

## MPO SECURE Cable Assemblies



### Product Facts

- For use with MT-RJ SECURE System MPO Cassettes on page 12 only
- Feature colored/keyed MPO connectors which only mate with like colored MPO couplers to limit access to secure networks
- 12-Fibers per MPO connector
- Pulling socks protect connectors during installation
- Available in 50  $\mu$ m, Laser Optimized (10 Gig), and 62.5  $\mu$ m Multimode as listed



### MPO SECURE Trunk Cable Assemblies

MPO SECURE Color	Fiber Type	Part Numbers	
		12 Fiber	24 Fiber
Red	50/125 $\mu$ m Multimode	6754273-X	6754281-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	6754420-X	6754424-X
	62.5/125 $\mu$ m Multimode	6754269-X	6754277-X
Yellow	50/125 $\mu$ m Multimode	6754276-X	6754284-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	6754421-X	6754425-X
	62.5/125 $\mu$ m Multimode	6754272-X	6754280-X
Green	50/125 $\mu$ m Multimode	6754274-X	6754282-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	6754422-X	6754426-X
	62.5/125 $\mu$ m Multimode	6754270-X	6754278-X
Blue	50/125 $\mu$ m Multimode	6754275-X	6754283-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	6754423-X	6754427-X
	62.5/125 $\mu$ m Multimode	6754271-X	6754279-X
Rose	50/125 $\mu$ m Multimode	1918741-X	1918759-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	1918753-X	1918771-X
	62.5/125 $\mu$ m Multimode	1918747-X	1918765-X
Aqua	50/125 $\mu$ m Multimode	1918742-X	1918760-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	1918754-X	1918772-X
	62.5/125 $\mu$ m Multimode	1918748-X	1918766-X
Brown	50/125 $\mu$ m Multimode	1918743-X	1918761-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	1918755-X	1918773-X
	62.5/125 $\mu$ m Multimode	1918749-X	1918767-X
Violet	50/125 $\mu$ m Multimode	1918744-X	1918762-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	1918756-X	1918774-X
	62.5/125 $\mu$ m Multimode	1918750-X	1918768-X
Orange	50/125 $\mu$ m Multimode	1918745-X	1918763-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	1918758-X	1918775-X
	62.5/125 $\mu$ m Multimode	1918751-X	1918769-X
Slate	50/125 $\mu$ m Multimode	1918746-X	1918764-X
	Laser Optimized (10 Gig) (850 nm LO 50/125 $\mu$ m) Multimode	1918759-X	1918776-X
	62.5/125 $\mu$ m Multimode	1918752-X	1918770-X

**Note:** X denotes length in feet: -1 = 10, -2 = 20, -3 = 30, -4 = 40, -5 = 50, -6 = 60, -7 = 70, -8 = 80, -9 = 90, 1- -0 = 100, 1- -1 = 110, 1- -2 = 120, 1- -3 = 130, 1- -4 = 140, 1- -5 = 150, 1- -6 = 160, 1- -7 = 170, 1- -8 = 180, 1- -9 = 190, 2- -0 = 200, 2- -1 = 210, 2- -2 = 220, 2- -3 = 230, 2- -4 = 240, 2- -5 = 250, 2- -6 = 260, 2- -7 = 270, 2- -8 = 280, 2- -9 = 290, 3- -0 = 300.

**Note:** All part numbers are RoHS compliant.

## MPO to MPO Trunk Cable Assemblies

### Product Facts

- Quick connection of 12 fibers
- Pulling socks protect connectors during installation
- Available in
  - 62.5/125  $\mu$ m
  - 50/125  $\mu$ m
  - 50/125  $\mu$ m laser optimized
  - Singlemode



Description	UL/NEC Ratings	Part Number
12 Fiber, Pair-Flipped (AB/BA)	50/125 $\mu$ m Multimode	Riser (OFNR)/ Plenum (OFNP) 6435028-X
	Laser Optimized (10 Gig) (850 nm 50/125 $\mu$ m) Multimode	Riser (OFNR)/ Plenum (OFNP) 6693087-X
	62.5/125 $\mu$ m Multimode	Riser (OFNR)/ Plenum (OFNP) 6435024-X
	Singlemode	Riser (OFNR)/ Plenum (OFNP) 6435070-X
24 Fiber, Pair-Flipped (AB/BA)	50/125 $\mu$ m Multimode	Riser (OFNR)/ Plenum (OFNP) 6435029-X
	Laser Optimized (10 Gig) (850 nm 50/125 $\mu$ m) Multimode	Riser (OFNR)/ Plenum (OFNP) 6754687-X
	62.5/125 $\mu$ m Multimode	Riser (OFNR)/ Plenum (OFNP) 6435025-X
	Singlemode	Riser (OFNR)/ Plenum (OFNP) 6754882-X
72-Fiber, Pair-Flipped (AB/BA)	50/125 $\mu$ m Multimode	Plenum (OFNP) 6435031-X
		Riser (OFNR) 6435039-X
	62.5/125 $\mu$ m Multimode	Plenum (OFNP) 6435027-X
		Riser (OFNR) 6435035-X

**Note:** X denotes length in feet: -1 = 10, -2 = 20, -3 = 30, -4 = 40, -5 = 50, -6 = 60, -7 = 70, -8 = 80, -9 = 90, 1- -0 = 100, 1- -1 = 110, 1- -2 = 120, 1- -3 = 130, 1- -4 = 140, 1- -5 = 150, 1- -6 = 160, 1- -7 = 170, 1- -8 = 180, 1- -9 = 190, 2- -0 = 200, 2- -1 = 210, 2- -2 = 220, 2- -3 = 230, 2- -4 = 240, 2- -5 = 250, 2- -6 = 260, 2- -7 = 270, 2- -8 = 280, 2- -9 = 290, 3- -0 = 300.

