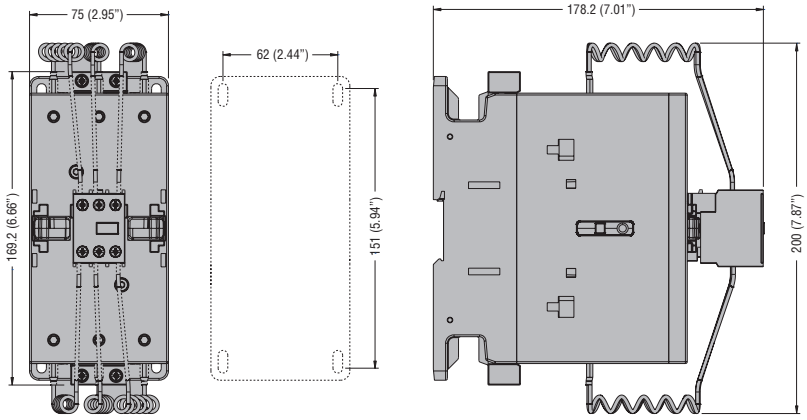
BFK2600A - BFK3200A - BFK3800A



BFK50 - BFK65 - BFK80 - BFK94

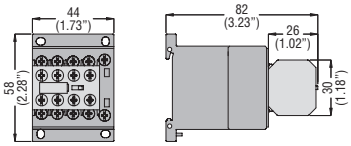


BFK95 - BFK115 - BFK150



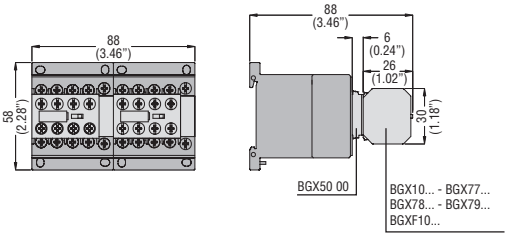
ADD-ON BLOCKS WITH BG MINI-CONTACTORS

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

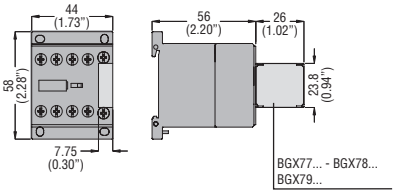


❶ Valid for BGX11... contacts as well when mounted on left-hand contactor of BGT or BGC assembly (p. 4-5).

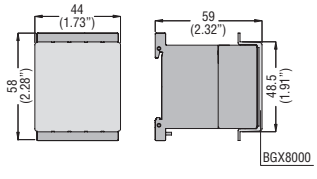
BGX5000 interlock with **BGX10..., BGXF10...** contacts and **BGX77...** or **BGX78...** or **BGX79...** suppressor



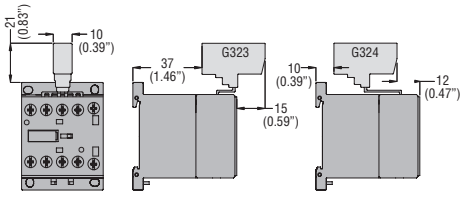
BGX77..., BGX78... or **BGX79...**
suppressor only



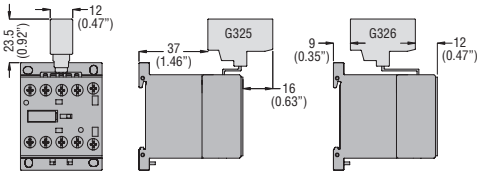
BGX8000 shroud



Paralleling links
G323, G324

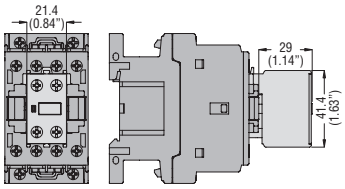


G325, G326

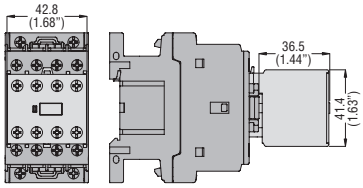


ADD-ON BLOCKS WITH BF CONTACTORS

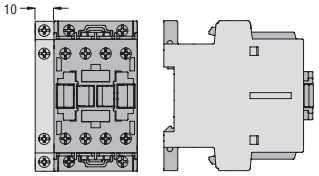
Auxiliary contacts **BFX10...**
w/2 contacts



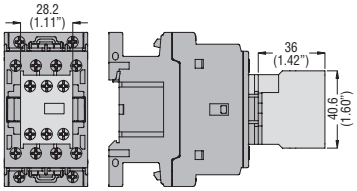
BFX10... w/4 contacts



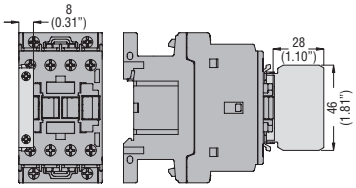
BFX12...



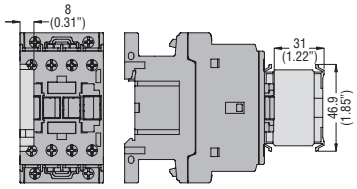
G484...



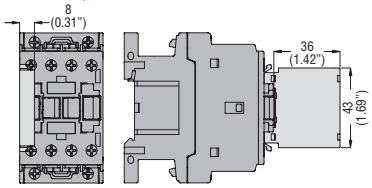
G418...



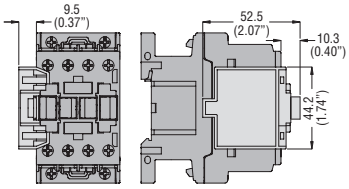
G218



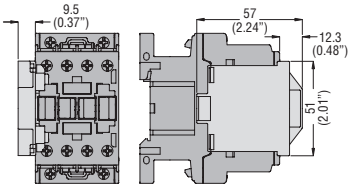
G481..., G482



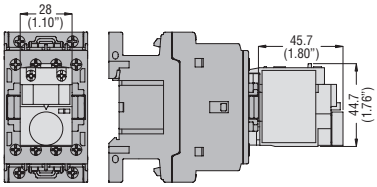
G280 with G218



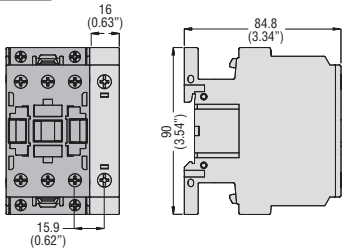
G419, with G418..., **G428..., G483** with G481... or G482



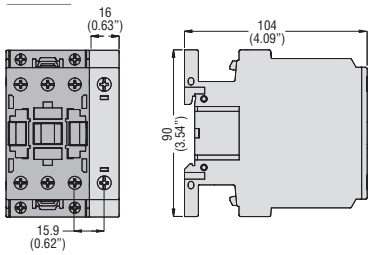
G485..., G486..., G487 delayed contacts



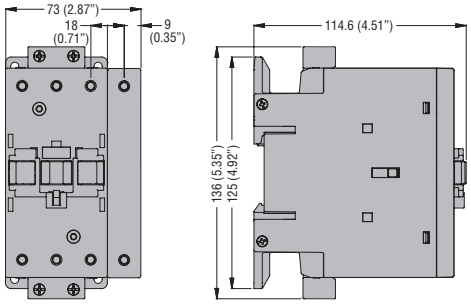
Fourth pole
BFX42



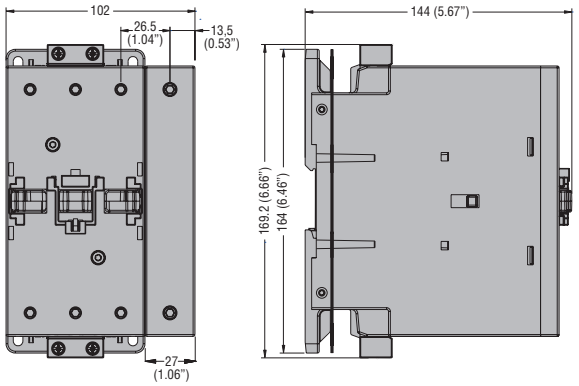
BFXD42



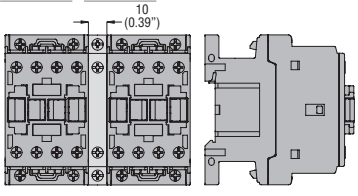
BFX43



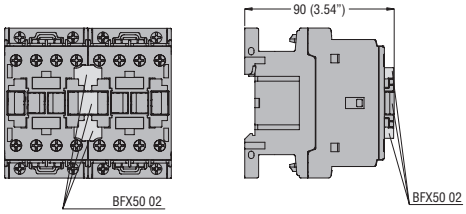
BFX44



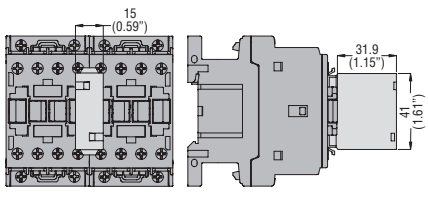
Mechanical interlocks
BFX5000, BFX5001, BFX5300, BFX5301, BFX5400, BFX5401



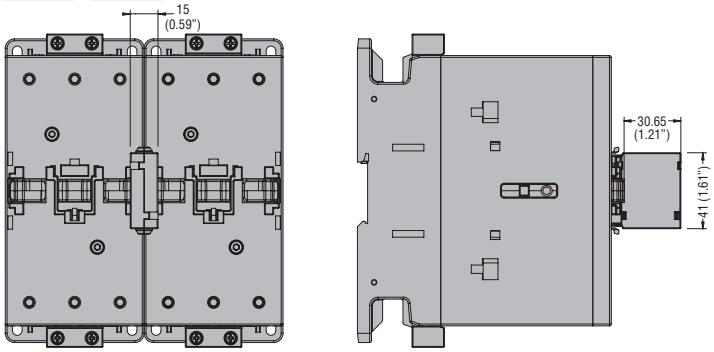
BFX5002



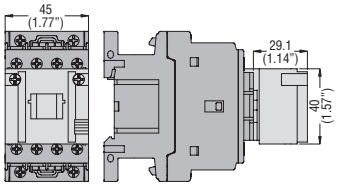
BFX5003, BFX5303, BFX5403



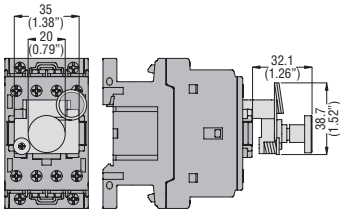
Mechanical interlocks
BFX5303 - BFX5403



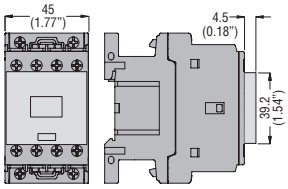
G222, G272, BFX641 mechanical latch



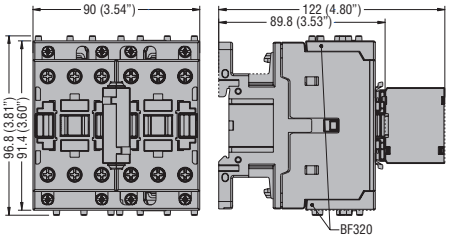
G454, G455, BF642 manual closing



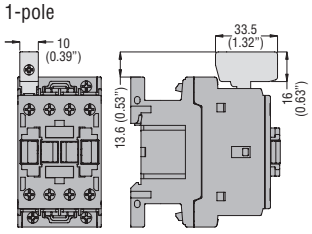
BFX80 sealing cover



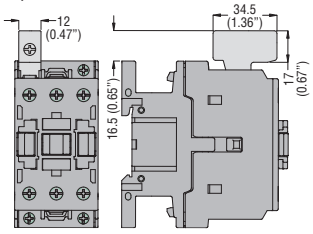
Rigid connecting kit **BFX3201**
A = 100mm (3.94") with BFX5000 and BFX5001
A = 90mm (3.54") with BFX5002 and BFX5003



