

Drawing No.



January 2002 Supersedes Application Data 32-870, dated February, 2000

Characteristic Curves for Types DS/DSL and DSII/DSLII Circuit Breakers With Digitrip RMS 510/610/810/910 Trip Units

This Application Data contains the following time-current curves:

Curve Description	(Curve No.)
Typical Instantaneous Time-Phase Current Characteristic Curve based on I _n , for Types DS/DSL and DSII/DSLII Circuit Breakers	8887C00 (SC-5619)
Typical Long Delay/Short Delay Time-Phase Current Characteristic Curve based on I _r for Types DS/DSL and DSII/DSLII Circuit Breakers	8887C01 (SC-5620)
Typical Ground Fault/Protection Time-Current Characteristic Curve based on I _n , for Types DS/DSL and DSII/DSLII Circuit Breakers	8887C02 (SC-5261)

Refer to Application Data 36-783 for the DSL and DSLII Limiter Time-Current Characteristic Curves.

Definitions

 \mathbf{I}_n is the maximum value of continuous current for which the trip unit can be set. \mathbf{I}_n is the basis (or reference) for Long Delay pickup, Instantaneous pickup and the Ground pickup protection current settings.

The value of I_n is printed on the Rating Plug.

 I_r is the basis for Short Delay (if provided) protection current settings. The value of I_r is the Long Delay pickup Current Setting $x\ I_n$.

Standard Ratings (60Hz)

71		Frame Rating	Interrupting Capacity, RMS Symmetrical Amperes (kA)		
DS-	DSII-	Amperes	With Instantaneous Trip		
			240V	480V	600V
206	308	800A	42,000	30.000	30,000
206H	—	800A	50,000	42,000	42,000
_	508	800A	65,000	50,000	42,000
206E	—	800A	65,000	65,000	50,000
	608	800A	65,000	65,000	50,000
416	516	1600A	65,000	50,000	42,000
416H	616	1600A	65,000	65,000	50,000
420	620	2000A	65,000	65,000	50,000
632	632	3200A	85,000	65,000	65,000
840	840	4000A	130,000	85,000	85,000
850	850	5000A	130,000	85,000	85,000

Types DSL (206, 416, 420, 632 and 840) and DSLII (308, 516, 620, 632 and 840) 200kA, 600V ac Max.