## Other Standard MPO Cable Assemblies

### Other Standard MPO Cable Assemblies

Part Number	Description
6588930-X	12-f MPO (f) - MPO (f), 50/125, jacketed ribbon, straight fiber path
6588688-X	12-f MPO (f) - MPO (f), 50/125, jacketed ribbon, reversed fiber path
6693182-X	12-f MPO (f) - MPO (f), 50/125, jacketed ribbon, reversed fiber path (For POP4 TxRx applications. Center 4 fibers not tested.)
6693088-X	12-f MPO (f) - MPO (f), SM, jacketed ribbon, straight fiber path
1588388-X	12-f MPO (f) - MPO (f), 62.5/125, jacketed ribbon, reversed fiber path
6457988-X	12-f MPO (f) - MPO (f), 62.5/125, jacketed ribbon, straight fiber path
6828375-X	12-f MPO (m) - MPO (m), 50/125, jacketed ribbon, straight fiber path
6828420-X	12-f MPO (m) - MPO (m), 50/125, jacketed ribbon, reversed fiber path

**Note:** X denotes length in feet: -1 = 10, -2 = 20, -3 = 30, -4 = 40, -5 = 50, -6 = 60, -7 = 70, -8 = 80, -9 = 90, 1- -0 = 100, 1- -1 = 110, 1- -2 = 120, 1- -3 = 130, 1- -4 = 140, 1- -5 = 150, 1- -6 = 160, 1- -7 = 170, 1- -8 = 180, 1- -9 = 190, 2- -0 = 200, 2- -1 = 210, 2- -2 = 220, 2- -3 = 230, 2- -4 = 240, 2- -5 = 250, 2- -6 = 260, 2- -7 = 270, 2- -8 = 280, 2- -9 = 290, 3- -0 = 300.

All part numbers are RoHS compliant.

## MPO Cable Assemblies (Continued)

### MPO Cable Assemblies for Premise Networks

#### Description

- A modular "plug-and-go" optical cabling system

#### Applications

- A high-performance option for AMP NETCONNECT zone cabling and cabling systems

#### Product Facts

- Uses proven NTT MT linear array technology in the MPO connector
- MPO packs up to 12 optical fibers into a single miniaturized connector about the same size as one SC type
- Cables are pre-terminated and tested
- Distribution hardware is pre-loaded
- Cable rating options:
  - Riser rated, UL-OFNR
  - Plenum rated, UL-OFNP (std.)
  - Low Smoke, Zero Halogen rated, LSZH
- Singlemode or Multimode

