



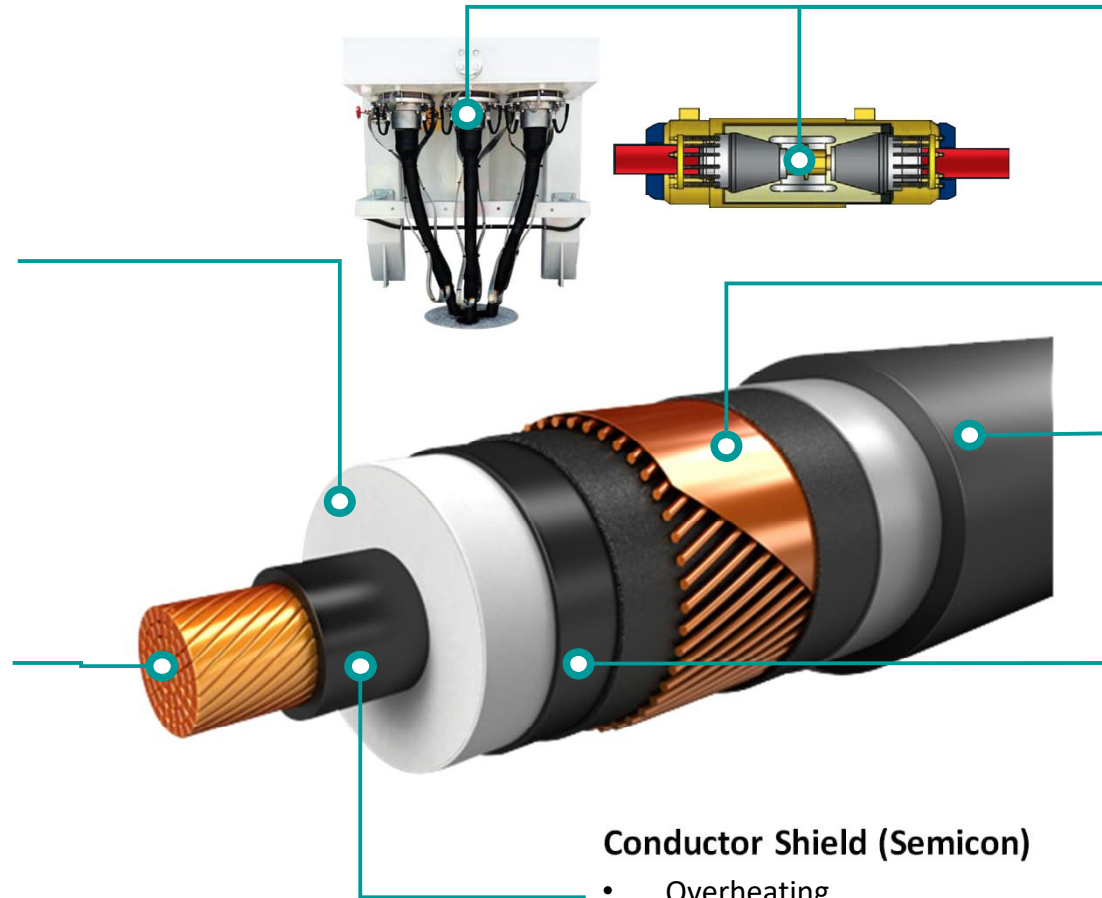
# Power Cable: Failure Mode Analysis

## Insulation

- Water Treeing
- Void and Contaminants
- Protrusions from the Shields
- Cracking of embrittled insulation
- Aging / Overall Degradation

## Conductors

- Very little can go wrong with a properly designed conductor
- Corrosion in some unusual cases
- Delamination on Conductor



## Terminations / Joints

- Overheating
- Discolored / Burnt Conductor
- Discolored / Burnt Insulator
- Bad Connector Crimps
- Cross Threading of the Elbow Probe
- Broken Stud in Bushing Well