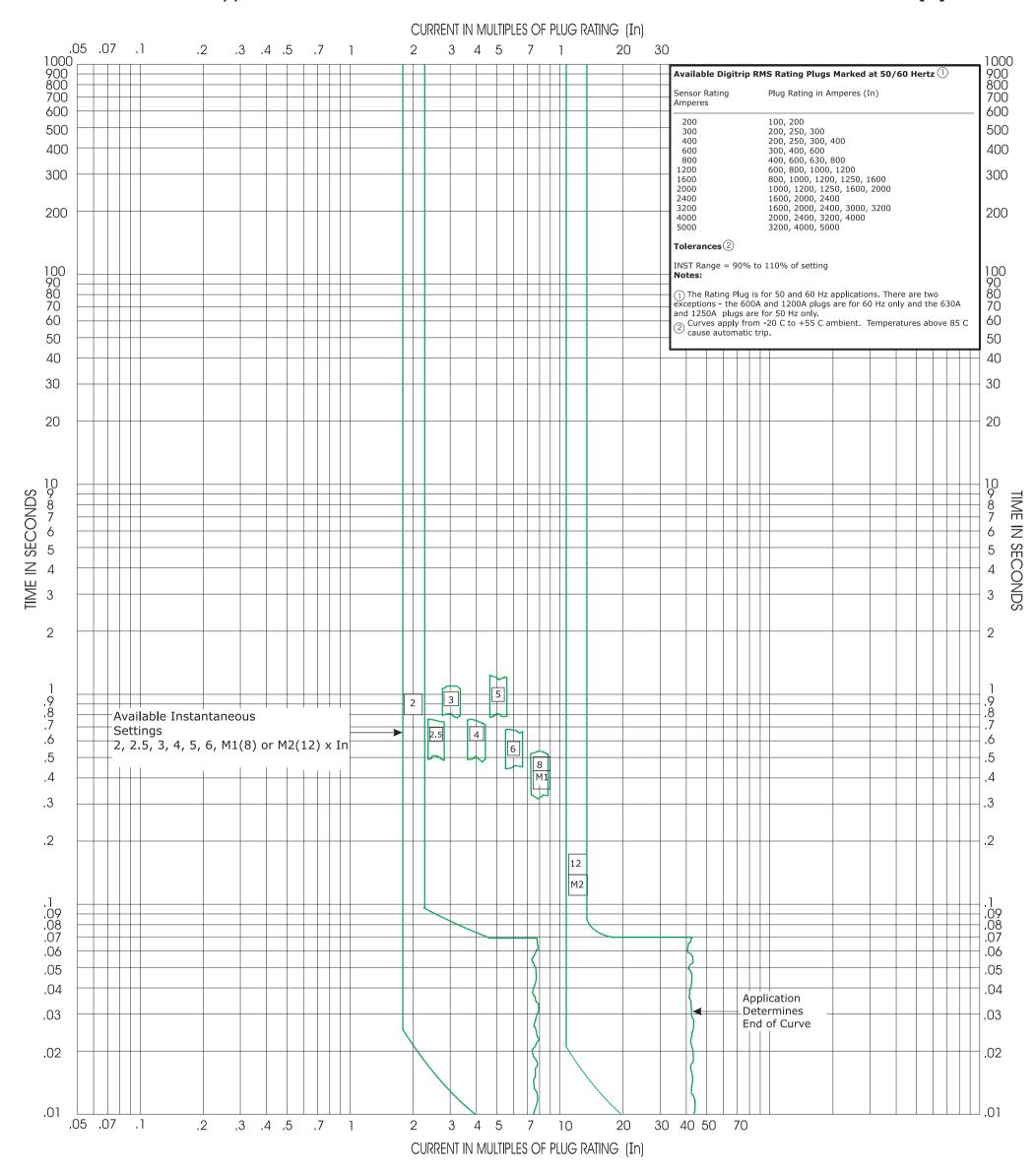
IMPORTANT

TRIP UNITS ARE **NOT AVAILABLE** WITH **ONLY INSTANTANEOUS** PROTECTION. **THIS CURVE MUST BE USED** in conjunction **WITH** Curve No SC-5620 for **LONG DELAY** (and, if applicable, **SHORT DELAY**) **PROTECTION** to obtain the complete time-current characteristic.

Application Data **32-870**

Cutler-Hammer

Types **DS/DSL** and **DSII/DSLII** Circuit Breakers **DIGITRIP RMS 510/610/810/910 Trip Units**Typical **Instantaneous** Time-**Phase** Current Characteristic Curve **(I)**





Cutler-Hammer

Types DS/DSL and DS II/DSL II Circuit Breakers with **DIGITRIP RMS 510/610/810/910 Trip Units** Typical Long Delay and Short Delay Time-Phase Current Characteristic Curve (LS)

CURRENT IN MULTIPLES OF THE LONG DELAY SETTING I

1000.05 .07 900 800 700 Ava 7 20 10 .3 .4 .5 1000 900 800 Available Digitrip RMS Rating Plugs Marked 50/60 Hz ① Available Sensor Rating Plug Rating in Amperes (In) 700 Long Delay (Ir) 600 600 200 300 400 100, 200 200, 250, 300 200, 250, 300, 400 Settings 500 500 .5, .6, .7, .8, .85, .9, .95, or 1 x **I**n= **I**r 200, 250, 300, 400 300, 400, 500 400, 600, 630, 800 600, 800, 1000, 1200 800, 1000, 1200, 1250, 1600 1000, 1200, 1250, 1600 1600, 2000, 2400 1600, 2000, 2400 6, 3000 \$, 3200 \$ 400 400 300 1600 300 2000 2400 3200 ⑤ 4000 5000 Maximum 2000, 2400, 3200, 4000 3200, 4000, 5000 200 200 Total Clearing Tolerances 2 Time LDS Range = 100% to 110% of setting LDT Range = 67% to 100% of setting shown @ 6x**Ir** SDS Range = 90% to 110% of setting 100 90 80 70 100 90 80 70 (1) The Rating Plug is for 50 and 60 Hz applications. There are two exceptions. The 600A and 1200A plugs are for 60 Hertz only and the 630A and 1250A plugs are for 50 Hertz only. (2) Curves apply from -20 C to -55 C ambient; temperatures above 85 C cause automatic trip. (3) With zone interlocking on short delay utilized and no restraining signal, the Minimum time band SDM applies--regardless of setting. (4) Long Time Memory function automatically shortens long delay time as Overload conditions recur. (5) DS/DSII - 632 Frames (only) built after 6/1/98, have improved measuring 60 60 50 50 40 40 30 30 ⑤DS/DSII - 632 Frames (only) built after 6/1/98, have improved measuring accuracy for 3 phase application. This was accomplished by improving the auxiliary current transformers to compensate for phase to phase magnetic 20 interaction. However, note that for single phase field testing, max tolerance 20 for pickup and time may exceed above specified by 5%. Under 3 phase application, normal tolerances apply. Available Long 10 9 8 7 10 9 8 7 Delay Time -TIME IN SECONDS Settings Z Shown 6 6 @ 6 x **I**r SECONDS 5 5 2, 4, 7, 10, 12, 15, 4 4 2 20, 24 3 3 2 Available Short Delay Settings 10 3 9 2, 2.5, 3, 4, 5, 6, . 8 .7 S1(8) or S2(10) x Ir 7 .6 4 .5 .5 .5* ③ .5 3 S1 .4 .4 .4 (3 Available Flat Response .3 _.3*_[3 .3 .3 ③ Short Delay Time Settings .1, .2, .3, .4, .5, Second .2 ③ .2 .2 Available SDM .1* ③ Application I2t Shape on Determines 09 Short Delay Time-09 08 07 End of Curve Settings .07 Indicated by * .06 .06 .05 .05 .04 .04 .03 .03 .02 .02 .01 .05 30 40 50 70 100 4 5 20 20