#### Other Applications

- Cabling System for Mainframes Catalog 889414

#### Performance Characteristics

##### Insertion Loss —

Singlemode — 0.35 dB typical

Multimode — 0.50 dB typical

##### Return Loss —

Angled Singlemode — -50 dB typical

Flat Multimode — -40 dB typical

##### Durability —

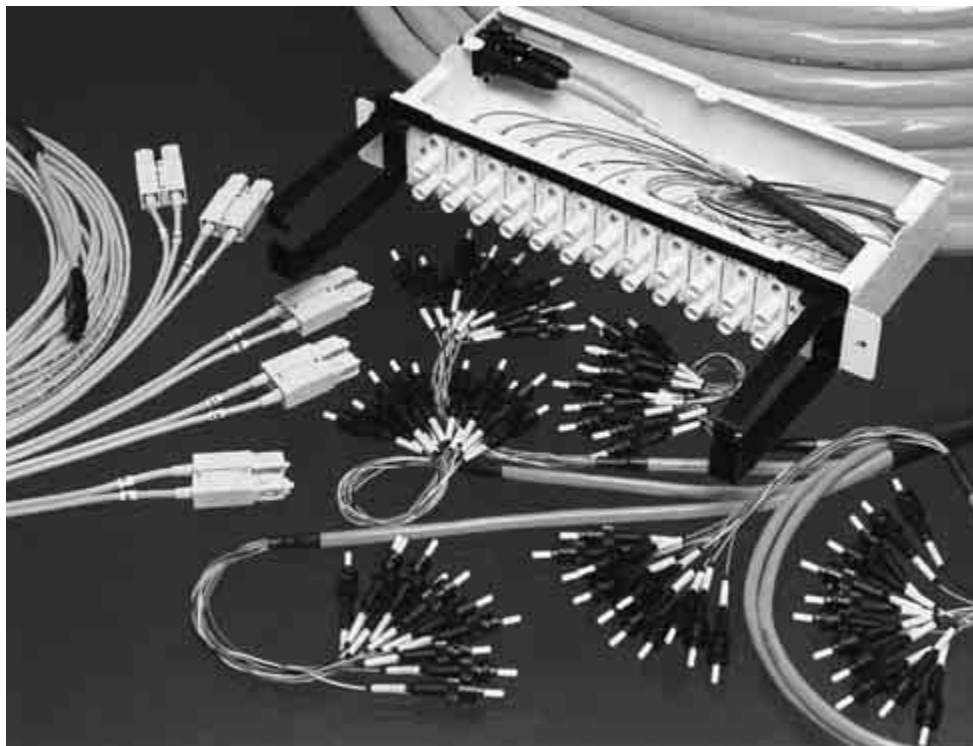
After 500 matings ≤0.1 dB change

##### Temperature Range —

-40°C to +80°C

- Produced under a Quality Management System certified to ISO 9001

A copy of the certificate is available upon request



Initially designed to replace thick copper parallel cables used under floors of computer rooms in large mainframe centers, Tyco Electronics' MPO Cabling System also makes perfect sense for campus and premise type Local Area Networks. It provides unparalleled ease and flexibility in cabling applications such as backbone and horizontal distribution to the desktop.

The MPO System uses the same simple concepts found in most structured networks following TIA/EIA 568A guidelines. The difference is that with MPO Systems the cables come pre-terminated and tested, with a pulling sock over each end. Just pull through the conduit, remove the netting, and plug it in — that's it.

MPO trunk cables run through the building vertically between floors, and

horizontally through walls, ceilings, and under floors to distribution enclosures and consolidation points strategically located within the building. Mini-trunks and fanout assemblies connect the consolidation point to the workstation outlets. Jumper cables connect the outlet to the workstation, and are also used for cross-connecting in the telecommunications closet. Installation is easier and faster with cables selected specifically for each site.

MPO cabling is a high performance option for AMP NETCONNECT zone cabling, and complements the system as a furniture cabling solution. MPO cables can reside parallel to existing UTP without fear of crosstalk.

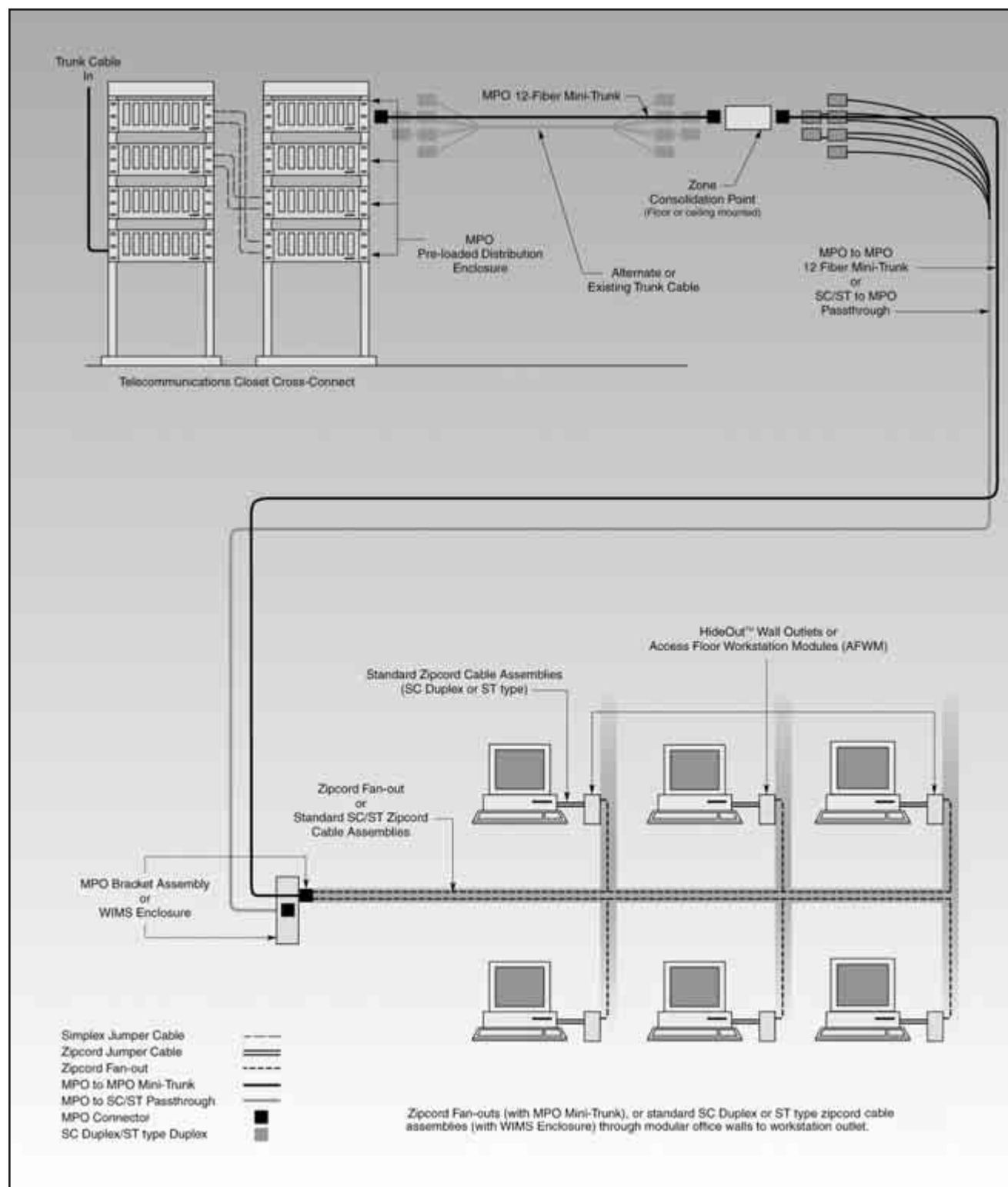
Mini-trunk feeder cables and fan-out cable assemblies are an ideal solution for the open office environment. Their small size

allows easy storage in modular office panels and raceways. When it's time to move add or change the zone, the mini-trunks are simply unplugged from nearby zone enclosures and moved with the furniture. Data outage is contained to the zone under construction. After the zone is reconfigured, just plug the MPO connectors back in to the network, and your workstations are up and running.

