

Innovative sensor for multiple conductor cables to increase the smartness of the distribution grid

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- The Jomitek I3+ sensor.
- Examples of field test installations during project.
- Measurements techniques.
- Operational principles.
- Relay functionalities.
- Distance relay – basics.

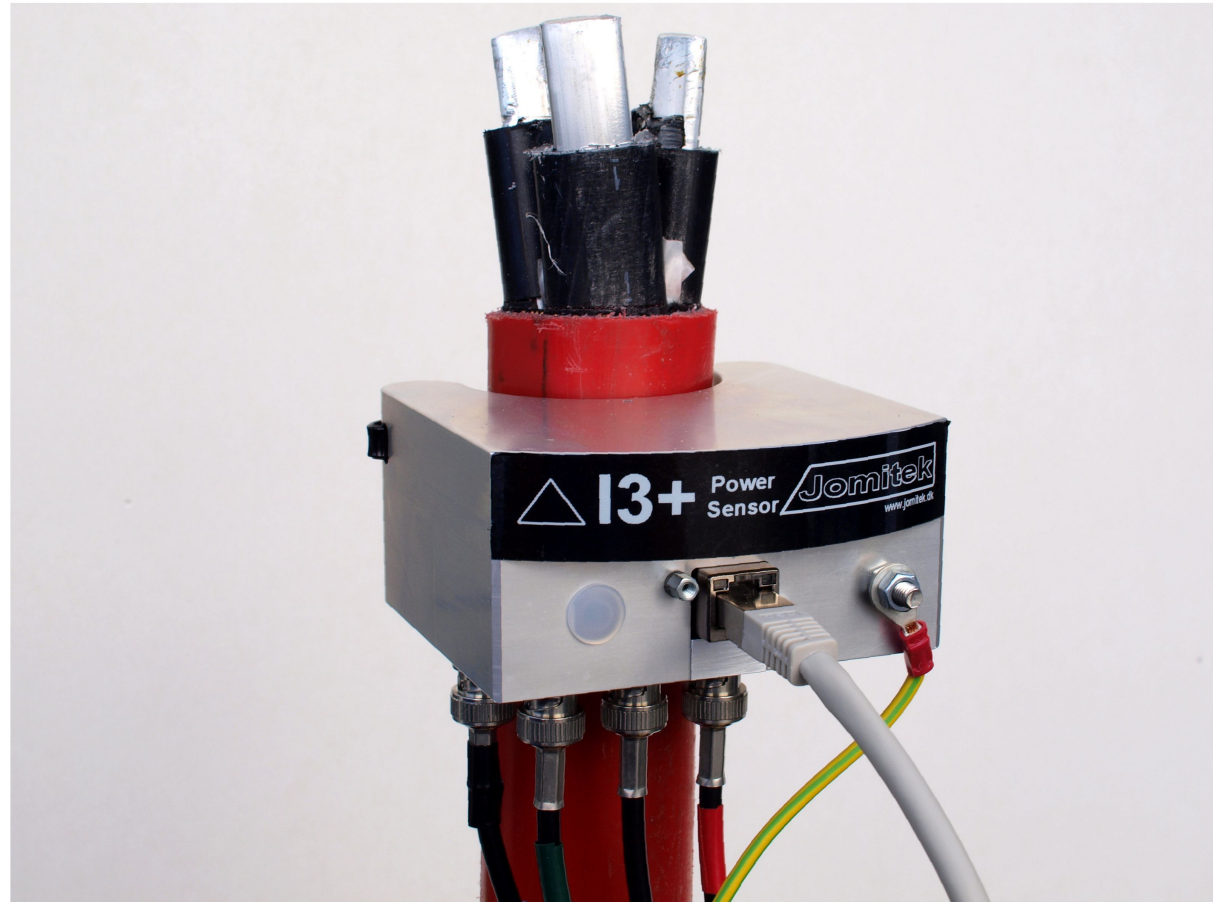


Key parameters

- Revolutionary current measurement.
- Easy installation.
- Localized data processing.
- Time synchronized voltage and current measurements.
- Memory capacity designed for full life time logging.

