BUYLOG SECTION 15

Motor control centers - low voltage

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Introduction to low voltage (LV) motor control centers (MCC)

ABB motor control centers offer an ideal means of quickly providing centralized motor control and other related control equipment. All of ABB's LV MCC's are configured with ABB's empower tool which provides a bill of material, one lines, front views and delivery schedules.

A pre-engineered version of the ABB motor control center is available in various shipment cycles, including short cycle, to meet any project schedule. The short cycle product offering has limited scope as defined in the following pages, which includes certain combination starter units and feeder units to be installed in a single, floor-mounted enclosure and fed from a common enclosed horizontal and vertical bus system.

Each ABB motor control center vertical section is constructed of 12 and 13 gauge steel which is subjected to a special corrosion-resistant zinc-phosphate treatment followed by a powder paint process using ANSI-61 light gray alkyd-enamel paint. Refer to the factory for additional color options. Each section houses the horizontal and vertical bus, horizontal and vertical wireways and the compartmentalized individual control units. Standard unit construction is Class I Type B wiring[1]. Factory assembled, wired and tested units are mounted in each vertical section, and sections are easily bolted together to form a motor control center line-up. The entire line-up is then powered by either a main lug only (MLO) unit or a main circuit breaker (MCB) unit.

ABB LV MCC's are available in main bus ratings up to 4000A, three-phase copper bus and vertical bus amperages up to 1200A, with bus bracing up to 100,0000 rms symmetrical.

Motor control centers product literature and reference material:

Product references	
Engineered products catalog	Section 10
Application and selection guide	E9000 DET291[1]
Application and selection guide	Spectra/8000 GET6729
Application and selection guide MNS MCC	2TDC190003
Renewal parts bulletin ReliaGear MCC	9AKK107991A9878
Renewal parts bulletin E9000 MCC	9AKK107991A9963
Renewal parts bulletin 8000 MCC	GEF-4628B
Renewal parts bulletin 7700 MCC	GEF-4629B
Installation guide ReliaGear MCC	1VAL117401-MB
Technical application guide ReliaGear MCC	1VAL117401-TG
AFM retrofit kits instruction ReliaGear MCC	DEI-009

[1] Typical wiring diagrams can be found in the application and selection guide for DET291 section "L".

ReliaGear LV MCC

MNS-MCC

LV MCC	Key applications
ReliaGear	Flagship motor control center, suitable for all market applications featuring variable frequency drives up to 500HP, with bypass, isolation and harmonic filtering.
ReliaGear w/arc flash mitigation	Flagship motor control center, suitable for all market applications with features such as retractable stabs, closed door racking, closed door stab and shutter position indication
MNS	Heavy industrial motor control center, equipped with ACS880 drives
MNS arc resistant	Heavy industrial motor control center, equipped with ACS880 drives, emphasis on arc flash containment

Note: Pricing available through empower.

ReliaGear LV MCC key benefits

ReliaGear LV MCC is the new UL845 platform combining 70 years of MCC experience with ABB's cutting-edge technology in circuit breakers and variable frequency drives. ReliaGear LV MCC is suitable for a wide range of industrial applications, providing operational safety and performance. E9000 LV MCC is the legacy design that will continue to be supported with Fastrac units program and replacement parts.

ReliaGear LV MCC

Safety:
- Hi-visible trip indication
- Door and unit interlocks
- Seismic rated (see Technical Application Guide for exclusions)
- Six Sigma designed
- Finger safe device options available
- Taped bus options
- Voltage presence indicators optional
- Withdrawable stabs options
- Arc resistant enclosure option for E9000 only

Size:
- 6" size 1 FVNR
- 6" 150A feeder
- 12" 250A feeder
- 36" size 5 plug-in, two in a section
- 300VA CPT—no additional space
- Plug in buckets to size 5
- Plug in feeders to 600A
- Back to back in 25" deep with shared main bus
- Back to back in 40" deep separate bus with pluggable wraparound corner section

Simplicity:
- Easy unit insertion/removal
- Snap-in shelves
- Equipment and replacement units easily quoted in empower
- Replacement units; ability to retrofit existing MCC's to arc flash mitigation units
- Plug connection provision every 6" is standard
- 72" standard usable unit spacing per section, can be expanded to 78" usable space per section
- Manufacturing flexibility, including short cycle shipment options

Scope:
- Main bus up to 3200A without use of fans
- Smart overloads, main metering options, communications and networking cabinets
- VFD's up to 500HP with bypass, isolation, line reactors and load filtering options
- 500 Hp SSS
- 250A and 600A stabs
- TVSS 65-200K surge current
- Automatic transfer switches to 1200A

Note: Pricing available through empower.

MNS LV MCC key benefits

MNS-MCC builds on over 40 years of experience in the development, design and manufacturing of low voltage systems for a wide range of industrial applications, providing operational safety and performance.

With its unique SafeT® Connect technology, the MNS-MCC low voltage motor control center provides a higher level of safety while minimizing factory downtime. Central to this design is the multifunction wall, which offers advanced insulating and isolating properties and a “closed-door, no-tool” unit removal for superior safety and reliability.

A pre-engineered version of the ABB MNS-MCC motor control center bucket is available at short-cycle and mid-cycle shipment. The product scope available is more limited than with normal cycle shipments and includes certain combination starter units and feeder units to be installed.

Industry applications
Main applications are in these industry segments:
- Chemical, oil and gas
- Mining and metals
- Power generation and distribution
- Process industry
- Water and wastewater
- Food and beverage

Ratings
- Up to 4000A horizontal bus
- 800A vertical bus standard
- Optional 1600A vertical bus
- 42kA, 65kA, or 100kA SCCR at 480V
- 42kA, 65kA SCCR at 600V

Arc resistant option
- Up to 2500A horizontal bus, 800A vertical bus
- 65kA SCCR at 480V and 600V

Unit types
- Main lug only (MLO) incomers up to 4000A
- Emax 2 air circuit breaker incomers up to 3200A
- Circuit breaker feeders up to 800A
- Across the line starters up to NEMA size 6 with electronic overload relays or UMC100.3 microprocessor programmable overload relays
- Full voltage contactor units
- Softstarter units up to 400HP @ 480V
- ACS880 variable frequency drives up to 300HP @ 480V

Intelligent MCC options
- Factory wired and tested fieldbus network with serial or Ethernet protocols:
  - Modbus RTU, Modbus TCP/IP
  - Profibus, Profinet
  - DeviceNet, Ethernet/IP

MNS-MCC

Note: Pricing available through empower.

ReliaGear LV MCC short cycle (SC) program

Features
The ReliaGear LV MCC SC is a pre-engineered, factory assembled, fully tested motor control center that contains many of the standard features of the Evolution motor control center, including some options.

All sections and units will be UL labeled where possible. Factory will advise when UL labeling is not available.

Please contact your distributor or ABB for scope, pricing, and ordering.

No changes are allowed to bill-of-material after order entry. Please cancel and re-order.

Highlights of the ReliaGear LV MCC SC program:

I Structure (20-inch wide is standard)
- 13- or 20-inch deep
- Back-to-back mounting (20-inch deep only)
- NEMA 1 gasket, 2, 12, 3R non-walk-in
- 24- and 20-inch wide enclosures
- Special enclosures
- Engraved nameplates (optional)

II Bus systems
- Voltage: 480, 575 volts
- 3-phase, 3-wire, or 3-phase, 4-wire
- Main bus: 600, 800, 1000, 1200, 1600 ampere
- Vertical bus: 300, 450, 600 ampere
- Optional ground bus: 300, 600 ampere
- Neutral bus: 300, 400, 600, 800, 1000 ampere
- “Vertical bus plugs” installed in unused stab openings

III Incoming line
- 600 amperes with 18 inches of pull space
- Circuit breakers thru 1600 amperes
- Fusible switches thru 600 amperes

IV Feeders and mains
- Feeders—800-ampere Tmax® XT
- Feeders—600-ampere fused switch
- Main—1200-ampere Spectra, 1600A PB2
- Shunt trip and UV release

V Combination starter units
- Control power transformer (CPT) (optional)
- “Extra” auxiliary interlocks (optional)
- Line-to-neutral control
- Separate control power or common CPT
- FVNR—size 1 thru 5
- FVR—size 1 thru 4
- RVNR—size 2 thru 5
- 2S2W—size 1 thru 4
- 2S1W—size 1 thru 4
- NEMA Type 1B wiring, 1 AM
- Interlocks mounted on circuit breaker and fusible switch (optional)

Note: Pricing available through empower.

