

Data Bulletin

Q2 Molded Case Circuit Breakers Class 734



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DESCRIPTION

SQUARE D[®] Type Q2 molded case circuit breakers and switches are rated 240 Vac, 225 A max. and are available in either unit-mount construction or I-LINE[®] group-mounted construction.

Applications

Q2 circuit breakers are used for overcurrent protection and switching on ac systems. Q2 circuit breakers are rated either 120/240 Vac or 240 Vac and are available with UL[®] Listed interrupting ratings from 10,000 to 42,000 A rms symmetrical. Unit-mount circuit breakers are available with lugs on both ends for bussed applications. Q2 circuit breakers may be mounted in individual enclosures, metering devices, panelboards or switchboards.

Figure 1: Q2 Unit-mount Circuit Breakers

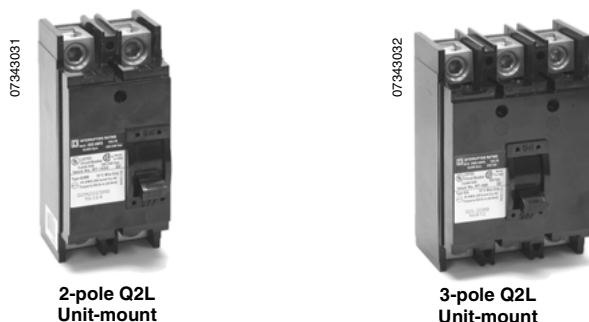


Figure 2: Q2 I-LINE Group-mounted Circuit Breaker



Figure 3: Q2M Main Circuit Breakers

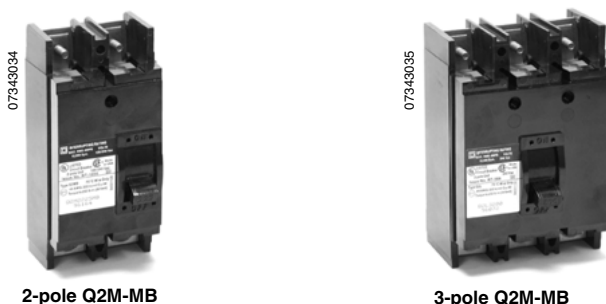


Table 1: Q2 225 A Frame Circuit Breakers (225 A Max., 240 Vac)

Ampere Rating	2-pole—240 Vac ⁽¹⁾		3-pole—240 Vac	
	Unit-mount Circuit Breaker	I-LINE Circuit Breaker (3" H)	Unit-mount Circuit Breaker	I-LINE Circuit Breaker (4.5" H)
10,000 A RMS—UL Listed Interrupting Rating				
100	Q2L2100	Q222100 ⁽²⁾	Q2L3100	Q232100
110	Q2L2110	Q222110 ⁽²⁾	Q2L3110	Q232110
125	Q2L2125	Q222125 ⁽²⁾	Q2L3125	Q232125
150	Q2L2150	Q222150 ⁽²⁾	Q2L3150	Q232150
175	Q2L2175	Q222175 ⁽²⁾	Q2L3175	Q232175
200	Q2L2200	Q222200 ⁽²⁾	Q2L3200	Q232200
225	Q2L2225	Q222225 ⁽²⁾	Q2L3225	Q232225
MCS ⁽³⁾ (225 A)	Q2L2000M	Q222000M ⁽²⁾	Q2L3000M	Q232000M
22,000 A RMS—UL Listed Interrupting Rating				
100	Q2L2100H	⁽⁴⁾ Q222100 ⁽²⁾ H	Q2L3100H	Q232100H
110	Q2L2110H	⁽⁴⁾ Q222110 ⁽²⁾ H	Q2L3110H	Q232110H
125	Q2L2125H	⁽⁴⁾ Q222125 ⁽²⁾ H	Q2L3125H	Q232125H
150	Q2L2150H	⁽⁴⁾ Q222150 ⁽²⁾ H	Q2L3150H	Q232150H
175	Q2L2175H	⁽⁴⁾ Q222175 ⁽²⁾ H	Q2L3175H	Q232175H
200	Q2L2200H	⁽⁴⁾ Q222200 ⁽²⁾ H	Q2L3200H	Q232200H
225	Q2L2225H	⁽⁴⁾ Q222225 ⁽²⁾ H	Q2L3225H	Q232225H
42,000 A RMS—UL Listed Interrupting Rating				
100	Q2LH2100	Q2H22100 ⁽²⁾	—	—
110	Q2LH2110	Q2H22110 ⁽²⁾	—	—
125	Q2LH2125	Q2H22125 ⁽²⁾	—	—
150	Q2LH2150	Q2H22150 ⁽²⁾	—	—
175	Q2LH2175	Q2H22175 ⁽²⁾	—	—
200	Q2LH2200	Q2H22200 ⁽²⁾	—	—
225	Q2LH2225	Q2H22225 ⁽²⁾	—	—

