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Motor Control and Motors

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Motor Control & Motors

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Mini contactors AC & DC control



BG0901A



BG09T4D



BG001020



BGX1040



G324



BGX5000



RF12...

type	rated current (AC1)	(AC3)	kW rating (AC3) 400V	control	description	auxiliary contacts	price
Three-pole mini contactors			(Ui 690V)				
BG0610A...	16A	6A	2.2 kW	AC	3-pole mini contactor	1NO	390.00
BG0910A...	20A	9A	4.0 kW	AC	3-pole mini contactor	1NO	460.00
BG0901A...	20A	9A	4.0 kW	AC	3-pole mini contactor	1NC	460.00
BG1210A...	20A	12A	5.7 kW	AC	3-pole mini contactor	1NO	525.00
BG1201A...	20A	12A	5.7 kW	AC	3-pole mini contactor	1NC	525.00
BG0910D...	20A	9A	4.0 kW	DC	3-pole mini contactor	1NO	615.00
BG0901D...	20A	9A	4.0 kW	DC	3-pole mini contactor	1NC	615.00

Four-pole mini contactors			(Ui 690V)					
type	rated current (AC1) (AC3)		kW (AC1) 230V 400V		control	description	main contacts	price
BG09T4A...	20A	9A	8	14	AC	4-pole mini contactor	4NO	578.00
BG09T2A...	20A	9A	8	14	AC	4-pole mini contactor	2NO + 2NC	586.00
BGP09T4A...	20A	9A	8	14	AC	PCB mount contactor	4NO	1 130.00
BG09T4D...	20A	9A	8	14	DC	4-pole mini contactor	4NO	1 390.00
BG09T2D...	20A	9A	8	14	DC	4-pole mini contactor	2NO + 2NC	1 460.00

Standard coil voltages (add to part number):

AC - 024/048/110/230/400

DC - 012/024/048/060/110/220

Control relays / AC control circuit

Control relays are used where additional contacts are required to switch low-level current loads such as pilot lights, motor starters, or other relays.

BG0040A...	10A	—	—	—	AC	mini control relay	4NO	538.00
BG0031A...	10A	—	—	—	AC	mini control relay	3NO + 1NC	538.00
BG0022A...	10A	—	—	—	AC	mini control relay	2NO + 2NC	538.00

Standard coil voltages (add to part number):

AC - 024/048/110/230/400

Auxiliary contact blocks for above mini contactors 10A lth / Ui 690V

BGX1020	10A	clip-on auxiliary contact	—	for BG contactors	2NO	320.00
BGX1011	10A	clip-on auxiliary contact	—	for BG contactors	1NO + 1NC	320.00
BGX1002	10A	clip-on auxiliary contact	—	for BG contactors	2NC	320.00
BGX1040	10A	clip-on auxiliary contact	—	for BG contactors	4NO	558.00
BGX1022	10A	clip-on auxiliary contact	—	for BG contactors	2NO + 2NC	558.00
BGX1004	10A	clip-on auxiliary contact	—	for BG contactors	4NC	558.00

Accessories for above mini contactors

BGX8000	modular shroud to raise the front degree of protection to IP40					70.00
BGX5000	mechanical interlock for BG contactors					276.00
G324	paralleling links (2-pole) for BG contactors					167.00
G326	paralleling links (4-pole) for BG contactors					180.00

Thermal overload relays for above mini BG contactors

RF12 series - Mini thermal overload relays

General features:

- Compensated, differential single-phase protection
- Incorporating test button facility and mechanical trip indication
- Adjustable range: 0.10 - 12.50A
- Selectable automatic or manual reset
- NO + NC auxiliary contacts
- Phase failure sensitive

type	kW rating AC3 (400V)	description	adjustable range	for contactors	price
RF120016	—	thermal overload relay	0.10 - 0.16A	BG6/9/12	734.00
RF120025	—	thermal overload relay	0.16 - 0.25A	BG6/9/12	734.00
RF120040	0.06 kW	thermal overload relay	0.25 - 0.40A	BG6/9/12	734.00
RF120063	0.12 kW	thermal overload relay	0.45 - 0.63A	BG6/9/12	734.00
RF120080	0.18 kW	thermal overload relay	0.55 - 0.80A	BG6/9/12	734.00
RF120100	0.25 - 0.37 kW	thermal overload relay	0.75 - 1.00A	BG6/9/12	734.00
RF120160	0.55 kW	thermal overload relay	1.10 - 1.60A	BG6/9/12	734.00
RF120250	0.75 kW	thermal overload relay	1.80 - 2.50A	BG6/9/12	734.00
RF120400	1.10 - 1.50 kW	thermal overload relay	2.90 - 4.00A	BG6/9/12	734.00
RF120630	2.2 kW	thermal overload relay	4.50 - 6.30A	BG6/9/12	734.00
RF121000	4.0 kW	thermal overload relay	7.20 - 10.00A	BG6/9/12	734.00
RF121250	5.5 kW	thermal overload relay	9.00 - 12.50A	BG6/9/12	734.00

Contactors AC & AC/DC control



BF0910A



BF2600A



BF5000A



BF23000E...

New

AC
DC



BF26500E



BF265T4E

BF series - Contactors

- Distinct contact status indication
- Quick connect - snap-on accessory mounting
- Mechanical interlock without overall dimensions increasing
- Rigid connection kits for fast wiring without mistakes (see *contactors accessories*)
- AC/DC coil with electronic control - Wide operating range

type	rated current (AC1) (AC3)		kW rating (AC3) 400V	control	description	auxiliary contacts	price
Three-pole contactors (Ui 690V) / AC control circuit							
BF0910A...	25A	9A	4.2 kW	AC	3-pole contactor	1NO	580.00
BF0901A...	25A	9A	4.2 kW	AC	3-pole contactor	1NC	580.00
BF1210A...	28A	12A	5.7 kW	AC	3-pole contactor	1NO	690.00
BF1201A...	28A	12A	5.7 kW	AC	3-pole contactor	1NC	690.00
BF1810A...	32A	18A	7.5 kW	AC	3-pole contactor	1NO	930.00
BF1801A...	32A	18A	7.5 kW	AC	3-pole contactor	1NC	930.00
BF2510A...	32A	25A	12.5 kW	AC	3-pole contactor	1NO	1 300.00
BF2501A...	32A	25A	12.5 kW	AC	3-pole contactor	1NC	1 300.00
BF2600A...	45A	26A	13.0 kW	AC	3-pole contactor	—	1 400.00
BF3200A...	56A	32A	16.0 kW	AC	3-pole contactor	—	1 990.00
BF3800A...	56A	38A	18.5 kW	AC	3-pole contactor	—	2 350.00

Three-pole contactors (Ui 1000V) / AC and AC/DC control circuit

BF4000A...	70A	40A	18.5 kW	AC	3-pole contactor	—	2 900.00
BF5000A...	90A	50A	22 kW	AC	3-pole contactor	—	3 040.00
BF6500A...	100A	65A	30 kW	AC	3-pole contactor	—	3 980.00
BF8000A...	115A	80A	45 kW	AC	3-pole contactor	—	4 580.00
BF9400A...	115A	95A	55 kW	AC	3-pole contactor	—	5 540.00
BF9500A...	140A	95A	55 kW	AC	3-pole contactor	—	5 800.00
BF11500A...	160A	115A	55 kW	AC	3-pole contactor	—	6 730.00
BF15000A...	165A	150A	75 kW	AC	3-pole contactor	—	7 590.00
BF16000E...	250A	160A	75 kW	AC/DC	3-pole contactor	—	9 710.00
BF19500E...	275A	195A	90 kW	AC/DC	3-pole contactor	—	10 700.00
BF23000E...	350A	230A	110 kW	AC/DC	3-pole contactor	—	13 600.00
BF26500E...	450A	265A	132 kW	AC/DC	3-pole contactor	—	18 000.00
BF33000E...	500A	330A	160 kW	AC/DC	3-pole contactor	—	21 200.00
BF40000E...	600A	400A	200 kW	AC/DC	3-pole contactor	—	27 300.00
B50000...	700A	520A	290 kW	AC/DC	3-pole contactor	—	41 900.00
B63000...	800A	630A	335 kW	AC/DC	3-pole contactor	—	51 600.00
B125024...	1250A	—	(AC1) 830 kW	AC/DC	3-pole contactor	—	153 000.00
B160024...	1600A	—	(AC1) 950 kW	AC/DC	3-pole contactor	—	160 000.00

Four-pole contactors / AC control circuit

type	rated current		kW (AC1)		control	description		price
	(AC1)	(AC3)	230V	400V				
BF09T4A...	25A	9A	9.5	16	AC	4-pole contactor	—	1 200.00
BF12T4A...	28A	12A	10	18	AC	4-pole contactor	—	1 550.00
BF18T4A...	32A	18A	12	21	AC	4-pole contactor	—	1 880.00
BF26T4A...	45A	26A	17	30	AC	4-pole contactor	—	2 660.00
BF38T4A...	56A	38A	21	36	AC	4-pole contactor	—	5 520.00

Attachable 4th pole - for above 3-pole contactors **BF26...150**

BFX42	56A	—	attachable 4th pole for 3-pole contactors			BF26...38A	1 390.00
BFX43	115A	—	attachable 4th pole for 3-pole contactors			BF40...94A/E	2 420.00
BFX44	165A	—	attachable 4th pole for 3-pole contactors			BF95...150A/E	2 930.00

Four-pole contactors (Ui 1000V) / AC/DC control circuit

BF160T4E...	250A	160A	95	165	AC/DC	4-pole contactor	—	18 600.00
BF195T4E...	275A	175A	104	181	AC/DC	4-pole contactor	—	20 500.00
BF230T4E...	350A	230A	132	230	AC/DC	4-pole contactor	—	26 200.00
BF265T4E...	450A	265A	170	296	AC/DC	4-pole contactor	—	31 700.00
BF330T4E...	500A	330A	189	329	AC/DC	4-pole contactor	—	37 100.00
BF400T4E...	600A	400A	227	395	AC/DC	4-pole contactor	—	45 100.00
B500400...	700A	520A	252	438	AC/DC	4-pole contactor	—	65 400.00
B630400...	800A	630A	288	500	AC/DC	4-pole contactor	—	110 000.00

"A" standard coil voltages: AC - 024/048/110/230/400 (others available on request)

"E" standard voltage coils: **BF160...400E** AC/DC - 024 (24-60V)/110 (60-130V)/230 (100-250V)/400 (250-500V)
B500...630 AC/DC - 110/220/400 **B125024...160024** AC/DC - 110/220

Contactors DC & AC/DC control

	type	rated current (AC1) (AC3)		kW rating (AC3) 400V	control	description	auxiliary contacts	price
 BF0910D	Three-pole contactors (Ui 690V) - DC control circuit							
	Permanent magnet types (Ui 690V) - DC control circuit (<i>low consumption coil 5.4 watts</i>)							
	BF0910D...	25A	9A	4.2 kW	DC	3-pole contactor	1NO	980.00
	BF1210D...	28A	12A	5.7 kW	DC	3-pole contactor	1NO	1 130.00
	BF1810D...	32A	18A	7.5 kW	DC	3-pole contactor	1NO	1 480.00
	BF2510D...	32A	25A	12.5 kW	DC	3-pole contactor	1NO	2 080.00
	BF2600D...	45A	26A	13.0 kW	DC	3-pole contactor	—	3 080.00
	BF3200D...	56A	32A	16.0 kW	DC	3-pole contactor	—	3 180.00
	BF3800D...	56A	38A	18.5 kW	DC	3-pole contactor	—	3 870.00
	 BF1810L...	Extra-low consumption coil 2.4 watt (<i>ideal for direct PLC interfacing</i>)						
BF0910L...		25A	9A	4.2 kW	DC	3-pole contactor	1NO	1 230.00
BF1210L...		28A	12A	5.7 kW	DC	3-pole contactor	1NO	1 360.00
BF1810L...		32A	18A	7.5 kW	DC	3-pole contactor	1NO	1 710.00
BF2510L...		32A	25A	12.5 kW	DC	3-pole contactor	1NO	2 390.00
BF3200L...		56A	32A	16.0 kW	DC	3-pole contactor	—	3 500.00
BF3800L...		56A	38A	18.5 kW	DC	3-pole contactor	—	4 200.00
AC/DC electronically controlled coil								
The contactor coil is controlled electronically it can therefore be used either as AC or DC supply. These contactors have an electronically controlled AC/DC coil for greatly reduced consumption and a wide nominal voltage range (e.g. just one coil for 100...250V AC/DC). Coils have 4 power terminals permitting cables to be terminated to the coil from top or bottom of the contactor.								
• Wide operating range • No chattering in the event of irregular voltage • Low consumption during in-rush and in service • Built-in surge suppression								
 BF9400E	BF4000E...	70A	40A	18.5 kW	AC/DC	3-pole contactor	—	3 610.00
	BF5000E...	90A	50A	22 kW	AC/DC	3-pole contactor	—	3 830.00
	BF6500E...	100A	65A	30 kW	AC/DC	3-pole contactor	—	4 890.00
	BF8000E...	115A	80A	45 kW	AC/DC	3-pole contactor	—	5 670.00
	BF9400E...	115A	95A	55 kW	AC/DC	3-pole contactor	—	6 460.00
	BF9500E...	140A	95A	55 kW	AC/DC	3-pole contactor	—	7 170.00
	BF11500E...	160A	115A	55 kW	AC/DC	3-pole contactor	—	8 200.00
	BF15000E...	165A	150A	75 kW	AC/DC	3-pole contactor	—	9 040.00
	BF16000E...	250A	160A	75 kW	AC/DC	3-pole contactor	—	9 710.00
	BF19500E...	275A	195A	90 kW	AC/DC	3-pole contactor	—	10 700.00
 BF23000E...	BF23000E...	350A	230A	110 kW	AC/DC	3-pole contactor	—	13 600.00
	BF26500E...	450A	265A	132 kW	AC/DC	3-pole contactor	—	18 000.00
	BF33000E...	500A	330A	160 kW	AC/DC	3-pole contactor	—	21 200.00
	BF40000E...	600A	400A	200 kW	AC/DC	3-pole contactor	—	27 300.00
	Larger sizes available - see page A-2 AC/DC contactors							
	Attachable 4th pole - for above 3-pole contactors BF26...150							
	BFXD42	56A			attachable 4th pole for 3-pole contactors	BF26...38D/L		1 390.00
	BFX43	115A			attachable 4th pole for 3-pole contactors	BF40...94A/E		2 420.00
	BFX44	165A			attachable 4th pole for 3-pole contactors	BF95...150A/E		2 930.00
	Four-pole contactors (Ui 690V) - DC control circuit							
	type	rated current (AC1) (AC3)		kW (AC1) 230V 400V	control	description		price
	Permanent magnet types (Ui 690V) - DC control circuit							
	BF09T4D...	25A	9A	9.5 16	DC	4-pole contactor	—	2 540.00
	BF18T4D...	32A	18A	12 21	DC	4-pole contactor	—	3 450.00
	Four-pole contactors (Ui 1000V) / AC/DC control circuit							
	BF265T4E...	450A	265A	170 296	AC/DC	4-pole contactor	—	31 700.00
	BF330T4E...	500A	330A	189 329	AC/DC	4-pole contactor	—	37 100.00
	BF400T4E...	600A	400A	227 395	AC/DC	4-pole contactor	—	45 100.00
 BF15000E + BFX44	Larger sizes available - see page A-2 AC/DC contactors							
	"D" standard coil voltages: DC - 012/024/048/060/110/220							
	"L" standard coil voltages: DC - 024/048							
	"E" standard voltage coils: BF40...150E AC/DC - 024 (24-60V)/ 110 (60-130V)/ 230 (100-250V)							
	BF160...400E AC/DC - 024 (24-60V)/ 110 (60-130V)/ 230 (100-250V)/ 400 (250-500V)							

Special configuration contactors AC & DC control



BF00...



BFK1810A...



BFK11500A...



DCTLA...



type	rated current (AC1) (AC3)		kW rating 230V 400V		control	description	main contacts	price	
Special configuration contactors / AC control circuit - 024/048/110/230/400V									
BF09T2A...	25A	9A	9.5	16	AC	4-pole contactor	2NO+2NC	1 740.00	
BF18T2A...	32A	18A	12	21	AC	4-pole contactor	2NO+2NC	2 130.00	
BF26T2A...	45A	26A	17	30	AC	4-pole contactor	2NO+2NC	3 610.00	
BF38T2A...	56A	38A	21	36	AC	4-pole contactor	2NO+2NC	6 670.00	
BF18T0A...	32A	18A	12	21	AC	4-pole contactor	4NC	2 130.00	
Special configuration contactors / DC control circuit									
BF18T2D...	32A	18A	12	21	DC	4-pole contactor	2NO+2NC	3 540.00	
BF26T2D...	45A	26A	17	30	DC	4-pole contactor	2NO+2NC	5 070.00	
BF38T2D...	56A	38A	21	36	DC	4-pole contactor	2NO+2NC	8 600.00	
BF80T2E...	115A	80A	43	76	AC/DC	4-pole contactor	2NO+2NC	17 100.00	
BF18T0D...	32A	18A	12	21	DC	4-pole contactor	4NC	3 540.00	
BF26T0D...	45A	26A	17	30	DC	4-pole contactor	4NC	4 650.00	
Control relays / AC control circuit - 024/048/110/230/400V									
BF0040A...	10A	—	—	—	AC	control relay	4NO	747.00	
BF0031A...	10A	—	—	—	AC	control relay	3NO+1NC	747.00	
BF0022A...	10A	—	—	—	AC	control relay	2NO+2NC	747.00	
BF0004A...	10A	—	—	—	AC	control relay	4NC	747.00	
Control relays / DC control circuit (extra-low consumption coil 2.4 watt)									
BF0040L...	10A	—	—	—	DC	control relay	4NO	2 160.00	
BF0031L...	10A	—	—	—	DC	control relay	3NO+1NC	2 160.00	
BF0022L...	10A	—	—	—	DC	control relay	2NO+2NC	2 160.00	
BF0004L...	10A	—	—	—	DC	control relay	4NC	2 160.00	
Capacitor switching contactors AC control circuit - 230/400V									
Contactors for PFC with AC control circuits equipped with early-make limiting resistors limiting in-rush currents initially before making contact. Resistors are disconnected from the circuit when contactor closing operation is complete.									
type	kvar 400V	kvar 440V	rated current	control	description	auxiliary contacts		price	
BFK1210A...	12.5	14	18A	AC	capacitor switching contactor	1NO		1 410.00	
BFK1810A...	15	17	23A	AC	capacitor switching contactor	1NO		1 600.00	
BFK2600A...	20	22	30A	AC	capacitor switching contactor	—		2 590.00	
BFK3200A...	25	27.5	36A	AC	capacitor switching contactor	—		3 020.00	
BFK3800A...	30	33	43A	AC	capacitor switching contactor	—		3 300.00	
BFK5000A...	40	41	58A	AC	capacitor switching contactor	—		4 740.00	
BFK8000A...	50	56	75A	AC	capacitor switching contactor	—		5 250.00	
BFK11500A...	75	85	115A	AC	capacitor switching contactor	—		9 780.00	
BFK15000A...	100	115	144A	AC	capacitor switching contactor	—		11 600.00	
Kit to assemble BFK contactors from standard BF contactors							for contactor		
G460	kit to assemble standard contactors for capacitor switching					BF09...38A		844.00	
BFX10K3	kit to assemble standard contactors for capacitor switching					BF50...94A		1 520.00	
BFX10K4	kit to assemble standard contactors for capacitor switching					BF95...150A		1 890.00	
Thyristor switching modules Suitable for dynamic (fast) PFC									
DCTL series thyristor modules are ideal for dynamic power factor correction. Zero cross switching guarantees very short switching times, reducing current peaks generated by capacitor insertion without voltage peaks on disconnection. Integrated current transformers permit complete monitoring and protection of capacitor banks.									
- Prevents high in-rush currents at capacitor switching - Operational voltage: 400...480 VAC (690V available on request)									
Advanced communication functions:									
- NFC connectivity for programming via smart devices - Optical port for frontal connection to a PC via USB or WiFi via CX01 or CX02 - Optional RS-485 card (EXC1042) for connection to DCRG8F controller									
type	kvar 400V	kvar 480V	rated current	description		dimensions (mm) (H) (W) (D)			price
DCTLA4800180	15	18	22A	thyristor switching module		218	75	172	18 800.00
DCTLA4800360	30	36	43A	thyristor switching module		218	75	172	19 600.00
DCTLA4800600	50	60	72A	thyristor switching module		226	95	182	27 200.00
DCTLA4801200	100	120	144A	thyristor switching module		301	212	216	40 800.00

Contactor accessories

General accessories for contactors

- Snap-on installation: Quick and easy installation to fit and remove an auxiliary contact without a tool
- Rigid connection kits: Available in reversing, changeover or line-star-delta connecting kits
- Mechanical interlock: Side, top, horizontal and vertical options are available, see contactor accessories
- Attachable 4th pole: Side mount attachable 4th pole can be snapped on a 3-pole contactor
- Pneumatic delay blocks: On-delay, delay-on de-energisation
- Spare voltage coils: Spare coils compatible with all contactors, see contactor accessories

type	mounting	description	terminal	contacts	price
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Clip-on auxiliary contact blocks

For contactors BF09...150 - 10A lth / Ui 690V

BFX1020	top (centre)	auxiliary contact block	screw	2NO	292.00
BFX1011	top (centre)	auxiliary contact block	screw	1NO + 1NC	235.00
BFX1002	top (centre)	auxiliary contact block	screw	2NC	292.00
BFX1040	top (centre)	auxiliary contact block	screw	4NO	469.00
BFX1031	top (centre)	auxiliary contact block	screw	3NO + 1NC	582.00
BFX1022	top (centre)	auxiliary contact block	screw	2NO + 2NC	550.00
BFX1004	top (centre)	auxiliary contact block	screw	4NC	582.00
BFX1220	side	auxiliary contact block	screw	2NO	457.00
BFX1211	side	auxiliary contact block	screw	1NO + 1NC	368.00
BFX1202	side	auxiliary contact block	screw	2NC	457.00
G48430	top (centre)	auxiliary contact block	screw	3NO	536.00
G48421	top (centre)	auxiliary contact block	screw	2NO + 1NC	431.00
G48412	top (centre)	auxiliary contact block	screw	1NO + 2NC	536.00
G48403	top (centre)	auxiliary contact block	screw	3NC	536.00
G41810	top (side)	auxiliary contact block	screw	1NO	205.00
G41810A	top (side)	auxiliary (early make)	screw	1NO	254.00
G41801	top (side)	auxiliary contact block	screw	1NC	254.00
G41801D	top (side)	auxiliary (late break)	screw	1NC	254.00
G48120	top (side)	auxiliary contact block	push-on	2NO	318.00
G48111	top (side)	auxiliary contact block	push-on	1NO + 1NC	318.00
G48102	top (side)	auxiliary contact block	push-on	2NO	318.00
G218	top (side)	auxiliary contact block	push-on	1NO (or) 1NC	222.00

For contactors BF160...400 - 10A lth / Ui 690V

BFX10C10	top	auxiliary contact block	screw	1NO	275.00
BFX10C01	top	auxiliary contact block	screw	1NC	275.00
BFX12C02	side	auxiliary contact block	screw	2NC	592.00
BFX12C11	side	auxiliary contact block	screw	1NO + 1NC	592.00
BFX12C20	side	auxiliary contact block	screw	2NO	592.00

For contactors B500...630 - 16A lth / Ui 690V

G354	side	auxiliary contact	push-on	1NO + 1NC	860.00
G350	side	auxiliary contact	push-on	2NO + 1NC	1 060.00
G370	adaptor	adaptor for push-on to screw terminal for		G350/354	90.00

Accessories for above auxiliary contact blocks

G280	side	side mount adaptor for auxiliary		G218	89.00
G419	side	side mount adaptor for auxiliary		G418	101.00
G483	side	side mount adaptor for auxiliary		G481	112.00
G358	adaptor	to fit BFX10/G484...7 auxiliaries to		B500...B630	579.00

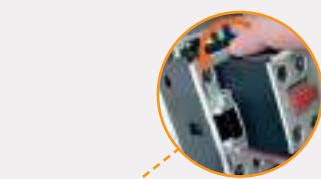
Pneumatic delay blocks BF09...150

G4856	on-delay pneumatic timer contact block	6sec	1NO + 1NC	2 090.00
G48560	on-delay pneumatic timer contact block	60sec	1NO + 1NC	2 260.00
G485120	on-delay pneumatic timer contact block	120sec	1NO + 1NC	2 830.00
G4866	delay-on de-energisation timer contact block	6sec	1NO + 1NC	2 050.00
G48660	delay-on de-energisation timer contact block	60sec	1NO + 1NC	2 210.00
G486120	delay-on de-energisation timer contact block	120sec	1NO + 1NC	2 770.00
G487	delay-on de-energisation timer contact block	70msec	1NO + 1NC	1 310.00

Attachable 4th pole for contactors BF26...150A/E (fully rated)

- Add following attachable 4th pole to above 3-pole contactors to make up a 4-pole contactor

BFX42	56A	attachable 4th pole for contactors	BF26...38A	1 390.00
BFXD42	56A	attachable 4th pole for contactors	BF26...38D/L	1 390.00
BFX43	115A	attachable 4th pole for contactors	BF40...94A/E	2 420.00
BFX44	165A	attachable 4th pole for contactors	BF95...150A/E	2 930.00



Snap-on installation



BFX1011



BFX1040



G48421



BFX12...



G481...



G280



BFX10C01

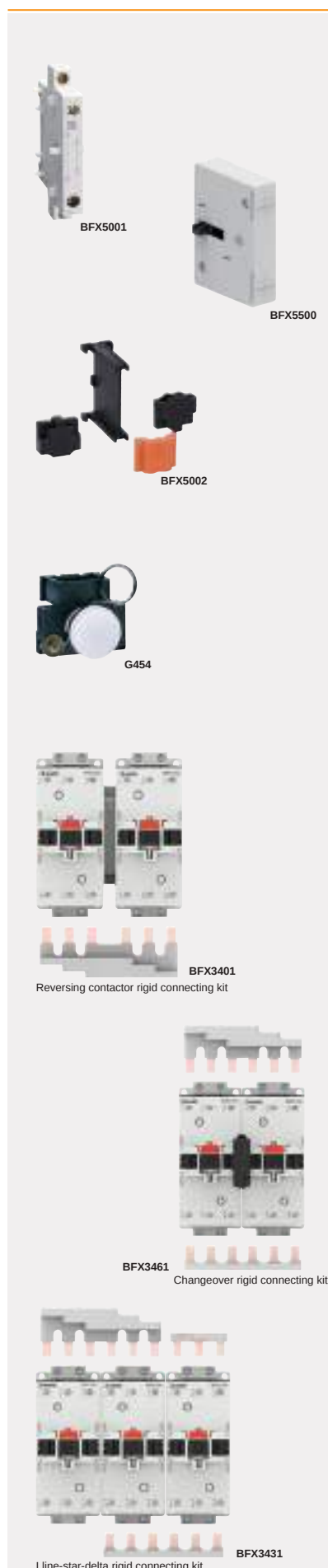


G485...