ReliaGear renewal parts

Renewal parts

Part	Description	Product number
O/L reset assembly	Size 1 standard O/L	9000RSG1
	Size 1 electronic O/L	9000RSG2
	Size 2,5 standard O/L	9000RSG3
	Size 2,5 electronic O/L	9000RSG4
	Size 3,4 standard O/L	9000RSG5
	Size 3,4 electronic O/O	9000RSG6
Door hinges	Door hinges	190B1013P1
Terminal blocks	Power pull apart terminal block 50A	190B1691G1
	Terminal block Din rail assembly 18 points max	190B2070G6
	Terminal block Din rail assembly 18 points max w/ TB	190B0270G12
	Control TB 30A male and female	190B1692G1
Wireway covers	Wireway covers top 12" with hinges	110C1440G1
	Wireway covers top 18" with hinges	110C1440G2
Control power transformers	CPT 150VA, 480/120 Size 1 and 2 w/o fuse block	9T58K0504G37
	CPT 300VA, 480/120 Size 1 and 2 with fuse block	9T58K0504G38
	CPT 100VA 480/120 Size 1 1/2X, size 5 w/o fuse block	MIC#B100-2989-5
Miscellaneous	Standard shelf	110C1059P1
	Shelf grounding bracket	270A1343G1
	Vertical bus shutter ASM at top	110C1783G1
	Vertical bus stab covers	190B1215P1
	Wireway knock out panel	190B1014P1
	Shelf support – 72" high	110C1010G11
	Handle Escutcheon ASM, SZ1-4, XT2, XT4	190B3989G1
	Handle Escutcheon ASM, SZ1-4, 1/2X XT2 XT4	190B3989G2
	Handle Escutcheon ASM, SZ1-4, XT2, XT4, TYPE 12	190B3989G3
	Handle Escutcheon ASM, SZ1-4, 1/2X XT2, XT4 TYPE 12	190B3989G4
	Handle Escutcheon ASM, SZ1-4, XT2, XT4 No Label	190B3989G5
	Handle Escutcheon ASM, SZ1-4, XT2, XT4 TYPE 12 No Label	190B3989G6
	Handle Escutcheon ASM, XT4 Vertical	190B3989G7
	Handle Escutcheon ASM, XT4 Horizontal	190B3989G8
	Handle Escutcheon ASM, XT4 Vertical T12	190B3989G9
	Handle Escutcheon ASM, XT4 Horizontal T12	190B3989G10
Filler kits (includes shelf and grounding bracket)	6"	EK06
	12"	EK12
	18"	EK18
	24"	EK24
	30"	EK30
	36"	EK36
	42"	EK42
	48"	EK48
Rear doors only	Rear cover only 45 x 20	190B1007P9
	Rear hinge door top only	110C1466G9
	Rear hinge door bottom only	110C1466G21
	Rear hinge mounting bracket (2 per section)	110C1464P1

Note: Pricing available through empower. If not, please contact factory for pricing.

ReliaGear renewal parts

Renewal parts continued

Part	Description	Product number
Wire trough doors (4")	6" high	110C1163G1
	12" high	110C1163G2
	18" high	110C1163G3
	24" high	110C1163G4
	30" high	110C1163G5
	36" high	110C1163G6
	42" high	110C1163G7
	48" high	110C1163G8
	54" high	110C1163G9
	60" high	110C1163G10
	66" high	110C1163G11
	72" high	110C1163G12
Cooling fans	Muffin fan 120V only	MUFFINFANG1
	Tarzan fan only	RMC#020169
	Case fan assembly	110C1556G1
	N3R fan assemblies	Refer to Factory
Blank unit door	15" x 6"	110C1240KKG1
	15" x 12"	110C1240KKG2
	15" x 18"	110C1240KKG3
	15" x 24"	110C1240KKG4
	15" x 30"	110C1240KKG5
	15" x 36"	110C1240KKG6
	15" x 42"	110C1240KKG7
	15" x 48"	110C1240KKG8
Pilot device bracket	6-unit device plate only	110C1039P100
	3-unit device plate only	110C1089P100
	Bracket	190B1662P1
Splice kits	600Amp bus – tin plated	110C1735G1SM
	800Amp bus – tin plated	110C1735G4SM
	1000/1200Amp bus – tin plated	110C1735G7SM
	2000Amp bus – tin plated	110C1735G12SM
	2500Amp bus – tin plated	110C1735G13SM
Arc flash mitigation	AFM mitigation kit	AFMKIT

Motor control centers parts publications list

Model	Description	Number
ReliaGear MCC	Installation guide	1VAL117401-MB
ReliaGear MCC	Renewal parts bulletin	9AKK107991A9878
ReliaGear MCC	Technical application guide	1VAL117401-TG
ReliaGear MCC	AFM retrofit kits instruction	DEI-009

Note: Pricing available through empower. If not, please contact factory for pricing.

E9000 starter units

This quick selection guide covers control center starters and feeders, including full and reduced voltage, reversing and non-reversing, two-speed single and dual winding starters, in sizes 1-5. It also covers E9000 sections. For other units, see the Engineered Products Catalog, Section 10.

Motor control starter units
For each of the following steps, find the option—MCC type, starter type, size, disconnect, control power, pilot lights, etc.— that meets the need. Transfer the corresponding product number digit(s) to the product number box(es).

When you have finished, you will have built a complete product number.

Starter product number

E														
1	2	2	3	4	5	5	6	7	8	8	8	9	10	10

1: Motor control center type

E = E9000

2: Starter type and size

Starter type	Size	Product number digits
FVNR	1	H1[1]
	1	A1
	2	A2
	3	A3
	4	A4
	5	A5
FV R	1	B1
	2	B2
	3	B3
	4	B4
2S1W variable torque	1	C1
	2	C2
	3	C3
	4	C4
2S2W variable torque	1	D1
	2	D2
	3	D3
	4	D4
RVNR	2	E2
	3	E3
	4	E4
	5	E5

[1] H1 is a 6" 10HP compact starter.

Note: Pricing available through empower.

3: Starter disconnect

Use the first table to identify desired disconnect device.
(Note that these are for basic applications; see publication DET-291 for E9000 for more information.)
Then, from the second table select starter disconnect.
If H1 is selected in Step 2, product number digits U or W must be selected.

Starter size	Mag only circuit breaker	Thermal mag circuit breaker	Short circuit rating		
			230V	460V	575V[2]
1, 2, 3	Spectra - 65k	Spectra - 65k	65	65	25
	Spectra - 100k	Spectra - 100k	100	100	—
4	Spectra - 65k	Spectra - 65k	65	65	25
	Spectra - 100k	Spectra - 100k	100	100	—
5	Spectra - 65k	Spectra - 65k	65	65	65
	Spectra - 100k	Spectra - 100k	100	100	100

[2] At 575V current limiters may be used.

Disconnect device	Product number digit	Starter size				
		1	2	3	4	5
FSW-R	F					
FSW-J[3]	R					
Spectra – 65 mag only[4]	U					
Spectra – 100 mag only	V					
Spectra – 65 thermal mag[4]	W					
Spectra – 100 thermal mag	X					

[3] J time delay
[4] 25 kAIC @ 575V

All Fastrac units have the following as standard:
A. NEMA 12 gasketing
B. Isolated N.O. overload alarm contact (not wired to TB)
C. Auxiliary contacts wired to the TB as noted below:
FVNR and RVNR starters—(1) N.O. (1) N.C.
FVR and 2S starters—(1) N.O. per contactor

E9000 starter units

Starter product number

E														
1	2	2	3	4	5	5	6	7	8	8	8	9	10	10

4: Control power

Standard control power transformer (CPT) ratings are adequate to handle the starter-coil current and three pilot lights. If additional burdens are expected, larger transformers should be specified from among those shown in the first table below. From the second table below, select the control power desired.
If H1 is selected in Step 2, product number digits 1 or 5 must be selected. Product number digit 1 is for 100VA CPT.

Starter type and size	CPT Std. VA	Oversize VA
All size 1	60	150
All size 2	150	—
All size 3	300	—
All size 4	300	—
All size 5	100	—

Control power (120 Vac)[1]	Product number digit	Starter size				
		1	2	3	4	5
Std. CPT	1					
Oversize	2					
Common/Separate source	5					

[1] At 380V 50Hz, control volts will be 110Vac; at 575V 60Hz, control volts will be 115Vac.

