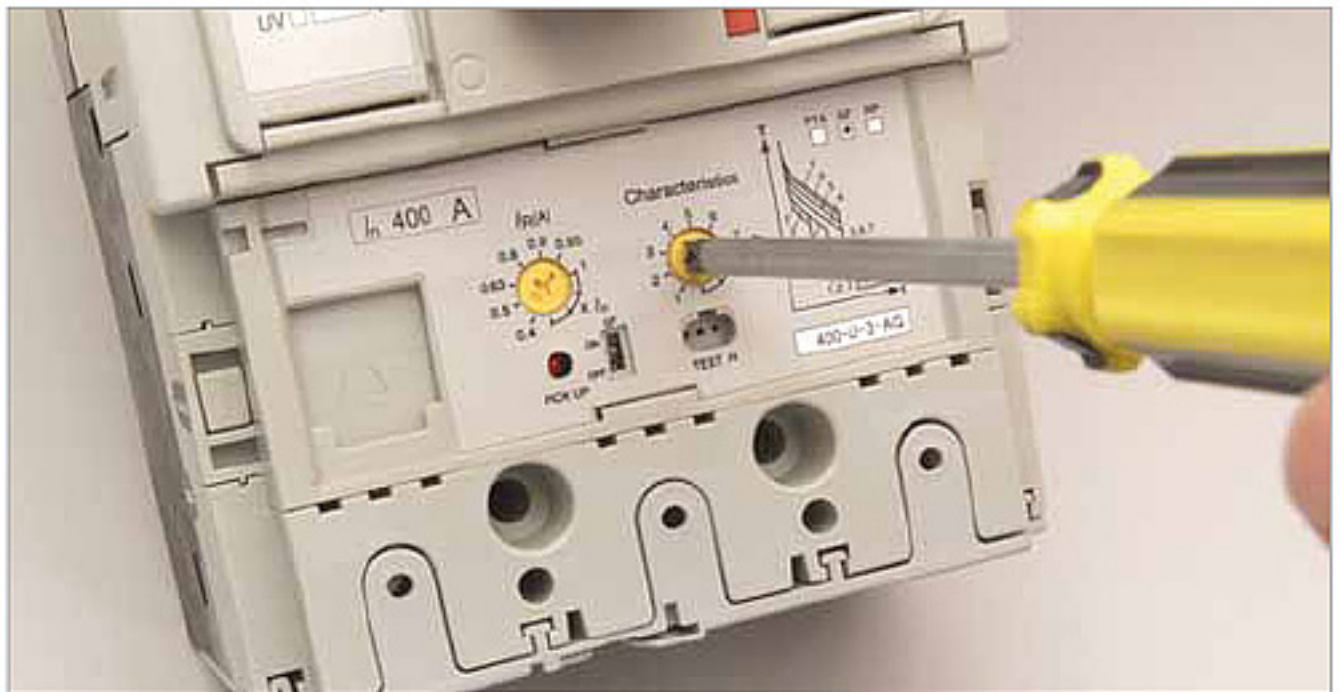


TemBreak 2 MCCBs from 250A frame to 630A frame are available with electronic protection units. Current ratings, I_n , of 40A, 125A, 160A, 250A, 400A and 630A are available. These offer great flexibility as their characteristics can be set to suit a wide range of application conditions. Overload protection can be set between 0.4 and 1.0 times I_n .

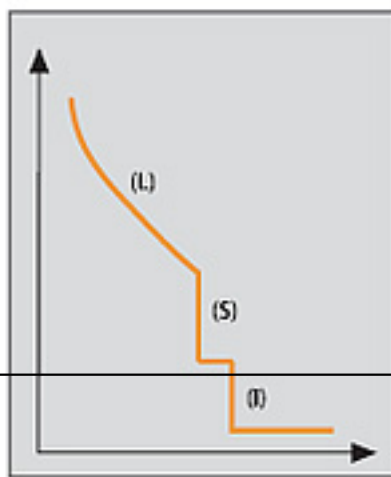
Terasaki offer one of the most adaptable protection units on the market:

If you require a characteristic which is not available as a preset on our standard electronic protection unit, send us the details and we will program a customised characteristic to your specification.*



Selecting a Preset Characteristic for a 400A TemBreak 2 MCCB with Electronic Protection

Every TemBreak 2 electronic protection unit includes overload protection (L), delayed short-circuit protection (S) and instantaneous protection (I) as standard.



Optional Functions

Three optional functions are available:

Ground Fault Trip (G)

This function trips the MCCB after time delay, t_g , if the ground fault current exceeds the threshold, I_g . Ground fault protection can be enabled and disabled by operating a DIP switch on the electronic protection unit. An external current transformer is available if the ground fault trip function is required on a 3 pole MCCB, in a 3 phase, 4 wire system.

Neutral Protection (N)

Neutral protection trips the MCCB after time delay, t_N , if current in the neutral conductor exceeds the rated current, I_n , of the MCCB. The time delay characteristic is identical to that of the overload characteristic (L).

