

# Refase™

**Refase™ is Synaptec’s powerful multi-zone power system protection solution, designed to protect complex, wide-area, or distributed networks and assets. The unique ability of Refase™ to simultaneously access many current measurements over a wide geographical area, or in multiple feeder sections within a substation, enables convenient centralised protection and control functions.**

This includes multi-zone protection and intelligent, highly-selective auto-reclose (AR or DAR), which is particularly suited to hybrid circuits composed of multiple underground cable and overhead line sections. Using Synaptec’s photonic sensing technology, granular unit protection of lines, cables, and other assets is enabled for complex, multi-ended and wide-area circuits that are challenging and costly to protect using both conventional measurement equipment and Faraday-effect based NCITs.

Refase™ issues time-critical trip and control commands, typically using IEC 61850 GOOSE format, and can optionally interface with existing SCADA systems. Full Sampled Value measurement data can also be provided to existing substation equipment enabling back-up or parallel protection and enabling advanced protection functionality on conventional relays. The approach is also ideal for monitoring, protecting, and controlling distributed generation. Refase™ includes all the features and benefits of Synaptec’s Interrogator platform, and is fully compatible with Synaptec PCT range of current measurement devices.

## Specifications

	Refase™	Synchromerger™	Synthesis™
<b>Core functionality</b>			
Up to 30 measurements per 60 km / 37 miles	✓	✓	
Multi-zone protection instrumentation	✓	✓	
Provides wide-area synchronous measurements		✓	
Data logging, visualisation, and analytics			✓
<b>Supported sensor types</b>			
PCT (current)	✓	✓	
PVT (voltage)		✓	
PTT (temperature)		✓	
PST (strain and sag)		✓	
Vibration		✓	
<b>Features</b>			
IEC 61850 / IEC 61869-9 output	✓	✓	
Auto-reclose (AR) block	✓	✓	
IEEE C37.118 synchrophasors		✓	✓
Real-time power quality (PQ)			✓
Correlated electro-mechanical data		✓	✓
Data visualisation			✓
High-quality data logging (private storage or cloud)			✓
Long-term trend analytics			✓