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APPENDIX-A

PROTECTION DATA AND CHARACTERISTIC CURVES

Table A.1: Summary of protection data

Protection Unit	Description of the Characteristic
GSS CB Relay	Standard: IEC VI I_p = 400 A , TMS = 0.5 , I_{inst} = 2,400 A
AR1	Standard: IEC VI I_p = 220 A , TMS = 0.5 , I_{inst} = 1,800 A
AR2	Standard: IEC VI I_p = 220 A , TMS = 0.5 , I_{inst} = 1,800 A
AR3	Standard: IEC VI I_p = 220 A , TMS = 0.5 , I_{inst} = 1,800 A
AR4	Standard: IEC VI I_p = 220 A , TMS = 0.5 , I_{inst} = 1,800 A
AR5	Standard: IEC VI I_p = 220 A , TMS = 0.25 , I_{inst} = 1,800 A
F1	Rating: 100A , Type: K (Fast) , Minimum Melting Time-Current Characteristic
F2	Rating: 100A , Type: K (Fast) , Minimum Melting Time-Current Characteristic
F3	Rating: 100A , Type: K (Fast) , Minimum Melting Time-Current Characteristic
F4	Rating: 80A , Type: K (Fast) , Minimum Melting Time-Current Characteristic
F5	Rating: 80A , Type: K (Fast) , Minimum Melting Time-Current Characteristic

Acc. to IEC 60255-3 or BS 142, Section 3.5.2 (see also Figure 4-1 and 4-2)

NORMAL INVERSE (Type A) $t = \frac{0.14}{(I/I_p)^{0.02} - 1} \cdot T_p$ [s]

VERY INVERESE (Type B) $t = \frac{13.5}{(I/I_p)^{1} - 1} \cdot T_p$ [s]

EXTREMELY INV. (Type C) $t = \frac{80}{(I/I_p)^{2} - 1} \cdot T_p$ [s]

LONG INVERSE (Type B) $t = \frac{120}{(I/I_p)^{1} - 1} \cdot T_p$ [s]

For All Characteristics

t	trip time in seconds
T_p	setting value of the time multiplier
I	fault current
I_p	setting value of the pickup current

The tripping times for $I/I_p \geq 20$ are identical with those for $I/I_p = 20$.

For zero-sequence current read 3I0p instead of I_p and T_{3I0p} instead of T_p;
for ground fault read I_{Ep} instead of I_p and T_{IEp} instead of T_p

Pickup Threshold	approx. 1.10 · I_p

Figure A.1: TCC curves according to IEC

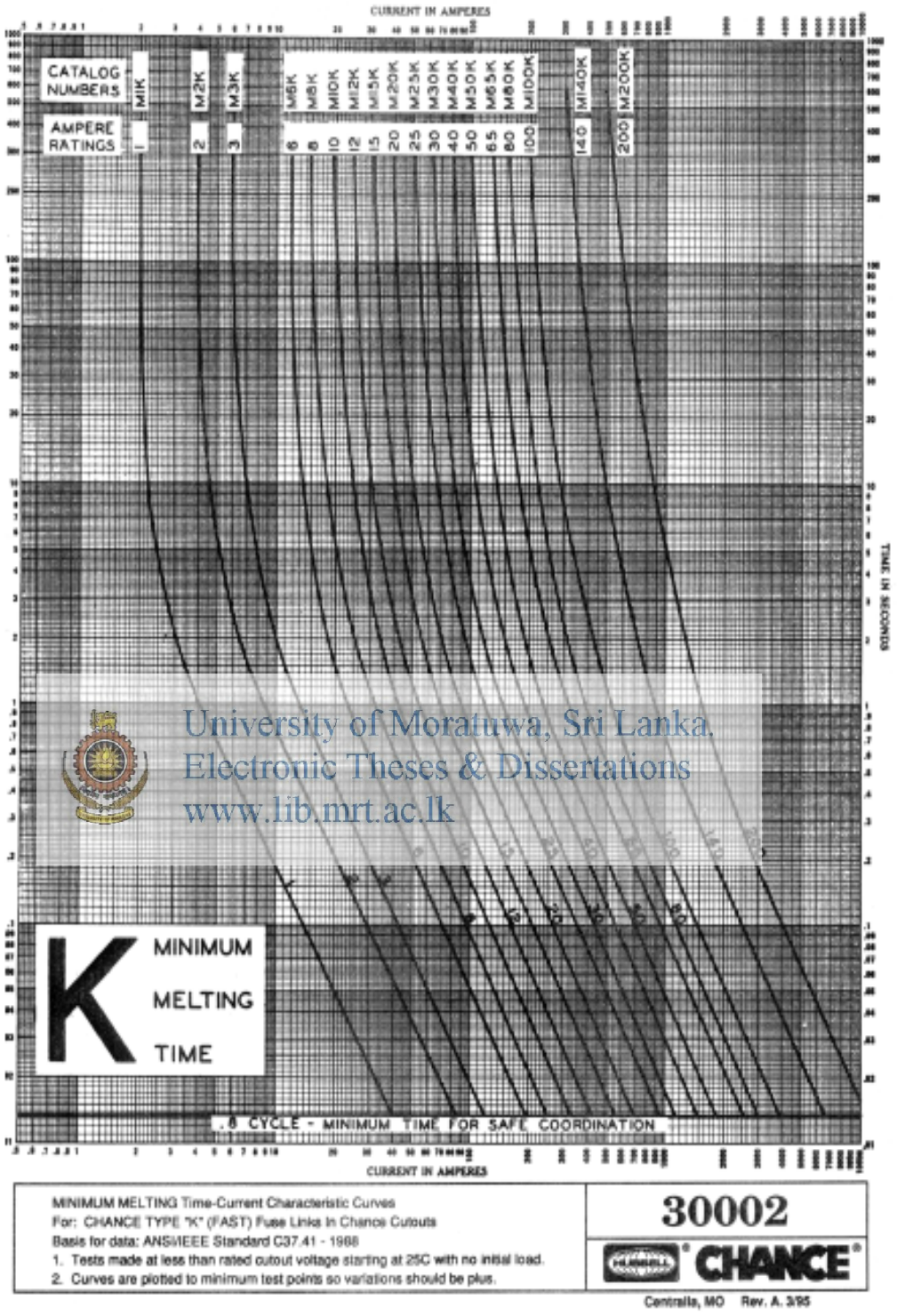

Figure A.2: Minimum Melting Time-Current Characteristics Curves, CHANCE TYPE “K” (FAST) Fuse Link, Data Sheet available at: http://www.hubbellpowersystems.com/switching/dist/fuselinks/fuse-curves/)