Value for the DSO

- Detailed knowledge about the grid.
- Reduce downtime.
- Optimize hardware renewal or repair planning.
- Optimize personal dispatch.





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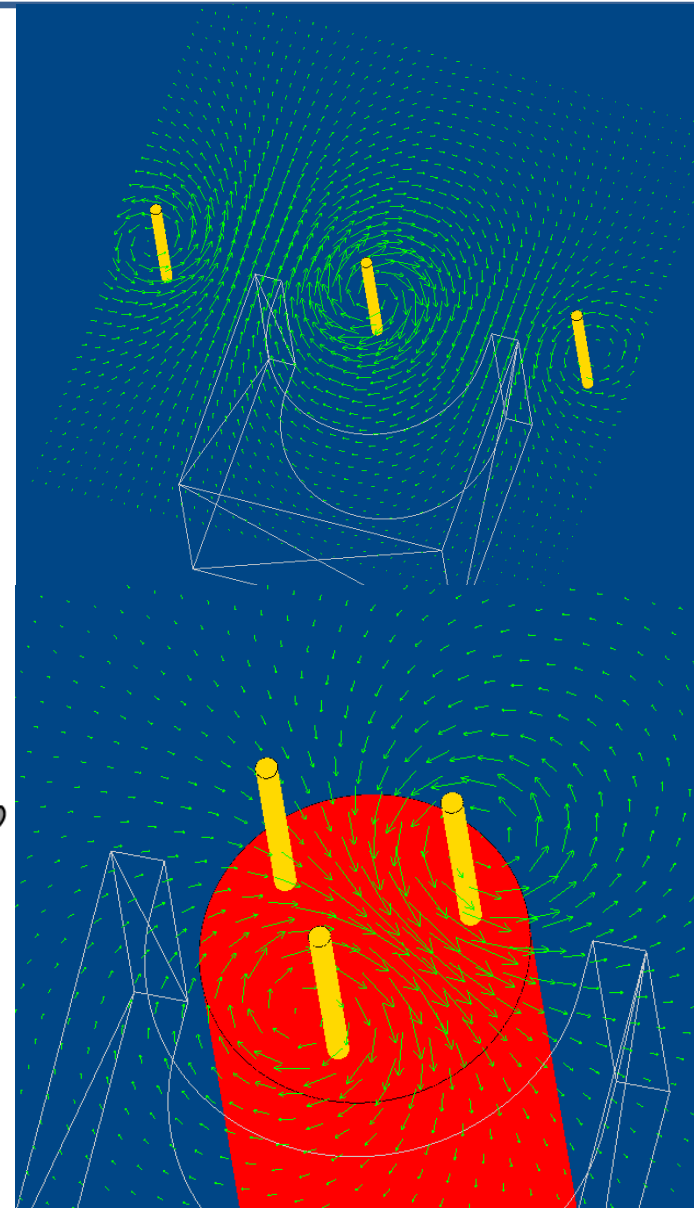
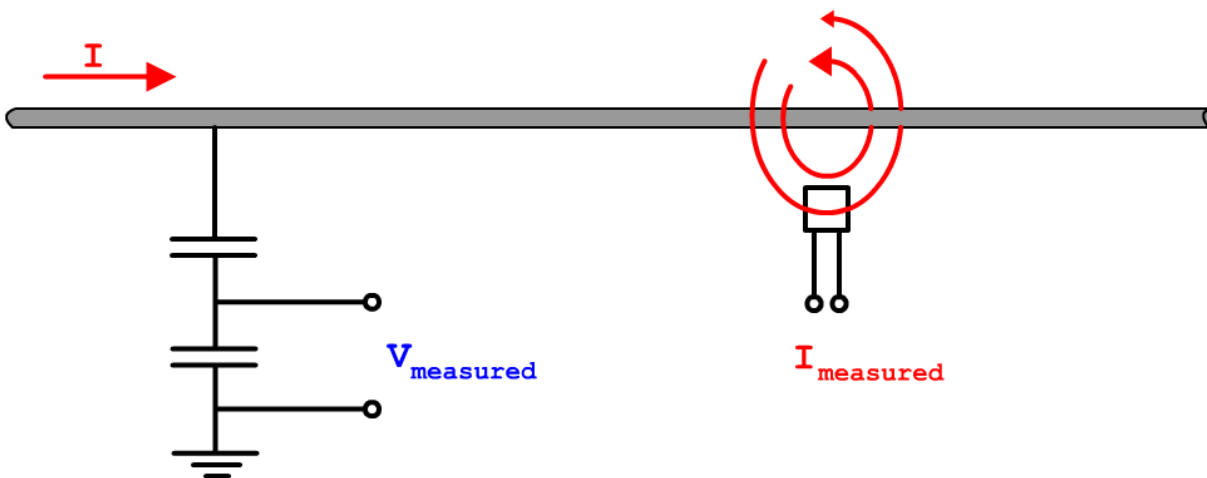
Easy online flexible mounting for multiple current measurements



