



# Miniature circuit breakers for all applications

BETA Low-Voltage Circuit Protection



Answers for infrastructure.

**SIEMENS**



## BETA Low-Voltage Circuit Protection: Circuits under Control, Wherever, Whenever.

Whether protecting, switching, measuring or monitoring – BETA low-voltage circuit protection offers a broad spectrum of products – for industrial applications, as well as for non-residential and residential buildings. How you benefit: regardless of application – you always have the right device.

# Miniature circuit breakers from Siemens – safe, flexible, and versatile

## ■ Safety for all applications

Miniature circuit breakers (MCB) protect electrical systems against overload and short circuits. With tripping characteristics A, B, C or D, they cover all application areas in industry, and residential or non-residential buildings. The special design of the terminals of Siemens devices also guarantees highly effective touch protection.

## ■ A comprehensive product portfolio

Siemens offers a complete range\* of miniature circuit breakers from 0.3 to 125 A in all required characteristics A, B, C, and D to cover every application.

- For standard applications: 5SL in 6 kA from 0.3 to 63 A
- For quick installation: 5SJ6 ...-KS with plug-in terminal up to 6 kA from 10 to 20 A
- For distribution boards with limited installation space: 5SY6 0, 1+N in 1 WE up to 6 kA from 2 to 40 A
- For applications with very high requirements: 5SY to 25 kA from 0.3 to 80 A, 5SP from 80 to 125 A, also for universal current (UC) applications
- For worldwide use, certified to UL 489 and IEC: 5SJ4 ...-HG from 0.3 to 63 A

## ■ A wide variety of additional components and accessories

Miniature circuit breakers from Siemens can be used in any desired combination with all kinds of different additional components, for example with auxiliary switches, fault signal contacts, shunt trips, undervoltage releases, remote controlled mechanisms or with RC units for combined personnel and fire protection. These additional components are standard for all Siemens miniature circuit breakers and can be retrofitted whenever required.

## ■ Maximum performance for line protection

When you choose miniature circuit breakers from Siemens, you invest in the highest quality and reliability. Thanks to the outstanding technical properties of these devices, you're always on the safe side. What's more, you profit from innovative installation techniques that allow you to install the breakers quickly and easily.

\* You will find detailed information on the products in our catalog.

## Highlights

- Maximum system reliability and availability through comprehensive line and system protection
- Complete portfolio of miniature circuit breakers for industry, and for residential or non-residential buildings
- Uniform and comprehensive range of additional components and a wide variety of accessories

## Four ways to success: BETA Low-Voltage Circuit Protection

### Low-Voltage Circuit Protection



Protecting

Switching

Measuring

Monitoring



Ideal for use in residential or non-residential buildings.



5SL with functional design, clear indication of switching position and ergonomic handle.

## 5SL – optimum line protection

5SL miniature circuit breakers are specially suited for the requirements of 6 kA applications in residential buildings and small non-residential buildings.

### ■ Optimal for standard applications

5SL miniature circuit breakers are the new standard with B and C characteristic for applications up to 63 A. They can be used as main switches for disconnecting or isolating systems. The 5SL devices are predominantly installed in meter cabinets and small distribution boards, for example to protect the circuits for lamps, electric cookers and machines in residential or non-residential buildings.

### ■ Highly functional design

The attractive design is geared entirely to functionality. For example, the switching state can be recognized immediately thanks to the colored switching position indicator with plain text that is integrated in the operating handle. Ergonomic handle and housing contours also facilitate easy operation.

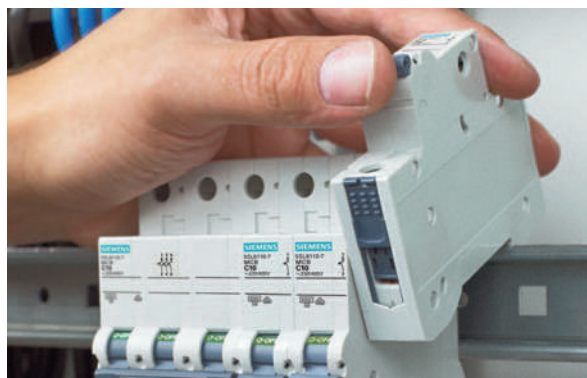
### ■ Easy and safe to install

Conductors from 0.75 to 35 mm<sup>2</sup> can be led in very easily and connected jointly with pin busbars. The touch protection when grasping the device that is integrated in the terminals provides reliable protection against electric shock. With the latching slide, the devices can be released from the networked busbar quickly and easily. Auxiliary switches and fault signal contacts can be mounted on the 5SL very quickly if required.

### Highlights

- 6 kA rated switching capacity, from 0.3 to 63 A, in B/C characteristic
- Simple operation thanks to ergonomic design of the device
- Clear, colored indication of the switching position
- Fast installation thanks to time-saving snap-on fixing system

Rectangular terminal for simple lead-in of conductors and pin busbars up to 35 mm<sup>2</sup>.







Perfect solution for industrial applications.



5SY with snap-on fixing system and 5SP for up to 125 A.

