

# Pilot wire protection

Pilot protection schemes, such as directional comparison blocking and permissive over-reaching transfer trip, use simple on/off communications between relays.

There are many methods to send this signal. The most common method is to use contact closure to an external communication circuit, such as power line carrier, microwave, radio, or fiber optic communications. GE Multilin relays simplify fiber optic communications method by using internal fiber optic communications via Direct I/O

eliminating the need for external communications devices. Direct I/O is a reliable mechanism that is simple to configure, securely transmits digital status points such as tripping or blocking commands between relays via directly-connected or multiplexed fiber optic channels.

Direct I/O operates within 2ms for high speed communications to the remote line end.

Direct I/O is available in any of the transmission line relays by adding an internal communications card. The output of the card can be IEEE C37.94, RS422 or G.703 communications to interface with fiber optic multiplexers, or may be a direct fiber connection to other relays.

The communications card can be single-channel or dual-channel, to support point-to-point communications, dual point-to-point communications, or ring communications between up to 16 relays.