BFX42

Contactor accessories



General accessories for contactors

type	mounting	description	for contactor	price
Mechanical interlocks between two contactors				
BFX5000	side	side mount mechanical interlock	BF09...38	481.00
BFX5001	side	mechanical interlock with 2NC contacts	BF09...38	482.00
BFX5002	top (side)	economy (low profile) mech. interlock	BF09...38	195.00
BFX5003	top (side)	top mount mechanical interlock	BF09...38	601.00
BFX5300	side	side mount mechanical interlock	BF40...94A/E	496.00
BFX5301	side	mechanical interlock with 2NC contacts	BF40...94A/E	741.00
BFX5303	top (side)	top mount mechanical interlock	BF40...94A/E	601.00
BFX5400	side	side mount mechanical interlock	BF95...150A/E	495.00
BFX5401	side	mechanical interlock with 2NC contacts	BF95...150A/E	741.00
BFX5403	top (side)	top mount mechanical interlock	BF95...150A/E	601.00
BFX5500	horizontal	side mount mechanical interlock	BF160...400	669.00
BFX5503	vertical	vertical mech. interlock (interaxis 305 - 345 mm)	BF160...400	1 640.00
G355	horizontal	side mount mechanical interlock	B500...630	545.00
G3564	vertical	vertical mech. interlock (interaxis 345 - 385 mm)	B500...630	1 770.00
G3565	vertical	vertical mech. interlock (interaxis 390 - 425 mm)	B500...630	1 810.00

Mechanical latch blocks (electric or hand reset)

G222...	mechanical latch mechanism (electrical/hand reset)	BF09...38	1 770.00
G272...	mechanical latch mechanism (electrical/hand reset)	BF40...94	1 770.00
BFX641...	mechanical latch mechanism (electrical/hand reset)	BF95...150	1 770.00
G454	mechanical latch mechanism (hand set/reset)	BF09...38	811.00
G455	mechanical latch mechanism (hand set/reset)	BF40...94	811.00
BFX642	mechanical latch mechanism (hand set/reset)	BF95...150	811.00

Standard coil voltages (add to part number): **AC** - 024/048/110/220/380

DC - 012/024/048/110/220

Connection accessories for large frame contactors BF160...400

BFX805	phase barrier	for large frame contactors (4-piece set)	BF160...230	629.00
BFX806	phase barrier	for large frame contactors (4-piece set)	BF265...400	692.00

Captive nut support - to support the connection nut (for ease of installation)

BFX8508	captive nut support	for large frame contactors (8-piece set)	BF160...230	1 120.00
BFX8608	captive nut support	for large frame contactors (8-piece set)	BF265...400	1 490.00
BFX3592	2-pole paralleling link	for large frame contactors	BF160...230	696.00
BFX3692	2-pole paralleling link	for large frame contactors	BF265...400	836.00
BFX3593	3-pole paralleling link	for large frame contactors	BF160...230	723.00
BFX3693	3-pole paralleling link	for large frame contactors	BF265...400	877.00

Accessories for contactors BF09...400

(with interlock)

type	description	mech. interlock	for contactor	price
BFX3101	reversing contactor rigid connecting kit	BFX5002/5003	BF09...25	397.00
BFX3102	reversing contactor rigid connecting kit	BFX5000/5001	BF09...25	397.00
BFX3201	reversing contactor rigid connecting kit	BFX50	BF26...38	435.00
BFX3301	reversing contactor rigid connecting kit	BFX5303	BF40...94	512.00
BFX3401	reversing contactor rigid connecting kit	BFX5403	BF95...150	841.00
BFX3501	reversing contactor rigid connecting kit	BFX5500	BF160...230	4 280.00
BFX3601	reversing contactor rigid connecting kit	BFX5500	BF265...400	6 600.00
BFX3361	changeover rigid connecting kit (3-pole)	BFX5300/5301	BF40...94	295.00
BFX3461	changeover rigid connecting kit (3-pole)	BFX5400/5401	BF95...150	463.00
BFX3561	changeover rigid connecting kit (3-pole)	BFX5500	BF160...230	2 390.00
BFX3661	changeover rigid connecting kit (3-pole)	BFX5500	BF265...400	3 960.00
BFX3371	changeover rigid connecting kit (4-pole)	BFX5300/5301	BF40...94	420.00
BFX3471	changeover rigid connecting kit (4-pole)	BFX5400/5401	BF95...150	619.00
BFX3571	changeover rigid connecting kit (4-pole)	BFX5500	BF160...230	3 870.00
BFX3671	changeover rigid connecting kit (4-pole)	BFX5500	BF265...400	5 350.00
BFX3131	line-star-delta rigid connecting kit	—	BF09...25	453.00
BFX3231	line-star-delta rigid connecting kit	—	BF26...38	598.00
BFX3232	line-star-delta rigid connecting kit	(L / Δ) BF26...38	(Y) BF09...25	598.00
BFX3331	line-star-delta rigid connecting kit	—	BF40...94	666.00
BFX3432	line-star-delta rigid connecting kit	(L / Δ) BF95...150	(Y) BF40...94	961.00
BFX3431	line-star-delta rigid connecting kit	—	BF95...150	961.00
BFX3531	line-star-delta rigid connecting kit	—	BF160...230	3 960.00
BFX3631	line-star-delta rigid connecting kit	—	BF265...400	7 590.00

Contactor accessories

General accessories for contactors

type	description		for contactor	price
Accessories for contactors BF09...400 / B500...630				
BFX80	sealing cover		for contactors BF09...38	73.00
BFX8901	universal screw mounting base		for contactors BF09...38	74.00
BFX8902	screw fixing brackets (2 pcs)		for contactors BF09...38	55.00
BFX835	3-pole terminal cover	for contactors	BF160...230	616.00
BFX836	3-pole terminal cover	for contactors	BF265...400	678.00
BFX845	4-pole terminal cover	for contactors	BF160...230	822.00
BFX846	4-pole terminal cover	for contactors	BF265...400	903.00
BA135	2-pole paralleling links	for contactors	BF09...25	66.00
BA235	2-pole paralleling links	for contactors	BF26...38	82.00
BFX3592	2-pole paralleling links	for contactors	BF160...230	696.00
BFX3692	2-pole paralleling links	for contactors	BF265...400	836.00
BA435	3-pole paralleling links	for contactors	BF95...150	448.00
BFX3593	3-pole paralleling links	for contactors	BF160...230	723.00
BFX3693	3-pole paralleling links	for contactors	BF265...400	877.00
BA1846	3-pole star connecting bar	for contactors	B500...630	804.00
BFX3583	3-pole spreader links	for contactors	BF160...230	2 170.00
BFX3683	3-pole spreader links	for contactors	BF265...400	2 560.00
BFX3584	4-pole spreader links	for contactors	BF160...230	2 730.00
BFX3684	4-pole spreader links	for contactors	BF265...400	3 330.00
G371	adaptor for push-on to screw terminal (coil)		B500...630	300.00
G231	1-pole enlarged terminal (1 x 6 mm²)	for contactors	BF09...25	163.00
G232	1-pole enlarged terminal (1 x 16 mm²)	for contactors	BF26...38	191.00
BFX30	blank label for self-labelling (orange)	for contactors	BF09...150	30.50

Surge suppressors for contactors BF09...150 (quick connect)

BFX77048	≤ 48 VAC/DC	varistor	for contactors	BF09...150A	313.00
BFX77125	48-125 VAC/DC	varistor	for contactors	BF09...150A	313.00
BFX77240	125-240 VAC/DC	varistor	for contactors	BF09...150A	313.00
BFX79415	240-415 VAC	resistor-capacitor	for contactors	BF09...150A	385.00

Spare coils for all contactors

BFX91A...	AC	spare coil only	for contactors	BF09...25A	486.00
BFX92A...	AC	spare coil only	for contactors	BF26...38A	591.00
BFX93A...	AC	spare coil only	for contactors	BF40...94A	1 060.00
BFX94A...	AC	spare coil only	for contactors	BF95...150A	1 740.00

Standard coil voltages: AC - 024/048/110/230/400

BFX93E...	AC/DC	spare coil only	for contactors	BF40...94E	2 800.00
BFX94E...	AC/DC	spare coil only	for contactors	BF95...150E	4 250.00
BFX95E...	AC/DC	spare coil only	for contactors	BF160...230E	5 250.00
BFX96E...	AC/DC	spare coil only	for contactors	BF265...400E	8 770.00
BA1796...	AC/DC	spare coil only	for contactors	B500...B630	17 100.00

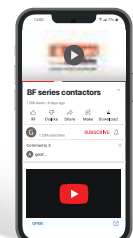
Standard coil voltages: AC/DC - 024 (24-60V), 110 (60-130V), 230 (100-250V), 400 (250-500V)

Spare contact sets (fixed and moving) per three-pole set

BFX99040T	3-pole	main contact set (fixed and moving)	BF40	2 370.00
BFX99050T	3-pole	main contact set (fixed and moving)	BF50	2 800.00
BFX99065T	3-pole	main contact set (fixed and moving)	BF65	3 580.00
BFX99080T	3-pole	main contact set (fixed and moving)	BF80	4 390.00
BFX99095T	3-pole	main contact set (fixed and moving)	BF95	5 590.00
BFX99115T	3-pole	main contact set (fixed and moving)	BF115	6 390.00
BFX99150T	3-pole	main contact set (fixed and moving)	BF150	7 060.00
BFX99195T	3-pole	main contact set (fixed and moving)	BF195	9 900.00
BFX99230T	3-pole	main contact set (fixed and moving)	BF230	12 700.00
G525	3-pole	main contact set (fixed and moving)	B500	34 800.00
G526	3-pole	main contact set (fixed and moving)	B630	75 600.00



◀ **Scan the QR Code**
for easy access to tutorials on
the Lovato Contactor range



Thermal overload relays

	type	motor rating AC3 (400V)	description	adjustment range	for contactor	price
 RF38...	RF38 series (phase failure sensitive)					
	Motor protection relay, phase failure/single-phase sensitive. Three-pole (three-phase), manual or automatic resetting. • Selectable manual or automatic reset • Direct mounting on BF09...38 contactors					
 RF82...	RF380016	—	thermal overload	0.10 - 0.16A	BF09...38	870.00
	RF380025	0.06 kW	thermal overload	0.16 - 0.25A	BF09...38	870.00
 RF200...	RF380040	0.09 kW	thermal overload	0.25 - 0.40A	BF09...38	870.00
	RF380063	0.12 - 0.18 kW	thermal overload	0.40 - 0.63A	BF09...38	870.00
 RFE45...	RF380100	0.25 kW	thermal overload	0.63 - 1.00A	BF09...38	870.00
	RF380160	0.37 - 0.55 kW	thermal overload	1.00 - 1.60A	BF09...38	870.00
 RFX3804	RF380250	0.75 kW	thermal overload	1.60 - 2.50A	BF09...38	870.00
	RF380400	1.1 - 1.5 kW	thermal overload	2.50 - 4.00A	BF09...38	870.00
 RFX3802	RF380650	2.2 kW	thermal overload	4.00 - 6.50A	BF09...38	870.00
	RF381000	3.0 - 4.0 kW	thermal overload	6.30 - 10.0A	BF09...38	870.00
	RF381400	5.5 kW	thermal overload	9.00 - 14.0A	BF09...38	870.00
	RF381800	7.5 kW	thermal overload	13.0 - 18.0A	BF09...38	990.00
	RF382300	11 kW	thermal overload	17.0 - 23.0A	BF09...38	990.00
	RF382500	11 kW	thermal overload	20.0 - 25.0A	BF09...38	990.00
	RF383200	15 kW	thermal overload	24.0 - 32.0A	BF09...38	1 220.00
	RF383800	18.5 kW	thermal overload	32.0 - 38.0A	BF09...38	1 510.00
	RF82 series (phase failure sensitive)					
	• Manual resetting - direct mounting on BF40...94 contactors					
	RF824200	15 - 18.5 kW	thermal overload	28 - 42A	BF40...94	2 080.00
	RF825000	22 kW	thermal overload	35 - 50A	BF40...94	2 360.00
	RF826500	22 - 30 kW	thermal overload	46 - 65A	BF40...94	2 360.00
	RF828200	37 - 45 kW	thermal overload	60 - 82A	BF40...94	2 710.00
	RF829500	45 kW	thermal overload	70 - 95A	BF40...94	2 940.00
	RF110 series (phase failure sensitive)					
	• Manual resetting - direct mounting on BF95...150 contactors					
	RF110095	45 kW	thermal overload	70 - 95A	BF95...150	3 000.00
	RF110110	55 kW	thermal overload	90 - 110A	BF95...150	3 360.00
	RF200 series (phase failure sensitive) req. links RFX20035/RFX20036 to attach to contactors					
	• Manual or automatic resetting - direct mounting of BF160...400 contactors					
	RF200150	51 - 80 kW	thermal overload	90 - 150A	BF160...400	6 340.00
	RF200200	75 - 100 kW	thermal overload	120 - 200A	BF160...400	6 560.00
	RF420 series (phase failure sensitive) req. links RFX42035/RFX42036 to attach to contactors					
	RF420250	92 - 132 kW	thermal overload	150 - 250A	BF160...400	8 150.00
	RF420300*	100 - 162 kW	thermal overload	180 - 300A	BF160...400	8 370.00
	RF420420*	129 - 198 kW	thermal overload	250 - 420A	BF160...400	8 600.00
	RFE series - Electronic overload relays (self-powered by main circuit)					
	The RFE... electronic thermal overload relays for BF series contactors are characterised by a wide current adjustment range and high reliability and accuracy of tripping. RFE electronic thermal overload relays are suitable for all types of motor starting thanks to the possibility to select several tripping classes. A single front push button is used to select the reset function, manual or automatic, and to activate or deactivate the STOP function.					
	RFE450200	0.12 - 0.75 kW	electronic overload	0.4 - 2A	BF09...38	2 130.00
	RFE450800	0.75 - 3.0 kW	electronic overload	1.6 - 8A	BF09...38	2 130.00
	RFE453200	3 - 15 kW	electronic overload	6.4 - 32A	BF09...38	2 130.00
	RFE454500	4 - 22 kW	electronic overload	9 - 45A	BF09...38	3 560.00
	Accessories for RF series overloads					
	RFX20035	set of links for mounting RF200 overload relays onto contactor			BF160...230	785.00
	RFX20036	set of links for mounting RF200 overload relays onto contactor			BF265...400	810.00
	RFX42035	set of links for mounting RF420 overload relays onto contactor			BF160...230	815.00
	RFX42036	set of links for mounting RF420 overload relays onto contactor			BF265...400	1 080.00
	RFX3804	separate mounting adaptor	(surface / DIN-rail mount)	RF38/RFE45		267.00
	G270	separate mounting adaptor	(surface / DIN-rail mount)	RF82/110		922.00
	G228220	electrical reset mechanism for overloads (220VAC)			RF82/110	1 000.00
	RFX3801	lead sealing device for overloads			RF38/200/420	95.00
	G233	lead sealing device for overloads			RF82/110	76.00
	RFX3802	protection cover for RF38 on contactor assembly			BF09...25	73.00
	RFX3803	protection cover for RF38 on contactor assembly			BF26...38	73.00

Motor protection circuit breakers

SM series - Motor protection circuit breakers

The SM series motor protection circuit breakers have been completely updated across all ranges of rated current, from 0.1 to 100A. The series includes three sizes: SM1, with a range-extended up to 40A (*available versions: with buttons or with rotary knob for motor protection*) SM2 from 34 to 63A and SM3 from 55 to 100A, both with rotary knobs.

(Type 2 co-ordination with contactors – see **Annex-2**)

General features:

- Temperature compensation
- Thermal and magnetic protection
- Rated insulation voltage U_i 690V
- For safety lockout hasps refer to **category K**
- High fault level (*type 2 co-ordination with contactors*)
- Differential single-phase protection (*phase failure sensitive*)
- Snap-on auxiliary contacts, shunt trip and undervolt release
- 3 sizes, from 0.1 to 100A, with pushbutton and rotary versions
- Trip-test facility/indication of trip condition overload (or) short circuit (**SM1R series**)



SM1P...



SM1R...



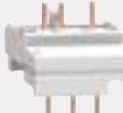
SM2R5000



SM3R...

type	motor rating		thermal trip adj.range	description	short circuit capacity Icu 400V	price
	230V	400V				
SM1P series Icu 100 to 10kA (H) 90 x (W) 45 x (D) 75 mm (inc. buttons)						
• Pushbutton control - padlockable in OFF position						
SM1P0016	—	—	0.1 - 0.16A	manual motor starter	100 kA	870.00
SM1P0025	—	—	0.16 - 0.25A	manual motor starter	100 kA	870.00
SM1P0040	—	—	0.25 - 0.4A	manual motor starter	100 kA	870.00
SM1P0063	—	0.18 kW	0.40 - 0.63A	manual motor starter	100 kA	870.00
SM1P0100	0.12 kW	0.25 kW	0.63 - 1A	manual motor starter	100 kA	890.00
SM1P0160	0.25 kW	0.37 - 0.55 kW	1 - 1.6A	manual motor starter	100 kA	890.00
SM1P0250	0.37 kW	0.75 kW	1.6 - 2.5A	manual motor starter	100 kA	890.00
SM1P0400	0.55 - 0.75 kW	1.1 - 1.5 kW	2.5 - 4A	manual motor starter	100 kA	890.00
SM1P0650	1.1 - 1.5 kW	2.2 kW	4 - 6.5A	manual motor starter	100 kA	890.00
SM1P1000	1.5 - 2.2 kW	4.0 kW	6.3 - 10A	manual motor starter	100 kA	998.00
SM1P1400	3.0 kW	5.5 kW	9 - 14A	manual motor starter	25 kA	998.00
SM1P1800	4.0 kW	7.5 kW	13 - 18A	manual motor starter	25 kA	998.00
SM1P2500	5.5 kW	11.0 kW	20 - 25A	manual motor starter	15 kA	1 420.00
SM1P3200	7.5 kW	15.0 kW	24 - 32A	manual motor starter	10 kA	1 770.00
SM1P4000	11 kW	18.5 kW	30 - 40A	manual motor starter	10 kA	3 250.00
SM1R series Icu 100 to 20kA (H) 90 x (W) 45 x (D) 91 mm (inc. knob)						
• Rotary selector control - padlockable in OFF position						
• Thermal and magnetic trip indication						
SM1R0016	—	—	0.1 - 0.16A	manual motor starter	100 kA	1 090.00
SM1R0025	—	—	0.16 - 0.25A	manual motor starter	100 kA	1 090.00
SM1R0040	—	—	0.25 - 0.4A	manual motor starter	100 kA	1 090.00
SM1R0063	—	0.18 kW	0.40 - 0.63A	manual motor starter	100 kA	1 090.00
SM1R0100	0.12 kW	0.25 kW	0.63 - 1A	manual motor starter	100 kA	1 190.00
SM1R0160	0.25 kW	0.37 - 0.55 kW	1 - 1.6A	manual motor starter	100 kA	1 190.00
SM1R0250	0.37 kW	0.75 kW	1.6 - 2.5A	manual motor starter	100 kA	1 190.00
SM1R0400	0.55 - 0.75 kW	1.1 - 1.5 kW	2.5 - 4A	manual motor starter	100 kA	1 190.00
SM1R0650	1.1 - 1.5 kW	2.2 kW	4 - 6.5A	manual motor starter	100 kA	1 190.00
SM1R1000	1.5/2.2 kW	4.0 kW	6.3 - 10A	manual motor starter	100 kA	1 300.00
SM1R1400	3.0 kW	5.5 kW	9 - 14A	manual motor starter	100 kA	1 300.00
SM1R1800	4.0 kW	7.5 kW	13 - 18A	manual motor starter	100 kA	1 300.00
SM1R2500	5.5 kW	11.0 kW	20 - 25A	manual motor starter	50 kA	1 700.00
SM1R3200	7.5 kW	15.0 kW	24 - 32A	manual motor starter	50 kA	2 120.00
SM1R4000	11 kW	18.5 kW	30 - 40A	manual motor starter	20 kA	3 870.00
SM2R series Icu 50kA (H) 140 x (W) 55 x (D) 145 mm (inc. knob)						
• Rotary selector control - padlockable in OFF position						
• Thermal and magnetic trip indication						
SM2R5000	15.0 kW	22.0 kW	34 - 50A	manual motor starter	50 kA	5 750.00
SM2R6300	18.5 kW	30.0 kW	45 - 63A	manual motor starter	50 kA	5 750.00
SM3R series Icu 50kA (H) 165 x (W) 70 x (D) 170 mm (inc. knob)						
• Rotary selector control - padlockable in OFF position						
• Thermal and magnetic trip indication						
SM3R7500	22.0 kW	37.5 kW	55 - 75A	manual motor starter	50 kA	6 630.00
SM3R9000	25.0 kW	45.0 kW	70 - 90A	manual motor starter	50 kA	7 070.00
SM3R9900	30.0 kW	55.0 kW	80 - 100A	manual motor starter	50 kA	7 510.00

Motor protection circuit breaker accessories

 SM1X1211  SM1X1311  SM2X16230  SM1X1120  SM2X16400  SM2X18200R  SM1X18S  SM1X3241P  SM1Z1701P  SM1X1740P  SM1X1745P	General accessories for motor protection circuit breakers						
	Accessories include left, right, and front auxiliary blocks, shunt trips, undervoltage releases, mounting accessories, and special enclosures, providing versatility and convenience for various applications.						
	type	config.	mount position	description		for starter	price
	Auxilliary contacts						
	SM1X1211	1NO + 1NC	left side	add-on auxiliary contact block		SM1P/R	220.00
	SM1X1220	2NO	left side	add-on auxiliary contact block		SM1P/R	220.00
	SM1X1311	1NO + 1NC	left side	trip indication auxiliary contact block		SM1P/R	578.00
	SM1X1111	1NO + 1NC	front	add-on auxiliary contact block		SM1P/R	180.00
	SM1X1120	2NO	front	add-on auxiliary contact block		SM1P/R	196.00
	SM2X1211	1NO + 1NC	left side	add-on auxiliary contact block		SM2/3R	293.00
	SM2X1220	2NO	left side	add-on auxiliary contact block		SM2/3R	293.00
	SM2X1311	1NO + 1NC	left side	trip indication auxiliary contact block		SM2/3R	578.00
	SM2X1111	1NO + 1NC	front	add-on auxiliary contact block		SM2/3R	293.00
	SM2X1120	2NO	front	add-on auxiliary contact block		SM2/3R	293.00
	Shunt trip release <i>(permits remote tripping of the motor protection circuit breakers)</i>						
	SM1X16024	24 VAC	right side	add-on shunt trip release unit		SM1P/R	968.00
	SM1X16110	110 VAC	right side	add-on shunt trip release unit		SM1P/R	968.00
	SM1X16230	230 VAC	right side	add-on shunt trip release unit		SM1P/R	796.00
	SM1X16400	400 VAC	right side	add-on shunt trip release unit		SM1P/R	796.00
	SM2X16024	24 VAC	right side	add-on shunt trip release unit		SM2/3R	814.00
SM2X16110	110 VAC	right side	add-on shunt trip release unit		SM2/3R	814.00	
SM2X16230	230 VAC	right side	add-on shunt trip release unit		SM2/3R	814.00	
SM2X16400	400 VAC	right side	add-on shunt trip release unit		SM2/3R	814.00	
Undervoltage release							
• Opens the MPCB when mains voltage fails and prevents unexpected starting when power is restored							
• Equipped with integrated normally open early make contacts							
SM1X14230	230 VAC	right side	add-on undervoltage release		SM1P/R	796.00	
SM1X14400	400 VAC	right side	add-on undervoltage release		SM1P/R	796.00	
SM2X14230	230 VAC	right side	add-on undervoltage release		SM2/3R	814.00	
SM2X14400	400 VAC	right side	add-on undervoltage release		SM2/3R	814.00	
Door interlocking handle <i>(for SM1/2/3R rotary type starters)</i>							
SM1X18200R	red/yellow	door interlock handle (IP65) and 200 mm shaft		SM1R	1 230.00		
SM2X18200R	red/yellow	door interlock handle (IP65) and 200 mm shaft		SM2/3R	1 230.00		
SM1X18S	support	optional shaft support for		SM1R	212.00		
Mounting accessories							
BFX8901	universal	base for screw fixing motor protection		SM1P/R	74.00		
SM1X3040P	3Ph rigid	rigid connection between SM1P and contactor		BG mini	209.00		
SM1X3141P	3Ph rigid	rigid connection between SM1P and contactor		BF09...25A	280.00		
SM1X3241P	3Ph rigid	rigid connection between SM1P and contactor		BF26...38A	316.00		
SM1X3040R	3Ph rigid	rigid connection between SM1R and contactor		BG mini	209.00		
SM1X3141R	3Ph rigid	rigid connection between SM1R and contactor		BF09...25A	280.00		
SM1X3241R	3Ph rigid	rigid connection between SM1R and contactor		BF26...38A	316.00		
Bridge bars for SM1P/R motor protection circuit breakers							
SMX9032	insulated	3-phase bridge bar to connect	2 units	(45 mm)	188.00		
SMX9033	insulated	3-phase bridge bar to connect	3 units	(45 mm)	230.00		
SMX9034	insulated	3-phase bridge bar to connect	4 units	(45 mm)	274.00		
SMX9035	insulated	3-phase bridge bar to connect	5 units	(45 mm)	296.00		
With spacing to accommodate side-mounted auxiliaries or releases							
SMX9042	insulated	3-phase bridge bar to connect	2 units	(54 mm)	452.00		
SMX9043	insulated	3-phase bridge bar to connect	3 units	(54 mm)	569.00		
SMX9044	insulated	3-phase bridge bar to connect	4 units	(54 mm)	601.00		
SMX9045	insulated	3-phase bridge bar to connect	5 units	(54 mm)	650.00		
SMX9030	25 mm²	3-phase busbar supply block	(enlarged terminal)		185.00		
Enclosures for motor protection circuit breakers - IP65							
Robust plastic enclosures for rotary and button-controlled motor protection circuit breakers up to 40A.							
SM1Z1701P	surface	mount enclosure for starters	135 x 80 x 101	SM1P	507.00		
SM1Z1715R	surface	mount enclosure for starters	154 x 100 x 138	SM1R	748.00		
Flush mount enclosure - (IP65) <i>panel cutout (H) 115.5 x (W) 70.5 mm</i>							
SM1Z1705P	flush	mount enclosure for starters	133 x 87 x 86	SM1P	459.00		
SM1X1745P	IP65	button membrane protection cover for enclosure		SM1P	168.00		
SM1X1740P		emergency stop (twist release) pushbutton assembly for enc.		SM1P	680.00		

Direct-on-line starters



M2P...



M1N



M3N



M3PA

Enclosed direct-on-line starters

The **M series** by Lovato Electric offers a straightforward and economical solution for starting and stopping induction motors in various industrial and commercial applications.

DOL starters, like those in the MxP series, are preferred in settings where precise control over motor speed or gradual acceleration is not necessary. It provides reliable motor control without the complexity or cost of more advanced systems like soft starters or variable frequency drives.