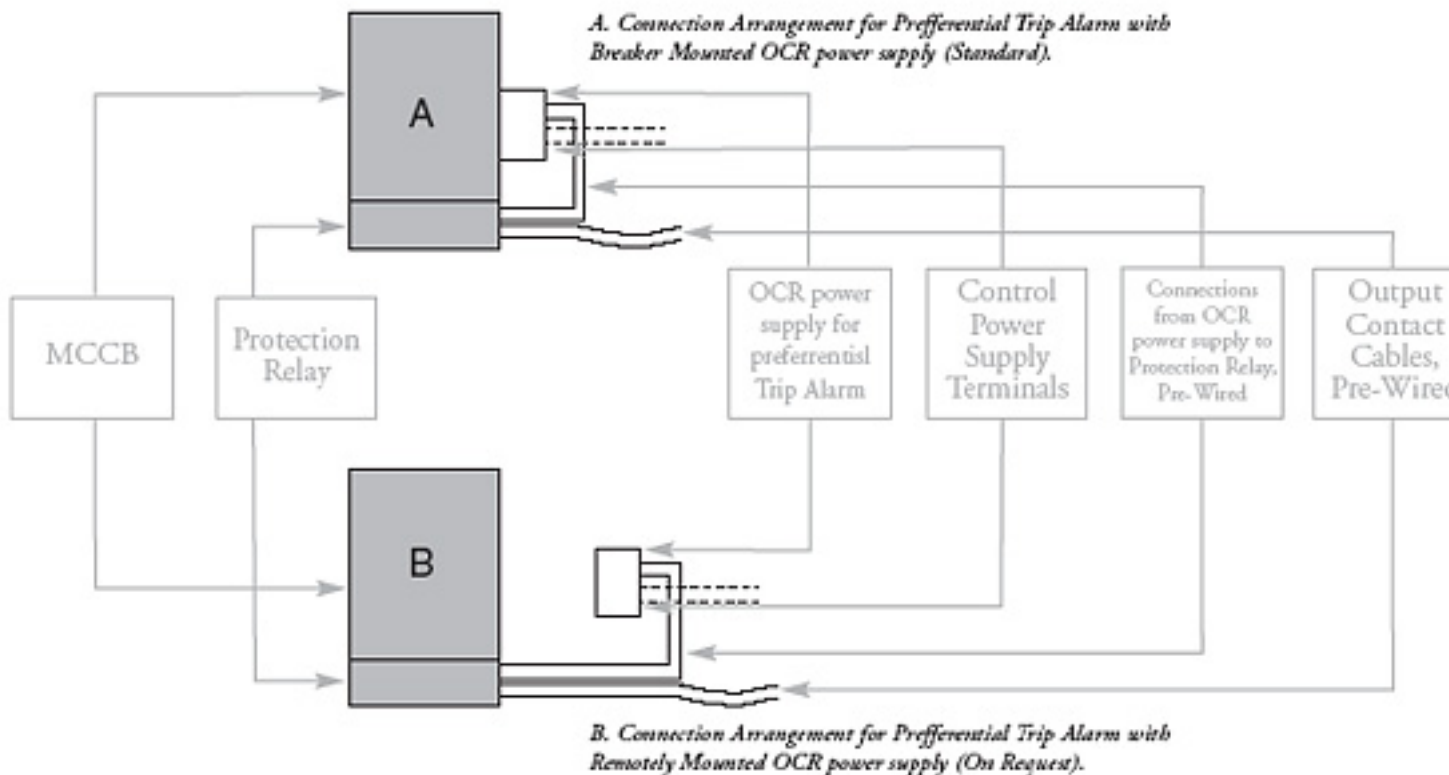
Preferential Trip Alarm (P)

An LED and volt-free output contact are activated after a time delay, t_p , if the load current exceeds the preset threshold, I_p .

An OCR power supply is required for operation of the preferential trip alarm. This is mounted as shown below, either on the side of the breaker (250A, 400A, 630A – standard), or remotely (400A, 630A only – on request). Ratings, specifications and wiring arrangements are shown below. Dimensions of the OCR power supply for preferential trip alarm can be found in Section 7. Note that the breaker mounted terminal block is not compatible with the OCR power supply for Front-Connected and Rear-Connected MCCBs described in Section 5, if the OCR power supply is mounted on the right side of the breaker.

