

SIEMENS



5TJ miniature circuit breakers

SINOVA The Power of **Simplicity**

Discover The Power of **Simplicity** with SINOVA

Backed by Siemens quality standards, SINOVA introduces exceptional ease of operation and cost-efficiency to electrical installations in buildings, utilities, industries, and infrastructure applications.

Our low-voltage electrical products offer protection, control, switching, and metering capabilities that help promote efficiency across the value chain, optimizing OPEX, CAPEX, and reducing environmental impact.

We are continuously driven to innovate and provide simple and reliable solutions. Inspired by efficiency and simplicity, we strive to empower industry professionals to streamline processes and complete projects quicker every time.



5TJ miniature circuit breakers

Product highlights



Reliable protection

Our miniature circuit breakers provide reliable protection for your installation with 4.5kA, 6kA, and 10kA breaking capacities.



Easy to use

Our miniature circuit breakers offer flexibility in termination which includes cable, pin-type, and fork-type busbars, making them easy to use.



Cost-effective

With low energy consumption, our miniature circuit breakers help you save on costs over their lifetime.

SINOVA The Power of **Simplicity**

Technical specifications

5TJ miniature circuit breakers

Parameters	Unit	Technical details
Standard		IEC 60898-1: 2015
Number of poles		1P, 2P, 3P, 4P
Rated voltage	V AC	240/415
Operational voltage	V AC/pole	Min. 24 Max. 440
Rated breaking capacity acc. to IEC 60898-1	kA AC	4.5kA, 6kA, & 10kA
Tripping characteristics		B, C (6kA & 10kA) & C (4.5kA)
Current rating	Ampere	B curve: 6-63 (6kA & 10kA) C curve: 6-63 (4.5kA, 6kA, & 10kA)
Insulation voltage	V AC	265/456
Rated frequency	Hz	50/60
Impulse withstand voltage	kV	4
Degree of pollution		2
Overvoltage category		III
Line load reversibility		Yes
Degree of protection acc. to EN 60529		IP20
RoHS compliant		Yes
CFC and silicone-free		Yes
REACH		Yes
Terminal tightening torque, recommended	N.m	2
Conductor cross-sections	mm ²	1...25 for 4.5kA & 6kA 1...35 for 10kA
Bi-connect (dual) terminals		Yes, on line side for 4.5kA and 6kA variant Yes, on both sides for 10kA variant
Busbar suitability		Both fork and pin type
Mounting position		Any
Average electrical/mechanical life		5,000/20,000 actuation
Ambient temperature	°C	- 25 ... +55 °C, max. 95% humidity Storage temperature: -40 +75 °C
Dimensional details Height x Width x Dimension	mm	84 x 18 x 76 mm (1 pole) Width change as number of module sizes increases from 1 pole...4 pole

Characteristic curves

Characteristic curves explain how miniature circuit breakers (MCBs) behave during an overload or short circuit event. They play a crucial role in configuring and sizing these devices.

Tripping behavior

The expected break time can be determined from the I-t tripping characteristic of an MCB. There are two sections within this characteristic curve based on the two tripping systems: overload release (bimetal) and short circuit release (short circuit coil).

The overload section describes how the bimetal responds to overloads, while the short circuit release section represents the behavior of the short circuit coil.

To ensure safe and efficient short circuit protection, the short circuit release of the MCB must trip depending on the equipment used and the operational behavior of the connected loads.

These tripping characteristics are standardized as per IS/IEC 60898-1 and include the following:

1

Tripping characteristic B

Reacts quickly to short circuits, tripping when the current is between 3 to 5 times the standard full load current. Suitable for protecting incandescent lighting and socket outlet circuits in domestic and commercial environments with low surge risk.

2

Tripping characteristic C

Widely used for general electrical circuit protection, cable, and line protection. Reacts quickly to short circuits, tripping when the current is between 5 to 10 times the standard full load current. Suitable for most inductive loads, including motors and fluorescent lighting.

These tripping characteristics define the behavior of MCBs and their suitability for different types of electrical circuits and loads.