Voltage measurement from existing available points



- Frequency independent.





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Multi functional relay

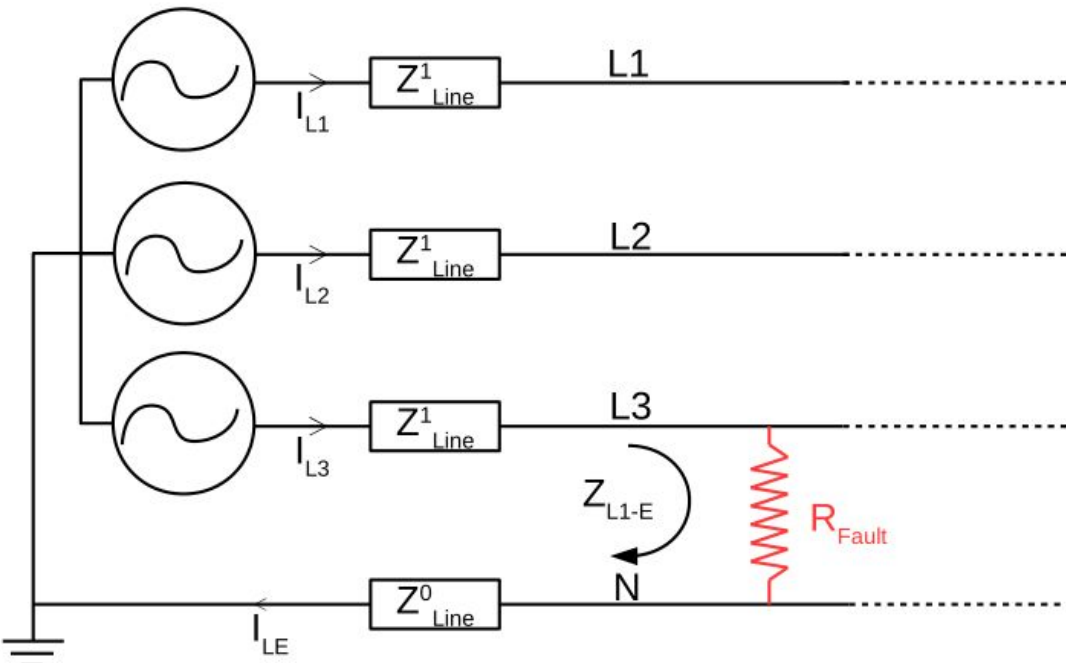
Operates as a localized mini SCADA.

- Localized data processing.
 - Memory capacity designed for full lifetime logging.
 - Synchronized voltage and current measurements.
 - Powerful embedded processor.
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- Directional overcurrent protection.
 - Earth fault protection.
 - Distance protection.

