

Low Fault Current Detection

LOW RATIO INTERNAL CTs

The G&W Viper recloser is equipped with an internal CT, which is completely encapsulated within the solid dielectric epoxy insulation of the interrupter module. In addition to the CT with the more common 1000/500:1 ratio, the Viper can also be equipped with 400/200:1 internal CT.

This lower ratio 400/200:1 CT can be supplied with the Viper-S, Viper-ST, and Viper-SP. The maximum continuous current rating with this lower ratio CT is 630A for overhead applications and 600A for padmount applications. The tables below compare the minimum pickup levels depending on the recloser control used and different CT ratios.

These CTs provide the recloser control with a $\pm 1\%$ accuracy input for all currents above the minimum pickup shown below. Unless requested otherwise, the ratio is factory set to the highest ratio and is field changeable.

Application

Utilities in remote and rural areas often have small load circuits. End of line applications will also necessitate the CT ratios to be adjusted to very small load and small fault current systems. These scenarios require the minimum pickup to be lowered to maintain proper protection elements on the system.

MINIMUM PICKUP CURRENTS WITH 1000/500:1 CTs

Protection elements	Current Input to relay: Minimum secondary pickups			Corresponding Primary Current CT set on 1000:1 ratio			Corresponding Primary Current CT set on 500:1 ratio		
	SEL-351R	SEL-651R	Beckwith M-7679	SEL-351R	SEL-651R	Beckwith M-7679	SEL-351R	SEL-651R	Beckwith M-7679
Relays									
min. 50P	0.05 A	0.05 A	0.02 A	50 A	50 A	20 A	25 A	25 A	10 A
min. 51P	0.05 A	0.05 A	0.02 A	50 A	50 A	20 A	25 A	25 A	10 A
Grd/Neut.	0.005 A	0.005 A	0.005 A	5 A	5 A	5 A	2.5 A	2.5 A	2.5 A

MINIMUM PICKUP CURRENTS WITH 400/200:1 CTs

Protection elements	Current Input to relay: Minimum secondary pickups			Corresponding Primary Current CT set on 400:1 ratio			Corresponding Primary Current CT set on 200:1 ratio		
	SEL-351R	SEL-651R	Beckwith M-7679	SEL-351R	SEL-651R	Beckwith M-7679	SEL-351R	SEL-651R	Beckwith M-7679
Relays									
min. 50P	0.05 A	0.05 A	0.02 A	20 A	20 A	8 A	10 A	10 A	4 A
min. 51P	0.05 A	0.05 A	0.02 A	20 A	20 A	8 A	10 A	10 A	4 A
Grd/Neut.	0.005 A	0.005 A	0.005 A	2 A	2 A	2 A	1 A	1 A	1 A

50P: Instantaneous/ Definite-time Overcurrent Elements, Phase

51P: Time Overcurrent Elements, Phase

Grd/Neut.: Ground and Neutral settings