

QMB Motor Starter Centers

Class 2320



CONTENTS

Description	Page
Application Data	1

APPLICATION DATA

Type

QMB power distribution panelboards with motor starter units are for use with 120, 208, 240, 480, or 600 Vac 3 ϕ systems. They are UL Listed under File E8087.

Service

- 1 ϕ 2W, 240 Vac
- 1 ϕ 3W, 120/240 Vac
- 3 ϕ 3W, 240 Vac
- 3 ϕ 3W, 240 Vac Gr. B ϕ
- 3 ϕ 4W, 208Y/120 Vac
- 3 ϕ 4W, 480Y/277 Vac
- 3 ϕ 3W, 480 Vac
- 3 ϕ 3W, 600 Vac



QMB Motor Starter Center with Fusible Disconnects



QMB Motor Starter Center with Circuit Breaker Disconnects

Main Lug Interior—Mechanical and Compression Lug Data

Mechanical Lugs				VCEL Compression Lugs				
Mains Ampere Rating	Conductors per Phase	Wire Range Wire Bending Space per NEC® Table 373-6	Lug Wire Range	Conductors per Phase	Wire Range Wire Bending Space per NEC Table 373-6	Catalog Number	Lug Wire Range	Adaptor Kit
225	1	#6-300 kcmil Al or Cu	#6-300 kcmil Al or Cu	1	#4-300 kcmil Al or Cu	VCEL030-516H1	#4-300 kcmil Al or Cu	—
400	2	(1) #6-300 kcmil Al or Cu and (1) 3/0-750 kcmil Al or Cu	#6-300 kcmil Al or Cu and 3/0-750 kcmil Al or Cu	2	(1) #4-300 kcmil Al or Cu and (1) 500-750 kcmil Al or Cu	VCEL030-516H1 VCEL075-12H1 VCEL050-12H1	#4-300 kcmil Al or Cu and 500-750 kcmil Al or Cu	—
600	2	3/0-500 kcmil Al or Cu	3/0-500 kcmil Al or Cu	2	2/0-500 kcmil Al or Cu	VCEL050-12H1	2/0-500 kcmil Al or Cu	—
800	3 or 2	3/0-500 kcmil Al or Cu or 3/0-750 kcmil Al or Cu	3/0-750 kcmil Al or Cu	3	2/0-500 kcmil Al or Cu	VCEL050-12H1 VCEL075-12H1	2/0-500 kcmil Al or Cu 500-750 kcmil Al	QMB8CLA
1200	4 or 3	3/0-500 kcmil Al or Cu or 3/0-750 kcmil Al or Cu	3/0-750 kcmil Al or Cu	4	2/0-500 kcmil Al or Cu	VCEL050-12H1 VCEL075-12H1	2/0-500 kcmil Al or Cu 500-750 kcmil Al	QMB12CLA
1600	—	—	—	4	500-700 kcmil Al or Cu	VCELC075-12H1	500-750 kcmil Al	—

Main Switch Interior—Mechanical and Compression Lug Data

Mechanical Lugs				VCEL Compression Lugs			
Mains Ampere Rating	Conductors per Phase	Wire Range Wire Bending Space per NEC Table 373-6	Lug Wire Range	Conductors per Phase	Wire Range Wire Bending Space per NEC Table 373-6	Catalog Number	Lug Wire Range
200	1	#6-300 kcmil Al or Cu	#6-300 kcmil Al or Cu	1	#4-300 kcmil Al or Cu	VCEL030-516H1	#4-300 kcmil Al or Cu
400	2	3/0-600 kcmil Al or Cu	3/0-600 kcmil Al or Cu	2	2/0-600 kcmil Al or Cu	VCEL050-12H1 VCEL060-12H1 VCEL075-12H1	2/0-500 kcmil Al or Cu 400-600 kcmil Al or Cu 500-750 kcmil Al
600	2	3/0-600 kcmil Al or Cu	3/0-600 kcmil Al or Cu	2	2/0-500 kcmil Al or Cu	VCEL050-12H1	3/0-500 kcmil Al or Cu
800	3	3/0-500 kcmil Al or Cu	3/0-600 kcmil Al or Cu	3	3/0-500 kcmil Al or Cu	VCEL050-12H1 VCEL075-12H1	2/0-500 kcmil Al or Cu 500-750 kcmil Al

NOTE: See the Distribution Products (DP) Catalog Class 4620 for additional information on interiors, boxes, fronts, and disconnects.