There's no longer a need to bring in a network staff to shut down the entire system to re-terminate and test the cabling for moves, adds, and changes. Moves can usually be done by the end-user's facilities crew or someone with minimal network experience. At last, "modular" is living up to its promise. You can take an office apart, move it, and put it back together — quick and simple!

## MPO Cable Assemblies (Continued)

### MPO Cable Assemblies for Premise Networks (Continued)



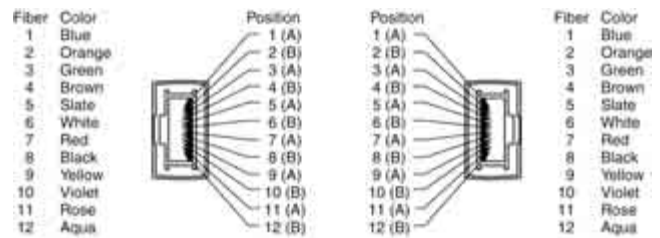
## MPO Cable Assemblies (Continued)

### MPO Cable Assemblies for Premise Networks (Continued)

#### Pairs Flipped Versus Straight Through Fiber Path Configuration

Unlike the mainframe application counterparts, Tyco Electronics' MPO trunks for Premise applications typically do not require "pair flipping". Pair Flipping, or "AB/BA" transmit/receive configuration is a sequential channel cross-over scheme used for

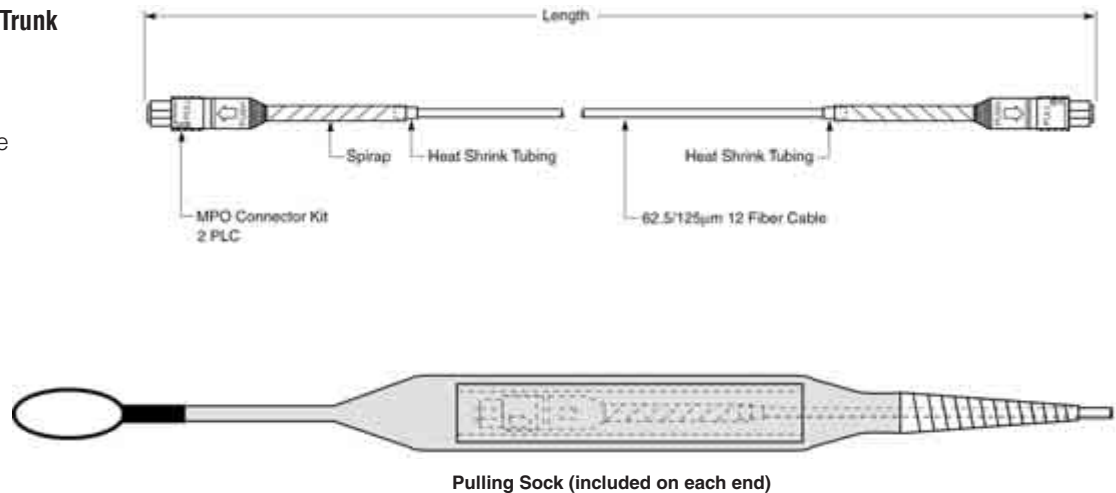
IBM Enterprise Systems Connectivity (ESCON) architecture. MPO premise trunk fiber pairs are configured as "AB/AB". For example — blue fiber (1) travels straight through the cable and exits on the opposite end in the same position (1), as illustrated (right). This fiber path configuration is known as "straight through".



**Straight Through  
Fiber Path Configuration**

#### MPO to MPO Mini-Trunk Cable Assembly

4 pair (8 fiber),  
straight through  
62.5/125 multimode



#### MPO to MPO Mini-Trunks

Trunk Length	Part Number (OFNP)
6 meter [19.7 feet]	1-5492105-9
8 meter [26.3 feet]	2-5492105-0
10 meter [32.8 feet]	5492105-2
15 meter [49.2 feet]	5492105-7
20 meter [65.6 feet]	5492105-3
23 meter [75.5 feet]	2-5492105-1
27 meter [88.6 feet]	2-5492105-2
30 meter [98.4 feet]	5492105-4
33 meter [108.3 feet]	2-5492105-3
38 meter [124.7 feet]	1-5492105-5
43 meter [141.1 feet]	2-5492105-4
46 meter [150.9 feet]	1-5492105-6
50 meter [164.1 feet]	5492105-8
53 meter [173.9 feet]	1-5492105-7
61 meter [200.1 feet]	1-5492105-3

Additional lengths available.  
Custom lengths can be built to customer's specifications.