- Supplied complete with thermal overload and start stop/reset pushbuttons
- Suitable for IE3 premium efficiency motors

type	motor rating AC3 (400V)	overload range	description	housing	price
M series - Standard DOL starters (with BF contactors)			IP65		
• Insulated IP65 polycarbonate enclosure:			M1P (H)202 x (W) 88 x (D)156 mm		
			M2P (H)234 x (W)110 x (D)170 mm		
M1P00912A4	0.25 kW	0.63 - 1.0A	direct-on-line starter	PC / IP65	2 100.00
M1P00912A5	0.55 kW	1.0 - 1.6A	direct-on-line starter	PC / IP65	2 100.00
M1P00912A6	0.75 kW	1.6 - 2.5A	direct-on-line starter	PC / IP65	2 100.00
M1P00912A7	1.5 kW	2.5 - 4.0A	direct-on-line starter	PC / IP65	2 100.00
M1P00912A8	2.2 kW	4.0 - 6.5A	direct-on-line starter	PC / IP65	2 100.00
M1P00912A9	4.0 kW	6.3 - 10A	direct-on-line starter	PC / IP65	2 100.00
M1P00912B0	5.5 kW	9 - 14A	direct-on-line starter	PC / IP65	2 300.00
M1P01812B1	7.5 kW	13 - 18A	direct-on-line starter	PC / IP65	2 590.00
M2P02512B2	11.0 kW	17 - 23A	direct-on-line starter	PC / IP65	3 330.00
M2P03212B4	15.0 kW	24 - 32A	direct-on-line starter	PC / IP65	4 400.00
M2P03812B5	18.5 kW	32 - 38A	direct-on-line starter	PC / IP65	5 020.00

Supplied standard with 400V coils - other voltages available on request
Larger sizes available on request

With mounted on-load isolator (extra charges)

- Padlockable in OFF position, interlocked in ON position

I16*	with padlockable interlocking isolator (in M2P enclosure)	0.25 - 7.5 kW	550.00
I40*	with padlockable interlocking isolator (in M2P enclosure)	11.0 - 18.5 kW	600.00

* Add part number to end of starter part number i.e **M1P00912A4I16**

Accessories for above M series DOL starters

M1PA	empty housing with start-stop/reset pushbuttons (IP65)	BF09...18A	658.00
M2PA	empty housing with start-stop/reset pushbuttons (IP65)	BF09...32A	987.00
M3PA	empty housing with start-stop/reset pushbuttons (IP65)	BF40...94A	2 040.00
M1N	empty housing without external pushbuttons (IP65)	202 x 88 x 135 mm	576.00
M2N	empty housing without external pushbuttons (IP65)	234 x 110 x 149 mm	823.00
M3N	empty housing without external pushbuttons (IP65)	280 x 233 x 170 mm	990.00
M24N	housing no external pushbuttons (IP65) with chassis plate	210 x 175 x 99 mm	816.00
M25N	housing no external pushbuttons (IP65) with chassis plate	210 x 175 x 149 mm	903.00
MX31	metal chassis/mounting plate	(for M25N enclosures)	374.00
MX30	metal chassis/mounting plate	(for M3N enclosures)	254.00
MX21P	fixing adaptor for pushbutton contact blocks	(for M1/2/25 enclosures)	48.00
MX11P	stop/reset button extension rod	(for M1 enclosures)	33.00
MX12P	stop/reset button extension rod	(for M2/25 enclosures)	33.00

RM series - Reversing DOL starters (enclosed)**IP65**

RM series, reversing DOL starters provide basic motor control functionality with the added capability of changing the direction of motor rotation, making it suitable for various industrial and commercial applications requiring bidirectional motor operation.

- Supplied complete with thermal overload and "forward-stop-reverse" pushbuttons

RM25 starters		mounted into M25N enclosure	(H) 210 x (W) 175 x (D) 165 mm		
RM25P09A5	0.37 kW	0.1 - 1.6A	enclosed reversing starter	PC / IP65	4 700.00
RM25P09A6	0.75 kW	1.6 - 2.5A	enclosed reversing starter	PC / IP65	4 700.00
RM25P09A7	1.5 kW	2.5 - 4.0A	enclosed reversing starter	PC / IP65	4 700.00
RM25P09A8	2.2 kW	4.0 - 6.5A	enclosed reversing starter	PC / IP65	4 700.00
RM25P09A9	4.0 kW	6.3 - 10A	enclosed reversing starter	PC / IP65	4 700.00
RM25P12B0	5.5 kW	9 - 14A	enclosed reversing starter	PC / IP65	4 950.00
RM25P18B1	7.5 kW	13 - 18A	enclosed reversing starter	PC / IP65	5 530.00
RM25P25B2	11.0 kW	17 - 23A	enclosed reversing starter	PC / IP66	6 260.00

Larger sizes available on request

With mounted on-load isolator (extra charges)

I16*	with padlockable interlocking isolator	0.35 - 7.5 kW	550.00
I40*	with padlockable interlocking isolator	11 kW	600.00

* Add part number to end of starter part number i.e **RM25P09A5I16**

Star-delta motor starters



JDY18/P



JD09/M2



BFA...

Star-delta motor starters

The JDY series of enclosed star-delta starters offers a reliable and effective solution for reducing the starting current and torque of three-phase induction motors. Its IP65 rating makes it ideal for use in harsh environments, provides durability and reliability in challenging operating conditions.

Suitable for IE3 premium efficiency motors.

Supplied with:

- Start, stop/reset pushbuttons (*pilot light can be incorporated*)
- Thermal overload relay (*phase failure sensitive*)
- Integral control terminals for ease of wiring
- Coil voltage 400 VAC unless other specified (*024/110/230V - on request*)

type	motor rating	overload range (x 0.58 of full load)	description	dimensions (mm) (H) (W) (D)			price
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JDY series - Enclosed star-delta starters IP65

ABS enclosure M3N (*hinged door 180° opening*)

JDY09/P	7.5 kW	6.3 - 10A	enclosed star-delta starter	280	233	187	7 130.00
JDY12/P	11.0 kW	9 - 14A	enclosed star-delta starter	280	233	187	7 720.00
JDY18/P	15.0 kW	13 - 18A	enclosed star-delta starter	280	233	187	8 090.00
JDY25/P	18.5 kW	17 - 23A	enclosed star-delta starter	280	233	187	8 920.00
JDY26/P	22.0 kW	24 - 32A	enclosed star-delta starter	280	233	187	9 590.00
JDY38/P	30.0 kW	32 - 38A	enclosed star-delta starter	280	233	187	12 200.00

Extra charge for mounted on-load isolator

- Padlockable in OFF position, door interlocking in ON position

I040*	isolator	with padlockable door interlocking isolator	up to	18.5 kW	600.00
I063*	isolator	with padlockable door interlocking isolator	up to	30.0 kW	1400.00

* Add part number to end of starter part number

Sheet metal enclosure - Grey (RAL7035) - Orange (RAL2000) on request

JDY09/M2	7.5 kW	6.3 - 10A	enclosed star-delta starter	450	300	220	8 060.00
JDY12/M2	11.0 kW	9 - 14A	enclosed star-delta starter	450	300	220	8 290.00
JDY18/M2	15.0 kW	13 - 18A	enclosed star-delta starter	450	300	220	9 030.00
JDY25/M2	18.5 kW	17 - 23A	enclosed star-delta starter	450	300	220	9 980.00
JDY26/M2	22.0 kW	24 - 32A	enclosed star-delta starter	450	300	220	10 700.00
JDY38/M2	30.0 kW	32 - 38A	enclosed star-delta starter	450	300	220	13 300.00
JDY50/M4	37/45 kW	35 - 50A	enclosed star-delta starter	650	450	270	17 500.00
JDY65/M4	55 kW	46 - 65A	enclosed star-delta starter	650	450	270	19 500.00
JDY80/M4	75 kW	60 - 82A	enclosed star-delta starter	650	450	270	21 900.00

Larger sizes available on request

Extra charge for mounted on-load isolator

- Padlockable in OFF position, door interlocking in ON position

I040*	isolator	with padlockable door interlocking isolator	up to	18.5 kW	600.00
I063*	isolator	with padlockable door interlocking isolator	up to	30 kW	1400.00
/PL*		pilot light "trip" or "run" indication incorporated into pushbuttons			380.00
/AM*		with ammeter mounted on enclosure door (48 x 48 direct max. 40A)			490.00
/VM*		with voltmeter mounted on enclosure door (48 x 48)			470.00

* Add part number to end of starter part number

BFA series - Open type pre-assembled star-delta starters

The BFA series of open type pre-assembled star-delta starters are typically used in industrial applications.

- Fully assembled and wired with mounted star-delta timer and thermal overload relay

BFA009.10	7.5 kW	6.3 - 10A	open frame complete star-delta starter	4 900.00
BFA012.14	11.0 kW	9 - 14A	open frame complete star-delta starter	5 130.00
BFA018.18	15.0 kW	13 - 18A	open frame complete star-delta starter	5 860.00
BFA025.23	18.5 kW	17 - 23A	open frame complete star-delta starter	6 770.00
BFA026.32	22.0 kW	24 - 32A	open frame complete star-delta starter	7 410.00
BFA038.38	30.0 kW	32 - 38A	open frame complete star-delta starter	9 960.00
BFA050.50	37.5 - 45 kW	35 - 50A	open frame complete star-delta starter	12 500.00
BFA065.65	55 kW	46 - 65A	open frame complete star-delta starter	14 500.00
BFA080.82	75 kW	60 - 82A	open frame complete star-delta starter	16 800.00
BFA095.110	90 kW	90 - 110A	open frame complete star-delta starter	21 900.00
BFA115.125	110 kW	75 - 125A	open frame complete star-delta starter	26 800.00
BFA150.150	132 kW	90 - 150A	open frame complete star-delta starter	28 600.00

Larger sizes available on request

Soft starters



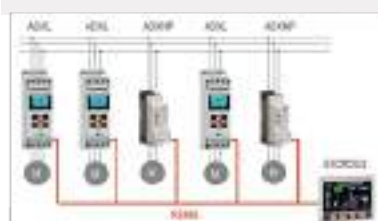
ADXNB...



ADXNP...



EXCRDU2

**ADXN series - Compact soft starters (two-phase control)**

ADXN soft starters are a simple, compact (*only 45 mm width*) and fast-to-configure products for the gradual control of the starting and stopping of motors. The versatility makes it suitable for several applications for the control of pumps, fans, conveyor belts, compressors. Available with rated currents from 6 to 45A.

- Economical soft starters for motors up to 22kW (400 VAC)
- Rated operational voltage: 208...600 VAC
- Integrated bypass relay disabling the thyristors once the starting ramp has concluded
- Ready to use - factory set configurations for quick and simple commissioning
- Suitable for IE3 premium efficiency motors

Integrated protection functions include: Soft starter thermal protection with integrated temperature sensor, line frequency/voltage out of tolerance, line voltage not present, phase loss, incorrect phase sequence.

type	rated current Ie	rated power (400V)	description	dimensions (mm) (H) (W) (D)			price
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ADXNB series - Basic version *(requires external overload protection)*

Ideal solution for a soft starter with basic functions that are extremely simple to configure for gradually starting and stopping motors. Their versatility makes them adaptable to various applications, including pump, fan, conveyor and compressor control.

Just three parameters, configurable with the front panel potentiometers:

- Initial voltage step: 30-80%U
- Deceleration ramp: 0-20sec
- Acceleration ramp: 1-20sec

Auxiliary supply Us 100...240 VAC

ADXNB006	6A	2.2 kW	basic industrial soft starter	139	45	113	5 200.00
ADXNB012	12A	5.5 kW	basic industrial soft starter	139	45	113	6 200.00
ADXNB018	18A	7.5 kW	basic industrial soft starter	139	45	113	7 300.00
ADXNB025	25A	11.0 kW	basic industrial soft starter	159	45	128	7 950.00
ADXNB030	30A	15.0 kW	basic industrial soft starter	159	45	128	9 990.00
ADXNB038	38A	18.5 kW	basic industrial soft starter	159	45	128	13 200.00
ADXNB045	45A	22.0 kW	basic industrial soft starter	159	45	128	15 600.00

Auxiliary supply Us 24 VAC/DC

ADXNB00624	6A	2.2 kW	basic industrial soft starter	139	45	113	5 640.00
ADXNB01224	12A	5.5 kW	basic industrial soft starter	139	45	113	6 860.00
ADXNB01824	18A	7.5 kW	basic industrial soft starter	139	45	113	7 970.00
ADXNB02524	25A	11.0 kW	basic industrial soft starter	159	45	128	8 540.00
ADXNB03024	30A	15.0 kW	basic industrial soft starter	159	45	128	10 900.00
ADXNB03824	38A	18.5 kW	basic industrial soft starter	159	45	128	14 000.00
ADXNB04524	45A	22.0 kW	basic industrial soft starter	159	45	128	16 400.00

ADXNP series - Advanced version *(includes overload protection)*

Parameter configuration via front potentiometers or NFC connectivity via smart devices with the LOVATO NFC App (*available for Android and iOS*).

Provides electronic thermal overload protection of the motor via integrated current transformers, permitting management of starting ramps with current limiting, automatically adapted to follow load variations with configurable separate thermal classes for starting and stopping. Offering protection against locked rotor, current asymmetry, low load, starter timeout.

- Optional RS-485 (*Modbus-RTU*) module for integration into a control and supervision network - **CX04**
- Factory set thresholds, reconfigurable via NFC

Auxiliary supply Us 100...240 VAC

ADXNP012	12A	5.5 kW	advanced industrial soft starter	139	45	113	8 490.00
ADXNP018	18A	7.5 kW	advanced industrial soft starter	139	45	113	9 870.00
ADXNP025	25A	11.0 kW	advanced industrial soft starter	159	45	128	10 600.00
ADXNP030	30A	15.0 kW	advanced industrial soft starter	159	45	128	13 500.00
ADXNP038	38A	18.5 kW	advanced industrial soft starter	159	45	128	17 400.00
ADXNP045	45A	22.0 kW	advanced industrial soft starter	159	45	128	20 300.00

Auxiliary supply Us 24 VAC/DC

ADXNP01224	12A	5.5 kW	advanced industrial soft starter	139	45	113	8 600.00
ADXNP01824	18A	7.5 kW	advanced industrial soft starter	139	45	113	9 980.00
ADXNP02524	25A	11.0 kW	advanced industrial soft starter	159	45	128	10 700.00
ADXNP03024	30A	15.0 kW	advanced industrial soft starter	159	45	128	14 200.00
ADXNP03824	38A	18.5 kW	advanced industrial soft starter	159	45	128	18 200.00
ADXNP04524	45A	22.0 kW	advanced industrial soft starter	159	45	128	19 400.00

Accessories for ADXN and ADXL soft starters

SM1X3150R	rigid con. kit for direct mnt ADXN 6-38A to SM1R motor protection circuit breakers	250.00
CX01	USB connects PC to ADXNP for programming, download and diagnostics	4 160.00
CX02	Wi-Fi connect PC/smartphone to ADX/NP/XL for programming and monitoring	10 400.00
CX04	RS-485 comm. module for ADX/NP/XL, Modbus-RTU, 24 VAC/DC aux supply	3 410.00
EXC1042	RS-485 communication plug-in board for ADXL...	2 200.00
EXCRDU2	remote display unit for motor starters (<i>connects up to 32 devices</i>)	8 090.00

Soft starters



ADXL series



ADXL...



ADXT...



ADXL series - Soft starters (three-phase control)

ADXL series soft starters feature a backlit LCD icon display and NFC connectivity for convenient configuration, accessible even from smartphones and tablets. Ideal for both straightforward "plug and play" setups and demanding applications requiring precise control and protection during motor startup and operation. Incorporating two-phase control during motor starting and stopping torque control during operation, they effectively reduce thermal power dissipation.

General features:

- Auxiliary supply: 100...240 VAC
- Rated operational voltage: 208...600 VAC
- Programming, data download and diagnostics via incorporated optical port with **CX01/02**
- Voltage ramp startup, torque control, kick start, limited maximum starting current
- Selectable default application: Centrifugal pump, fire pump, conveyor belt, fan, mixer and general purpose
- Optional RS-485 communication with **EXC1042**
- Indicating:
 - Voltage - current L1/L2/L3 - torque - active power - PF - motor thermal status
 - Soft starter temperature - active energy - motor hour counter - startup counter

type	rated current I _e	rated power 400V	description	dimensions (mm)			price
				(H)	(W)	(D)	
ADXL series (two phase control, integrated bypass facility)							
ADXL0018600	18A	7.5 kW	industrial soft starter	218	75	172	15 000.00
ADXL0030600	30A	15.0 kW	industrial soft starter	218	75	172	17 300.00
ADXL0045600	45A	22.0 kW	industrial soft starter	218	75	172	22 000.00
ADXL0060600	60A	30.0 kW	industrial soft starter	218	75	172	24 900.00
ADXL0075600	75A	37.0 kW	industrial soft starter	226	95	182	27 600.00
ADXL0085600	85A	45.0 kW	industrial soft starter	226	95	182	30 400.00
ADXL0115600	115A	55.0 kW	industrial soft starter	226	95	182	36 400.00
ADXL0135600	135A	75.0 kW	industrial soft starter	301	212	216	43 000.00
ADXL0162600	162A	90.0 kW	industrial soft starter	301	212	216	48 200.00
ADXL0195600	195A	110.0 kW	industrial soft starter	486	212	216	58 500.00
ADXL0250600	250A	132.0 kW	industrial soft starter	486	212	216	64 300.00
ADXL0320600	320A	160.0 kW	industrial soft starter	486	212	216	70 000.00

ADXT... series - Advanced heavy-duty soft starters (three-phase control)

ADXT... soft starters for applications requiring high performance, reliability and robustness. Incorporate advanced features with integrated motor and starter protection, provide accurate control of motor starting and stopping, reducing energy consumption for constant speed applications.

Mainly used for control of heavy loads due to high torque availability during starting, overcoming the inertia of applications such as crushers, fans, vertical/inclined conveyors, screw compressors, centrifuges, propellers, mills, band/circular saws, shredders and many others. The integrated or external bypass contactor disabling the thyristors once motor starting is completed, reducing energy consumption, generated heating and power dissipation.

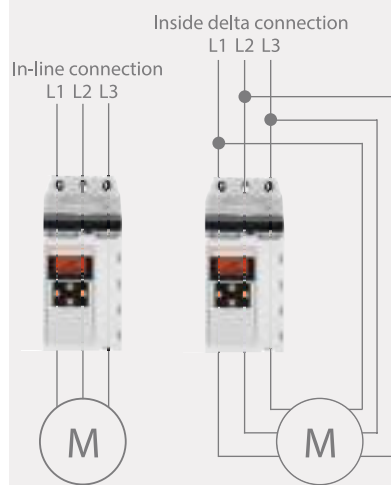
- Auxiliary supply voltage 110...120 / 220...240 VAC (available with 24 VAC/DC supply)
- Rated operational voltage 380...690 VAC
- Built-in bypass contactor

ADXT soft starters can be installed with traditional in-line connection or inside delta connection (six-wire connection) with thyristors connected in series to each motor winding. In this configuration, requiring six-wire motors, the soft starter is only crossed by the phase current, which is significantly lower than the line current. This permits the use of a smaller starter, resulting in cost savings, and simplifies the replacement of star-delta starters since the existing wiring is retained.

type	rated current I _e	in-line (400V)	inside Δ (400V)	description	dimensions (mm)			price
					(H)	(W)	(D)	
ADXT0034	34A	18.5 kW	22 kW	heavy-duty soft starter	336	152	233	23 800.00
ADXT0060	60A	30 kW	45 kW	heavy-duty soft starter	336	152	233	34 300.00
ADXT0084	84A	45 kW	55 kW	heavy-duty soft starter	336	152	233	44 100.00
ADXT0104	104A	55 kW	75 kW	heavy-duty soft starter	336	152	233	48 900.00
ADXT0126	126A	55 kW	90 kW	heavy-duty soft starter	336	152	233	65 200.00
ADXT0139	139A	75 kW	110 kW	heavy-duty soft starter	482	216	244	68 900.00
ADXT0165	165A	90 kW	132 kW	heavy-duty soft starter	482	216	244	75 800.00
ADXT0187	187A	90 kW	160 kW	heavy-duty soft starter	482	216	244	87 200.00
ADXT0230	230A	132 kW	160 kW	heavy-duty soft starter	482	216	244	93 200.00
ADXT0311	311A	160 kW	250 kW	heavy-duty soft starter	482	216	243	112 000.00
ADXT0410	410A	220 kW	355 kW	heavy-duty soft starter	482	216	243	127 000.00
ADXT0506	506A	280 kW	400 kW	heavy-duty soft starter	482	216	243	149 000.00
ADXT0554	554A	315 kW	450 kW	heavy-duty soft starter	482	216	243	166 000.00

Accessories (for ADXT soft starters)

ADXTRTU	RS485 communication card for ADXT, Modbus-RTU protocol	3 400.00
ADXTTCP	Ethernet communication card for ADXT, Modbus-TCP protocol	11 900.00
ADXTC01KIT	remote keypad kit for ADXT (IP65)	6 460.00



Electronic motor starters



ME070RD024



ME024RSD024

Electronic motor starters

ME... series electronic motor starters are extremely compact (22.5 mm width) ideal for applications requiring a very high number of starts with electronic thermal protection incorporated.

Employing hybrid technology, combining advantages of extremely long working life of a wear-free semiconductor device with the robustness of a mechanical relay and low consumption.

Direct-on-line and Reversing starters for motors up to 3 kW with rated voltage up to 500VAC.

Electronic motor thermal protection incorporated in all models and are also available with built-in STO (Safe Torque Off) emergency stop function.

Functionality:

- Direct-on-line and Reversing starters
- Rated motor current 2.4 or 7A (AC3, AC53)
- Operational voltage $U_e \leq 500$ VAC
- Auxilliary and control supply voltage 24 VDC
- Potentiometer for the adjustment of the rated motor current I_e
- Integrated electronic motor thermal protection with tripping class 10A
- Versions with STO (Safe Torque Off) emergency stop with Safety Integrity Level SIL3 (IEC/EN 61508) and Performance Level "PL e" (ISO 13489)

4 digital inputs:

- 1 digital input for motor starting in forward direction
- 1 digital input for motor starting in reversing direction (ME...RD... only)
- 1 digital input for reset of motor thermal protection alarm (automatic or manual)
- 1 digital input for reset mode

3 integrated digital outputs:

- 1 relay output with changeover contact for alarm signalling
- 2 PNP digital outputs for motor running direction signalling (1 only for ME...FD)

4 status LEDs on front for diagnostics:

- POWER = presence of auxiliary supply
- ALARM = alarm active
- FORWARD = motor forward running
- REVERSE = motor reverse running (ME...RD only)

Protections:

- Motor thermal protection, against overload
- Protection against phase loss
- Protection against phase imbalance (current asymmetry) or load loss

Typical applications:

- Conveyors
- Packaging machines
- Automatic doors
- Escalators
- Sorting equipment
- Access control systems

Electronic motor starters

type	rated power (400VAC)	rated current I_e AC-53a	adjustment range	STO (safe torque off)	description	price
Direct-on-line starters with integrated motor thermal protection						
Overall, the ME series of DOL electronic starters with integrated motor thermal protection offer reliable motor control while ensuring the safety and longevity of the connected motors, making them suitable for a wide range of applications across different industries.						
Particularly beneficial in applications where motors are subjected to varying loads or operating conditions which may lead to overheating if not adequately monitored and protected.						
ME024FD024	0.75 kW	2.4 A	0.18 - 2.4 A	—	direct-on-line starter	4 880.00
ME070FD024	3.0 kW	7.0 A	1.5 - 7.0 A	—	direct-on-line starter	4 880.00
ME024FSD024	0.75 kW	2.4 A	0.18 - 2.4 A	•	direct-on-line starter	5 530.00
ME070FSD024	3.0 kW	7.0 A	1.5 - 7.0 A	•	direct-on-line starter	5 530.00
Reversing starters with integrated motor thermal protection						
The ME series reversing starters with integrated motor thermal protection provide a comprehensive solution for starting, stopping, and reversing induction motors while safeguarding them against overheating in various industrial and commercial applications.						
ME024RD024	0.75 kW	2.4 A	0.18 - 2.4 A	—	reversing starter	5 330.00
ME070RD024	3.0 kW	7.0 A	1.5 - 7.0 A	—	reversing starter	5 330.00
ME024RSD024	0.75 kW	2.4 A	0.18 - 2.4 A	•	reversing starter	5 970.00
ME070RSD024	3.0 kW	7.0 A	1.5 - 7.0 A	•	reversing starter	5 970.00

Electronic motor protection and control



Advanced electronic motor protection and control

WDH-31-530 advanced motor management system provides detailed multifunctional monitoring, control, protection and communication as an integral solution for management of 3-phase AC motors. Offering high-performance, reliable, accurate motor protection and control in harsh industrial applications

Potential motor fault situations anticipated via predictive analysis, avoiding dreaded unexpected disruptions, and downtime in important processes, increasing productivity and reducing downtime by providing detailed fault reporting with self-diagnosis, installation monitoring and statistics of all necessary information.

Predefined, selectable motor control protection modes incorporated into the controller:

A Direct start	starting of non-reversing motors
B Bi-directional start	starting of reversing motors
C Two-speed start	2-speed starting of motors (<i>Dahlander, pole changer</i>)
E Star-delta start	star-delta starting of motors
H Autotransformer start	autotransformer starting
K Overload	monitoring of motors not managed by the controller
R Soft-starter start	Soft start with starting control
P VFD starter	Starting control with frequency converter
V Electric valve start	Starting of electric valves

Measurement / metering functions (RMS values):

Three-phase current - Current imbalance - Temperature - Residual current - Three-phase voltage - Frequency - Active/Reactive power - Power factor - Active/Reactive energy - Resistance input

Protection functions with configurable trip and starting delays

- Overload inverse time protection
- Start acceleration timeout protection
- Starting overcurrent protection
- Operating overcurrent protection
- Short circuit protection
- Current imbalance / open phase protection
- Under load (current or power)
- Overvoltage protection
- Undervoltage protection
- Residual current (*grounding*) 0.3le-8.0le
- Residual current (*leakage*) 50mA-5000mA
- External fault protection (*process interlock*)
- tE time protection (*increased safety motor*)
- Under power protection
- Phase sequence protection
- Temperature protection
- Analog input protection (*process interlock*)
- Voltage imbalance

Rated voltage:	400V / 690 VAC
Rated current:	0.1...800A - Internal Current Transformers up to 100 A (<i>by external CT's up to 800A</i>)
Control voltage:	80...270VAC/DC
Communication:	RS-485, Modbus-RTU communication (<i>others on request</i>)
Trip classes:	10A-10-20-30 (IEC 947-4-1)
Logic inputs:	5 (customisable)
Relay logic outputs:	4 - 1NC+3NO (<i>customisable</i>)
Analog output:	1 - DC 4-20mA (<i>programmable</i>)

Optional HMI display unit for reading, displaying, diagnostics, and modifying monitored parameters.

type	current range	motor rating (400V)	inbuilt CT hole Ø	description	dimensions (mm) (H) (W) (D)	price
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Advanced motor management controller

- DIN-rail mounting, compact design
- Integrated current transformers and residual current transformer
- PTC / NTC thermistor input for motor temperature monitoring and protection

WDH-31-533-5	0.2-5 A	0.13 - 2 kW	10.5mm	motor protection	90 70 130	7 270.00
WDH-31-533-25	2.5-25 A	2 - 11 kW	10.5mm	motor protection	90 70 130	7 270.00
WDH-31-533-100	10-100 A	11 - 55 kW	18.0mm	motor protection	90 90 121	7 270.00

Above 100A - use 5A unit with 3 x 5A secondary Current Transformers

Display units for (above) controllers IP65

External HMI LCD display and control keypad dedicated to WDH motor controllers for: configuration, operation, monitoring and displaying of controller parameters, faults and alarms.