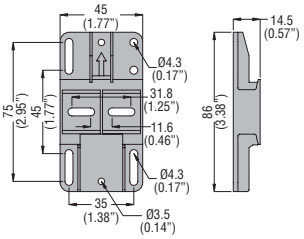
G231 terminal
1-pole



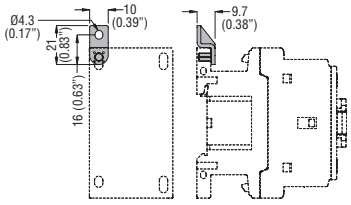
G232 terminal
1-pole



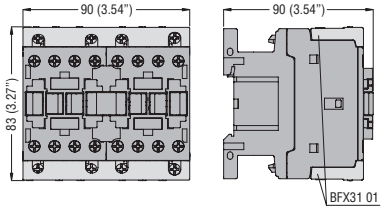
BFX8901 fixing base



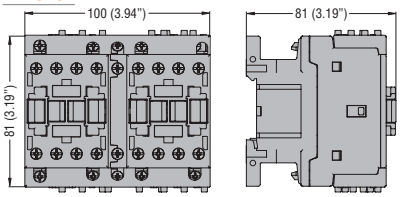
BFX8902 fixing brackets



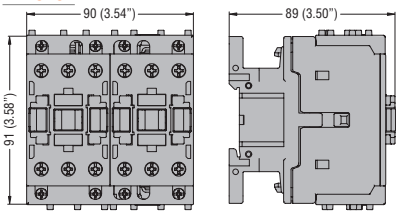
Rigid connecting kit
BFX3101



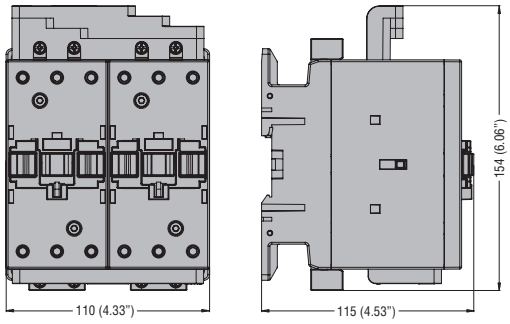
BFX3102



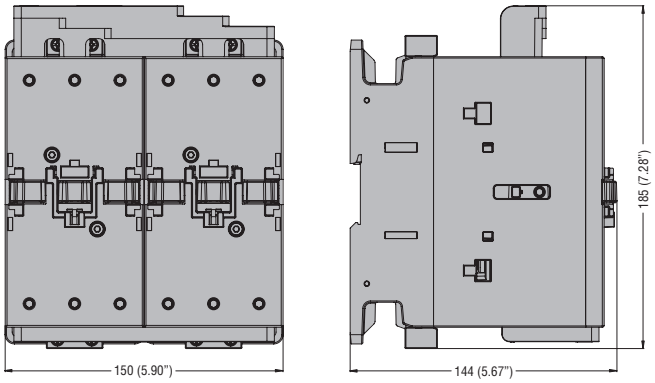
BFX3201



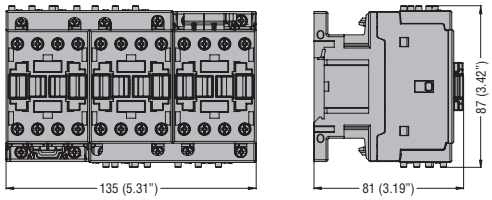
BFX3301



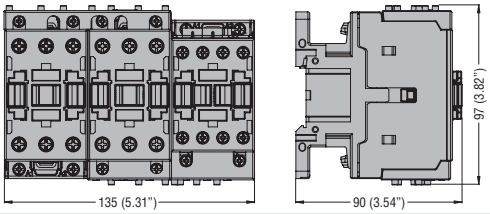
BFX3401



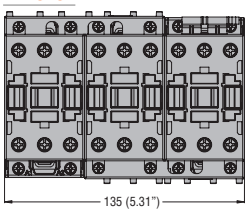
BFX3131

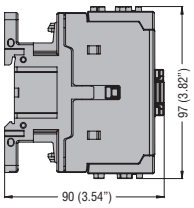


BFX3232

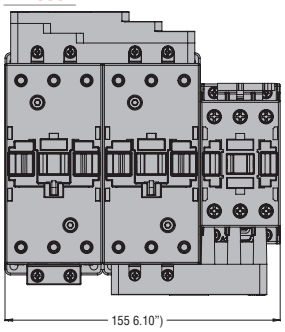


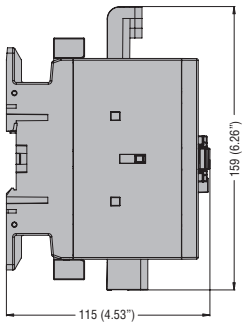
BFX3231



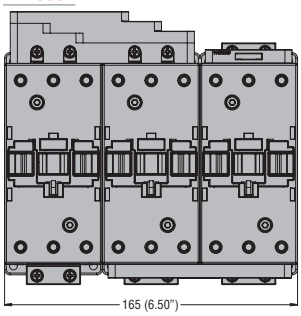


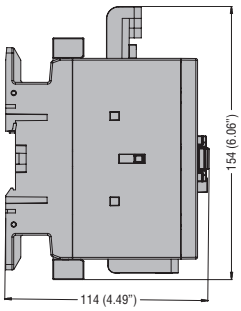
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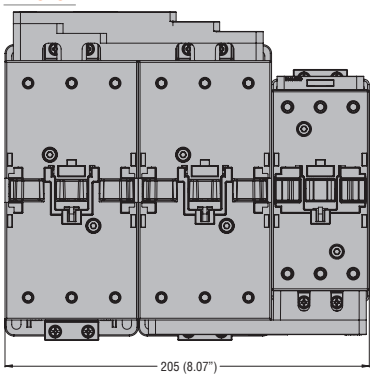


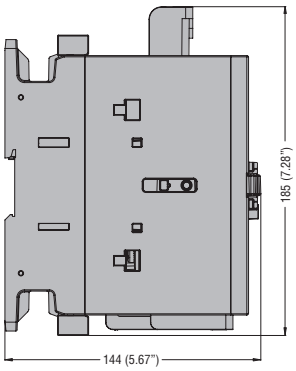
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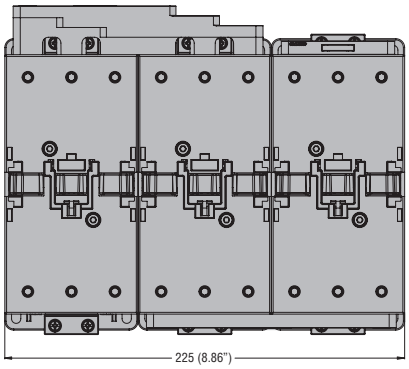


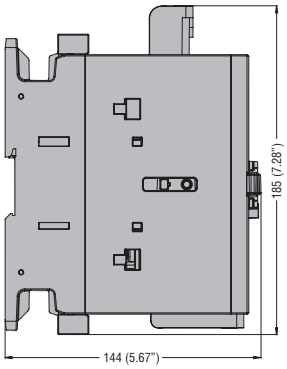
BFX3432



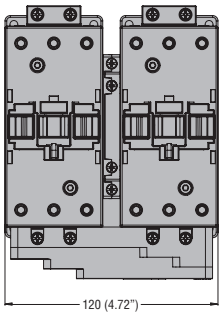


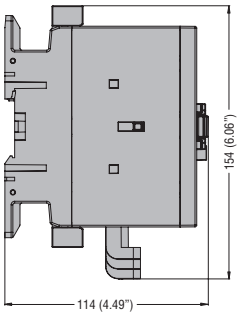
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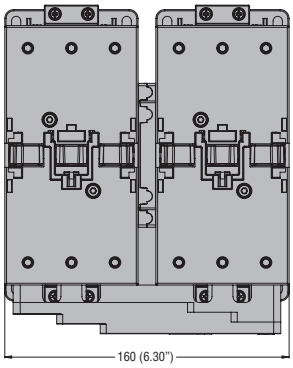


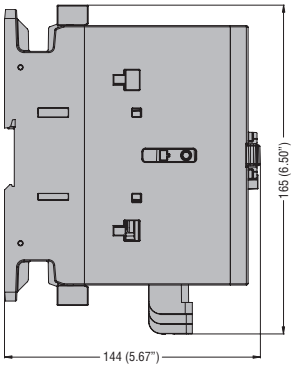
BFX3361



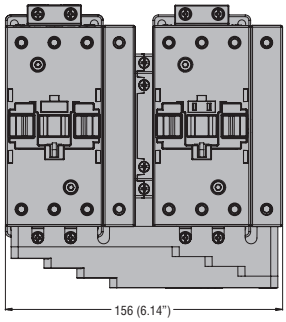


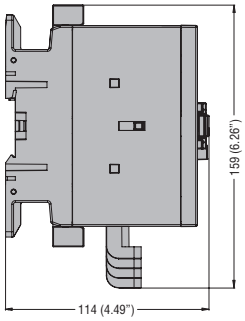
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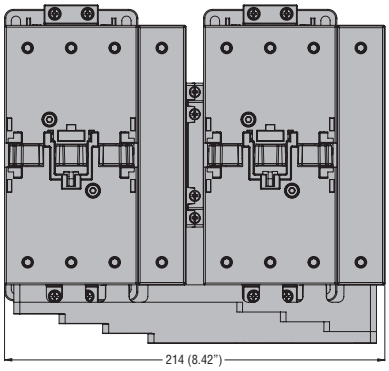