**Note:** All part numbers are RoHS compliant.

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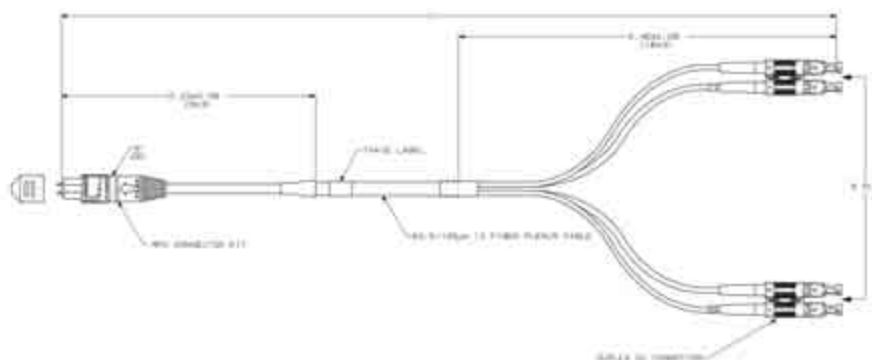


## MPO Cable Assemblies (Continued)

### MPO Cable Assemblies for Premise Networks (Continued)

#### MPO to SC Duplex PASS-THROUGH Fan-out

6 pair (12 fiber),  
straight through  
62.5/125 multimode



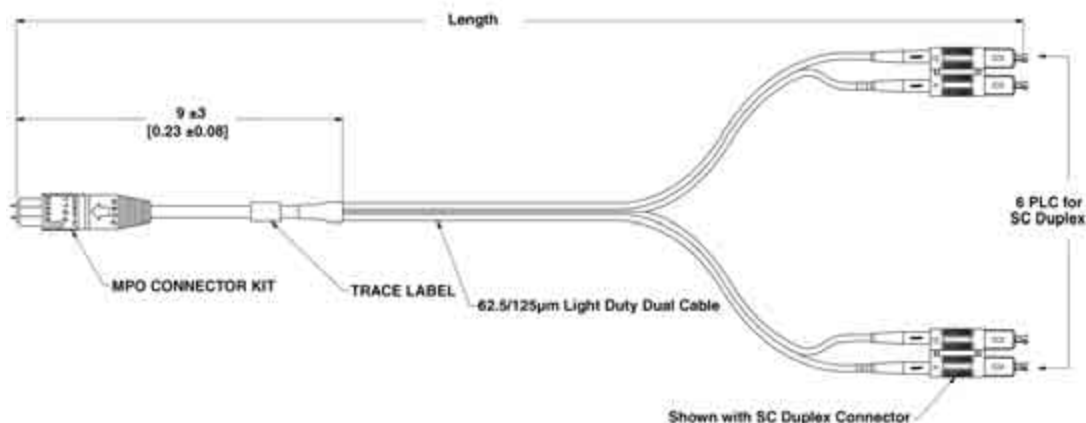
#### MPO to SC Duplex

Overall Length [L]	Part Number (OFNP)
6 meter [19.7 feet]	5492362-6
8 meter [26.3 feet]	5492362-8
10 meter [32.8 feet]	1-5492362-0
15 meter [49.2 feet]	1-5492362-5
20 meter [65.6 feet]	2-5492362-0

Additional lengths available.  
Custom lengths can be built to customer's specifications.

#### MPO to SC Duplex Zipcord Fan-out

6 pair (12 fiber),  
straight through  
62.5/125 multimode



#### MPO to SC Duplex

Overall Length [L]	Part Number
6 meter [19.7 feet]	5492363-6
8 meter [26.3 feet]	5492363-8
15 meter [49.2 feet]	1-5492363-5

Additional lengths available.  
Custom lengths can be built to customer's specifications.

**Note:** All part numbers are RoHS compliant.

## MPO Cable Assemblies (Continued)

### MPO Cable Assemblies for Mainframes

#### Description

- A modular "plug-and-go" optical cabling system for mainframe information centers

#### Application

- Replaces copper bus-and-tag cables in parallel architecture, or streamlines IBM ESCON serial fiber optic technology

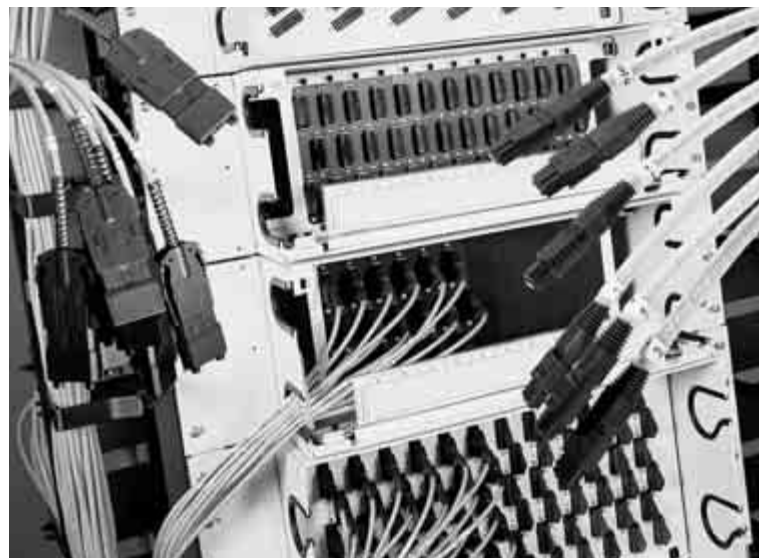
#### Product Facts

- Proven NTT MT linear array technology in the MPO connector
- MPO packs up to 12 optical fibers into a single miniaturized connector about the same size as one SC type
- ESCON Connectors are IBM Approved and 100% compatible
  - Direct attach harnesses
  - Jumper cables
- Cables are pre-terminated and tested
- Distribution hardware is pre-loaded
- Cable rating options:
  - Riser rated, UL-OFNR (std.)
  - Plenum rated, UL-OFNP
  - Low smoke, Zero Halogen rated, LSZH
- Singlemode or Multimode

