Cutler-Hammer

May 1998

Time/Current Characteristic Curves for Westinghouse Series C® K-Frame Circuit Breakers

Westinghouse AB DE-ION® Circuit Breakers

① Use in conjunction with SC-5638-93, SC-5639-93, SC-5644-93, or SC-5645-93.
② Use in conjunction with SC-5640-93, SC-5641-93, SC-5646-93, or SC-5647-93.
③ Use in conjunction with SC-5642-93, SC-5643-93, SC-5648-93, or SC-5649-93.

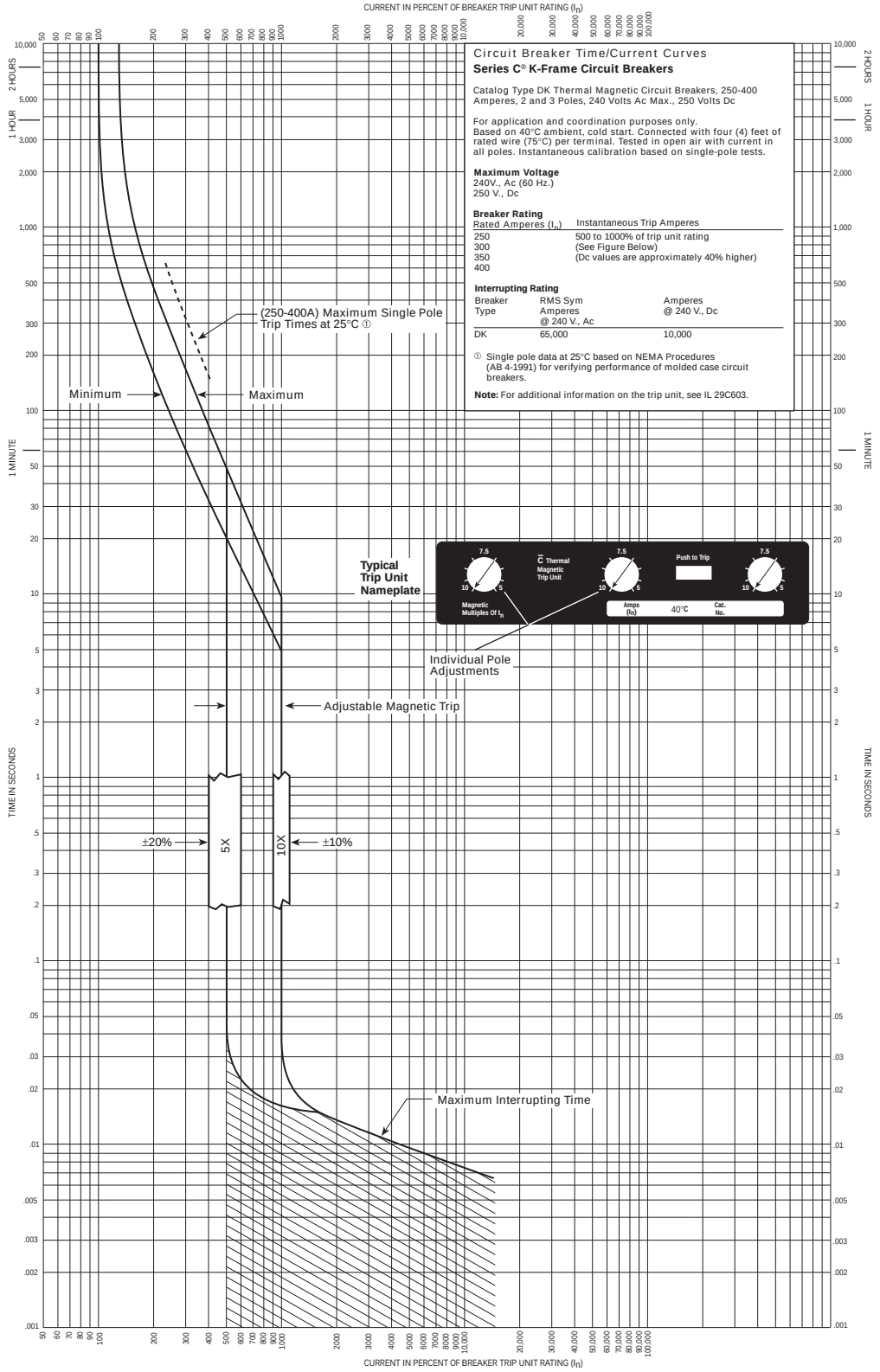
Individual oversize copies of curves listed above printed on onion-skin paper are available in limited quantity from:

Cutler-Hammer
Five Parkway Center
Pittsburgh, PA 15220

When ordering onion-skin curves, use number at bottom of page where curve appears, i.e., SC-4117-87B. **Requests for full sets of curves will not be honored.**

AB DE-ION Circuit Breakers

Type DK



Circuit Breaker Time/Current Curves

Series C® K-Frame Circuit Breakers

Catalog Type DK Thermal Magnetic Circuit Breakers, 250-400 Amperes, 2 and 3 Poles, 240 Volts Ac Max., 250 Volts Dc

For application and coordination purposes only.
Based on 40°C ambient, cold start. Connected with four (4) feet of rated wire (75°C) per terminal. Tested in open air with current in all poles. Instantaneous calibration based on single-pole tests.

Maximum Voltage
240V., Ac (60 Hz.)
250 V., Dc

Breaker Rating

Rated Amperes (I_n)	Instantaneous Trip Amperes
250	500 to 1000% of trip unit rating
300	(See Figure Below)
350	(Dc values are approximately 40% higher)
400	

Interrupting Rating

Breaker Type	RMS Sym Amperes @ 240 V., Ac	Amperes @ 240 V., Dc
DK	65,000	10,000

① Single pole data at 25°C based on NEMA Procedures (AB 4-1991) for verifying performance of molded case circuit breakers.

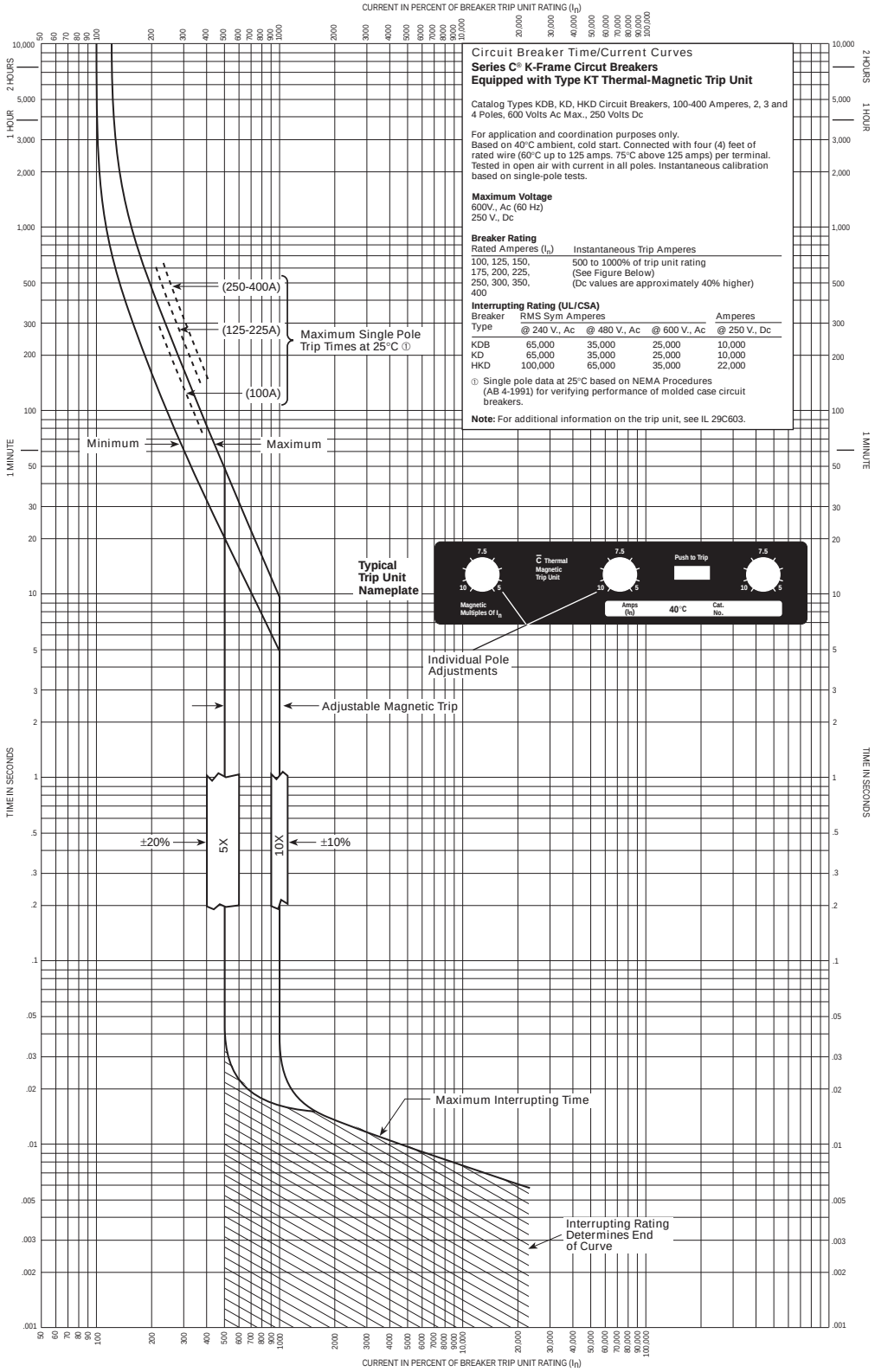
Note: For additional information on the trip unit, see IL 29C603.

Curve No. SC-4117-87B

October 1997

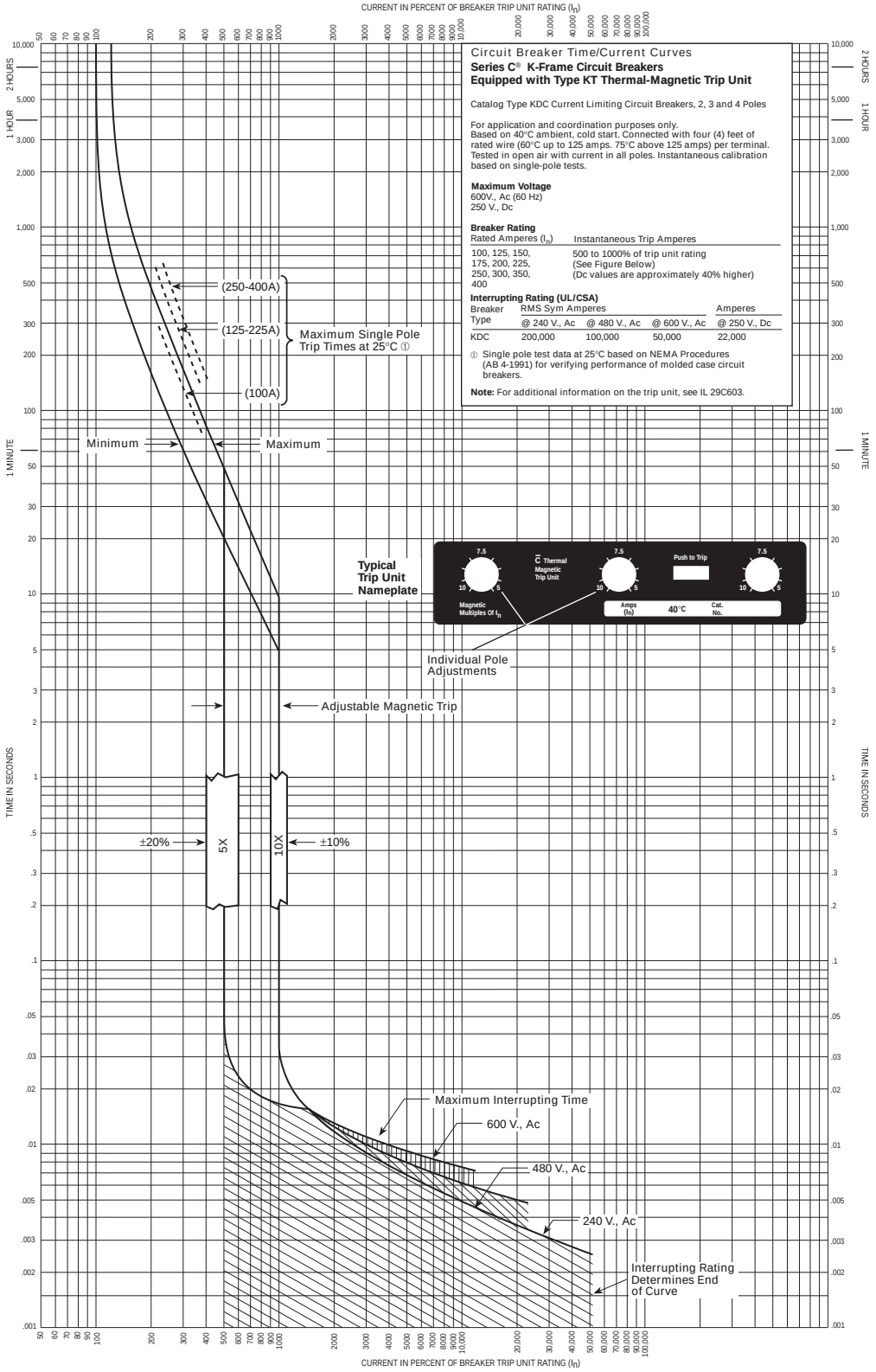
AB DE-ION Circuit Breakers

Types KDB, KD, HKD Equipped with Type KT Thermal-Magnetic Trip Unit



AB DE-ION Circuit Breakers

Type KDC Equipped with Type KT Thermal-Magnetic Trip Unit



Circuit Breaker Time/Current Curves
Series C® K-Frame Circuit Breakers
Equipped with Type KT Thermal-Magnetic Trip Unit

Catalog Type KDC Current Limiting Circuit Breakers, 2, 3 and 4 Poles

For application and coordination purposes only.
Based on 40°C ambient, cold start. Connected with four (4) feet of rated wire (60°C up to 125 amps. 75°C above 125 amps) per terminal. Tested in open air with current in all poles. Instantaneous calibration based on single-pole tests.

Maximum Voltage
600V., Ac (60 Hz)
250 V., Dc

Breaker Rating

Rated Amperes (I_n)	Instantaneous Trip Amperes
100, 125, 150, 175, 200, 225, 250, 300, 350, 400	500 to 1000% of trip unit rating (See Figure Below) (Dc values are approximately 40% higher)

Interrupting Rating (UL/CSA)

Breaker Type	RMS Sym Amperes @ 240 V., Ac	@ 480 V., Ac	@ 600 V., Ac	Amperes @ 250 V., Dc
KDC	200,000	100,000	50,000	22,000

① Single pole test data at 25°C based on NEMA Procedures (AB 4-1991) for verifying performance of molded case circuit breakers.