¹ 10,000 AIC 2-pole breakers rated 120/240 Vac.

² I-LINE 2-pole circuit breaker catalog numbers are completed by adding the required phase connection letters as a suffix to the circuit breakers listed in the table below.

³ MCS = Automatic molded case switch

⁴ 2-pole Q2-H Rated 10,000 AIC 240 Vac. 3-phase ground, B-phase

Table 2: Example: 150 A, 240 Vac Circuit Breakers¹ (Phase Connections and Number of Poles as Shown)

Phase Connection	1-pole	2-pole	3-pole
A-B	—	Q2 22150-AB	—
A-C	—	Q2 22150-AC	—
B-C	—	Q2 22150-BC	—
A-B-C	—	—	Q2 32150

¹ Bolt-on branch circuit breakers are available, add letter B to catalog number prefix. (i.e. Q2B-).



Table 3: Q2M Main Circuit Breakers

Ampere Rating	2-pole, 120/240 Vac		3-pole, 240 Vac	
	Top Mounted	Bottom Mounted	Top Mounted	Bottom Mounted
10,000 A RMS—UL Listed Interrupting Rating				
100	Q2M2100MT	Q2M2100	Q2M3100MT	Q2M3100MB
110	Q2M2110MT	Q2M2110	Q2M3110MT	Q2M3110MB
125	Q2M2125MT	Q2M2125	Q2M3125MT	Q2M3125MB
150	Q2M2150MT	Q2M2150	Q2M3150MT	Q2M3150MB
175	Q2M2175MT	Q2M2175	Q2M3175MT	Q2M3175MB
200	Q2M2200MT	Q2M2200	Q2M3200MT	Q2M3200MB
225	Q2M2225MT	Q2M2225MB	Q2M3225MT	Q2M3225MB
22,000 A RMS—UL Listed Interrupting Rating				
100	Q2M2100MTH	Q2M2100VH	—	—
125	Q2M2125MTH	Q2M2125VH	—	—
150	Q2M2150MTH	Q2M2150VH	—	—
175	Q2M2175MTH	Q2M2175VH	—	—
200	Q2M2200MTH	Q2M2200VH	—	—
225	Q2M2225MTH	Q2M2225VH	—	—
42,000 A RMS—UL Listed Interrupting Rating				
100	—	Q2MH2100	—	—
125	—	Q2MH2125	—	—
150	—	Q2MH2150	—	—
175	—	Q2MH2175	—	—
200	—	Q2MH2200	—	—

Construction Standards

Q2 circuit breakers are built in accordance with UL Standard 489 and NEMA Standard AB-1-1999. Circuit breakers are UL listed under File E-84905, CSA certified under File LR40970. Circuit breakers meet Federal Specification W-C-375B/GEN. Molded case switches are listed under UL File E87153 and CSA File LR40969.