#### Other Applications

- Cabling System for Premise Networks
- Produced under a Quality Management System certified to ISO 9001

A copy of the certificate is available upon request



Tyco Electronics' MPO modular cabling system is structured to provide unparalleled ease and flexibility in the cabling of IBM Enterprise Systems Connection architecture (ESCON).

MPO provides every thing you need to cable your data center:

- assorted lengths of MPO connectorized 36 and 72-fiber trunks
- 8 or 12-fiber mini-trunks
- MPO to ESCON direct attach harnesses
- pre-loaded distribution enclosures
- MPO coupler bushing mounting brackets
- cable clamps
- ESCON jumper cables

Select what you need to connect your system and plug it in. Installation is faster and easier with cables selected specifically for the hardware layout in your data center.

MPO trunk cables deployed around the periphery or down the center of the computer room through under-floor conveyance systems provide plug-and-go connectivity to pre-loaded MPO distribution enclosures mounted in main and zone cabinets throughout the data center.

Multiple layers of MPO trunks and distribution hardware allow the data center to be divided into zones. Zoning further increases simplicity and flexibility of connections between equipment.

MPO mini-trunks, ESCON jumper cables and harnesses plugged into the distribution panels provide final connections to IBM Enterprise Systems processors, ESCON directors, and I/O devices.

Tyco Electronics' MPO System eliminates thick, inflexible point-to-point copper cables, or tangled bundles of ESCON jumpers

running under computer room floors.

Once installed, the MPO System simplifies the hassles associated with migration. Because fiber transmissions are electrically silent, systems can be upgraded without planned outages. Re-configuring and rearranging equipment is six times faster, since only one connector is plugged in. It is also as simple as unplugging the trunk from the ESCON harness, leaving the harness to be removed with the equipment. Each MPO cable is removable and reusable.

The MPO System takes the superior performance of ESCON fiber optic technology one step further — by simplifying installation and migration, while opening up crowded space under computer room floors, improving air flow and breathing new life into data centers.

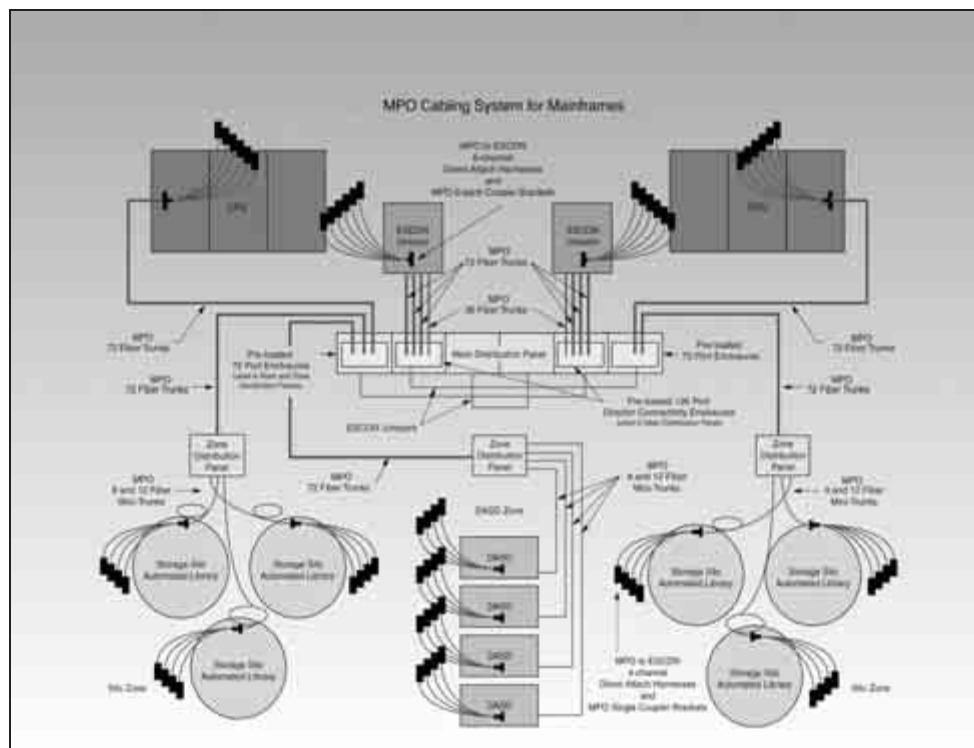
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## MPO Cable Assemblies (Continued)

### MPO Cable Assemblies for Mainframes (Continued)

#### Product Facts

- Fiber wiring pattern is pair-flipped (AB/BA)
- Also available in straight-through (AB/AB) configuration
- Simple and flexible premise fiber cabling
- All cassettes have MPO trunk connections at rear
- Fits all AMP NETCONNECT Enclosures listed in this catalog that accept snap-in adapter plates
- Easy installation, moves, adds and changes