Application Data

Non-Reversing QMB Motor Starters Class 8536

- Available 120, 208, 240, 480, and 600 Vac
- NEMA Size 0—Class 8536 Type SB
- NEMA Size 1—Class 8536 Type SC
- NEMA Size 2—Class 8536 Type SD
- NEMA Size 3—Class 8536 Type SE

Non-reversing QMB motor starters are twin mounted and feature:

- Steel barriers between starters
- Individual door over each starter
- External reset mechanism
- Card holder
- Five twistouts for adding pilot devices
- Hasp on each starter door latch mechanism to lock starter door

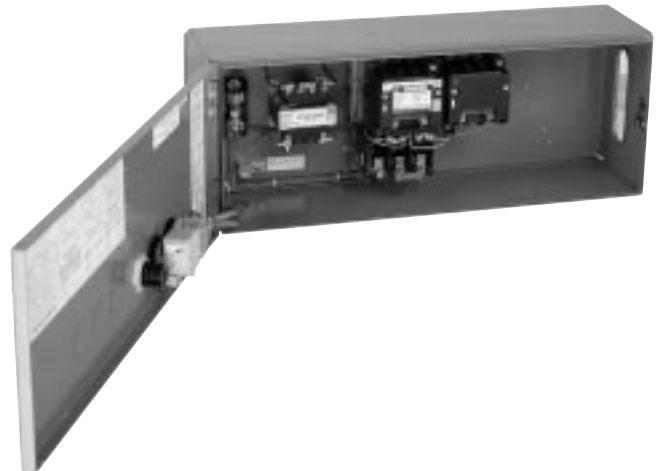


Reversing QMB Motor Starters Class 8736

- Available 120, 208, 240, 480, and 600 Vac
- NEMA Size 0—Class 8736 Type SB
- NEMA Size 1—Class 8736 Type SC
- NEMA Size 2—Class 8736 Type SD
- NEMA Size 3—Class 8736 Type SE

Reversing QMB motor starters are single mounted and feature:

- External reset mechanism
- Card holder
- Five twistouts for adding pilot devices
- Hasp on each starter door latch mechanism to lock starter door



Accessories



Push Button



Selector Switch



Pilot Light

A wide variety of accessories are available for field or factory installation in QMB motor starter units.

Push buttons, selector switches, and pilot lights may be mounted in twistouts on the starter doors. See Control Products (CP) Catalog Class 9001 for additional information.

Control circuit transformers and fuse blocks may be mounted on pre-drilled holes located next to the starter. See CP Catalog Classes 9070 and 9080 for additional information.

Electrical interlocks, power pole adders, and timer attachments are also available for use with QMB motor starter units. See CP Catalog Class 9999 for additional information.

QMB Fusible Switch Units—Ratings

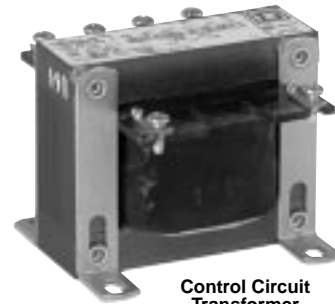
- 30–100 A, twin-mounted switch units
- 200 A, single-mounted switch units
- Suitable for installation on circuits capable of delivering up to 100,000 rms symmetrical amperes short circuit current when the appropriate Class R or J fuses are installed. See DP Catalog Class 4620 for additional information.

Mechanical interlock between motor starter and disconnect:

- The fusible disconnect door features a dual interlock.
- The fusible disconnect door is mechanically interlocked with the motor starter door.
- The motor starter door is controlled by the door on the fusible disconnect.