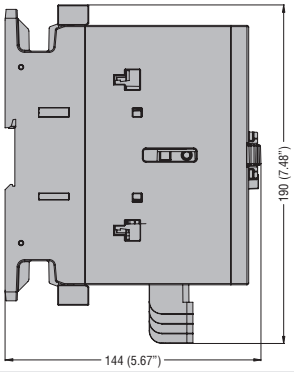
BFX3371





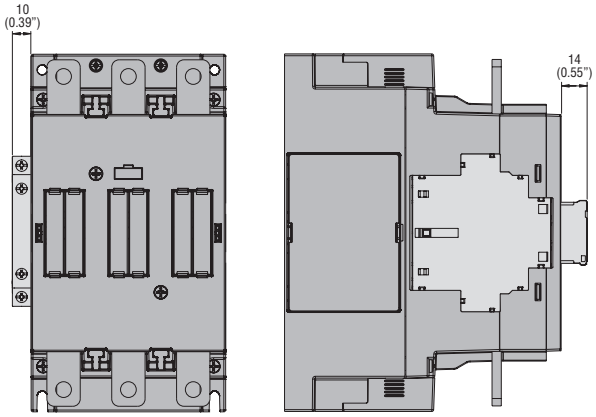
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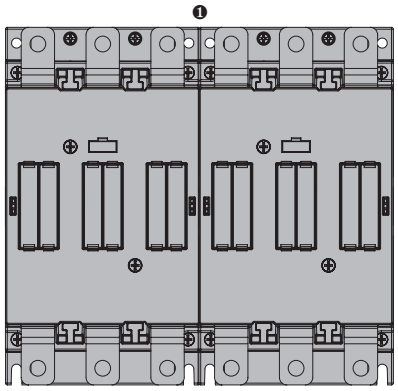


ADD-ON BLOCKS WITH BF160...BF400 CONTACTORS

BFX10C..., BFX12C... auxiliary contacts

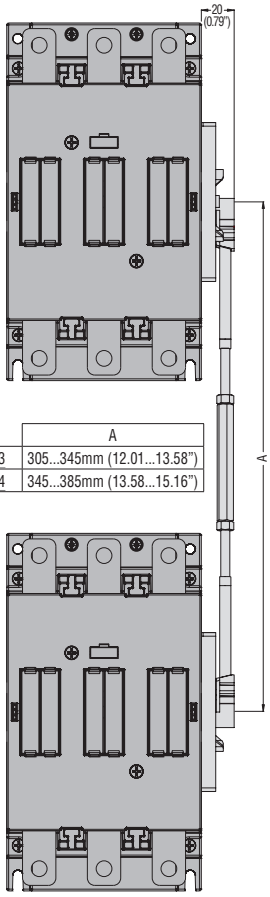


BFX5500 interlock



❶ The BFX5500 interlock is mounted inside the 2 contactors without dimesions increasing.

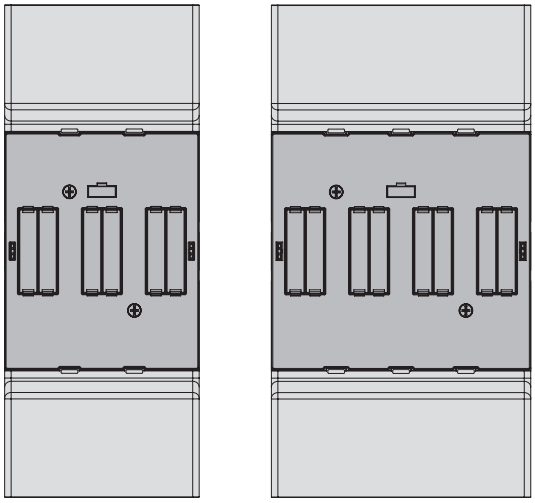
BFX5503, BFX5504 interlocks

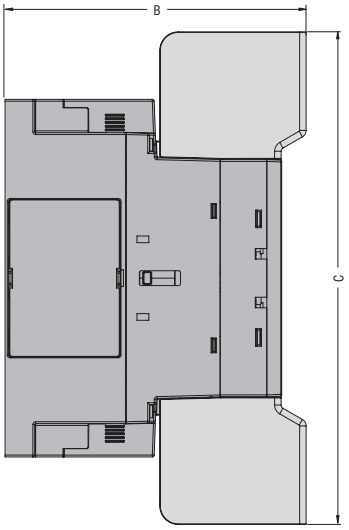


	A
BFX5503	305...345mm (12.01...13.58")
BFX5504	345...385mm (13.58...15.16")

Terminal protection

BFX835 - BFX845 - BFX836 - BFX846

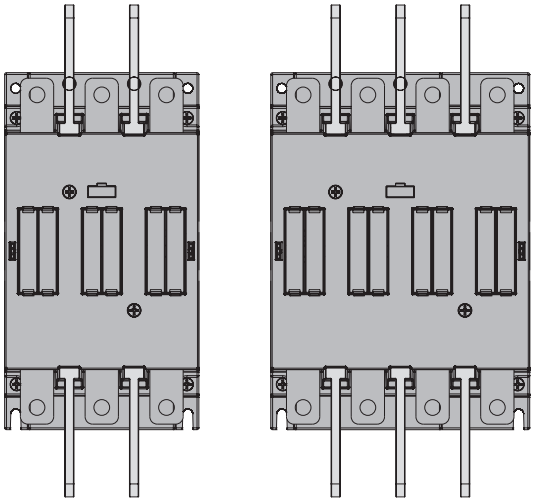


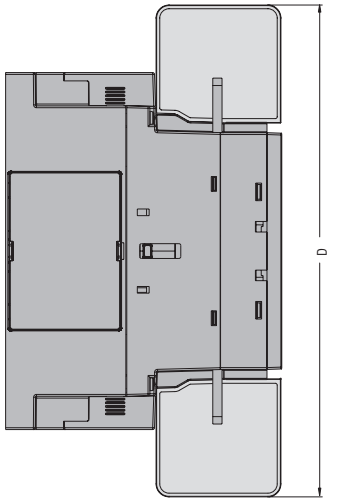


	B	C
BFX835 - BFX845	163 (6.42")	266 (10.47")
BFX836 - BFX846	193 (7.60")	384 (15.23")

Phase barrier

BFX805 - BFX806

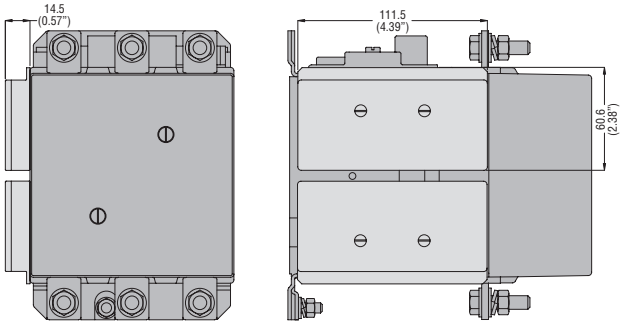




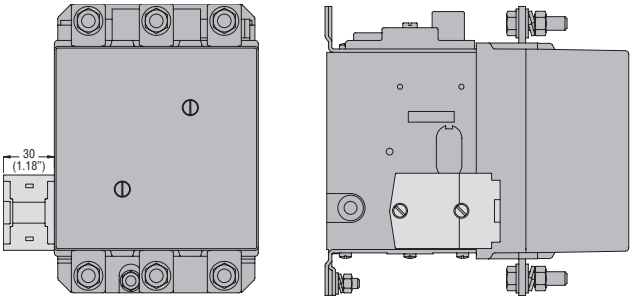
	D
BFX805	266 (10.47")
BFX806	384 (15.23")

ADD-ON BLOCKS WITH B CONTACTORS

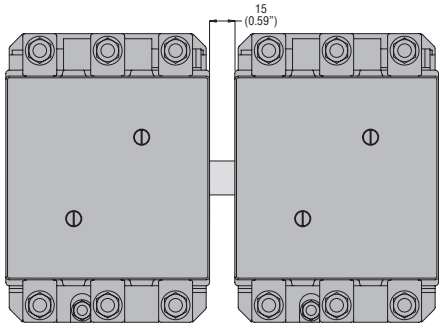
Auxiliary contacts **G350, G354**



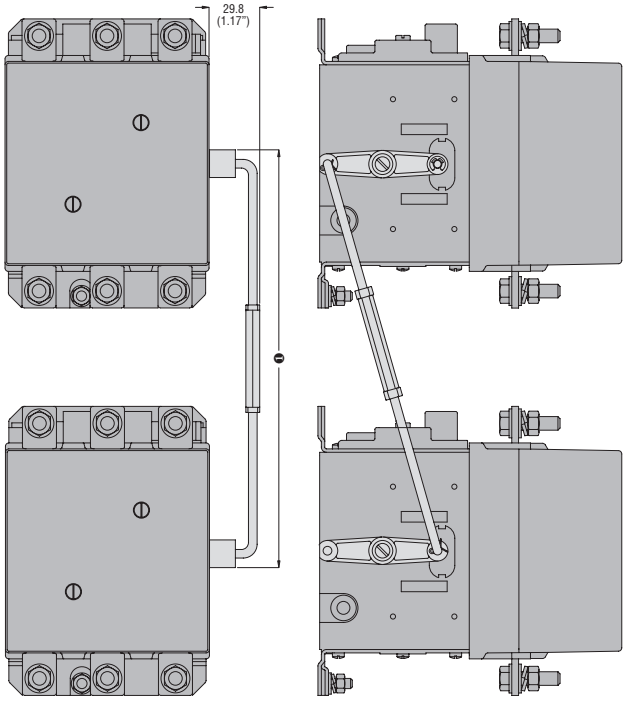
G358 adapter



G355 interlocks



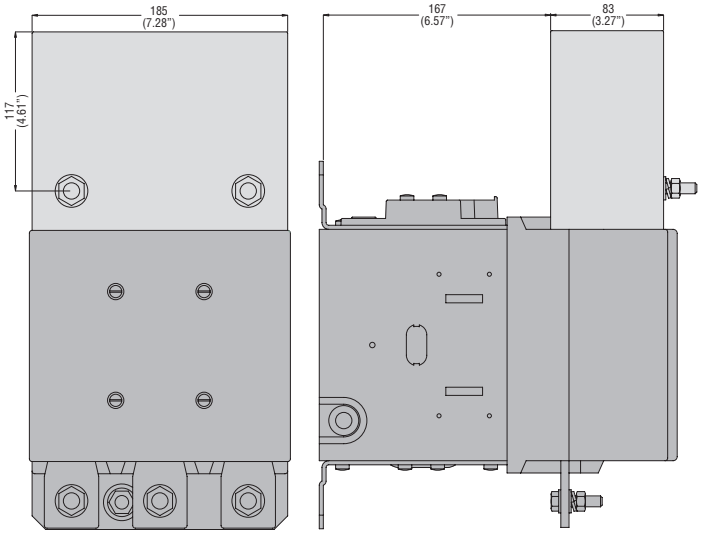
G356…



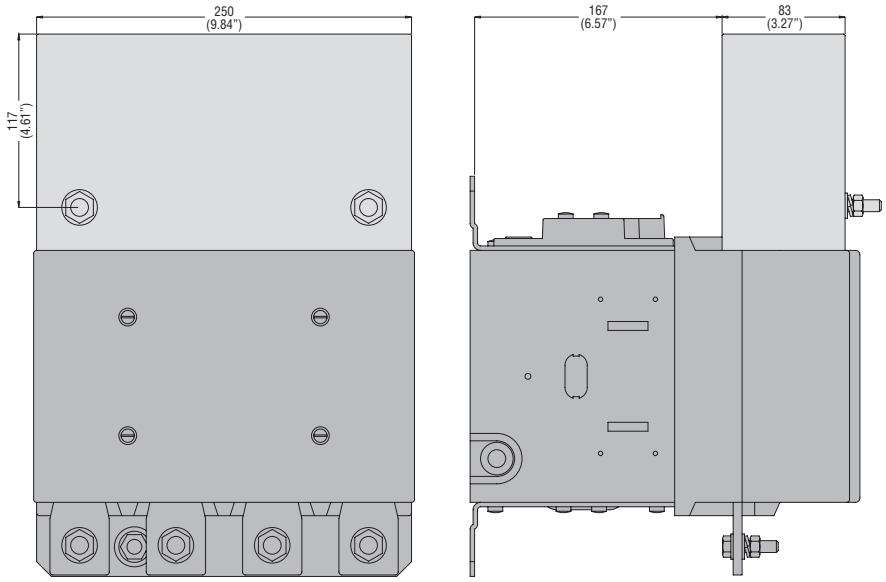
❶ For dimensions, refer to page 2-78.

