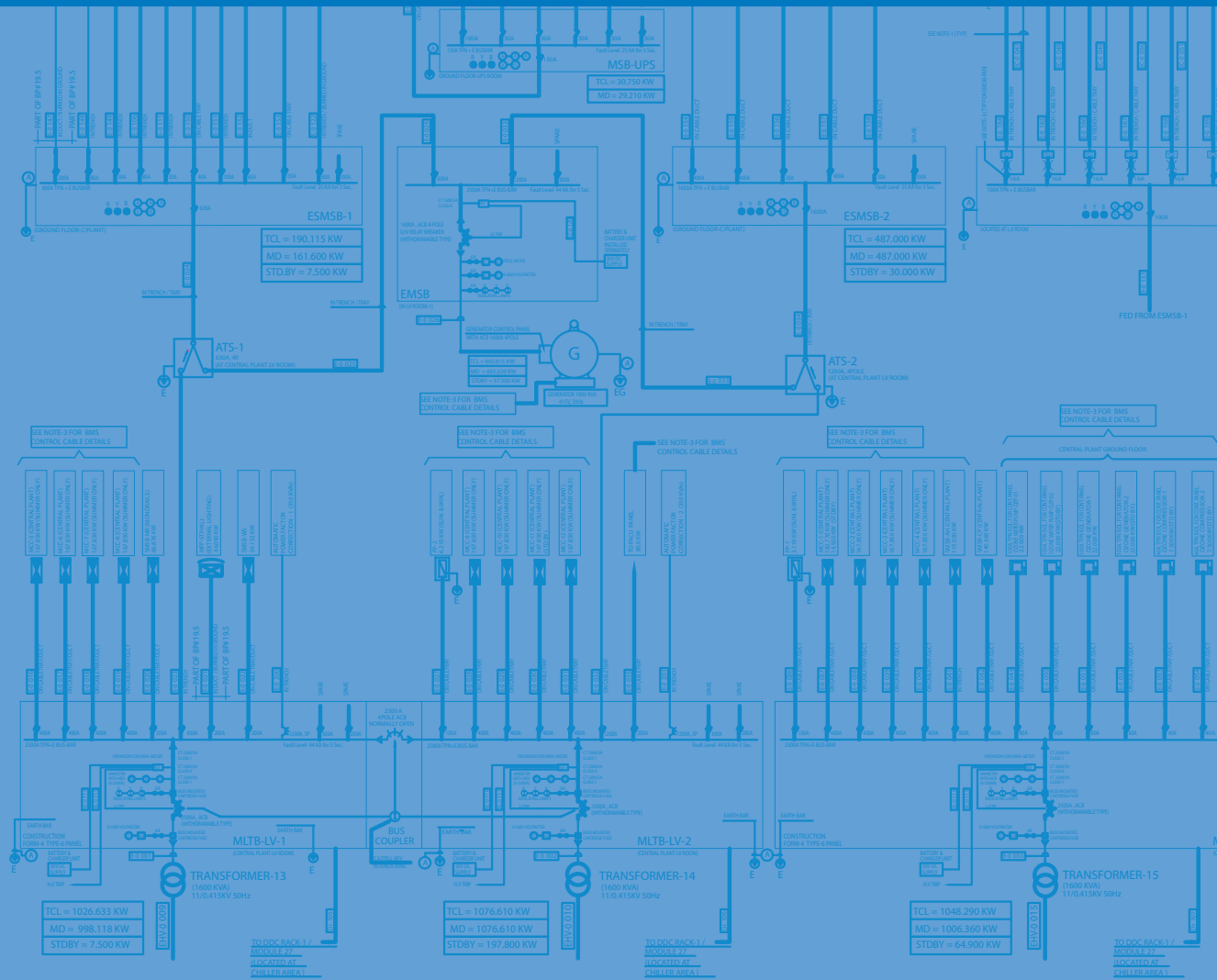


Discrimination and Back-up tables

Technical Data

- Moulded Case Circuit Breakers
- Miniature Circuit Breakers
- HRC Fuses



Contents:

Overload & Short Circuit Discrimination

- Circuit Breakers upstream / Circuit Breakers downstream – Table A
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Back-up Protection – Series ratings – Co-ordination

- MCCBs or fuses upstream / MCBs downstream – Table D
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OVERLOAD & SHORT CIRCUIT DISCRIMINATION (SELECTIVITY) – FAULT LEVEL TO WHICH DISCRIMINATION IS ACHIEVED (A)

Fuses upstream / circuit breakers downstream

Table B



UPSTREAM → BS88 Fuses MEM SB3 to SH10 'T' represents maximum discrimination to kA rating level of the downstream device

DOWNSTREAM ↓

FUSE RATING (A)		20	25	32	40	50	63	80	100	125	160	200	250	315	355	400	450	500	560	630	710	800
BREAKER RATING (A)																						
EATON MCB 10kA IEC60898 & 15kA IEC60947-2 Series: EMBH EMCH EMDH	1	.16kA	.28kA	.65kA	1.6kA	2.6kA	5.4kA	7.5kA	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	2	.16kA	.28kA	.65kA	1.6kA	2.6kA	5.4kA	7.5kA	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	4	.16kA	.28kA	.65kA	1.6kA	2.6kA	5.4kA	7.5kA	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	6	.16kA	.28kA	.65kA	1.6kA	2.6kA	5.4kA	7.5kA	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	8		.23kA	.45kA	1.6kA	2.6kA	5.4kA	7.5kA	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	10		.23kA	.45kA	1kA	1.6kA	2.7kA	3.7kA	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	13			.28kA	.65kA	1.6kA	2.7kA	3.7kA	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	16			.28kA	.65kA	.95kA	1.8kA	2.3kA	7kA	T	T	T	T	T	T	T	T	T	T	T	T	T
	20				.6kA	.88kA	1.75kA	2.2kA	6.1kA	T	T	T	T	T	T	T	T	T	T	T	T	T
	25					.88kA	1.75kA	2.2kA	6.1kA	T	T	T	T	T	T	T	T	T	T	T	T	T
	32					.75kA	1.5kA	1.8kA	4.6kA	6.2kA	T	T	T	T	T	T	T	T	T	T	T	T
	40						1.2kA	1.6kA	4kA	5.5kA	T	T	T	T	T	T	T	T	T	T	T	T
	50							1.4kA	3.4kA	4.5kA	7kA	T	T	T	T	T	T	T	T	T	T	T
	63								.5kA	3kA	4.3kA	T	T	T	T	T	T	T	T	T	T	T
EATON MCB IEC60947-2 63A=25kA, 80-100A=20kA, 125A=15kA Series EMBS, EMCS, EMDS	63								.5kA	3kA	4.3kA	T	T	T	T	T	T	T	T	T	T	
	80											3.5kA	4.5kA	6kA	9kA	22kA	24kA	24kA	T	T	T	
