

Cable Connection Monitor (CCM)

Increase generation and reduce operational cost with the world's only distributed electrical sensor network for windfarms.

Our passive sensor arrays require no power or data networks and provide live data more reliably and securely from more locations. This wide area, multipoint technology is ideal for automated condition monitoring, and improved asset management decisions.

Key points

- Precision condition monitoring of sheath current and temperature
- Accurate thermal and electrical measurements using passive optical fiber sensors
- Quick and safe to fit – no power supplies or telecoms needed at any turbine
- Output data and alarms easily integrated with SCADA

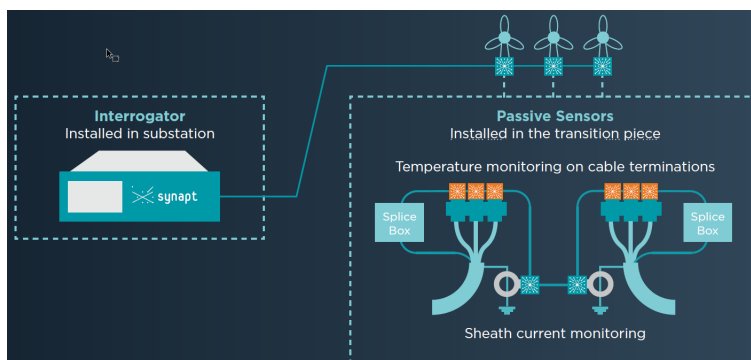
Electrical faults are the largest cause of failure in windfarms. The cause is often traced back to cable terminations, where jointing and earthing can be vulnerable to degradation over time. Monitoring current and temperature in the terminations and screen connections allows diagnosis of nascent issues which can be addressed to mitigate or minimise faults.

CCM is a simple and powerful solution to enable health monitoring of cable junctions and terminations. Using Synaptec's passive and distributed current and temperature monitoring technology, CCM delivers real-time, high quality data on the cable screen earthing points and ambient temperature. Integrated and customisable threshold alarms and live measurement data are easily integrated with existing SCADA systems, giving wind farm operators awareness and actionable information on the health and status of terminations.

Using Synaptec's unique Distributed Electromechanical Sensing (DES) technology, just one optical fiber per string is required to measure current and temperature at all wind turbines. The solution does not require power supplies, telecoms, or time clocks at any measurement location, so installation takes as little as 30 minutes per sensor and does not require any live electrical work.

Current measurements are IEC 60044/61869 compliant. Temperature measurements are accurate to within 0.1 °C and have a spatial resolution of 2 cm, allowing the temperature of individual components to be precisely and discretely monitored. All data – electrical and thermal – are precisely timestamped by the Interrogator for analysis on fault precursors and trends.

CCM is compatible with complementary mid-span optical monitoring technologies such as DTS and DAS and can share the same optical fiber core as those technologies.



Components

- Synaptec Interrogator
- Photonic Current Transducer (PCT)
- Photonic Temperature Transducer (PTT)