

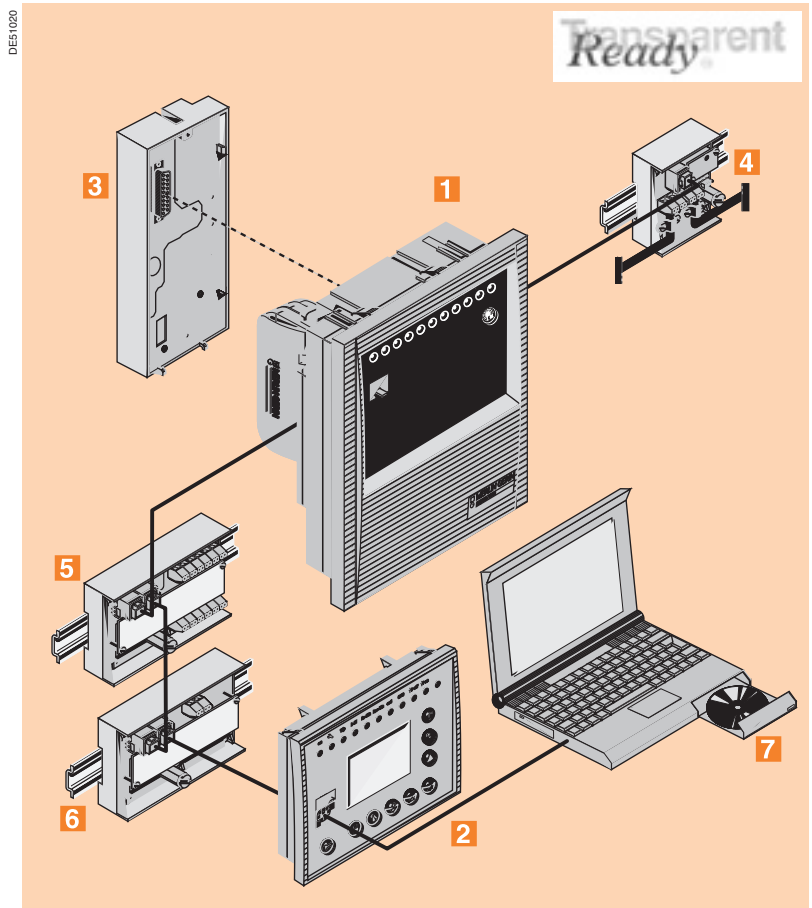
Sepam series 40



Sepam **series 40** is a family of digital units used for **current** and **voltage** protection, in any medium or low voltage distribution system.

Sepam series 40 and its optional modules

- 1 Base unit, with various User Machine Interface levels (UMI):**
 - basic UMI
 - advanced UMI with graphical LCD screen.
- 2 Remote advanced UMI.**
- 3 10 logic inputs and 8 output relays,**
4 outputs on the base unit + 1 optional module providing 10 inputs and 4 outputs.
- 4 1 Modbus communication port:**
 - direct connection to 2-wire RS 485, 4-wire RS 485 and fibre optic networks
 - connection to Ethernet TCP/IP network via PowerLogic Ethernet server (Transparent Ready™).
- 5 Processing of temperature data from 16 sensors, Pt100, Ni100, or Ni120.**
- 6 1 low level analogue output,**
0-10 mA, 4-20 mA or 0-20 mA.
- 7 Software tools:**
 - Sepam parameter and protection setting, control logic customisation
 - local installation operation
 - recovery and display of disturbance recording data.



Characteristics

Conformity to standards	
IEC 60255 – Protection relays	
IEC 60529 – Degree of protection	IP52 on front panel
IEC 60068 – Operating temperature	-25 °C to +70 °C
Certifications	
CE, UL508, CSA C22.2	
Auxiliary power supply	
24-250 V DC and 110-240 V AC	
Overall size of base units (H x W x D)	
222 x 176 x 130 mm	

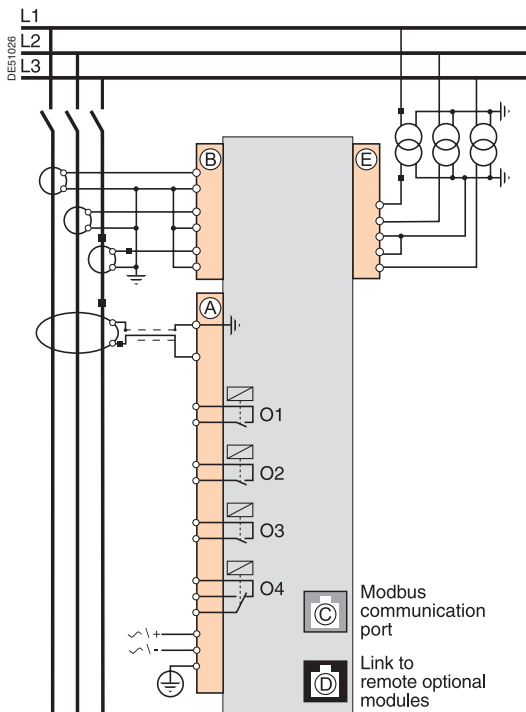
Selection guide

The Sepam **series 40** family includes 7 types:

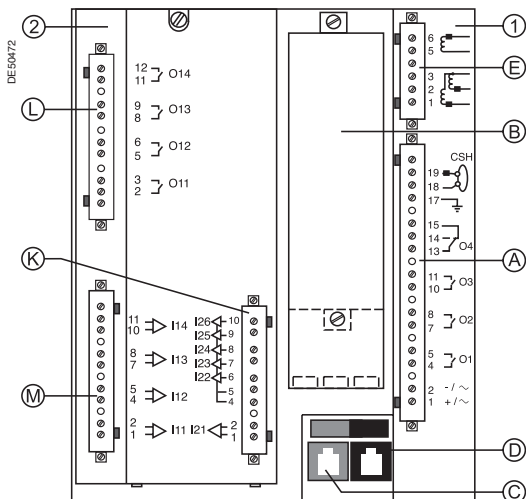
Specific protections available	Applications			
	Substation	Transformer	Motor	Generator
	S40	T40		G40
Directional earth fault	S41		M41	
Directional earth fault and phase overcurrent	S42	T42		

7 types of Sepam *series 40*

- **S40, S41, S42**: substation incomers and feeders protection
- **T40, T42**: transformer protection
- **M41**: motor protection
- **G40**: generator protection.



Sepam series 40 connection scheme.



Sepam series 40 rear face:

- ① **Base unit.**
- ② **Optional module, 10 inputs and 4 outputs.**
- ③ **Main connector.**
- ④ **Input current connector.**
- ⑤ **Modbus communication port.**
- ⑥ **Link to remote optional modules.**
- ⑦ **Input voltage connector.**

Protections	ANSI code	S40	S41	S42	T40	T42	M41	G40
Phase overcurrent	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
Breaker failure	50BF	1	1	1	1	1	1	1
Unbalance/negative sequence	46	2	2	2	2	2	2	2
Directional phase overcurrent	67			2		2		
Directional earth fault	67N/67NC		2	2		2		
Directional real overpower	32P		1	1			1	1
Directional reactive overpower	32Q/40						1	1
Thermal overload	49 RMS				2	2	2	2
Phase undercurrent	37						1	
Locked rotor, excessive starting time	48/51LR/14						1	
Starts per hour	66						1	
Positive sequence undervoltage	27D						2	
Remanent undervoltage	27R						1	
Undervoltage	27/27S	2	2	2	2	2	2	2
Overvoltage	59	2	2	2	2	2	2	2
Neutral voltage displacement	59N	2	2	2	2	2	2	2
Negative sequence overvoltage	47	1	1	1	1	1	1	1
Overfrequency	81H	2	2	2	2	2	2	2
Underfrequency	81L	4	4	4	4	4	4	4
Recloser (4 cycles)	79	□	□	□				
Temperature monitoring (8 or 16 RTDs, 2 set points per RTD)	38/49T				□	□	□	□
Thermostat / Buchholz	26/63				□	□		
Metering								
RMS phase current I1, I2, I3, residual current I0		■	■	■	■	■	■	■
Average 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		■	■	■	■	■	■	■
Real / reactive / apparent power P, Q, S		■	■	■	■	■	■	■
Peak demand real/reactive power PM, QM		■	■	■	■	■	■	■
Power factor		■	■	■	■	■	■	■
Calculated real / reactive energy (±W.h, ±var.h)		■	■	■	■	■	■	■
Real/reactive energy impulse counter (±W.h, ±var.h)		□	□	□	□	□	□	□
Temperature					□	□	□	□
Network and machine diagnosis								
Tripping current Tripl1, Tripl2, Tripl3, Tripl0		■	■	■	■	■	■	■
Tripping context		■	■	■	■	■	■	■
Unbalance ratio/negative sequence current		■	■	■	■	■	■	■
Phase shift 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						■	■	■
Start inhibit time delay, number of starts before inhibition							■	■
Switchgear diagnosis								
Cumulative breaking current		■	■	■	■	■	■	■
Trip circuit supervision		□	□	□	□	□	□	□
Number of operations, operating time, charging time		□	□	□	□	□	□	□
CT/VT supervision		■	■	■	■	■	■	■
Control and monitoring								
Circuit breaker / contactor control	94/69	■	■	■	■	■	■	■
Latching / acknowledgment	86	■	■	■	■	■	■	■
Logic discrimination	68	□	□	□	□	□	□	□
Switching of group of settings		■	■	■	■	■	■	■
Annunciation	30	■	■	■	■	■	■	■
Logical equation editor		■	■	■	■	■	■	■
Modbus communication								
Measurement readout		□	□	□	□	□	□	□
Remote indication and time tagging of event		□	□	□	□	□	□	□
Remote control orders		□	□	□	□	□	□	□
Remote setting of protections		□	□	□	□	□	□	□
Transfer of disturbance recording data		□	□	□	□	□	□	□

■ standard, □ according to parameter settings and optional modules.

Schneider Electric Ltd

123 Jack Lane
Leeds
LS10 1BS
Tel: 0870 608 8 608
Fax: 0870 608 8 606

<http://www.schneider.co.uk>

MGMV 5659

As standards, specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

DEC 04