- Panel mounting: 61 x 98 mm display - (*cut-out 91.5 x 55 mm*)
- IP protection: IP65 (*front panel*)
- USB port for up/download of parameters and logic (*only WHD-31-50XC*)
- Supplied with cable for connection to WDH controller (*1 meter*)

WDH-31-53X	HMI	external HMI LCD display and control keypad	3 000.00
WDH-31-53XC	HMI	external HMI TFT (<i>full colour</i>) display and control keypad	6 840.00

Controller with integrated LCD display (as above WDH-31-533 but with LCD display)

WDH-31-531-5	0.2 - 5A	0.13 - 2 kW	10.5 mm	motor protection	90 70 130	10 300.00
WDH-31-531-25	2.5 - 25A	2 - 11 kW	10.5 mm	motor protection	90 70 130	10 300.00
WDH-31-531-100	10 - 100A	11 - 55 kW	18.0 mm	motor protection	90 90 121	10 300.00

Above 100A - use 5A unit with 3 x 5A secondary Current Transformers



WDH-31-533-5



WDH-31-53X



WDH-31-53XC



WDH-31-531-100
with built-in CTs

Switch disconnectors

GA series - Three-pole load-break switches 16A - 160A

GA series load break switches (also referred to as switch disconnectors) are manufactured in robust, heavy-duty ABS materials, ensuring durability in diverse environments. With their modular DIN-rail mountable design and comprehensive range of accessories, these switches are versatile components suitable for various applications.

Whether installed in industrial panels, machinery, electrical distribution systems, renewable energy installations, or power generation facilities, the GA series provides reliable manual control, isolation, and switching of electrical circuits, contributing to safe and efficient operations across different industries.

- Modular design DIN-rail mountable, supplied with direct mounted padlockable handle
- Door interlocking handle and shaft (to be ordered separately)

type	AC-23A ≤ 400V	AC-23A ≤ 415V	poles	description	dimensions (mm) (H) (W) (D)			price
GA016A	16A	7.5 kW	3-pole	Isolator/load-break switch	78	36	75	328.00
GA025A	25A	11.0 kW	3-pole	Isolator/load-break switch	78	36	75	375.00
GA032A	32A	15.0 kW	3-pole	Isolator/load-break switch	78	36	75	433.00
GA040A	40A	18.5 kW	3-pole	Isolator/load-break switch	78	36	75	481.00
GA063SA	45A	22.0 kW	3-pole	Isolator/load-break switch	78	36	75	676.00
GA063A	63A	30 kW	3-pole	Isolator/load-break switch	100	70	75	967.00
GA080A	80A	45 kW	3-pole	Isolator/load-break switch	100	70	75	1 140.00
GA125A	125A	55 kW	3-pole	Isolator/load-break switch	100	70	75	1 370.00
GA160A	160A	55 kW	3-pole	Isolator/load-break switch	100	70	75	1 600.00

Attachable 4th pole (for above 3-pole switches)

GAX42040A	40A	—	1-pole	attachable 4th pole for switches	GA016...40A	159.00
GAX42063SA	63A	—	1-pole	attachable 4th pole for switches	GA063SA	257.00
GAX42080A	80A	—	1-pole	attachable 4th pole for switches	GA063...80A	579.00
GAX42125A	125A	—	1-pole	attachable 4th pole for switches	GA125A	375.00
GAX42160A	160A	—	1-pole	attachable 4th pole for switches	GA160A	461.00
GAX41040A	40A	—	1-pole	early make 4th pole for switches	GA016...40A	175.00
GAX41125A	125A	—	1-pole	early make 4th pole for switches	GA063...125A	415.00

Handles (external front operation)
IP65

- External door interlocking handles padlockable (3 padlocks) in "OFF" position

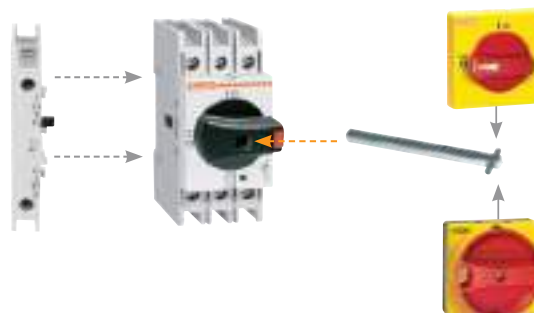
GAX61	red/yellow	door interlocking handle 65 mm ² (screw fixing)	GA016...160A	174.00
GAX63	red/yellow	door interlocking handle 65 mm ² (ring fix Ø 22 mm)	GA016...160A	277.00
GAX63B	black	door interlocking handle 65 mm ² (ring fix Ø 22 mm)	GA016...160A	277.00
GAX64	red/yellow	as above - defeatable 65 mm ² (ring fix Ø 22 mm)	GA016...160A	410.00
GAX68	red/yellow	door interlocking handle 48 mm ² (screw fixing)	GA016...40A/63SA	170.00
GAX66N*	red/yellow	door interlocking pistol grip handle - (defeatable)	GA063...160A	798.00
GAX66NB*	black	door interlocking pistol grip handle - (defeatable)	GA063A...160A	798.00

* Requires **GAX60B** adaptor (below) and 7 mm² extension shaft

GAX60B	adaptor to accommodate 7 mm ² shaft required for handles	GAX66N/NB	88.00
GLX00	shaft alignment ring for pistol grip handles	GAX66N/NB	255.00

Extension shafts (for above handles)

GAX7200	200 mm	□ 5 mm ²	extension shaft for handles	GAX61...8	79.00
GAX7300	300 mm	□ 5 mm ²	extension shaft for handles	GAX61...8	111.00
GAX7200AN	200 mm	□ 7 mm ²	extension shaft for handles	GAX66N/NB	251.00
GAX7300AN	300 mm	□ 7 mm ²	extension shaft for handles	GAX66N/NB	287.00

GA series - Switch disconnector / Accessories


Scan to watch video

Switch disconnecter accessories

	type	contact / pole	description		for switch	price	
	GAX67B						
	GAX6000						
	GAX1011A						
	GAX391						
	GAX83						
	GA025C						
	GA080C						
Changeover and parallel attachments for switches 16A - 160A							
Changeover attachment							
• To mechanically interlock two switches side-by-side to make up a changeover switch							
	GAX5000	I-O-II	changeover mechanism between two switches	GA016...40A/63SA	641.00		
	GAX5001	I-O-II	changeover mechanism between two switches	GA063...160A	854.00		
	GAX67B	black	door interlocking handle (<i>I-O-II</i>) for above changeover mechanisms		324.00		
Parallel attachment							
• Combine two switches side-by-side to make up a 6/8 pole switch							
	GAX6000	I-O	6/8 pole conversion kit between two switches	GA016...40A/63SA	643.00		
	GAX6001*	I-O	6/8 pole conversion kit between two switches	GA063...125A	772.00		
* Requires GAX66N/NB handles, GAX60B adaptor and 7 mm ² extension shaft (see pg A-17)							
Auxiliary contact blocks (<i>I</i>th 10A)							
Auxiliary contact blocks are used to operate auxiliary circuits and control circuits in standard industrial environments.							
• NO + NC contacts							
• Clipping onto the right- and/or left-hand side of the switches							
	GAX1011A	1NO + 1NC	auxiliary contact for DIN-rail mounting switches	GA016...160A	304.00		
	GAX1110EA	1NO	auxiliary for DIN-rail mount switches (<i>early-break</i>)	GA016...40A/63SA	356.00		
	GAX1210EA	1NO	auxiliary for DIN-rail mount switches (<i>early-break</i>)	GA063...160A	356.00		
Three-pole fuse holder for load-break switches 16 - 32A							
Three-pole fuse holder can be directly mounted onto 16 - 32A switch disconnectors to provide a single compact unit.							
• For cylindrical 10 x 38 mm fuses							
• Access to the fuses can only be made with the isolator in the OFF position							
	GAX391	10 x 38	3ph fuse holder (<i>attaches onto switches</i>)	GA016...032A	637.00		
Terminal shrouds for switches 16 - 160A							
Three-pole terminal covers							
	GAX83	terminal	3-pole protection shroud (<i>set of 2 pcs</i>)	GA016...40A/63SA	139.00		
	GAX84	terminal	3-pole protection shroud (<i>set of 2 pcs</i>)	GA063...160A	227.00		
Single-pole terminal covers (<i>for 4th pole</i>)							
	GAX81	terminal	1-pole protection shroud (<i>set of 2 pcs</i>)	GA016...40A/63SA	83.00		
	GAX82	terminal	1-pole protection shroud (<i>set of 2 pcs</i>)	GA063...160A	134.00		
Direct door mounting switches (<i>rear access terminals</i>) with shaft							
	type	AC-21A ≤ 690V	AC-23A ≤ 415V	poles	description	dimensions (mm) (H) (W) (D)	price
	GA025C	25A	11.0 kW	3-pole	direct mnt load-break switch	78 36 73	424.00
	GA040C	40A	18.5 kW	3-pole	direct mnt load-break switch	78 36 73	527.00
	GA080C	80A	45.0 kW	3-pole	direct mnt load-break switch	100 70 70	1 230.00
	GA125C	125A	55.0 kW	3-pole	direct mnt load-break switch	100 70 70	1 470.00
Accessories for (<i>above</i>) direct door-mounted switches							
Attachable 4th pole							
	GAX42040C	40A	18.5 kW	1-pole	attachable 4th pole for switch	GA025...40C	200.00
	GAX42125C	125A	55 kW	1-pole	attachable 4th pole for switch	GA080...125C	467.00
Handles for (<i>above</i>) direct door-mounted switches (<i>IP65</i>)							
• External handles padlockable (<i>3 padlocks</i>) in "OFF" position							
	GAX61	red/yellow	door interlocking handle 65 mm ² (<i>screw fixing</i>)		GA025...125C	174.00	
	GAX68	red/yellow	door interlocking handle 48 mm ² (<i>screw fixing</i>)		GA025...40C	170.00	
	GAX63	red/yellow	door interlocking handle 65 mm ² (<i>ring fix Ø 22 mm</i>)		GA025...40C	277.00	
	GAX63B	black	door interlocking handle 65 mm ² (<i>ring fix Ø 22 mm</i>)		GA016...160A	277.00	
Auxiliary contact blocks (<i>I</i>th 10A) (<i>for above door mount switches</i>)							
	GAX1011C	1NO + 1NC	auxiliary	for direct door mount switches	GA025...125C	321.00	

Switch disconnectors



GL0315C1



GL1000C1



GLX61B



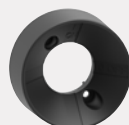
GLX61D



GLX550

type	AC-23A ≤ 400V	AC-23A ≤ 415V	poles	description	dimensions (mm) (H) (W) (D)			price
GL series - Three-pole load-break switches 160A - 1000A								
• Compact design - chassis mount or DIN-rail mountable (<i>up to 315A</i>) • Visible contacts - Maximum security Window on individual power poles clearly indicates switch status • Easy shaft mount and removal (<i>snap-on with front-mounted release lever</i>) • Door interlocking handle and shaft (<i>to be ordered separately</i>)								
GL0160C1	160A	90 kW	3-pole	Isolator/load-break switch	155	162	91	2 450.00
GL0200C1	200A	110 kW	3-pole	Isolator/load-break switch	155	162	91	2 630.00
GL0250C1	250A	140 kW	3-pole	Isolator/load-break switch	155	162	91	3 560.00
GL0315C1	315A	160 kW	3-pole	Isolator/load-break switch	155	162	91	4 080.00
GL0400C1	400A	200 kW	3-pole	Isolator/load-break switch	188	204	112	5 190.00
GL0500C1	500A	250 kW	3-pole	Isolator/load-break switch	188	204	112	5 670.00
GL0630C1	630A	355 kW	3-pole	Isolator/load-break switch	260	231	112	6 000.00
GL0800C1	800A	450 kW	3-pole	Isolator/load-break switch	250	284	148	12 200.00
GL1000C1	1000A	560 kW	3-pole	Isolator/load-break switch	388	314	148	20 000.00
Attachable 4th pole (for above 3-pole switches)								
GLX420315	315A	—	1-pole	attachable 4th pole for switches	GL0160...315C1			1 320.00
GLX420400	400A	—	1-pole	attachable 4th pole for switches	GL0400C1			2 500.00
GLX420630	630A	—	1-pole	attachable 4th pole for switches	GL0500...630C1			3 530.00
GLX420800	800A	—	1-pole	attachable 4th pole for switches	GL0800C1			5 060.00
GLX421000	1000A	—	1-pole	attachable 4th pole for switches	GL1000C1			7 360.00
Handles (external front operation)					IP65			
• External door interlocking handles padlockable (<i>3 padlocks</i>) in "OFF" position								
GLX61	red/yellow			door interlocking pistol grip handle (<i>125 mm</i>)	GL0160...315C1			497.00
GLX61B	black			door interlocking pistol grip handle (<i>125 mm</i>)	GL0160...315C1			497.00
GLX62	red/yellow			door interlocking pistol grip handle (<i>175 mm</i>)	GL0400...630C1			553.00
GLX62B	black			door interlocking pistol grip handle (<i>175 mm</i>)	GL0400...630C1			553.00
GLX63	red/yellow			door interlocking pistol grip handle (<i>175 mm</i>)	GL0800...1000C1			1 160.00
GLX63B	black			door interlocking pistol grip handle (<i>175 mm</i>)	GL0800...1000C1			1 160.00
GLX00	—			shaft alignment ring for pistol grip handles	GLX61...3/B			255.00
Extension shafts (for above handles)								
GLX7200S10	200 mm	□ 10 mm ²		extension shaft for handles	GLX61...2/B			216.00
GLX7300S10	300 mm	□ 10 mm ²		extension shaft for handles	GLX61...2/B			237.00
GLX7400S10	400 mm	□ 10 mm ²		extension shaft for handles	GLX61...2/B			339.00
GLX7500S10	500 mm	□ 10 mm ²		extension shaft for handles	GLX61...2/B			617.00
GLX7200S12	200 mm	□ 12 mm ²		extension shaft for handles	GLX63/B			575.00
GLX7300S12	300 mm	□ 12 mm ²		extension shaft for handles	GLX63/B			657.00
GLX7400S12	400 mm	□ 12 mm ²		extension shaft for handles	GLX63/B			902.00
GLX7500S12	500 mm	□ 12 mm ²		extension shaft for handles	GLX63/B			1 620.00
Handles (direct switch mounted)								
GLX61DB	black			direct switch mount internal handle	GL0160...315C1			644.00
GLX61D	red/yellow			direct switch mount internal handle	GL0160...315C1			644.00
GLX62DB	black			direct switch mount internal handle	GL0400...630C1			740.00
GLX63DB	black			direct switch mount internal handle	GL0800...1000C1			888.00
Auxiliary contact blocks (1th 10A)								
• Snap-on auxiliary contact blocks mounted on the main switching actuator								
GLX1010EA	1NO	auxiliary		contact for GL switches (<i>early break</i>)	GL0160...1000C1			174.00
GLX1001	1NC	auxiliary		contact block for GL switches	GL0160...1000C1			295.00
Terminal shrouds for switches 160 - 1000A								
GLX800	1-pole	terminal		protection shroud (<i>set of 3 pcs</i>)	GL0160...315C1			711.00
GLX802	1-pole	terminal		protection shroud (<i>set of 3 pcs</i>)	GL0400...630C1			1 010.00
GLX804	1-pole	terminal		protection shroud (<i>set of 3 pcs</i>)	GL0800...1000C1			1 220.00
Phase barriers (required for voltage > 500V)								
GLX900	3-pole	barrier		phase barrier (<i>set of 6 pcs</i>)	GL0160...315C1			1 020.00
GLX902	3-pole	barrier		phase barrier (<i>set of 6 pcs</i>)	GL0400...630C1			1 590.00
GLX904	3-pole	barrier		phase barrier (<i>set of 6 pcs</i>)	GL0800C1			1 750.00
Captive nuts								
GLX550	1 terminal			captive nuts for switch terminals (<i>set of 8 pcs</i>)	GL0160...315C1			1 210.00
GLX551	1 terminal			captive nuts for switch terminals (<i>set of 8 pcs</i>)	GL0400...630C1			277.00
GLX552	1 terminal			captive nuts for switch terminals (<i>set of 8 pcs</i>)	GL0800C1			1 760.00
GLX553	1 terminal			captive nuts for switch terminals (<i>set of 8 pcs</i>)	GL01000C1			1 930.00

Changeover switches

	type	AC-21A ≤ 690V	AC-23A ≤ 415V	poles	description	dimensions (mm) (H) (W) (D)			price
 GA025ET6	GA series - Three-pole changeover switches					IP65			
	- Direct operating handle and door coupling version - Modular design DIN-rail mountable supplied with direct mounted padlockable handle - Door interlocking handle and shaft (<i>to be ordered separately - see below</i>) - Attachable 4th pole available for all switches								
	GA025ET6	25A	11.0 kW	3-pole	changeover switch	78	72	89	1 510.00
	GA040ET6	40A	18.5 kW	3-pole	changeover switch	78	72	89	1 660.00
	GA063SAET6	63A	30 kW	3-pole	changeover switch	78	72	89	1 780.00
	GA080ET6	80A	45 kW	3-pole	changeover switch	100	140	89	2 640.00
	GA125ET6	125A	55 kW	3-pole	changeover switch	100	140	89	3 930.00
	GA160ET6	160A	55 kW	3-pole	changeover switch	100	140	89	6 040.00
	GA series - Enclosed changeover switches					IP65			
	- Enclosure material: Polycarbonate - Possibility of fitting: 2 contact blocks both on the right and left side for GAZ...ET6 types								
 GAZ025 ET6	GAZ025ET6	25A	11.0 kW	3-pole	enclosed changeover switch	210	175	184	2 980.00
	GAZ040ET6	40A	18.5 kW	3-pole	enclosed changeover switch	210	175	184	3 190.00
	GAZ080ET6	80A	45.0 kW	3-pole	enclosed changeover switch	280	220	208	4 670.00
	GAZ125ET6	125A	55.0 kW	3-pole	enclosed changeover switch	280	220	208	5 110.00
	Add attachable 4th pole to the above switches								
 GLC0200C1  GLX00  GLX61DB  GLX201	GLC series - Changeover switches					IEC/EN, 60947-6-1			
	- Operating handle and shaft (<i>to be ordered separately</i>) - Visual contacts (<i>window on individual power poles clearly indicates switch status</i>) - Easy shaft mount and removal (<i>snap-on with front-mounted release lever</i>) - Clip-on auxiliary contact (<i>up to 8 per switch</i>)								
	GLC0160C1	160A	90 kW	3-pole	changeover switch	141	186	192	7 400.00
	GLC0200C1	200A	110 kW	3-pole	changeover switch	141	186	192	8 880.00
	GLC0250C1	250A	140 kW	3-pole	changeover switch	141	186	192	10 800.00
	GLC0315C1	315A	160 kW	3-pole	changeover switch	141	186	192	12 500.00
	GLC0400C1	400A	200 kW	3-pole	changeover switch	159	237	231	16 200.00
	GLC0500C1	500A	250 kW	3-pole	changeover switch	159	237	231	19 100.00
	GLC0630C1	630A	355 kW	3-pole	changeover switch	260	264	231	23 100.00
	GLC0800C1	800A	450 kW	3-pole	changeover switch	200	340	326	30 500.00
	GLC1000C1	1000A	560 kW	3-pole	changeover switch	388	370	326	44 300.00
	GLC0160T4C1	160A	90 kW	4-pole	changeover switch	141	221	192	9 040.00
	GLC0200T4C1	200A	110 kW	4-pole	changeover switch	141	221	192	10 600.00
	GLC0250T4C1	250A	140 kW	4-pole	changeover switch	141	221	192	15 000.00
	GLC0315T4C1	315A	160 kW	4-pole	changeover switch	141	221	192	22 600.00
	GLC0400T4C1	400A	200 kW	4-pole	changeover switch	159	282	231	24 800.00
	GLC0500T4C1	500A	250 kW	4-pole	changeover switch	159	282	231	36 500.00
	GLC0630T4C1	630A	355 kW	4-pole	changeover switch	260	318	231	40 600.00
	GLC0800T4C1	800A	450 kW	4-pole	changeover switch	200	405	326	58 000.00
	GLC1000T4C1	1000A	560 kW	4-pole	changeover switch	388	445	326	84 300.00
	Handles for changeover switches (<i>external front operation</i>)					IP65			
	External door interlocking handles padlockable (<i>3 padlocks</i>) in "OFF" position								
	GAX67B	black	I-O-II	door interlocking handle 65 mm ² (<i>screw fixing</i>)	GA025...160ET6				324.00
	GLX61CB	black	I-O-II	door interlocking pistol grip handle (<i>125 mm</i>)	GLC0200...315C1				1 020.00
	GLX62CB	black	I-O-II	door interlocking pistol grip handle (<i>175 mm</i>)	GLC0400...630C1				1 350.00
GLX63CB	black	I-O-II	door interlocking pistol grip handle (<i>175 mm</i>)	GLC0800...1000C1				1 390.00	
GLX00	black		shaft alignment ring for all above handles	GLX61...3CB				255.00	
For extension shafts see A-17									
Direct switch-mounted handles for changeover switches									
GLX61DB	black	I-O-II	direct switch mount internal handle	GLC160...315C1				644.00	
GLX62DB	black	I-O-II	direct switch mount internal handle	GLC0400...630C1				740.00	
GLX63DB	black	I-O-II	direct switch mount internal handle	GLC0800...1000C1				888.00	
Bridging bars for changeover switches									
GLX201	3-pole	bridge bars	terminal bridging bars (<i>set of 3 pcs</i>)	GLC160...315C1				1 150.00	
GLX206	3-pole	bridge bars	terminal bridging bars (<i>set of 3 pcs</i>)	GLC0400...630C1				1 560.00	
GLX208	3-pole	bridge bars	terminal bridging bars (<i>set of 3 pcs</i>)	GLC0800...1000C1				2 100.00	
GLX202	4-pole	bridge bars	terminal bridging bars (<i>set of 4 pcs</i>)	GLC160...315C1				1 530.00	
GLX207	4-pole	bridge bars	terminal bridging bars (<i>set of 4 pcs</i>)	GLC0400...630C1				2 080.00	
GLX209	4-pole	bridge bars	terminal bridging bars (<i>set of 4 pcs</i>)	GLC0800...1000C1				2 810.00	

Above ZAR prices do not include VAT. E&OE

A-20

Enclosed isolators

Enclosed Isolators

GA series enclosed switch disconnectors are supplied in robust, heavy-duty enclosures in an IP65 execution. The enclosures incorporate a red/yellow operating handle mechanically interlocked with cover in the "ON" position and padlockable (3 padlocks) in the "OFF" position.