Terminal protection

G527, G529

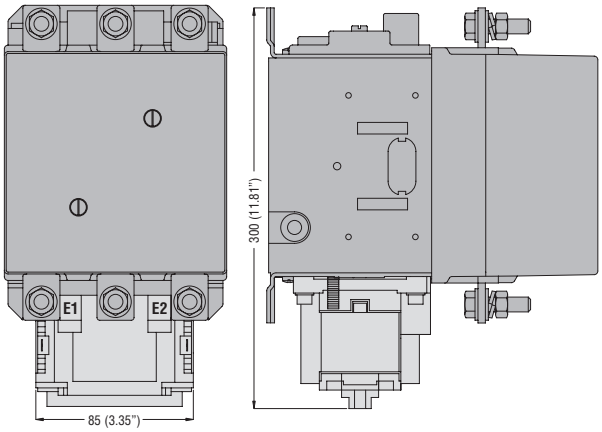


G528, G530

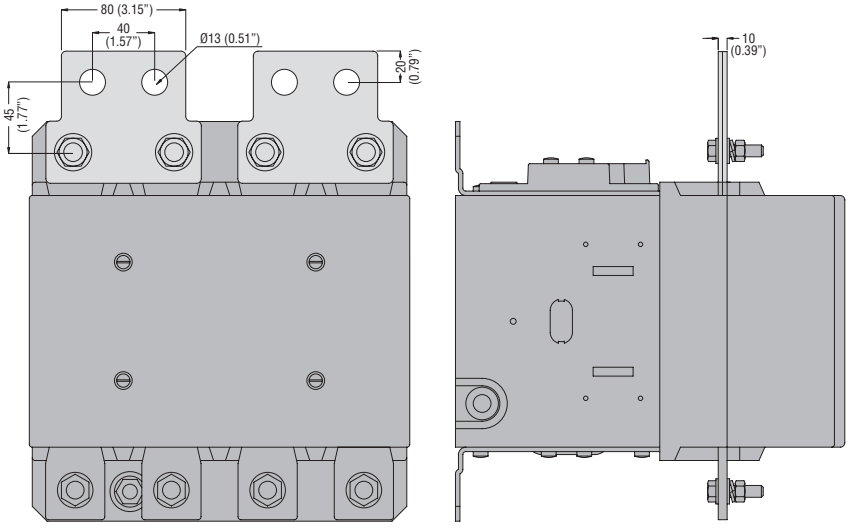


Mechanical latch on B500...B630 contactor

G495



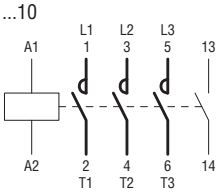
BA1845



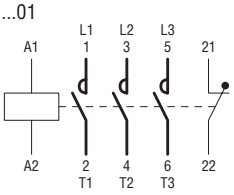
THREE-POLE CONTACTORS IN AC

BG06A - BG09A - BGF09A - BGP09A - BG12A
BF09A - BF12A - BF18A - BF25A

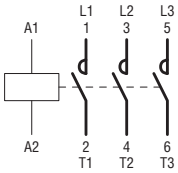
...10



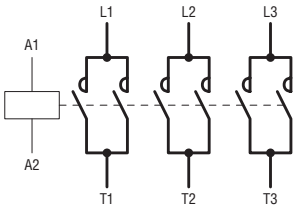
...01



BF26A - BF32A - BF38A
BF40A - BF50A - BF65A - BF80A
BF94A - BF95A - BF115A - BF150A
B500...B630



B125024 - B160024... ❶

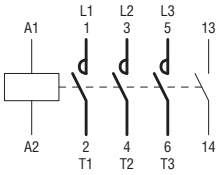


❶ The input electronic circuit of the contactor coil is designed and tested according to IEEEC 62.41 standards and can withstand a 10kV impulse voltage (1.2/50µs) with 50 Joule energy. The use of an auxiliary reduced voltage transformer is recommended for higher values.

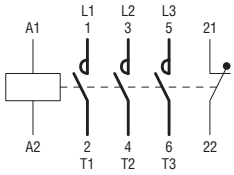
THREE-POLE CONTACTORS IN DC (AC/DC for BF40E...BF400E)

BG06D - BG09D - BGF09D - BGP09D - BG12D
BG06L - BG09L - BGF09L - BGP09L - BG12L

...10

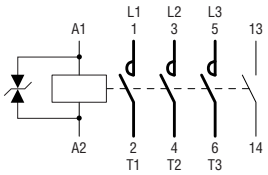


...01

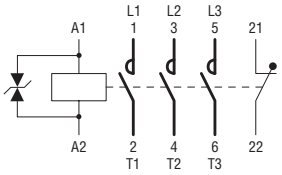


BF09D - BF12D - BF18D - BF25D
BF09L - BF12L - BF18L - BF25L

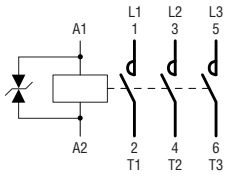
...10



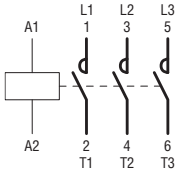
...01



BF26D - BF32D - BF38D
BF26L - BF32L - BF38L

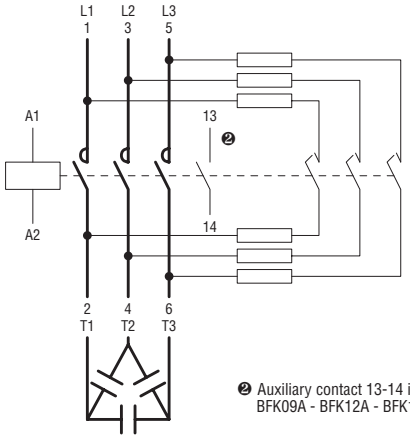


BF40E - BF50E - BF65E - BF80E - BF94E
BF95E - BF115E - BF150E - BF160E - BF195E - BF230E
BF265E - BF330E - BF400E



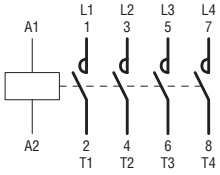
CONTACTORS FOR POWER FACTOR CORRECTION

BFK09A - BFK12A - BFK18A
BFK26A - BFK32A - BFK38A - BFK50A - BFK65A - BFK80A - BFK94A - BFK95A - BFK115A - BFK150A

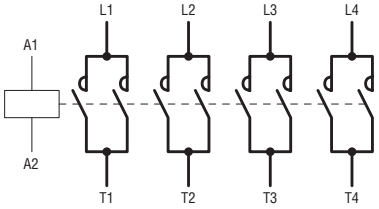


❷ Auxiliary contact 13-14 is found on BFK09A - BFK12A - BFK18A types only.

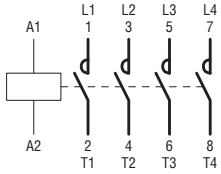
FOUR-POLE CONTACTORS IN AC
BG09T4A - BGF09T4A - BGP09T4A
BF09T4A - BF38T4A
BF50T4A - BF65T4A - BF80T4A
BF95T4A - BF115T4A - BF150T4A
BFD80T4A
B5004...B6304



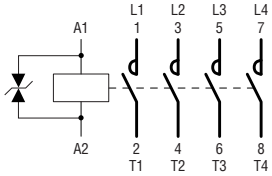
B12504 - B16004



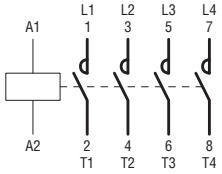
FOUR-POLE CONTACTORS IN DC (AC/DC for BF65T4E...BF400T4E)
BG09T4D - BGF09T4D - BGP09T4D



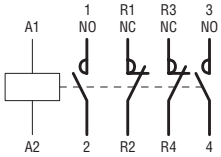
BF09T4D - BF38T4D
BF09T4L - BF38T4L



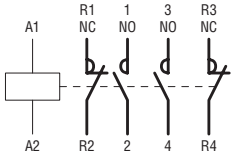
BF65T4E - BF80T4E - BF95T4E - BF150T4E - BFD150T4E
BF160T4E - BF195T4E - BF230T4E



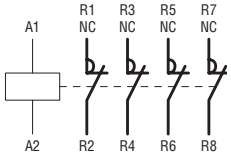
FOUR-POLE CONTACTORS IN AC WITH 2NO AND 2NC POLES
BG09T2A



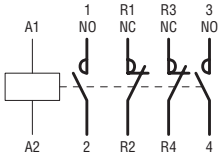
BF09T2A - BF18T2A - BF26T2A - BF38T2A
BF80T2A



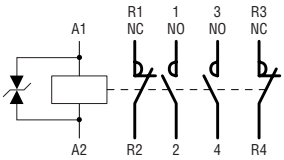
WITH NC FOUR-POLES
BF18T0A - BF26T0A



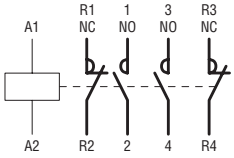
FOUR-POLE CONTACTORS IN DC (AC/DC for BF80T2E) WITH 2NO AND 2NC POLES
BG09T2D



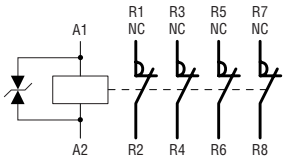
BF18T2D - BF26T2D - BF38T2D
BF18T2L - BF26T2L - BF38T2L



