Series G NHH circuit breaker time current curves

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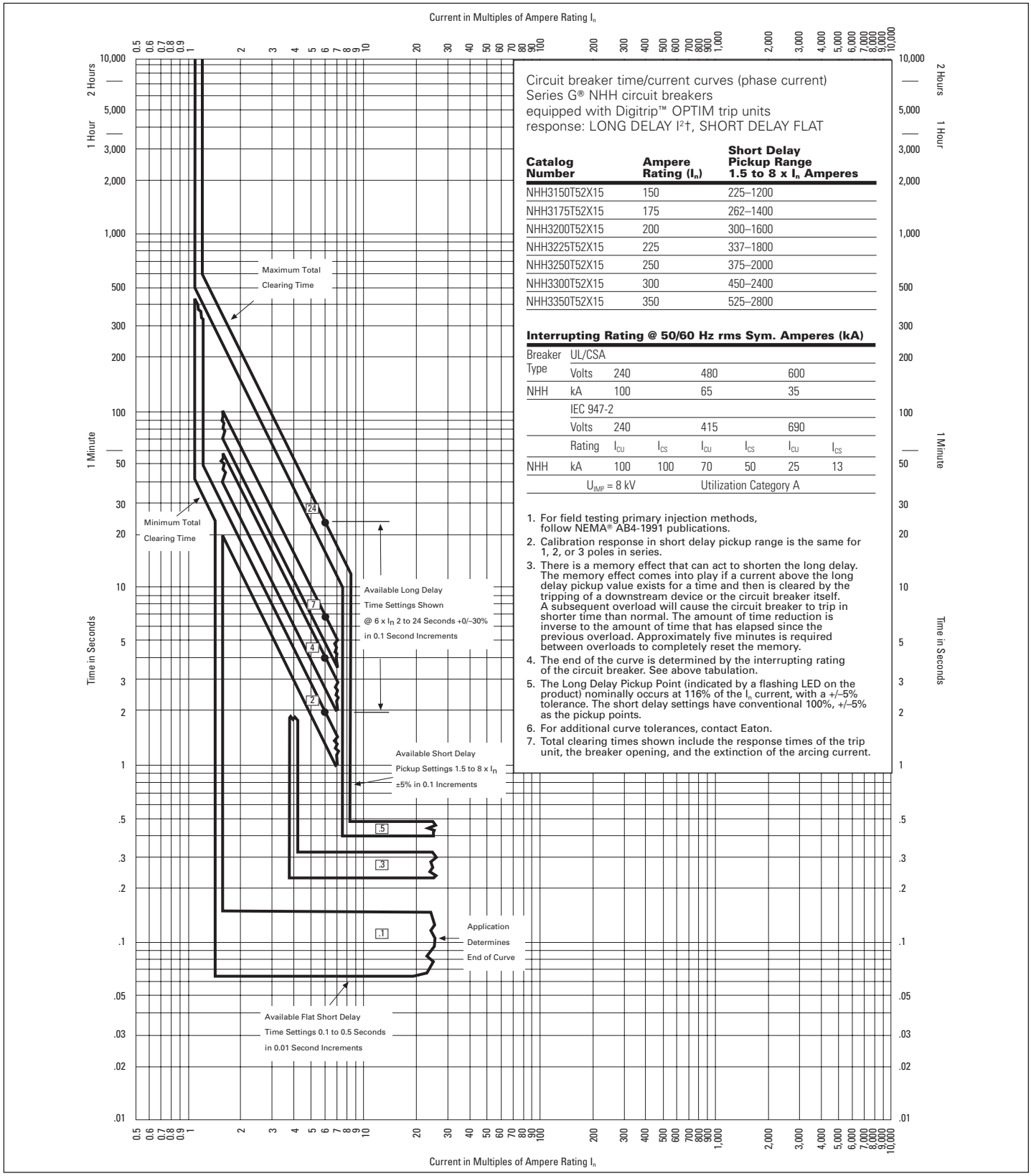
Powering Business Worldwide

NHH circuit breakers equipped with Digitrip™ OPTIM™ trip units; long delay I²t, short delay flat

AB DE-ION® circuit breakers



Circuit breaker time/current curves (phase current)
Series G® NHH circuit breakers
equipped with Digitrip™ OPTIM trip units
response: LONG DELAY I²t, SHORT DELAY FLAT

Catalog Number	Ampere Rating (I_n)	Short Delay Pickup Range 1.5 to 8 x I_n Amperes
NHH3150T52X15	150	225–1200
NHH3175T52X15	175	262–1400
NHH3200T52X15	200	300–1600
NHH3225T52X15	225	337–1800
NHH3250T52X15	250	375–2000
NHH3300T52X15	300	450–2400
NHH3350T52X15	350	525–2800