General features:

- Manual operated
- IP rating: IP65
- Attachable 4th pole available for all switches
- Padlockable handles (3 padlocks) in OFF position
- Red/Yellow handle, interlocked with front cover in ON position
- Available in plastic (ABS), metal (*sheet metal*) and stainless steel

type	AC-21A ≤ 690V	AC-23A ≤ 415V	poles	description	dimensions (mm)			price
					(H)	(W)	(D)	

Plastic ABS enclosed isolators

IP65

GAZ016	16A	7.5 kW	3-pole	enclosed load-break switch	160	100	120	685.00
GAZ025	25A	11.0 kW	3-pole	enclosed load-break switch	160	100	120	747.00
GAZ032	32A	15.0 kW	3-pole	enclosed load-break switch	160	100	120	809.00
GAZ040EM	40A	18.5 kW	3-pole	enclosed load-break switch	160	100	120	950.00
GAZ063EM	63A	22.0 kW	3-pole	enclosed load-break switch	160	100	120	1 140.00
GAZ080EM	80A	45.0 kW	3-pole	enclosed load-break switch	210	175	122	2 020.00
GAZ125EM	125A	55.0 kW	3-pole	enclosed load-break switch	210	175	122	2 240.00
GAZ160EM	160A	55.0 kW	3-pole	enclosed load-break switch	210	175	122	2 460.00

Attachable 4th pole to the above switches (see below)

Empty ABS plastic enclosures only (with red/yellow handle and extension shaft)

GAZ1			enclosure - supplied with handle and shaft	160	100	97	498.00
GAZ2			enclosure - supplied with handle and shaft	210	175	99	936.00
GAZ3			enclosure - supplied with handle and shaft	280	220	170	1 800.00

Metal enclosed isolators

IP65

GAZM series 16 - 160A

GAZM016EM	16A	7.5 kW	3-pole	enclosed load-break switch	200	150	120	2 020.00
GAZM025EM	25A	11.0 kW	3-pole	enclosed load-break switch	200	150	120	2 060.00
GAZM032EM	32A	15.0 kW	3-pole	enclosed load-break switch	200	150	120	2 120.00
GAZM040EM	40A	18.5 kW	3-pole	enclosed load-break switch	200	150	120	2 170.00
GAZM063EM	63A	22.0 kW	3-pole	enclosed load-break switch	200	150	120	2 360.00
GAZM080EM	80A	45.0 kW	3-pole	enclosed load-break switch	200	150	120	2 800.00
GAZM125EM	125A	55.0 kW	3-pole	enclosed load-break switch	300	200	120	3 880.00
GAZM160EM	160A	55.0 kW	3-pole	enclosed load-break switch	300	200	120	4 100.00

GLZ series 200 - 1000A

GLZM0200EM	200A	110 kW	3-pole	enclosed load-break switch	400	300	220	5 420.00
GLZM0250EM	250A	132 kW	3-pole	enclosed load-break switch	400	300	220	6 320.00
GLZM0315EM	315A	140 kW	3-pole	enclosed load-break switch	400	300	220	6 820.00
GLZM0400EM	400A	200 kW	3-pole	enclosed load-break switch	000	000	000	7 960.00
GLZM0630EM	630A	355 kW	3-pole	enclosed load-break switch	000	000	000	9 440.00
GLZM0800EM	800A	450 kW	3-pole	enclosed load-break switch	000	000	000	15 800.00
GLZM1000EM	1000A	560 kW	3-pole	enclosed load-break switch	000	000	000	24 200.00

Add attachable 4th pole to the above switches

Stainless steel (AISI 304) enclosed isolators available on request

Attachable 4th pole for above switches

GAX42040A	40A	18.5 kW	attachable 4th pole for above switches	GAZ/M016...40EM	159.00
GAX42063SA	63A	22.0 kW	attachable 4th pole for above switches	GAZ/M063EM	257.00
GAX42125A	125A	55.0 kW	attachable 4th pole for above switches	GAZ/M080...125EM	375.00
GAX42160A	160A	55.0 kW	attachable 4th pole for above switches	GAZ/M160EM	461.00
GAX41040A	40A	18.5 kW	early-make attachment for switches	GAZ/M016...40EM	175.00
GAX41125A	125A	55.0 kW	early-make attachment for switches	GAZ/M080...125EM	415.00
GLX420315	315A	132 kW	attachable 4th pole for above switches	GLZM0200...315EM	1 320.00
GLX420400	400A	200 kW	attachable 4th pole for above switches	GLZM0400EM	2 500.00
GLX420630	630A	355 kW	attachable 4th pole for above switches	GLZM0500...630EM	3 530.00
GLX420800	800A	450 kW	attachable 4th pole for above switches	GLZM0800EM	5 060.00
GLX421000	1000A	560 kW	attachable 4th pole for above switches	GLZM1000EM	7 360.00



GAZ025



GAZM016EM



GAZM160EM



GAX42063SA



GLX420800

PUSHBUTTONS AND SELECTORS



Refer to Category D



Variable frequency drives - Selection chart

Series			ME300 Series												MS300 Series									
																								
			single-phase					three-phase							single-phase					three-phase				
Model number VFD-__ME/MS/E			1A6	2A8	4A8	7A5	11A	1A5	2A7	4A2	5A5	9A0	13A	17A	1A6	2A8	4A8	7A5	11A	13A	2A7	4A2		
Frame size			A	A	B	C	C	A	A	B	C	C	D	D	A	A	B	C	C	D	A	B		
Max. applicable motor output			kW		0.2	0.4	0.75	1.5	2.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	0.2	0.4	0.75	1.5	2.2	5.5	0.75	1.5
Output rating																								
Rated output capacity		NORMAL DUTY heavy duty	kVA	0.7	1.2	1.9	3.2	4.8	1.4	2.3	3.5	5	8	12	15.6	0.7	1.2	1.9	3.2	4.8	9.9	2.3	3.5	
Rated output current			A	1.8	3.2	5	8.5	12.5	1.8	3	4.6	6.5	10.5	15.7	20.5	1.8	3.2	5	8.5	12.5	15.7	3	4.6	
Output frequency		HEAVY DUTY super heavy duty	Hz	0.0 - 599Hz											0.0 - 599Hz									
Carrier frequency			kHz	2 - 15kHz											2 - 15 kHz (default 4)									
Rated output capacity		kVA	0.6	1.1	1.8	2.9	4.2	1.1	2.1	3.2	4.2	6.9	9.9	13	0.6	1.1	1.8	2.9	4.2	9.9	2.1	3.2		
Rated output current		A	1.6	2.8	4.8	7.5	11	1.5	2.7	4.2	5.5	9	13	17	1.6	2.8	4.8	7.5	11	13	2.7	4.2		
Carrier frequency		kHz	2 - 15kHz											2 - 15kHz (default 4)										
Input rating																								
Input current (heavy duty)		A	3.4	5.9	10.1	15.8	23.1	1.7	3	4.6	6.1	9.9	14.3	18.7	3.4	5.9	10.1	15.8	23.1	14.3	3.7	5.8		
Input current (normal duty)		A	3.8	6.7	10.5	17.9	26.3	2	3.3	5.1	7.2	11.6	17.3	22.6	3.8	6.7	10.5	17.9	26.35	17.3	4.2	6.4		
Rated voltage		V	1-phase 200-240V (-15 to +10%)					3-phase AC 380V - 480V (-15 to +10%)							1-phase 200-240V (-15 to +10%)					3-phase AC 380V - 480V 50/60Hz				
Operating voltage range		V	170 - 265V					323 - 528V							170 - 264V									
Frequency range		Hz	47 - 63Hz ± 5%											47 - 63Hz ± 5%										
Cooling method			convection		fan		convection		fan cooling			conv.		fan cooling			fan cooling							
Braking chopper			built-in											built-in										
DC reactor			optional											optional										
Control method			V/F, SVC											V/F, SVC,										
Starting torque		%	up to 150% at 3 Hz including auto-torque/slip											up to 150% at 3.0Hz including auto-torque/slip compensation										
Max. output frequency		Hz	0.00-599.00 Hz											0.00-599.00 Hz										
Frequency output accuracy			-											-										
Frequency setting resolution		Hz	0.01Hz											0.01Hz										
Overload tolerance (normal duty, heavy duty)			120% of rated output current for 60 seconds; 150% for 3 seconds											120% of rated output current for 60 seconds; 150% for 3 seconds										
Overload tolerance (heavy duty, super heavy duty)			150% of rated output current for 60 seconds; 200% for 3 seconds											150% of rated output current for 60 seconds; 200% for 3 seconds										
Frequency setting signal			0 - 10V / 4(0)-20mA, PWM pulse width input (1kHz), pulse input (10kHz)											0 - +10 V / -10 V - +10 V, 4 - 20 mA / 0 - +10 V, 1 pulse input (33 kHz), 1 pulse output (33 kHz)										
Accel./decel. Time			0.1 - 600 sec. (2 settings accel/decel time)											0.1 - 600 sec. (2 independent settings accel/decel time)										
Main control functions			2 independent motor parameter settings, fast run, deceleration energy back (DEB) function, fast deceleration function, selectable master and auxiliary frequency source, momentary power loss ride through, speed search, over-torque detection, 16-step speed accel/decel timer, S-curve accel/decel, JOG frequency, upper/lower limits frequency ref, DC injection braking at start and stop, PID control, simple positioning function, Modbus integrated as standard											Multiple motor switches (max. 4 independent motor parameter settings), fast run, deceleration energy back (DEB) function, wobble frequency function, fast deceleration function, master and auxiliary frequency source selectable, momentary power loss ride thru, speed search, over-torque detection, 16-step speed (max.), accel/decel time switch, S-curve accel/decel, 3-wire sequence, JOG frequency, upper/lower limits for frequency reference, DC injection braking at start and stop, PID control, built-in PLC (2k steps), simple positioning function, Modbus is integrated as standard										
Fan control			fan control											fan control										
Motor protection			electronic thermal relay and phase failure protection											over/under-volt/current, external fault, overload, IGBT short circuit, PTC										
Over-current protection			yes											yes										
Over-voltage protection			yes											yes										
Over-temperature protection			yes											yes										
Stall prevention			Stall prevention during acceleration, deceleration and running independently											Stall prevention during acceleration, deceleration and running independently										
Re-start after momentary power off			yes											yes										
Ground current protection			yes											yes										
EMI filter			no											no										
Dimensions (H) x (W) x (D)		H	mm	128	128	142	157	128	128	142	157	207	128	128	142	157	128	128	142	157	128	128	142	
		W	mm	68	68	72	87	68	68	72	87	109	68	68	72	87	109	68	68	72	87	68	68	72
		D	mm	78	107	127	136	113	127	127	136	138	96	143	143	179	129	143	143	179	129	143	143	143
Weight		kg	0.4	0.5	0.8	1	0.55	0.7	0.8	1	2	0.65	0.95	0.95	1.24	0.76	0.81	1						
Optional accessories			DIN-rail mount adaptor											DeviceNet, Ethernet/IP, Profibus DP, Modbus TCP, CANopen, Ethercat communication cards, external 24 VDC power supply card, DIN-rail mount adaptor, cable for remote mounting of digital keypad										

MS300 Series (IP66)								C2000+ Series																										
																																		
three-phase																																		
5A5	9A0	13A	17A	25A	32A	38A	45A	040	055	075	110	150	185	220	300	370	450	550	750	900	1100	1320	1600	1850	2000	2200	2500	2800	3150	3550	4000	4500	5000	5600
C	C	D	D	E	E	F	F	A	A	B	B	B	C	C	C	D	D	D	D	E	E	F	F	G	G	G	G	H	H	H	H	H	H	H
2.2	3.7	5.5	7.5	11	15	18.5	22	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	185	200	220	250	280	315	355	400	450	500	560
5	8	9.9	13	19.1	24.4	29	34.4	8.4	10	14	19	25	30	36	48	58	73	88	120	143	175	207	247	295	315	367	383	438	491	544	613	690	741	872
6.5	10.5	15.7	20.5	28	36	41.5	49	10.5	12	18	24	32	38	45	60	73	91	110	150	180	220	260	310	370	395	460	481	550	616	683	770	866	930	1094
0.10 - 599.0 Hz								Heavy duty: 0.1 - 599 Hz; super heavy duty: 0.1 - 599 Hz																										
1 - 15 kHz								2 - 15kHz (8kHz)				2 - 10kHz (6kHz)				2 - 10kHz (6kHz)																		
4.2	6.9	9.9	13	19.1	24.4	29	34.3	7.2	8.4	9.6	14	19	25	30	36	48	58	73	88	120	143	175	207	247	247	295	315	366	438	491	544	544	690	741
5.5	9	13	17	25	32	38	45	9	10.5	12	18	24	32	38	45	60	73	91	110	1510	180	220	260	310	310	370	395	460	550	616	683	683	866	930
2 - 15kHz (default 4)								2 - 15kHz (4kHz)				2 - 10kHz (4kHz)				2 - 9kHz (4kHz)								2 - 9kHz (3kHz)										
6.1	9.9	9.9	13	19.1	24.4	29	34.3	14.5	16	19	25	33	38	45	60	70	96	108	149	159	197	228	285	361	300	380	390	469	527	594	590	625	866	930
7.2	11.6	13	17	25	32	38	45	15.5	17	20	26	35	40	47	63	74	101	114	157	167	207	240	300	380	397	400	447	494	555	625	770	866	930	1094
3-phase AC 380V ÷ 480V 50/60Hz								3-phase AC 380V ÷ 480V (-15% ÷ +10%), 50/60Hz (also available in 500-690V versions)																										
342 - 528V								323 - 528 VAC																										
47 - 63Hz ± 5%								47 - 63 Hz																										
convection		fan cooling						fan cooling																										
built-in								built-in				optional																						
optional								optional				built-in																						
SPWM (V/F or sensorless vector control)								1: V/F, 2: SVC, 3: VF+PG, 4: FOC+PG, TQC+PG																										
up to 150% at 3.0Hz								up to 150% or above at 0.5Hz; under FOC+PG mode can reach up to 150% at 0Hz																										
0.1 - 599.0 Hz								Heavy Duty: 0.1 - 599 Hz; Super Heavy Duty: 0.1 - 599 Hz																										
-								digital command: ± 0.01%, -10°C ÷ +40°C, analogue command: ± 0.1%, 25 ±10°C																										
0.01Hz								digital command: 0.1Hz, analogue command: 0.03/60Hz (±11 bits)																										
150% of rated output current for 60 seconds								150% of rated output current: 1 minute for every 5 minutes or 180% of rated output current: 3 seconds for every 30 seconds (heavy duty default)																										
150% of rated current for 1 minute								150% of rated output current: 1 minute for every 5 minutes or 200% of rated output current: 3 seconds for every 30 seconds (super heavy duty)																										
Potentiometer 5 kΩ / 0.5 W, 0 to +10 VDC, 4 to 20 mA, RS-485 interface								+10V ÷ -10, 0 ÷ +10V, 4-20mA, pulse input																										
0.1 - 600 sec. (2 independent settings accel/decel time)								0.00 ÷ 600.00 / 0.0 ÷ 6000.0 seconds																										
Multiple motor switches (max. 4 independent motor parameter settings), fast run, deceleration energy back (DEB) function, wobble frequency function, fast deceleration function, master and auxiliary frequency source selectable, momentary power loss ride thru, speed search, over-torque detection, 16-step speed (max.), accel/decel time switch, S-curve accel/decel, 3-wire sequence, JOG frequency, upper/lower limits for frequency reference, DC injection braking at start and stop, PID control, built-in PLC (2k steps), simple positioning function, Modbus is integrated as standard								torque control, speed/torque control switching, feed forward control, zero-servo control, momentary power loss ride through, speed search, over-torque detection, torque limit, 16-step speed (including master speed), accel/decel time switch, S-curve accel/decel, 3 wire sequence, auto-tuning (rotational, stationary), dwell, slip compensation, torque compensation, skip frequency, frequency upper/lower limit settings, DC injection braking at start/stop, high slip braking, PID control (with sleep function), energy saving control, Modbus communication (RS-485 RJ45) max. 115.2kbps, fault restart and parameter copy.																										
fan control								ON/OFF switch				PWM control																						
over/under-volt/current, external fault, overload, IGBT short circuit, PTC								electronic thermal relay protection																										
yes								thermal current forces 240% of the over-current protection, current clamp: normal duty 170 - 175%; heavy duty: 180 - 185%																										
yes								drive will stop when DC-BUS voltage exceeds 820V																										
yes								built-in temperature sensor																										
stall prevention during acceleration, deceleration and running independently																																		
yes								parameter setting can be up to 20 seconds																										
yes								ground current protection level is 50% of rated current of the AC motor drive																										
no								built-in								optional																		
157		207		250		300		250		320		400		550		590		800		1000						1435								
87		109		130		175		130		190		250		280		370		420		500						700								
152		154		185		192		170		190		210		255				300		397						398								
1.24		2.07		3.97		6.25		2.6 ±0.3		5.4 ±1		9.8 ±1.5		27 ±1.5		38.5 ±1.5		64.8 ±1.5		86.5 ±1.5		134 ±4				228								
DeviceNet, EtherNet/IP, Profibus DP, Modbus TCP, CANopen, Ethercat communication cards, external 24 VDC power supply card, DIN-rail mount adaptor, cable for remote mounting of digital keypad								Digital keypad and panel mount adaptor, I/O extension cards, relay extension cards, PG encoder cards, EtherNet/IP - Modbus TCP - PROFIBUS-DP - DeviceNet - CANopen, Ethercat, Profinet communication cards																										

Variable frequency drives - Compact



Conveyor



Fan



Machine Tool



Motors



VFD1A6ME21ANN



VFD4A8ME21ANN



VFD4A8MS21ANS



VFD32AMS43ANS

ME300 / MS300 series - Vector control compact drive

ME300 / MS300 range of compact vector controlled drives offer standard essential built-in functionality including multi-pump control, built-in brake chopper, RS-485 (Modbus). For both IM and PM motors.

Common features include:

- Built-in PID feedback control
- Easy to navigate keypad with LED display and potentiometer
- Pre-configured parameters for most commonly used applications
- High-efficiency cooling and compact design (*for side-by-side installation*)
- Multi motor control for operating more than one motor from the same drive
- Multiple digital outputs MS300 (1x relay, 2x transistor) ME300 (1x relay, 1x transistor)
- Dual rating chart for ME / MS300 drives - normal and heavy duty applications (*see Annex-4*)
- Overload capabilities: 150% of rated output current for 60 sec, 200% for 3 seconds (*heavy duty*)
- Overcurrent, overvoltage, overload, over-temperature and phase failure protection incorporated
- Enhanced PCB coatings (**IEC 60721-3-3 class 3C2 standard**) ensures drive operation in harsh environments
- Default drive rating: Heavy duty

type	motor rating	rated current	description	frame size	dimensions (mm)			price
					(H)	(W)	(D)	

ME300 series - Basic ultra-compact AC motor drives - (VF/SVC open-loop control)

- High starting torque (*up to 150% rated starting torque at 3 Hz*)
- Supports side-by-side installation, with operating temp -20 to +40°C
- Supports high speed pulse and PWM (10kHz) frequency input signals
- Ultra compact frame sizes, up to 60% reduction compared to previous VFD-EL
- Front fascia 4 digit LED display, frequency adjustment knob and direction - run/stop function keys

Single-phase input 200-240V 50/60Hz (three-phase output voltage 230VAC)

VFD1A6ME21ANN	200 W	1.6A	1-ph AC motor drive	A1	128	68	78	3 980.00
VFD2A8ME21ANN	400 W	2.8A	1-ph AC motor drive	A3	128	68	107	4 070.00
VFD4A8ME21ANN	750 W	4.8A	1-ph AC motor drive	B2	142	72	127	4 240.00
VFD7A5ME21ANN	1.5 kW	7.5A	1-ph AC motor drive	C1	157	87	136	5 610.00
VFD11AME21ANN	2.2 kW	11A	1-ph AC motor drive	C1	157	87	136	6 480.00

Three-phase input 380-480V 50/60Hz

VFD1A5ME43ANN	400 W	1.5A	3-ph AC motor drive	A4	128	68	113	5 680.00
VFD2A7ME43ANN	750 W	2.7A	3-ph AC motor drive	A6	128	68	127	5 940.00
VFD4A2ME43ANN	1.5 kW	4.2A	3-ph AC motor drive	B1	142	72	127	6 470.00
VFD5A5ME43ANN	2.2 kW	5.5A	3-ph AC motor drive	C1	157	87	136	7 690.00
VFD9A0ME43ANN	3.7 kW	9.0A	3-ph AC motor drive	C1	157	87	136	8 790.00
VFD13AME43ANN	5.5 kW	13A	3-ph AC motor drive	D1	207	109	138	10 700.00
VFD17AME43ANN	7.5 kW	17A	3-ph AC motor drive	D1	207	109	138	12 800.00

MS300 series - Standard compact AC motor drives (VF/SVC open-loop control)

Essential functions built-in as standard includes: PLC for simple programming needs, communication slots for various communication cards, support for both IM and PM motor controls, STO function ensuring worry-free operation and protection.

- Built-in PLC functionality (2K steps)
- Supports high speed pulse (33kHz) frequency input signal
- High starting torque (*up to 200% rated starting torque at 0.5 Hz*)
- Built-in slot for optional communication modules (*see accessories for ME/MS drives*)
- Integrated Safe Torque Off (STO) SIL2/PLD compliance, offers high safety machine stop
- USB port for simplicity of data uploads and downloads (*supports PC program via USB*)
- Removable 5 digit LED keypad with function keys and frequency adjustment knob

Single-phase input 200-240V 50/60Hz (three-phase output voltage 230VAC)

VFD1A6MS21ANS	200 W	1.6A	1-ph AC motor drive	A1	128	68	96	5 570.00
VFD2A8MS21ANS	400 W	2.8A	1-ph AC motor drive	A3	128	68	125	5 650.00
VFD4A8MS21ANS	750 W	4.8A	1-ph AC motor drive	B2	142	72	143	6 100.00
VFD7A5MS21ANS	1.5 kW	7.5A	1-ph AC motor drive	C1	157	87	152	7 060.00
VFD11AMS21ANS	2.2 kW	11A	1-ph AC motor drive	C1	157	87	152	9 550.00

Three-phase input 380-480V 50/60Hz

VFD1A5MS43ANS	400 W	1.5A	3-ph AC motor drive	A4	128	68	129	7 000.00
VFD2A7MS43ANS	750 W	2.7A	3-ph AC motor drive	A5	128	68	143	7 170.00
VFD4A2MS43ANS	1.5 kW	4.2A	3-ph AC motor drive	B1	142	72	143	7 790.00
VFD5A5MS43ANS	2.2 kW	5.5A	3-ph AC motor drive	C1	157	87	152	8 950.00
VFD9A0MS43ANS	3.7 kW	9.0A	3-ph AC motor drive	C1	157	87	152	10 400.00
VFD13AMS43ANS	5.5 kW	13A	3-ph AC motor drive	D1	207	109	154	13 800.00
VFD17AMS43ANS	7.5 kW	17A	3-ph AC motor drive	D1	207	109	154	16 500.00
VFD25AMS43ANS	11 kW	25A	3-ph AC motor drive	E1	250	130	185	19 400.00
VFD32AMS43ANS	15 kW	32A	3-ph AC motor drive	E1	250	130	185	25 000.00
VFD38AMS43ANS	18.5 kW	38A	3-ph AC motor drive	F1	300	175	192	30 300.00
VFD45AMS43ANS	22 kW	45A	3-ph AC motor drive	F1	300	175	192	35 500.00

See accessories for ME/MS drives

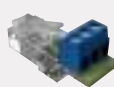
Variable frequency drives - Compact



VFD3A0MS53ANS



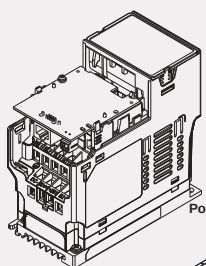
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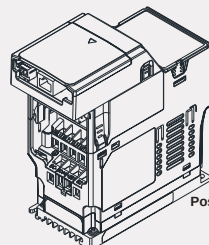
MKM-HUB01



IFD6500



Pos 1



Pos 2

MS300 series - Vector control compact drive

MS300 range of compact vector controlled drives offer standard essential built-in functionality including - multi-pump control, built-in brake chopper, RS-485 (Modbus) supporting both IM and PM motors.

- High starting torque (*up to 200% rated starting torque at 0.5 Hz*)
- Overload capabilities: 150% of rated output current for 60 seconds, 200% for 3 seconds
- Integrated Safe Torque Off (STO) SIL2/PLd compliance offers high-safety machine stop
- Built-in PLC functionality (*2K steps*), supports high-speed pulse (*33kHz*) frequency input signal
- Default drive rating: Heavy duty (*break resistor chart, see Annex-3*)

type	motor rating	rated current	description	frame size	dimensions (mm)			price
					(H)	(W)	(D)	

MS300 series - 575V compact AC motor drives (VF/SVC open-loop control)

Modbus Communications Built-in. Options for CANopen, Profinet ModbusTCP, Ethernet/IP and EtherCAT communications

Three-phase input 525-600V 50/60Hz

VFD1A7MS53ANS	750 W	1.7A	3-ph AC motor drive	A5	128	68	143	11 000.00
VFD3A0MS53ANS	1.5 kW	3.0A	3-ph AC motor drive	B1	142	72	143	12 700.00
VFD4A2MS53ANS	2.2 kW	4.2A	3-ph AC motor drive	C1	157	87	152	14 500.00
VFD6A6MS53ANS	3.7 kW	6.6A	3-ph AC motor drive	C1	157	87	152	18 800.00
VFD9A9MS53ANS	5.5 kW	9.9A	3-ph AC motor drive	D1	207	109	154	24 600.00
VFD12AMS53ANS	7.5 kW	12.2A	3-ph AC motor drive	D1	207	109	154	27 800.00

MS300 series IP66 - AC motor drives (VF/SVC open-loop control)

IP66 / NEMA4X water-proof and dust-proof design enables stable operation under harsh environments. Quick installation without a control cabinet saves cost.

Single-phase input 200-240V 50/60Hz (three-phase output voltage 230 VAC)

VFD2A8MS21MNS	400 W	2.8A	1-ph AC motor drive	A1	230	160	151	11 300.00
VFD4A8MS21MNS	750 W	4.8A	1-ph AC motor drive	A1	230	160	151	12 200.00
VFD7A5MS21MNS	1.5 kW	7.5A	1-ph AC motor drive	A2	230	160	167	14 600.00
VFD11AMS21MNS	2.2 kW	11A	1-ph AC motor drive	B	280	175	193	19 100.00

Three-phase input 380-480V 50/60Hz

VFD1A5MS43MNS	400 W	1.5A	3-ph AC motor drive	A1	230	160	151	14 500.00
VFD2A7MS43MNS	750 W	2.7A	3-ph AC motor drive	A1	230	160	151	14 800.00
VFD4A2MS43MNS	1.5 kW	4.2A	3-ph AC motor drive	A2	230	160	167	16 100.00
VFD5A5MS43MNS	2.2 kW	5.5A	3-ph AC motor drive	A3	230	160	190	18 500.00
VFD9A0MS43MNS	3.7 kW	9.0A	3-ph AC motor drive	B	280	175	193	21 400.00
VFD13AMS43MNS	5.5 kW	13A	3-ph AC motor drive	C	300	195	193	28 300.00
VFD17AMS43MNS	7.5 kW	17A	3-ph AC motor drive	C	300	195	193	33 900.00

Accessories for ME/MS300 series drives

MKM-DRB	DIN-rail	mounting kit for frame A and B		ME/MS300 drives	151.00
MKM-DRC	DIN-rail	mounting kit for frame C		ME/MS300 drives	190.00
EMM-BPS01	24 VDC	external DC power supply card		for MS300 drives	4 050.00
KPC-CC01	keypad	panel mount LCD		for MS300 drives	1 930.00
KPMS-LE01	keypad	removable LED keypad		for MS300 drives	490.00
MKM-HUB01	adaptor	daisy chain - RJ-45 to screw connector		ME/MS300 drives	254.00
EG1010A	cable	to remotely mount keypad	1 met	for MS300 drives	405.00
EG2010A	cable	to remotely mount keypad	2 met	for MS300 drives	470.00
EG3010A	cable	to remotely mount keypad	3 met	for MS300 drives	535.00
UC-PRG030-02A	USB (B to A)	programming cable PC-VFD	3 met	for MS300 drives	242.00
IFD6500	RS-485 to USB	converter (no ext. power supply required)			1 080.00

❖ Applicable to MS300 IP66

Fieldbus modules for MS series drives

CMM-EIP02	Ethernet/IP	Modbus TCP plug-in com. card	1 port	for MS300 drives	1 630.00
CMM-EIP03	Ethernet/IP	Modbus TCP plug-in com. card	2 port	for MS300 drives	1 630.00
CMM-EC02	EtherCAT	plug-in communication card	2 port	for MS300 drives	2 350.00
CMM-PN02	Profinet	plug-in communication card	2 port	for MS300 drives	3 260.00
CMM-COP02	CANopen	plug-in communication card	2 port	for MS300 drives	868.00

Note: CBM-CCxxA required when using above communication card

Cables for above communication cards

				frame	Pos.*	
CBM-CL01A	cable for	CMM-DN/EIP/PD/COP	145 mm	A,B	1	431.00
		CMM-EC02		A	2	
CBM-CL02A	cable for	CMM-DN/EIP/PD/COP	250 mm	C,D,E,F	1	477.00
		CMM-EC02		B,C,D	2	
CBM-CC01A	cable for	CMM-DN/EIP/PD/COP	145 mm	A	2	522.00
CBM-CC02A	cable for	CMM-DN/EIP/PD/COP	250 mm	B,C,D	2	568.00

* Pos 1 - compact mounting, communication card installed back to front

* Pos 2 - right side up mounting, with extra additional cover (adds to frame size depth)



Milling Machine



Cranes



Compressor



Motors



VFD150C4EA-21



VFD220C4EA-21



VFD370C63B-21

C2000+ series - High performance vector control drive

C2000+ series features precise speed, torque and position control, suitable for both sensor and sensorless types of synchronous and asynchronous motors. With a higher overload capacity the C2000+ provides the best performance and stability for a variety of heavy duty and constant torque applications in refrigeration, mining, cranes/hoists, crushers, compressors etc.