#### MPO Cassettes

Part Number	Description	Color	Fiber Count	Fiber Type	Config.
6435067-2	MPO-ST mod. assy.	Black	12	50	Crossed
6278418-2	MPO-ST mod. assy.	Black	12	62.5	Crossed
6754286-1	MPO-MT-RJ mod. assy.	Black	12	50	Crossed
6754288-1	MPO-MT-RJ mod. assy.	Black	24	50	Crossed
6754285-2	MPO-MT-RJ mod. assy.	Black	12	62.5	Crossed
6754287-1	MPO-MT-RJ mod. assy.	Black	24	62.5	Crossed
1938996-1	MPO-MT-RJ mod. assy.	Black	12	SM	Crossed
6828819-1	MPO-MT-RJ mod. assy.	Black	24	SM	Crossed
1918777-1	MPO-MT-RJ mod. assy.	Black	12	Laser Optimized (10 Gig)	Crossed
1918778-1	MPO-MT-RJ mod. assy.	Black	24	Laser Optimized (10 Gig)	Crossed
6435181-2	MPO-SC mod. assy.	Black	12	50	Crossed
6435180-2	MPO-SC mod. assy.	Black	12	62.5	Crossed

Part Number	Description	Color	Fiber Count	Fiber Type	Config.
6435069-2	MPO-SC mod. assy.	Black	12	SM	Crossed
6754333-2	MPO-SC mod. assy.	Black	12	Laser Optimized (10 Gig)	Crossed
1918779-1	MPO-LC mod. assy.	Black	12	50	Crossed
1918780-1	MPO-LC mod. assy.	Black	24	50	Flipped
1918781-1	MPO-LC mod. assy.	Black	12	62.5	Crossed
1918782-1	MPO-LC mod. assy.	Black	24	62.5	Flipped
1938056-1	MPO-LC mod. assy.	Black	12	SM	Crossed
1918786-1	MPO-LC mod. assy.	Black	24	SM	Flipped
1918783-1	MPO-LC mod. assy.	Black	12	Laser Optimized (10 Gig)	Crossed
1918784-1	MPO-LC mod. assy.	Black	24	Laser Optimized (10 Gig)	Flipped

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## MPO Cable Assemblies (Continued)

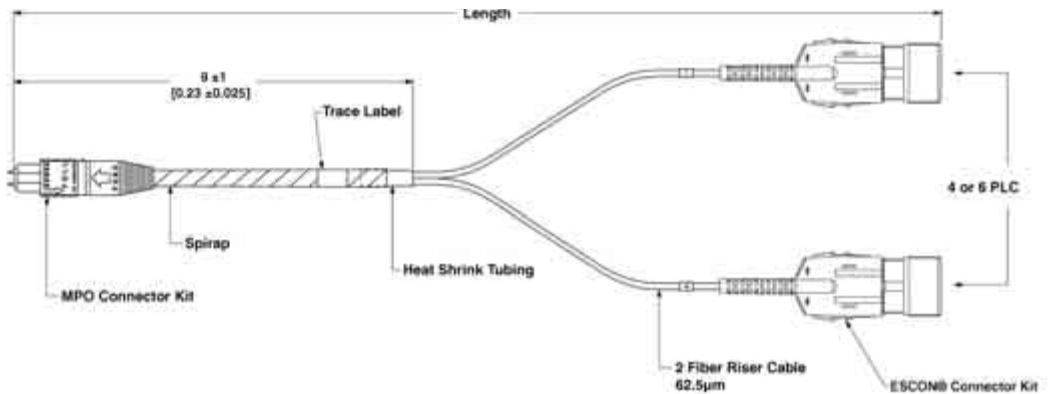
### MPO Cable Assemblies for Mainframes (Continued)

#### MPO to ESCON Direct Attach Harness

4 channel (8 fiber), AB/AB  
straight through

6 channel (12 fiber), AB/AB  
straight through

62.5/125 multimode



Harness Length	6 Channel (12 fiber)
	Part Number
3 feet [0.9 meters]	6754335-1

Custom lengths can be built to customer's specifications.  
Cable is Riser rated.

#### ESCON Cable Assemblies 62.5/125 µm Multimode

Cable Type	Length (meters)											
	1	2	3	4	5	7	13	22	31	46	61	122
Riser	5492231-1	5492231-2	5492231-3	5492231-4	5492231-5	5492231-7	1-5492231-3	2-5492231-2	3-5492231-1	4-5492231-6	6-5492231-1	9-5492231-9
Plenum	5492251-1	5492251-2	5492251-3	5492251-4	5492251-5	5492251-7	1-5492251-3	2-5492251-2	3-5492251-1	4-5492251-6	6-5492251-1	9-5492251-9
Low Smoke Zero Halogen	5492275-1	5492275-2	5492275-3	5492275-4	5492275-5	5492275-7	1-5492275-3	2-5492275-2	3-5492275-1	4-5492275-6	6-5492275-1	9-5492275-9

Connectors are black, cable is orange.  
Cable construction is two fiber round.  
Custom lengths are available.