QMB Circuit Breaker Units—Ratings

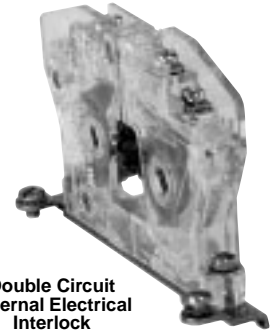
- 15–100 A, twin-mounted FA frame circuit breaker units.
- 110–225 A, single-mounted KA frame circuit breaker units.
- 250–400 A, single-mounted LA frame circuit breaker units.
- 600 Vac maximum
- MAG-GARD® circuit breakers may be used in 15–225 A circuit breaker units. See DP Catalog Class 4620 for additional information.



Control Circuit Transformer



Fuse Block



Double Circuit External Electrical Interlock



QMB Motor Starter with Fusible Switch Disconnect



QMB Motor Starter with Circuit Breaker Disconnect



Application Data

Single Motor Branch Circuits

▲ Motor full load currents through 200 hp are taken from Tables 430-147, 148, and 150 of the NEC. Above 200 hp, the currents are from UL 98. Select wire sizes, circuit breakers, or fuses on basis of horsepower rather than nameplate full load current per NEC Article 430-6. **Do not use these values to select overload relay thermal units.** See the Square D Digest for selection of thermal units when actual full load current is not known. The voltages listed are rated motor voltages. Corresponding nominal system voltages are 110–120, 200–208, 220–240, 440–480, and 550–600 V.

■ Thermal-magnetic circuit breaker recommended trip ratings are for approximate average conditions and based on trip characteristics of Square D circuit breakers and NEC Tables 430-152 for inverse time circuit breaker requirements for squirrel cage and wound rotor motors with code letters B to E, inclusive, for a trip rating not to exceed 200% of the full-load current. Lower trip ratings are required for motors with code letter A and higher trip ratings are required for motors without code letters or with codes letters F to V, inclusive.

Under some conditions, the next size larger switch or circuit breaker trip may be necessary to accommodate the starting of the motor and is permitted according to NEC 430-52, Exception Number 2. For explanation of Code Letter Marking, see NEC Table 430-7(b).

★ Ordinary service for normal starting duty only with acceleration time of 10 seconds or less. Contact Square D Company for recommended circuit breaker selection for longer acceleration times.

◆ Heavy service is jogging or plugging duty or cycling load over 25 starts per hour or over 5 starts per minute.


● Size of switch only is shown in table. Fuses should be selected not to exceed maximum percent of full load current as given in NEC Table 430-152. Above 50 hp, DC switches are not hp rated by UL as Motor Circuit Switches, but as General Use Switches only and are not necessarily capable of interrupting the maximum operating overload current of a motor. See NEC Article 100 for definition of General Use Switch.

▼ Maximum 100 hp at 575 Vac.

NOTE: Consult your local Square D sales office for circuit breaker selection on constant horsepower multi-speed motors.