- Speed/torque/position control mode
- Accepts various PG (*encoder*), I/O extension, relay extension and communication cards
- Integrated Safe Torque Off (STO) SIL2/PLd compliance, offers high safety machine stop
- Dual rating design - heavy duty / super heavy duty. Built-in PLC function (*10k steps capacity*)
- Overload capabilities: C2000+ 150% of rated output current for 1min, 180% for 3sec (*heavy duty*)
- Enhanced PCB coatings (**IEC 60721-3-3 class 3C3 standard**) ensures drive operation in harsh environments
- Built-in Modbus and CANopen (up to 30kW) high-speed communication interface (*optional cards for others*)
- Default drive rating: Heavy duty (*break resistor chart, see Annex-3*)

type	motor rating 400V	rated current	description	frame size	dimensions (mm)			price
					(H)	(W)	(D)	
C2000+ - Three-phase input 380-480V 50/60Hz								
VFD007C4EA-21	0.75 kW	3.0A	3-ph AC motor drive	A	250	130	170	14 400.00
VFD015C4EA-21	1.5 kW	4.0A	3-ph AC motor drive	A	250	130	170	15 500.00
VFD022C4EA-21	2.2 kW	6.0A	3-ph AC motor drive	A	250	130	170	17 000.00
VFD040C4EA-21	4.0 kW	10.5A	3-ph AC motor drive	A	250	130	170	22 000.00
VFD055C4EA-21	5.5 kW	12A	3-ph AC motor drive	A	250	130	170	22 900.00
VFD075C4EA-21	7.5 kW	18A	3-ph AC motor drive	B	320	190	190	25 700.00
VFD110C4EA-21	11 kW	24A	3-ph AC motor drive	B	320	190	190	29 900.00
VFD150C4EA-21	15 kW	32A	3-ph AC motor drive	B	320	190	190	37 200.00
VFD185C4EA-21	18.5 kW	38A	3-ph AC motor drive	C	400	250	210	46 200.00
VFD220C4EA-21	22 kW	45A	3-ph AC motor drive	C	400	250	210	52 100.00
VFD300C4EA-21	30 kW	60A	3-ph AC motor drive	C	400	250	210	59 700.00
VFD370C43S-00	37 kW	73A	3-ph AC motor drive	D0-1	500	280	255	55 300.00
VFD450C43S-00	45 kW	91A	3-ph AC motor drive	D0-1	500	280	255	63 300.00
VFD550C43A-00	55 kW	110A	3-ph AC motor drive	D1	550	330	275	84 500.00
VFD750C43A-00	75 kW	150A	3-ph AC motor drive	D1	550	330	275	117 000.00
VFD900C43A-00	90 kW	180A	3-ph AC motor drive	E1	589	370	300	136 000.00
VFD1100C43A-00	110 kW	220A	3-ph AC motor drive	E1	589	370	300	157 000.00
VFD1320C43A-00	132 kW	260A	3-ph AC motor drive	F1	800	420	300	180 000.00
VFD1600C43A-00	160 kW	310A	3-ph AC motor drive	F1	800	420	300	214 000.00
VFD1850C43A-00	185 kW	370A	3-ph AC motor drive	G1	1000	500	397	284 000.00
VFD2000C43A-00	200 kW	395A	3-ph AC motor drive	G1	1000	500	397	294 000.00
VFD2200C43A-00	220 kW	460A	3-ph AC motor drive	G1	1000	500	397	345 000.00
VFD2500C43A-00	250 kW	481A	3-ph AC motor drive	G1	1000	500	397	366 000.00
VFD2800C43A-00	280 kW	550A	3-ph AC motor drive	H1	1435	700	398	461 000.00
VFD3150C43A-00	315 kW	616A	3-ph AC motor drive	H1	1435	700	398	503 000.00
VFD3550C43A-00	355 kW	683A	3-ph AC motor drive	H1	1435	700	398	538 000.00
VFD4000C43A-00	400 kW	770A	3-ph AC motor drive	H1	1435	700	398	582 000.00
VFD4500C43A-00	450 kW	866A	3-ph AC motor drive	H1	1435	700	398	681 000.00
VFD5000C43A-00	500 kW	930A	3-ph AC motor drive	H1	1435	700	398	739 000.00
VFD5600C43A-00	560 kW	1094A	3-ph AC motor drive	H1	1435	700	398	865 000.00

Frames A, B, C - built-in braking chopper, EMI filter and CANopen communication

Frames D,E,F,G,H - DC reactor built-in

C2000 - Three-phase input 525-600V (up to 15kW) 525-690V (from 22kW) 50/60Hz

type	motor rating at 525V	rated current	description	frame size	dimensions (mm)			price
					(H)	(W)	(D)	
VFD037C53A-21	3.7 kW	6.7A	3-ph AC motor drive	A	250	130	170	17 300.00
VFD055C53A-21	5.5 kW	9.9A	3-ph AC motor drive	B	320	190	190	23 900.00
VFD075C53A-21	7.5 kW	12.1A	3-ph AC motor drive	B	320	190	190	27 500.00
VFD110C53A-21	11 kW	18.7A	3-ph AC motor drive	B	320	190	190	34 800.00
VFD150C53A-21	15 kW	24.2A	3-ph AC motor drive	B	320	190	190	43 400.00
VFD300C63B-21	22 kW	36A	3-ph AC motor drive	C	400	250	210	82 700.00
VFD370C63B-21	30 kW	45A	3-ph AC motor drive	C	400	250	210	83 000.00
VFD450C63B-00	37 kW	54A	3-ph AC motor drive	D1	550	330	275	103 000.00
VFD550C63B-00	45 kW	67A	3-ph AC motor drive	D1	550	330	275	114 000.00
VFD750C63B-00	55 kW	86A	3-ph AC motor drive	E1	589	370	300	148 000.00
VFD900C63B-00	75 kW	104A	3-ph AC motor drive	E1	589	370	300	163 000.00
VFD1320C63B-00	90 kW	150A	3-ph AC motor drive	E1	589	370	300	232 000.00
VFD1600C63B-00	132 kW	180A	3-ph AC motor drive	F1	800	420	300	257 000.00
VFD2000C63B-00	160 kW	220A	3-ph AC motor drive	F1	800	420	300	310 000.00
VFD2500C63B-00	185 kW	290A	3-ph AC motor drive	G1	1000	500	397	379 000.00
VFD3150C63B-00	250 kW	350A	3-ph AC motor drive	G1	1000	500	397	518 000.00

Default 525/690 rating: Light duty **Control modes:** V / F, V / F+PG, SVC control modes only

(See Annex-3 for detailed derating chart for different duties and voltages)

Frame A, B, C built-in braking chopper (frames D,E,F,G,H) DC reactor built-in

Variable frequency drives - Variable-torque



VP3000 series - Open-loop variable-torque standard drive

The Delta **VP3000** series provides new advanced features for a seamless and robust customer experience with predictive maintenance for key components, lower harmonics, reduced dimensions and a lower carbon footprint

VP3000 is ideal for variable-torque applications such as blowers, pumps, HVAC, water treatment and supply systems. With built-in support for **BACnet**, the drives are easily integrated with Building Management Systems.

Power ranges from 0.75 to 630 kW with reduced frame sizes for optimal space usage and easier maintenance.

General features:

- Custom development platform: Built-in PLC with 20k steps
- Functional safety: Built-in Safe Torque Off (STO) SIL3
- Built-in EMC filter: In compliance with **(EN61800-3 C2, C3)**
- High-speed network: Supports various industrial comm. protocols
- Enhanced PCB coating: In compliance with (IEC 60721-3-3 class 3C3)
- Energy efficiency: IM, PM, and high-efficiency SynRM motor control modes
- Micro SD: Parameter backup, PLC program backup, firmware updates
- Compact size: Slim design, optimising panel space and cable configuration
- Lower harmonics: EN 61000-3-12 standard harmonics reach min. 35% (from 22 kW)
- PdM: Monitors key component's service life for stable equipment operation
- Built-in USB-C port: Facilitates drive setting, updating, real-time monitoring and system tuning



VFD011VP43BFTAA



VFD110VP43BFTCA



VFD866VP43SHTCA



type	motor rating	rated current	description	frame size	dimensions (mm)			price
					(H)	(W)	(D)	

VP3000 series - Three-phase input 380-480V 50/60Hz

VFD3A0VP43BFTAA	0.75 kW	3.0A	3-ph AC motor drive	A2	300	110	147	11 100.00
VFD4A2VP43BFTAA	1.5 kW	4.2A	3-ph AC motor drive	A2	300	110	147	12 100.00
VFD5A6VP43BFTAA	2.2 kW	5.6A	3-ph AC motor drive	A2	300	110	147	13 100.00
VFD7A2VP43BFTAA	3.0 kW	7.2A	3-ph AC motor drive	A2	300	110	147	13 200.00
VFD011VP43BFTAA	4.0 kW	11A	3-ph AC motor drive	A2	300	110	147	16 300.00
VFD013VP43BFTAA	5.5 kW	13A	3-ph AC motor drive	B2	300	110	167	18 100.00
VFD018VP43BFTAA	7.5 kW	18A	3-ph AC motor drive	B2	300	110	167	19 700.00
VFD025VP43BFTAA	11.0 kW	25A	3-ph AC motor drive	C2	380	142	213	23 000.00
VFD032VP43BFTAA	15.0 kW	32A	3-ph AC motor drive	C2	380	142	213	26 100.00
VFD038VP43BFTAA	18.5 kW	38A	3-ph AC motor drive	C2	380	142	213	32 600.00
VFD045VP43BFTCA	22 kW	45A	3-ph AC motor drive	D2	460	175	221	38 100.00
VFD062VP43BFTCA	30 kW	62A	3-ph AC motor drive	D2	460	175	221	43 500.00
VFD073VP43BFTCA	37 kW	73A	3-ph AC motor drive	E2	489	190	226	50 400.00
VFD090VP43BFTCA	45 kW	90A	3-ph AC motor drive	E2	489	190	226	57 300.00
VFD110VP43BFTCA	55 kW	110A	3-ph AC motor drive	F2	595	190	255	73 300.00
VFD150VP43BFTCA	75 kW	150A	3-ph AC motor drive	G2	660	199	310	93 000.00
VFD180VP43BFTCA	90 kW	180A	3-ph AC motor drive	H2	710	262	310	112 000.00
VFD220VP43BFTCA	110 kW	220A	3-ph AC motor drive	H2	710	262	310	139 000.00
VFD260VP43BFTCA	132 kW	260A	3-ph AC motor drive	I2	783	260	341	173 000.00
VFD310VP43BFTCA	160 kW	310A	3-ph AC motor drive	I2	783	260	341	189 000.00
VFD370VP43BFTCA	185 kW	370A	3-ph AC motor drive	J2	937	346	410	251 000.00
VFD395VP43BFTCA	200 kW	395A	3-ph AC motor drive	J2	937	346	410	272 000.00
VFD460VP43BFTCA	220 kW	460A	3-ph AC motor drive	K2	955	380	410	286 000.00
VFD485VP43BFTCA	250 kW	485A	3-ph AC motor drive	K2	955	380	410	305 000.00
VFD530VP43SHTCA	280 kW	530A	3-ph AC motor drive	L2	1279	345	529	325 000.00
VFD616VP43SHTCA	315 kW	616A	3-ph AC motor drive	L2	1279	345	529	458 000.00
VFD683VP43SHTCA	355 kW	683A	3-ph AC motor drive	L2	1279	345	529	492 000.00
VFD770VP43SHTCA	400 kW	770A	3-ph AC motor drive	L2	1279	345	529	542 000.00
VFD866VP43SHTCA	450 kW	866A	3-ph AC motor drive	M2	1434	345	529	664 000.00
VFD930VP43SHTCA	500 kW	930A	3-ph AC motor drive	M2	1434	345	529	668 000.00
VFD1K1VP43SHTCA	560 kW	1100A	3-ph AC motor drive	M2	1434	345	529	772 000.00
VFD1K2VP43SHTCA	630 kW	1200A	3-ph AC motor drive	M2	1434	345	529	836 000.00

Accessories for VP3000 drives

EMV-R6AA	relay	plug-in extension card for multi-function output selection	1 110.00
EMV-A22A	analog	plug-in I/O extension card 0 - 10 V, 0 - 20mA/4 - 20mA	1 230.00
EMV-D42A	I/O	plug-in I/O extension card	680.00
EMC-COP01	CANopen	plug-in CANopen communication card	1 200.00
CMC-EIP02	EtherNet	plug-in EtherNet/IP, Modbus TCP communication card	2 520.00
CMC-PN01	PROFINET	plug-in PROFINET communication card	4 940.00

Standard fieldbus cables

UC-CMC010-01A	1 m	CANopen	CANopen cable (RJ45 connector)	203.00
UC-CMC020-01A	2 m	CANopen	CANopen cable (RJ45 connector)	301.00
UC-CMC030-01A	3 m	CANopen	CANopen cable (RJ45 connector)	542.00
UC-EMC010-02B	1 m	EtherNet	EtherNet cable (shielded)	460.00
UC-EMC020-02B	2 m	EtherNet	EtherNet cable (shielded)	644.00
UC-EMC050-02B	5 m	EtherNet	EtherNet cable (shielded)	1 030.00



VFD150CP4EB-21



VFD450CP43S-21



VFD450FP4EA-52

CP2000 series - Fan and Pump purpose drives

CP2000 series AC motor drive for energy-saving HVAC systems and for pump and fan applications. Equipped with special HVAC parameters and PID control functions for efficient operation, multi-segment V/F control curve and soft start functions to assist frequent torque change and constant output applications with energy-saving performance.

General features:

- Built-in PLC (10K steps) programming capacity with real-time-clock and calendar
- Built-in RS-485 (Modbus) and BACnet MS/TP (expandable with optional extension cards)
- Multi-pump control of up to 8 motors provide fixed amount and fixed time circulation control
- Flying start and auto restart after momentary power loss functions, suitable for fan application
- Enhanced PCB coatings (IEC 60721-3-3 class 3C2 standard) ensures drive operation in harsh environments
- Default rated current: Light duty (break resistor chart, see **Annex-3**)
- Dual rating chart for CP/CFP2000 drives - normal and heavy-duty applications (see **Annex-4**)

type	motor rating	rated current	description	frame size	dimensions (mm)			price
					(H)	(W)	(D)	

CP2000 series - Fan/Pump vector control drives

Three-phase input 380-480V 50/60 Hz

VFD015CP4EB-21	1.5 kW	4.2A	3-ph AC motor drive	A	250	130	170	12 100.00
VFD022CP4EB-21	2.2 kW	5.5A	3-ph AC motor drive	A	250	130	170	13 100.00
VFD040CP4EA-21	4.0 kW	10.5A	3-ph AC motor drive	A	250	130	170	16 000.00
VFD055CP4EB-21	5.5 kW	13A	3-ph AC motor drive	A	250	130	170	17 600.00
VFD075CP4EB-21	7.5 kW	18A	3-ph AC motor drive	A	250	130	170	18 900.00
VFD110CP4EB-21	11 kW	24A	3-ph AC motor drive	B	320	190	190	22 900.00
VFD150CP4EB-21	15 kW	32A	3-ph AC motor drive	B	320	190	190	27 200.00
VFD185CP4EB-21	18.5 kW	38A	3-ph AC motor drive	B	320	190	190	30 800.00
VFD220CP4EA-21	22 kW	45A	3-ph AC motor drive	C	400	250	210	36 400.00
VFD300CP4EB-21	30 kW	60A	3-ph AC motor drive	C	400	250	210	41 100.00
VFD370CP4EB-21	37 kW	73A	3-ph AC motor drive	C	400	250	210	45 700.00
VFD450CP43S-21	45 kW	91A	3-ph AC motor drive	D0	500	280	255	56 500.00
VFD550CP43S-21	55 kW	110A	3-ph AC motor drive	D0	500	280	255	63 300.00
VFD750CP43B-21	75 kW	150A	3-ph AC motor drive	D	550	330	275	89 000.00
VFD900CP43A-21	90 kW	180A	3-ph AC motor drive	D	550	330	275	123 000.00
VFD1100CP43A-21	110 kW	220A	3-ph AC motor drive	E	589	370	300	139 000.00
VFD1320CP43B-21	132 kW	260A	3-ph AC motor drive	E	589	370	300	161 000.00
VFD1600CP43A-21	160 kW	310A	3-ph AC motor drive	F	800	420	300	182 000.00
VFD1850CP43B-00	185 kW	370A	3-ph AC motor drive	F	800	420	300	243 000.00
VFD2200CP43A-00	220 kW	460A	3-ph AC motor drive	G1	1000	500	397	298 000.00
VFD2800CP43A-00	280 kW	530A	3-ph AC motor drive	G1	1000	500	397	378 000.00
VFD3150CP43A-00	315 kW	616A	3-ph AC motor drive	H1	1435	700	398	483 000.00
VFD3550CP43A-00	355 kW	683A	3-ph AC motor drive	H1	1435	700	398	527 000.00
VFD4000CP43A-00	400 kW	770A	3-ph AC motor drive	H1	1435	700	398	593 000.00
VFD5000CP43A-00	500 kW	930A	3-ph AC motor drive	H1	1435	700	398	746 000.00

Frames A, B, C - built-in braking chopper, EMI filter. Frames D,E,F,G,H - DC reactor built-in
Flange mount kits for rear projecting heat sinks for improved ventilation (see accessories page)
Larger sizes up to 630kW available on request

CFP2000 series - Drives for Fans and Pumps

IP55

CFP2000 series designed with an industry leading IP55 enclosure providing protection from dust and water. It includes many outstanding features and built-in functionality, reducing setup and tuning time while providing higher efficiency.

- Built-in EMI filter (meets EN61800-3)
- Built-in DC choke (meets EN6100-3-12)
- Built-in Safe Torque Off (STO) SIL2 function and 2 sets of PID controller functions
- Enhanced PCB coating to (IEC 60721-3-3 class 3C3) ensures reliability in harsh environments

Three-phase input 380-480V 50/60 Hz

VFD015FP4EA-52	1.5 kW	4.2A	3-ph AC motor drive	A-1	366	161	199	20 000.00
VFD022FP4EA-52	2.2 kW	5.5A	3-ph AC motor drive	A-1	366	161	199	21 300.00
VFD040FP4EA-52	4.0 kW	10.5A	3-ph AC motor drive	A-1	366	161	199	22 200.00
VFD055FP4EA-52	5.5 kW	13A	3-ph AC motor drive	A-1	366	161	199	23 000.00
VFD075FP4EA-52	7.5 kW	18A	3-ph AC motor drive	A-1	366	161	199	23 500.00
VFD110FP4EA-52	11 kW	24A	3-ph AC motor drive	B-1	491	216	229	26 100.00
VFD150FP4EA-52	15 kW	32A	3-ph AC motor drive	B-1	491	216	229	26 200.00
VFD185FP4EA-52	18.5 kW	38A	3-ph AC motor drive	B-1	491	216	229	41 700.00
VFD220FP4EA-52	22 kW	45A	3-ph AC motor drive	B-1	491	216	229	49 400.00
VFD300FP4EA-52	30 kW	60A	3-ph AC motor drive	C-1	630	282	265	61 700.00
VFD370FP4EA-52	37 kW	73A	3-ph AC motor drive	C-1	630	282	265	82 500.00
VFD450FP4EA-52	45 kW	91A	3-ph AC motor drive	D0-1	680	308	307	105 000.00
VFD550FP4EA-52	55 kW	110A	3-ph AC motor drive	D0-1	680	308	307	122 000.00
VFD750FP4EA-52	75 kW	150A	3-ph AC motor drive	D-1	770	370	335	148 000.00
VFD900FP4EA-52	90 kW	180A	3-ph AC motor drive	D-1	770	370	335	171 000.00

Frames A-1, B-1, C-1 - built-in braking chopper

Variable frequency drive - Accessories

Accessories for C2000+, CP/CFP2000 series drives

Delta's AC Motor Drive product line provides a full range of motor control technologies and accessories that can be used throughout a wide range of industries to enhance and improve machine automation.

Optional communication cards include **EtherCAT, EtherNet/IP, PROFINET, Modbus TCP, CANopen**

Hardware accessories

type	device	description			price
KPC-CC01	keypad	with LCD, parameters backup function	C series drives		1 930.00
MKC-KPPK	bracket	remote panel adapter for KPC-CC01 (IP66)	C series drives		679.00
EMC-D42A	DC 24V	digital I/O extension card, selectable NPN/PNP	4DI / 2DO		620.00
EMC-A22A	analog	I/O extension card, selectable 0-10V/4-20mA	2AI / 2AO		1 130.00
EMC-R6AA	card	multi-function relay output extension card	6 relay		1 020.00
IFD6530	converter/program	USB to RS-485 - KPC-CC01 and C series drives			1 820.00
IFD6500	converter	USB to RS-485 - C series drives			1 080.00

Mounting accessories

Flange mount kits to permit the chassis mounting of drives with the heat-sink section protruding from the rear of the enclosure for improved cooling/heat dissipation of drives.

MKC-AFM	flange	mount kit for rear exposure of heat sink	for drive frame A	1 260.00
MKC-BFM	flange	mount kit for rear exposure of heat sink	for drive frame B	1 400.00
MKC-CFM	flange	mount kit for rear exposure of heat sink	for drive frame C	1 590.00

Base mounting flange can be moved to central position to expose heat sinks for frames D, E, F.

Conduit boxes

• Application: Wall mount IP00 - IP21

MKC-DN1CB	frame D	Conduit box kit for frame D1 (not D01)	3 260.00
MKC-EN1CB	frame E	Conduit box kit for frame E1	3 750.00
MKC-FN1CB	frame F	Conduit box kit for frame F1	5 170.00

PG cards for C2000 drives

type	output voltage	PG 1-300kHz motor encoder	PG 2-300kHz optional pulse command	PG out re-transmission 1-255 ratio	price
EMC-PG01L	5 or 12 VDC	Line drive / Open collector	Line drive / Open collector	Line driver	2 800.00
EMC-PG01O	5 or 12 VDC	Line drive / Open collector	Line drive / Open collector	Open collector	2 160.00
EMC-PG01U	5 or 12 VDC	Line drive with commutation	Line drive / Open collector	Line driver	3 010.00

Fieldbus modules for drives (plugs into drive)

type	comms	description			rate	price
CMC-EIP02	EtherNet/IP	supports, Modbus TCP protocols	2 port	10/100 Mbps		2 520.00
CMC-PD01	Profibus-DP	plug-in communication card		9.6kbps - 12Mbps		5 590.00
EMC-COP01	CANopen	plug-in communication card		50kbps - 1Mbps		1 200.00
CMC-EC01	EtherCAT	plug-in 2 port comm. card		100 Mbps		4 800.00
CMC-PN01	Profinet	plug-in 2 port comm. card		10/100 Mbps Auto-Detect		4 940.00

Cables for above communication cards

UC-CMC010-01A	CANopen	standard fieldbus cable, RJ45 connector	1 meter	203.00
UC-CMC020-01A	CANopen	standard fieldbus cable, RJ45 connector	2 meter	301.00
UC-CMC030-01A	CANopen	standard fieldbus cable, RJ45 connector	3 meter	542.00
UC-EMC010-02B	Ethernet	shielded Ethernet cable	1 meter	460.00
UC-EMC020-02B	Ethernet	shielded Ethernet cable	2 meter	644.00
UC-EMC050-02B	Ethernet	shielded Ethernet cable	5 meter	1 030.00

DIAStudio
Smart Machine Suite

Industrial communication protocols

EtherCAT

CANopen

Modbus

EtherNet/IP

PROFINET

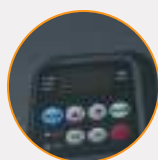
POLAR CLOUD



VFD185ED43S



EMED-PGABD-1



VFD004DD21S



ECMD-B91608MS

ED series - Elevator drives

ED series motor drives are specifically designed for elevator applications and feature the latest innovative control technology, providing extended features with outstanding performance. Designed to high safety standards and for high durability, the ED series is an excellent solution for elevator operation in critical environments.

General features:

- Auto-tuning with load attached
- Dual-output protection for reliable rides
- Supports both asynchronous and synchronous motors
- Precise time sequence for elevator motion (*start/stop*)
- Built-in USB-B port for parameter uploads and downloads
- Auto-correct start torque and load compensation with manual adjustment
- DC braking level and slip compensation enhancing the levelling accuracy providing ride comfort
- Built-in STO (Safe Torque Off) function (complies with **EN61800-5-2** and **EN61508 (SIL2)** standards)
- Supports 1-phase 230/460 VAC UPS (*light-load direction search function triggered automatically on power failure*)
- Default rated current: Heavy duty

type	motor rating	rated current	description	frame size	dimensions (mm)			price
					(H)	(W)	(D)	

Single-phase input 200-240 VAC 50/60Hz

VFD037ED21S	3.7 kW	17A	1-ph elevator drive	B	260	194	134	21 300.00
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Three-phase input 380-460VAC 50/60Hz

VFD055ED43S*	5.5 kW	13A	3-ph elevator drive	C	350	235	146	23 400.00
VFD075ED43S*	7.5 kW	17A	3-ph elevator drive	C	350	235	146	26 700.00
VFD110ED43S*	11 kW	23A	3-ph elevator drive	C	350	235	146	31 900.00
VFD150ED43S*	15 kW	30A	3-ph elevator drive	C	350	235	146	38 200.00
VFD185ED43S*	18.5 kW	38A	3-ph elevator drive	C	350	235	146	46 000.00
VFD220ED43S*	22 kW	45A	3-ph elevator drive	D	404	255	178	56 700.00
VFD300ED43S*	30 kW	58A	3-ph elevator drive	D	404	255	178	82 300.00
VFD370ED43S	37 kW	80A	3-ph elevator drive	E	550	330	273	97 800.00
VFD450ED43S	45 kW	100A	3-ph elevator drive	E	550	330	273	105 000.00

* Braking chopper built in (break resistor chart, see **Annex-3**)

Larger sizes available on request.

Braking units for above drives without built-in braking chopper

type	IMAX (A) 10%ED	ICONT (A)	Input range. (VDC)	Min. Resistance (ohm)	price
VFDB4045	60	18	400-800	13.6	7 650.00

PG feedback cards

EMED-PGAB	supports open-collector or Line-driver and UVW encoder signal, 5/12 VDC supply	1 450.00
EMED-PGABD-1	open-collector, differential, UVW encoder signal and frequency divider output	2 040.00
EMED-PGHSD-3	supports Heidenhain ERN1387/ECN1313, SICK HIPERFACE 5/8V supply	2 760.00

DD series elevator door drive

DD series AC motor drives (*specifically designed for elevator door applications*) feature door width auto-tuning with precise open and close control and smooth door open curve and blocking detection.

- Door width auto-tuning
- Smooth door re-open curve
- Safety protection and blockage detection (*four steps*)
- Induction motor (*asynchronous*) and permanent magnet motor (*synchronous*)
- Multiple door control solutions: distance /speed control / multi-step speed control modes

Single-phase input 230 VAC 50/60Hz

VFD004DD21S	0.4 kW	2.5A	1-ph elevator door drive	170	215	55	7 160.00
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Accessories for DD Drive

MEC-SG1026S	1 meter	encoder cable (<i>without D-SUB connector</i>) for DD series	272.00
MEC-SG3026S	3 meter	encoder cable (<i>without D-SUB connector</i>) for DD series	530.00
KPC-CC01	keypad	with LCD display, parameters backup function	1 930.00

Slimline sliding door motor DC brushless motor

- Ultra-slim design (55 mm)
- Instant torque up to 3 Nm
- Flexible installation (*front or back side installation*)

ECMD-B91608MS	80W	3.0Nm/250 rpm	sliding door motor	160	160	55	7 280.00
DPB-N7779	dust cap		dust cover for protection of door motor terminals				158.00

Discover TechTop's Range of Electric Motors

Where Innovation Meets Efficiency

- IE3 Premium Efficiency Motors
- Frame size 80 - 355M/L
- 0.75 to 355kW



Explore the Range

ELECTRON Series



300S-5SPLR-O

Electron series - Standard pump panels

Irrigation and water reticulation applications require precise pump control and protection to pump water reliably and efficiently. Pump purpose drives in constant pressure systems are designed to save energy, eliminate high start-up currents, and precisely control pump speed to match pressure demand.