Overcurrent Protection

Q2 circuit breakers contain individual thermal (overload) and magnetic (short circuit) sensing elements in each pole. The thermal trip elements are calibrated to carry current at 104°F (40°C) free air ambient temperature. Per the National Electric Code® (NEC®), circuit breakers may only be applied at up to 80% of their rating. Q2 circuit breakers for I-LINE panelboard mounting have an integral push-to-trip button in the cover to mechanically trip the circuit breaker. This should be part of a regular preventive maintenance program (See Data Bulletin 0600DB9901 “*Field Testing and Maintenance Guide for MICROLOGIC Electronic Trip and Thermal-magnetic Molded Case Circuit Breakers*”).

Operating Mechanism

Q2 circuit breakers have an over-center toggle mechanism providing quick-make, quick-break operation. The operating mechanism is also trip-free, which allows tripping even when the circuit breaker handle is held in the “ON” position. An internal cross-bar provides common opening and closing of all poles with a single operating handle.

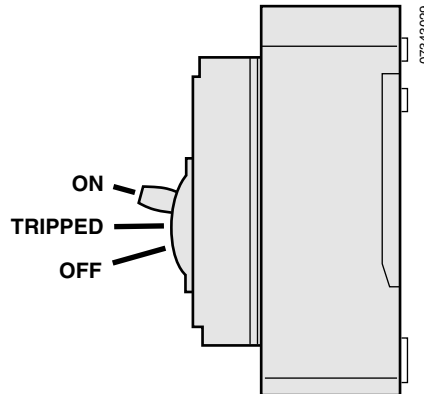


Trip Indication

The Q2 circuit breaker handle can assume any of three positions, ON, TRIPPED or OFF as shown in **Figure 4**.

The center “TRIPPED” position provides positive visual indication that the circuit breaker has tripped. The circuit breaker can be reset by pushing the handle to the extreme “OFF” position.

Figure 4: Handle Positions



Terminations

Q2 circuit breakers have box-type lugs suitable for use with #4-300 kcmil (21.2–152 mm²) aluminum or copper conductors.

INTERRUPTING RATINGS

Table 4: Circuit Breaker Interrupting Ratings

Catalog Number Prefix	Ampere Rating	No. of Poles	UL Listed Interrupting Rating (RMS Symmetrical Amperes)		Federal Specifications (W-C-375B/GEN)
			120/240 Vac	240 Vac	
Q2, Q2L, Q2M	100–225	2	10,000	—	—
		3	—	10,000	12b
Q2-H, Q2L-H	100–225	2	—	22,000 ¹	12b, 14b
		3	—	22,000	12b, 14b
Q2H, Q2LH	100–225	2	—	42,000	12b, 14b

¹ 2-pole Rated 10,000 AIC, 240 Vac, 3-phase, Grounded B-phase

Molded Case Switches

Two- and three-pole automatic molded case switches are available with a 225 A, 240 Vac rating. Automatic molded case switches contain magnetic tripping elements set high enough not to interfere with normal overload protective device operation but will protect the switch in the event of a short circuit. Molded case switches provide no overcurrent protection.

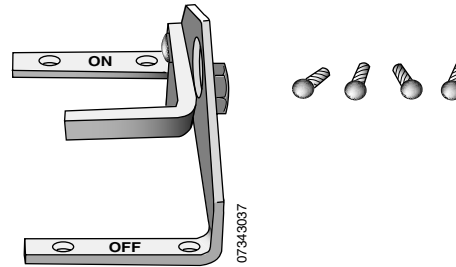


ACCESSORIES

Handle Padlock Attachment

The handle padlock attachment allows locking the Q2 handle in the "ON" or "OFF" position. Catalog number HPA-FYQ attaches to the circuit breaker escutcheon for two- or three-pole applications.