	100											3.5kA	4.5kA	6kA	9kA	22kA	24kA	24kA	T	T	T	
	125													6kA	9kA	22kA	24kA	24kA	T	T	T	
Series-G E-frame MCCB 18kA & 25kA Versions	16				.45kA	.53kA	1.6kA	1.6kA	1.6kA	1.8kA	2.3kA	4.3kA	8kA	14kA	22kA	T	T	T	T	T	T	
	20					.55kA	1kA	1kA	1.6kA	1.8kA	2.3kA	4.3kA	8kA	14kA	18kA	T	T	T	T	T	T	
	32							.92kA	1.6kA	1.75kA	2.2kA	4kA	6kA	8.5kA	13.T	T	T	T	T	T	T	
	40								1.6kA	1.75kA	2.2kA	4kA	6kA	8.5kA	11kA	T	T	T	T	T	T	
	50									1.7kA	2.1kA	3.5kA	4.9kA	6.7kA	9.6kA	23.5kA	23.5kA	23.5kA	T	T	T	
	63									1.7kA	2.1kA	3.5kA	4.9kA	6.7kA	9.6kA	23.5kA	23.5kA	23.5kA	T	T	T	
	80											3.5kA	4.5kA	6kA	9kA	22kA	24kA	24kA	T	T	T	
	100											3.5kA	4.5kA	6kA	9kA	22kA	24kA	24kA	T	T	T	
	125													6kA	9kA	22kA	24kA	24kA	T	T	T	
Series-G E-frame MCCB 45kA & 70kA Versions	20					.55kA	1kA	1kA	1.6kA	1.8kA	2.3kA	4.3kA	8kA	14kA	18kA	25kA	25kA	25kA	25kA	25kA	25kA	
	32							.92kA	1.6kA	1.75kA	2.2kA	4kA	6kA	8.5kA	13.25kA	25kA	25kA	25kA	25kA	25kA	25kA	
	40								1.6kA	1.75kA	2.2kA	3.7kA	5.25kA	7.5kA	11kA	25kA	25kA	25kA	25kA	25kA	25kA	
	50									1.7kA	2.1kA	3.5kA	4.9kA	6.7kA	9.6kA	23.5kA	23.5kA	23.5kA	25kA	25kA	25kA	
	63									1.7kA	2.1kA	3.5kA	4.9kA	6.7kA	9.6kA	23.5kA	23.5kA	23.5kA	25kA	25kA	25kA	
	80											3.5kA	4.5kA	6kA	9kA	22kA	24kA	24kA	25kA	25kA	25kA	
	100											3.5kA	4.5kA	6kA	9kA	22kA	24kA	24kA	25kA	25kA	25kA	
	125													6kA	9kA	22kA	24kA	24kA	25kA	25kA	25kA	
Series-G J-frame MCCB 45kA & 70kA Versions	50									2.2kA	2.75kA	4.6kA	7kA	8.8kA	12kA	24kA	24kA	24kA	25kA	40kA	40kA	
	63										2.75kA	4.3kA	7kA	8.8kA	12kA	24kA	24kA	24kA	25kA	40kA	40kA	
	80											4.2kA	6.2kA	8kA	10kA	22kA	24kA	24kA	25kA	40kA	40kA	
	100											4.1kA	6.2kA	8kA	10kA	22kA	24kA	24kA	25kA	40kA	40kA	
	125													8kA	10kA	22kA	24kA	24kA	25kA	40kA	40kA	
	160														9.5kA	19kA	22kA	22kA	25kA	40kA	40kA	
	200																		25kA	40kA	40kA	
250																			25kA	25kA	40kA	
Series-G L-frame MCCB 50kA & 70kA Versions	250																	8kA	9.5kA	18kA	18kA	
	320																		9kA	14kA	14kA	
	400																					
	500																					
	630																					