5: Pilot devices

Select pilot devices desired by starter type. **If H1 is selected in Step 2, a pilot device with an asterisk (*) must be selected.**

Pilot device	Product number digits
FVNR and RVNR and RVSS starter type	
NONE - Blank Pilot Device Bracket Provided	NN
RED LGT STD	OE*
RED LGT PUSH-TO-TEST (PTT)	OF
RED/GREEN LGT STD	OS*
RED/GREEN LGT PTT	OT
HAND/OFF/AUTO (H/O/A) SW.	AN
H/O/A SW. RED LGT STD	OB*
H/O/A SW. RED LGT PTT	OP
H/O/A SW. R/G LGT STD	OC*
H/O/A SW. R/G LGT PTT	OQ
H/O/A SW. STOP/START PB RED LGT STD	OD
H/O/A SW. STOP/START PB RED LGT PTT	OR

5: Pilot devices (continued)

Pilot device	Product number digits
FVNR and RVNR and RVSS starter type (continued)	
STOP/START PB	BN
STOP/START PB RED LGT STD	PB*
STOP/START PB RED LGT PTT	PP
STOP/START PB R/G LGT STD	PC
STOP/START PB R/G LGT PTT	PQ
OFF/ON SW.	GN
OFF/ON SW. RED LGT STD	UB*
OFF/ON SW. RED LGT PTT	UP
OFF/ON SW. R/G LGT STD	UC*
OFF/ON SW. R/G LGT PTT	UQ
FVR starter type	
NONE - Blank Pilot Device Bracket Provided	NN
RED/GREEN LGT STD	QE
RED/GREEN LGT PTT	QR
RED/AMBER LGT STD	QF
RED/AMBER LGT PTT	QS
R/A/G LGT STD	QG
R/A/G LGT PTT	QT
FWD/REV/STOP PB	CN
FWD/REV/STOP PB R/A LGT STD	QB
FWD/REV/STOP PB R/A LGT PTT	QP
FWD/REV/STOP PB R/G/A LGT STD	QC
FWD/REV/STOP PB R/G/A LGT PTT	QQ
FWD/OFF/REV SW	DN
FWD/OFF/REV SW RED LGT STD	RB
FWD/OFF/REV SW RED LGT PTT	RP
FWD/OFF/REV SW R/G LGT STD	RC
FWD/OFF/REV SW R/G LGT PTT	RQ
2S1W and 2S2W starter type	
NONE - Blank Pilot Device Bracket Provided	NN
RED/AMBER LGT STD	SF
RED/AMBER LGT PTT	SS
R/A/G LGT STD	SG
R/A/G LGT PTT	ST
FAST/SLOW/STOP PB	EN
FAST/SLOW/STOP PB R/A LGT STD	SB
FAST/SLOW/STOP PB R/A LGT PTT	SP
FAST/SLOW/STOP PB R/A/G LGT STD	SC
FAST/SLOW/STOP PB R/A/G LGT PTT	SQ
FAST/SLOW/OFF/AUTO (F/S/O/A) SW	NF
F/S/O/A SW R/A LGT STD	TB
F/S/O/A SW R/A LGT PTT	TP
F/S/O/A SW R/A/G LGT STD	TC
F/S/O/A SW R/A/G LGT PTT	TQ

Note: Pricing available through empower.

E9000 starter units

Starter product number

E														
1	2	2	3	4	5	5	6	7	8	8	8	9	10	10

6: Overload relay

If H1 is selected in Step 2, product number digit 2 must be selected. *If H1 is selected in Step 2, the overload provided is the Series RT overload.

Relay type	Product number digit
Standard	1
Ambient compensated	2*
Solid state	3

7: Control disconnect terminal board

If H1 is selected in Step 2, product number digit H must be selected.

Standard high-density	H

8: Horsepower

Note that some product number digits consist of a decimal point.

Horsepower	Product number digits	Horsepower	Product number digits
1/4	.25	15	015
1/3	.33	20	020
3/8	.38	25	025
1/2	.50	30	030
3/4	.75	40	040
1	001	50	050
1-1/2	1.5	60	060
2	002	75	075
3	003	100	100
5	005	125	125
7-1/2	7.5	150	150
10	010	200	200

9: System voltage

If H1 is selected in Step 2, product number digits A or C must be selected.

Voltage	Product number digit
480V 60 Hz	A
208V 60 Hz	B
240V 60 Hz	C
575V 60 Hz	D
380V 50 Hz	E

10: OEM Fastrac units

Fastrac units designed for OEM use are engineered and built with the same components and layout as the standard Fastrac units. Power wiring is provided: however, to allow the maximum flexibility for OEM users, no control wiring is provided.

Product numbers are the same as the standard Fastrac units with the addition of two additional suffix letters, **XX**.

Example

Standard Fastrac unit	EA1U1AB1H010A
OEM Fastrac unit	EA1U1AB1H010A**XX**

Note: Pricing available through empower.

E9000 feeder units

Motor control feeder units
For each of the following steps, find the option—MCC type, disconnect type, amp rating, feeder devices—that meets the need. Transfer the corresponding product number digits to the product number boxes for either the standard or OEM extended feeder unit. When you have finished, you will have built a complete product number.

Standard feeder unit product number

1: Motor control center type

E = E9000

2: Feeder disconnect type

Type	Voltage	Product number digits
Circuit breaker	—	FB
Fusible switch-R	208/240V	FR
Fusible switch-R	480/600V	FS
Fusible switch-J	480/600V	FJ

3: Amp rating

Select amp rating for either circuit breaker trip or Class R fuse.

Amps	Product number digits	Amps	Product number digits
15	015	110	110
20	020	125	125
30	030	150	150
40	040	175	175
50	050	200	200
60	060	225	225
70	070	250	250
80	080	400	400
90	090	600	600
100	100	—	—

4: Feeder device for standard feeder units

Device	Amp rating (max.)	Short circuit rating KA volts			Unit height (inches)	Product number digits
		240	480	600		
SELT	150	65	65	25	12	SEL2
	150	65	65	25	6	SEL8
SELT-L	150	—	—	65	12	SLL2
	150	—	—	65	6	SLL8
SEPT	150	100	100	25	12	SEP2
	150	100	100	25	6	SEP8
SFLT	250	65	65	25	12	SFLT
SFPT	250	100	100	25	12	SFPT
SGL1C w-LT & INST	150	100	65	65	24	GLI1
SGL1C w-LT/INST & GF	150	100	65	65	24	LIG1
SGL4C w-LT & INST	400	100	65	65	24	GLI4
SGL4C w-LT/INST & GF	400	100	65	65	24	LIG4
SGL6C w-LT & INST	600	100	65	65	24	GLI6
SGL6C w-LT/INST & GF	600	100	65	65	24	LIG6
FSW	30	100	100	100	12	QMR3
	60	100	100	100	12	QMR6
	100	100	100	N/A	12	QMR1
	200	100	100[1]	100[1]	24	QMR2

[1] Unit height for 480V and 600V is 30".

Door and shelf kit

6" – EK06	30" – EK30
12" – EK12	36" – EK36
18" – EK18	42" – EK42
24" – EK24	48" – EK48

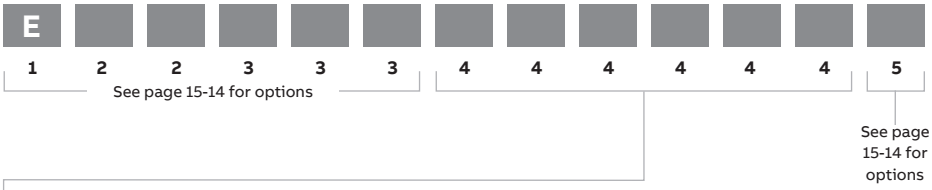
5: System voltage

Voltage	Product number digit
480V 60 Hz	A
208V 60 Hz	B
240V 60 Hz	C
575V 60 Hz	D
380V 50 Hz	E

Note: Pricing available through empower.

E9000 feeder units

OEM extended feeder unit product number



4: OEM extended feeder units for E9000 only

Device	Amp rating (max.)	Short circuit rating KA volts			Unit height (inches)	Product number digits
		240	480	600		
SELT	150	65	65	25	18	SELT18
					24	SELT24
					30	SELT30
					36	SELT36
SELT-L	150	65	65	65	18	SELL18
					24	SELL24
					30	SELL30
					36	SELL36
SEPT	150	100	100	N/A	18	SEPT18
					24	SEPT24
					30	SEPT30
					36	SEPT36
SFLT	250	65	65	25	18	SFLT18
					24	SFLT24
					30	SFLT30
					36	SFLT36
					42	SFLT42
SFPT	250	100	100	N/A	18	SFPT18
					24	SFPT24
					30	SFPT30
					36	SFPT36
					42	SFPT42
SGL4B w-LT & INST	400	100	65	65	30	GLI430
					36	GLI436
					42	GLI442
SGL4B w-LT/INST & GF	400	100	65	65	30	LIG430
					36	LIG436
					42	LIG442
SGL6B w-LT & INST	600	100	65	65	30	GLI630
					36	GLI636
					42	GLI642
SGL6B w-LT/INST & GF	600	100	65	65	30	LIG630
					36	LIG636
					42	LIG642

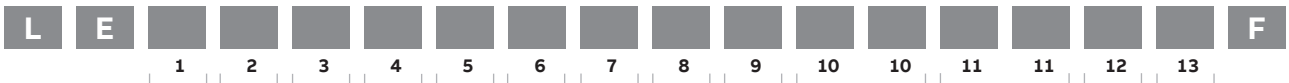
Note: Pricing available through empower.

E9000 MCC sections

E9000 MCC sections
This is for selection of one to three sections of 20" deep E9000 motor control centers without units. Each section will be shipped with blank doors. The typical section will have (3) 12", (1) 24" and (2) 6" doors and shelves.

For each of the following steps, find the option—short circuit rating, NEMA enclosure, etc.—that meets the need. Transfer the corresponding product number digit(s) to the corresponding product number box(es). When you have finished, you will have built a complete product number.

