

Photonic Current Transducer (PCT)



Synaptec’s PCT brings together the benefits of well-understood high-performance CTs with modern techniques for passive photonic sensing to deliver unprecedented reliability and flexibility in power system instrumentation.

By using high-performance metering or protection class CTs as primary converters, no non-standard or vulnerable installation processes are introduced, while Synaptec’s photonic sensing techniques permit the measurement of the CT without dedicated local merging units or data networks. The format of the primary converter – solid or split core, air-insulated stack or cable-mounted – may be determined by the customer based on the use case. Similarly, Synaptec PCTs may be configured as IEC 60044 and IEC 61869 compliant protection or metering class devices.

Synaptec’s photonic technology allows PCTs to be completely optically isolated: no electronics, batteries, data communications, power supplies, or time synchronisation is required at measurement locations. As a result, the footprint and weight of sensors is minimised, quick and safe retrofitting in remote and inaccessible locations is enabled, and long-term maintenance-free operation is achieved.

Specifications

Electrical	
Nominal current	User specified up to 40 kA
Accuracy class	5P / 10P (protection) 0.5 / 1.0 (metering)
Voltage	LV to 600 kV
Insulator	User specified to match voltage rating Not required for measurement on insulated conductor
Environmental	
Operating temperature range	-40 to +80 °C
Humidity	90%
Vibration	1G
Optical	
Fibre type	Standard single mode
Fibre connection	Single mode fibre splice