

Polarity methods

Multifibre connectivity for duplex channels

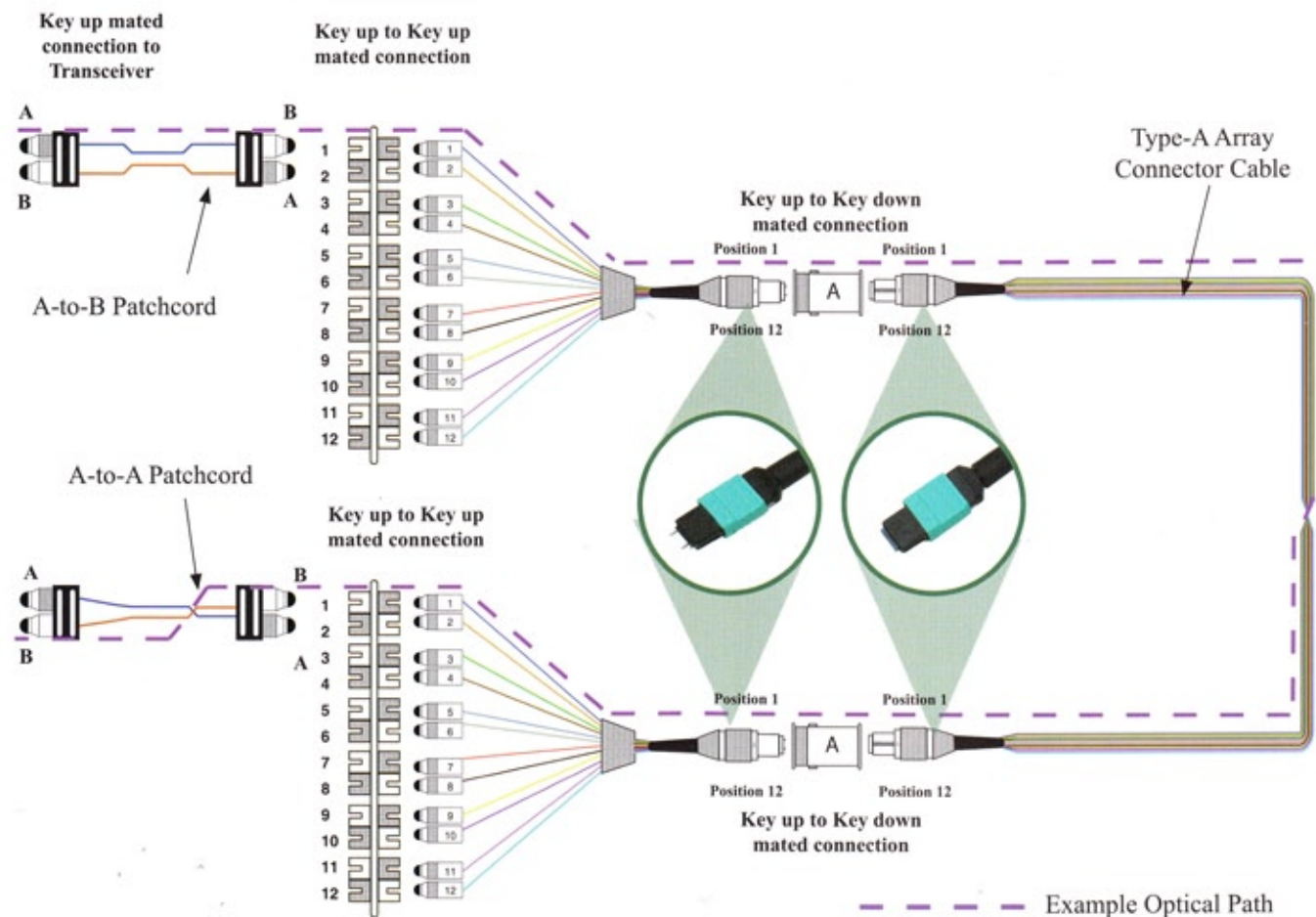
In order to successfully implement multifibre connectivity for duplex channels, it is important to maintain bi-directional transmission paths. The cabling must provide the correct signal polarity; the transmitter at one end must connect to the receiver at the other end. These methods of maintaining polarity have been standardised. See TIA/EIA 568-B.1-7 (guidelines for maintaining polarity using array connectors) for more detail. The guidelines cover typical system configurations containing the following:

- ▶ Multifibre trunks with 12 fibre MTP® connectors at either end
- ▶ Cassettes or modules where there is an MTP® to duplex connector transition
- ▶ Duplex patchcords used to connect the active equipment to the cabling system

All of the connectors and adaptors in this system are keyed to make sure the connectors mate with the correct orientation. Keying deals with MPO orientation but it does not ensure fibre pair polarity.