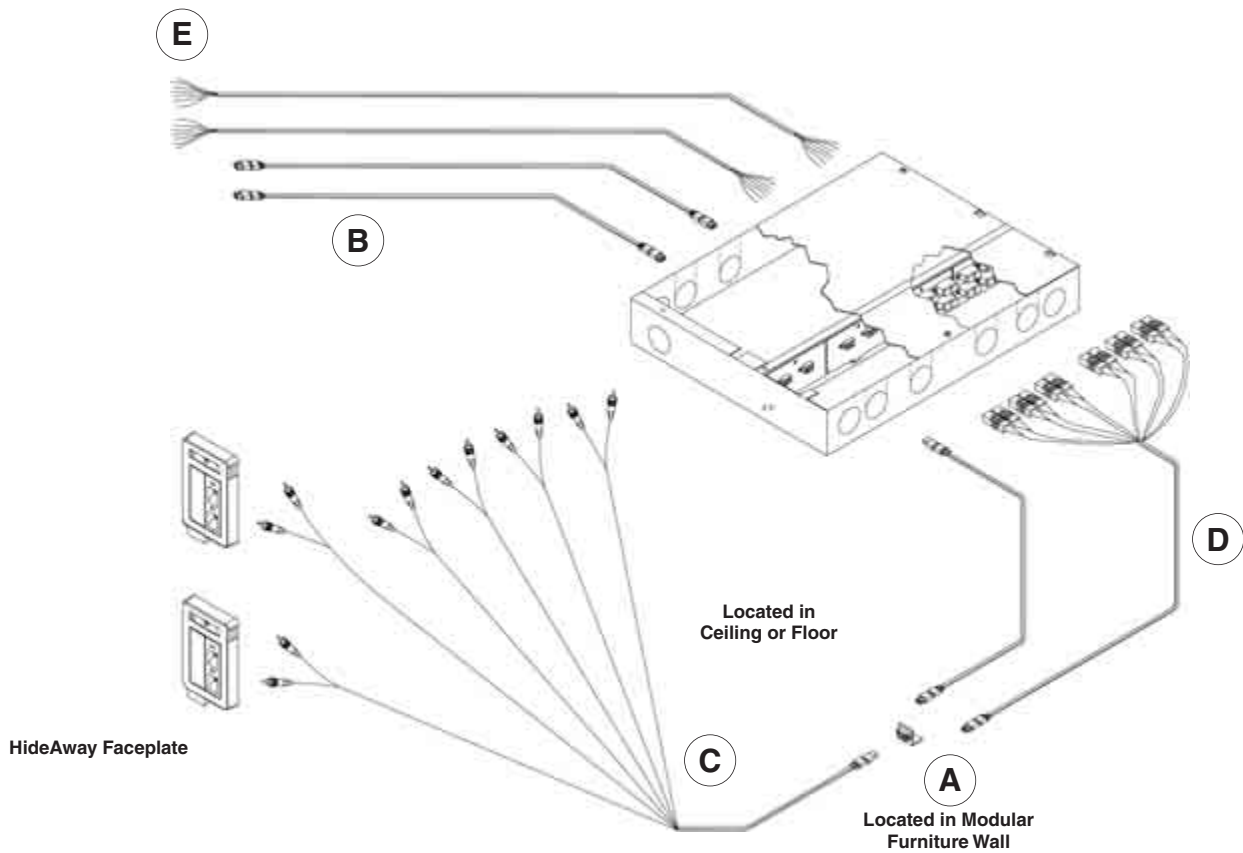
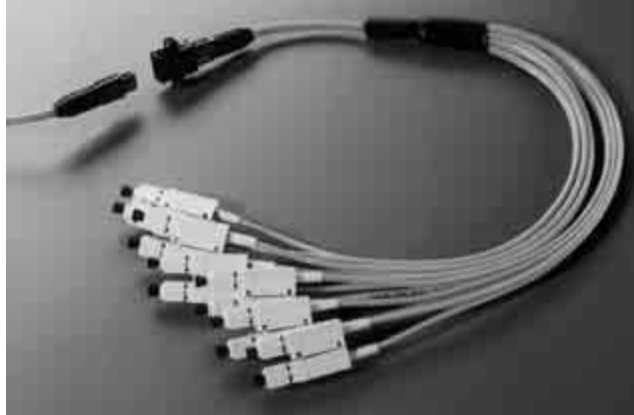
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Corporation.

## MPO Cable Assemblies (Continued)

### MPO Cable Assemblies for Mainframes (Continued)

Tyco Electronics' MPO System delivers the full bandwidth of optical fiber while maintaining the flexibility for the open office with reusable assemblies.



#### Ordering Information:

	Part Number	Description
A	5504954-1	MPO Receptacle Mounting Bracket
B	5492105-X	MPO Cable Assembly, MPO/MPO straight through, 12 fiber, 62.5/125 mm
C	5492363-Y	MPO Cable Assembly, MPO/SC Duplex long fan-out, 12 fiber, 62.5/125 mm
D	5492362-Z	MPO Cable Assembly, MPO/SC Duplex short fan-out, 12 fiber, 62.5/125 mm

X denotes length in meters: -7 = 15, 1- -4 = 30, 1- -5 = 38, 1- -6 = 45, 2- -0 = 8, 2- -1 = 23

Y denotes length in meters: -6 = 6, -8 = 8, 1- -5 = 15

Z denotes length in meters: -6 = 6, -8 = 8, 1- -0 = 10, 1- -5 = 15, 2- -0 = 20

**Note:** All part numbers are RoHS compliant.