

# **Locating Broken-Conductor In HV Transmission Lines**

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***Abstract***—This paper presents An ANN based technique for improving the performance of distance relays against open-circuit faults in transmission networks. The technique utilizes the small capacitive current measured in the open-phase plus the currents in the two healthy phases in calculating the open-circuit fault distance. The results obtained show that a distance relay with the proposed scheme will not only be able to detect the open conductor condition in HVTL but also to locate the place of this fault regardless the value of the pre-fault current loading. There is no need for especial communication schemes since the existing media could work properly for the needs of the proposed technique.

***Keywords***—Distance relay, Open conductor, ANN, Transmission networks, fault location.

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