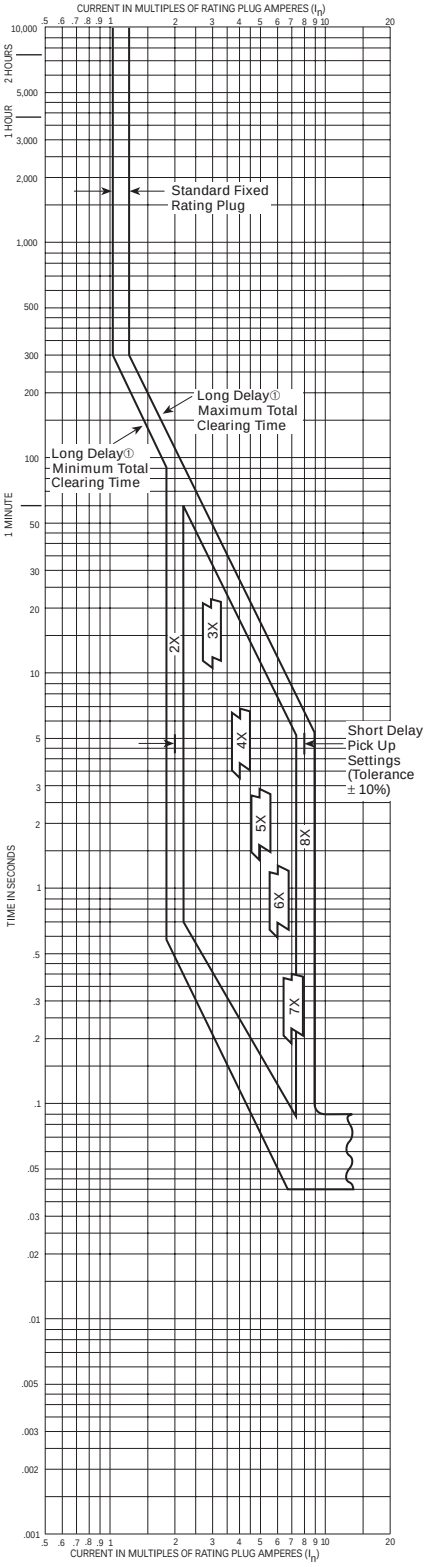
Note: For additional information on the trip unit, see IL 29C603.

Curve No. SC-4119-87B

October 1997

AB DE-ION Circuit Breakers

Types KD, CKD, HKD, CHKD Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3400LS, KES3400LSG

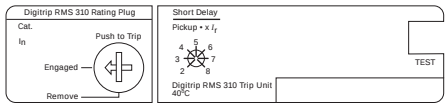


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3400LS, KES3400LSG Digitrip RMS 310 Trip Units for use with Circuit Breaker Types KD, HKD, CKD, and CHKD, 400A. max.

Fixed Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
400	Fixed	4KES 400T	800-3200
350	Fixed	4KES 350T	700-2800
300	Fixed	4KES 300T	600-2400
250	Fixed	4KES 250T	500-2000
225	Fixed	4KES 225T	450-1800
200	Fixed	4KES 200T	400-1600
200, 250, 300, 400	Adjustable	A4KES 400T1	400-3200
250, 300, 350, 400	Adjustable	A4KES 400T3	500-3200

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KD, CKD	65	35	25
HKD, CHKD	100	65	35

Breaker Type	IEC 947-2 240V	380V	415V
KD, CKD	65	40	40
HKD, CHKD	100	65	65

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

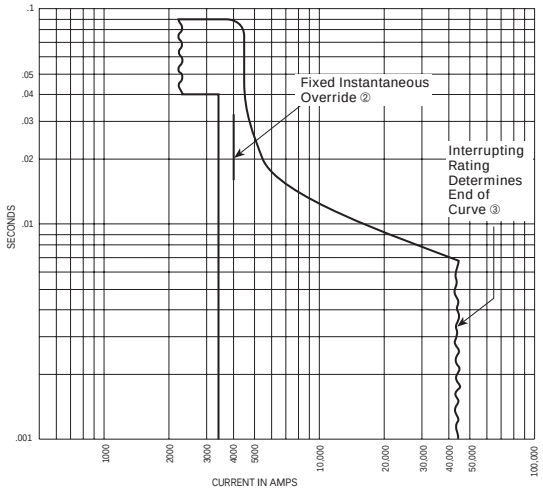
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

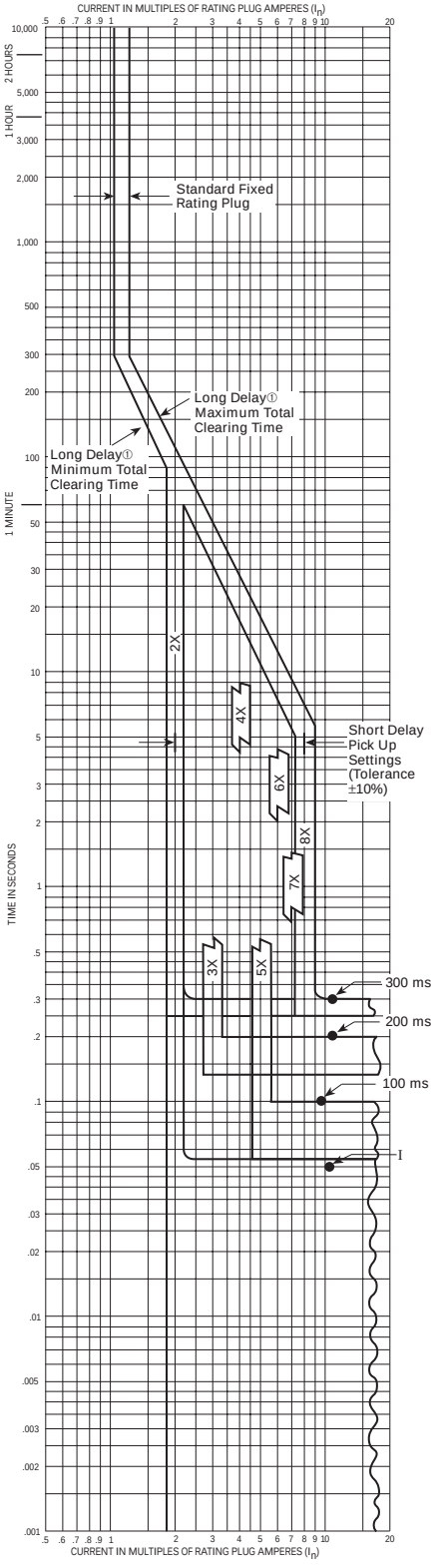
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5650-93.



AB DE-ION Circuit Breakers

Types KD, CKD, HKD, CHKD Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3400LSI, KES3400LSIG

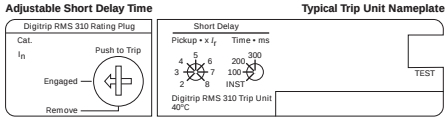


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3400LSI, KES3400LSIG Digitrip RMS 310 Units for use with Circuit Breaker Types KD, HKD, CKD, and CHKD, 400A. max.

Adjustable Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
400	Fixed	4KES 400T	800-3200
350	Fixed	4KES 350T	700-2800
300	Fixed	4KES 300T	600-2400
250	Fixed	4KES 250T	500-2000
225	Fixed	4KES 225T	450-1800
200	Fixed	4KES 200T	400-1600
200, 250, 300, 400	Adjustable	A4KES 400T1	400-3200
250, 300, 350, 400	Adjustable	A4KES 400T3	500-3200

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KD, CKD	65	35	25
HKD, CHKD	100	65	35

Breaker Type	IEC 947-2 240V	380V	415V
KD, CKD	65	40	40
HKD, CHKD	100	65	65

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

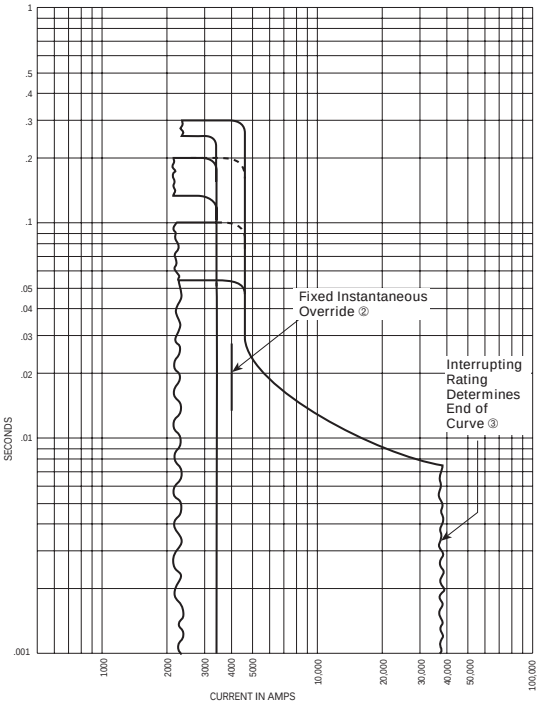
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

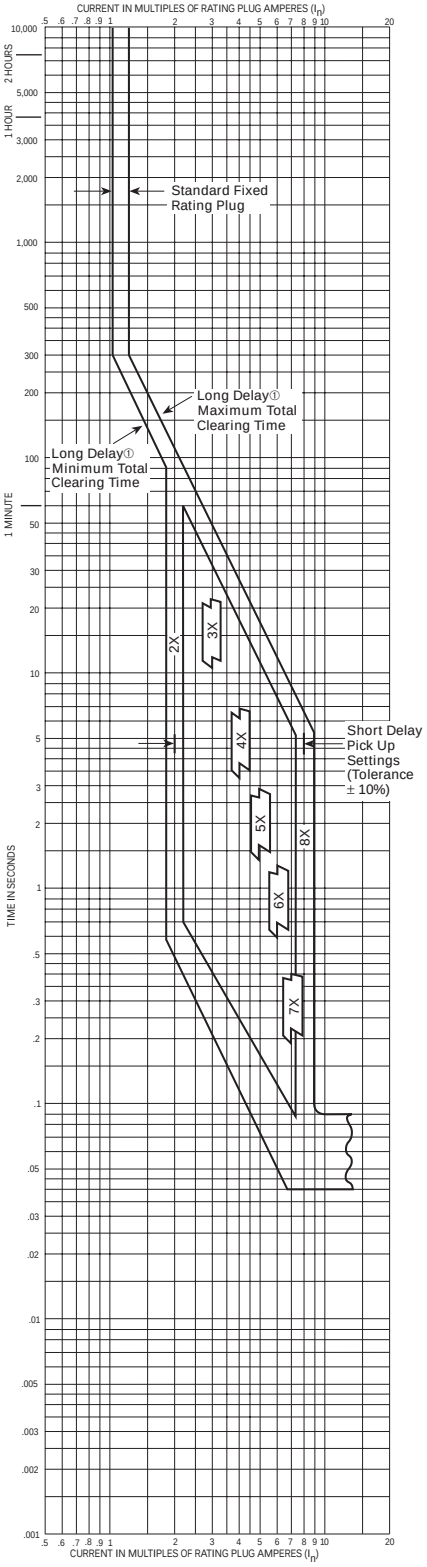
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5650-93.



AB DE-ION Circuit Breakers

Types KD, CKD, HKD, CHKD Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3250LS, KES3250LSG

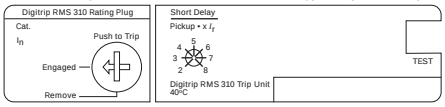


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3250LS, KES3250LSG Digitrip RMS 310 Units for use with Circuit Breaker Types KD, HKD, CKD, and CHKD, 250A. max.

Fixed Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
250	Fixed	2KES 250T	500-2000
225	Fixed	2KES 225T	450-1800
200	Fixed	2KES 200T	400-1600
175	Fixed	2KES 175T	350-1400
150	Fixed	2KES 150T	300-1200
125	Fixed	2KES 125T	250-1000
125, 150, 200, 250	Adjustable	A2KES 250T1	250-2000

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KD, CKD	65	35	25
HKD, CHKD	100	65	35

Breaker Type	IEC 947-2 240V	380V	415V
KD, CKD	65	40	40
HKD, CHKD	100	65	65

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

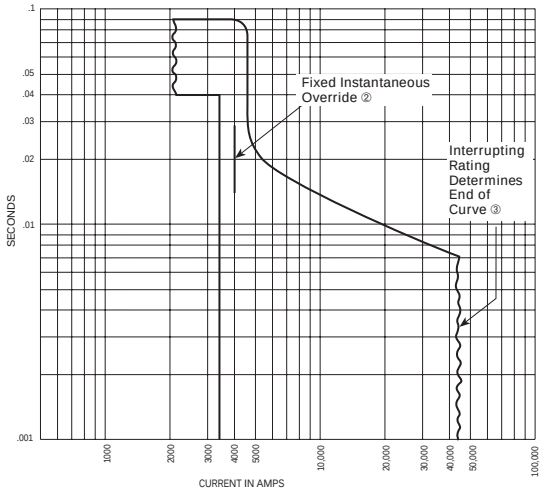
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

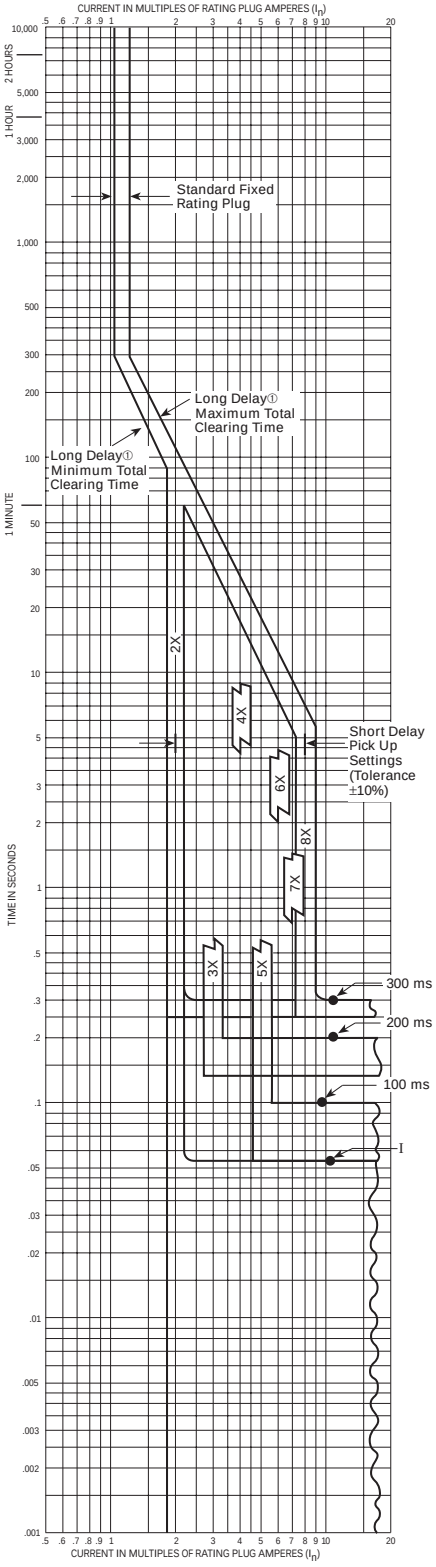
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5651-93.



