

Better Line Protection At Lower Cost

Is Your Pilot Wire Relay Scheme a Ticking Time Bomb?

Time may be running out for your critical pilot wire protection circuits. Pilot wire cables don't last forever yet most pilot wire relay applications have been in service for decades. And just replacing these cables is not a good strategy since telephone companies seldom offer such services today.

Consequently, you may be asking yourself if pilot wire relaying is still a good idea. The answer is most certainly YES, but only by using a new version that employs modern digital technology. Why? Because differential relaying, as enabled in the past by pilot wires, has many benefits:

- It is the best choice for short line protection
- It does not require potential transformers
- It provides high speed, reliable fault clearing
- It provides high security from false tripping
- It utilizes a simple, proven, protection concept

Broadband Power Line Carrier (B-PLC) Technology to the Rescue!

The fix to this growing pilot wire problem is called B-PLC. This innovative and simple solution from Amperion is ideal for short to medium distances (5-10 miles) and lower voltages (138 KV and below), where fiber does not already exist or is cost prohibitive to add. The installation of B-PLC on existing power transmission lines is fast and simple at a fraction of the cost of fiber. B-PLC is especially beneficial because:

- There are no ground potential rise, or other voltage surge, problems.
- The utility gains independence from the phone company.
- Pilot wire maintenance is eliminated.
- Reliable relaying is retained; communication is not lost during a fault.
- Redundant channels, using multiple phase paths, can be provided.
- Modern **line current differential protection** digital relays (with their many enhanced features) can be employed.
- Alternatively POTT or DCB protection can also be supported.

B-PLC allows elimination of the traditional metallic pilot wire and the associated pilot wire monitoring devices, while supporting the most advanced form of line protection at a much lower cost and with less continuing maintenance. As a side benefit, a high speed digital communication link for SCADA and other applications is established between stations.

The Effects of Time on Pilot Relay Cables		
Past	Present	Effect
New Pilot Wire Cable	Pilot Wire Cables have aged significantly	Pilot Wire Circuits are failing
Telephone Company uses metallic wire everywhere including trunk lines	Telephone Company has stopped using cable for trunk lines	Utilities cannot obtain metallic circuits where they need them
Easy to lease wire pairs from Telephone Company	Telephone Company ending leases and maintenance	Utilities must turn to less effective relay schemes
Healthy connectors and splices	Corrosion in connectors and splices causes open or shorted circuits	False trips and loss of protection are frequent

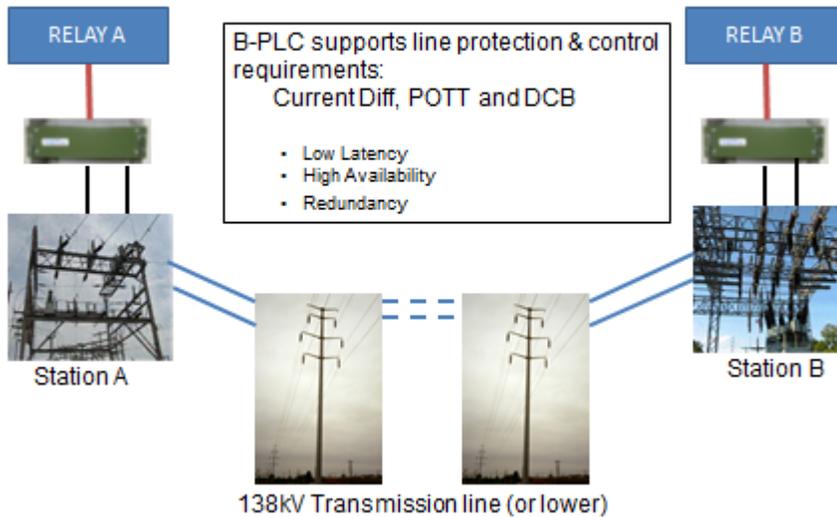


360 Merrimack Street, Lawrence MA, 01843 USA
TEL: +1 978-569-2000 FAX: +1 978-569-2002
sales@amperion.com www.amperion.com

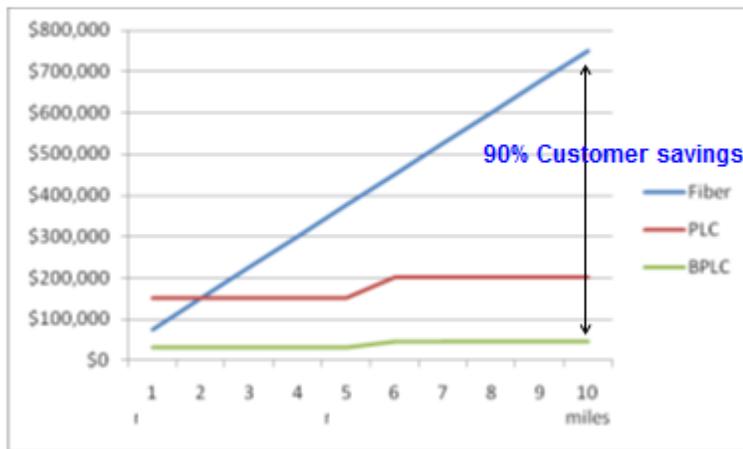
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Line Current Differential Protection with Digital Relays

Line Protection with B-PLC



B-PLC Has 10 to 1 Cost Advantage Over Fiber



B-PLC time to install is days compared to weeks or months with fiber

The wait is over – B-PLC is available today – no need to wait for fiber!



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