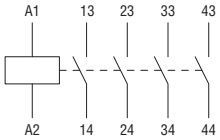
BF80T2E



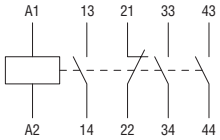
WITH NC FOUR-POLES
BF18T0D - BF26T0D
BF18T0L



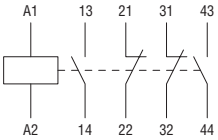
CONTROL RELAY IN AC
BG0040A - BGF0040A
BF0040A



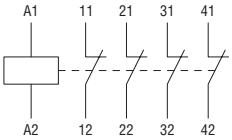
BG0031A - BGF0031A
BF0031A



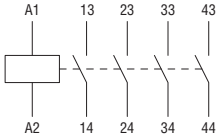
BG0022A - BGF0022A
BF0022A



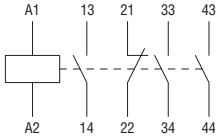
BF0004A



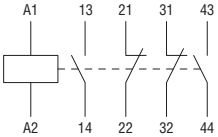
CONTROL RELAY IN DC
BG0040D - BGF0040D
BG0040L - BGF0040L



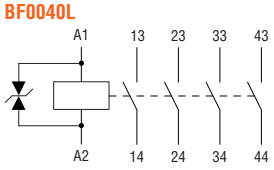
BG0031D - BGF0031D
BG0031L - BGF0031L



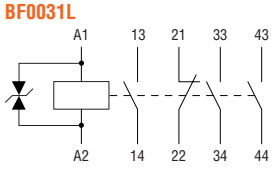
BG0022D - BGF0022D
BG0022L - BGF0022L



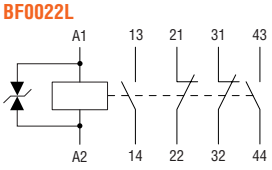
BF0040D
BF0040L



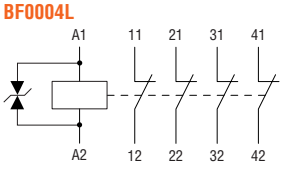
BF0031D
BF0031L



BF0022D
BF0022L



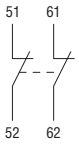
BF0004D
BF0004L



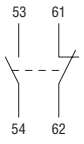
ADD-ON BLOCKS FOR BG MINI-CONTACTORS

Auxiliary contacts

BGX1002 BGXF1002



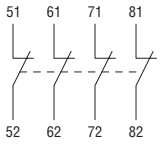
BGX1011 BGXF1011



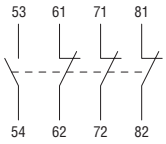
BGX1020 BGXF1020



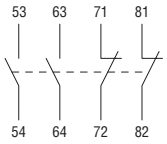
BGX1004 BGXF1004



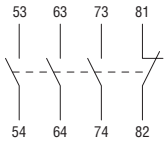
BGX1013 BGXF1013



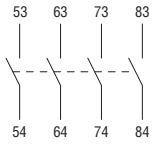
BGX1022 BGXF1022



BGX1031 BGXF1031

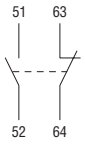


BGX1040 BGXF1040

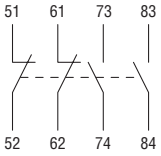


Special auxiliary contacts

BGX1111

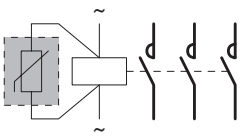


BGX1122

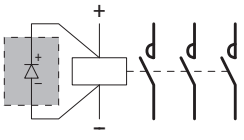


Surge suppressor

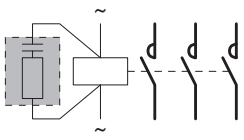
BGX77…



BGX78…

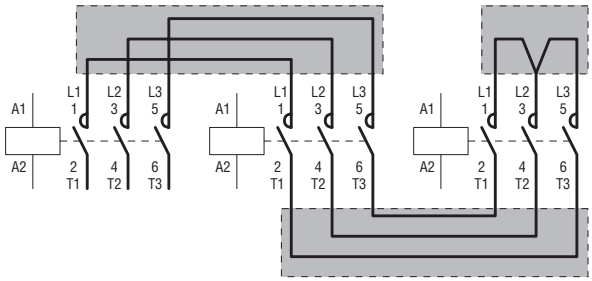


BGX79…

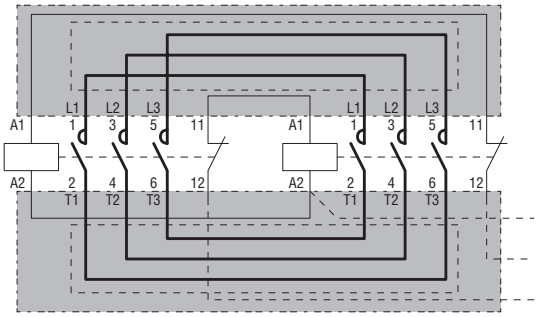


Rigid connections

SMX9021



SMX9022



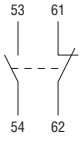
ADD-ON BLOCKS FOR BF CONTACTORS

Auxiliary contacts

BFX1002



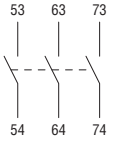
BFX1011



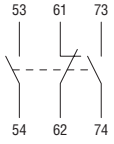
BFX1020



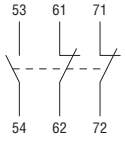
G48430



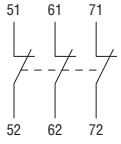
G48421



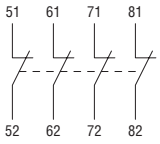
G48412



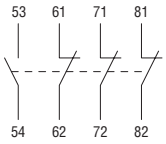
G48403



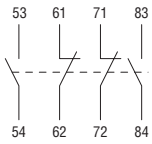
BFX1004



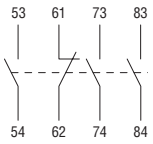
BFX1013



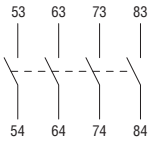
BFX1022



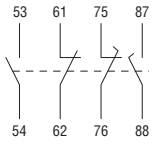
BFX1031



BFX1040

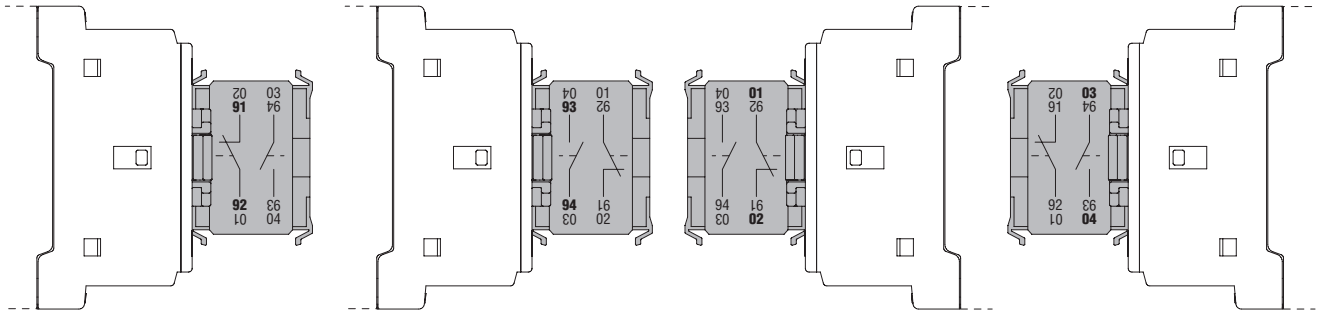


BFX101111



Auxiliary contact

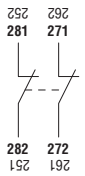
G218



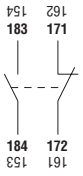
The termination of the G218 auxiliary contact has more than one numbering due to the fact that the block can assume various mounting positions.
See the numbering in boldface for a correct interpretation.

Auxiliary contacts

BFX1202
BFX12C02



BFX1211
BFX12C11



BFX1220
BFX12C20



BFX10C10



BFX10C01



G41810
G42810



G41810A
G42810A



G41801
G42801



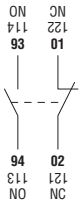
G41801D
G42801D



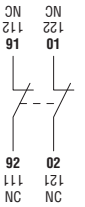
G48120



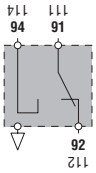
G48111



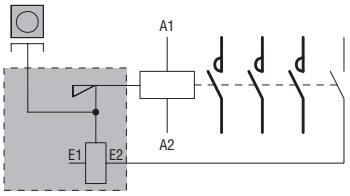
G48102



G482



Mechanical latch
G222... - G272... - BFX641...

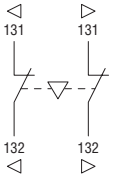


The termination of the BFX12... / G418... / G481... / G482 auxiliary contacts has more than one numbering due to the fact that the block can assume various mounting positions. See the numbering in boldface when the block is mounted on the left side of the contactor.

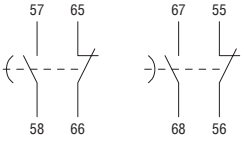
4th pole
BFX42 - BFX43 - BFX44
BFXD42



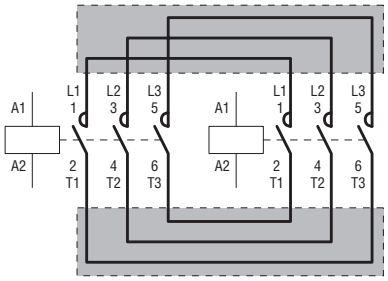
Interlock
BFX5001 - BFX5301
BFX5401



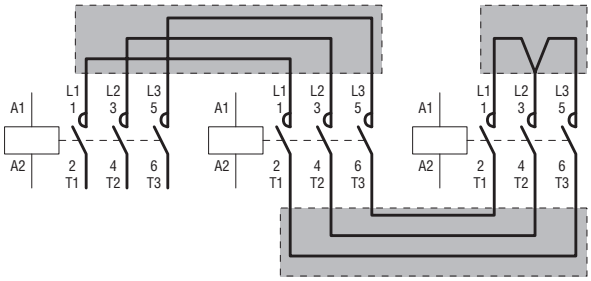
Delayed auxiliary contacts
G485... **G486... - G487**



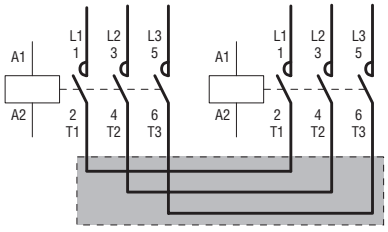
Rigid connecting kits
BFX3101 - BFX3102 - BFX3201
BFX3301 - BFX3401



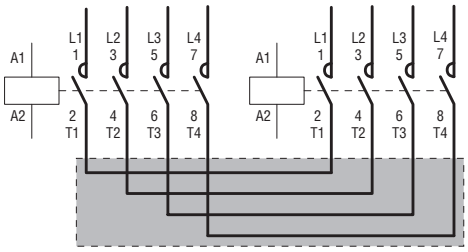
BFX3131 - BFX3231 - BFX3232 - BFX3331 - BFX3332 - BFX3431 - BFX3432