AB DE-ION Circuit Breakers

Types KD, CKD, HKD, CHKD Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3250LSI, KES3250LSIG

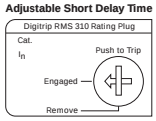


Circuit Breaker Time/Current Curves (Phase Current) ④

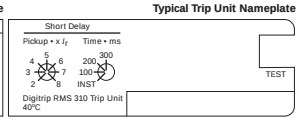
Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3250LSI, KES3250LSIG Digitrip RMS 310 Units for use with Circuit Breaker Types KD, HKD, CKD, and CHKD, 250A. max.

Adjustable Short Delay Time



Typical Trip Unit Nameplate



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
250	Fixed	2KES 250T	500-2000
225	Fixed	2KES 225T	450-1800
200	Fixed	2KES 200T	400-1600
175	Fixed	2KES 175T	350-1400
150	Fixed	2KES 150T	300-1200
125	Fixed	2KES 125T	250-1000
125, 150, 200, 250	Adjustable	A2KES 250T1	250-2000

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KD, CKD	65	35	25
HKD, CHKD	100	65	35

Breaker Type	IEC 947-2 240V	380V	415V
KD, CKD	65	40	40
HKD, CHKD	100	65	65

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

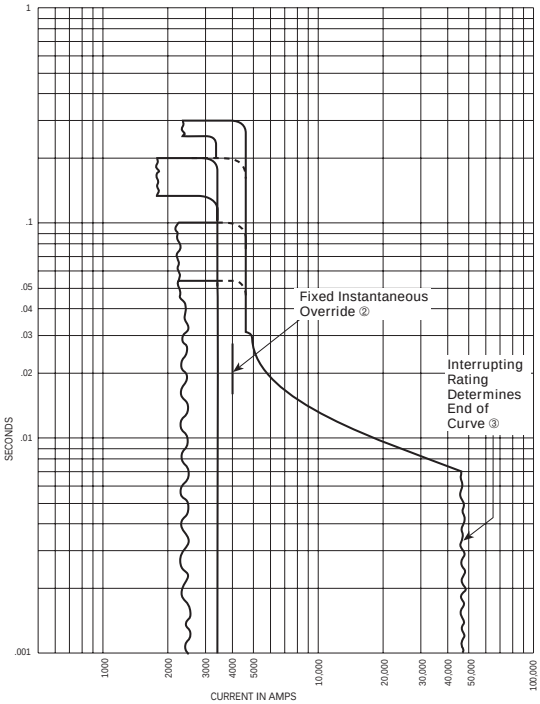
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

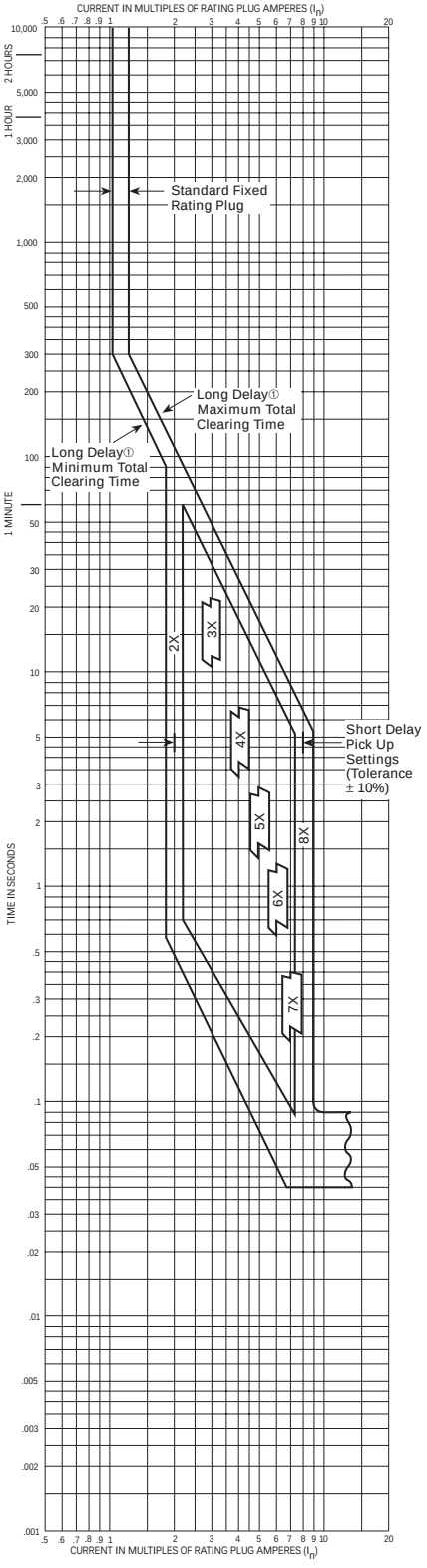
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5651-93.



AB DE-ION Circuit Breakers

Types KD, CKD, HKD, CHKD Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3125LS, KES3125LSG

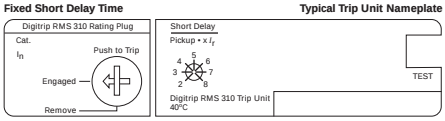


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3125LS, KES3125LSG Digitrip RMS 310 Trip Units for use with Circuit Breaker Types KD, HKD, CKD, and CHKD, 125A. max.

Fixed Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
125	Fixed	1KES 125T	250-1000
110	Fixed	1KES 110T	220- 880
100	Fixed	1KES 100T	200- 800
90	Fixed	1KES 90T	180- 720
70	Fixed	1KES 70T	140- 560
70, 90, 100, 125	Adjustable	A1KES 125T1	140-1000

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KD, CKD	65	35	25
HKD, CHKD	100	65	35

Breaker Type	IEC 947-2 240V	380V	415V
KD, CKD	65	40	40
HKD, CHKD	100	65	65

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

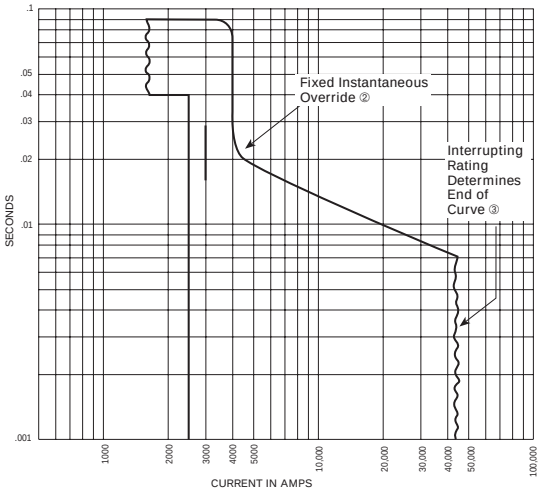
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

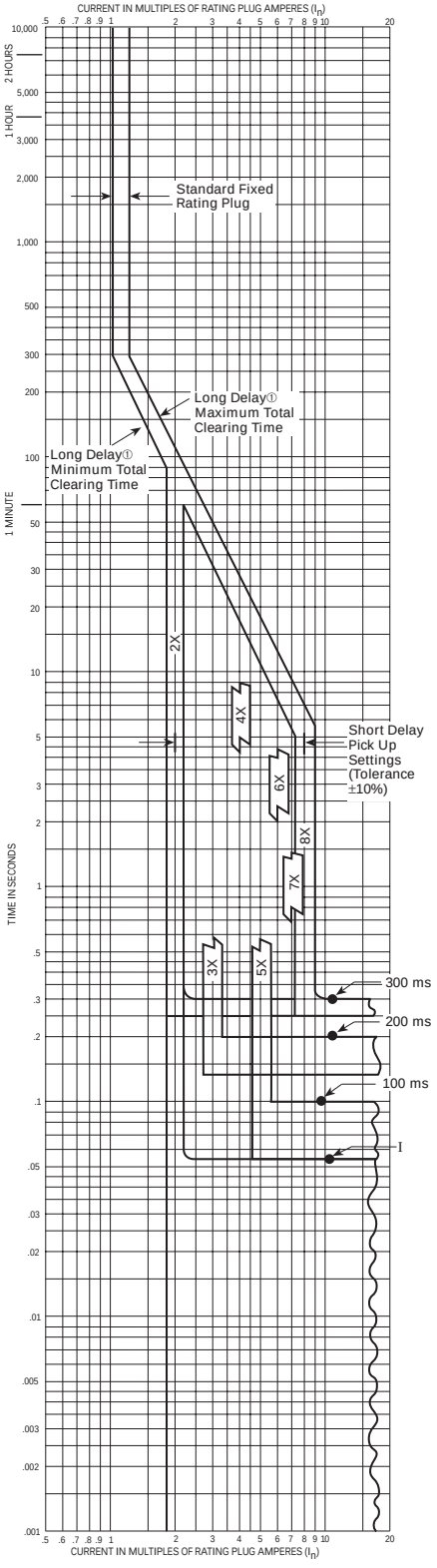
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5652-93.



AB DE-ION Circuit Breakers

Types KD, CKD, HKD, CHKD Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3125LSI, KES3125LSIG

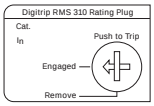


Circuit Breaker Time/Current Curves (Phase Current) ④

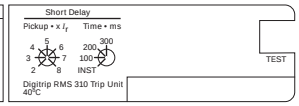
Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3125LSI, KES3125LSIG Digitrip RMS 310 Trip Units for use with Circuit Breaker Types KD, HKD, CKD, and CHKD, 125A. max.

Adjustable Short Delay Time



Typical Trip Unit Nameplate



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
125	Fixed	1KES 125T	250-1000
110	Fixed	1KES 110T	220- 880
100	Fixed	1KES 100T	200- 800
90	Fixed	1KES 90T	180- 720
70	Fixed	1KES 70T	140- 560
70, 90, 100, 125	Adjustable	A1KES 125T1	140-1000

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KD, CKD	65	35	25
HKD, CHKD	100	65	35

Breaker Type	IEC 947-2 240V	380V	415V
KD, CKD	65	40	40
HKD, CHKD	100	65	65

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

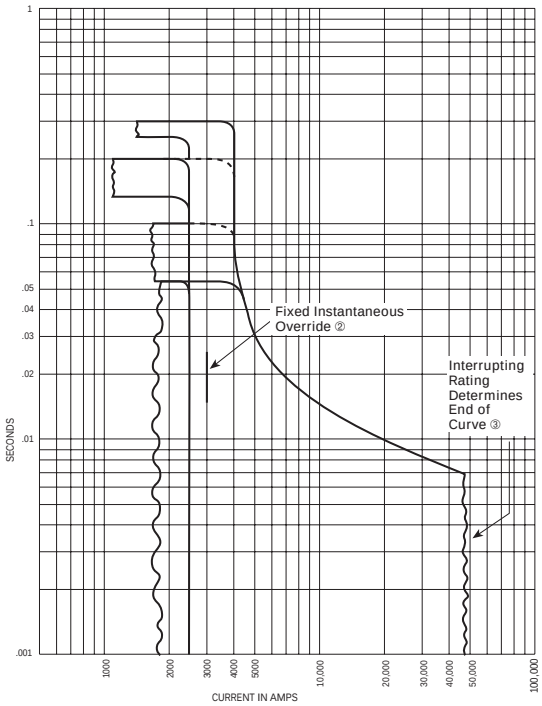
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

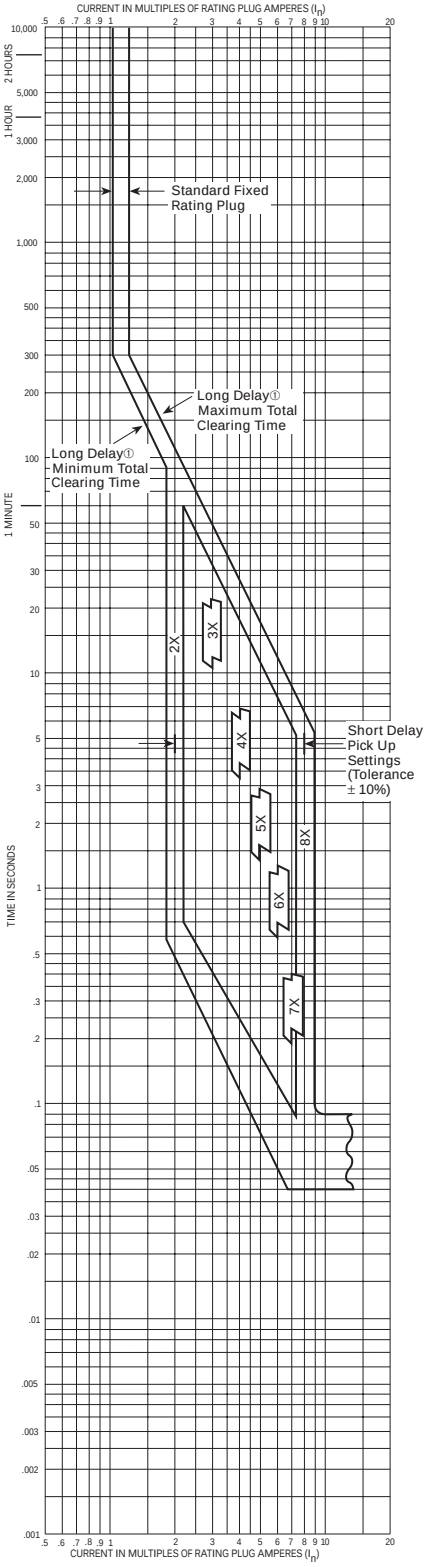
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5652-93.



AB DE-ION Circuit Breakers

Type KDC Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3400LS, KES3400LSG

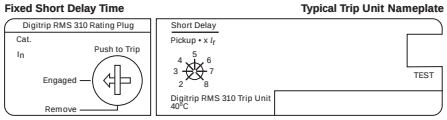


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3400LS, KES3400LSG Digitrip RMS 310 Trip Units for use with Circuit Breaker Type KDC, 400A. max.

