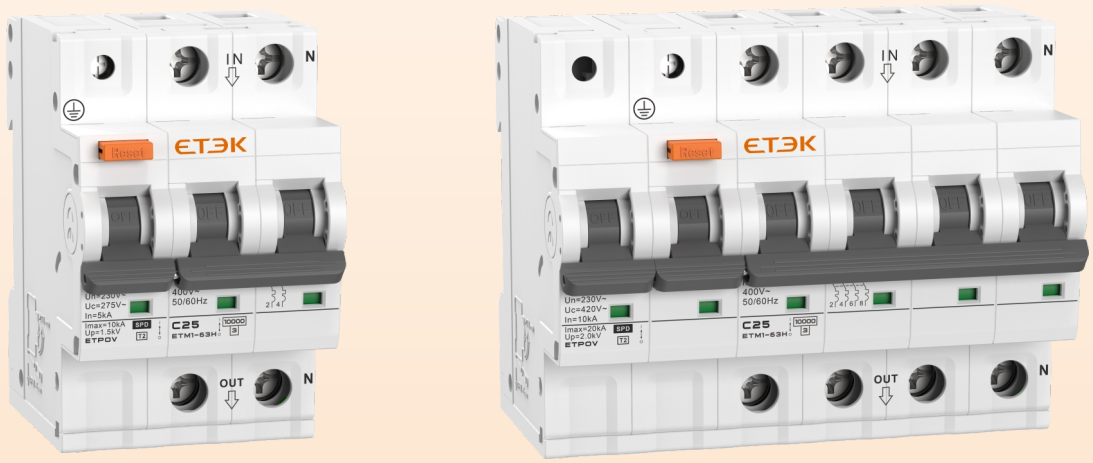
ETPOV

POP+SPD+MCB



Overview

ETPOV is an integrated protection device combining a Miniature Circuit Breaker (MCB), Surge Protective Device (SPD), and Power-Frequency Overvoltage Protection (POP) in one compact modular unit. It provides comprehensive protection against short circuits, overloads, transient surge voltages, lightning-induced overvoltages, and sustained power-frequency overvoltage conditions.

Designed for residential, commercial, and similar low-voltage distribution applications, the ETPOV Series helps protect electrical circuits and connected terminal equipment, including appliances, control systems, communication devices, and sensitive electronic loads. The series is available in 2P and 4P versions, covering single-phase 230V AC and three-phase four-wire 400V AC systems, with rated current options from 6A to 63A.

The integrated MCB function provides reliable overload, short-circuit, and isolation protection. Its built-in SPD section suppresses transient overvoltages caused by indirect lightning and switching events, while the POP function is designed to disconnect the protected circuit when sustained abnormal mains overvoltage occurs, helping reduce the risk of damage to downstream equipment.

Key Features

- **5-in-1 integrated protection**: Short-circuit, overload, isolation, surge, and power-frequency overvoltage protection.
- **2P and 4P versions:** Suitable for 230V AC single-phase and 400V AC three-phase four-wire systems.
- **Rated current range:** Available from 6A to 63A.
- **Surge protection capability:** 2P version with Imax 10 kA; 4P version with Imax 20kA.
- **Compact DIN-rail mounting:** Helps save distribution-board space and simplify installation.
- **Standard:** IEC/EN 60898-1: Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations – Part 1.
  IEC/EN 61643-11: Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – Requirements and test methods.
  IEC 63052: Electrical accessories – Power-frequency overvoltage protective devices for household and similar applications.
  Note: The power-frequency overvoltage protection function is designed with reference to IEC 63052 requirements.