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

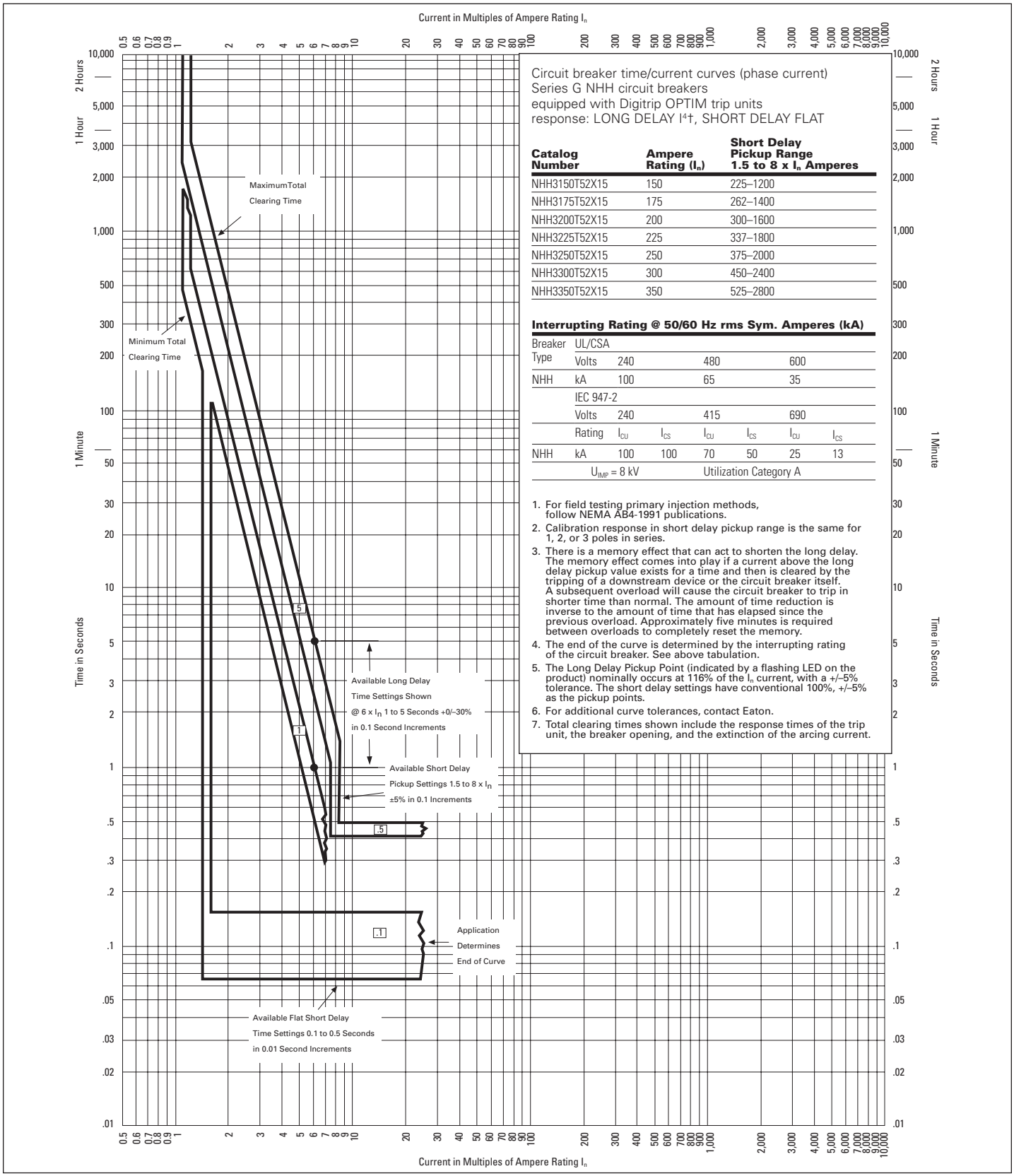
Breaker Type	UL/CSA						
	Volts	240		480		600	
NHH	kA	100		65		35	
	IEC 947-2						
	Volts	240		415		690	
	Rating	I_{CU}	I_{CS}	I_{CU}	I_{CS}	I_{CU}	I_{CS}
NHH	kA	100	100	70	50	25	13
	U_{IMP} = 8 kV			Utilization Category A			

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. The Long Delay Pickup Point (indicated by a flashing LED on the product) nominally occurs at 116% of the I_n current, with a +/–5% tolerance. The short delay settings have conventional 100%, +/–5% as the pickup points.
6. For additional curve tolerances, contact Eaton.
7. Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.

