

Clearing Time For SF6 Gas Fault Interrupters

(Model NI, FI and VI)

Standard

Definition

The dual logo fault interrupter standard IEEE C37.60 / IEC 62271-111 provides a time line (Figure 1) that defines Clearing Time as the sum of the following times:

Clearing Time = Release Delay + Opening Time + Arcing Time

- Release Delay is the time it takes the control to detect fault current, activate the corresponding programmed protection element, and send the trip command to the fault interrupter. This includes the time over-current curve.
- Opening Time is the time from the moment the magnetic latch is energized to initiate the trip operation to the time the vacuum interrupter contacts part.
- Arcing Time corresponds with how long it takes the vacuum interrupter to extinguish the arc.

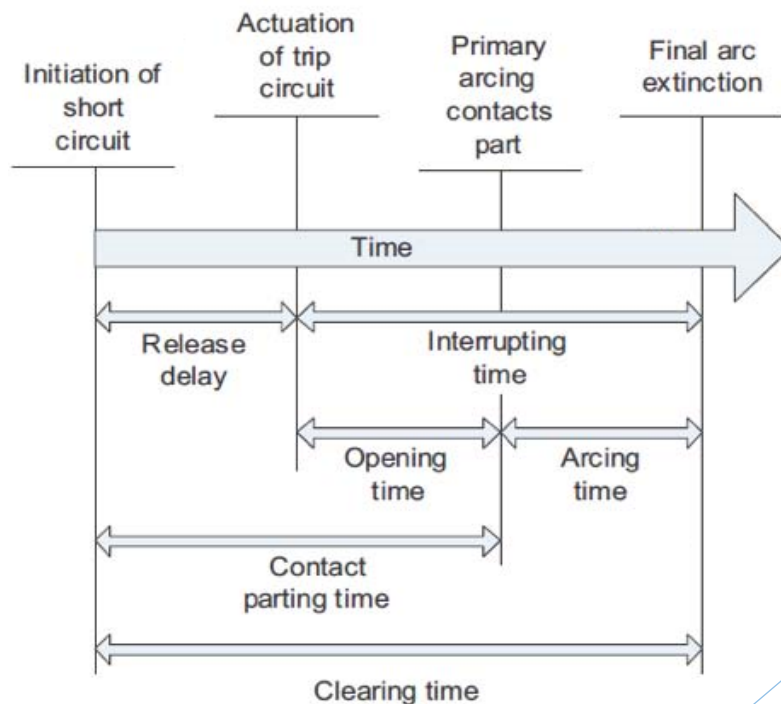


Figure 1: Graphical representation of Clearing Time

Clearing Time

SF6 Gas Fault Interrupters (*Models NI, FI and VI*)

The Clearing Time as shown in the table below is for the fault interrupter. This timing considers an instantaneous trip command from the control that corresponds to the minimum time delay response from the relay.

Description	Times	
	ms	Cycles (60 Hz based)
Release Delay	8 (±5)	0.5 (±0.3)
Opening Time	48 (±5)	3.0 (±0.3)
Arcing Time	8 (±5)	0.5 (±0.3)
Total Clearing Time	64 (±15)	4.0 (±1.0)

Factory Testing

This Clearing Time above does not take into account any Time Over-Current curve, which depending on the fault current magnitude and curve type, may delay the timing of the trip command to the fault interrupter up to several seconds.

The fault interrupters are system-tested with their control. In order to guarantee proper operation within the Clearing Time performance, G&W performs routine tests per the above mentioned standard.