Fixed Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
400	Fixed	4KES 400T	800-3200
350	Fixed	4KES 350T	700-2800
300	Fixed	4KES 300T	600-2400
250	Fixed	4KES 250T	500-2000
225	Fixed	4KES 225T	450-1800
200	Fixed	4KES 200T	400-1600
200, 250, 300, 400	Adjustable	A4KES 400T1	400-3200
250, 300, 350, 400	Adjustable	A4KES 400T3	500-3200

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KDC	200	100	50

Breaker Type	IEC 947-2 240V	380V	415V
KDC	200	100	100

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

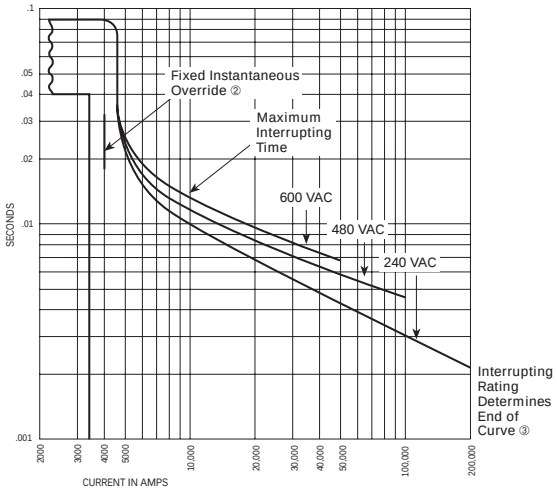
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

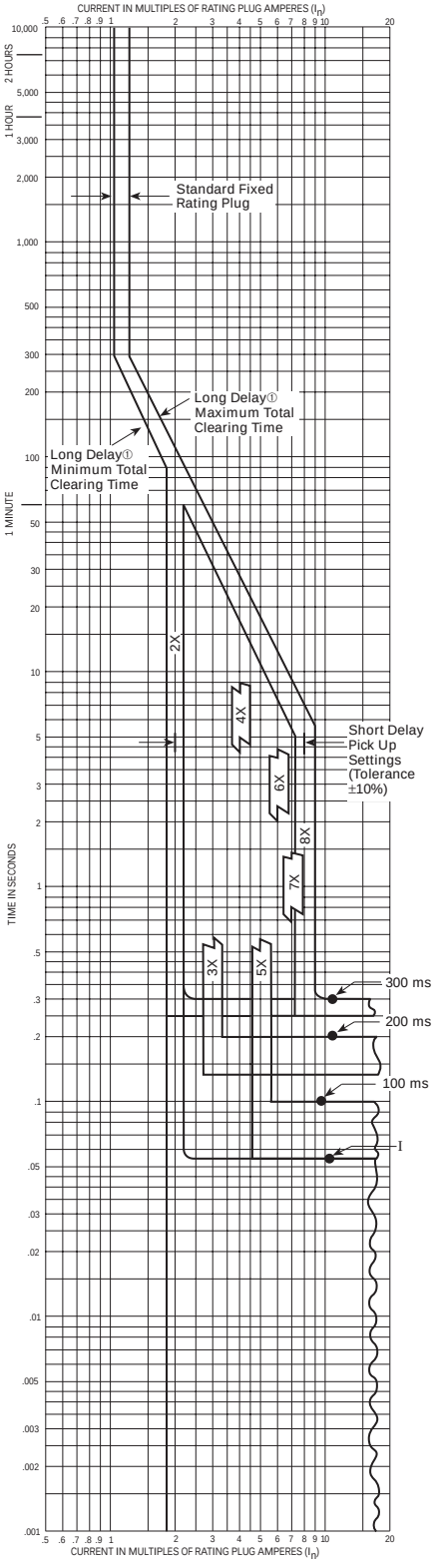
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5650-93.



AB DE-ION Circuit Breakers

Type KDC Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3400LSI, KES3400LSIG

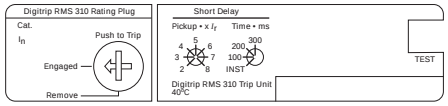


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3400LSI, KES3400LSIG, Digitrip RMS 310 Trip Units for use with Circuit Breaker Type KDC, 400A. max.

Adjustable Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
400	Fixed	4KES 400T	800-3200
350	Fixed	4KES 350T	700-2800
300	Fixed	4KES 300T	600-2400
250	Fixed	4KES 250T	500-2000
225	Fixed	4KES 225T	450-1800
200	Fixed	4KES 200T	400-1600
200, 250, 300, 400	Adjustable	A4KES 400T1	400-3200
250, 300, 350, 400	Adjustable	A4KES 400T3	500-3200

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KDC	200	100	50

Breaker Type	IEC 947-2 240V	380V	415V
KDC	200	100	100

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

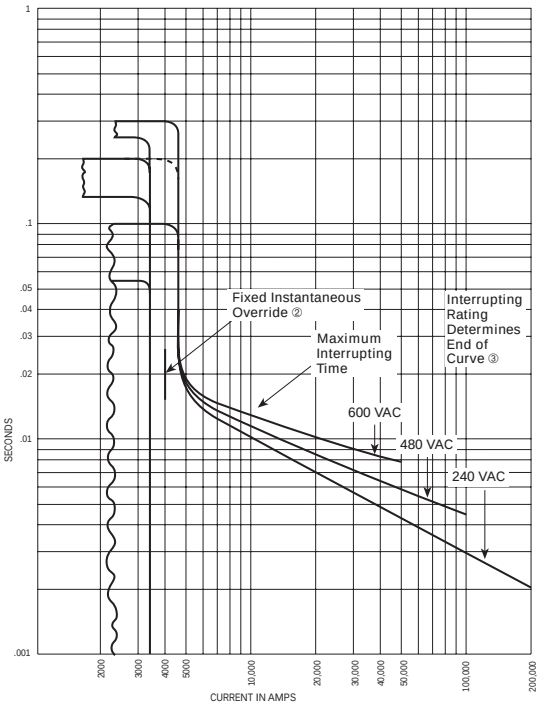
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5650-93.

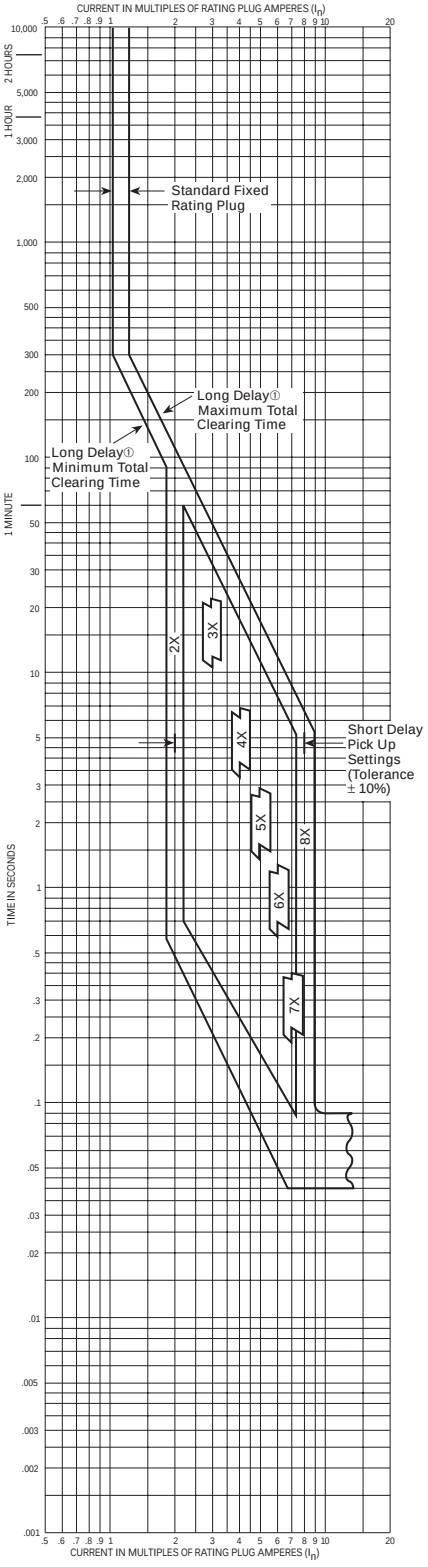


Curve No. SC-5645-93

October 1997

AB DE-ION Circuit Breakers

Type KDC Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3250LS, KES3250LSG

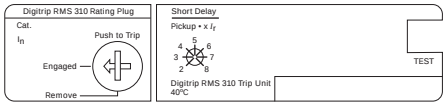


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3250LS, KES3250LSG Digitrip RMS 310 Units for use with Circuit Breaker Type KDC, 250A. max.

Fixed Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
250	Fixed	2KES 250T	500-2000
225	Fixed	2KES 225T	450-1800
200	Fixed	2KES 200T	400-1600
175	Fixed	2KES 175T	350-1400
150	Fixed	2KES 150T	300-1200
125	Fixed	2KES 125T	250-1000
125, 150, 200, 250	Adjustable	A2KES 250T1	250-2000

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KDC	200	100	50

Breaker Type	IEC 947-2 240V	380V	415V
KDC	200	100	100

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

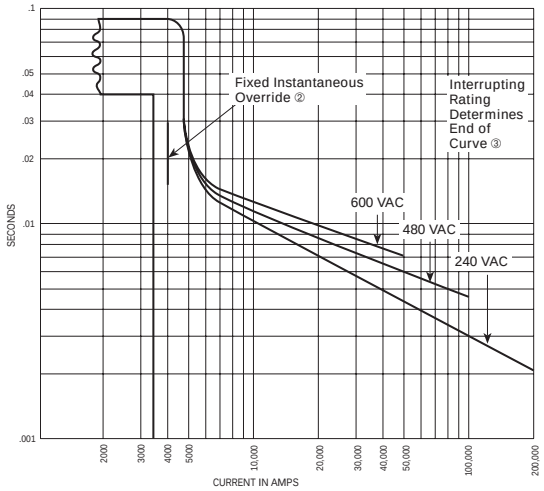
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

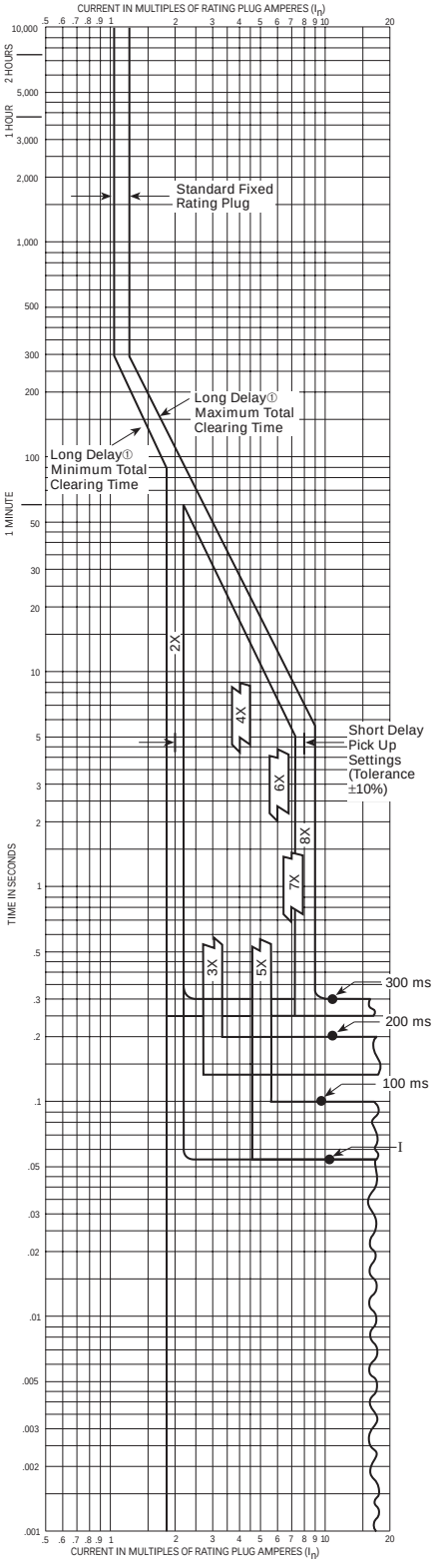
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5651-93.



AB DE-ION Circuit Breakers

Type KDC Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3250LSI, KES3250LSIG

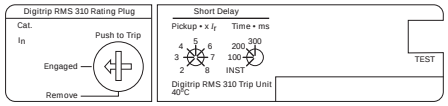


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Units

Catalog Types KES3250LSI, KES3250LSIG Digitrip RMS 310 Trip Units for use with Circuit Breaker Type KDC, 250A. max.

Adjustable Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
250	Fixed	2KES 250T	500-2000
225	Fixed	2KES 225T	450-1800
200	Fixed	2KES 200T	400-1600
175	Fixed	2KES 175T	350-1400
150	Fixed	2KES 150T	300-1200
125	Fixed	2KES 125T	250-1000
125, 150, 200, 250	Adjustable	A2KES 250T1	250-2000

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KDC	200	100	50

Breaker Type	IEC 947-2 240V	380V	415V
KDC	200	100	100

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

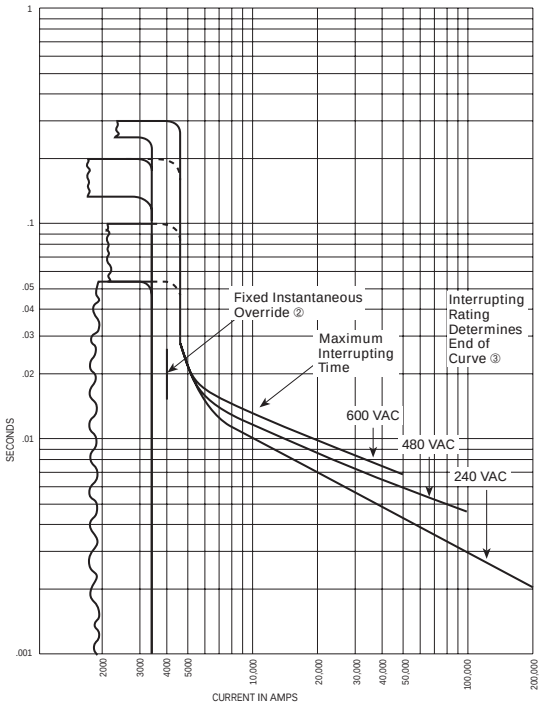
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

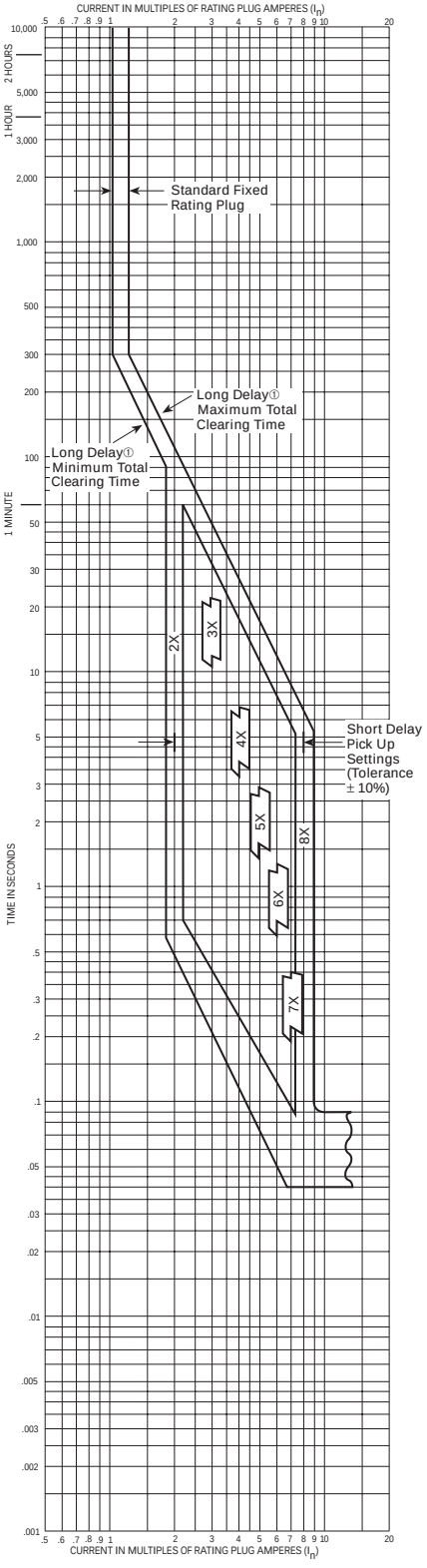
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5651-93.