Figure 1. Type NHH—Curve Number TC01207016E—Long Delay I²t, Short Delay Flat

NHH circuit breakers equipped with Digitrip OPTIM trip units; long delay I^4t, short delay flat

AB DE-ION circuit breakers



Circuit breaker time/current curves (phase current)
Series G NHH circuit breakers
equipped with Digitrip OPTIM trip units
response: LONG DELAY I^4t, SHORT DELAY FLAT

Catalog Number	Ampere Rating (I_n)	Short Delay Pickup Range 1.5 to 8 x I_n Amperes
NHH3150T52X15	150	225–1200
NHH3175T52X15	175	262–1400
NHH3200T52X15	200	300–1600
NHH3225T52X15	225	337–1800
NHH3250T52X15	250	375–2000
NHH3300T52X15	300	450–2400
NHH3350T52X15	350	525–2800

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

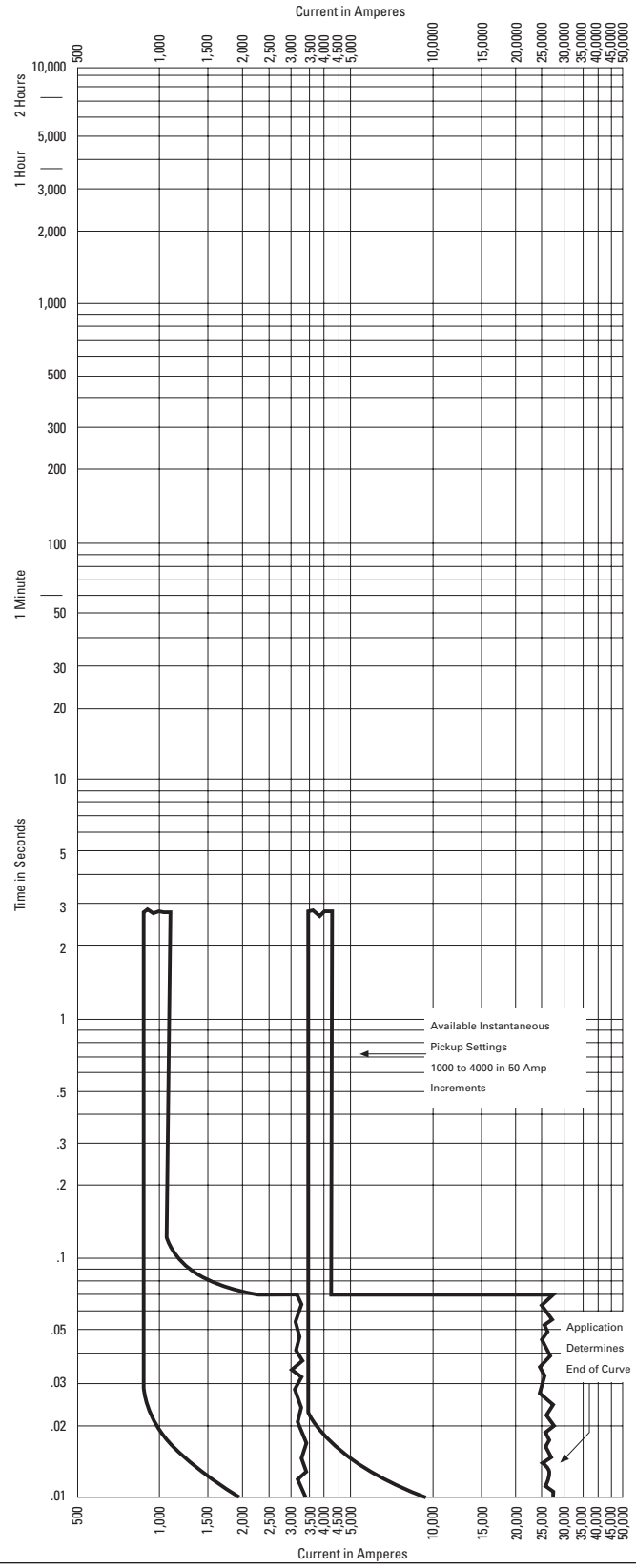
Breaker Type	UL/CSA						
	Volts	240		480		600	
NHH	kA	100		65		35	
	IEC 947-2						
	Volts	240		415		690	
	Rating	I_{CU}	I_{CS}	I_{CU}	I_{CS}	I_{CU}	I_{CS}
NHH	kA	100	100	70	50	25	13
	U_{IMP} = 8 kV			Utilization Category A			