Conventional constant pressure systems routinely introduce many problems, such as overloads during pipe filling, unreliable sleep and wake states resulting in pump cavitation requiring intricate and cumbersome setup.

Installation of a smart pump panel utilises various system variables and inputs which dynamically react to prevailing environmental conditions, ensuring a reactive dependable control system.

Comprehensive ready-to-connect pump panel comprising:

- Maintain a constant pressure by utilising a **CP2000** pump-purpose drive
 - Utilising an internal 10k step PLC to automatically preserve the system at peak efficiency
 - The software assesses variables to automatically determine the most reliable operation
 - Phase failure/reversal, no flow digital input
- Front panel controls
 - Three position Man/Off/Auto selector. Automatic mode maintains constant pressure
 - Manual mode for speed control by analogue potentiometer
 - Run and trip indicators for operational indication
 - Standard 0-5 position pressure selector for preset setpoints
 - Local or remote: Selector switch
- Ergonomic LCD keypad display for easy setup and operation, displaying all vital information: motor current, output frequency, current pressure set point, feedback pressure, no-load time out, sleep/wake status
- Graphical menu for easy navigation through basic to advanced embedded features such as:
 - Pipeline filling, smart sleep/wake, no flow/underload protection, overcurrent stall prevention, pump priming
 - Filter flush control (optional accessory control relays **EMC-R6AA**), transmitter failure detection
 - Pipe burst detection, 0-24H restart delay for dry run trips, three-point acceleration curve
- Powder-coated metal RAL2000 enclosure suitable for outdoors with hooded vents and panel
- 40 kA Class II surge protection

Automatic mode: Requires a pressure transmitter **Type 528** and **4-pin M12 cable** (purchased separately)

type	motor rating	rated current (A)	description	dimensions (mm)			price
				(H)	(W)	(D)	
Electron series - Standard pump panel - (3 phase input 380-480V, 50/60Hz)							
400V three-phase pump panel							
075S-5SPLR-O	7.5 kW	18A	std. pump control panel	650	450	270	39 700.00
110S-5SPLR-O	11 kW	24A	std. pump control panel	750	550	270	46 500.00
150S-5SPLR-O	15 kW	32A	std. pump control panel	750	550	270	51 200.00
185S-5SPLR-O	18.5 kW	38A	std. pump control panel	750	550	270	55 600.00
220S-5SPLR-O	22 kW	45A	std. pump control panel	850	600	270	61 800.00
300S-5SPLR-O	30 kW	60A	std. pump control panel	850	600	270	68 700.00
370S-5SPLR-O	37 kW	73A	std. pump control panel	850	600	270	74 200.00
450S-5SPLR-O	45 kW	91A	std. pump control panel	950	700	330	87 200.00
550S-5SPLR-O	55 kW	110A	std. pump control panel	950	700	330	93 900.00
750S-5SPLR-O	75 kW	150A	std. pump control panel	1150	850	330	132 000.00
900S-5SPLR-O	90 kW	180A	std. pump control panel	1150	850	330	162 000.00
1100S-5SPLR-O	110 kW	220A	std. pump control panel	1150	850	330	182 000.00
1320S-5SPLR-O	132 kW	260A	std. pump control panel	1150	850	330	205 000.00

Larger sizes available on request

Electron Lite series - Pump panel - (3 phase input 380-480V, 50/60Hz)

Electron "Lite" series, featuring pre-configured parameters and an easy-to-navigate keypad with LED display and potentiometer, housed in a compact, durable steel enclosure perfect for various applications including: irrigation, borehole, booster pumps, and water storage tanks.

- Pre-configured parameters for irrigation applications with **ME300** drive
- Constant pressure control with the use of a pressure transmitter
- Excludes remote monitoring

220V three-phase pump panel

015S-1SP-L2	1.5 kW	7.5A	basic pump control panel	450	300	220	10 800.00
022S-1SP-L2	2.2 kW	11.0A	basic pump control panel	450	300	220	11 900.00

400V three-phase pump panel

015S-1SP-L4	1.5 kW	4.2A	basic pump control panel	450	300	220	12 300.00
022S-1SP-L4	2.2 kW	5.5A	basic pump control panel	450	300	220	13 500.00
040S-1SP-L4	4.0 kW	9.0A	basic pump control panel	450	300	220	14 600.00
055S-1SP-L4	5.5 kW	13.0A	basic pump control panel	450	300	220	16 400.00
075S-1SP-L4	7.5 kW	17.0A	basic pump control panel	450	300	220	18 600.00



015S-1SP-L4

New

PHOTON Series



220PV4-O-CP

Photon - Solar pump panels

Photon pump control panels harness solar energy to deliver water efficiently, ideal for remote agricultural areas and reducing electricity costs.

Modes:

- **Hybrid Mode:** Combines solar and AC power, ensuring constant pressure control during low solar conditions (CP2000)
- **Solar Mode:** Adjusts pump speed based on solar radiation: maintains user-defined output pressure with a pressure transmitter (CP2000)

Features:

- **Comprehensive System:** Includes solar and control tracking with a 10k step PLC, underload/no-flow detection, and optional no-flow digital input
- **User-Friendly Interface:** LCD shows motor current, frequency, DC voltage, and pressure. Graphical menu for easy navigation of advanced settings like MPPT values and bore hole pump startup
- **Rugged Enclosure:** Powder-coated metal (RAL2000)

Flexible Power Options: Hybrid mode, allowing seamless integration with AC power for continuous operation in varying sunlight conditions.

AC Automatic mode: Works with a **Type 528** pressure transmitter, requiring a **4-pin M12 cable** (purchased separately)

type	motor rating	rated current (A)	vmp range (DC)	Voc (DC)	dimensions (mm)			price
					(H)	(W)	(D)	

Photon series - Pump vector control drives

- Customized LCD keypad interface
- Pressure control/limiter in solar mode
- Constant speed and pressure control in hybrid mode
- Sleep and wake functions in both solar and hybrid mode

400V three-phase pump panel (hybrid)

022PV4-D-O-CP	2.2 kW	5.5A	500 - 650V	770V	650	450	270	30 600.00
055PV4-D-O-CP	5.5 kW	13A	500 - 650V	770V	650	450	270	35 300.00
075PV4-D-O-CP	7.5 kW	18A	500 - 650V	770V	650	450	270	37 400.00
110PV4-D-O-CP	11 kW	24A	500 - 650V	770V	850	600	270	47 600.00
150PV4-D-O-CP	15 kW	32A	500 - 650V	770V	850	600	270	54 500.00
220PV4-D-O-CP	22 kW	45A	500 - 650V	770V	950	700	330	68 700.00
370PV4-D-O-CP	37 kW	73A	500 - 650V	770V	950	700	330	86 400.00
450PV4-D-O-CP	45 kW	91A	500 - 650V	770V	950	700	330	110 000.00

400V three-phase pump panel (off-grid)

110PV4-O-CP	11 kW	24A	500-650V	770V	850	600	270	41 400.00
150PV4-O-CP	15 kW	32A	500-650V	770V	850	600	270	48 300.00
220PV4-O-CP	22 kW	45A	500-650V	770V	950	700	330	62 300.00
370PV4-O-CP	37 kW	73A	500-650V	770V	950	700	330	74 800.00
450PV4-O-CP	45 kW	91A	500-650V	770V	950	700	330	86 400.00

Larger sizes available on request



Maximise Your Cloud Monitoring Experience:

Register Within 60 Days: To activate your included **ONE YEAR SUBSCRIPTION** to Polar Cloud and immediately begin monitoring your system.

Installer Support: Authorised installers can access the system remotely

Extend Your Warranty: Upgrade to a **24-month warranty** within the first year by extending your remote monitoring subscription for only R 2000.00



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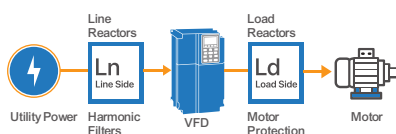
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AC reactors



AC reactors (chokes) are suited for all series Delta drives and are finely tuned to manufacturer's specifications.

Installing an AC reactor on the **input** side of an AC motor drive can increase line impedance, improve power factor, reduce input current, and reduce harmonics generated from the motor drive.

Installing the AC reactor on the **output** side can allow the user to extend the output power cable further than otherwise possible (*actual length - model dependant*). When multiple motors are installed on a single VFD which are being protected by manual motor starters it is advised to install a load reactor.

- High quality grain orientated silicon steel
- Normal operation temperature (40°C...50°C) above ambient

New



EIR...

type	motor rating (kW)	rated current (A)	impedance (mH)	description	dimensions (mm)			price
Input/Line AC reactors					(H)	(W)	(D)	
4% impedance								
• Increase line impedance, improves power factor, reduced input current, increase system capacity and reduce interference generated from the motor drive • Reduces momentary voltage surges or abnormal current spikes from the mains supply • Install an AC input reactor in series between the main power and the three input phases R S T								
EIR003A0850	1.5 kW	3.5A	8.5	AC input reactor	135	120	70	3 440.00
EIR005A0590	2.2 kW	5.0A	5.9	AC input reactor	135	120	85	3 440.00
EIR008A0350	4.0 kW	8.5A	3.50	AC input reactor	155	150	80	4 020.00
EIR012A0260	5.5 kW	12A	2.60	AC input reactor	160	150	80	4 020.00
EIR016A0190	7.5 kW	16A	1.9	AC input reactor	160	150	100	4 590.00
EIR022A0134	11 kW	22A	1.34	AC input reactor	185	150	100	4 920.00
EIR030A0100	15 kW	30A	1	AC input reactor	160	180	110	6 310.00
EIR037AP800	18.5 kW	37A	0.8	AC input reactor	160	180	130	6 880.00
EIR044AP670	22 kW	44A	0.67	AC input reactor	160	180	135	7 790.00
EIR060AP490	30 kW	60A	0.49	AC input reactor	210	240	150	10 400.00
EIR072AP400	37 kW	72A	0.4	AC input reactor	210	240	155	11 300.00
EIR085AP350	45 kW	85A	0.35	AC input reactor	210	240	170	12 100.00
EIR105AP280	55 kW	105A	0.28	AC input reactor	205	240	175	12 700.00
EIR140AP210	75 kW	140A	0.21	AC input reactor	270	300	170	16 100.00
EIR170AP170	90 kW	170A	0.17	AC input reactor	270	300	190	18 400.00
EIR205AP140	110 kW	205A	0.14	AC input reactor	260	300	240	21 300.00
EIR245AP120	132 kW	245A	0.12	AC input reactor	260	300	210	23 000.00
EIR295AP100	160 kW	295A	0.1	AC input reactor	310	360	200	25 800.00
EIR340AP086	185 kW	340A	0.086	AC input reactor	310	390	230	33 300.00
EIR370AP079	200 kW	370A	0.079	AC input reactor	320	360	235	37 900.00
EIR460AP064	250 kW	460A	0.064	AC input reactor	440	440	255	41 900.00
EIR580AP050	315 kW	580A	0.05	AC input reactor	430	440	275	48 800.00
EIR636AP046	350 kW	636A	0.046	AC input reactor	480	440	280	57 400.00
EIR710AP042	400 kW	710A	0.042	AC input reactor	480	440	280	63 100.00
EIR800AP037	450 kW	800A	0.037	AC input reactor	475	470	290	71 700.00
EIR880AP034	500 kW	880A	0.034	AC input reactor	550	520	320	77 400.00

Output/Load AC reactors 1.2% impedance

- Useful for applications of multiple motors installed on a single VSD
- Assists in prevention of ground fault (GFF), over-current (OC), over-voltage (OV) on long cable runs
- Install an AC output reactor in series between the three output phases U V W and the motor
- Increases the high-frequency impedance and reduces terminal voltage to protect the motor

type	motor rating (kW)	rated current (A)	impedance (mH)	description	dimensions (mm)			price
					(H)	(W)	(D)	
EOR003A0260	1.5 kW	3.5A	2.6	AC output reactor	135	120	70	2 870.00
EOR005A0180	2.2 kW	5.0A	1.80	AC output reactor	135	120	70	2 870.00
EOR008A0105	4 kW	8.5A	1.05	AC output reactor	135	120	90	2 870.00
EOR012AP800	5.5 kW	12A	0.8	AC output reactor	135	120	90	3 120.00
EOR016AP630	7.5 kW	16A	0.63	AC output reactor	160	150	90	3 940.00
EOR022AP400	11 kW	22A	0.4	AC output reactor	190	150	75	4 020.00
EOR030AP300	15 kW	30A	0.3	AC output reactor	130	150	115	4 590.00
EOR037AP240	18.5 kW	37A	0.24	AC output reactor	160	180	110	5 490.00
EOR044AP220	22 kW	44A	0.22	AC output reactor	160	180	120	6 310.00
EOR060AP150	30 kW	60A	0.15	AC output reactor	160	180	140	7 460.00
EOR072AP130	37 kW	72A	0.13	AC output reactor	180	240	160	8 600.00
EOR085AP110	45 kW	85A	0.11	AC output reactor	180	240	160	10 400.00
EOR105AP090	55 kW	105A	0.09	AC output reactor	180	240	160	10 900.00
EOR140AP070	75 kW	140A	0.07	AC output reactor	235	240	160	12 700.00
EOR170AP052	90 kW	170A	0.052	AC output reactor	245	240	155	13 800.00
EOR205AP043	110 kW	205A	0.043	AC output reactor	260	300	170	15 000.00
EOR245AP036	132 kW	245A	0.036	AC output reactor	260	300	170	17 200.00
EOR295AP030	160 kW	295A	0.03	AC output reactor	310	360	200	21 800.00
EOR340AP026	185 kW	340A	0.026	AC output reactor	310	360	180	24 100.00
EOR370AP024	200 kW	370A	0.024	AC output reactor	315	360	220	26 400.00
EOR460AP020	250 kW	460A	0.02	AC output reactor	365	360	220	30 400.00
EOR580AP016	315 kW	580A	0.016	AC output reactor	395	360	230	45 900.00
EOR636AP014	350 kW	636A	0.014	AC output reactor	480	420	240	51 600.00
EOR710AP013	400 kW	710A	0.013	AC output reactor	420	400	250	57 400.00
EOR800AP011	450 kW	800A	0.011	AC output reactor	490	420	270	61 900.00
EOR880AP010	500 kW	880A	0.01	AC output reactor	490	420	270	66 000.00

Use a motor with a rated voltage ≤ 500 VAC and insulation level ≥ 1.35 kV in accordance with IEC 60034-17. Distances based on non-shielded/non-armoured cables. Please refer to specific drive manual for more details. For longer cable distances use a reactor with 3% impedance available on request.

Sinewave filters & Braking resistors for drives



New



Sinusoidal / Sinewave output filters

Frequency converters generate high du/dt electrical interference signals which disturb the load, increasing the insulation load putting stress on the motor.

SINUSOIDAL FILTERS are low-pass filters providing a perfect sinusoid waveform to the motor which filters frequency from the PWM (*pulse width modulation*) output signal of the inverter, reducing motor heating in installations where the drive and motor are separated by extreme distances.

The filters are connected between the frequency converter and the motor reducing high-frequency transient emissions improving motor efficiency and the entire EMC load on equipment.

Suited for older motors (*not designed for inverter operations*) or installations with long cable lengths.

- Reduction of the motor noise and eddy current losses
- Inverter-operation on long motor cables made possible
- Protection for motors driven by inverters
- Generation of a sinusoidal output voltage

type	motor rating (kW)	rated current (A)	impedance (mH)	description	dimensions (mm)			price
					(H)	(W)	(D)	
ESF011A0055	5.5 kW	11A	5.50	Sinewave output filter	235	240	170	20 100.00
ESF015A0075	7.5 kW	15A	4.00	Sinewave output filter	235	240	190	20 900.00
ESF022A0110	11 kW	22A	2.80	Sinewave output filter	265	240	240	22 200.00
ESF030A0150	15 kW	30A	2.10	Sinewave output filter	285	300	300	25 400.00
ESF037A0185	18.5 kW	37A	1.75	Sinewave output filter	285	300	290	28 700.00
ESF044A0220	22 kW	44A	1.40	Sinewave output filter	285	300	290	29 500.00
ESF057A0300	30 kW	57A	1.10	Sinewave output filter	375	360	340	32 000.00
ESF072A0370	37 kW	72A	0.82	Sinewave output filter	375	360	350	43 500.00
ESF085A0450	45 kW	85A	0.75	Sinewave output filter	375	360	360	51 200.00
ESF105A0550	55 kW	105A	0.60	Sinewave output filter	390	420	360	54 100.00
ESF140A0750	75 kW	140A	0.45	Sinewave output filter	390	420	380	60 200.00
ESF170A0900	90 kW	170A	0.36	Sinewave output filter	420	420	380	71 700.00

Braking resistors and EMC filters for drives

Aluminium-housed compact brake resistors have protection class superior to conventional ceramic-skeleton resistors offer improved heat dissipation and overload capabilities, designed to endure high pulse loads, common with heavy duty inverters and regenerative braking circuits in industrial drive systems.

- High pulse load and high vibration capability

Protection: IP33 (*others available on request*)
 Temperature coefficient: Less than 400 ppm/°C
 Dielectric strength: AC 3.5kV @50Hz 5s



type	power (W)	resistance (ohm)	terminal	description	dimensions (mm)			price
					(H)	(W)	(D)	
Aluminium-housed resistors					Tolerance: <1000VDC, <1200VAC			
RXLG-80W/200RJ	80	200 Ω	cable	brake resistor	110	40	20	366.00
RXLG-200W/91RJ	200	91 Ω	cable	brake resistor	170	60	30	586.00
RXLG-300W/70RJ	300	70 Ω	cable	brake resistor	220	60	30	720.00
RXLG-80W/750RJ	80	750 Ω	cable	brake resistor	115	40	20	366.00
RXLG-200W/360RJ	200	360 Ω	cable	brake resistor	170	60	30	586.00
RXLG-300W/250RJ	300	250 Ω	cable	brake resistor	220	60	30	720.00
RXLG-1KW/75RJ	1000	75 Ω	cable	brake resistor	400	60	30	1 650.00
RXLG-1.5KW/43RJ	1500	43 Ω	busbar	brake resistor	400	107	50	2 550.00
RXLG-2KW/32RJ	2000	32 Ω	busbar	brake resistor	450	107	50	3 460.00
RXLG-3KW/26RJ	3000	26 Ω	busbar	brake resistor	500	107	50	5 220.00
RXLG-4.8KW/16RJ	5000	16 Ω	busbar	brake resistor	700	107	50	7 950.00
RXLG-4KW/20RJ	5000	20 Ω	busbar	brake resistor	700	107	50	6 820.00
RXLG-6KW/14RJ	6000	14 Ω	busbar	brake resistor	750	107	50	9 330.00

Braking units for drives without built-in braking chopper



type	IMAX (A) 10%ED	ICONT (A)	Input range (VDC)	Min. Resistance	price
VFDB4030	40	15	400-750	20 Ω	7 350.00
VFDB4045	60	18	400-750	13.6 Ω	7 650.00
VFDB4110	126	45	400-751	6 Ω	21 700.00
VFDB4160	190	50	400-752	4 Ω	25 400.00
VFDB4185	225	100	400-753	3.4 Ω	29 900.00
VFDB5055	60	20	607-1000	15.8 Ω	10 400.00
VFDB6055	46	29	600-1120	24.5 Ω	14 600.00
VFDB6110	92	59	600-1121	12.2 Ω	18 100.00
VFDB6160	136	86	600-1122	8.2 Ω	23 800.00
VFDB6200	162	107	600-1123	6.9 Ω	29 400.00

Electric motors (cast-iron frame)



New



T3CR 90S-2



T3CR 160L-4



T3C 315L3-4

Electric Motors (Cast iron frame) - IE3 premium efficiency

TechTop electric motors conform to IEC standards, guaranteeing quality and reliability. Ideally suited for commercial, manufacturing, construction, and agricultural irrigation applications.

- Removable feet - terminal boxes can be side or top of motor
- Continuous duty service factor - S1
- Thermistors fitted as standard (*frame 160 and above*)
- Suitable for VSD use (*class H insulation rating*)
- In accordance with **SANS/IEC 60034-2-1** standards
- Electrically insulated non-drive end bearings (*frame 315 and above*)

Three-phase cast iron motors**Foot mounting (B3)**

Protection degree: IP55

Insulation class: H (180°C) / ambient temperature 40°C

Colour: RAL 7024 (graphite grey)

Δ 220-240V (or) Y 380-415V 50Hz (*frame 80 - 100*)Δ 380-415V (or) Y 660-690V 50Hz (*frame 112 - 355*)

Type	output (kW)	frame size	pole	speed RPM	description	shaft Ø (mm)	weight (kg)	price
2-pole		Three-phase motors		IE3 - premium efficiency				
T3CR 801-2	0.75 kW	80	2	2880	3ph cast iron motor	19	15.2	3 940.00
T3CR 802-2	1.1 kW	80	2	2880	3ph cast iron motor	19	17.1	4 320.00
T3CR 90S-2	1.5 kW	90S	2	2880	3ph cast iron motor	24	21.5	5 410.00
T3CR 90L-2	2.2 kW	90L	2	2880	3ph cast iron motor	24	24.6	6 260.00
T3CR 100L-2	3 kW	100L	2	2900	3ph cast iron motor	28	35.5	8 180.00
T3CR 112M-2	4 kW	112M	2	2910	3ph cast iron motor	28	44.5	10 200.00
T3CR 132S1-2	5.5 kW	132S	2	2910	3ph cast iron motor	38	63.2	13 600.00
T3CR 132S2-2	7.5 kW	132S	2	2920	3ph cast iron motor	38	70.2	14 900.00
T3CR 160M1-2	11 kW	160M	2	2930	3ph cast iron motor	42	118	26 700.00
T3CR 160M2-2	15 kW	160M	2	2940	3ph cast iron motor	42	128	31 700.00
T3CR 160L-2	18.5 kW	160L	2	2940	3ph cast iron motor	42	144	36 200.00
T3CR 180M-2	22 kW	180M	2	2945	3ph cast iron motor	48	183	45 000.00
T3CR 200L1-2	30 kW	200L	2	2945	3ph cast iron motor	55	247	56 400.00
T3CR 200L2-2	37 kW	200L	2	2945	3ph cast iron motor	55	268	63 000.00
T3CR 225M-2	45 kW	225M	2	2950	3ph cast iron motor	55	369	75 000.00
T3CR 250M1-2	55 kW	250M	2	2960	3ph cast iron motor	60	428	93 700.00
T3CR 250M2-2	75 kW	250M	2	2960	3ph cast iron motor	60	587	113 000.00
T3CR 280M1-2	90 kW	280M	2	2960	3ph cast iron motor	65	655	133 000.00
T3CR 280M2-2	110 kW	280M	2	2960	3ph cast iron motor	65	980	158 000.00
T3C 315M-2	132 kW	315M	2	2960	3ph cast iron motor	65	1100	259 000.00
T3C 315L1-2	160 kW	315L	2	2960	3ph cast iron motor	65	1155	292 000.00

Larger sizes available on request

4-pole		Three-phase motors		IE3 - premium efficiency				
T3CR 802-4	0.75 kW	80	4	1420	3ph cast iron motor	19	18.2	4 200.00
T3CR 90S-4	1.1 kW	90S	4	1430	3ph cast iron motor	24	23.0	5 170.00
T3CR 90L-4	1.5 kW	90L	4	1430	3ph cast iron motor	24	26.3	6 120.00
T3CR 100L1-4	2.2 kW	100L	4	1430	3ph cast iron motor	28	35.5	7 880.00
T3CR 100L2-4	3 kW	100L	4	1435	3ph cast iron motor	28	38.5	8 930.00
T3CR 112M-4	4 kW	112M	4	1440	3ph cast iron motor	28	47.0	11 400.00
T3CR 132S-4	5.5 kW	132S	4	1440	3ph cast iron motor	38	68.3	13 900.00
T3CR 132M1-4	7.5 kW	132M	4	1440	3ph cast iron motor	38	79	16 300.00
T3CR 160M-4	11 kW	160M	4	1450	3ph cast iron motor	42	127	26 500.00
T3CR 160L-4	15 kW	160L	4	1450	3ph cast iron motor	42	160	31 600.00
T3CR 180M-4	18.5 kW	180M	4	1460	3ph cast iron motor	48	170	38 800.00
T3CR 180L-4	22 kW	180L	4	1460	3ph cast iron motor	48	196	45 200.00
T3CR 200L1-4	30 kW	200L	4	1470	3ph cast iron motor	55	252	58 800.00
T3CR 225S-4	37 kW	225S	4	1470	3ph cast iron motor	60	325	71 800.00
T3CR 225M1-4	45 kW	225M	4	1470	3ph cast iron motor	60	353	80 300.00
T3CR 250M1-4	55 kW	250M	4	1470	3ph cast iron motor	65	428	98 800.00
T3CR 250M2-4	75 kW	250M	4	1480	3ph cast iron motor	75	674	116 000.00
T3CR 280M1-4	90 kW	280M	4	1480	3ph cast iron motor	75	692	141 000.00
T3CR 280M2-4	110 kW	280M	4	1480	3ph cast iron motor	80	1027	174 000.00
T3C 315M-4	132 kW	315M	4	1480	3ph cast iron motor	80	1155	261 000.00
T3C 315L1-4	160 kW	315L	4	1480	3ph cast iron motor	80	1240	288 000.00
T3C 315L3-4	200 kW	315L	4	1480	3ph cast iron motor	80	1400	301 000.00
T3C 355M1-4	220 kW	355M	4	1480	3ph cast iron motor	95	1560	459 000.00
T3C 355M2-4	250 kW	355M	4	1480	3ph cast iron motor	95	1600	471 000.00
T3C 355L1-4	280 kW	355L	4	1480	3ph cast iron motor	95	1650	507 000.00
T3C 355L2-4	315 kW	355L	4	1480	3ph cast iron motor	95	1700	543 000.00
T3C 355L3-4	355 kW	355L	4	1480	3ph cast iron motor	95	1700	593 000.00

Larger sizes available on request

Above ZAR prices do not include VAT. E&OE

Electric motors (cast-iron & aluminium frame)



Electric Motors (Cast iron frame) - IE3 top premium efficiency

TechTop electric motors conform to IEC standards, guaranteeing quality and reliability. Ideally suited for commercial, manufacturing, construction, and agricultural irrigation applications.