Figure 5: HPA-FYQ Handle Padlock Attachment

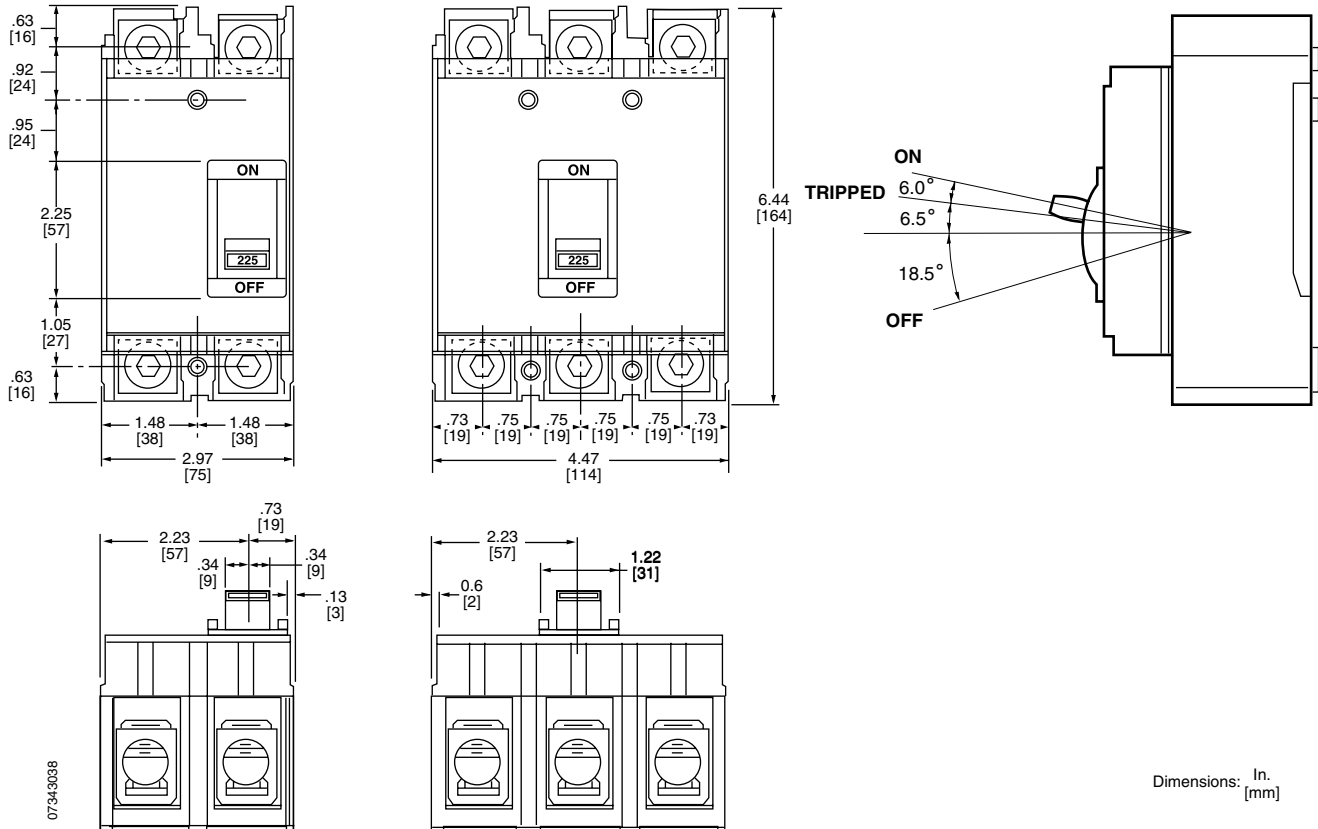


NOTE: Refer to the following for additional information:nt

- Enclosed Circuit Breakers (Class 1100)
- NQOD Panelboards (Class 1630)
- I-LINE Panelboards (Class 2110)

