

TemBreak PRO

New release



IoT with SMART MCCB

Now our **PRO** series is launched.

Ultratech for enhanced safety and usability.

New product recommendation from **TERASAKI**



User Friendly



Hi-Performance with Hi-Technology



Safety





It's the **TemBreak** **PRO**

Completely renewed electronic circuit breakers, ranging from

Among the industry's smallest breakers

Models sizing 100AF or 125AF are the industry's smallest, measuring just 90 mm width, 130 mm height, and 68 mm depth for 3-pole types. 630AF models are of the same dimensions as 400AF versions: 140 mm width, 260 mm height, and 103 mm depth for 3-pole types. Their compactness helps space-saving in distribution switchboards.



Smart MCCBs facilitating energy saving

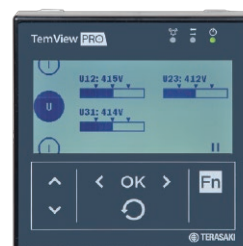
Our new smart circuit breakers are capable of acquiring, displaying, and transmitting circuit information. They help consolidate and reduce devices needed for energy management systems used at buildings and factories.

★ Remote display of circuit information

The TemViewPRO Remote display (optional) can be connected to the smart circuit breakers using a single cable and easily attached to the switchboard panel. It has a back-lit LCD display that is highly visible even in dark places.

TemView PRO

Remote display



★ Centralized control of circuit information

The TemComPRO Communication Module (optional) allows network communication of circuit information. A system can be easily developed owing to the Modbus RTU communication protocol.

The TemComPRO can be mounted on a DIN rail with a snap-on mechanism and wired using connectors, so it is easy to install for additional installation.

With use of a support, the module can also be mounted on the side of the circuit breaker.

TemCom PRO

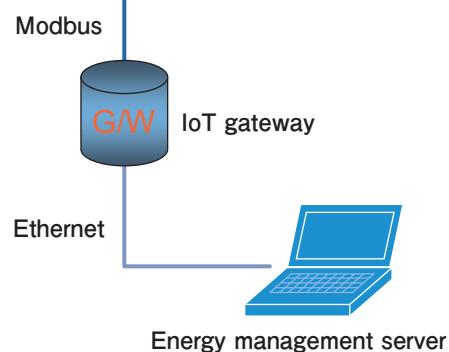
Communication module



Support to mount the module on the side of the breaker

★ Zone interlock function mitigates circuit damage

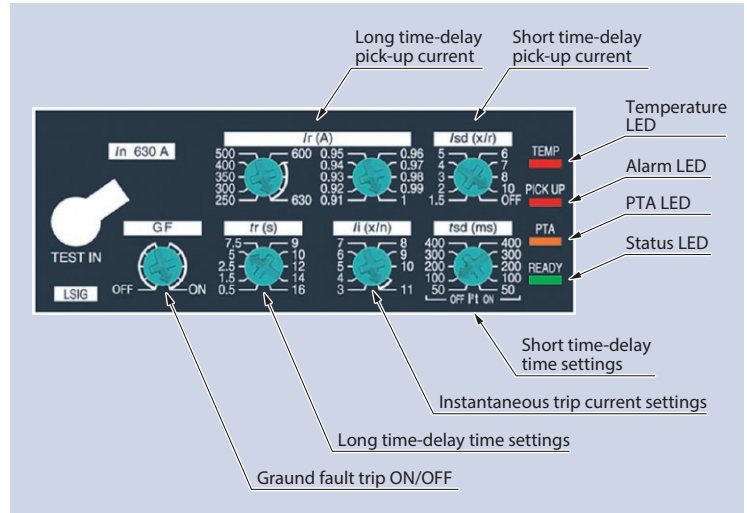
If an accidental short circuit or ground fault occurs in a selective coordinated circuit with short time-delay protection and ground fault protection, the circuit breaker in the immediate upstream of the accident spot can be protected by an instantaneous trip triggered as a result of deactivation of time delay settings, consequently alleviating thermal and mechanical damage to the circuit at the time of accidental short circuiting. Linkage can be established among smart circuit breakers ranging from 100AF to 630AF, as well as between the smart circuit breaker and the TemPower2 air circuit breaker.



100AF to 630AF, provide much improved user convenience.