Section product number



1: Short circuit rating

Circuit rating	Product number digit
25 kAIC	A
42 kAIC	B
65 kAIC	C

2: NEMA enclosure type

Enclosure type	Product number digit
1 Gasketed	1
12	2

3: System voltage

System voltage	Product number digit
480V 60 Hz	A
208V 60 Hz	B
240V 60 Hz	C
575V 60 Hz	D
380V 50 Hz	E

4: System wires

System wires	Product number digit
3 W	3
4 W-Neutral	4

5: Bus plating

Bus plating	Product number digit
Tin	T
Silver	S

6: Main bus rating

Main bus rating	Product number digit
600A	6
1200A	2

7: Ground bus

Ground bus	Product number digit
300A	3
600A	6

8: Neutral bus

Neutral bus	Product number digit
None	0
300A	3
600A	6

9: Horizontal wire-way

Horizontal wire-way	Product number digit
12" top-6" bottom	T
12" top-12" bottom	B

10: Main location

Main location	Product number digits
Top left	TL
Bottom left	BL
Top right	TR
Bottom right	BR

11: Main type

Main type	Product number digits
600A splice	6S
1200A splice	2S
600A MLO	6L
1200A MLO bottom	2L
1200A MLO top	2L
600A CB	6C
1200A CB	2C
600A switch	6F

12: Main circuit breaker trip or main switch fuse

Main CB or main switch fuse	Product number digit
No fuse	0
300A	3
400A	4
600A	6
800A	8
1000A	1
1200A	1

13: Number of vertical sections with common main bus

Number of sections	Product number digit
One	1
Two	2
Three	3

Note: Pricing available through empower.

E9000 renewal parts

Renewal parts

Part	Description	Product number
O/L reset assembly	Size 1 standard O/L	9000RSG1
	Size 1 electronic O/L	9000RSG2
	Size 2,5 standard O/L	9000RSG3
	Size 2,5 electronic O/L	9000RSG4
	Size 3,4 standard O/L	9000RSG5
	Size 3,4 electronic O/L	9000RSG6
Door hinges	Door hinges	190B1013P1
Terminal blocks	Power pull apart terminal block 50A	190B1691G1
	Terminal block Din rail assembly 18 points max	190B2070G6
	Terminal block Din rail assembly 18 points max w/ TB	190B0270G12
	Control TB 30A male and female	190B1692G1
Wireway covers	Wireway covers top 12" with hinges	110C1440G1
	Wireway covers top 18" with hinges	110C1440G2
Control power transformers	CPT 150VA, 480/120 Size 1 and 2 w/o fuse block	9T58K0504G37
	CPT 300VA, 480/120 Size 1 and 2 with fuse block	9T58K0504G38
	CPT 100VA, 480/120 Size 1 1/2X, size 5 w/o fuse block	MIC#B100-2989-5
Miscellaneous	Standard shelf	110C1059P1
	Shelf grounding bracket	270A1343G1
	Vertical bus shutter ASM at top	110C1783G1
	Vertical bus stab covers	190B1215P1
	Wireway knock out panel	190B1014P1
	Shelf support - 72" high	110C1010G11
Circuit breaker/starter handles	E and F frame CB vertical handle only	190B1704G1
	E and F frame CB horizontal handle only	190B1704G2
Filler kits (includes shelf and grounding bracket)	6"	EK06
	12"	EK12
	18"	EK18
	24"	EK24
	30"	EK30
	36"	EK36
	42"	EK42
	48"	EK48
Rear doors only	Rear cover only 45 x 20	190B1007P9
	Rear hinge door top only	110C1466G9
	Rear hinge door bottom only	110C1466G21
	Rear hinge mounting bracket (2 per section)	110C1464P1
Wire trough doors (4")	6" high	110C1163G1
	12" high	110C1163G2
	18" high	110C1163G3
	24" high	110C1163G4
	30" high	110C1163G5
	36" high	110C1163G6
	42" high	110C1163G7
	48" high	110C1163G8
	54" high	110C1163G9
	60" high	110C1163G10
	66" high	110C1163G11
	72" high	110C1163G12

Note: Pricing available through empower. If not, please contact factory for pricing.

E9000 renewal parts

Renewal parts continued

Part	Description	Product number
Cooling fans	Muffin fan 120V only	MUFFINFANG1
	Tarzan fan only	RMC#020169
	Case fan assembly	110C1556G1
	N3R fan assemblies	Refer to Factory
Blank unit door	15" x 6"	110C1240KKG1
	15" x 12"	110C1240KKG2
	15" x 18"	110C1240KKG3
	15" x 24"	110C1240KKG4
	15" x 30"	110C1240KKG5
	15" x 36"	110C1240KKG6
	15" x 42"	110C1240KKG7
	15" x 48"	110C1240KKG8
Pilot device bracket	6-unit device plate only	110C1039P100
	3-unit device plate only	110C1089P100
	Bracket	190B1662P1
Splice kits	600Amp bus – tin plated	110C1735G1SM
	800Amp bus – tin plated	110C1735G4SM
	1000/1200Amp bus – tin plated	110C1735G7SM
	2000Amp bus – tin plated	110C1735G12SM
	2500Amp bus – tin plated	110C1735G13SM
Optional semiconductor soft start fuses	50Amp	CSC#A50QS50
	60Amp	CSC#A50QS60
	80Amp	CSC#A50QS80
	100Amp	CSC#A50QS100
	200Amp	CSC#A50QS200
	225Amp	CSC#A50QS225
	250Amp	CSC#A50QS250
Arc flash mitigation	AFM mitigation kit	AFMKIT

Motor control centers parts publications list

Model	Description	Number
E9000 MCC	Installation	GEH 40472
E9000 MCC	Renewal parts bulletin	9AKK107991A9963
E9000 MCC	AFM retrofit kits instructions	DEI-009

Note: Pricing available through empower. If not, please contact factory for pricing.

MNS LV MCC SC Fastrac program

This quick selection guide covers control center starters and feeders, including full reversing and non-reversing starters, in sizes 1-5. For other units, see the Engineered Products Catalog.

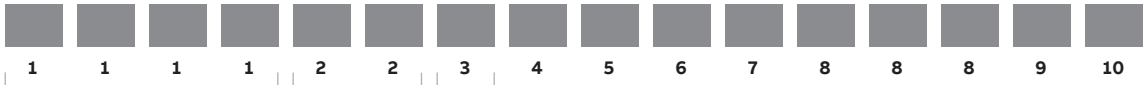
Each ABB MNS-MCC motor control center bucket unit is painted using ANSI-61 light gray as standard. Unit construction is Class I Type B wiring. Factory assembled, wired and tested units.

Standard UL labeled NEMA 1 units consisting of starters, feeders, and/or spaces for future units.

Motor control starter units
For each of the following steps, find the option—MCC type, starter type, size, disconnect, control power, pilot lights, etc.— that meets the need. Transfer the corresponding product number digit(s) to the product number box(es).

When you have finished, you will have built a complete product number.

Starter product number



1: Motor control center type

MCC type	Product number digits
MNS-MCC ANSI LV	2TDM
MNS-MCC (arc resistant) ANSI LV	2TDR

2: Starter type and size

Starter type	Size	Product number digits
FVNR	1	A1
	2	A2
	3	A3
	4	A4
	5	A5
FVR	1	B1
	2	B2
	3	B3
	4	B4
FVC	1	C1
	2	C2
	3	C3
	4	C4
	5	C5

3: Starter disconnect

Use the first table to identify desired disconnect device. (Note that these are for basic applications) Then, from the second table select starter disconnect.

Starter type	Mag only circuit breaker	Thermal mag circuit breaker	Short circuit rating		
			240V	480V	600V
FVNR FVR	Tmax 65k	—	100	65	25
	Tmax 100k	—	100	100	65
FVC	—	Tmax 65k	100	65	25
	—	Tmax 100k	100	100	65

Disconnect device	Product number digit	Starter size				
		1	2	3	4	5
Tmax 65k Mag only[1]	U					
Tmax 100k Mag only[2]	V					
Tmax 65k Thermal mag[1]	W					
Tmax 100k Thermal mag[2]	X					
Fusible switch[3]	F					

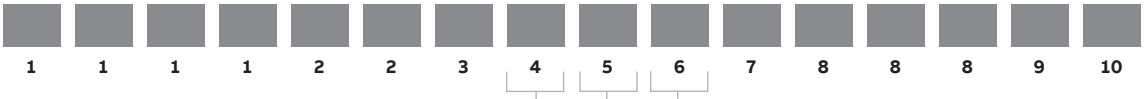
[1] 25 kAIC @ 600V
[2] 65 kAIC @ 600V
[3] J time delay

All Fastrac units have the following as standard:
A. NEMA 1 for MNS-MCC arc resistant
B. NEMA 1A gasketing for MNS-MCC conventional
C. Isolated N.O. overload alarm contact (not wired to TB)
D. Auxiliary contacts wired to the TB as noted below:
FVNR and FVC starters—(1) N.O. (1) N.C.
FVR starters—(1) N.O. per contactor

Note: Pricing available through empower.