# 5SY/5SP – high functionality up to 125 A

Miniature circuit breakers 5SY and 5SP are ideal for application areas with stricter requirements, for example in large non-residential buildings and in industry.

## ■ Ideal for industrial applications

Whether for circuits with motors or large lamps, semiconductors or equipment such as transformers and solenoid valves generating strong pulses, 5SY and 5SP miniature circuit breakers are optimally tailored to meet the stricter requirements in industrial areas and have proven their viability in these applications.

## ■ Maximum functionality for high-current and UC applications

5SY miniature circuit breakers offer you the highest quality and functionality for installation in complex buildings and in industry. With a rated switching capacity of up to 25 kA, they can meet the highest requirements at a rated current from 0.3 A to 80 A. The contact position is clearly recognizable by means of a separate

rate display. Additionally, for currents from 80 A to 125 A there is the miniature circuit breaker 5SP. Special types are available in both series for universal current applications.

## ■ Additional components usable throughout

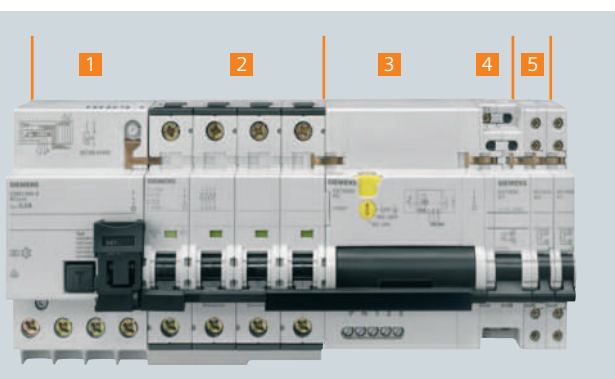
The same additional components can be mounted in all series – up to 125 A. That simplifies handling and reduces the quantity you need to keep in stock.

## ■ Practical installation advantage

5SY miniature circuit breakers have a snap-on fixing system with manual operation and are thus suitable for all installation practices. This saves you a great deal of time assembling the pin busbar and allows easy exchange of individual devices.

## Highlights

- Complete portfolio from 0.3 to 125 A in all common characteristics
- All kinds of additional components can be mounted
- Separate switching position indication
- Time-saving snap-on fixing system



Simple configuration of complex applications – thanks to multiple combination options

- 1 RC unit for personnel protection and prevention of electrically ignited blazes
- 2 Miniature circuit breaker 5SY 4-pole
- 3 Remote controlled mechanism for remote switching of the MCB
- 4 Undervoltage releases protect downstream loads in the circuit against risks from undervoltage
- 5 Auxiliary switch/fault signal contacts for signaling the switching state or protective tripping



With products from Siemens, you can quickly and simply realize comprehensive line and personnel protection in buildings.

# Simple handling with high security

Miniature circuit breakers from Siemens are designed for fast, simple installation to save you time, effort, and costs.

## More space and better overview for installation and connection

All miniature circuit breakers can be mounted together on a busbar. In this practical solution, the incoming feeder is connected in front of the busbar so you can see what you are doing at all times. The wire connection is visible and can be checked. The busbar situated at the back ensures plenty of wiring space between the rows of devices, giving you more flexibility for connecting the incoming and outgoing cable in the terminal.

## Integrated touch protection

The miniature circuit breakers 5SL and 5SY not only safeguard electrical plants, but also protect the operator thanks to integrated, fingerproof terminal covers.

## Miniature circuit breakers replaced in next to no time

The breakers can be released quickly and simply from the standard mounting rail and from the configured busbar assembly without needing any tools.

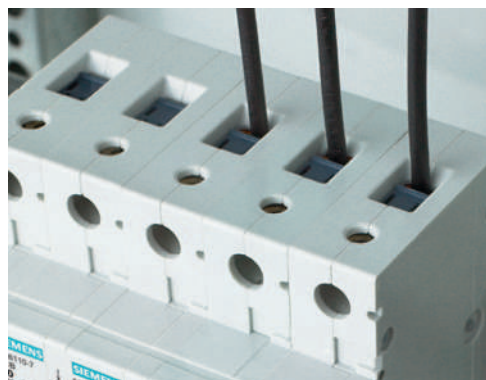
## Highlights

- Simple, consistent mounting and wiring thanks to rear-positioned busbar
- Touch protection when grasping the device – exceeds the requirements of VBG4/BGV A3
- Fast and simple replacement of devices from the busbar network

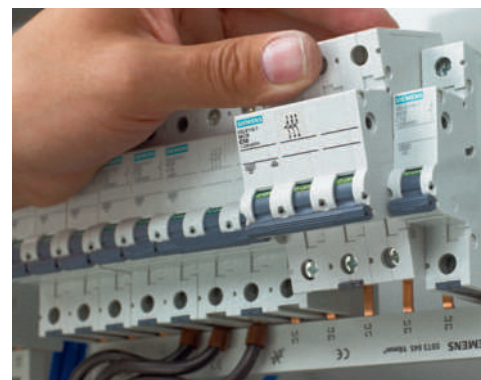
Clear connection of the feeder in front of the busbar.