Advanced standard series electronic circuit breakers

- ★ Protection settings of standard series can be adjusted using multiple dials in place of conventional two dials, enabling flexible configuration of protection to meet a wide variety of needs.
- ★ The pre-trip alarm function, which was optional for the previous series, is now available as a standard feature. With this, the load current can be constantly monitored.
- ★ Settings for long time-delay can be configured by conventional rated current adjustment; in addition, it can be set to 91% and 100% of the rated current, in 1% increments. This allows fine tuning to suit the load conditions to be applied.
- ★ Also equipped with a temperature self-monitoring function.
When the temperature of the circuit board inside the over-current protective device exceeds 105°C, a LED lamp lights up in red to indicate an abnormal operating status of the breaker.



★Versatile measurement functions

The following types of circuit information can be acquired. There is no need to install in-panel instruments and incidental connecting wires in the energy management system.

- Current • Voltage • Wattage • Watt-hour • Power factor
- Frequency • Total harmonic distortion • Demand current
- Demand wattage

★Precision measurement

Rogowski coils are used for current sensors. Measurement is now possible with higher precision than previous series. Reading errors complying with the international standard IEC 61557-12 were adopted to realize enhanced measurement accuracy: $\pm 1\%$ for electric current, $\pm 0.5\%$ for voltage, and $\pm 2\%$ for wattage. This allows precise monitoring of energy use conditions.

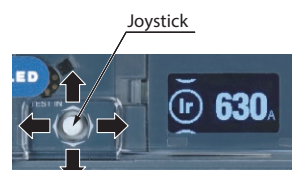
★Great visibility

An OLED display panel is used for the display to indicate measurement values. Also, high visibility is ensured by use of symbols representing the items to be displayed.



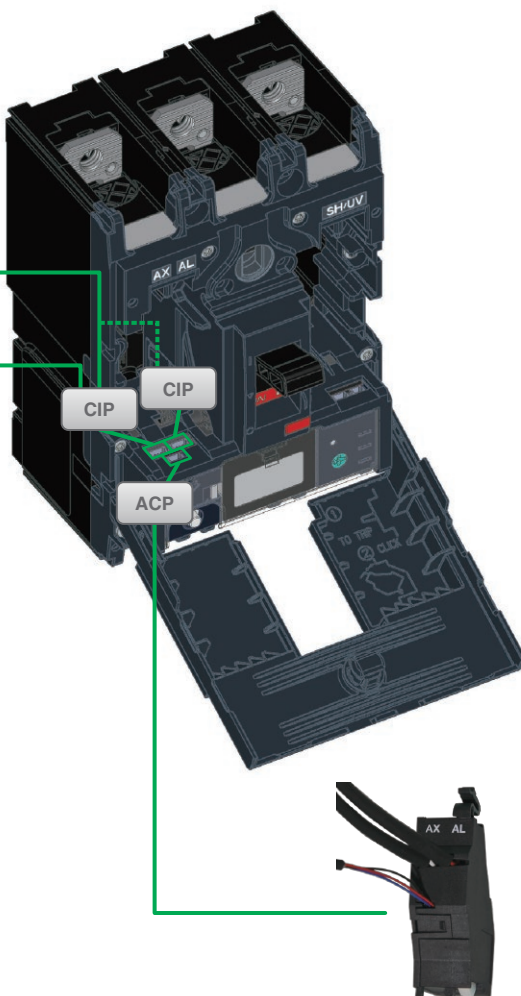
★Excellent operability

A joystick is used for switching display screens and configuring settings. User-friendliness improved in comparison with push-button operation adopted in conventional models.









★Status indication realized by smart AX/AL switch

With a special AX/AL switch installed, the number of times the auxiliary switch and alarm switch were activated can be indicated on the display of the circuit breaker, and it is also possible to transmit the activation count, along with the status of these switches, to the network including remote displays.