MNS LV MCC SC Fastrac program

Starter product number



4: Control power

Standard control power transformer (CPT) ratings are adequate to handle the starter-coil current and three pilot lights. If additional burdens are expected, larger transformers should be specified from among those shown in the first table below. From the second table below, select the control power desired.

Starter type and size	CPT Std. VA	Oversize VA
All size 1	50	100
All size 2	50	100
All size 3	50	150
All size 4	100	250
All size 5	150	350

Control power (120 Vac)	Product number digit	Starter size				
		1	2	3	4	5
Std. CPT	1					
Oversize	2					
Common/Separate source	4					

5: Pilot devices

Select pilot devices desired by starter type. See pilot devices table below and note that all are LED lamps.

Starter type	Pilot device	Product number digit
FVNR	NONE	N
	RED Light	A
	RED PUSH-TO-TEST (PTT)	B
	RED/GREEN Light	C
	RED/GREEN PTT	D
	RED/GREEN/YELLOW Light	E
	RED/GREEN/YELLOW PTT	F
	HAND/OFF/AUTO (H/O/A) SW	G
	H/O/A RED Light	H
	H/O/A RED PTT	J
	H/O/A RED/GREEN Light	K
	H/O/A RED/GREEN PTT	L
	H/O/A RED/GREEN/YELLOW Light	M
	H/O/A RED/GREEN/YELLOW PTT	P
	H/O/A START/STOP PB RED Light	Q
	H/O/A START/STOP PB RED PTT	R
	START/STOP PB	S
	START/STOP PB RED Light	T
	START/STOP PB RED PTT	U
FVNR (continued)	START/STOP PB RED/GREEN Light	V
	START/STOP PB RED/GREEN PTT	W
	START/STOP PB R/G/Y Light	X
	START/STOP PB R/G/Y PTT	Y
FVR	NONE	N
	RED/GREEN Light	A
	RED/GREEN PTT	B
	RED/GREEN/YELLOW Light	C
	RED/GREEN/YELLOW PTT	D
	FWD/REV/STOP PB	E
	FWD/REV/STOP PB R/G Light	F
	FWD/REV/STOP PB R/G PTT	G
	FWD/REV/STOP PB R/G/Y Light	H
	FWD/REV/STOP PB R/G/Y PTT	J
	FWD/OFF/REV SW	K
	FWD/OFF/REV R/G Light	L
	FWD/OFF/REV R/G PTT	M
	FWD/OFF/REV R/G/Y Light	P
	FWD/OFF/REV R/G/Y PTT	Q
FVC	NONE	N
	RED Light	A
	RED PUSH-TO-TEST (PTT)	B
	RED/GREEN Light	C
	RED/GREEN PTT	D
	OFF/ON SW	E
	OFF/ON RED Light	F
	OFF/ON RED PTT	G
	OFF/ON RED/GREEN Light	H
	OFF/ON RED/GREEN PTT	J

6: Overload relay

Relay type	Product number digit
Electronic OL	1
UMC100.3	3
UMC100.3 w/ground fault relay	4
UMC100.3 w/voltage module	5
UMC100.3 w/GFR/VM	6

Note: Pricing available through empower.

MNS LV MCC SC Fastrac program

Starter product number

7: Communication

Communication type	Product number digit
None	N
MODBUS RTU	M
MODBUS TCP/IP	T
PROFIBUS DP	P
PROFINET	R
ETHERNET IP	E
DEVICENET	D

8: Horsepower

Note that some product number digits consist of a decimal point.

Horsepower	Product number digits	Horsepower	Product number digits
1/4	.25	20	020
1/2	.50	25	025
3/4	.75	30	030
1	001	40	040
1-1/2	1.5	50	050
2	002	60	060
3	003	75	075
5	005	100	100
7-1/2	7.5	125	125
10	010	150	150
15	015	200	200

9: System voltage and indication

Select system voltage and if a presence of voltage indicator is required.

Voltage	Product number digit
240V	A
380V	B
480V	C
600V	D
240V w/voltage indicator	J
380V w/voltage indicator	K
480V w/voltage indicator	L
600V w/voltage indicator	M

10: SafeT Connect and test position

Select Power SafeT Connect or conventional connection and if the test position is required. **If arc resistant is selected in Step 1, product number digits 1 or 2 must be selected.**

	Product number digit
SafeT Connect[1]	1
SafeT Connect w/test position	2
Conventional connection	4
Conventional w/test position	5

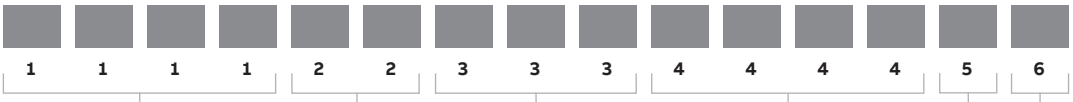
[1] SafeT Connect -> with power cable connection unit

Note: Pricing available through empower.

MNS LV MCC SC Fastrac program

Motor control feeder units
For each of the following steps, find the option—MCC type, disconnect type, amp rating, feeder devices—that meets the need. Transfer the corresponding product number digits to the product number boxes for the standard feeder unit. When you have finished, you will have built a complete product number.

Standard feeder unit product number



1: Motor control center type

MCC type	Product number digits
MNS-MCC ANSI LV	2TDM
MNS-MCC (arc resistant) ANSI LV	2TDR

2: Feeder disconnect type

Type	Product number digits
Circuit breaker	CB
Fusible switch[1]	FS

[1] J time delay

3: Amp rating

Select amp rating for either circuit breaker trip or Class J fuse.

Amps	Product number digits	Amps	Product number digits
15	015	90	090
20	020	100	100
25	025	125	125
30	030	150	150
35	035	175	175
40	040	200	200
50	050	225	225
60	060	250	250
70	070	300	300
80	080	400	400

4: Feeder device

Device	Amp rating (max.)	Short circuit rating KA volts			Unit height	Product number digits
		240	480	600		
XT2 LSIG	125	100	65	25	6E[2]	T2VA
	125	100	65	25	12E	T2VB
XT4 LSIG	100	100	100	65	12E	T4VA
	225	100	100	65	18E	T4VB
	250	100	100	65	24E	T4VC
T5 LSIG	400	100	100	65	24E	T5LA
FSW	30	100	100	100	12E	FSWA
	60	100	100	100	12E	FSWB
	100	100	100	100	24E	FSWC
	200	100	100	100	24E	FSWD
	300	100	100	100	30E	FSWE

[2] SafeT Connect not available

5: SafeT Connect

Select Power SafeT Connect or conventional connection. **If arc resistant is selected in Step 1, product number digit 1 must be selected.**

	Product number digit
SafeT Connect[3]	1
Conventional connection	4

[3] SafeT Connect -> with power cable connection unit

6: System voltage and indication

Select system voltage and if a presence of voltage indicator is required.

Voltage	Product number digit
240V	A
380V	B
480V	C
600V	D
240V w/voltage indicator	J
380V w/voltage indicator	K
480V w/voltage indicator	L
600V w/voltage indicator	M

Note: Pricing available through empower.