Standard ranges for immediate tripping in accordance with IEC 60898-1, Table 2:

Tripping characteristic B: $3-5 \times I_n$
Tripping characteristic C: $5-10 \times I_n$

Tripping characteristics at an ambient temperature of 30°C

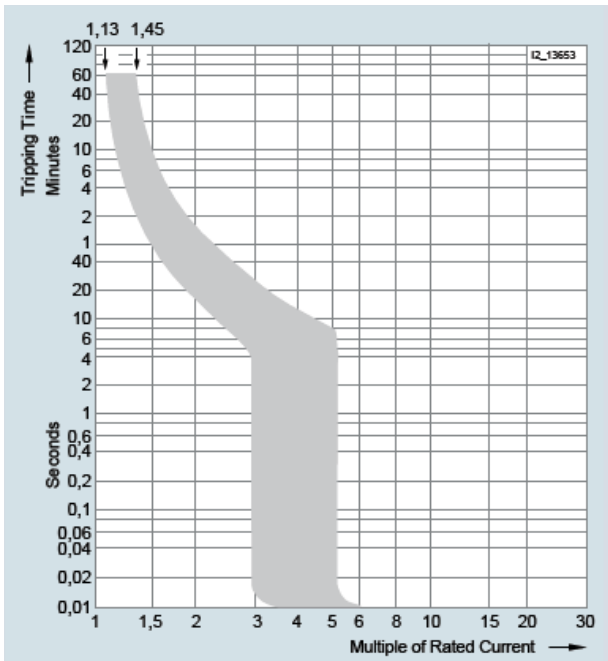
Tripping characteristics	Standards	Thermal trips test currents:			Electromagnetic trips test currents:		
		Limiting test current I_1	Minimum test current I_2	Tripping time $I_n \leq 63 A$ t	Hold I_4	Latest tripping instant I_5	Tripping time t
B	IEC 60898-1	$1.13 \times I_n$	$1.45 \times I_n$	$>1 h$ $<1 h$	$3 \times I_n$	$5 \times I_n$	$\geq 0.1 s$ $<0.1 s$
C	IEC 60898-1	$1.13 \times I_n$	$1.45 \times I_n$	$>1 h$ $<1 h$	$5 \times I_n$	$10 \times I_n$	$\geq 0.1 s$ $<0.1 s$

These characteristics allow applying loads with high peak currents without requiring to oversize the MCBs. It enables handling higher inrush currents, such as those from lamps and motors, by allowing peak currents of up to 5 times the rated current (I_n). For 'C' characteristics, the magnetic operating limits for short-circuit operations range between 5 and 10 times the rated current (I_n) of the MCB.

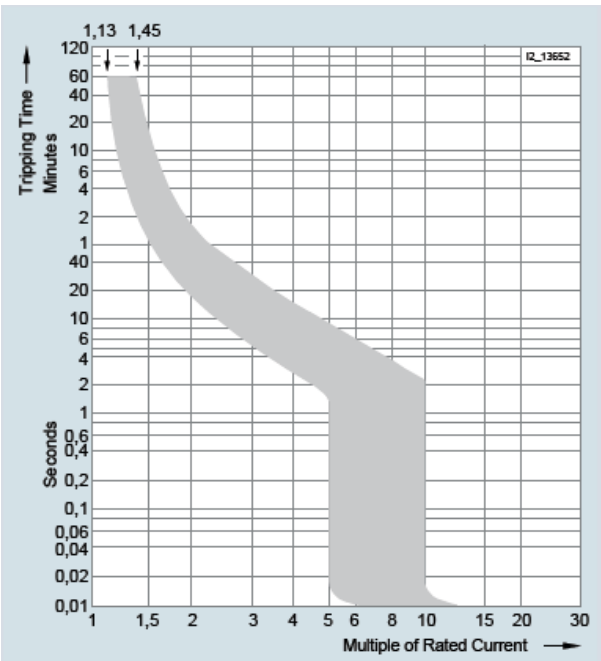
For example, in an over-current situation, the instantaneous mechanism of a 10A MCB will operate between 50A and 100A. The thermal operating limits range from 1.45 times the rated current (I_n) to the immediate tripping limit of the MCB.

Refer to the graphs below for an overview of the tripping characteristic curves:

Overview of tripping characteristic curves



Tripping characteristic B
For universal use in socket outlet and lighting circuits



Tripping characteristic C
Ideally suitable for use in lamp and motor circuits with higher starting currents

Selection guide for residential appliances

Our guide provides a listing of residential appliances that our miniature circuit breakers (MCBs) can safely support.