AB DE-ION Circuit Breakers

Type KDC Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3125LS, KES3125LSG

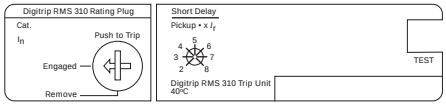


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3125LS, KES3125LSG Digitrip RMS 310 Trip Units for use with Circuit Breaker Types KDC, 125A. max.

Fixed Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
125	Fixed	1KES 125T	250-1000
110	Fixed	1KES 110T	220- 880
100	Fixed	1KES 100T	200- 800
90	Fixed	1KES 90T	180- 720
70	Fixed	1KES 70T	140- 560
70, 90, 100, 125	Adjustable	A1KS 125T1	140-1000

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KDC	200	100	50

Breaker Type	IEC 947-2 240V	380V	415V
KDC	200	100	100

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

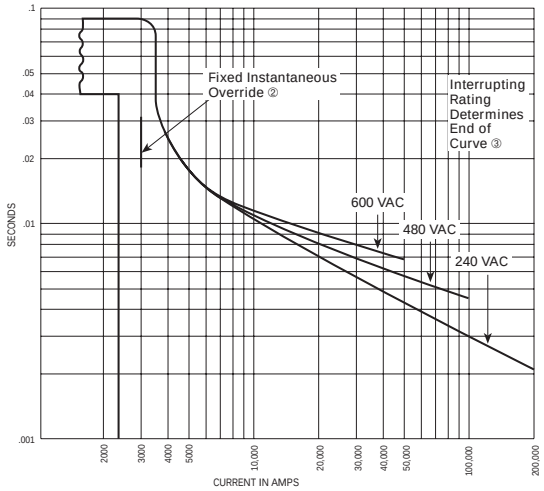
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

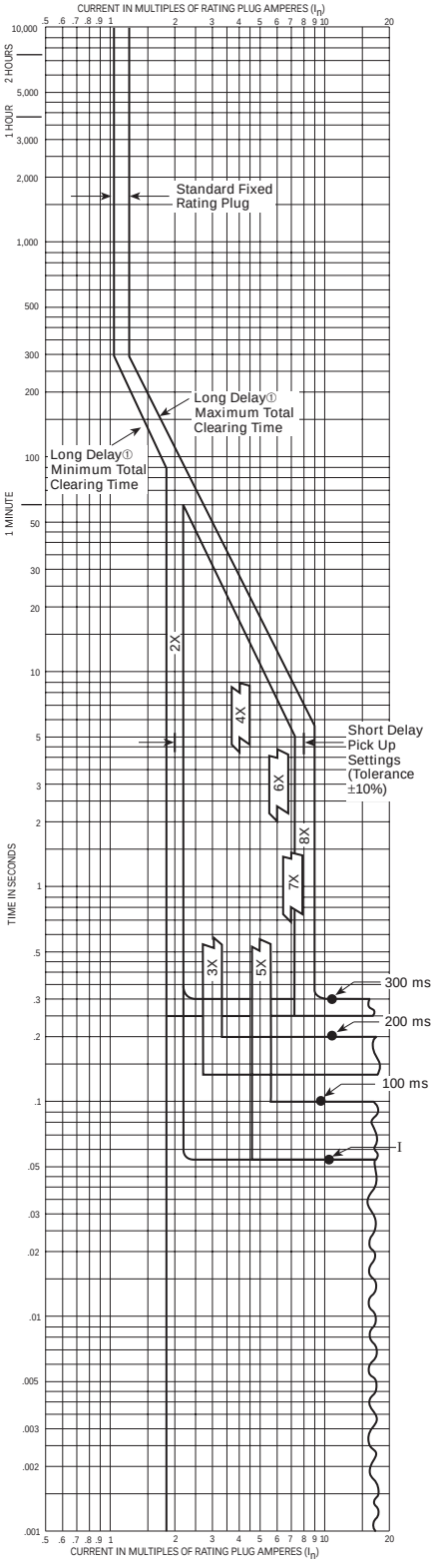
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5652-93.



AB DE-ION Circuit Breakers

Type KDC Equipped with Type KES Digitrip RMS 310 Trip Units, Types KES3125LSI, KES3125LSIG

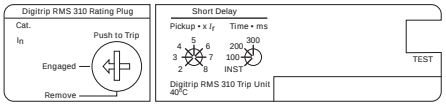


Circuit Breaker Time/Current Curves (Phase Current) ④

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units

Catalog Types KES3125LSI, KES3125LSIG Digitrip RMS 310 Trip Units for use with Circuit Breaker Type KDC, 125A. max.

Adjustable Short Delay Time **Typical Trip Unit Nameplate**



Available Rating Plugs

Ampere Rating (I_n)	Type	Catalog Number	Short Delay Pickup Range Amperes
125	Fixed	1KES 125T	250-1000
110	Fixed	1KES 110T	220- 880
100	Fixed	1KES 100T	200- 800
90	Fixed	1KES 90T	180- 720
70	Fixed	1KES 70T	140- 560
70, 90, 100, 125	Adjustable	A1KES 125T1	140-1000

Interrupting Ratings – 50/60 Hz
RMS Sym. Amperes (kA)

Breaker Type	UL/CSA 240V	480V	600V
KDC	200	100	50

Breaker Type	IEC 947-2 240V	380V	415V
KDC	200	100	100

Notes
Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

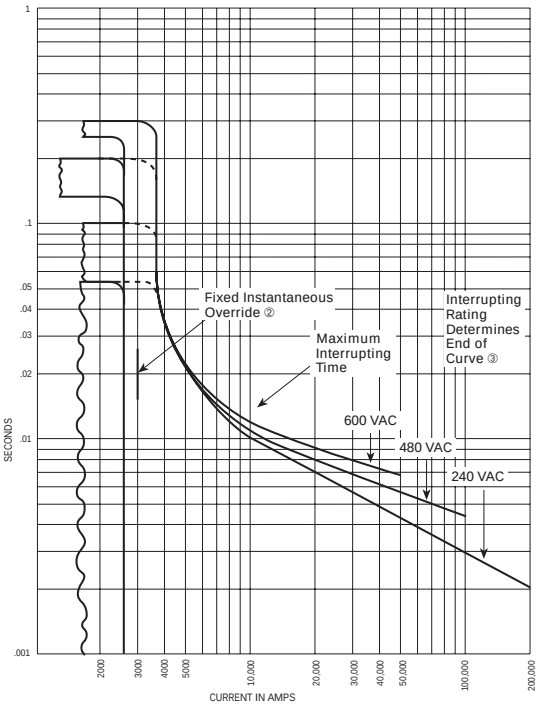
There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pick up value exists for a time and then is cleared by the tripping of a down stream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.

① Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

② For high fault current levels a fixed instantaneous override is provided at 4000A. (Tolerance ±15%).

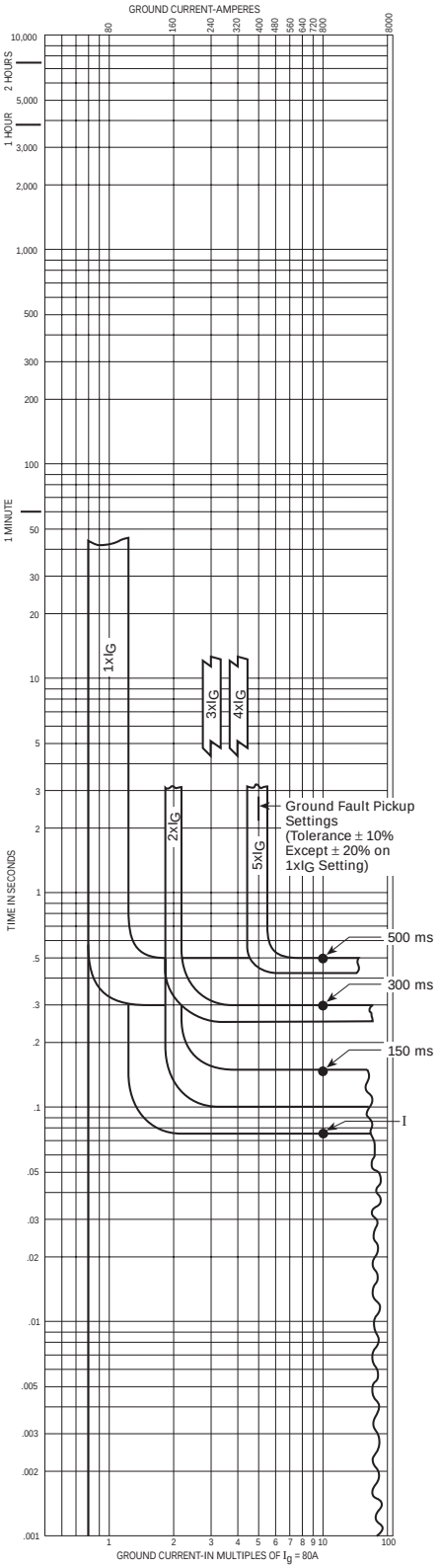
③ The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.

④ For ground fault time/current curve see SC-5652-93.



AB DE-ION Circuit Breakers

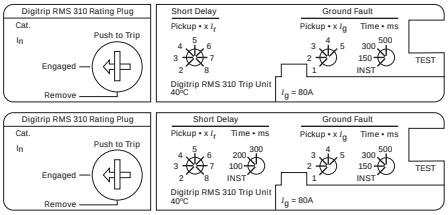
Ground Fault Protection (KES3400LSG, KES3400LSIG)



Circuit Breaker Time/Current Curves (Ground Current) ①

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units
For Ground Fault Protection

Type Digitrip RMS 310 Trip Unit for use with Circuit Breaker Types KD, HKD, KDC, CKD, and CHKD
For use with Trip Unit Catalog Numbers
KES3400LSG
KES3400LSIG



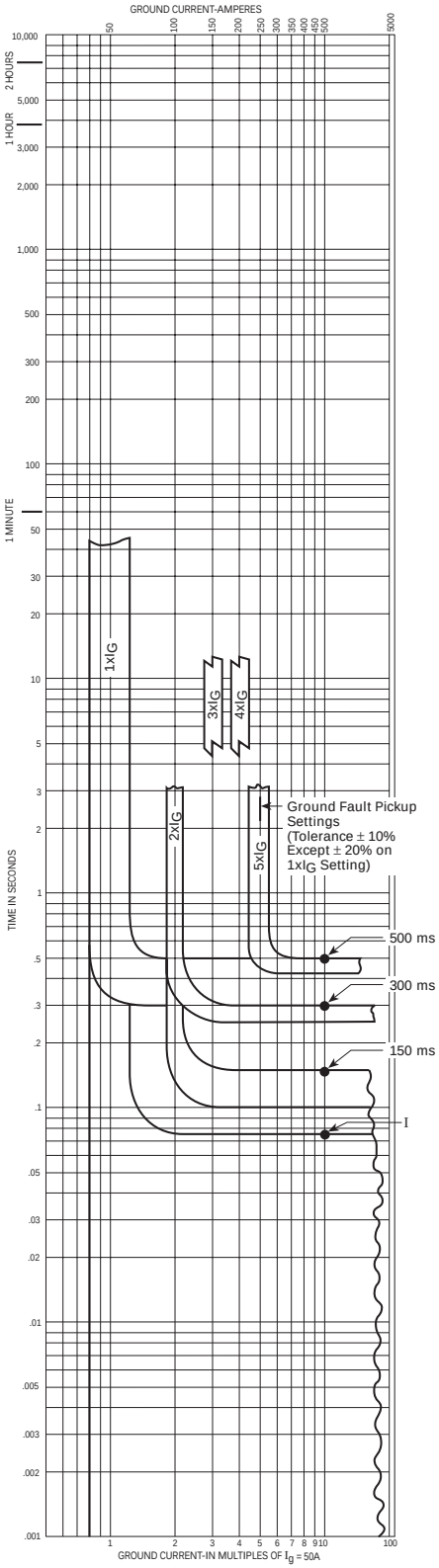
Notes
Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

① For phase time/current curves see SC-5638-93, SC-5639-93, SC-5644-93, or SC-5645-93.