OVERLOAD & SHORT CIRCUIT DISCRIMINATION (SELECTIVITY) - FAULT LEVEL TO WHICH DISCRIMINATION IS ACHIEVED (A)
Circuit breakers upstream / circuit breakers downstream

OVERLOAD & SHORT CIRCUIT DISCRIMINATION (SELECTIVITY) – FAULT LEVEL TO WHICH DISCRIMINATION IS ACHIEVED (A)

Eaton Magnum ACBs upstream / Eaton Series G MCCBs downstream

Table C



UPSTREAM →

DOWNSTREAM ↓

BREAKER RATING (A)		Magnum ACB Range - Utilisation Category B (provides for time graded discrimination)								
		800	1250	1600	2000	2500	3200	4000	5000	6300
Series-G E-frame MCCB (* = up to Icu rated breaking capacity of downstream MCCB)	16	T*	T*	T*	T*	T*	T*	T*	T*	T*
	20	T*	T*	T*	T*	T*	T*	T*	T*	T*
	32	T*	T*	T*	T*	T*	T*	T*	T*	T*
	40	T*	T*	T*	T*	T*	T*	T*	T*	T*
	50	T*	T*	T*	T*	T*	T*	T*	T*	T*
	63	T*	T*	T*	T*	T*	T*	T*	T*	T*
	80	T*	T*	T*	T*	T*	T*	T*	T*	T*
	100	T*	T*	T*	T*	T*	T*	T*	T*	T*
	125	T*	T*	T*	T*	T*	T*	T*	T*	T*
160	T*	T*	T*	T*	T*	T*	T*	T*	T*	
Series-G J-frame MCCB (* = up to Icu rated breaking capacity of downstream MCCB)	50	T*	T*	T*	T*	T*	T*	T*	T*	T*
	63	T*	T*	T*	T*	T*	T*	T*	T*	T*
	80	T*	T*	T*	T*	T*	T*	T*	T*	T*
	100	T*	T*	T*	T*	T*	T*	T*	T*	T*
	125	T*	T*	T*	T*	T*	T*	T*	T*	T*
	160	T*	T*	T*	T*	T*	T*	T*	T*	T*
	200	T*	T*	T*	T*	T*	T*	T*	T*	T*
250	T*	T*	T*	T*	T*	T*	T*	T*	T*	
Series-G L-frame MCCB (* = up to Icu rated breaking capacity of downstream MCCB)	250	T*	T*	T*	T*	T*	T*	T*	T*	T*
	320	T*	T*	T*	T*	T*	T*	T*	T*	T*
	400	T*	T*	T*	T*	T*	T*	T*	T*	T*
	500	T*	T*	T*	T*	T*	T*	T*	T*	T*
	630	T*	T*	T*	T*	T*	T*	T*	T*	T*
Series-G N-frame MCCB (* = up to Icu rated breaking capacity of downstream MCCB)	800	T*	T*	T*	T*	T*	T*	T*	T*	T*
	1250		T*	T*	T*	T*	T*	T*	T*	T*
	1600		T*	T*	T*	T*	T*	T*	T*	T*

OVERLOAD & SHORT CIRCUIT DISCRIMINATION (SELECTIVITY) - FAULT LEVEL TO WHICH DISCRIMINATION IS ACHIEVED (A)
Eaton Magnum ACBs upstream / Eaton Series G MCCBs downstream

BACKUP PROTECTION* – FAULT LEVEL TO WHICH PROTECTION IS ACHIEVED (kA) (* Also known as ‘series-rating’ or ‘co-ordination’)
 MCCBs or fuses upstream / MCCBs downstream

Table E

UPSTREAM → (max.settings)

DOWNSTREAM ↓

BREAKER RATING (A)			MCCB				BS FUSE				
			Series-G J FRAME MCCB		Series-G L FRAME MCCB		Series-G N FRAME MCCB		Series-G R FRAME MCCB	BS88	
			45kA	70kA	50kA	70kA	50kA	70kA	70kA	80kA	
			all current ratings		all current ratings		all current ratings		all current ratings		
Series-G E-frame MCCB	18kA	all current ratings	40kA	40kA							80kA
	25kA		40kA	40kA							80kA
	45kA		45kA	70kA	50kA	70kA	50kA	70kA	70kA		80kA
	70kA			70kA		70kA		70kA	70kA		80kA
Series-G J-frame MCCB	45kA	all current ratings	45kA	70kA	50kA	70kA	50kA	70kA	70kA		80kA
	70kA			70kA		70kA		70kA	70kA		80kA
Series-G L-frame MCCB	50kA	all current ratings					50kA	70kA	70kA		
	70kA							70kA	70kA		
Series-G N-frame MCCB	50kA	all current ratings					50kA	70kA	70kA		
	70kA							70kA	70kA		
	100kA										
Series-G R-frame MCCB	70kA	all current ratings							70kA		
	100kA										
											200A Max

BACKUP PROTECTION* - FAULT LEVEL TO WHICH PROTECTION IS ACHIEVED (kA)
 (* Also known as ‘series-rating’ or ‘co-ordination’)
 MCCBs or fuses upstream / MCCBs downstream