Appliances	Capacity (Watts)	MCB current ratings (Amps)
Iron	1200	6
Mixer grinder	200	2
Microwave oven	750	6
Hot plate	2000	10
Electrical kettle	1500	10
TV/Audio system	200	2
Washing machine	2200	16
Refrigerator 350 litres	750	4
Air conditioner		
1 hp	1500	10
1.5 hp	2500	16
2.5 hp	3500	20



Selection & ordering data

5TJ miniature circuit breakers (4.5kA)

Characteristic: C curve

Product	In (A)	No. of poles	Characteristics C Article no.	Standard packaging No. of pieces	List price per PU (Per Unit)
240/415V AC					
	6	1 pole	5TJ3106-7	12	
	10		5TJ3110-7	12	
	16		5TJ3116-7	12	
	20		5TJ3120-7	12	
	25		5TJ3125-7	12	
	32		5TJ3132-7	12	
	40		5TJ3140-7	12	
	50		5TJ3150-7	12	
	63		5TJ3163-7	12	
415V AC					
	6	2 pole	5TJ3206-7	6	
	10		5TJ3210-7	6	
	16		5TJ3216-7	6	
	20		5TJ3220-7	6	
	25		5TJ3225-7	6	
	32		5TJ3232-7	6	
	40		5TJ3240-7	6	
	50		5TJ3250-7	6	
	63		5TJ3263-7	6	
415V AC					
	6	3 pole	5TJ3306-7	4	
	10		5TJ3310-7	4	
	16		5TJ3316-7	4	
	20		5TJ3320-7	4	
	25		5TJ3325-7	4	
	32		5TJ3332-7	4	
	40		5TJ3340-7	4	
	50		5TJ3350-7	4	
	63		5TJ3363-7	4	
415V AC					
	6	4 pole	5TJ3406-7	3	
	10		5TJ3410-7	3	
	16		5TJ3416-7	3	
	20		5TJ3420-7	3	
	25		5TJ3425-7	3	
	32		5TJ3432-7	3	
	40		5TJ3440-7	3	
	50		5TJ3450-7	3	
	63		5TJ3463-7	3	

Selection & ordering data

5TJ miniature circuit breakers (6kA)

Characteristic: B curve

Product	In (A)	No. of poles	Characteristics B Article no.	Standard packaging No. of pieces	List price per PU (Per Unit)
240/415V AC					
	6	1 pole	5TJ6106-6	12	
	10		5TJ6110-6	12	
	16		5TJ6116-6	12	
	20		5TJ6120-6	12	
	25		5TJ6125-6	12	
	32		5TJ6132-6	12	
	40		5TJ6140-6	12	
	50		5TJ6150-6	12	
	63		5TJ6163-6	12	
415V AC					
	6	2 pole	5TJ6206-6	6	
	10		5TJ6210-6	6	
	16		5TJ6216-6	6	
	20		5TJ6220-6	6	
	25		5TJ6225-6	6	
	32		5TJ6232-6	6	
	40		5TJ6240-6	6	
	50		5TJ6250-6	6	
	63		5TJ6263-6	6	
415V AC					
	6	3 pole	5TJ6306-6	4	
	10		5TJ6310-6	4	
	16		5TJ6316-6	4	
	20		5TJ6320-6	4	
	25		5TJ6325-6	4	
	32		5TJ6332-6	4	
	40		5TJ6340-6	4	
	50		5TJ6350-6	4	
	63		5TJ6363-6	4	
415V AC					
	6	4 pole	5TJ6406-6	3	
	10		5TJ6410-6	3	
	16		5TJ6416-6	3	
	20		5TJ6420-6	3	
	25		5TJ6425-6	3	
	32		5TJ6432-6	3	
	40		5TJ6440-6	3	
	50		5TJ6450-6	3	
	63		5TJ6463-6	3	

Selection & ordering data

5TJ miniature circuit breakers (6kA)