AB DE-ION Circuit Breakers

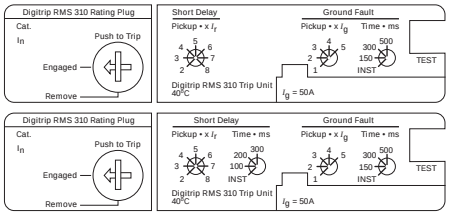
Ground Fault Protection (KES3250LSG, KES3250LSIG)



Circuit Breaker Time/Current Curves (Ground Current) ①

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Trip Units
For Ground Fault Protection

Type Digitrip RMS 310 Trip Unit for use with Circuit Breaker Types KD, HKD, KDC, CKD, and CHKD
For use with Trip Unit Catalog Numbers
KES3250LSG
KES3250LSIG



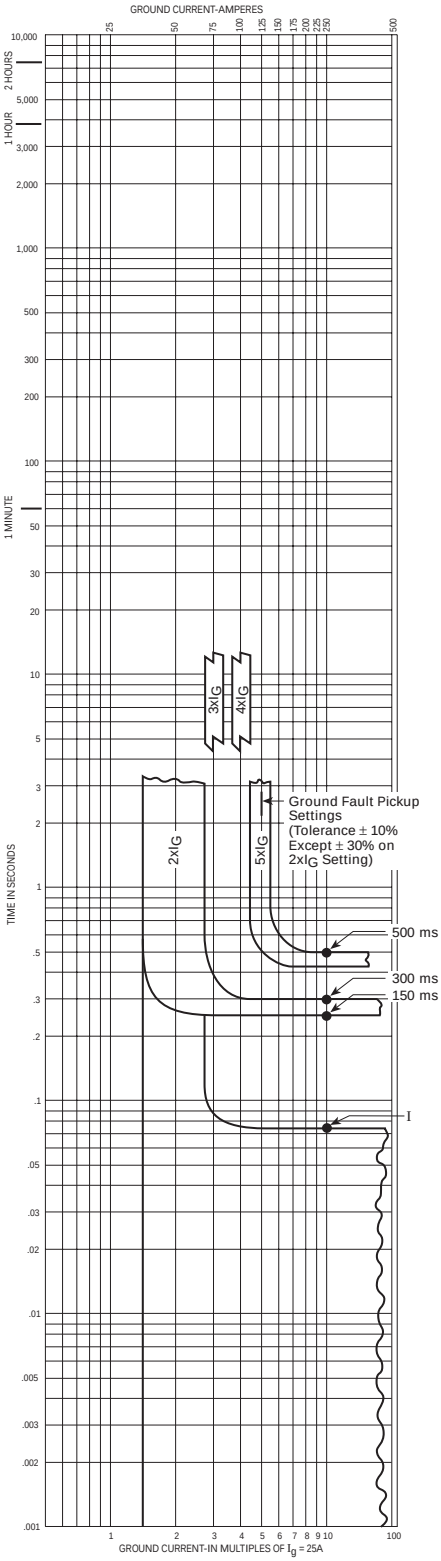
Notes
Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

① For phase time/current curves see SC-5640-93, SC-5641-93, SC-5646-93, or SC-5647-93.

AB DE-ION Circuit Breakers

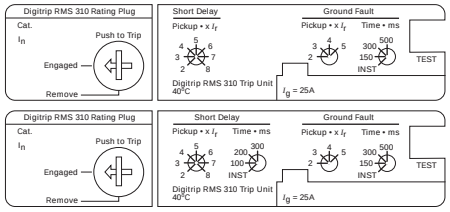
Ground Fault Protection (KES3125LSG, KES3125LSIG)



Circuit Breaker Time/Current Curves (Ground Current) ①

Series C® K-Frame Circuit Breakers
Equipped With Type KES Digitrip RMS 310 Units
For Ground Fault Protection

Type Digitrip RMS 310 Trip Unit for use with Circuit Breaker Types KD, HKD, KDC, CKD, and CHKD
For use with Trip Unit Catalog Numbers
KES3125LSG
KES3125LSIG

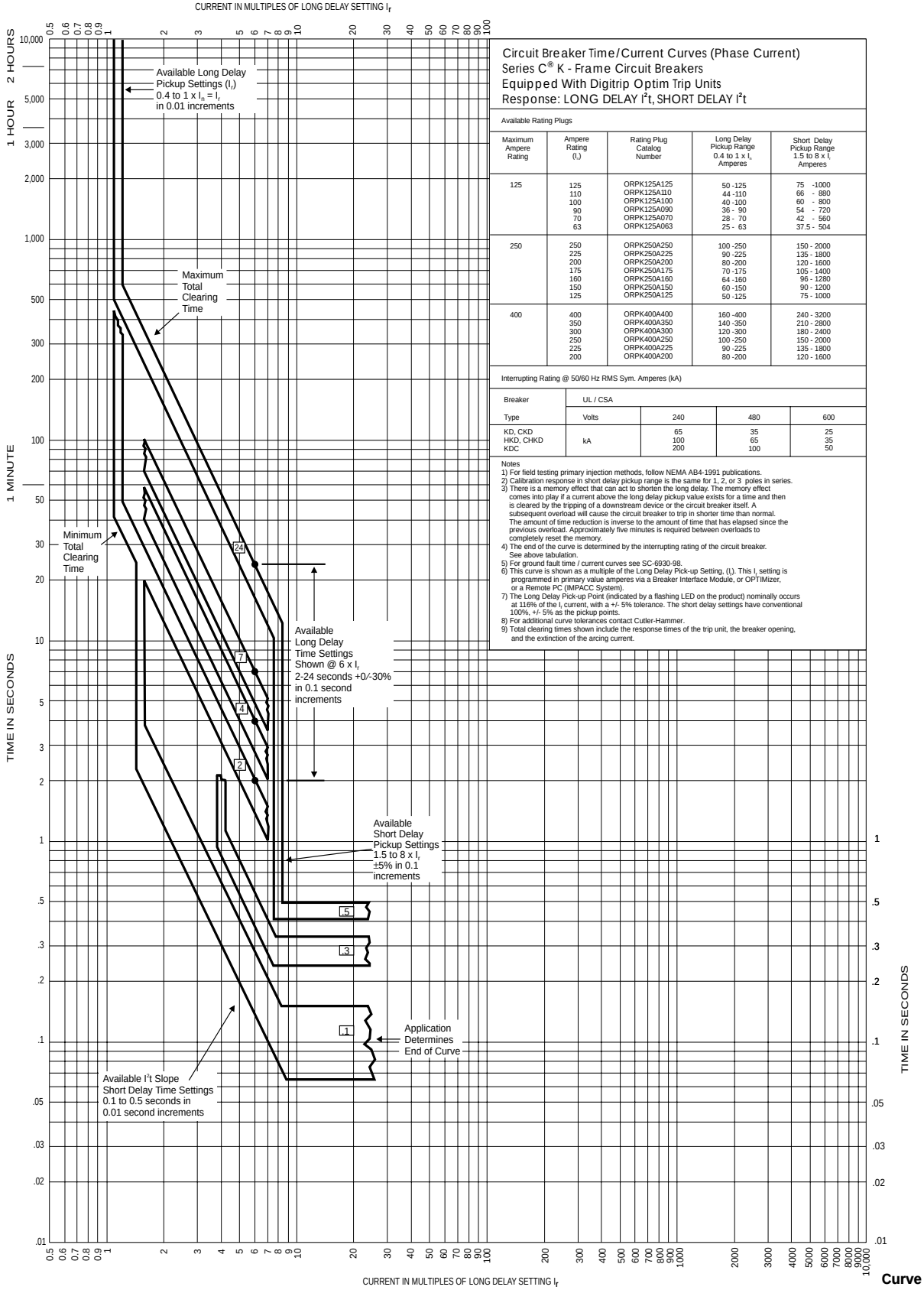


Notes
Curve accuracy applies from –20°C to +55°C ambient. For possible continuous ampere derating for ambient above 40°C, refer to Cutler-Hammer.

Digitrip RMS 310 trip units are suitable for functional field testing with test kit Cat. No. STK2. For field testing using primary injection methods, follow NEMA publication AB-4-1991.

① For phase time/current curves see SC-5642-93, SC-5643-93, SC-5648-93, or SC-5649-93.

K-Frame Circuit Breakers Equipped with Digitrip OPTIM Trip Units; Long Delay I^2t, Short Delay I^2t



Circuit Breaker Time/Current Curves (Phase Current)
Series C® K - Frame Circuit Breakers
Equipped With Digitrip Optim Trip Units
Response: LONG DELAY I^2t, SHORT DELAY I^2t

Available Rating Plugs

Maximum Ampere Rating	Ampere Rating (I_n)	Rating Plug Catalog Number	Long Delay Pickup Range 0.4 to 1 x I_n Amperes	Short Delay Pickup Range 1.5 to 8 x I_r Amperes
125	125	ORPK125A125	50 -125	75 -1000
	110	ORPK125A110	44 -110	66 - 880
	100	ORPK125A100	40 -100	60 - 800
	90	ORPK125A090	36 - 90	54 - 720
	70	ORPK125A070	28 - 70	42 - 560
	63	ORPK125A063	25 - 63	37.5 - 504
250	250	ORPK250A250	100 -250	150 - 2000
	225	ORPK250A225	90 -225	135 - 1800
	200	ORPK250A200	80 -200	120 - 1600
	175	ORPK250A175	70 -175	105 - 1400
	160	ORPK250A160	64 -160	96 - 1280
	150	ORPK250A150	60 -150	90 - 1200
	125	ORPK250A125	50 -125	75 - 1000
400	400	ORPK400A400	160 -400	240 - 3200
	350	ORPK400A350	140 -350	210 - 2800
	300	ORPK400A300	120 -300	180 - 2400
	250	ORPK400A250	100 -250	150 - 2000
	225	ORPK400A225	90 -225	135 - 1800
	200	ORPK400A200	80 -200	120 - 1600

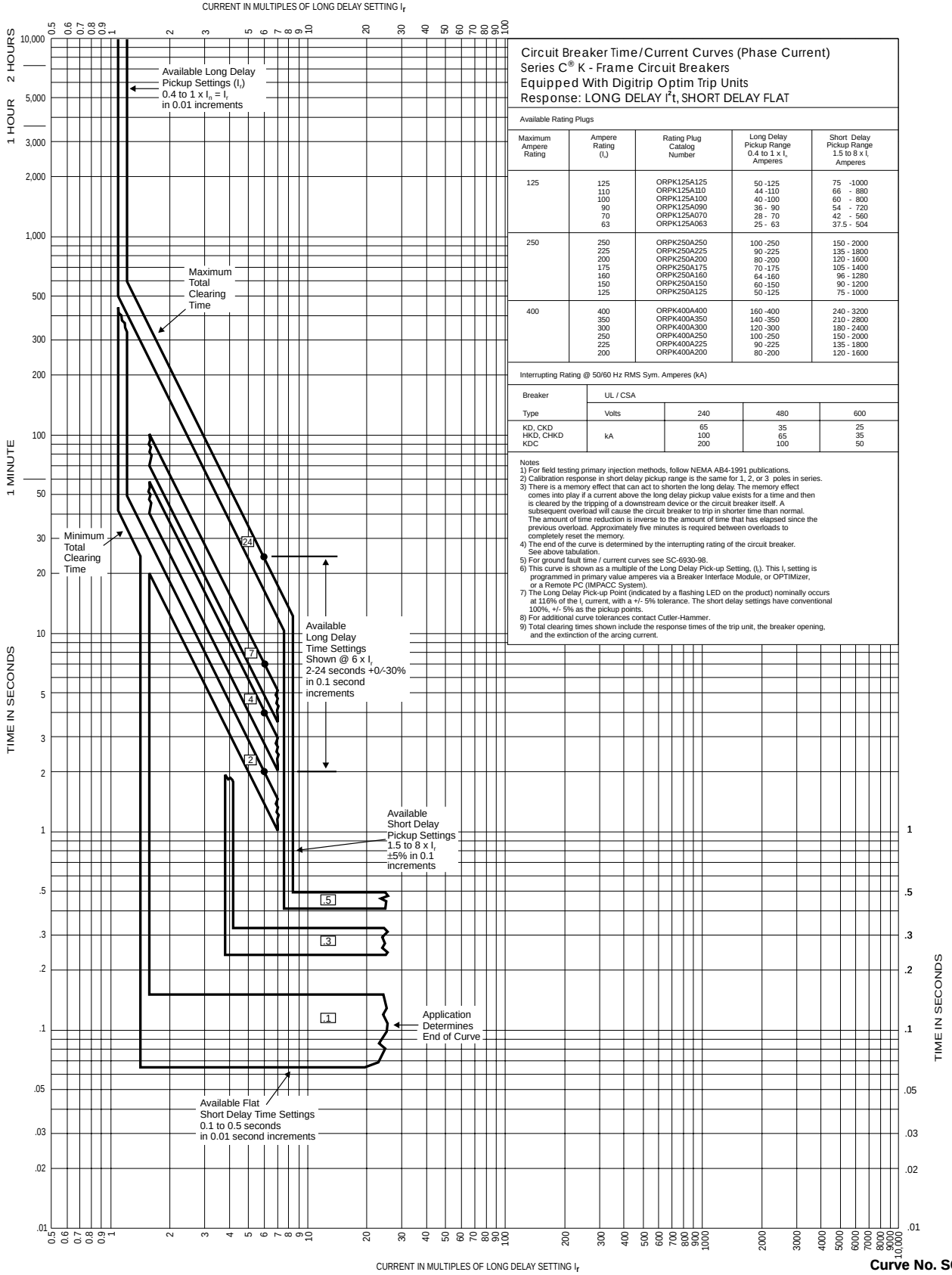
Interrupting Rating @ 50/60 Hz RMS Sym. Amperes (kA)

Breaker	UL / CSA			
Type	Volts	240	480	600
KD, CKD	kA	65	35	25
HKD, CHKD		100	65	35
KDC		200	100	50

Notes
1) For field testing primary injection methods, follow NEMA AB4-1991 publications.
2) Calibration response in short delay pickup range is the same for 1, 2, or 3 poles in series.
3) There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.
4) The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.
5) For ground fault time / current curves see SC-6930-98.
6) This curve is shown as a multiple of the Long Delay Pick-up Setting, (I_r). This I_r setting is programmed in primary value amperes via a Breaker Interface Module, or OPTIMizer, or a Remote PC (IMPACC System).
7) The Long Delay Pick-up Point (indicated by a flashing LED on the product) nominally occurs at 116% of the I_r current, with a +/- 5% tolerance. The short delay settings have conventional 100%, +/- 5% as the pickup points.
8) For additional curve tolerances contact Cutler-Hammer.
9) Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.