- Suitable for VSD use (*class H insulation rating*)
- In accordance with **SANS/IEC 60034-2-1** standards

Three-phase cast iron motors

Foot mounting (B3)

Protection degree: IP55
Insulation class: H (180°C) / ambient temperature 40°C
Colour: RAL 7024 (*graphite grey*)

Δ 220-240V (or) Y 380-415V 50Hz (*frame 80 - 100*)

Δ 380-415V (or) Y 660-690V 50Hz (*frame 112 - 355*)



T3CR 90L-6



Type	output (kW)	frame size	pole	speed RPM	description	shaft Ø (mm)	weight (kg)	price
6 pole Three-phase motors IE3 - premium efficiency								
T3CR 90S-6	0.75 kW	90S	6	935	3ph cast iron motor	24	21.5	5 260.00
T3CR 90L-6	1.1 kW	90L	6	940	3ph cast iron motor	24	25.5	6 480.00
T3CR 100L-6	1.5 kW	100L	6	940	3ph cast iron motor	28	33.5	7 440.00
T3CR 112M-6	2.2 kW	112M	6	940	3ph cast iron motor	28	40.0	9 700.00
T3CR 132S-6	3 kW	132S	6	940	3ph cast iron motor	38	59.0	13 200.00
T3CR 132M1-6	4 kW	132M	6	950	3ph cast iron motor	38	75.5	15 200.00
T3CR 132M2-6	5.5 kW	132M	6	950	3ph cast iron motor	38	76.3	17 500.00
T3CR 160M-6	7.5 kW	160M	6	960	3ph cast iron motor	42	112	26 400.00
T3CR 160L-6	11 kW	160L	6	960	3ph cast iron motor	42	134	31 900.00
T3CR 180L-6	15 kW	180L	6	960	3ph cast iron motor	48	185	41 800.00
T3CR 200L1-6	18.5 kW	200L	6	970	3ph cast iron motor	55	231	51 300.00
T3CR 200L2-6	22 kW	200L	6	970	3ph cast iron motor	55	249	55 500.00
T3CR 225M-6	30 kW	225M	6	975	3ph cast iron motor	60	339	72 200.00
T3CR 250M1-6	37 kW	250M	6	975	3ph cast iron motor	65	399	91 500.00
T3CR 250M2-6	45 kW	250M	6	980	3ph cast iron motor	75	551	104 000.00
T3CR 280M1-6	55 kW	280M	6	980	3ph cast iron motor	75	624	127 000.00
T3CR 280M2-6	75 kW	280M	6	980	3ph cast iron motor	80	860	159 000.00
T3C 315M-6	90 kW	315M	6	980	3ph cast iron motor	80	970	264 000.00
T3C 315L1-6	110 kW	315L	6	980	3ph cast iron motor	80	1070	296 000.00
T3C 315L2-6	132 kW	315L	6	980	3ph cast iron motor	80	1196	325 000.00
T3C 355M1-6	160 kW	355M	6	980	3ph cast iron motor	95	1537	456 000.00

Larger sizes available on request



ML90L-2



Aluminium- Single-phase electric motors

IE1 - standard efficiency

Aluminium motors (*Totally Enclosed Fan Cooled*) (TEFC)

Foot mounting (B3)

- High performance and efficiency
- Removable feet - terminal boxes can be side or top of motor
- Continuous duty service factor - S1
- Suitable for VSD use (*class H insulation rating*)
- In accordance with **SANS/IEC 60034-2-1** standards
- Colour: RAL 7024 (*graphite grey*)
- Protection degree: IP55
- Insulation class: F (155°C)

Single-phase electric motors

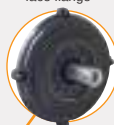
220V - High torque motor (*capacitor start and run*)

2-pole Single - phase motors IE1 - standard efficiency								
ML711-2	0.37 kW	71	2	2780	1ph aluminium motor	14	6.1	3 430.00
ML712-2	0.55 kW	71	2	2790	1ph aluminium motor	14	7.0	3 870.00
ML801-2	0.75 kW	80	2	2840	1ph aluminium motor	19	9.0	4 840.00
ML802-2	1.1 kW	80	2	2850	1ph aluminium motor	19	10.3	5 490.00
ML90S-2	1.5 kW	90S	2	2860	1ph aluminium motor	24	13.8	6 960.00
ML90L-2	2.2 kW	90L	2	2850	1ph aluminium motor	24	16.8	8 280.00
4-pole Single - phase motors IE1 - standard efficiency								
ML711-4	0.25 kW	71	4	1415	1ph aluminium motor	14	5.9	3 540.00
ML712-4	0.37 kW	71	4	1410	1ph aluminium motor	14	6.9	3 920.00
ML801-4	0.55 kW	80	4	1420	1ph aluminium motor	19	9.6	4 960.00
ML802-4	0.75 kW	80	4	1420	1ph aluminium motor	19	10.9	5 520.00
ML90S-4	1.1 kW	90S	4	1420	1ph aluminium motor	24	13.8	7 510.00
ML90L-4	1.5 kW	90L	4	1420	1ph aluminium motor	24	16.7	8 700.00
ML100L1-4	2.2 kW	100L	4	1440	1ph aluminium motor	28	22.8	11 100.00

Electric motors (cast-iron frame)



face flange



(B3 + B14) B34



T3CR 90S-2 B5



T3C 315L1-2 B5

large flange



(B3 + B5) B35



T3C 315L1-4 B5

Electric Motors (Cast iron frame)

TechTop electric motors conform to IEC standards, guaranteeing quality and reliability. Ideally suited for commercial, manufacturing, construction, and agricultural irrigation applications.

Cast Iron motors - IE3 top premium efficiency

- High performance and efficiency
- Removable feet terminal boxes can be side or top of motor
- Continuous duty service factor - S1
- Thermistors fitted as standard (*frame 160 to 355*)
- Electrically insulated non-drive end bearings (*frame 315 and above*)
- Suitable for VSD use (*class H insulation rating*)
- In accordance with SANS/IEC 60034-2-1 standards

Three-phase cast iron motors

Flange/Foot mounting (B35)

Protection degree: IP55

Insulation class: H (180°C) / ambient temperature 40°C

Colour: RAL 7024 (graphite grey)

Δ 220-240V (or) Y 380-415V 50Hz (*frame 80 - 100*)Δ 380-415V (or) Y 660-690V 50Hz (*frame 112 - 355*)

Type	output (kW)	frame size	pole	speed RPM	description	shaft Ø (mm)	weight (kg)	price
2-pole		Three-phase motors			IE3 - premium efficiency			
T3CR 801-2 B5*	0.75 kW	80	2	2880	3ph cast iron motor	19	15.2	4 370.00
T3CR 802-2 B5*	1.1 kW	80	2	2880	3ph cast iron motor	19	17.1	4 740.00
T3CR 90S-2 B5*	1.5 kW	90S	2	2880	3ph cast iron motor	24	21.5	5 890.00
T3CR 90L-2 B5*	2.2 kW	90L	2	2880	3ph cast iron motor	24	24.6	6 720.00
T3CR 100L-2 B5*	3 kW	100L	2	2900	3ph cast iron motor	28	35.5	8 850.00
T3CR 112M-2 B5*	4 kW	112M	2	2910	3ph cast iron motor	28	44.5	11 500.00
T3CR 132S1-2 B5*	5.5 kW	132S	2	2910	3ph cast iron motor	38	63.2	15 300.00
T3CR 132S2-2 B5*	7.5 kW	132S	2	2920	3ph cast iron motor	38	70.2	16 600.00
T3CR 160M1-2 B5*	11 kW	160M	2	2930	3ph cast iron motor	42	118	28 800.00
T3CR 160M2-2 B5*	15 kW	160M	2	2940	3ph cast iron motor	42	128	33 100.00
T3CR 160L-2 B5*	18.5 kW	160L	2	2940	3ph cast iron motor	42	144	37 500.00
T3CR 180M-2 B5	22 kW	180M	2	2945	3ph cast iron motor	48	183	46 600.00
T3CR 200L1-2 B5	30 kW	200L	2	2945	3ph cast iron motor	55	247	58 800.00
T3CR 200L2-2 B5	37 kW	200L	2	2945	3ph cast iron motor	55	268	65 200.00
T3CR 225M-2 B5	45 kW	225M	2	2950	3ph cast iron motor	55	369	77 200.00
T3CR 250M1-2 B5	55 kW	250M	2	2960	3ph cast iron motor	60	428	96 600.00
T3CR 250M2-2 B5	75 kW	250M	2	2960	3ph cast iron motor	60	587	116 000.00
T3CR 280M1-2 B5	90 kW	280M	2	2960	3ph cast iron motor	65	655	136 000.00
T3CR 280M2-2 B5	110 kW	280M	2	2960	3ph cast iron motor	65	980	161 000.00
T3C 315M-2 B5	132 kW	315M	2	2960	3ph cast iron motor	65	1100	276 000.00
T3C 315L1-2 B5	160 kW	315L	2	2960	3ph cast iron motor	65	1155	292 000.00
Larger sizes available on request								
4-pole		Three-phase motors			IE3 - premium efficiency			
T3CR 802-4 B5*	0.75 kW	80	4	1420	3ph cast iron motor	19	18.2	4 620.00
T3CR 90S-4 B5*	1.1 kW	90S	4	1430	3ph cast iron motor	24	23.0	5 650.00
T3CR 90L-4 B5*	1.5 kW	90L	4	1430	3ph cast iron motor	24	26.3	6 580.00
T3CR 100L1-4 B5*	2.2 kW	100L	4	1430	3ph cast iron motor	28	35.5	8 560.00
T3CR 100L2-4 B5*	3 kW	100L	4	1435	3ph cast iron motor	28	38.5	9 580.00
T3CR 112M-4 B5*	4 kW	112M	4	1440	3ph cast iron motor	28	47.0	12 000.00
T3CR 132S-4 B5*	5.5 kW	132S	4	1440	3ph cast iron motor	38	68.3	15 600.00
T3CR 132M1-4 B5*	7.5 kW	132M	4	1440	3ph cast iron motor	38	79	18 100.00
T3CR 160M-4 B5*	11 kW	160M	4	1450	3ph cast iron motor	42	127	29 800.00
T3CR 160L-4 B5*	15 kW	160L	4	1450	3ph cast iron motor	42	160	35 000.00
T3CR 180M-4 B5	18.5 kW	180M	4	1460	3ph cast iron motor	48	170	43 200.00
T3CR 180L-4 B5	22 kW	180L	4	1460	3ph cast iron motor	48	196	46 800.00
T3CR 200L1-4 B5	30 kW	200L	4	1470	3ph cast iron motor	55	252	61 200.00
T3CR 225S-4 B5	37 kW	225S	4	1470	3ph cast iron motor	60	325	74 000.00
T3CR 225M1-4 B5	45 kW	225M	4	1470	3ph cast iron motor	60	353	82 300.00
T3CR 250M1-4 B5	55 kW	250M	4	1470	3ph cast iron motor	65	428	102 000.00
T3CR 250M2-4 B5	75 kW	250M	4	1480	3ph cast iron motor	75	674	118 000.00
T3CR 280M1-4 B5	90 kW	280M	4	1480	3ph cast iron motor	75	692	144 000.00
T3CR 280M2-4 B5	110 kW	280M	4	1480	3ph cast iron motor	80	1027	176 000.00
T3C 315M-4 B5	132 kW	315M	4	1480	3ph cast iron motor	80	1155	279 000.00
T3C 315L1-4 B5	160 kW	315L	4	1480	3ph cast iron motor	80	1240	307 000.00
T3C 315L3-4 B5	200 kW	315L	4	1480	3ph cast iron motor	80	1400	320 000.00
T3C 355M1-4 B5	220 kW	355M	4	1480	3ph cast iron motor	95	1560	487 000.00
T3C 355L1-4 B5	280 kW	355L	4	1480	3ph cast iron motor	95	1650	537 000.00
T3C 355L2-4 B5	315 kW	355L	4	1480	3ph cast iron motor	95	1700	574 000.00

* For B14 flange replace B5 with B4. Larger sizes available on request

Electric motors (cast-iron & aluminium frame)



Electric Motors (Cast iron frame)

Three-phase cast iron motors

Flange/Foot mounting (B35)

Protection degree: IP55
 Insulation class: H (180°C) / ambient temperature 40°C
 Colour: RAL 7024 (graphite grey)
 Δ 220-240V (or) Y 380-415V 50Hz (frame 80 - 100)
 Δ 380-415V (or) Y 660-690V 50Hz (frame 112 - 355)

New



T3CR 90L-6 B5



Type	output (kW)	frame size	pole	speed RPM	description	shaft Ø (mm)	weight (kg)	price
6 pole Three-phase motors IE3 - premium efficiency								
T3CR 90S-6 B5*	0.75	90S	6	935	3ph cast iron motor	24	21.5	5 750.00
T3CR 90L-6 B5*	1.1	90L	6	940	3ph cast iron motor	24	25.5	6 930.00
T3CR 100L-6 B5*	1.5	100L	6	940	3ph cast iron motor	28	33.5	8 130.00
T3CR 112M-6 B5*	2.2	112M	6	940	3ph cast iron motor	28	40.0	10 400.00
T3CR 132S-6 B5*	3	132S	6	940	3ph cast iron motor	38	59.0	14 000.00
T3CR 132M1-6 B5*	4	132M	6	950	3ph cast iron motor	38	75.5	15 900.00
T3CR 132M2-6 B5*	5.5	132M	6	950	3ph cast iron motor	38	76.3	18 200.00
T3CR 160M-6 B5*	7.5	160M	6	960	3ph cast iron motor	42	112	27 900.00
T3CR 160L-6 B5*	11	160L	6	960	3ph cast iron motor	42	134	33 300.00
T3CR 180L-6 B5	15	180L	6	960	3ph cast iron motor	48	185	43 500.00
T3CR 200L1-6 B5	18.5	200L	6	970	3ph cast iron motor	55	231	53 900.00
T3CR 200L2-6 B5	22	200L	6	970	3ph cast iron motor	55	249	57 900.00
T3CR 225M-6 B5	30	225M	6	975	3ph cast iron motor	60	339	74 400.00
T3CR 250M1-6 B5	37	250M	6	975	3ph cast iron motor	65	399	94 600.00
T3CR 250M2-6 B5	45	250M	6	980	3ph cast iron motor	75	551	106 000.00
T3CR 280M1-6 B5	55	280M	6	980	3ph cast iron motor	75	624	130 000.00
T3CR 280M2-6 B5	75	280M	6	980	3ph cast iron motor	80	860	161 000.00
T3C 315M-6 B5	90	315M	6	980	3ph cast iron motor	80	970	265 000.00
T3C 315L1-6 B5	110	315L	6	980	3ph cast iron motor	80	1070	295 000.00
T3C 315L2-6 B5	132	315L	6	980	3ph cast iron motor	80	1196	324 000.00
T3C 355M1-6 B5	160	355M	6	980	3ph cast iron motor	95	1537	454 000.00

* For B14 flange replace B5 with B4, larger sizes available on request

Aluminium - Single-phase electric motors

Aluminium motors (Totally Enclosed Fan Cooled) (TEFC)

Flange/Foot mounting (B35)

Protection degree: IP55
 Insulation Class: F (155°C)

Single-phase electric motors

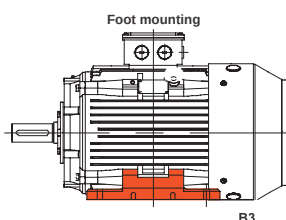
220V - High torque motor (capacitor start and run)

2-pole Single-phase motors IE1 - standard efficiency								
ML711-2 B5	0.37	71	2	2780	1ph aluminium motor	14	6.1	3 670.00
ML712-2 B5	0.55	71	2	2790	1ph aluminium motor	14	7.0	4 090.00
ML801-2 B5	0.75	80	2	2840	1ph aluminium motor	19	9.0	5 270.00
ML802-2 B5	1.1	80	2	2850	1ph aluminium motor	19	10.3	5 910.00
ML90S-2 B5	1.5	90S	2	2860	1ph aluminium motor	24	13.8	7 390.00
ML90L-2 B5	2.2	90L	2	2850	1ph aluminium motor	24	16.8	8 670.00
4-pole Single-phase motors IE1 - standard efficiency								
ML711-4 B5	0.25	71	4	1415	1ph aluminium motor	14	5.9	3 770.00
ML712-4 B5	0.37	71	4	1410	1ph aluminium motor	14	6.9	4 150.00
ML801-4 B5	0.55	80	4	1420	1ph aluminium motor	19	9.6	5 400.00
ML802-4 B5	0.75	80	4	1420	1ph aluminium motor	19	10.9	5 940.00
ML90S-4 B5	1.1	90S	4	1420	1ph aluminium motor	24	13.8	7 910.00
ML90L-4 B5	1.5	90L	4	1420	1ph aluminium motor	24	16.7	9 080.00
ML100L1-4 B5	2.2	100L	4	1440	1ph aluminium motor	28	22.8	11 800.00

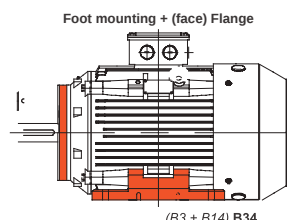


T3C 315L1-6 B5

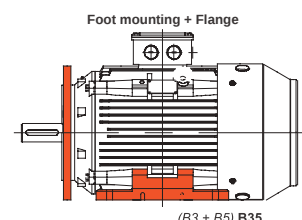
Mounting options



B3



(B3 + B14) B34



(B3 + B5) B35

Spare parts for motors

Spare parts for motors are available from our stocks and can be ordered (see below examples) as replacement parts for damaged components on the motor.

Example 1: Spare terminal box for **TC90** frame size, the ordering code is: **TC80/90/100TB**

Example 2: B5 flange for **TC250-2P** frame size, the ordering code is: **TC250-2PB5**

		TC80	TC90	TC100	TC112	TC132	TC160	TC180	TC200	TC225	TC250	TC280S	TC280M	TC315-2P	TC315-4/6P	TC355-2P	TC355-4/6P					
Auxiliary Box	AB	MS56 144.00																				
Terminal Box	TB	TC80/90/100					TC160/180				TC250/280S			TC315		TC355						
		434.00			597.00		597.00		1 260.00		2 140.00		2 140.00		2 900.00		3 040.00		2 990.00		3 980.00	
Terminal Block	TBL	TC80/90/100			TC112/132		TC160/180		TC200/225		TC250/280S			TC315		TC355						
		126.00			192.00		361.00		614.00		870.00		870.00		639.00		2 170.00					
Rubber Seal	RS	TC80/90/100			TC112/132		TC160/180		TC200/225		TC250/280S			TC315		TC355						
		11.00			14.00		22.00		39.00		50.00		50.00		141.00		292.00					
Plastic Fan	PF	T1C80	T1C90	T1C100	T1C112	T1C132	T1C160	T1C180	T1C200	T1C225	T1C250	T1C280		T1C315/355-4P		T1C355-2P	T1C 315/355-6P					
		35.30	35.30	38.30	57.00	79.00	184.00	234.00	365.00	329.00	558.00	598.00		636.00	1 260.00	608.00	1 380.00					
Fan Cover	FC	102.00		128.00	154.00	180.00	255.00	485.00	574.00	781.00	1 220.00	1 730.00		TC280								
												2 080.00		3 370.00	3 370.00	4 100.00	4 290.00					
Rain Cover	RFC	164.00		197.00	240.00	283.00	413.00	771.00	904.00	1 260.00	1 840.00	2 590.00		TC280								
												3 210.00		4 760.00	4 760.00	4 100.00	4 290.00					
End Shield (NE & NDE)	ES																					
		185.00	210.00	293.00	432.00	590.00	1 050.00	1 510.00	1 980.00	2 590.00												
End Shield (Drive End)	ESDE										TC250-2P	TC250-4/6P	TC280-2P	TC280-4/6P	TC315-2P	TC315-4/6P	TC355-2P	TC355-4/6P				
											3 240.00	3 150.00	4 000.00	4 050.00	6 590.00	6 600.00	6 150.00	6 490.00				
End Shield (Non-Drive End)	ESND										TC280		TC315		TC355							
											3 240.00		4 000.00		6 590.00		6 440.00					
Bearing Cover	BC						225.00	319.00	447.00	550.00	665.00		TC280		TC315		TC355					
											1 020.00		1 630.00		2 020.00							
Oil Seal	OS	13.00	13.00	14.00	14.00	14.00	27.00	37.00	44.00	POR	POR		POR		POR		POR					
B5 Flange	B5	556.00	655.00	933.00	1 010.00	1 230.00	2 340.00	3 020.00	4 150.00	4 430.00	TC250-2P	TC250-4/6P	TC280-2P	TC280-4/6P	8 310.00	7 940.00	11 400.00	12 000.00				
		5 810.00				5 850.00		7 060.00		7 120.00												
B14 Flange	B14	258.00	289.00	389.00	479.00	688.00	1 820.00															
Removable Feet	RF	POR																				

New



G-355C...



Terminal block



Terminal box



B14 Flange

Forced cooling kit for cast iron motors

Forced cooling is recommended when the motor speed is below 25 Hz to compensate for the reduced cooling capacity of the motor at lower speeds.

Frame size	pole	frame	description	power (W)	phase	voltage	Hz	price
Three-phase forced cooling kits (Cast Iron Motors)								
G-80C	2/4/6	80	forced cooling kit	37	3-ph	400	50	3 470.00
G-90C	2/4/6	90	forced cooling kit	45	3-ph	400	50	3 570.00
G-100C	2/4/6	100	forced cooling kit	72	3-ph	400	50	4 410.00
G-112C	2/4/6	112	forced cooling kit	85	3-ph	400	50	4 740.00
G-132C	2/4/6	132	forced cooling kit	50	3-ph	400	50	5 760.00
G-160C	2/4/6	132	forced cooling kit	60	3-ph	400	50	6 080.00
G-180C	2/4/6	180	forced cooling kit	80	3-ph	400	50	7 270.00
G-200C	2/4/6	200	forced cooling kit	110	3-ph	400	50	9 300.00
G-225C	2/4/6	225	forced cooling kit	170	3-ph	400	50	11 000.00
G-250C	2/4/6	250	forced cooling kit	200	3-ph	400	50	13 200.00
G-280C	2/4/6	280	forced cooling kit	200	3-ph	400	50	13 400.00
G-315C2P	2	315	forced cooling kit	350	3-ph	400	50	13 800.00
G-315C4/6P	4/6	315	forced cooling kit	350	3-ph	400	50	13 800.00
G-355C2P	2	355	forced cooling kit	280	3-ph	400	50	14 600.00
G-355C4/6P	4/6	355	forced cooling kit	280	3-ph	400	50	14 600.00

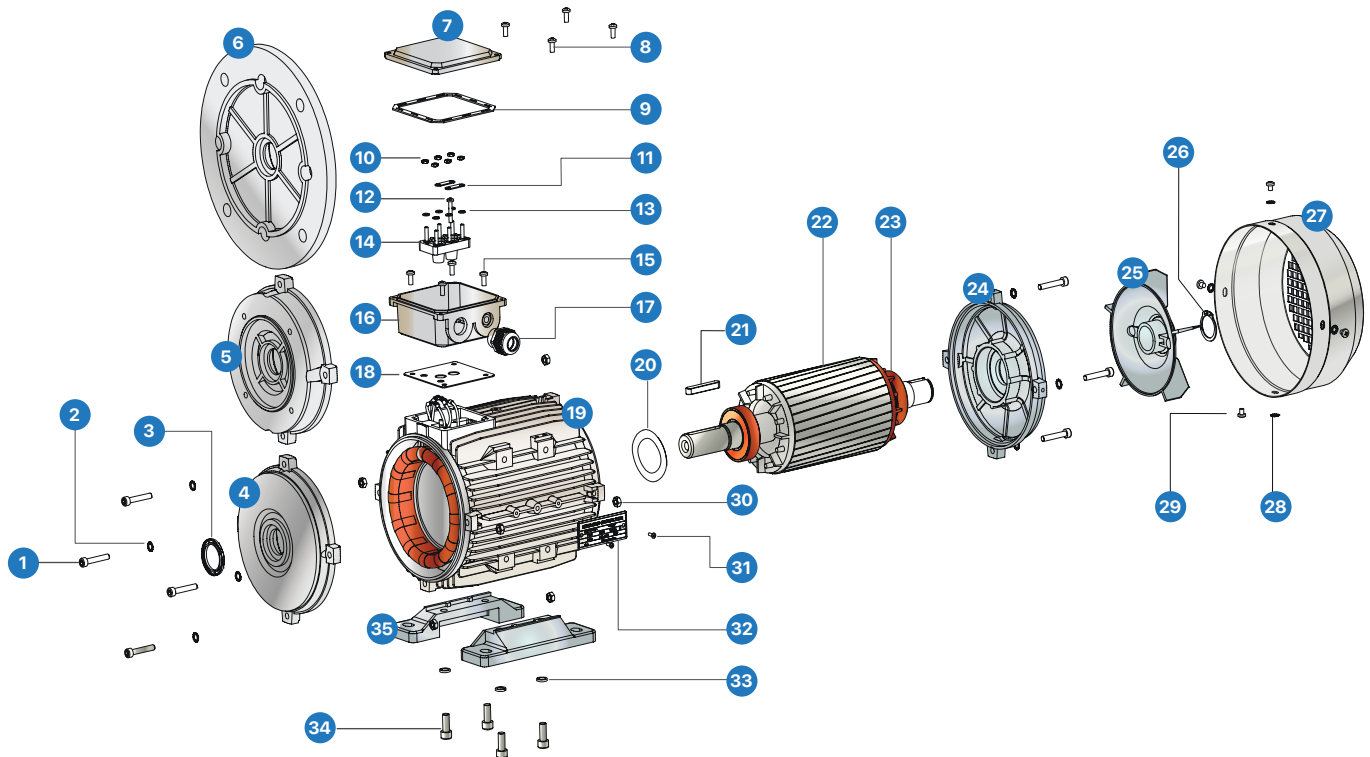
Modifications: Optional features

Available on request by special order. Contact us for assistance and a quotation.

	Frame size														
		71	80	90	100	112	132	160	180	200	225	250	280	315	355
IP65 Upgrade		—	—	—	—	—	*	*	*	*	*	*	*	*	*
Insulated NDE Bearing		—	—	—	—	—	—	*	*	*	*	*	*	STD	STD
Insulated DE Bearing		—	—	—	—	—	—	*	*	*	*	*	*	*	*
Thermistor		—	—	—	*	*	*	STD	STD	STD	STD	STD	STD	STD	STD
1x PT100 per Bearing		—	—	—	—	—	*	*	*	*	*	*	*	*	*
2x PT100 per Bearing		—	—	—	—	—	*	*	*	*	*	*	*	*	*
1x PT100 per Winding		—	—	—	—	—	—	*	*	*	*	*	*	*	*
2x PT100 per Winding		—	—	—	—	—	—	*	*	*	*	*	*	*	*
Space Heater		—	—	—	—	—	*	*	*	*	*	*	*	*	*

Electric motor accessories

Electric motor exploded view



Illustrated reference guide

- | | | |
|-------------------------------|-----------------------------------|-----------------------------|
| 1. Screw | 13. Terminal shim | 25. Cooling fan |
| 2. Washer | 14. Terminal board | 26. Fan circlip |
| 3. Oil seal | 15. Terminal box fixing screws | 27. Fan cover |
| 4. Front endshield | 16. Terminal block base | 28. Fan cover fixing shim |
| 5. B14 flange | 17. Cable gland | 29. Fan cover fixing screws |
| 6. B5 flange | 18. Terminal box bottom gasket | 30. Endshield fixing nut |
| 7. Terminal cover | 19. Motor frame | 31. Rivet |
| 8. Box cover fixing screws | 20. Preload washer | 32. Motor nameplate |
| 9. TB upper gasket | 21. Shaft key | 33. Foot fixing nut |
| 10. Terminal board fixing nut | 22. Rotor | 34. Foot fixing screws |
| 11. Terminal bridge | 23. Bearing | 35. Foot |
| 12. Terminal pin | 24. Non drive-end (NDE) endshield | |