Characteristic: C curve

Product	In (A)	No. of poles	Characteristics C Article no.	Standard packaging No. of pieces	List price per PU (Per Unit)
240/415V AC					
	6	1 pole	5TJ6106-7	12	
	10		5TJ6110-7	12	
	16		5TJ6116-7	12	
	20		5TJ6120-7	12	
	25		5TJ6125-7	12	
	32		5TJ6132-7	12	
	40		5TJ6140-7	12	
	50		5TJ6150-7	12	
	63		5TJ6163-7	12	
415V AC					
	6	2 pole	5TJ6206-7	6	
	10		5TJ6210-7	6	
	16		5TJ6216-7	6	
	20		5TJ6220-7	6	
	25		5TJ6225-7	6	
	32		5TJ6232-7	6	
	40		5TJ6240-7	6	
	50		5TJ6250-7	6	
	63		5TJ6263-7	6	
415V AC					
	6	3 pole	5TJ6306-7	4	
	10		5TJ6310-7	4	
	16		5TJ6316-7	4	
	20		5TJ6320-7	4	
	25		5TJ6325-7	4	
	32		5TJ6332-7	4	
	40		5TJ6340-7	4	
	50		5TJ6350-7	4	
	63		5TJ6363-7	4	
415V AC					
	6	4 pole	5TJ6406-7	3	
	10		5TJ6410-7	3	
	16		5TJ6416-7	3	
	20		5TJ6420-7	3	
	25		5TJ6425-7	3	
	32		5TJ6432-7	3	
	40		5TJ6440-7	3	
	50		5TJ6450-7	3	
	63		5TJ6463-7	3	

Selection & ordering data

5TJ miniature circuit breakers (10kA)

Characteristic: B curve

Product	In (A)	No. of poles	Characteristics B Article no.	Standard packaging No. of pieces	List price per PU (Per Unit)
240/415V AC					
	6	1 pole	5TJ4106-6	12	
	10		5TJ4110-6	12	
	16		5TJ4116-6	12	
	20		5TJ4120-6	12	
	25		5TJ4125-6	12	
	32		5TJ4132-6	12	
	40		5TJ4140-6	12	
	50		5TJ4150-6	12	
	63		5TJ4163-6	12	
415V AC					
	6	2 pole	5TJ4206-6	6	
	10		5TJ4210-6	6	
	16		5TJ4216-6	6	
	20		5TJ4220-6	6	
	25		5TJ4225-6	6	
	32		5TJ4232-6	6	
	40		5TJ4240-6	6	
	50		5TJ4250-6	6	
	63		5TJ4263-6	6	
415V AC					
	6	3 pole	5TJ4306-6	4	
	10		5TJ4310-6	4	
	16		5TJ4316-6	4	
	20		5TJ4320-6	4	
	25		5TJ4325-6	4	
	32		5TJ4332-6	4	
	40		5TJ4340-6	4	
	50		5TJ4350-6	4	
	63		5TJ4363-6	4	
415V AC					
	6	4 pole	5TJ4406-6	3	
	10		5TJ4410-6	3	
	16		5TJ4416-6	3	
	20		5TJ4420-6	3	
	25		5TJ4425-6	3	
	32		5TJ4432-6	3	
	40		5TJ4440-6	3	
	50		5TJ4450-6	3	
	63		5TJ4463-6	3	

Selection & ordering data

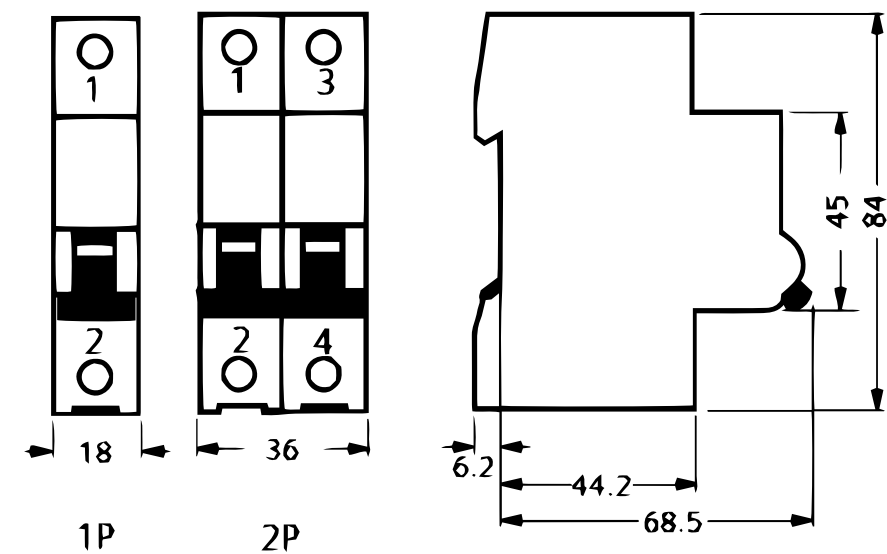
5TJ miniature circuit breakers (10kA)