MNS renewal parts

Renewal parts

Part	Description	Product number
Rotary handle	Rotary handle 45mm for size 6E	1SCA022399R7640
	Rotary handle 65mm for size 12E and higher	1SCA022399R7720
	Stainless steel Hasp for rotary handle	1SCA022841R5480
Pull handle	Drawer handle angular >=4E grey	1TSA030009P0061
	Name plate support for handle	HANL200056P0001
	Handle for 8E2 bucket grey	HANL200008P0010
O/L electronic	DB19EF single mounting kit	1SAX101910R1001
	DB45EF single mounting kit	1SAX201910R0001
	EF19-2.7 EOL 0.8-2.7A	1SAX121001R1103
	EF19-6.3 EOL 1.9-6.3A	1SAX121001R1104
	EF19-18.9 EOL 5.7-18.9A	1SAX121001R1105
	EF45-45 EOL 15-45A	1SAX221001R1102
	EF96-100 EOL 37-100A	1SAX341001R1101
	EF146-150 EOL 54-150A	1SAX351001R1101
	EF370-380 EOL 115-380A	1SAX611001R1101
	Mechanical reset TF-EF 400mm Bowden	1TNA500032R0001
	Mechanical reset TF-EF 600mm Bowden	1TNA500032R0002
	Reset mechanism	2TDA080021P0001
	Reset button	2TDA080104R0001
UMC100	UMC100.3 UC, 110-240 V AC/DC	1SAJ530000R1100
	UMC100.3 DC, 24 V DC	1SAJ530000R0100
	UMC100-PAN, operating panel	1SAJ590000R0103
	UMCPAN-CAB.070, 0.7 m ext. cable with door mounting set	1SAJ510003R0002
	UMCPAN-CAB.150, 1.5 m ext. cable with door mounting set	1SAJ510004R0002
	UMC100.3 remote HMI adapter M12	1TNA603016R0001
	UMC100.3 remote HMI KIT	1TGB100149R0002
	3-PH current transformer CT4L185R/4	1SAJ929500R0185
	3-PH current transformer CT4L310R/4	1SAJ929500R0310
	3-PH current transformer CT4L500R/4	1SAJ929501R0500
W/D terminal blocks	Terminal block markings	2TDA080033P0001
	Control terminal block socket part B4E 12-pole	GILN100115R2302
	Control terminal block plug part S4E 12-pole	GILN100116R2302
W/D cable connection unit	Barrier of boots CCU300	2TDA030088P0001
	Boot CCU300	2TDA030084P0001
	Contact holder housing 3P outgoing	1TSA233000P0015
	Contact holder housing 3P outgoing 101	1TSA030017P0006
Miscellaneous	Rubber grommet profile	2TDA080113P0001
	Contact holder housing 4P incoming	1TSA030018P0032
	Touch protection contact holder 4P	1TSA030018P0034
	Door mechanical interlock	1TSA275000R0001
	Wheels for module bottom plate and cover	1TSA275002R0004
	Shaft bkr. XT2 6E	2TDA080116P0004
	Shaft bkr. XT2 and XT4	2TDA080116P0001
	Shaft bkr. T5	2TDA080119P0001
	Shaft bkr. T5 FDR	2TDA080119P0003
	Voltage indicator non flashing light	2TDA060007R0002
	Nameplate holder	1TSA229431-67
	120deg hinge	1TSA271000P0091
	Unmarked plate	SK615640-1
	30mm adaptor for 22mm chrome	1SFA616920R8030

Note: Pricing available through empower. If not, please contact factory for pricing.

MNS renewal parts

Renewal parts continued

Part	Description	Product number
Plug-in contacts	Plug-in contact assembly 10AWG 6mm²	2TDA080004R0001
	Plug-in contact assembly 8AWG 10mm²	2TDA080004R0002
	Contact type 101-Ag 6-10-16mm² w/o cable	1TGB100101A1116
	Contact type 101-Ag 35mm² w/o cable	1TGB100101A0035
	Contact type 101-Ag 50mm² w/o cable	1TGB100101A0050
	Contact type 101-Ag 70mm² w/o cable	1TGB100101A0070
	Contact type 101-Sn 6-10-16mm² w/o cable	1TGB100101S1116
	Contact type 101-Sn 35mm² w/o cable	1TGB100101S0035
	Contact type 101-Sn 50mm² w/o cable	1TGB100101S0050
	Contact type 101-Sn 70mm² w/o cable	1TGB100101S0070
Communication	PDP32.0, Profibus DP communication interface	1SAJ242000R0001
	MRP31.0, Modbus RTU communication interface	1SAJ251000R0001
	EIU32.0, EtherNet/IP communication interface	1SAJ262000R0100
	DNP31.0, DeviceNet communication interface	1SAJ231000R0001
	MTQ22-FBP.0, Ethernet Modbus TCP interface	1SAJ260000R0100
	PNQ22-FBP.0, Ethernet Profinet IO interface	1SAJ261000R0100
	CDP18.150, cable for use inside drawer, length 1.5 m	1SAJ929180R0015
	CDP23.300, cable Ethernet interface - UMC100.3, length 3 m	1SAJ929230R0030
	CDP24.150, cable from SMK3.0 to drawer's outside, length 1.5 m	1SAJ929240R0015
	SMK3.0, adapter for separate mounting of a communication interface	1SAJ929600R0001
Control power transformers	CPT 50VA, 480/120 with fuse block	2TDA060051P4050
	CPT 100VA, 480/120 with fuse block	2TDA060051P4100
	CPT 150VA, 480/120 with fuse block	2TDA060051P4150
	CPT 250VA, 480/120 with fuse block	2TDA060051P4250
	CPT 350VA, 480/120 with fuse block	2TDA060051P4350
	CPT 50VA, 600/120 with fuse block	2TDA060051P6050
	CPT 100VA, 600/120 with fuse block	2TDA060051P6100
	CPT 200VA, 600/120 with fuse block	2TDA060051P6200
	CPT 250VA, 600/120 with fuse block	2TDA060051P6250
	CPT 300VA, 600/120 with fuse block	2TDA060051P6300
Contactors	Contactor size 1 AF26-30-00-13 100-250VAC/DC	1SBL237001R1300
	Contactor size 2 AF40-30-00-13 100-250VAC/DC	1SBL347001R1300
	Contactor size 3 AF80-30-00-13 100-250VAC/DC	1SBL397001R1300
	Contactor size 4 AF140-30-00-13 100-250VAC/DC	1SFL447001R1300
	Contactor size 5 AF265-30-00-13 100-250VAC/DC	1SFL547002R1300

Note: Pricing available through empower. If not, please contact factory for pricing.

8000 line LV MCC replacement starter program

This quick selection guide covers control center starters and feeders, including full and reduced voltage, reversing and non-reversing, two-speed single and dual winding starters, in sizes 1-5. For other units, see the Engineered Products Catalog, Section 10.

Motor control starter units
For each of the following steps, find the option—MCC type, starter type, size, disconnect, control power, pilot lights, etc.— that meets the need. Transfer the corresponding product number digit(s) to the product number box(es).

When you have finished, you will have built a complete product number.

Starter product number

M														
1	2	2	3	4	5	5	6	7	8	8	8	9	10	10

1: Motor control center type

M = CR8000

2: Starter type and size

Starter type	Size	Product number digits
FVNR	1	A1
	2	A2
	3	A3
	4	A4
FVR	1	B1
	2	B2
	3	B3
	4	B4
2S1W	1	C1
	2	C2
	3	C3
	4	C4
2S2W	1	D1
	2	D2
	3	D3
	4	D4

3: Starter disconnect

Disconnect device	Product number digit	Starter size			
		1	2	3	4
FSW-R	F	•	•	•	
FSW-J[1]	R	•	•	•	
Tmax XT2H - 65 TMA/F or Ekip I[2]	0	•	•	•	
Tmax XT2L - 100 TMA/F or Ekip I[2]	1	•	•	•	
Tmax XT2N - 65 TMA/F	2	•	•	•	
Tmax XT2S - 100 TMA/F	3	•	•	•	
Tmax XT4H - 65 TMA	4				•
Tmax XT4L - 100 TMA	5				•
Tmax XT4N - 65 TMA	6				•
Tmax XT4S - 100 TMA	7				•

[1]J time delay
[2]Ekip I Breakers only offered through Fastrac program for limited HPs, in Size 1 applications

All Fastrac units have the following as standard:
A. Type 1 with Gasketing
B. Isolated N.O. overload alarm contact (not wired to TB)
C. Auxiliary contacts wired to the TB as noted below:
FVNR and RVNR starters—(1) N.O. (1) N.C.
FVR and 2S starters—(1) N.O. per contactor

Note: Pricing available through empower.

8000 line LV MCC replacement starter program

Starter product number

M														
1	2	2	3	4	5	5	6	7	8	8	8	9	10	10

4: Control power

Standard control power transformer (CPT) ratings are adequate to handle the starter-coil current and three pilot lights. If additional burdens are expected, larger transformers should be specified from among those shown in the first table below. From the second table below, select the control power desired.

Starter type and size	CPT Min. VA	Oversize VA
All size 1	60	150
All size 2	150	—
All size 3	300	—
All size 4	300	—

Note: For 380V units, all CPTs rated at 250VA.

Control power (120 Vac)[1]	Product number digit	Starter size			
		1	2	3	4
Std. CPT	1	•	•	•	•
Common/Separate source	5	•	•	•	•

[1]At 380V 50Hz, control volts will be 110Vac; at 575V 60Hz, control volts will be 115Vac.

5: Pilot devices

Select pilot devices desired by starter type.

