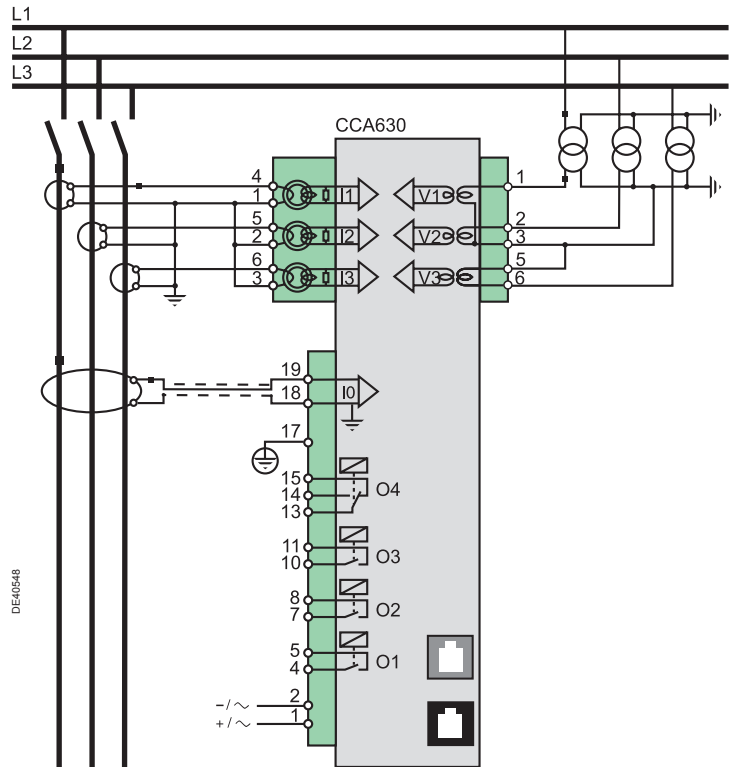


17 types of Sepam series 40

- S40, S41, S42, S43, S44, S50, S51, S52, S53, S54: Substation incomers and feeders protection
- T40, T42, T50, T52: transformer protection.
- M40, M41: motor protection.
- G40: generator protection.

Protection	ANSI code	S40	S50	S41	S51	S42	S52	S43	S53	S44	S54	T40	T50	T42	T52	M40	M41	G40
Phase overcurrent	50/51	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Phase overcurrent cold load pick-up / blocking	CLPU 50/51		4		4		4		4		4		4		4			
Voltage-restrained overcurrent	50V/51V																	1
Earth fault / Sensitive earth fault	50N/51N 50G/51G	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Earth fault cold load pick-up / blocking	CLPU 50/51N		4		4		4		4		4		4		4			
Breaker failure	50BF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Negative sequence / unbalance	46	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Directional phase overcurrent	67					2	2							2	2			
Directional earth fault	67N/67NC			2	2	2	2	2	2									2
Directional active overpower	32P			1	1	1	1	1	1									1
Directional reactive overpower	32Q/40																	1
Thermal overload	49RMS											2	2	2	2	2	2	2
Phase undercurrent	37																	1
Excessive starting time, locked rotor	48/51LR/14																	1
Starts per hour	66																	1
Positive sequence undervoltage	27D																	2
Remanent undervoltage	27R																	1
Undervoltage <sup>(1)</sup>	27/27S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Overvoltage <sup>(1)</sup>	59	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Neutral voltage displacement	59N	2	2	2	2	2	2	2	2			2	2	2	2	2	2	2
Negative sequence overvoltage	47	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Overfrequency	81H	2	2	2	2	2	2	2	2			2	2	2	2	2	2	2
Underfrequency	81L	4	4	4	4	4	4	4	4			4	4	4	4	4	4	4
Recloser (4 cycles)	79	□	□	□	□	□	□	□	□	□	□							
Temperature monitoring (8 or 16 RTDs)	38/49T											□	□	□	□	□	□	□
Thermostat / Buchholz	26/63											□		□				
Broken conductor	46BC		1		1		1		1		1		1		1			

Metering	S40 to S44	S50 to S54	T40 to T52	M40 to M41	G40
Phase current I1, I2, I3 RMS, residual current I0	■	■	■	■	■
Demand current I1, I2, I3, peak demand current IM1, IM2, IM3	■	■	■	■	■
Voltage U21, U32, U13, V1, V2, V3, residual voltage V0	■	■	■	■	■
Positive sequence voltage Vd / rotation direction	■	■	■	■	■
Negative sequence voltage Vi	■	■	■	■	■
Frequency	■	■	■	■	■
Active, reactive and apparent power P, Q, S	■	■	■	■	■
Peak demand power PM, QM, power factor	■	■	■	■	■
Calculated active and reactive energy (±W.h, ±var.h)	■	■	■	■	■
Active and reactive energy by pulse counting (±W.h, ±varh)	□	□	□	□	□
Temperature	□	□	□	□	□
<b>Network and machine diagnosis</b>					
Tripping context	■	■	■	■	■
Tripping current TripI1, TripI2, TripI3, TripI0	■	■	■	■	■
Unbalance ratio / negative sequence current Ii	■	■	■	■	■
Phase displacement φ0, φ1, φ2, φ3	■	■	■	■	■
Disturbance recording	■	■	■	■	■
Thermal capacity used	■	■	■	■	■
Remaining operating time before overload tripping	■	■	■	■	■
Waiting time after overload tripping	■	■	■	■	■
Running hours counter / operating time	■	■	■	■	■
Starting current and time	■	■	■	■	■
Cable arcing fault detection	■	■	■	■	■
Fault locator	■	■	■	■	■
Start inhibit time, number of starts before inhibition	■	■	■	■	■
<b>Switchgear diagnosis</b>					
Cumulative breaking current	■	■	■	■	■
Trip circuit supervision	□	□	□	□	□
Number of operations, operating time, charging time	□	□	□	□	□
CT / VT supervision	60FL	■	■	■	■
<b>Control &amp; monitoring</b> ANSI code					
Circuit breaker / contactor control <sup>(1)</sup>	94/69	■	■	■	■
Latching / acknowledgement	86	■	■	■	■
Logic discrimination	68	□	□	□	□
Switching of groups of settings		■	■	■	■
Annunciation	30	■	■	■	■
Logic equation editor		■	■	■	■
<b>Additional modules</b>					
8 temperature sensor inputs - MET148-2 module <sup>(2)</sup>			□	□	□
1 low level analog output - MSA141 module		□	□	□	□
Logic inputs/outputs - MES114/MES114E/MES114F (10I/4O) module		□	□	□	□
Communication interface - ACE949-2, ACE959, ACE937, ACE969TP-2, ACE969FO-2, ACE850FP, ACE850FO or ECI850		□	□	□	□



■ standard, □ according to parameter setting and MES114/MES114E/MES114F or MET148-2 input/output module options.  
 (1) For shunt trip unit or undervoltage trip unit.  
 (2) 2 modules possible.  
 (3) Exclusive choice, phase-to-neutral voltage or phase-to-phase voltage for each of the 2 relays.

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