DIMENSIONS

Figure 6: Q2 Circuit Breaker Dimensions

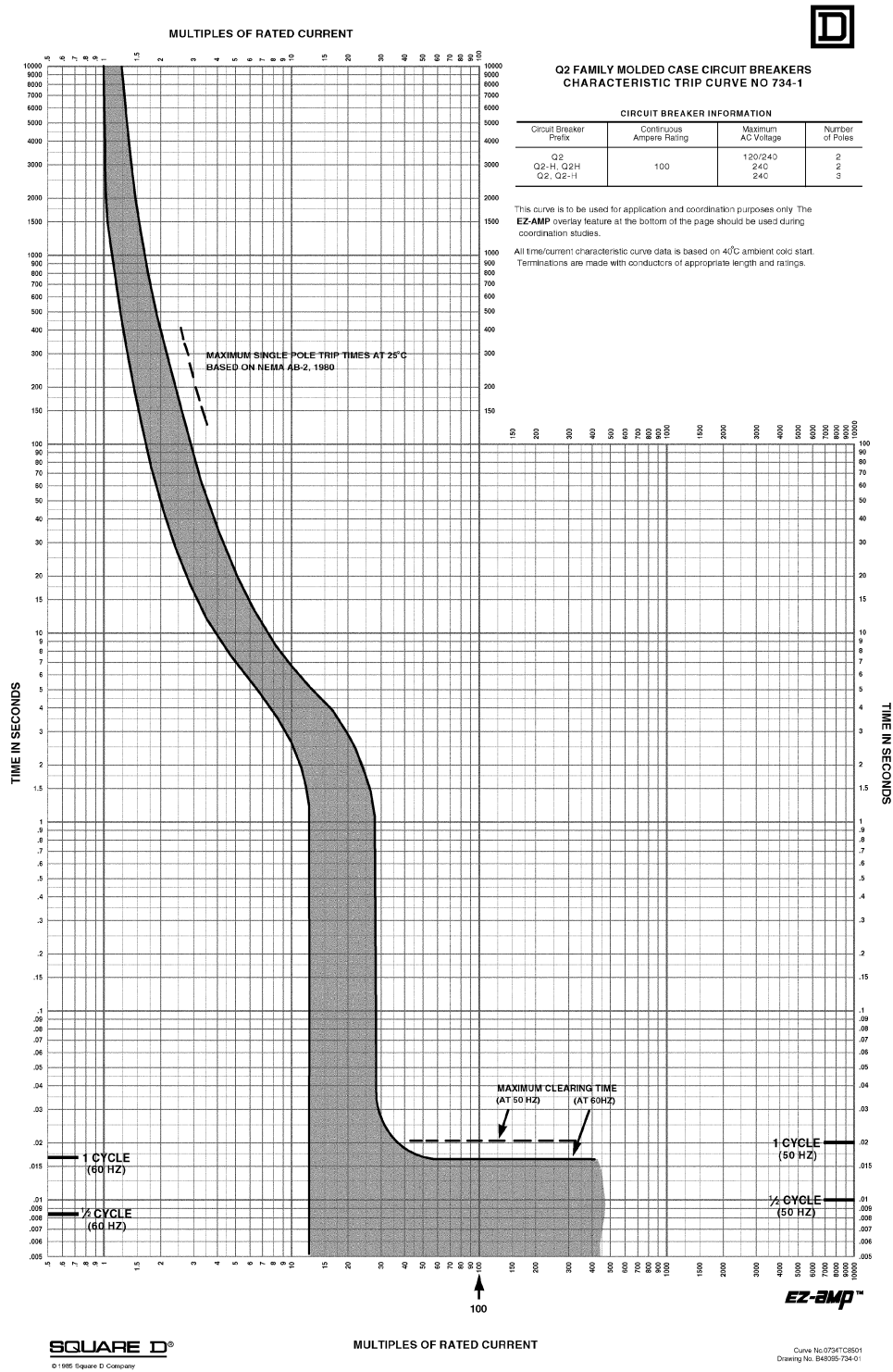


Dimensions: In.
[mm]