Horsepower Ratings of Squirrel Cage and Wound Rotor Motors with Code Letters B–E Operating at Usual Speeds						Full Load Amps ▲	Thermal-Magnetic Non-Adjustable Inverse Time Circuit Breaker ■		Switch with Time Delay Fuses ●
3ϕ 60 Hz AC			1ϕ 60 Hz AC				★ Ordinary Service	◆ Heavy Service	
200 V	230 V	460 V	575 V	115 V	230 V				
—	2	—	—	—	—	6.8	15FA	15FA	30 A
—	—	—	—	—	3/4	6.9	15FA	15FA	
—	—	—	—	—	1/3	7.2	15FA	15FA	
—	—	5	—	—	—	7.6	15FA	15FA	
2	—	—	—	—	—	7.82	15FA	15FA	
—	—	—	—	—	1	8.0	15FA	20FA	
—	—	—	7 1/2	—	—	9.0	15FA	20FA	
—	3	—	—	—	—	9.6	20FA	20FA	
—	—	—	—	1/2	—	9.8	20FA	20FA	
—	—	—	—	—	1 1/2	10.0	20FA	20FA	
3	—	7 1/2	10	—	—	11.0	20FA	25FA	
—	—	—	—	—	2	12.0	25FA	25FA	
—	—	—	—	3/4	—	13.8	25FA	30FA	
—	—	10	—	—	—	14.0	25FA	30FA	
—	5	—	—	—	—	15.2	30FA	35FA	
—	—	—	—	1	—	16.0	30FA	35FA	
—	—	—	15	—	3	17.0	35FA	35FA	
5	—	—	—	—	—	17.5	35FA	35FA	
—	—	—	—	1 1/2	—	20.0	40FA	40FA	
—	—	15	—	—	—	21	40FA	45FA	
—	7 1/2	—	20	—	—	22	45FA	45FA	
—	—	—	—	2	—	24	50FA	50FA	
7 1/2	—	—	—	—	—	25.3	50FA	50FA	
—	—	20	25	—	—	27	60FA	60FA	
—	10	—	—	—	5	28	60FA	60FA	
10	—	—	30	—	—	32	60FA	70FA	
—	—	25	—	3	—	34	70FA	70FA	
—	—	30	—	—	7 1/2	40	80FA	80FA	
—	—	—	40	—	—	41	80FA	90FA	
—	15	—	—	—	—	42	80FA	90FA	
15	—	—	—	—	—	48.3	90FA	100FA	
—	—	—	—	—	10	50	90FA	100FA	
—	—	40	50	—	—	52	90FA	110KA	
—	20	—	—	—	—	54	90FA	110KA	
—	—	—	—	—	—	55	90FA	90KA	
—	—	—	—	5	—	56	90FA	110KA	
—	—	—	—	—	—	58	90FA	90FA	
20	—	—	60	—	—	62	100FA	125KA	
—	—	50	—	—	—	65	100FA	150KA	
—	25	—	—	—	—	68	100FA	150KA	
—	—	—	—	—	—	72	110KA	110KA	
—	—	—	—	—	—	76	125KA	125KA	
—	—	60	75	—	—	77	110KA	175KA	
25	—	—	—	—	—	78.2	110KA	175KA	
—	30	—	—	7 1/2	—	80	110KA	175KA	
—	—	—	—	—	—	89	125KA	150KA	
30	—	—	—	—	—	92	125KA	200LA	
—	—	75	—	—	—	96	125KA	200LA	
—	—	—	100	—	—	99	150KA	200LA	
—	—	—	—	10	—	100	150KA	200LA	
—	40	—	—	—	—	104	150KA	225LA	
—	—	—	—	—	—	106	175KA	175KA	
40	—	—	—	—	—	120	175KA	250LA	
—	—	100	—	—	—	124	200KA	250LA	
—	—	—	125	—	—	125	200KA	250LA	
—	50	—	—	—	—	130	200KA	300LA	
—	—	—	—	—	—	140	200LA	225LA	
—	—	—	150	—	—	144	200LA	300LA	
50	—	—	—	—	—	150	200LA	300LA	
—	60	—	—	—	—	154	225LA	350LA	
—	—	125	—	—	—	156	225LA	350LA	
—	—	—	—	—	—	173	250LA	300LA	
60	—	—	—	—	—	177	250LA	—	
—	—	150	—	—	—	180	250LA	—	
—	75	—	—	—	—	192	250LA	—	
—	—	—	—	—	—	206	300LA	—	
75	—	—	—	—	—	221	300LA	—	
—	—	200	—	—	—	240	350LA	—	
—	—	—	—	—	—	242	350LA	—	
—	100	—	—	—	—	248	350LA	—	
—	—	—	—	—	—	255	400LA	—	
100	—	—	—	—	—	285	400LA	—	
—	—	—	—	—	—	289	400LA	—	
—	—	250	—	—	—	302	400LA	—	
—	125	—	—	—	—	312	—	—	
—	—	—	—	—	—	336	—	—	
—	—	—	—	—	—	341	—	—	
125	—	—	—	—	—	359	—	—	
—	150	—	—	—	—	360	—	—	
—	—	300	—	—	—	361	—	—	
—	—	—	—	—	—	382	—	—	
150	—	—	—	—	—	414	—	—	
—	—	—	—	—	—	425	—	—	
—	—	—	—	—	—	472	—	—	
—	—	—	—	—	—	477	—	—	
—	200	—	—	—	—	480	—	—	

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