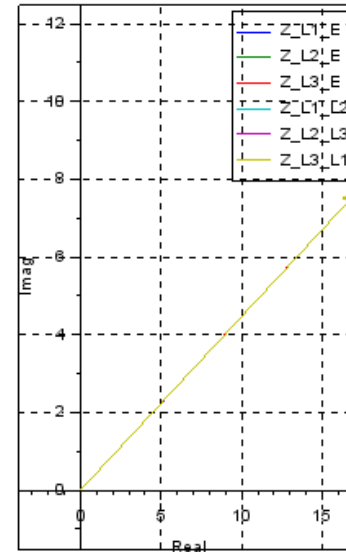


Fundamentals

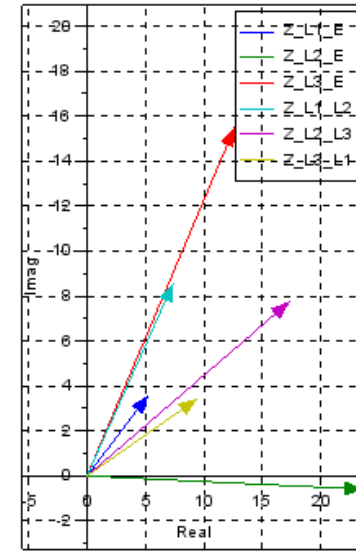
- Loop impedance.
- Overhead line vs. cable.
- Before and after fault occurrence.