Control Power Supply Specifications		
Frame (A)	250	400/630
Voltage	200-240V AC	200-240V AC
Rated Power	2VA	2VA

Rated Current of Output Contact		
Frame (A)	250	400/630
125V AC, resistive load	3A	3A
125V AC, inductive load	2A	2A
250V AC, resistive load	3A	3A
250V AC, inductive load	2A	2A
30V DC, resistive load	2A	2A
30V DC, inductive load	2A	2A



How to Specify Optional Functions

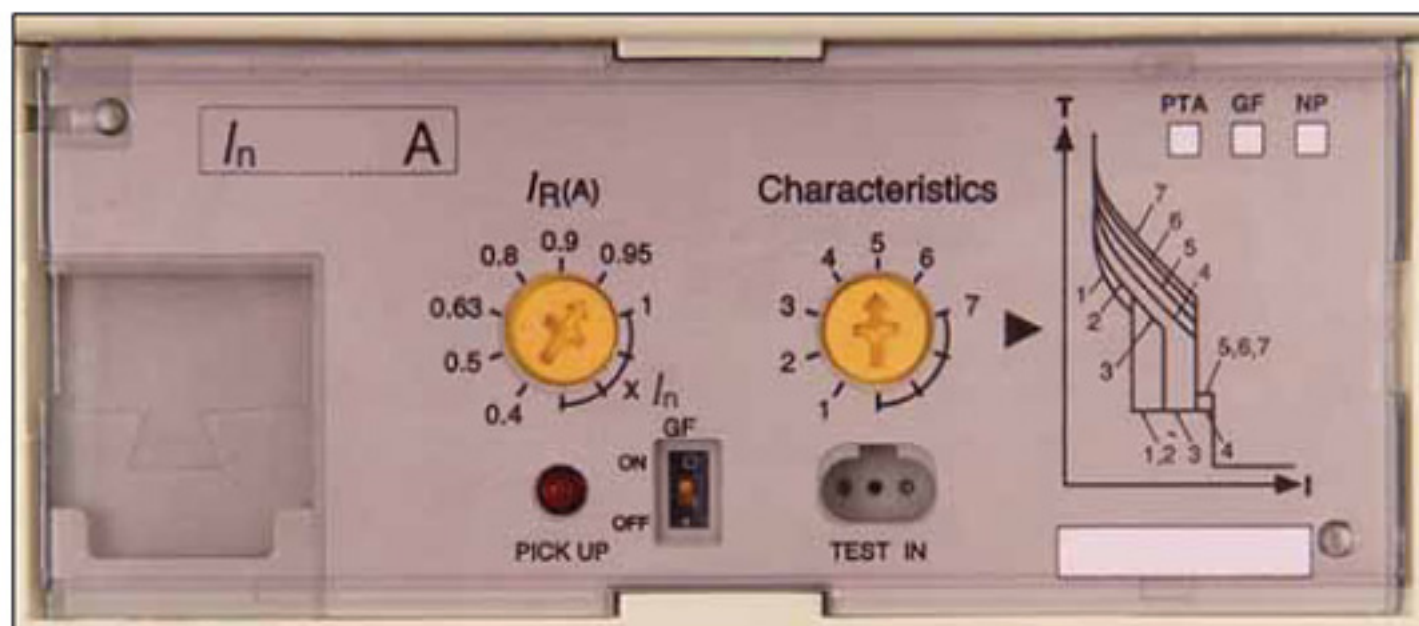
Optional functions must be specified at the time of order. Descriptions for electronic MCCBs include a 1-4 digit alphabetic code after the type designation which details the combination of optional functions. For example:

S400-GE **APG** 3P 400A FC - includes preferential trip and ground fault trip.

The table below lists codes for all the optional functions currently available:

Optional Function					
I_n	Poles	Code	Ground Fault (G)	Neutral Protection (N)	Preferential Trip Alarm (P)
250	3	AP	-	-	■
		AG	■	-	-
	4	AP	-	-	■
		AN	-	■	-
400	3	APG	■	-	■
		AGN	■	■	-
		APGN	■	■	■
	4	AP	-	-	■
		AG	■	-	-
		AN	-	■	-
		APN	-	■	■
		AGN	■	■	-
630	3	APG	■	-	■
		AGN	■	■	-
		APGN	■	■	■
	4	AP	-	-	■
		AG	■	-	-
		AN	-	■	-
		APN	-	■	■
		AGN	■	■	-

Adjustment Dials



The left adjustment dial sets the rated current to match the conductor rating. The right adjustment dial selects one of seven preset characteristics on 250A and 400A models, and one of six preset characteristics on 630A models. The effects of the left adjustment dial (labelled $I_R(A)$), and the adjustment dial (labelled Characteristics) are detailed in the tables shown underneath each time / current graph.

Tolerances of Characteristics

Characteristics		Tolerance
Long Time Delay	t_R	$\pm 20\%$
Short Time Delay	I_{sd}	$\pm 15\%$
	t_{sd}	Total clearing time +50ms, resettable time -20ms
Instantaneous	I_i	$\pm 20\%$
Preferential Trip Alarm	I_p	$\pm 10\%$
	t_p	$\pm 10\%$
Ground Fault Trip	I_g	$\pm 15\%$
	t_g	Total clearing time +50ms, resettable time -20ms
Neutral Protection	I_N	$\pm 15\%$