TRIP CURVES

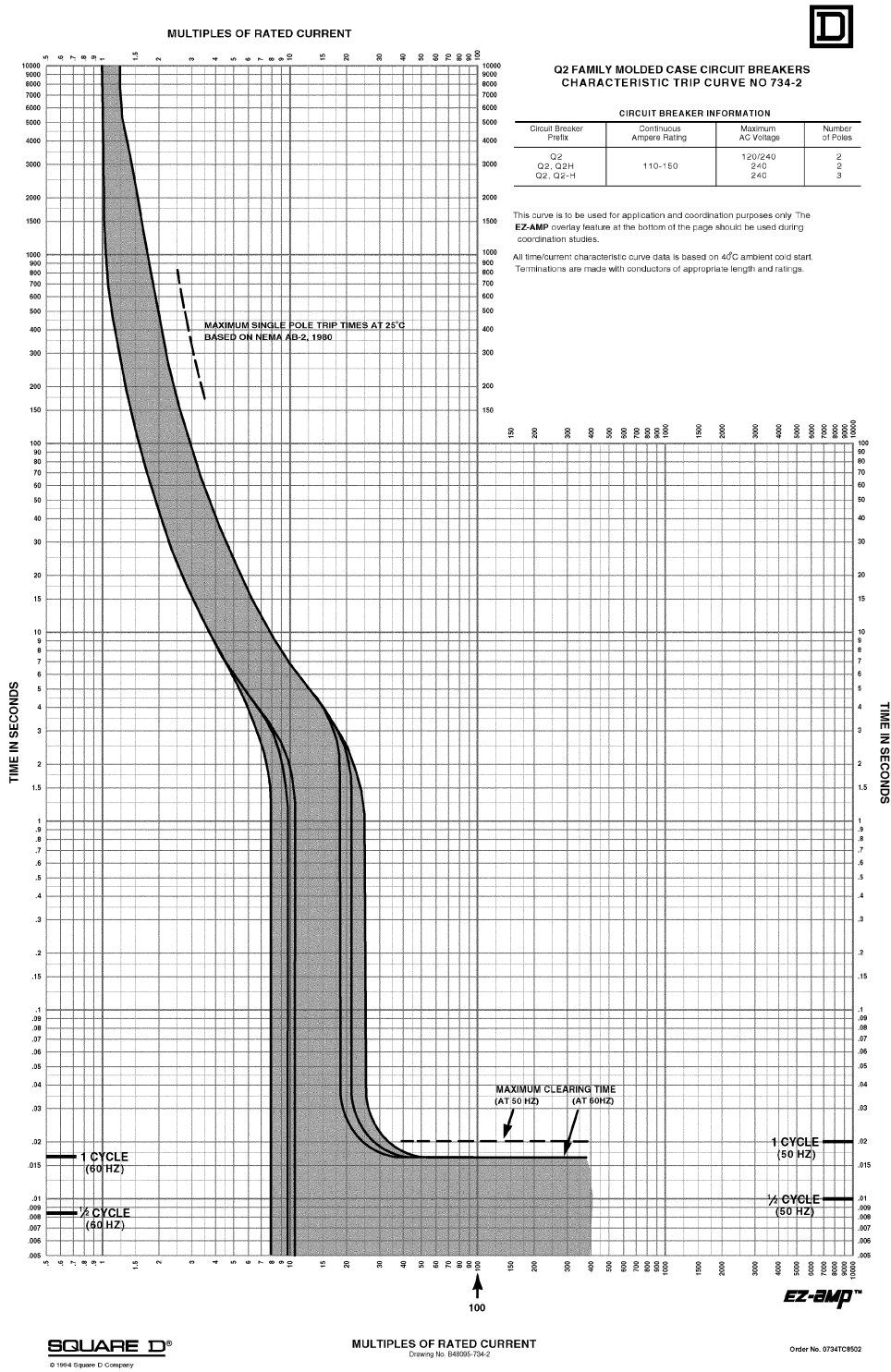
Figure 7: 100 A (Continuous Ampere Rating)



All curves available on Compact Disc as a set for coordination studies.