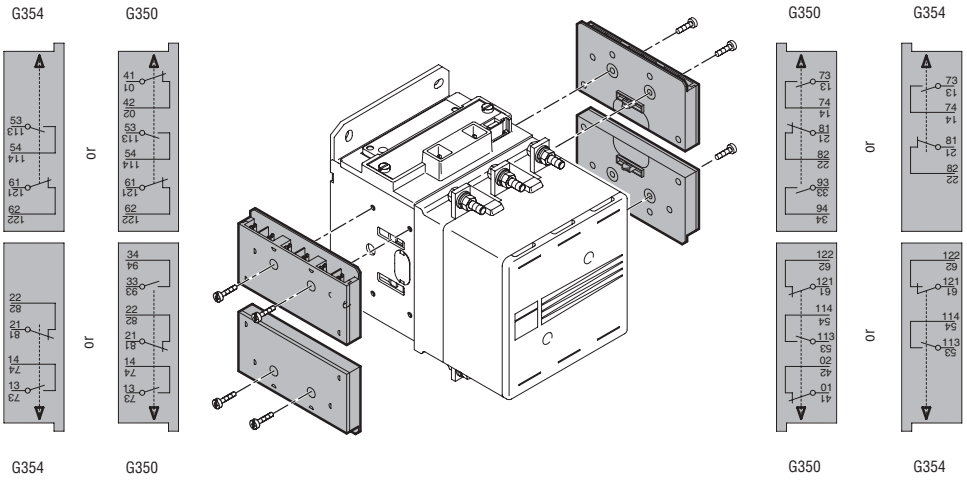
BFX3361 - BFX3461



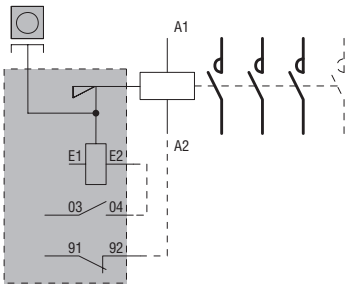
BFX3371 - BFX3471



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



Mechanical latch
G495

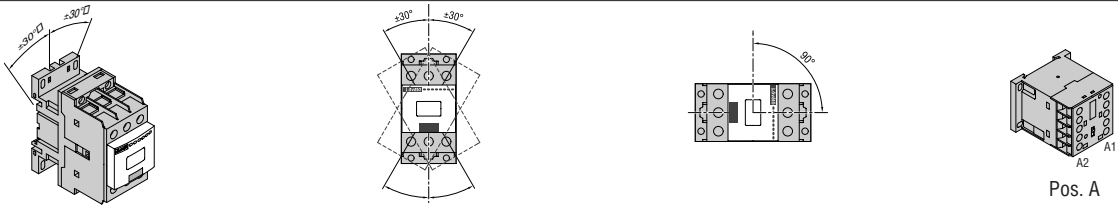


MOUNTING POSITION OF CONTACTORS

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.

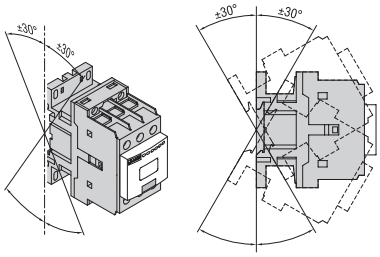


Pos. A

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.



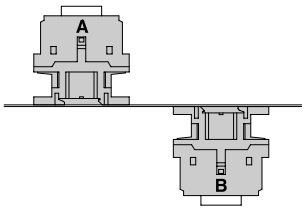
ON HORIZONTAL PLANE (FOR BF SERIES CONTACTORS)

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.

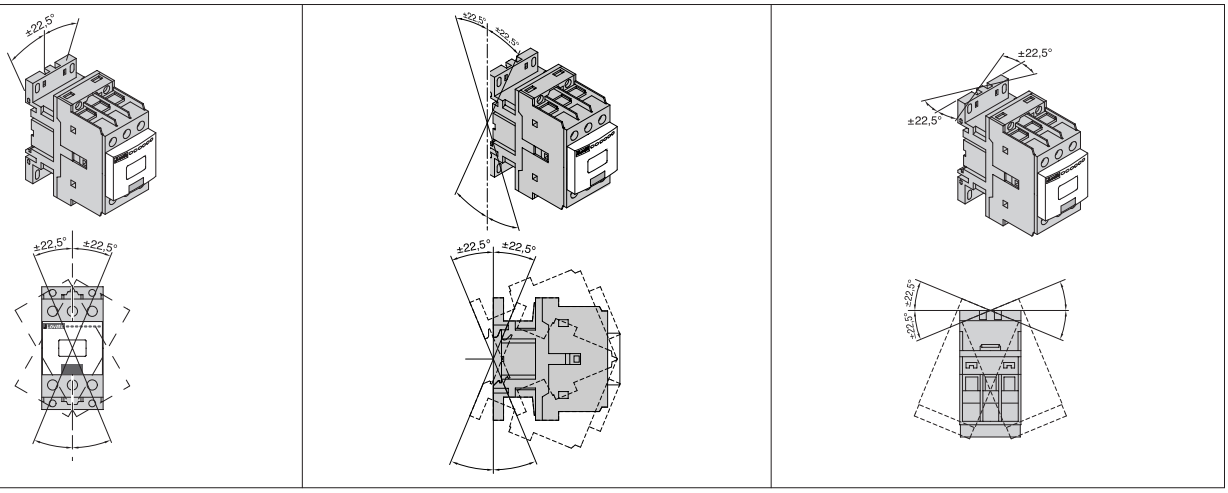
NOTE: Position B is not recommendable.



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 AC-3 / AC-3e
POLE CHARACTERISTICS
Squirrel-cage induction motors; breaking at rated motor current.

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

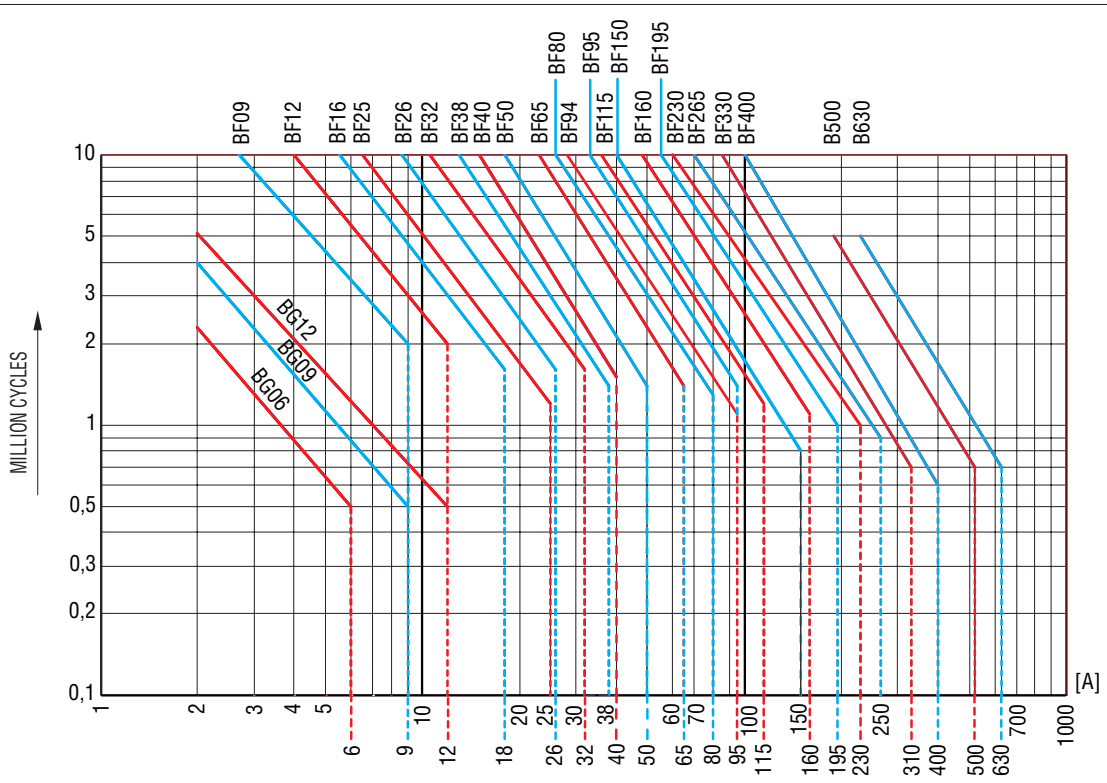
UL/CSA DUTY FOR AC MOTOR SWITCHING

POLE CHARACTERISTICS
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	7½
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	22	10	15	30	30
BF50	50	15	22	30	30	30	37	30	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
BF160	160	45	75	90	90	110	132	75	50	50	100	125
BF195	195	55	90	110	110	132	160	110	60	75	150	150
BF230	230	55	110	110	132	132	160	132	75	75	150	200
BF265	265	75	132	132	160	160	200	160	75	100	200	250
BF330	320	90	160	160	160	200	250	200	100	125	250	300
BF400	420	110	200	200	200	250	315	220	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	and poles in series	IEC Maximum current Ie [A] in categories: DC1 with L/R ≤ 1ms and poles in series				DC3 - DC5 with L/R ≤ 15ms and poles in series			
	Type	1	2	3	4	1	2	3	4
75V	**BF160**	250	250	250	250	160	160	160	160
	BF195	275	275	275	275	180	180	180	180
	BF230	350	350	350	350	250	250	250	250
	BF265	350	350	350	350	280	280	280	280
	BF330	375	375	375	375	310	310	310	310
	BF400	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	**BF160**	110	150	160	250	80	120	140	140
	BF195	120	170	170	275	90	140	160	160
	BF230	145	270	270	350	135	225	250	250
	BF265	160	300	300	300	150	250	280	280
	BF330	195	350	350	350	170	290	310	310
	BF400	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	**BF160**	--	130	150	250	--	90	120	140
	BF195	--	150	170	275	--	100	140	160
	BF230	--	225	270	350	--	180	225	225
	BF265	--	250	300	300	--	200	250	280
	BF330	--	300	350	350	--	230	290	310
	BF400	--	350	400	400	--	280	350	350
	B500	--	450	600	600	--	450	550	550
	B630	--	700	800	800	--	700	800	800
330V	**BF160**	-	-	130	150	--	--	90	140
	BF195	--	--	150	170	--	--	100	160
	BF230	--	--	225	270	--	--	180	210
	BF265	--	--	250	300	--	--	200	280
	BF330	--	--	300	350	--	--	230	310
	BF400	--	--	350	400	--	--	280	350
	B500	--	--	450	600	--	--	450	550
	B630	--	--	700	750	--	--	650	700
460V	**BF160**	--	--	--	130	--	--	--	90
	BF195	--	--	--	150	--	--	--	100
	BF230	--	--	--	225	--	--	--	180
	BF265	--	--	--	250	--	--	--	200
	BF330	--	--	--	300	--	--	--	230
	BF400	--	--	--	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:

1 POLE

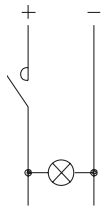


Fig. 1

2 POLES

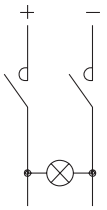


Fig. 2

3 POLES

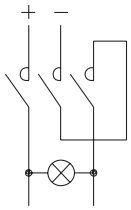


Fig. 3

4 POLES

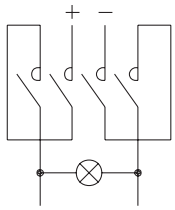


Fig. 4

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:

1 POLE in series and
2 POLES in parallel



Fig. 5

1 POLE in series and
3 POLES in parallel

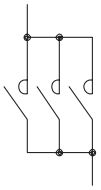


Fig. 6

1 POLE in series and
4 POLES in parallel

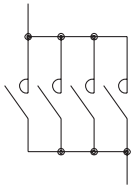


Fig. 7

2 POLE in series and
2 POLES in parallel

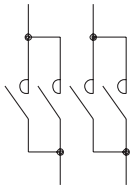


Fig. 8

MAXIMUM OPERATIONAL CURRENT
See tables on pages 2-59 to 2-61.