Optronics MTP® components are supplied to Method A as a standard. Method B and Method C components are also available. Please refer to the standards and select the correct polarity method to suit your network.

Illustration - Connectivity method A for duplex Channels



For ease of illustration the type -A cable is shown with a twist

Application Note

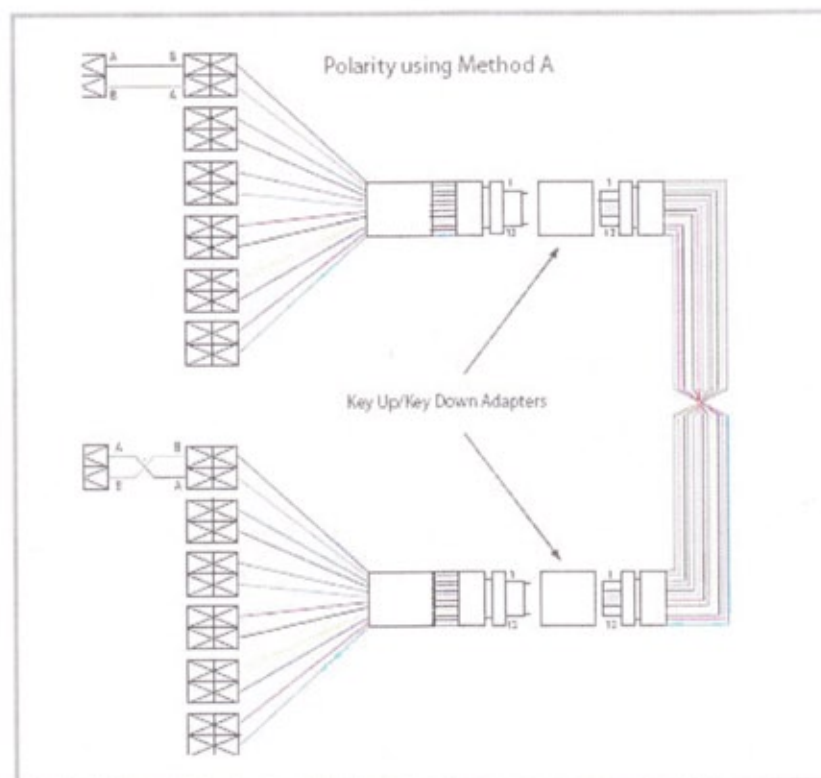
MTP/MPO Polarity Management

Scope: Duplex links carried over cables using MTP/MPO connectors

Three standard methods for managing two fibre duplex links in multi-fibre connection are defined in TIA/EIA 568-b.1-7.

All three methods are used in data centre design. It is most important to confirm the appropriate method when placing orders for MPT/MPO cassettes and truck cables.