Curve No. SC-6924-98

K-Frame Circuit Breakers Equipped with Digitrip OPTIM Trip Units; Long Delay I^2t, Short Delay Flat



Circuit Breaker Time/Current Curves (Phase Current)
Series C® K - Frame Circuit Breakers
Equipped With Digitrip Optim Trip Units
Response: LONG DELAY I^2t, SHORT DELAY FLAT

Available Rating Plugs

Maximum Ampere Rating	Ampere Rating (I_n)	Rating Plug Catalog Number	Long Delay Pickup Range 0.4 to 1 x I_r Amperes	Short Delay Pickup Range 1.5 to 8 x I_r Amperes
125	125	ORPK125A125	50 -125	75 -1000
	110	ORPK125A110	44 -110	66 - 880
	100	ORPK125A100	40 -100	60 - 800
	90	ORPK125A090	36 - 90	54 - 720
	70	ORPK125A070	28 - 70	42 - 560
	63	ORPK125A063	25 - 63	37.5 - 504
250	250	ORPK250A250	100 -250	150 - 2000
	225	ORPK250A225	90 -225	135 - 1800
	200	ORPK250A200	80 -200	120 - 1600
	175	ORPK250A175	70 -175	105 - 1400
	160	ORPK250A160	64 -160	96 - 1280
	150	ORPK250A150	60 -150	90 - 1200
	125	ORPK250A125	50 -125	75 - 1000
400	400	ORPK400A400	160 -400	240 - 3200
	350	ORPK400A350	140 -350	210 - 2800
	300	ORPK400A300	120 -300	180 - 2400
	250	ORPK400A250	100 -250	150 - 2000
	225	ORPK400A225	90 -225	135 - 1800
	200	ORPK400A200	80 -200	120 - 1600

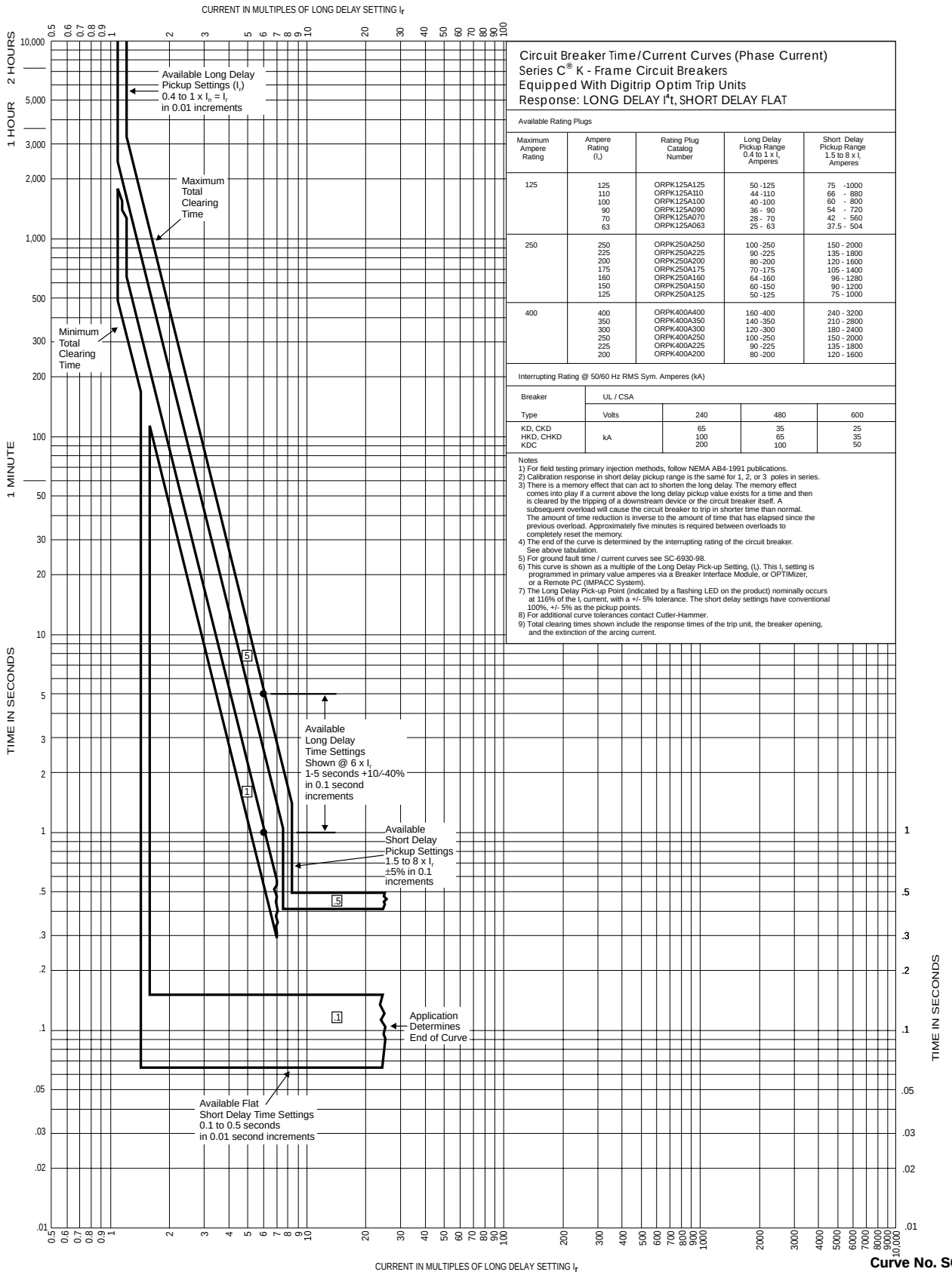
Interrupting Rating @ 50/60 Hz RMS Sym. Amperes (kA)

Breaker	UL / CSA			
Type	Volts	240	480	600
KD, CKD	kA	65	35	25
HKD, CHKD		100	65	35
KDC		200	100	50

Notes
1) For field testing primary injection methods, follow NEMA AB4-1991 publications.
2) Calibration response in short delay pickup range is the same for 1, 2, or 3 poles in series.
3) There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.
4) The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.
5) For ground fault time / current curves see SC-6930-98.
6) This curve is shown as a multiple of the Long Delay Pick-up Setting, (I_r). This I_r setting is programmed in primary value amperes via a Breaker Interface Module, or OPTIMizer, or a Remote PC (IMPACC System).
7) The Long Delay Pick-up Point (indicated by a flashing LED on the product) nominally occurs at 116% of the I_r current, with a +/- 5% tolerance. The short delay settings have conventional 100%, +/- 5% as the pickup points.
8) For additional curve tolerances contact Cutler-Hammer.
9) Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.

Curve No. SC-6925-98

K-Frame Circuit Breakers Equipped with Digitrip OPTIM Trip Units; Long Delay I^4t, Short Delay Flat



Circuit Breaker Time/Current Curves (Phase Current)
Series C® K - Frame Circuit Breakers
Equipped With Digitrip Optim Trip Units
Response: LONG DELAY I^4t, SHORT DELAY FLAT

Available Rating Plugs

Maximum Ampere Rating	Ampere Rating (I_n)	Rating Plug Catalog Number	Long Delay Pickup Range 0.4 to 1 x I_r Amperes	Short Delay Pickup Range 1.5 to 8 x I_r Amperes
125	125	ORPK125A125	50 -125	75 -1000
	110	ORPK125A110	44 -110	66 - 880
	100	ORPK125A100	40 -100	60 - 800
	90	ORPK125A090	36 - 90	54 - 720
	70	ORPK125A070	28 - 70	42 - 560
	63	ORPK125A063	25 - 63	37.5 - 504
250	250	ORPK250A250	100 -250	150 - 2000
	225	ORPK250A225	90 -225	135 - 1800
	200	ORPK250A200	80 -200	120 - 1600
	175	ORPK250A175	70 -175	105 - 1400
	160	ORPK250A160	64 -160	96 - 1280
	150	ORPK250A150	60 -150	90 - 1200
	125	ORPK250A125	50 -125	75 - 1000
400	400	ORPK400A400	160 -400	240 - 3200
	350	ORPK400A350	140 -350	210 - 2800
	300	ORPK400A300	120 -300	180 - 2400
	250	ORPK400A250	100 -250	150 - 2000
	225	ORPK400A225	90 -225	135 - 1800
	200	ORPK400A200	80 -200	120 - 1600

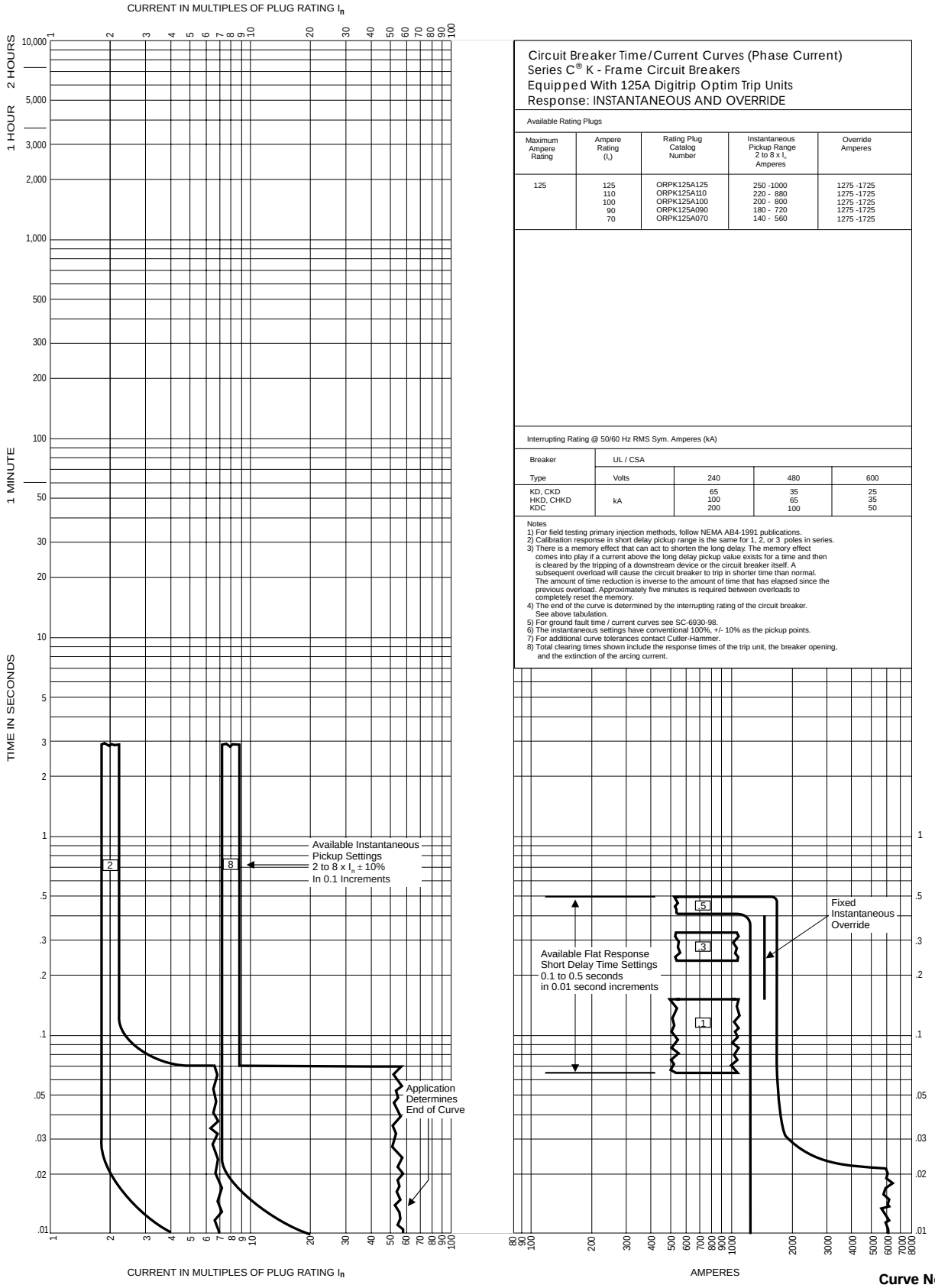
Interrupting Rating @ 50/60 Hz RMS Sym. Amperes (kA)

Breaker	UL / CSA			
Type	Volts	240	480	600
KD, CKD	kA	65	35	25
HKD, CHKD		100	65	35
KDC		200	100	50

Notes
1) For field testing primary injection methods, follow NEMA AB4-1991 publications.
2) Calibration response in short delay pickup range is the same for 1, 2, or 3 poles in series.
3) There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.
4) The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.
5) For ground fault time / current curves see SC-6930-98.
6) This curve is shown as a multiple of the Long Delay Pick-up Setting, (I_r). This I_r setting is programmed in primary value amperes via a Breaker Interface Module, or OPTIMizer, or a Remote PC (IMPACC System).
7) The Long Delay Pick-up Point (indicated by a flashing LED on the product) nominally occurs at 116% of the I_r current, with a +/- 5% tolerance. The short delay settings have conventional 100%, +/- 5% as the pickup points.
8) For additional curve tolerances contact Cutler-Hammer.
9) Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.

Curve No. SC-6926-98

K-Frame Circuit Breakers Equipped with 400A Digitrip OPTIM Trip Units; Instantaneous and Override



Circuit Breaker Time/Current Curves (Phase Current)
Series C® K - Frame Circuit Breakers
Equipped With 125A Digitrip Optim Trip Units
Response: INSTANTANEOUS AND OVERRIDE

Available Rating Plugs

Maximum Ampere Rating	Ampere Rating (I_n)	Rating Plug Catalog Number	Instantaneous Pickup Range 2 to 8 x I_n Amperes	Override Amperes
125	125	ORPK125A125	250 -1000	1275 -1725
	110	ORPK125A110	220 - 880	1275 -1725
	100	ORPK125A100	200 - 800	1275 -1725
	90	ORPK125A090	180 - 720	1275 -1725
	70	ORPK125A070	140 - 560	1275 -1725

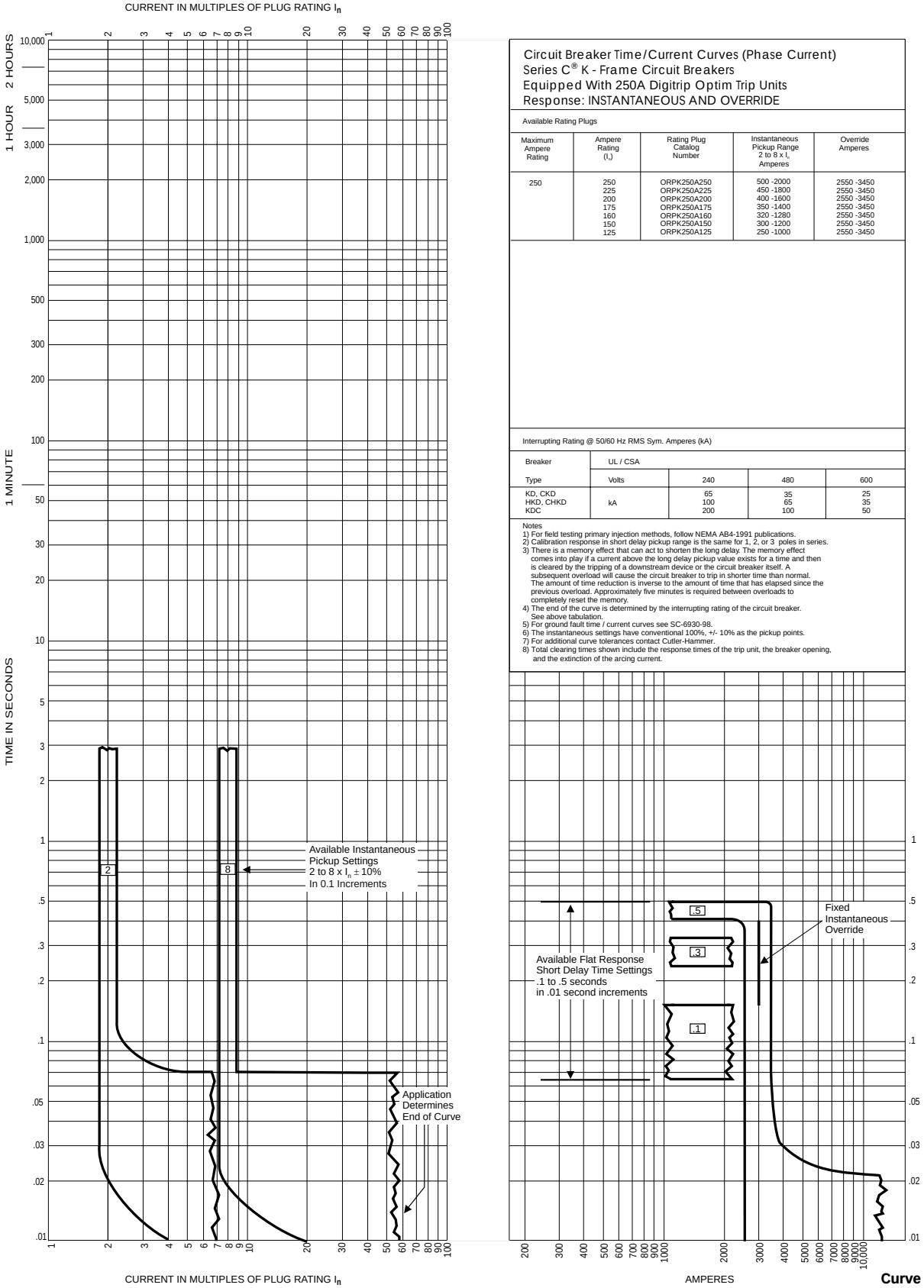
Interrupting Rating @ 50/60 Hz RMS Sym. Amperes (kA)

Breaker	UL / CSA			
Type	Volts	240	480	600
KD, CKD	kA	65	35	25
HKD, CHKD		100	65	35
KDC		200	100	50

Notes
1) For field testing primary injection methods, follow NEMA AB4-1991 publications.
2) Calibration response in short delay pickup range is the same for 1, 2, or 3 poles in series.
3) There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.
4) The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.
5) For ground fault time / current curves see SC-6930-98.
6) The instantaneous settings have conventional 100%, +/- 10% as the pickup points.
7) For additional curve tolerances contact Cutler-Hammer.
8) Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.