OTHER CONDITIONS
For different operating conditions or voltage not included among those indicated in the tables, on pages 2-59 to 2-61, 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	Rated current	Capacitor capacity	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	BF160	BF195 BF230
		[W]	[A]	[µF]											
LED 220...240V 50/60Hz	See note ❻				Each pole can carry 67% of the rated current AC3 ❻										
INCANDESCENT	50/60Hz	60	0.27	-	30	48	92	118	129	203	240	296	370	425	462
220...240V		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	50/60Hz	100	0.45	-	20	33	57	77	88	122	144	177	244	311	377
220...240V		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	Not corrected	15	0.35	-	25	42	74	100	114	157	185	228	314	400	485
220...240V	Single mounting	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	15	0.11	4.5	24	40	62	94	94	200	200	200	533	533	533
	Single mounting	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 2-6.
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	BF160	BF195 BF230
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 • $\sqrt{3}$.
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	IEC maximum operational power (AC-6b)			
					220V 230V 240V	380V 400V	415V 440V	500V 660/690V
Type	[A]	[A]	[V]	gG [A]	[kvar]	[kvar]	[kvar]	[kvar]
BF09A	12	500	690	16	4.5	7.5	9	10
BF12A	18	550	690	25	7	12.5	12	14
BF18A	23	1000	690	32	9	15	16	18
BF25A	23	1000	690	32	9	15	16	18
BF26A	30	1400	690	40	11	20	22	22
BF32A	36	1700	690	50	14	25	27	30
BF38A	43	1900	690	63	17	30	30	34
BF40A	50	2500	1000	100	20	35	40	45
BF50A	58	2500	1000	80	22	40	41	45
BF65A	65	2500	1000	100	26	45	50	52
BF80A	75	2500	1000	125	30	50	56	60
BF94A	75	2500	1000	125	30	50	56	70
BF95A	90	3000	1000	125	34	60	75	80
BF115A	115	3000	1000	160	45	75	85	135
BF150A	144	3000	1000	160	50	100	115	150
BF160	150	3400	1000	200	57	100	108	130
BF195	170	3600	1000	250	65	112	122	150
BF230	215	4500	1000	315	85	140	150	190
BF265	240	5100	1000	315	91	158	172	210
BF330	265	5900	1000	315	105	184	200	245
BF400	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

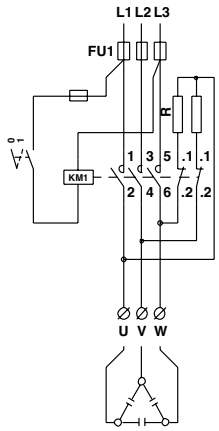
The use of contactors with the above operational powers is allowable only when the peak current, in the installation point of the power factor correction board, is lower than the values stated in the table.
If this condition is not verified, it is necessary to use limiting inductances or specific contactors stated on page 2-18. 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.

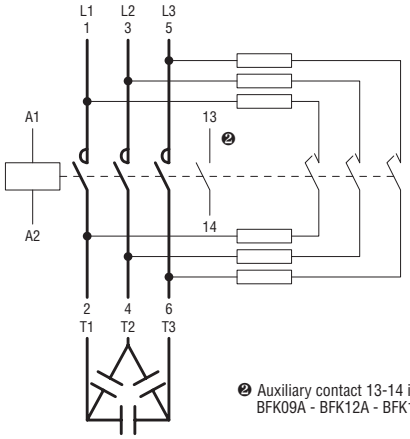


Fig. 1

❷ Auxiliary contact 13-14 is found on BFK09A - BFK12A - BFK18A 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]
BFK09A	1	12	16	4.5	7.5	9	10
BFK12A	1	18	25	7	12.5	14	16
BFK18A	1	23	40	9	15	17	20
BFK26A	—	30	40	11	20	22	25
BFK32A	—	36	63	14	25	27.5	30
BFK38A	—	43	63	17	30	33	36
BFK50A	—	58	80	22	40	41	46
BFK65A	—	65	100	26	45	50	56
BFK80A	—	75	125	30	50	56	65
BFK94A❷	—	90	125	34	60	75	80
BFK95A	—	90	125	34	60	75	80
BFK115A	—	115	160	45	75	85	135
BFK150A	—	144	160	50	100	115	150

NOTE: See page 2-18 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 **Note: The maximum thermal current of the BFK94 contactor is 115A.**

CHOICE OF CONTACTORS TYPE BFK 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]
BFK09A	1	12	16	4.5	9	10
BFK12A	1	18	25	7	14	16
BFK18A	1	23	40	9	17	20
BFK26A	—	30	40	11	22	27.5
BFK32A	—	36	63	14	27.5	32
BFK38A	—	43	63	17	33	36
BFK50A	—	58	80	22	41	46
BFK65A	—	70	100	26	50	56
BFK80A	—	75	125	30	60	75
BFK95A	—	100	125	40	80	100
BFK115A	—	115	160	45	90	120
BFK150A	—	121	160	50	100	125

NOTE: See page 2-18 for order codes.

IEC OPERATIONAL CHARACTERISTICS BG00 AND BF00

TYPE			BG00	BF00A	BF00D	BF00L
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/BS 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		
		lb.in	9	13...16		
Tightening torque for coil terminals min-max		Nm	0.8...1			
		lb.in	7...9			
		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 o 1x2.5	1...4		
	Flexible c/w spade lug	mm²	2x1.5 o 1x2.5	1...4		
Terminal protection according to IEC/EN/BS 60529			IP20❸			
AMBIENT CONDITIONS						
Operating temperature		°C	-50...+70			
Storage temperature		°C	-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/BS 60947-5-1 UTILIZATION CATEGORIES AND UL508/CSA C22.2 n°14

IEC/EN/BS designation	IEC/EN/BS 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										W max	
			125VDC		250VDC		301VDC		400VDC		500VDC	600VDC	300V or less ❺	
P600	DC-13	5	1.1		0.55		0.2		0.31		0.27	0.2	138	138
Q600	DC-13	2.5	0.55		0.27		0.1		0.15		0.13	0.1	69	69

TYPE					BG00	BF00A	BF00D	BF00L
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		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		in-rush		VA	30	75	—	—
		holding		VA	4	9	—	—
Dissipation at holding ≤20°C			a 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 BF0004D is 23...29ms while NC opening time is 40...49ms.
❸ NC closing time for BF0004L 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 (IEC/EN/BS 60947-1)		10s	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	7.5	7.5	7.5
			B	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
			lb.in	9	9	9
			Phillips	2	2	2
Conductor section connectable with 1 or 2 wires min...max						
	AWG stranded		N°	18...12		
	Flexible w/o lug		mm²	0.75...2.5		
	Flexible c/w boot-lace ferrule		mm²	2x1.5 or 1x2.5		
	Flexible c/w spade lug		mm²	2x1.5 or 1x2.5		
Terminal protection to IEC/EN/BS 60529				IP20❺		
AUXILIARY CONTACT CHARACTERISTICS						
Type of contact			n°	1-NO or NC based on configuration❻		
Thermal current Ith			A	10		
IEC/EN/BS 60947-5-1 designation			AC	A600		
			DC	Q600		
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 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 2-38.
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/BS 60947-5-1 UTILIZATION CATEGORIES AND UL508/CSA C22.2 n°14

IEC/EN/BS designation	IEC/EN/BS 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										W max	
			125VDC		250VDC		301VDC		400VDC		500VDC		300V or less	
Q600	DC-13	2.5	0.55		0.27		0.1		0.15		0.13		69	69

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 voltage 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/BS 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
			lb.in	13...16	13...16	13...16	13...16	22...27	22...27	22...27
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
			lb.in	7.1...8.8	7.1...8.8	7.1...8.8	7.1...8.8	7.1...8.8	7.1...8.8	7.1...8.8
			Phillips	2	2	2	2	2	2	2
Conductor section connectable with 1 or 2 wires min...max										
	AWG stranded		n°	16...8	16...8	16...8	16...8	14...6	14...6	14...6
	Flexible w/o lug		mm^2	1...6	1...6	1...6	1...6	2.5...16	2.5...16	2.5...16
	Flexible c/w insulated boot-lace ferrule		mm^2	1...4	1...4	1...4	1...4	1...10	1...10	1...10
	Flexible c/w insulated spade lug		mm^2	1...4	1...4	1...4	1...4	1...10	1...10	1...10
Power terminal protection according to IEC/EN/BS 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/BS 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						

Products certified by UL / CSA as Elevator Equipment.

Type	Maximum horsepower ratings Single phase		Three phase			
	120V	240V	200-208V	240V	480V	600V
	[HP]	[HP]	[HP]	[HP]	[HP]	[HP]
BF12❼	½	1½	3	3	7½	7½
BF25❼	1½	3	5	7½	15	15
BF38❼	3	5	10	10	20	20
BF65❽	3	10	15	15	40	50
BF95❽	7.5	15	25	30	60	75
BF115❽	–	–	30	40	75	100
BF150❽	–	–	30	40	75	100

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 1mm^2 conductor section.
❹ IP20 protection on front.
❺ For this other current value, use 16mm^2 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.
❼ Elevator equipment by CSA (file LR54332-23) 500,000 operations.
❽ Elevator equipment by cULus (file E93602) 500,000 operations.