## Metallic Shield / Neutral

- Damaged Shield
- Overheating

## Jacket / Sheath

- Cracks on the Sheath

## Insulation Shield (Semicon)

- Small air pockets
- Loose bonding with Insulation
- Discolored Metal
- Protrusions on the semicon
- Burning / Arcing

## Conductor Shield (Semicon)

- Overheating
- Protrusions on the semicon
- Burning / Arcing



# Power Cable: Termination / Junction Temperature Monitoring

## Fiber Optic Based temperature Monitoring

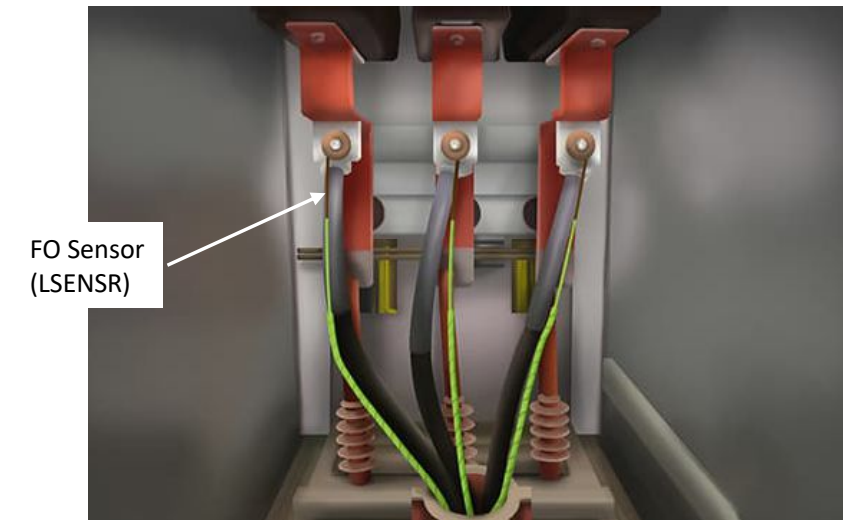
1. Easy to install temperature Sensor for retrofit applications
2. Sensor installation suitable for all kinds of Cable (MV and HV) and Termination / Joint types
3. Highly dielectric Sensor – Do not need any isolation at high Voltage
4. Most accurate sensor for Cable Terminations – No Need for Compensation
5. Real time temperature monitoring to detect incipient faults



Fiber Optic Temperature Sensor



Temperature Monitor  
O201



FO Temperature Sensors installed at Cable Termination



# Power Cable: Partial Discharge Monitoring

## High Frequency Partial Discharge Monitoring Systems

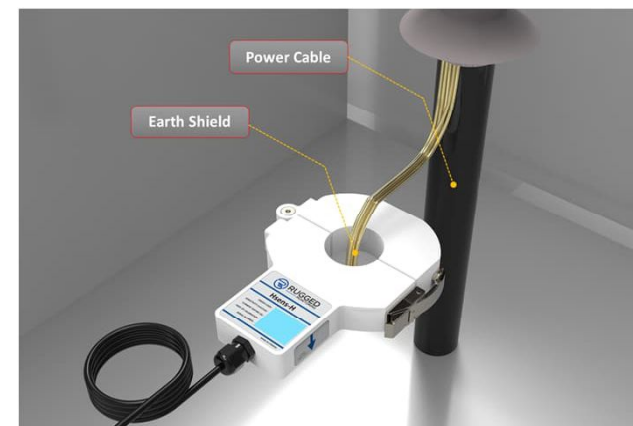
1. Portable System for periodic testing and measurement
2. Continuous Online Monitoring system for critical assets
3. Enterprise Software for multiple assets
4. Expert Reporting Service for customers



Cable PD Portable (HPM601)



Cable PD Continuous Online Monitor (HPM601)



Cable PD Sensors (HFCT)



Cable PD Sensors (TEV)