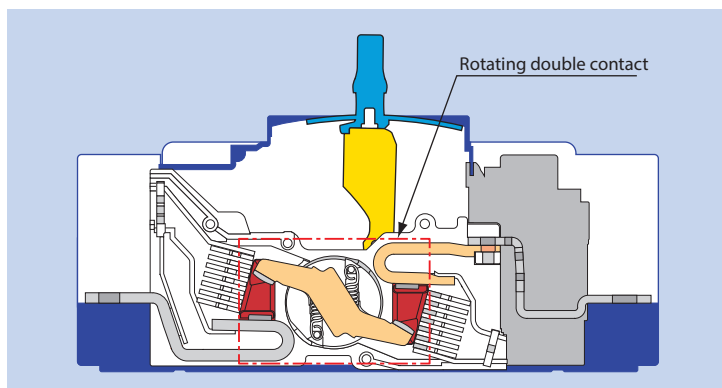


Smart AX/AL switch

Rated breaking capacity improved for 100AF - 630AF models

	TemBreak	TemBreak PRO
100AF 125AF	 S100-GF 415V AC $I_{cu}/I_{cs}=65\text{kA}/33\text{kA}$	 PS125-PF 415V AC $I_{cu}/I_{cs}=70\text{kA}/50\text{kA}$
225AF 250AF	 S225-GF 415V AC $I_{cu}/I_{cs}=65\text{kA}/35\text{kA}$	 PS250-PF 415V AC $I_{cu}/I_{cs}=70\text{kA}/50\text{kA}$
400AF	 S400-PF 415V AC $I_{cu}/I_{cs}=85\text{kA}/85\text{kA}$	 PH400-CF 415V AC $I_{cu}/I_{cs}=110\text{kA}/110\text{kA}$
630AF	 S630-PF 415V AC $I_{cu}/I_{cs}=100\text{kA}/50\text{kA}$	 PH630-CF 415V AC $I_{cu}/I_{cs}=110\text{kA}/110\text{kA}$

The 400AF/630AF models feature a pressure trip mechanism that leverages internal pressure generated at the time of a short-circuit trip, and a rotating double contact structure that has evolved from the world's first current-limiting circuit breaker technology developed by Terasaki. Owing to smooth contact separation realized by the rotating double throw contact, as well as speedy cut-off by the pressure trip mechanism, these new circuit breakers have excellent breaking performance: $I_{cu}/I_{cs} = 110\text{kA}/110\text{kA}$ (415V AC).





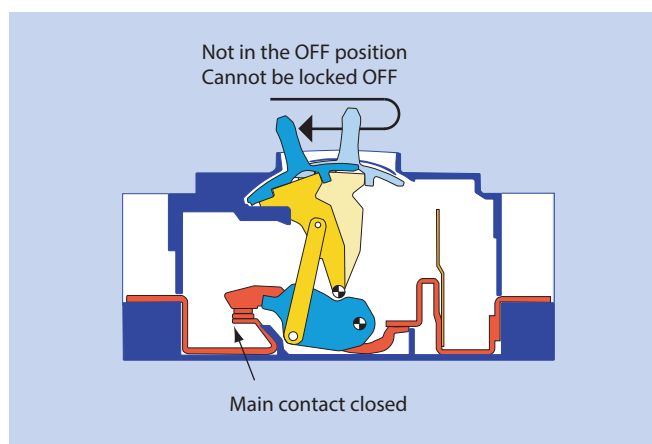
Safety inherited from *TemBreak2*

The safety-conscious functions and design features of the TemBreakPRO were taken over from the *TemBreak2* series.

Isolation capability

The isolation capability means that, as long as the main contact is closed, the toggle is not in the OFF position and cannot be locked at the OFF position.

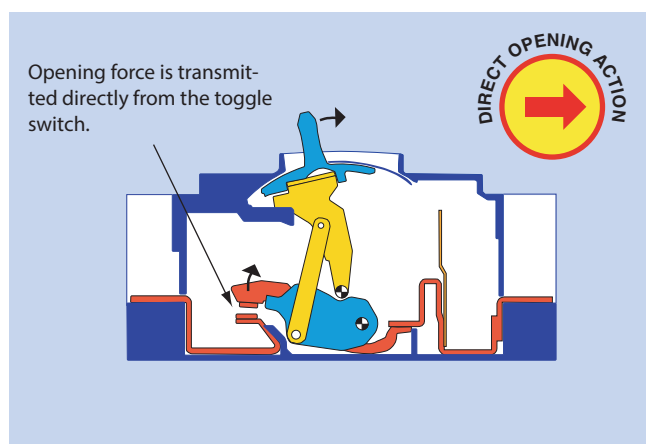
The toggle being in the OFF position hence shows the main contact is open and personnel are not exposed to electrical shock hazard when working in the load side.