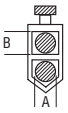
TYPE					BF09	BF12	BF18	BF25	BF26	BF32	BF38
AC CONTROL											
Rated voltage at 50/60Hz, 60Hz				V	12...600						
Operating voltage limits											
50/60Hz coil powered at	50Hz	pick-up		% Us	80...110						
		drop-out		% Us	20...55						
	60Hz	pick-up		% Us	85...110						
		drop-out		% Us	20...55						
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		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		m	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/BS 60947-5-1 UTILIZATION CATEGORIES AND UL508/CSA C22.2 n°14

IEC/EN/BS designation	IEC/EN/BS 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										W max	
			125VDC		250VDC		301VDC		400VDC		500VDC		300V or less	
P600	DC-13	5	1,1		0,55		0,2		0,31		0,27		138	138

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/BS 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 							
			A [mm]	9.5					15		
			B [mm]	11					14.5		
			Screw	M6					M8		
			Metric Allen	4					4		
Tightening torque for power pole terminal min-max			Nm	4...5					6...7		
			lb.in	35.4...44.3					53.1...61.9		
Tightening torque for coil terminals min-max			Nm	0.8...1							
			lb.in	7.1...8.8							
			Phillips	2							
Conductor section connectable with 1 or 2 wires min...max		AWG	N°	14...2					14...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/BS 60529				IP20 front							
AMBIENT CONDITIONS											
Operating temperature			°C	-40...+70❸							
Storage temperature			°C	-60...+80❹							
Maximum altitude			m	3000							
Operating position		Normal		On vertical plane							
		Allowable		± 30°							
Fixing				Screw or on 35mm DIN rail					Screw or on 35mm DIN rail❺		

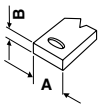
❶ Derating for use at 61-400 Hz. Consult Technical support for information; see contact details on inside front cover.
❷ Current values guarantee an electrical life of about 200,000 cycles.
❸ -40...+70 for BF40...150E.
❹ -50...+80 for BF40...150E.
❺ Din rail height 15mm (TH35-15).

Products certified by UL / CSA as Elevator Equipment.
See table on page 2-72.

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	3600 (1500 for BF40...E...BF150...E...)							

❶ For electronically controlled AC/DC coils 80% of Us min. and 110% of Us max; for 20...48V 85% of Us min when powered in AC; 77% of Us min for 100...250V coils.
❷ Electromagnetic compatibility: BF40...94E contactors with electronic coil 20...48VAC/DC are in compliance with IEC/EN/BS 60947-1 and IEC/EN/BS 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 BF160...BF400 and B500...B1600

TYPE				BF160	BF195	BF230	BF265	BF330	BF400	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	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	250	275	350	450	500	600	700	800	1000	1250	1600
	AC3 (≤440V ≤55°C)		A	160	195	230	265	330	400	520	630	–	–	–
	AC4 (400V)❷		A	75	95	110	125	160	190	240	260	–	–	–
Short-time allowable current for 10s (IEC/EN/BS 60947-1)			A	1280	1560	1840	2120	2640	3200	4050	5040	5600	6500	8300
Maximum fuse size coordination Type 2 - 400V - 50kA		gG	A	315	400	400	630	630	800	800	1000	1000	1250	1600
		aM	A	250	250	315	400	500	500	500	630	–	–	–
Making capacity (RMS value)			A	1600	1950	2300	2650	3300	4000	5000	6300	6300	6300	6300
Breaking capacity at voltage		≤440V	A	1280	1560	1840	2120	2640	3200	5000	6300	6300	6300	6300
		500V	A	1248	1472	1472	1792	2240	2752	4500	5600	5600	5600	5600
		690V	A	1072	1296	1296	1624	2000	2504	4000	5000	5000	5000	5000
		1000V	A	440	528	624	856	960	1064	2700	3400	3400	3400	3400
Consumption and resistance per pole (average values)			mΩ	0.18	0.18	0.18	0.12	0.12	0.12	0.14	0.14	0.14	0.07	0.07
		Ith	W	11	13	21	24.3	30.0	43.2	68.6	90	140	110	180
		AC3	W	4.5	6.7	9.3	8.4	13	19	35	56	–	–	–
Terminals														
			A mm	18	18	18	20	20	20	35	40	60	80	80
			B mm	5	5	5	5	5	5	6	6	6	10	10
			Screw + hex nut	M8	M8	M8	M10	M10	M10	M10	M12	2xM12	2xM12	2xM12
			Key mm	13	13	13	17	17	17	17	19	19	19	19
	Coil terminals		Type	Screw						Faston 1x6.35 o 2x2.8				
Pole tightening torque			Nm	18	18	18	35	35	35	35	55	55	55	55
			lb.in	159	159	159	310	310	310	310	486	486	486	486
Tightening torque for coil terminals min-max			Nm	0.8...1						0.8...1❸				
			lb.in	7.1...8.8						7.1...8.8❸				
			Phillips	2						2❸				
Maximum conductor section														
	1 or 2 bars		mm	25x5	25x5	25x5	30x4	30x5	30x5	50x5	60x5	60x5	100x5	100x5
	N° 1 wire with lug		mm²	185			240			--	--	–	–	–
	N° 2 wire with lug		mm²	185			240			240	240	–	–	–
AMBIENT CONDITIONS														
Operating temperature			°C	-40...+70						-50...+70		-20...+60		
Storage temperature			°C	-50...+80						-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 G371: Adapter to transform coil Faston terminals into screw type.

TYPE			BF160	BF195	BF230	BF265	BF330	BF400	B500	B630	B630 1000	B1250	B1600
AC CONTROL													
Supply voltage			50/60Hz, DC						Either in AC/DC			Only AC	
Rated control voltage		V	20...500						48...480	48...480	48...480	110/240	110/240
Operating voltage limits	pick-up	% Us	80...110❶						80...110	80...110	80...110	80...110	80...110
	drop-out	% Us	≤70% Us min						20...60	20...60	20...60	20...60	20...60
Consumption at ≤20°C	in-rush	VA/W	160...230			160...320			400	400	400	800	800
	holding	VA/W	1.5...3.0			3.5...8.0			18	18	18	45	45
Dissipation at ≤20°C		W	1.5...3.0			3.5...8.0			18	18	18	40	40
OPERATING TIMES													
Making		ms	50...100			80...120	80...120	80...120	110...180	110...180	110...180	120...210	300...450
Breaking		ms	30...75			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	5	5	5	5	5	5	5	5
Electrical (million) (Ie at 400V in AC3)		cycles	1	1	1	0.9	0.7	0.6	0.7	0.7	–	–	–
MAXIMUM OPERATING RATE													
Mechanical operations		cy/h	1,000						1,200				
PARTICULAR CHARACTERISTICS													
Indicator			For contactor open or closed status										

❶ 80% of Us min and 110% of Us max.

CONTROL CIRCUIT UTILISATION
The input electronic circuit of the contactor coil B500-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 B500-B630 type, can have mechanical latch included or can be predisposed, to be completed with mechanical latch, see pages 2-6 and 2-8 (3-pole version) or 2-10 and 2-12 (4-pole version).
Technical data of mechanical latch G495 type is stated on page 2-32.

MECHANICAL INTERLOCK BETWEEN CONTACTORS ONE ON TOP OF THE OTHER B500...B1600... (Fig. 1, 2 and 3)
It is G356... type, which is provided in three 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	B500-B630
KM2	B500 B630
G3566	470...500

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

KM1	B500-B630
KM2	B500 B630
G3564	345...385
G3565	390...425
G3566	470...500

To interlock two contactors B6301000, use type G3566 only.
To interlock two contactors B1250 or B1600, it is imperative to use two pieces of type G3566 (fig. 3), one fixed on the left side and the other on the right.

Interaxis B is 470-500mm for B6301000, B1250 or B1600.
The B1250 or B1600 cannot be interlocked with the other types of the B series.

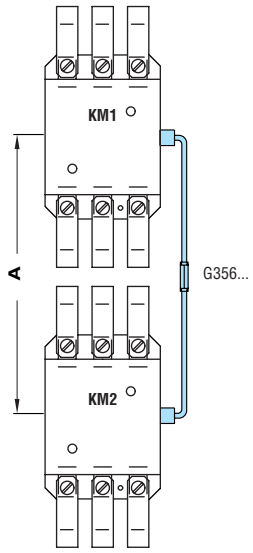


Fig. 1

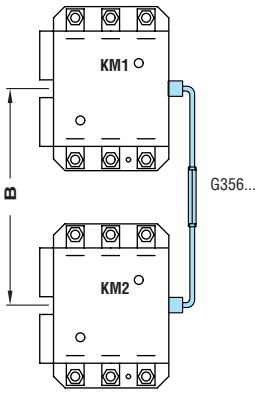


Fig. 2

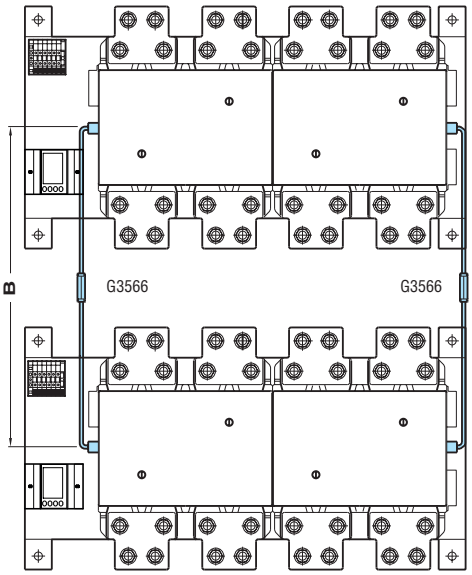
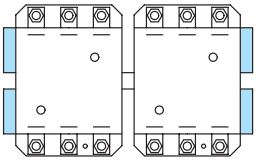


Fig. 3

Horizontal and vertical interlock between contactors B500...B630.
For contactor B6301000 (three-pole), contact our Technical support office.

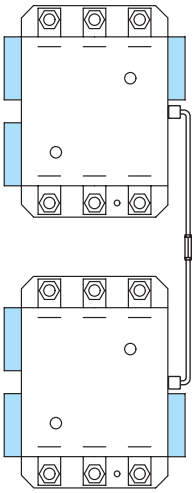
Admissible mounting positions for 11G350 and 11G354 auxiliary contacts on contactors equipped with mechanical interlock:

– horizontal G355



B500-B630

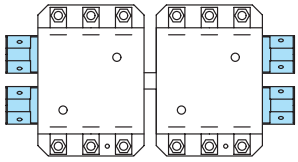
– vertical G356/...



B500-B6301000

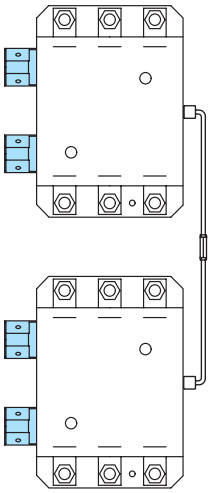
Admissible mounting positions for 11G358 adapter on contactors equipped with mechanical interlock:

– horizontal G355



B500-B630

– vertical G356/...



B500-B6301000