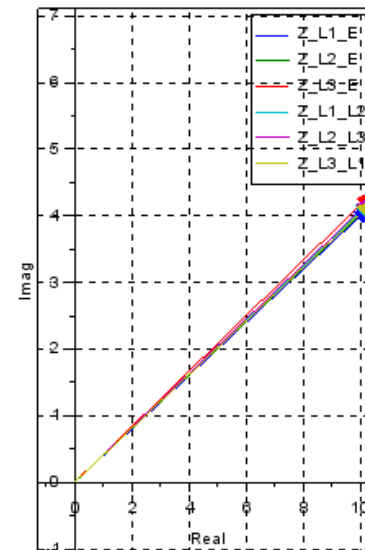
Before fault loop impedances



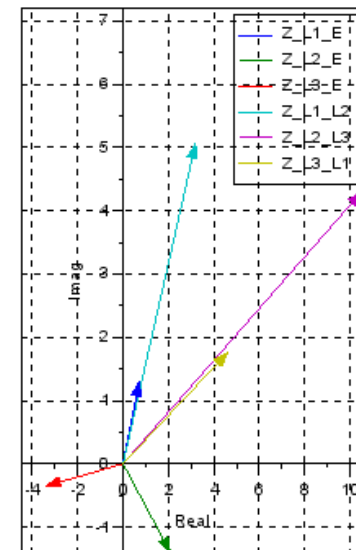
After fault loop impedances



Before fault loop impedances

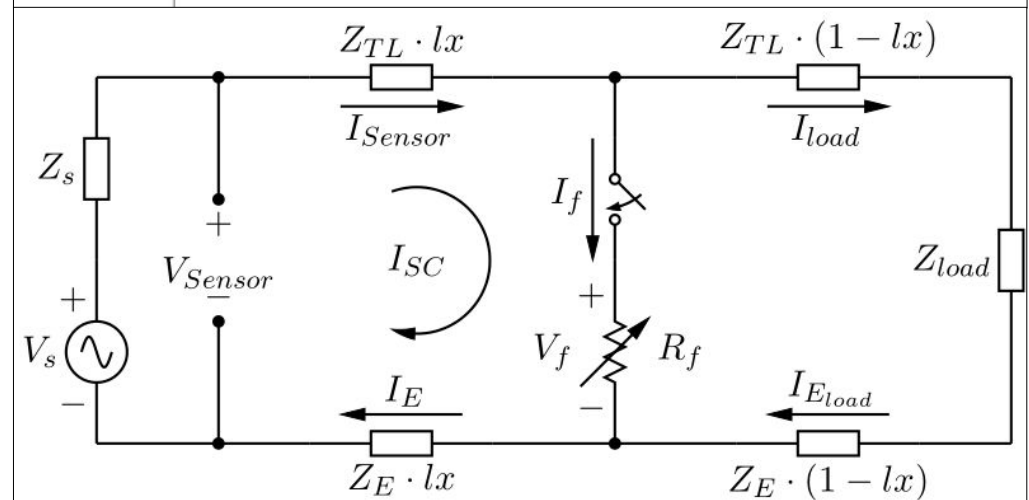
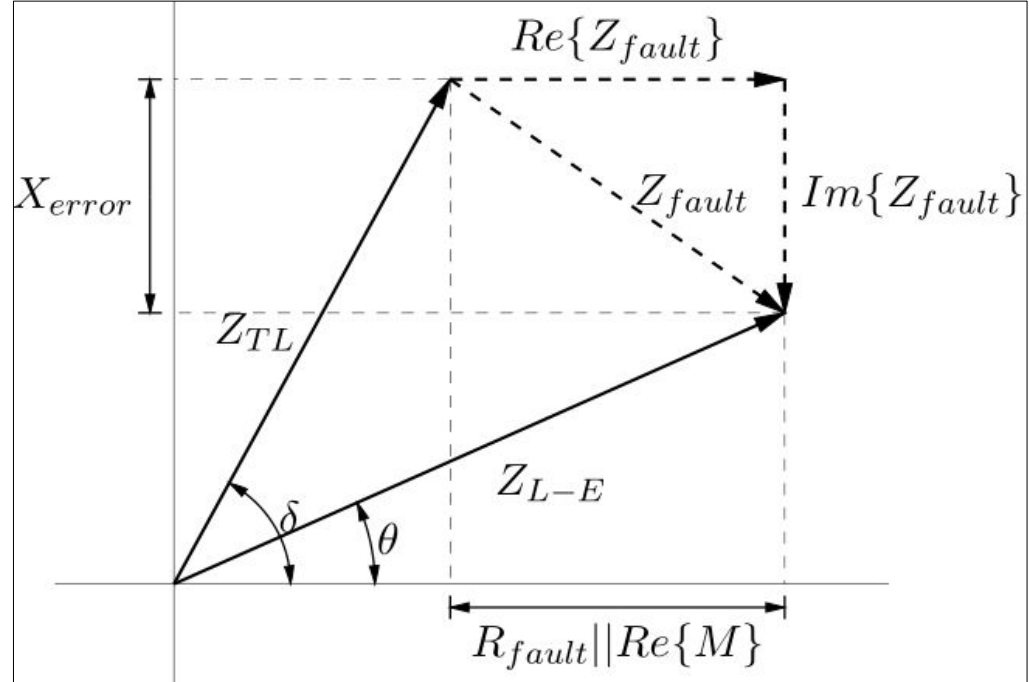