Reliable touch protection when grasping the device thanks to covered terminals.



Replacement of MCB without tools thanks to manually operated latching slide.



# Clarity along the whole line

The order numbers are based on a system and provide information on the most important features of the miniature circuit breakers: series, rated switching capacity, number of poles, rated current, and characteristics. The table gives an overview of the portfolio of miniature circuit breakers from Siemens.

Series	Rated switching capacity [kA]				Number of poles					Rated current [A]																	Charac-teristics				Addi-tion																												
	6	10	15	25	1	2	3	4	1+N	1TE	3+N	0,3	0,5	1	1,6	2	3	4	5	6	8	10	13	15	16	20	25	30	32	35		40	45	50	60	63	80	100	125	A	B	C	D																
5SJ	6				1	2	3		5											06	10	13		16	20																						-6	-7	KS <sup>3</sup>										
5SL	6				1	2	3	4	5		6									06	10	13		16	20	25	32	40	50	63																				-6									
5SY	6									0										06	10	13		16	20	25	32	40																							-6		KL <sup>4</sup>						
	6									0										06	10	13		16	20	25	32	40																								-6		KL <sup>4</sup>					
	6									0						02		04			06	10	13		16	20	25	32	40																								-7		KL <sup>4</sup>				
	6									0						02		04			06	10	13		16	20	25	32	40																								-7		KL <sup>4</sup>				
5SY		4			1	2	3	4	5		6			01	15	02	03	04		06	10	13		16	20	25	32	40	50	63																							-5						
		4			1	2	3	4	5		6									06	10	13		16	20	25	32	40	50	63																								-6					
		4			1	2	3	4													06	10	13		16	20	25	32	40	50	63																								-6				
		4			1	2	3														11				18			30		45	60																									-7			
		4			1	2	3	4	5		6	14	05	01	15	02	03	04		06	10	13		16	20	25	32	40	50	63	80																								-7				
		4			1	2	3	4	5		6	14	05	01	15	02	03	04		06	10	13		16	20	25	32	40	50	63																										-8			
		7			1	2	3	4	5		6	14	05	01	15	02	03	04		06	10	13		16	20	25	32	40	50	63																										-6			
		7			1	2	3	4	5		6	14	05	01	15	02	03	04		06	10	13		16	20	25	32	40	50	63																											-7	-8	
			8 <sup>1</sup>		1	2	3	4	5		6	14	05	01	15	02	03	04		06	10	13		16	20	25	32	40	50	63																											-7	-8	
		5 <sup>2</sup>			1																02		04		06	10	13	16	20	25	32	40	50	63																				-6					
	5 <sup>2</sup>			2																	06	10	13	16	20	25	32	40	50	63																								-6					
	5 <sup>2</sup>			1	2		4						14	05	01	15	02	03	04		06	10	13	16	20	25	32	40	50	63																								-7					
5SP	4			1	2	3	4																																																	-6	-7		
	4			1	2	3	4																																																	-8			
	5 <sup>2</sup>			1	2																																																			-7			
5SJ	4			1																	06	10	13	18	16	20	25	30	32	35	40	45	50	60	63																		-6		HG40 <sup>5</sup>				
	4			1																	14	05	01	15	02	03	04	11	06	08	10	13	18	16	20	25	30	32	35	40	45	50	60	63											-7	-8	HG40 <sup>5</sup>		
	4			1	2	3															14	05	01	15	02	03	04	11	06	08	10	13	18	16	20	25	30	32	35	40	45	50	60	63											-7	-8	HG41 <sup>5</sup>		
	4			1	2	3															14	05	01	15	02	03	04	11	06	08	10	13	18	16	20	25	30	32	35	40	45	50	60	63											-7	-8	HG42 <sup>5</sup>		

Order No. e.g. **5SL 6 1 16 -6**

Series    6 kA    1-pole    16 A    B-Char.    Addition

<sup>1</sup> Series with high rated switching capacity up to 70 kA as per EN 60947-2  
<sup>2</sup> UC series  
<sup>3</sup> KS = plug-in terminal on outgoing side  
<sup>4</sup> KL = N pole on left  
<sup>5</sup> HG.. = approved in accordance with UL489



# Answers for infrastructure.

## ■ Megatrends driving the future

The megatrends – demographic change, urbanization, climate change and globalization – are shaping the world today. These have an unprecedented impact on our lives and on vital sectors of our economy.

## ■ Innovative technologies to answer the associated toughest questions

Throughout a 160-year history of proven research and engineering talent, with more than 50,000 active patents, Siemens has continuously provided its customers with innovations in the areas of healthcare, energy, industry and infrastructure – globally and locally.

## ■ Increase productivity and efficiency through complete building life cycle management

Building Technologies offers intelligent integrated solutions for industry, commercial and residential buildings and public infrastructure. Over the entire facility's life cycle, our comprehensive and environmentally conscious portfolio of products, systems, solutions and services in the fields of electrical installation technology, building automation, fire safety and electronic security, ensures the:

- optimum comfort and highest energy efficiency in buildings,
- safety and security for people, processes and assets,
- increased business productivity.



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