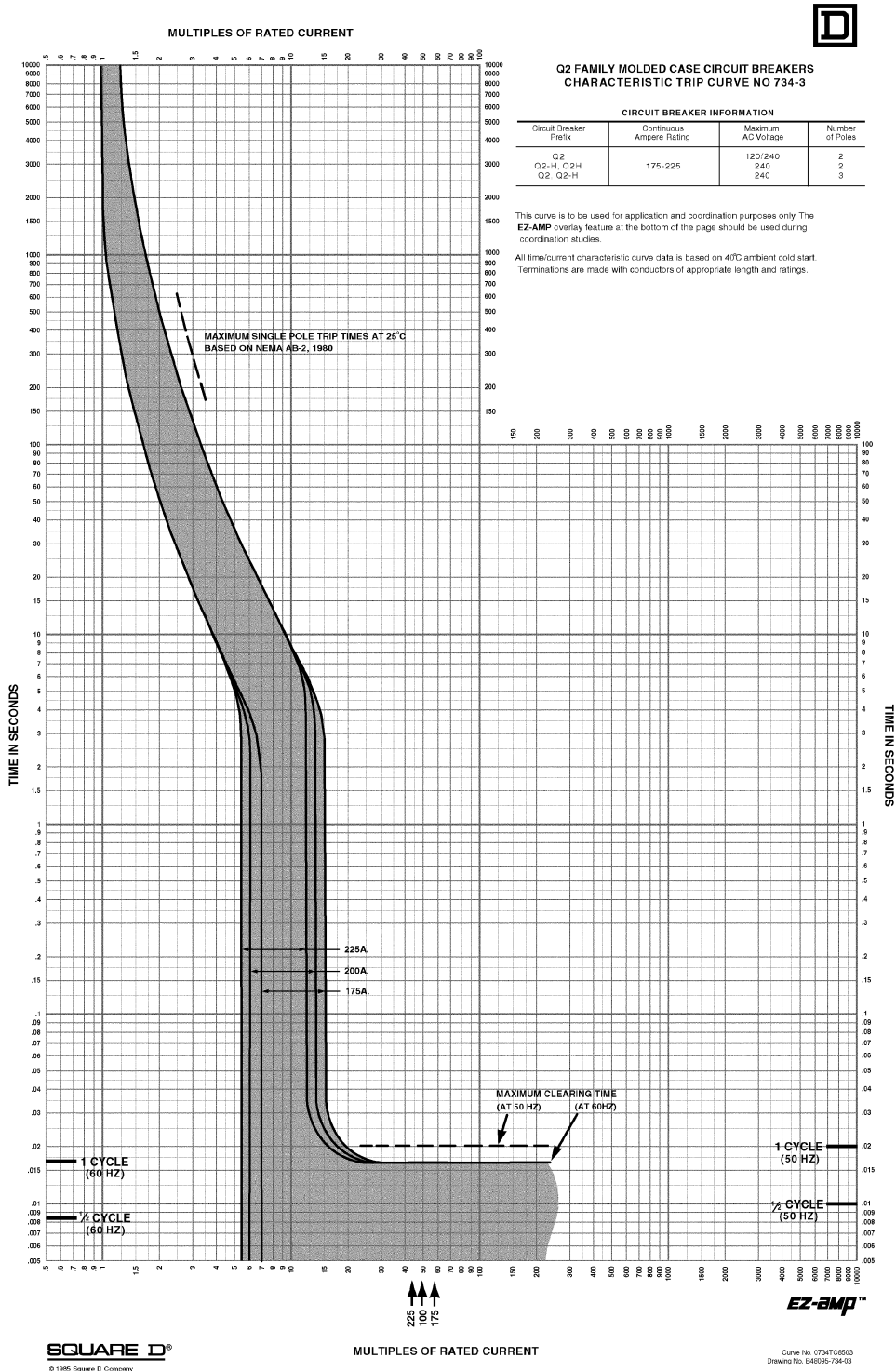
Figure 8: 110–150 A (Continuous Ampere Rating)



All curves available on Compact Disc as a set for coordination studies.



Figure 9: 175–225 A (Continuous Ampere Rating)




All curves available on Compact Disc as a set for coordination studies.



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