Curve No. SC-6927-98

K-Frame Circuit Breakers Equipped with 250A Digitrip OPTIM Trip Units; Instantaneous and Override



Circuit Breaker Time/Current Curves (Phase Current)
Series C® K - Frame Circuit Breakers
Equipped With 250A Digitrip Optim Trip Units
Response: INSTANTANEOUS AND OVERRIDE

Available Rating Plugs

Maximum Ampere Rating	Ampere Rating (I_n)	Rating Plug Catalog Number	Instantaneous Pickup Range 2 to 8 x I_n Amperes	Override Amperes
250	250	ORPK250A250	500 -2000	2550 -3450
	225	ORPK250A225	450 -1800	2550 -3450
	200	ORPK250A200	400 -1600	2550 -3450
	175	ORPK250A175	350 -1400	2550 -3450
	160	ORPK250A160	320 -1280	2550 -3450
	150	ORPK250A150	300 -1200	2550 -3450
	125	ORPK250A125	250 -1000	2550 -3450

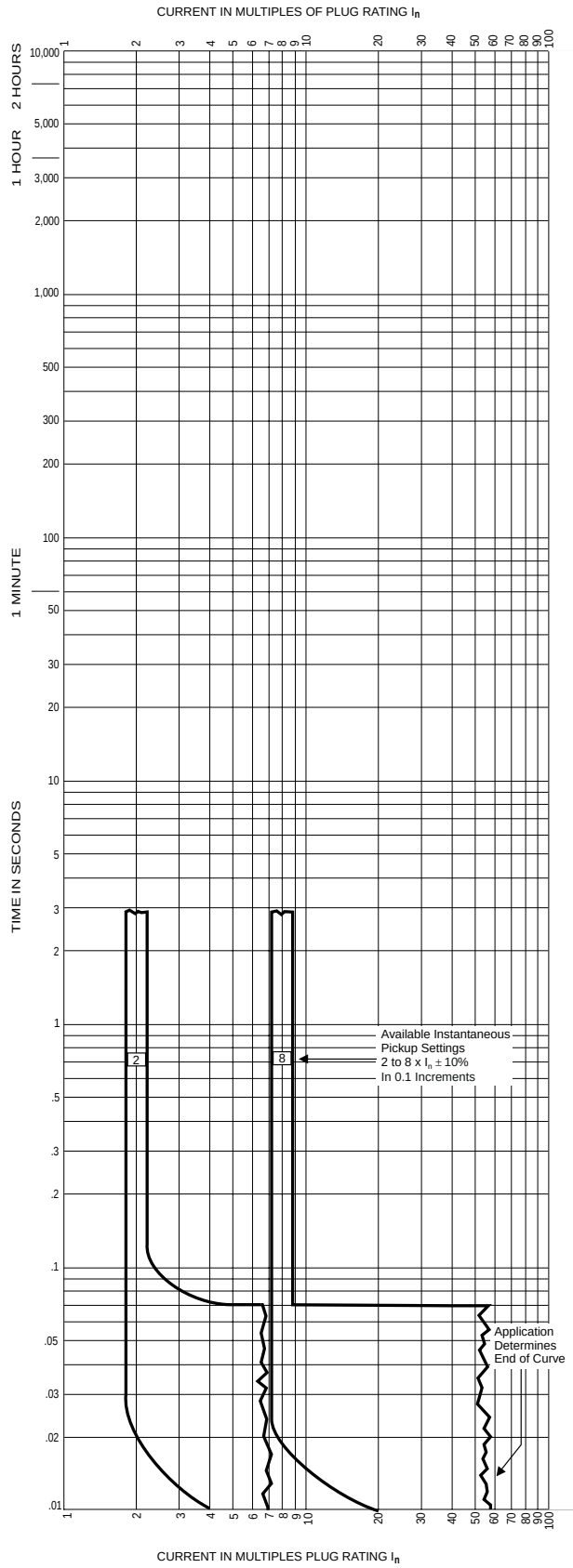
Interrupting Rating @ 50/60 Hz RMS Sym. Amperes (kA)

Breaker Type	UL / CSA Volts	240	480	600
KD, CKD	kA	65	35	25
HKD, CHKD		100	65	35
KDC		200	100	50

Notes
1) For field testing primary injection methods, follow NEMA AB4-1991 publications.
2) Calibration response in short delay pickup range is the same for 1, 2, or 3 poles in series.
3) There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.
4) The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.
5) For ground fault time / current curves see SC-6930-98.
6) The instantaneous settings have conventional 100%, +/- 10% as the pickup points.
7) For additional curve tolerances contact Cutler-Hammer.
8) Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.

Curve No. SC-6928-98

K-Frame Circuit Breakers Equipped with 125A Digitrip OPTIM Trip Units; Instantaneous and Override



Circuit Breaker Time/Current Curves (Phase Current)
Series C® K - Frame Circuit Breakers
Equipped With 400A Digitrip Optim Trip Units
Response: INSTANTANEOUS AND OVERRIDE

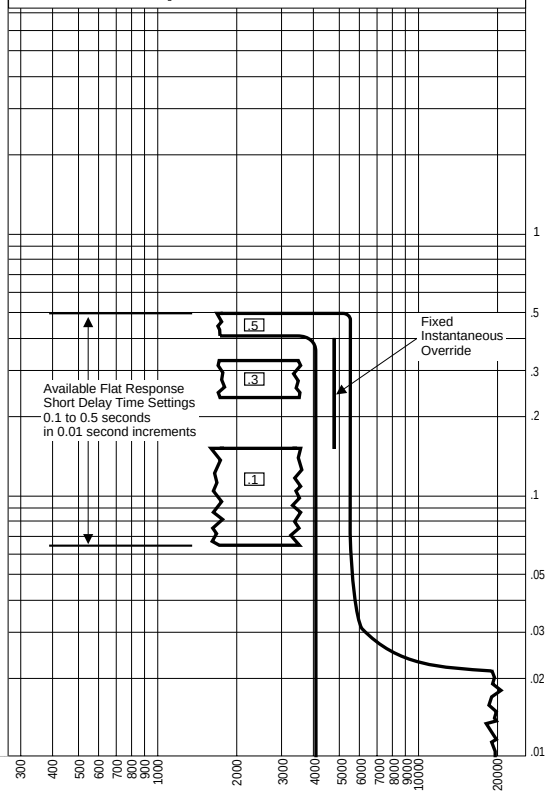
Available Rating Plugs

Maximum Ampere Rating	Ampere Rating (I_n)	Rating Plug Catalog Number	Instantaneous Pickup Range 2 to 8 x I_n Amperes	Override Amperes
400	400 350 300 250 225 200	ORPK400A400 ORPK400A350 ORPK400A300 ORPK400A250 ORPK400A225 ORPK400A200	800 -3200 700 -2800 600 -2400 500 -2000 450 -1800 400 -1600	4080 -5520 4080 -5520 4080 -5520 4080 -5520 4080 -5520 4080 -5520

Interrupting Rating @ 50/60 Hz RMS Sym. Amperes (kA)

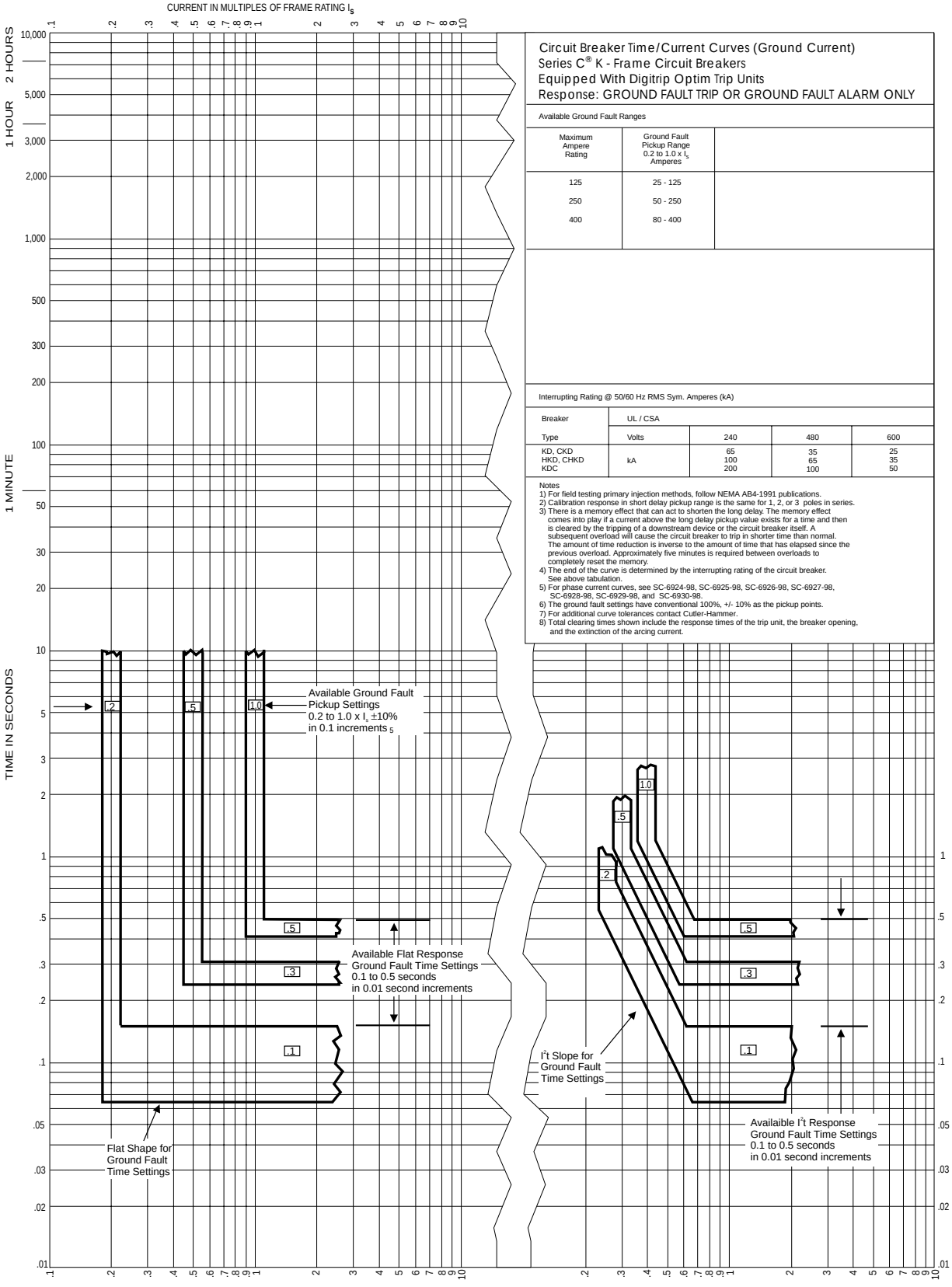
Breaker Type	UL / CSA Volts	240	480	600
KD, CKD HKD, CHKD KDC	kA	65 100 200	35 65 100	25 35 50

Notes
1) For field testing primary injection methods, follow NEMA AB4-1991 publications.
2) Calibration response in short delay pickup range is the same for 1, 2, or 3 poles in series.
3) There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.
4) The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.
5) For ground fault time / current curves see SC-6930-98.
6) The instantaneous settings have conventional 100%, +/- 10% as the pickup points.
7) For additional curve tolerances contact Cutler-Hammer.
8) Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.



Curve No. SC-6929-98

K-Frame Circuit Breakers Equipped with Digitrip OPTIM Trip Units; Ground Fault or Ground Fault Alarm Only



Circuit Breaker Time/Current Curves (Ground Current)
Series C® K - Frame Circuit Breakers
Equipped With Digitrip Optim Trip Units
Response: GROUND FAULT TRIP OR GROUND FAULT ALARM ONLY

Available Ground Fault Ranges

Maximum Ampere Rating	Ground Fault Pickup Range 0.2 to 1.0 x I_s Amperes
125	25 - 125
250	50 - 250
400	80 - 400

Interrupting Rating @ 50/60 Hz RMS Sym. Amperes (kA)

Breaker	UL / CSA			
Type	Volts	240	480	600
KD, CKD HKD, CHKD KDC	kA	65 100 200	35 65 100	25 35 50

Notes
1) For field testing primary injection methods, follow NEMA AB4-1991 publications.
2) Calibration response in short delay pickup range is the same for 1, 2, or 3 poles in series.
3) There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.
4) The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.
5) For phase current curves, see SC-6924-98, SC-6925-98, SC-6926-98, SC-6927-98, SC-6928-98, SC-6929-98, and SC-6930-98.
6) The ground fault settings have conventional 100%, +/- 10% as the pickup points.
7) For additional curve tolerances contact Cutler-Hammer.
8) Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.

Curve No. SC-6930-98