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Protection functions	ANSI code	B21	B22	B80	B83
Phase overcurrent ⁽¹⁾	50/51			8	8
Earth fault / Sensitive earth fault ⁽¹⁾	50N/51N 50G/51G			8	8
Breaker failure	50BF			1	1
Negative sequence / unbalance	46			2	2
Positive sequence undervoltage	27D	2	2	2	2
Remanent undervoltage	27R	1	1	2	2
Undervoltage (L-L or L-N)	27	2/1 ⁽³⁾	2/1 ⁽³⁾	4	4
Overvoltage (L-L or L-N)	59	2	2	4	4
Neutral voltage displacement	59N	2	2	2	2
Negative sequence overvoltage	47			2	2
Overfrequency	81H	1	1	2	2
Underfrequency	81L	2	2	4	4
Rate of change of frequency	81R		1		
Synchro-check ⁽²⁾	25			□	□

The figures indicate the number of units available for each protection function

■ standard, □ options.

(1) Protection functions with 2 groups of settings.

(2) With optional MCS025 synchro-check module.

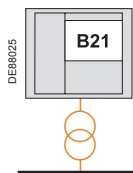
(3) 2 undervoltage (L-L) and 1 undervoltage (L-N).

Voltage monitoring

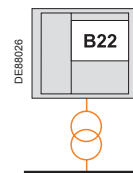
- voltage and frequency monitoring.

Monitoring of the 3 phase voltages and the residual voltage on busbars: Sepam B21 or B22

- load-shedding-specific function: 81L.



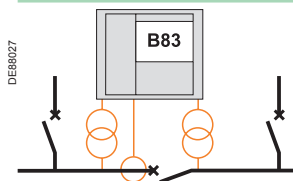
- load-shedding-specific functions: 81L, 81R.



Coupling circuit-breaker protection

- busbar short-circuit protection
- voltage and frequency monitoring.

Monitoring of the 3 phase voltages and the residual voltage on 2 both half-busbars: Sepam B83



Incomer protection with additional busbar voltage monitoring

- busbar short-circuit protection
- line voltage and frequency monitoring.

Additional busbar voltage monitoring: Sepam B80