Technical Data

Standard	IEC/EN 60898-1; IEC/EN 61643-11; IEC 63052*	
Product type	POP+SPD+MCB	
Poles	2P	4P
Rated voltage (Un)	230V	400V
Rated frequency	50/60Hz	
Rated current (In)	6, 8, 10, 13, 16, 20, 25, 32, 40, 50, 63A	
Rated short-circuit capacity (Icu)	6kA / 10kA	
Service short-circuit capacity (Ics)	6 kA / 7.5 kA	
Instantaneous tripping characteristics	B: 3In-5In; C: 5In-10In; D: 10In-20In	
Rated impulse withstand voltage (Uimp) (1.2/50μs)	6 kV	
SPD type	Type 2 (Class II)	
Maximum continuous operating voltage (Uc)	275V (L–N)	
Nominal discharge current (In)	5kA	10kA
Maximum discharge current (Imax)	10kA	20kA
Voltage protection level (Up)	≤1.5kV	≤2kV
POP tripping voltage (Ua)	≥275V (L–N)	
POP operating time	See POP tripping characteristics table below	
Contact position indication	green OFF / red ON	
Reset button	Press to reset before reclosing	
Electrical life	10,000 operations	
Mechanical life	20,000 operations	
Protection degree	IP20	
Reference temperature	30°C	
Operating ambient temperature (with daily average≤35°C)	-25°C ~ +55°C	
Storage temperature	-30°C ~ +70°C	
Terminal connection type	Cable/ Pin-type/ Fork busbar (Fork on top terminal only)	
Max. terminal size for cable	16mm² flexible/ 25mm² rigid	
Max. tightening torque	2.5N.m	
Mounting type	Mounting on 35mm DIN rail	
Incoming method	From top	

*Note: The power-frequency overvoltage protection function is designed with reference to IEC 63052 requirements.

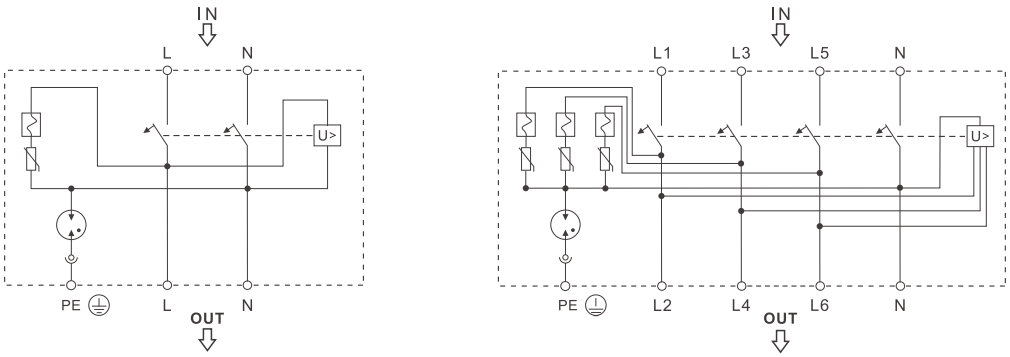
POP Tripping Characteristics (Designed Ref. to IEC 63052)

Applied voltage (Ua)	255V	275V	300V	350V	400V
Maximum break time	No tripping	15s	5s	0.75s	0.20s
Minimum non-actuating time	No tripping	3s	1s	0.25s	0.07s

Temperature Derating Table

Rated current (A)	Correction factor for ambient temperature											
	-40°C	-30°C	-20°C	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C
6	8	7.7	7.5	7.2	6.9	6.6	6.3	6	5.7	5.3	4.9	4.5
10	13.3	12.9	12.5	12	11.5	11.1	10.5	10	9.4	8.8	8.2	7.5
16	21.3	20.7	20	19.2	18.5	17.7	16.9	16	15.1	14.1	13.1	11.9
20	26.7	25.8	24.9	24	23.1	22.1	21.1	20	18.9	17.6	16.3	14.9
25	33.3	32.3	31.2	30	28.9	27.6	26.4	25	23.6	22	20.4	18.6
32	42.7	41.3	39.9	38.5	37	35.4	33.7	32	30.2	28.2	26.1	23.9
40	53.3	51.6	49.9	48.1	46.2	44.2	42.2	40	37.7	35.3	32.7	29.8
50	66.7	64.5	62.4	60.1	57.7	55.3	52.7	50	47.1	44.1	40.8	37.3
63	84	81.3	78.6	75.7	72.7	69.6	66.4	63	59.4	55.6	51.4	47

Wiring Diagram



Dimension (mm)