Characteristic: C curve

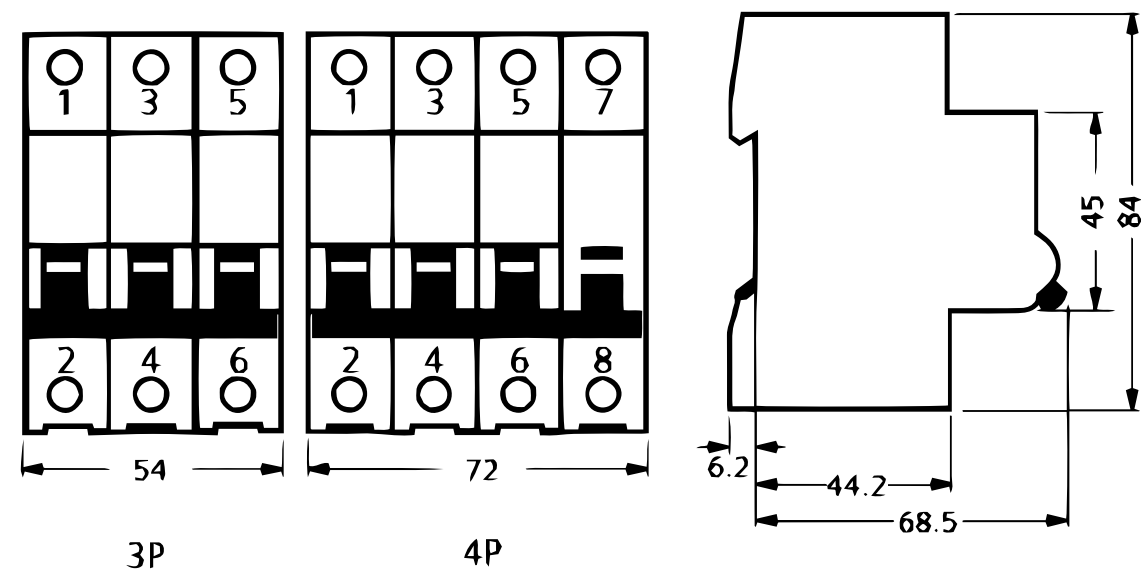
Product	In (A)	No. of poles	Characteristics C Article no.	Standard packaging No. of pieces	List price per PU (Per Unit)
240/415V AC					
	6	1 pole	5TJ4106-7	12	
	10		5TJ4110-7	12	
	16		5TJ4116-7	12	
	20		5TJ4120-7	12	
	25		5TJ4125-7	12	
	32		5TJ4132-7	12	
	40		5TJ4140-7	12	
	50		5TJ4150-7	12	
	63		5TJ4163-7	12	
415V AC					
	6	2 pole	5TJ4206-7	6	
	10		5TJ4210-7	6	
	16		5TJ4216-7	6	
	20		5TJ4220-7	6	
	25		5TJ4225-7	6	
	32		5TJ4232-7	6	
	40		5TJ4240-7	6	
	50		5TJ4250-7	6	
	63		5TJ4263-7	6	
415V AC					
	6	3 pole	5TJ4306-7	4	
	10		5TJ4310-7	4	
	16		5TJ4316-7	4	
	20		5TJ4320-7	4	
	25		5TJ4325-7	4	
	32		5TJ4332-7	4	
	40		5TJ4340-7	4	
	50		5TJ4350-7	4	
	63		5TJ4363-7	4	
415V AC					
	6	4 pole	5TJ4406-7	3	
	10		5TJ4410-7	3	
	16		5TJ4416-7	3	
	20		5TJ4420-7	3	
	25		5TJ4425-7	3	
	32		5TJ4432-7	3	
	40		5TJ4440-7	3	
	50		5TJ4450-7	3	
	63		5TJ4463-7	3	

Dimension drawings

1 and 2 pole



3 and 4 pole



Note: All dimensions are in mm.

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