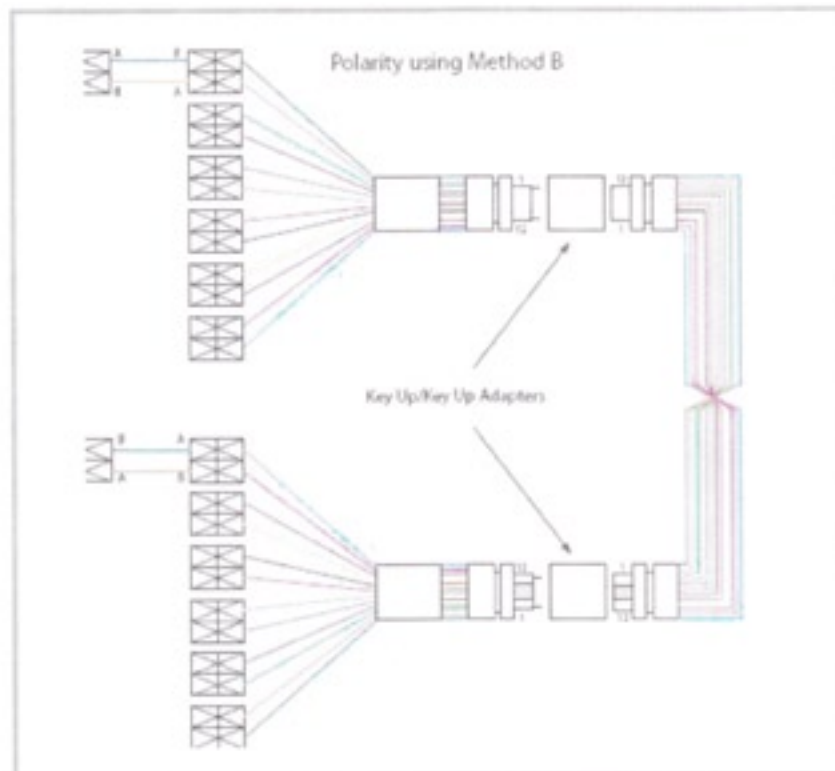
Method A



- Suitable for both singlemode and multimode
- Employs key up to key down adapters to connect array connector
- This is the default standard configuration offered by FibreFab

Registration of Fibre 1 is maintained throughout the optical circuit. Fibre 1 in the near end cassette mates to Fibre 1 in the trunk assembly, which mates to Fibre1 in the remote cassette, and the circuit, is complete by using a non-standard A-A polarity patch cord.

Method B

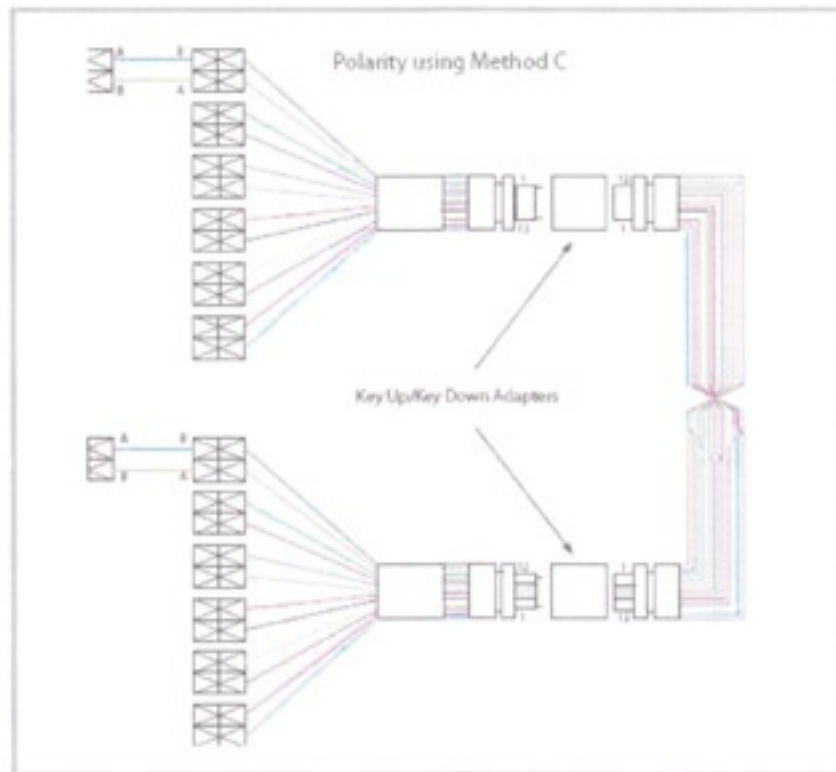


- Suitable for multimode (flat polished) array connectors only
- Requires two different cassettes as to either fibre connector or labelling
- Key up to key up mating of array connectors

In Method B, the fibre circuit is completed by using standard A-B polarity patch cords at the beginning and end of the link. With this, an inversion is created mating Fibre1 with Fibre12, Fibre 2 with Fibre 11, and so on. For proper transceiver operation, one of the cassettes must be configured such that Fibre12 is mated with Fibre 1.

This method cannot be used with singlemode, angle polished MTP connectors.

Method C



- Suitable for both singlemode and multimode links
- Employs key up to key down adapters

In Method C, the fibre circuit is completed by utilizing standard A-B polarity patch cords at the beginning and end of the link, like method A. The fibre pair flip is accomplished in the array cable itself and not in the far end patch cords as in Method A.