Pilot device	Product number digits
FVNR starter type	
NONE - Blank Pilot Device Bracket Provided	NN
RED LGT STD	OE
RED LGT PUSH-TO-TEST (PTT)	OF
RED/GREEN LGT STD	OS
RED/GREEN LGT PTT	OT
HAND/OFF/AUTO (H/O/A) SW.	AN
H/O/A SW. RED LGT STD	OB
H/O/A SW. RED LGT PTT	OP
H/O/A SW. R/G LGT STD	OC
H/O/A SW. R/G LGT PTT	OQ
H/O/A SW. STOP/START PB RED LGT STD	OD
H/O/A SW. STOP/START PB RED LGT PTT	OR
STOP/START PB	BN
STOP/START PB RED LGT STD	PB
STOP/START PB RED LGT PTT	PP
STOP/START PB R/G LGT STD	PC
STOP/START PB R/G LGT PTT	PQ

5: Pilot devices (continued)

Pilot device	Product number digits
FVNR starter type (continued)	
OFF/ON SW.	GN
OFF/ON SW. RED LGT STD	UB
OFF/ON SW. RED LGT PTT	UP
OFF/ON SW. R/G LGT STD	UC
OFF/ON SW. R/G LGT PTT	UQ
FVR starter type	
NONE - Blank Pilot Device Bracket Provided	NN
RED/GREEN LGT STD	QE
RED/GREEN LGT PTT	QR
RED/AMBER LGT STD	QF
RED/AMBER LGT PTT	QS
R/A/G LGT STD	QG
R/A/G LGT PTT	QT
FWD/REV/STOP PB	CN
FWD/REV/STOP PB R/A LGT STD	QB
FWD/REV/STOP PB R/A LGT PTT	QP
FWD/REV/STOP PB R/G/A LGT STD	QC
FWD/REV/STOP PB R/G/A LGT PTT	QQ
FWD/OFF/REV SW	DN
FWD/OFF/REV SW RED LGT STD	RB
FWD/OFF/REV SW RED LGT PTT	RP
FWD/OFF/REV SW R/G LGT STD	RC
FWD/OFF/REV SW R/G LGT PTT	RQ
2S1W and 2S2W starter type	
NONE - Blank Pilot Device Bracket Provided	NN
RED/AMBER LGT STD	SF
RED/AMBER LGT PTT	SS
R/A/G LGT STD	SG
R/A/G LGT PTT	ST
FAST/SLOW/STOP PB	EN
FAST/SLOW/STOP PB R/A LGT STD	SB
FAST/SLOW/STOP PB R/A LGT PTT	SP
FAST/SLOW/STOP PB R/A/G LGT STD	SC
FAST/SLOW/STOP PB R/A/G LGT PTT	SQ
FAST/SLOW/OFF/AUTO (F/S/O/A) SW	FN
F/S/O/A SW R/A LGT STD	TL
F/S/O/A SW R/A LGT PTT	TP
F/S/O/A SW R/A/G LGT STD	TC
F/S/O/A SW R/A/G LGT PTT	TQ

Note: Pricing available through empower.

8000 line LV MCC replacement starter program

Starter product number

M								H						
1	2	2	3	4	5	5	6	7	8	8	8	9	10	10

6: Overload relay

Relay type	Product number digit
Standard	1
Ambient compensated	2
Solid state	3

7: Control disconnect terminal board

Standard high-density	H

8: Horsepower

Note that some product number digits consist of a decimal point.

Horsepower	Product number digits	Horsepower	Product number digits
1/4	.25	15	015
1/3	.33	20	020
3/8	.38	25	025
1/2	.50	30	030
3/4	.75	40	040
1	001	50	050
1-1/2	1.5	60	060
2	002	75	075
3	003	100	100
5	005	—	—
7-1/2	7.5	—	—
10	010	—	—

Note: 1/4, 1/3 and 3/8 HP ratings not available for Tmax XT based starter units.

9: System voltage

Voltage	Product number digit
480V 60 Hz	A
208V 60 Hz	B
240V 60 Hz	C
380V 50 Hz	E

10: OEM Fastrac units

Fastrac units designed for OEM use are engineered and built with the same components and layout as the standard Fastrac units. Power wiring is provided: however, to allow the maximum flexibility for OEM users, no control wiring is provided.

Product numbers are the same as the standard Fastrac units with the addition of two additional suffix letters, **XX**.

Example

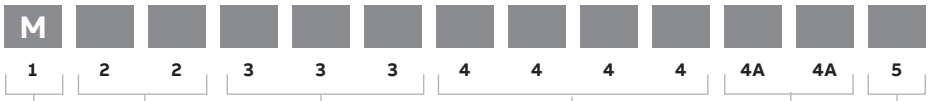
Standard Fastrac unit	MA1U1AB1H010A
OEM Fastrac unit	MA1U1AB1H010A**XX**

Note: Pricing available through empower.

8000 line LV MCC replacement feeder program

Motor control feeder units
For each of the following steps, find the option—MCC type, disconnect type, amp rating, feeder devices—that meets the need. Transfer the corresponding product number digits to the product number boxes for the standard feeder unit. When you have finished, you will have built a complete product number.

Standard feeder unit product number



1: Motor control center type

M = CR8000

2: Feeder disconnect type

Type	Voltage	Product number digits
Circuit breaker	—	FB
Fusible switch-R	208/240V	FR
Fusible switch-R	480/600V	FS
Fusible switch-J	480/600V	FJ

3: Amp rating

Select amp rating for either circuit breaker trip or Class R fuse.

Amps	Product number digits	Amps	Product number digits
15	015	90	090
20	020	100	100
25	025	110	110
30	030	125	125
35	035	150	150
40	040	175	175
50	050	200	200
60	060	225	225
70	070	250	250
80	080	—	—

4: Feeder device for standard feeder units

Device	Amp rating (max.)	Short circuit rating KA volts			Unit height (inches)	Product number digits
		240	480	600		
Tmax XT2	125	100	—	—	6, 12, 18, 24, 30 or 36	XT2S
		65	—	—		XT2N
		—	100	—		XT2L
		—	65	—		XT2H
Tmax XT4	250	100	—	—	18, 24, 30, 36, 42 or 48	XT4S
		65	—	—		XT4N
		—	100	—		XT4L
		—	65	—		XT4H
FSW	30	100	100	100	6	QM36
	30	100	100	100	12	QMR3
	60	100	100	100	6	QM66
	60	100	100	100	12	QMR6
	100	100	100	25	12	QMR1
	200	100	100	100	24	QMR2

Note: For the part numbering system, need to insert two “4A” digits between the “4” and “5” digits. This is ONLY for Tmax XT based buckets.

4A: Unit height

Inches	Product number digits
6	06
12	12
18	18
24	24
30	30
36	36
42	42
48	48

5: System voltage

Voltage	Product number digit
480V 60 Hz	A
208V 60 Hz	B
240V 60 Hz	C
575V 60 Hz	D
380V 50 Hz	E

Note: Option D, 575V 60Hz is not available for Tmax XT breaker based units.

Note: Pricing available through empower.

7700/8000 line LV MCC renewal parts

Renewal parts

Part	Description	MCC type			Product number
		7700	8000	Spectra	
Vertical bus parts	Shelf-standard	•	•	•	68J210383BBXXXXXXY
	Shelf support	•	•	•	117B5044P2
	Bus shutter assembly	•	•	•	204B4153BVG1
	Door latch	•	•	•	169C6386DMG2
Cooling fans	Muffin fan	•	•	•	272A5509SDP1
	Tarzan fan	•	•	•	RMC#020169
Wireway covers	6" X 20"	•	•	•	204B4127G19
	12" X 20"	•	•	•	204B4127G20
	18" X 20"	•	•	•	204B4127G21
O/L reset assy	Size 1 all		•	•	204B4142BDG1
	Size 1 all	•			116C8961G1
	Size 2 all	•			116C8961G2
	Size 2 FVNR		•	•	204B4142BDG2
	Size 2 FVR - 2 speed		•	•	204B4142BDG3
	Size 3 and 4 all	•			116C8961G3[1]
	Size 3 and 4 FVNR-FVR-2 speed		•	•	204B4142BDG4[1]
	Size 3 and 4 RVNR		•	•	204B4142BDG5[1]
	Size 5 all	•			116C8961G5
	Size 5 all		•	•	204B4142BDG6
Control power transformer	60VA (with fuse block)	•	•	•	302A3600YDP201
	150VA (with fuse block)	•	•	•	302A3600YDP204
	300VA (with fuse block)	•	•	•	302A3600YDP207
	300VA (no fuse block)	•	•	•	302A3600YDP7
Standard TB	Male - 3 point	•	•		75B132504G701
	Female - 3 point	•	•		204B4153APG1
Power TB	Male - 3 point	•	•		75B132504G701
	Female - size 1 and 2 - 3 point (w/lugs)	•	•		204B4153APG2
	Size 3 - 3 point	•	•		204B4050WDG5
	Size 4 - 3 point	•	•		204B4050WDG1
High density TB	6 Point-control		•	•	CR151KPP56F
Filler kit - 7700 line	6" high	•			273A7764G6[2]
	12" high	•			273A7764G12[2]
	18" high	•			273A7764G18[2]
	24" high	•			273A7764G24[2]
	30" high	•			273A7764G30[2]
	36" high	•			273A7764G36[2]
	42" high	•			273A7764G42[2]
	48" high	•			273A7764G48[2]
Filler kit - 8000 line	6" high		•		204B4145AMG1[2]
	12" high		•		204B4145AMG2[2]
	18" high		•		204B4145AMG3[2]
	24" high		•		204B4145AMG4[2]
	30" high		•		204B4145AMG5[2]
	36" high		•		204B4145AMG6[2]
	42" high		•		204B4145AMG7[2]
	48" high		•		204B4145AMG8[2]

[1] O/L types. Refer to factory
[2] Includes blank door, shelf, shelf support and hinged filler strip.

Note: Contact factory for pricing.