After fault loop impedances



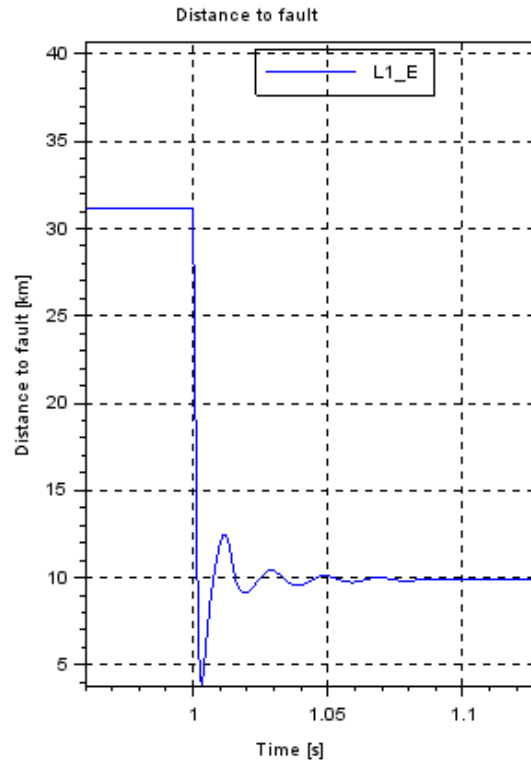
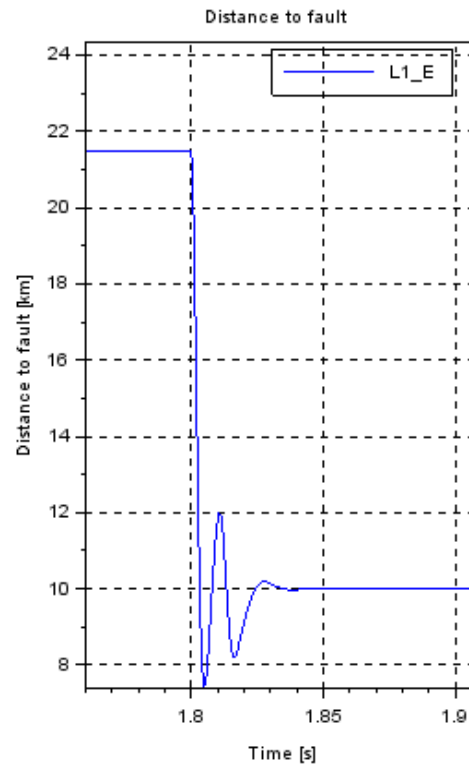
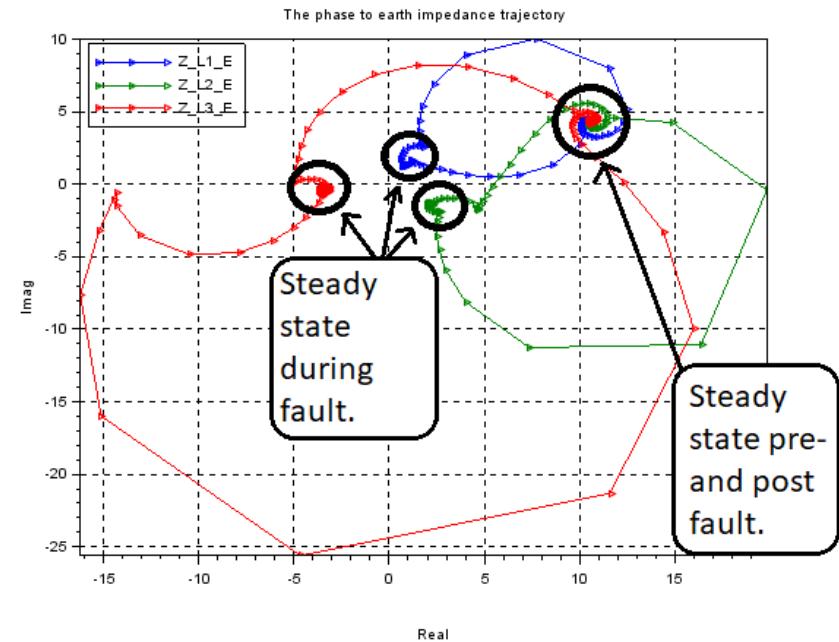
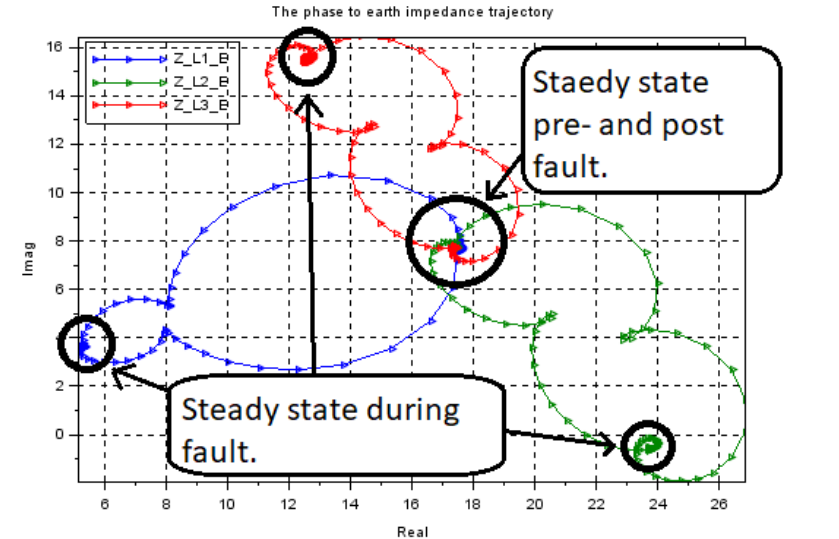
Causes of error

- Fault impedance.
- Load current.



Operational delay – optimization possibilities

- Impedance trajectory.
- Phasor computation.



Problem

- Distribution grid is not ready for Smart Grid applications.
- Existing technology/ products are too expensive for the DSO and not designed for retro fitting.

Solution

- Compact multi protection device.
- Long term monitoring.
- Easy installation in existing grid.
- Compliant with existing SCADA infrastructure.
- All-in-one solution to reduce cost.

Thank you for your time

Any questions?

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