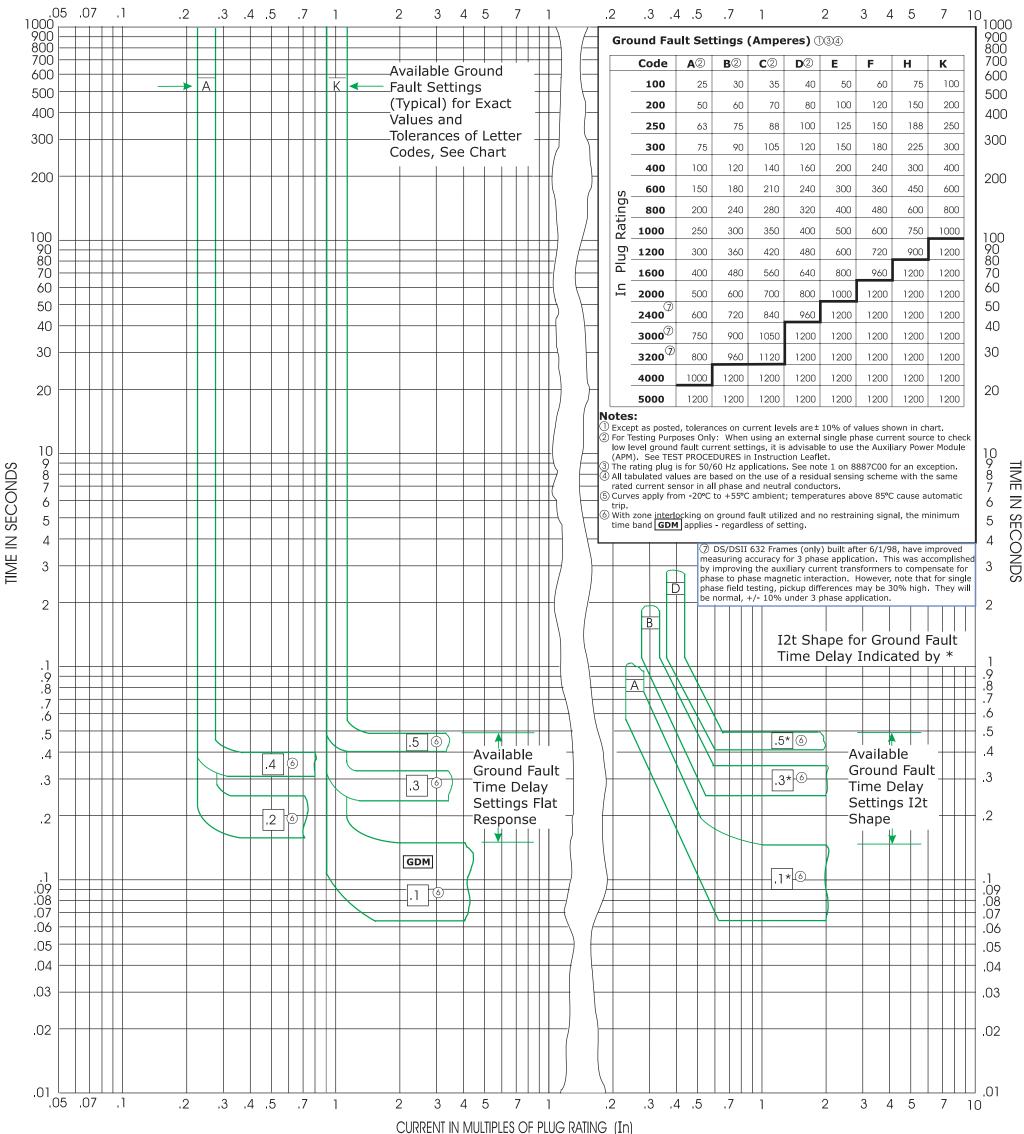
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Cutler-Hammer

Types **DS/DSL** and **DSII/DSLII** Circuit Breakers with **DIGITRIP RMS 510/610/810/910 Trip Units**Typical Time-**Ground** Current Characteristic Curve **(G)**

CURRENT IN MULTIPLES OF PLUG RATING (In)





Curve number SC-5621-02 Dwg. No. 8887C02 January 2002