Direct Opening Action

As well as being a spring-based switching mechanism, with the forced OFF mechanism, the main contact is moved directly by the operating force from the toggle at the time of OFF operation.

It can be used as an emergency stop switch for machines which comply with IEC60204-1. Even if the internal spring mechanism is damaged, the plug-in base can be turned OFF, meaning that it is safe.

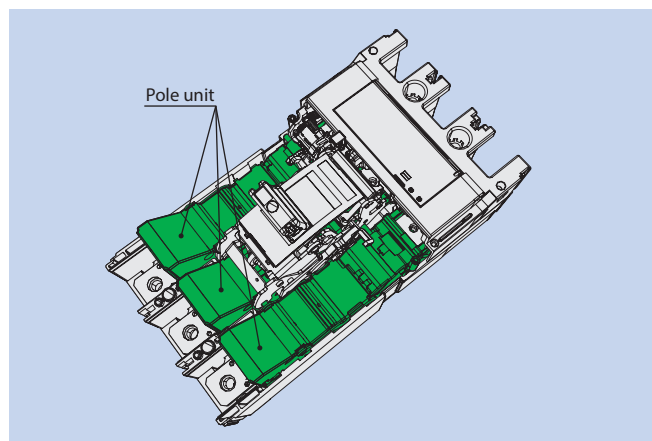


Enhanced Insulation

The risk of touching live parts has been minimized by design. If the toggle is broken by accident or misuse, no live part is exposed.

Moreover, 400AF and 630AF models adopted a pole unit structure comprising contacts and arc chambers housed in plastic cases and allocated to each pole.

This helped improve insulation performance between poles.



Easy-to-understand status indication

The indicator clearly shows Red when the circuit breaker is ON and Green when the breaker is OFF. No color indication means the device has tripped.

This design prevents misperception of breaker status when seen from any angle, thus ensuring safety.



Ratings and Specifications

TemBreak PRO Thermal-magnetic models

Frame size A			125	250	
					
Type			PS125-NF	PS125-PF	PS250-PF
Number of poles			2, 3, 4	2, 3, 4	3, 4
Rated current, A			15 20 30 40 50 60 75 100 125	15 20 30 40 50 60 75 100 125	125 150 175 200 225 250
Rated insulation voltage [U_i] V			800	800	800
Rated short time withstand current, [I_{cw}] kA			—	—	—
Utilisation category			A	A	A
Rated breaking capacity, kA JIS C 8201-2-1 Ann.1 Ann.2 IEC 60947-2 $I_{cu}/I_{cs}(sym)$	AC	690V	6/6	6/6	6/6
		415V	36/36	70/50	70/50
		240V	50/50	85/85	85/85
	DC	250V	25/19	40/40	40/40
External dimensions W×H×D (3P) mm			90×130×68	90×130×68	105×165×68
Front-connected (FC) Terminal screws			●	●	●
Rear-connected (RC) Flat bar studs			○	○	○
Plug-in (PM) For switchboards High-performance (PMB)			○ (3,4P)	○ (3,4P)	○
Flush-mounted (FP) With flat bar studs			○	○	○
Overcurrent trip mechanism			Thermal-magnetic	Thermal-magnetic	Thermal-magnetic
Suitability for isolation			Yes	Yes	Yes
Reverse connection			Yes	Yes	Yes

Notes:

● : Standard. This configuration used unless otherwise specified. ○ : Optional standard. Specify when ordering.
 ● : "yes" or "available". — : "no" or "not available".



	400				630			
								
	PS400-CF	PS400-NF	PS400-GF	PH400-CF	PS630-CF	PS630-NF	PS630-GF	PH630-CF
	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
	225 250 300 350 400	225 250 300 350 400	225 250 300 350 400	225 250 300 350 400	500 600	500 600	500 600	500 600
	800	800	800	800	800	800	800	800
	—	—	—	—	—	—	—	—
	A	A	A	A	A	A	A	A
	7/7	12/12	12/12	12/12	7/7	12/12	12/12	12/12
	36/36	50/50	70/70	110/110	36/36	50/50	70/70	110/110
	50/50	85/85	100/100	125/125	50/50	85/85	100/100	125/125
	25/25	50/50	50/50	50/50	25/25	50/50	50/50	—
	140×260×103	140×260×103	140×260×103	140×260×103	140×260×103	140×260×103	140×260×103	140×260×103
	●	●	●	●	●	●	●	●
	○	○	○	○	○	○	○	○
	○	○	○	○	○ (500A only)	○ (500A only)	○ (500A only)	○ (500A only)
	○	○	○	○	○	○	○	○
	Thermal-magnetic (adjustable)	Thermal-magnetic (adjustable)	Thermal-magnetic (adjustable)	Thermal-magnetic (adjustable)	Thermal-magnetic (adjustable)	Thermal-magnetic (adjustable)	Thermal-magnetic (adjustable)	Thermal-magnetic (adjustable)
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Ratings and Specifications