7700/8000 line LV MCC renewal parts

Renewal parts continued

Part	Description	MCC type			Product number
		7700	8000	Spectra	
Blank Spectra door	6" high			•	68J210397DAXX06XXB
	12" high			•	68J210397DAXX12XXB
	18" high			•	68J210397DAXX18XXB
	24" high			•	68J210397DAXX24XXB
	30" high			•	68J210397DAXX30XXB
	36" high			•	68J210397DAXX36XXB
	42" high			•	68J210397DAXX42XXB
	48" high			•	68J210397DAXX48XXB
Spectra fill strip	6" high			•	272A5650BVP9
	12" high			•	272A5650BVP10
	18" high			•	272A5650BVP11
	24" high			•	272A5650BVP12
	30" high			•	272A5650BVP13
	36" high			•	272A5650BVP14
	42" high			•	272A5650BVP15
	48" high			•	272A5650BVP16
Door hinges	Left	•	•		117B5027P2
	Right	•	•		117B5027P3
	Spectra hinge			•	204B4145FZP1
	Spectra hinge pin			•	273A7728TLP1
Rear doors	20" wide	•	•	•	68J210375DB2090XXB
	24" wide	•	•	•	68J210375DB2490XXB
Rear covers	20" wide	•	•	•	68J120323LE0102AAB[1]
	24" wide	•	•	•	68J120323XA0102AAB[1]
Wire trough doors	6" high	•	•		68J210375CB2006XXB[2]
	12" high	•	•		68J210375CB2012XXB[2]
	24" high	•	•		68J210375CB2024XXB[2]
	30" high	•	•		68J210375CB2030XXB[2]
	36" high	•	•		68J210375CB2036XXB[2]
	42" high	•	•		68J210375CB2042XXB[2]
	48" high	•	•		68J210375CB2048XXB[2]
	54" high	•	•		68J210375CB2054XXB[2]
	60" high	•	•		68J210375CB2060XXB[2]
	66" high	•	•		68J210375CB2066XXB[2]
	72" high	•	•		68J210375CB2072XXB[2]
	18" high		•		68J210375SCB2018XXB[2]
	6" high			•	68J210397AC2006XXB[2]
	12" high			•	68J210397AC2012XXB[2]
	18" high			•	68J210397AC2018XXB[2]
	24" high			•	68J210397AC2024XXB[2]
	30" high			•	68J210397AC2030XXB[2]
	36" high			•	68J210397AC2036XXB[2]
	42" high			•	68J210397AC2042XXB[2]
	48" high			•	68J210397AC2048XXB[2]
	54" high			•	68J210397AC2054XXB[2]
	60" high			•	68J210397AC2060XXB[2]
	66" high			•	68J210397AC2066XXB[2]
	72" high			•	68J210397AC2072XXB[2]

[1] Flat covers for 13" MCC
[2] Product numbers shown are for 7700 and 8000 line – 20" wide sections. If wider than 20" substitute section width into product number eg/24"W x 6"H use #68J210375CB2406XXB.

Note: Contact factory for pricing.

7700/8000 line LV MCC renewal parts

Renewal parts continued

Part	Description	MCC type			Product number
		7700	8000	Spectra	
Semiconductor fuses for drives	40 Amp		Other		CSC#A50P40
	60 Amp		Other		CSC#A50P60
	100 Amp		Other		CSC#A50P100
	175 Amp		Other		CSC#A50P175
	200 Amp		Other		CSC#A50P200
	300 Amp		Other		CSC#A50P300
Semiconductor fuses for soft starters	1000 Amp		Other		CSC#A50P1000
	1200 Amp		Other		CSC#A50P1200
	1600 Amp		Other		CSC#A50P1600
	60 Amp		Other		CSC#A50QS60
	100 Amp		Other		CSC#A50QS100
	150 Amp		Other		CSC#A50QS150
	175 Amp		Other		CSC#A50QS175
	225 Amp		Other		CSC#A50QS225
	250 Amp		Other		CSC#A50QS250
	300 Amp		Other		CSC#A50QS300
	350 Amp		Other		CSC#A50QS350
	600 Amp		Other		CSC#A50QS600
Signal conditioners	Single		Other		ACT#4380-2000
	Double		Other		ACT#4390
Relays	General		Other		Refer to factory
	CR7		Other		Refer to factory
	ITI		Other		Refer to Factory
	MCRA		Other		Refer to factory

Motor control centers parts publications list

Model	Description	Number
7700 line	Installation	GEH 2614
	Renewal parts	GEH 4629
8800 line	Installation	GEH 4961
	Renewal parts	GEH 4630

Note: Contact factory for pricing.

7700/8000 line LV MCC renewal parts

Buckets and associated parts – individual parts

Bucket type	Individual part type	NEMA size	Height (in.)	MCC type	Product number
Fused switch	Disconnect	1	12"	Other	204B4054G10
		2	12"	Other	204B4054G26
	N/A	3	30"	Other	204B4054G62
		4	42"	Other	204B4056G15
	Stab harness	1	12"	Other	8000L8G2
		2	12"	Other	8000L8G8
Spectra circuit breaker	Stab harness	4	30"	Spectra	8000L4G47
		3	24"	Spectra	8000L4G48
		N/A	N/A	Spectra	8000L8G21
	Starter	1	12"	Spectra	CR306C002ACET
		N/A	N/A	Spectra	CR306D002LVH
		3	24"	Spectra	CR306E002LVH
		4	30"	Spectra	CR306F002LVH
	CPT fuse primary	1	12"	Spectra	CSC#ATMR1/2
		2	12"	Spectra	CSC#ATMR1
		4	30"	Spectra	CSC#ATMR2
	CPT fuse secondary	2	12"	Spectra	CSC#TR1-6/10R
		4	30"	Spectra	CSC#TR3-2/10R
		1	12"	Spectra	CSC#TR6/10R
	Disconnect	1	12"	Spectra	SELA36AI0007
		2	12"	Spectra	SELA36AI0030
		3	24"	Spectra	SELA36AI0100
		4	30"	Spectra	SFLA36AI0250
	Rating plug	3	24"	Spectra	SRPE100A70
		2	12"	Spectra	SRPE30A25
		1	12"	Spectra	SRPE7A3
		4	30"	Spectra	SRPF250A150

Note: Contact factory for pricing.

7700/8000 line LV MCC renewal parts

Buckets and associated parts – complete bucket

Bucket type	NEMA size	Horsepower	Height (in.)	MCC type	Product number
Fused switch	1	1/4	12"	Other	MA1F1AB2J.25A
		1/3	12"	Other	MA1F1AB2J.33A
		3/8	12"	Other	MA1F1AB2J.38A
		1/2	12"	Other	MA1F1AB2J.50A
		3/4	12"	Other	MA1F1AB2J.75A
		1	12"	Other	MA1F1AB2J001A
		2	12"	Other	MA1F1AB2J002A
		3	12"	Other	MA1F1AB2J003A
		5	12"	Other	MA1F1AB2J005A
		10	12"	Other	MA1F1AB2J010A
		1-1/2	12"	Other	MA1F1AB2J1.5A
		7-1/2	12"	Other	MA1F1AB2J7.5A
	2	15	12"	Other	MA2F1AB2J015A
		20	12"	Other	MA2F1AB2J020A
		25	12"	Other	MA2F1AB2J025A
	3	30	30"	Other	MA3F1AB2J030A
		40	30"	Other	MA3F1AB2J040A
		50	30"	Other	MA3F1AB2J050A
	4	60	42"	Other	MA4F1AB2J060A
		75	42"	Other	MA4F1AB2J075A
		100	42"	Other	MA4F1AB2J100A
Spectra circuit breaker	1	1/4	12"	Spectra	MA1U1AB2J.25A
		1/3	12"	Spectra	MA1U1AB2J.33A
		3/8	12"	Spectra	MA1U1AB2J.38A
		1/2	12"	Spectra	MA1U1AB2J.50A
		3/4	12"	Spectra	MA1U1AB2J.75A
		1	12"	Spectra	MA1U1AB2J001A
		2	12"	Spectra	MA1U1AB2J002A
		3	12"	Spectra	MA1U1AB2J003A
		5	12"	Spectra	MA1U1AB2J005A
		10	12"	Spectra	MA1U1AB2J010A
		1-1/2	12"	Spectra	MA1U1AB2J1.5A
		7-1/2	12"	Spectra	MA1U1AB2J7.5A
	2	15	12"	Spectra	MA2U1AB2J015A
		20	12"	Spectra	MA2U1AB2J020A
		25	12"	Spectra	MA2U1AB2J025A
	3	30	24"	Spectra	MA3U1AB2J030A
		40	24"	Spectra	MA3U1AB2J040A
		50	24"	Spectra	MA3U1AB2J050A
	4	60	30"	Spectra	MA4U1AB2J060A
		75	30"	Spectra	MA4U1AB2J075A
		100	30"	Spectra	MA4U1AB2J100A

Note: Contact factory for pricing.

Notes