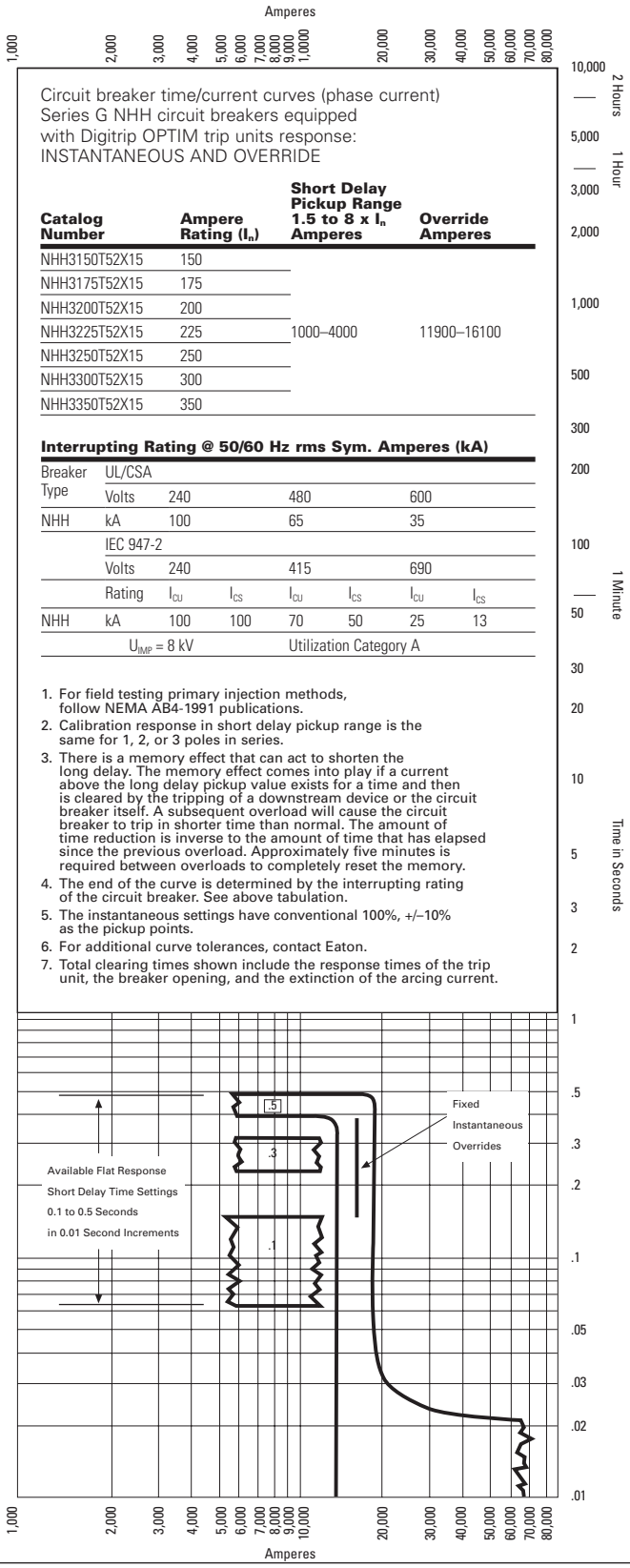
1. For field testing primary injection methods, follow NEMA AB4-1991 publications.
2. Calibration response in short delay pickup range is the same for 1, 2, or 3 poles in series.
3. There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the 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. The Long Delay Pickup Point (indicated by a flashing LED on the product) nominally occurs at 116% of the I_n current, with a +/–5% tolerance. The short delay settings have conventional 100%, +/–5% as the pickup points.
6. For additional curve tolerances, contact Eaton.
7. Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.

Figure 2. Type NHH—Curve Number TC01207017E—Long Delay I^4t, Short Delay Flat

NHH circuit breakers equipped with Digitrip OPTIM trip units; instantaneous and override response

AB DE-ION circuit breakers





Circuit breaker time/current curves (phase current)
Series G NHH circuit breakers equipped
with Digitrip OPTIM trip units response:
INSTANTANEOUS AND OVERRIDE

Catalog Number	Ampere Rating (I_n)	Short Delay Pickup Range 1.5 to 8 x I_n Amperes	Override Amperes
NHH3150T52X15	150		
NHH3175T52X15	175		
NHH3200T52X15	200		
NHH3225T52X15	225	1000–4000	11900–16100
NHH3250T52X15	250		
NHH3300T52X15	300		
NHH3350T52X15	350		

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

Breaker Type	UL/CSA						
	Volts	240		480		600	
NHH	kA	100		65		35	
	IEC 947-2						
	Volts	240		415		690	
	Rating	I_{CU}	I_{CS}	I_{CU}	I_{CS}	I_{CU}	I_{CS}
NHH	kA	100	100	70	50	25	13
	U_{IMP} = 8 kV			Utilization Category A			

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. The instantaneous settings have conventional 100%, +/–10% as the pickup points.
6. For additional curve tolerances, contact Eaton.
7. Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.

Figure 3. Type NHH—Curve Number TC01207018E—Instantaneous and Override

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