TemBreak PRO Standard electronic models and Smart breakers

Frame size A			125		250	
						
Type			PS125-NE	PS125-PE	PS250-NE	PS250-PE
Number of poles			3, 4	3, 4	3, 4	3, 4
Rated current, A			(Adjustable) $I_n=100$ $I_n=125$ 40 125 50 60 63 75 100	(Adjustable) $I_n=100$ $I_n=125$ 40 125 50 60 63 75 100	(Adjustable) $I_n=250$ 125 150 175 200 225 250	(Adjustable) $I_n=250$ 125 150 175 200 225 250
Rated insulation voltage [U_i] V			800	800	800	800
Rated short time withstand current, [I_{cw}] kA			—	—	—	—
Utilisation category			A	A	A	A
Rated breaking capacity, kA JIS C 8201-2-1 Ann.1 Ann.2 IEC 60947-2 $I_{cu}/I_{cs}(sym)$	AC	690V	6/6	6/6	6/6	6/6
		415V	36/36	70/50	36/36	70/50
		240V	—	—	50/50	85/85
	DC	250V	—	—	—	—
External dimensions W×H×D(3P) mm			90×130×68	90×130×68	105×165×68	105×165×68
Front-connected (FC) Terminal screws			●	●	●	●
Rear-connected (RC) Flat bar studs			○	○	○	○
Plug-in (PM) For switchboards High-performance (PMB)			○	○	○	○
Flush-mounted (FP) With flat bar studs			○	○	○	○
Overcurrent trip mechanism			Electronic	Electronic	Electronic	Electronic
Suitability for isolation			Yes	Yes	Yes	Yes
Reverse connection			Yes	Yes	Yes	Yes

Notes:

● : Standard. This configuration used unless otherwise specified. ○ : Optional standard. Specify when ordering.
● : "yes" or "available". — : "no" or "not available".



	400			630		
						
	PS400-NE	PS400-GE	PH400-CE	PS630-NE	PS630-GE	PH630-CE
	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
	(Adjustable) $I_n=250$ $I_n=400$ 125 175 150 200 175 225 200 250 225 300 250 350 400	(Adjustable) $I_n=250$ $I_n=400$ 125 175 150 200 175 225 200 250 225 300 250 350 400	(Adjustable) $I_n=250$ $I_n=400$ 125 175 150 200 175 225 200 250 225 300 250 350 400	(Adjustable) $I_n=630$ 250 300 350 400 500 600 630	(Adjustable) $I_n=630$ 250 300 350 400 500 600 630	(Adjustable) $I_n=630$ 250 300 350 400 500 600 630
	800	800	800	800	800	800
	5 (0.4sec.)	5 (0.4sec.)	5(0.4sec.)	—	—	—
	B	B	B	A	A	A
	12/12	12/12	12/12	12/12	12/12	12/12
	50/50	70/70	110/110	50/50	70/70	110/110
	85/85	100/100	125/125	85/85	100/100	125/125
	—	—	—	—	—	—
	140×260×103	140×260×103	140×260×103	140×260×103	140×260×103	140×260×103
	●	●	●	●	●	●
	○	○	○	○	○	○
	○	○	○	—	—	—
	○	○	○	○	○	○
	Electronic	Electronic	Electronic	Electronic	Electronic	Electronic
	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes



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Since 1971 when we established TERASAKI ELECTRIC Europe, our first overseas subsidiary, in the UK, we have assembled a global network of 10 overseas subsidiaries and 72 agents to provide sales and technical supports to customers worldwide.

Safety Notice

Carefully read instruction manual to ensure proper installation, connection, operation, handling and maintenance of the product.

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