

Application

The SeeChange Terminal is Clearfield's small, carrier grade plug-and-play access terminal for use in FTTx applications, including Fiber to Home and Fiber to Business. Its small size also makes it an attractive choice to deliver fiber to cell towers and inside 5G decorative poles. The terminal provides an interface between incoming feeder fiber and single fiber drop cables.

Description

The SeeChange Terminal is fully sealed and includes a multifiber MPO input port, 2 or 4 single fiber drop ports and a multifiber MPO express output port. The MPO express output port is used to daisy chain to other SeeChange terminals deeper in the neighborhood. All connections to the terminal are made using SeeChange hardened connectors that can be installed with entry level technicians for quick deployment. SeeChange hardened connectors are ruggedized for OSP applications and meet Clearfield's FiberDeep performance levels for low insertion loss (0.2dB max IL for single fiber and 0.35dB max IL for MPO assemblies). Both centralized split and distributed split configurations are supported by the SeeChange Terminal. The terminal can be deployed below grade in vaults, handholes and flower pots, as well as above grade in pedestals or on a pole, and can be hung overhead on a strand for aerial applications.

Features and Benefits

Integrity

- SeeChange Terminal GR-771 Compliant
- Hardened SeeChange Connectors GR-3120 and GR-3152 compliant
- Supports SeeChange MPO and SeeChange SC/APC connectors

Protection

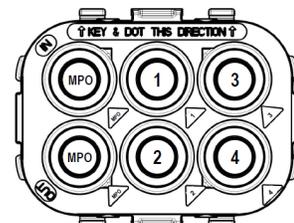
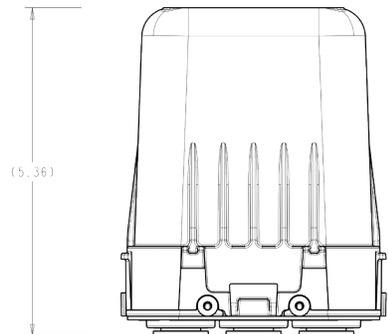
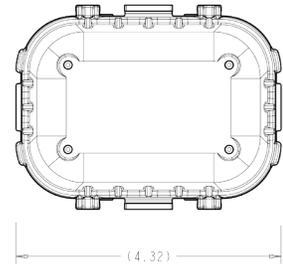
- Environmentally sealed for the harshest OSP environments
- Molded with UV resistant thermoplastic material
- Above grade, below grade and aerial mounting options
- Carrier grade GR compliant terminal and connectors

Access

- 1 SeeChange MPO input port
- 2 or 4 SeeChange SC APC drop ports
- 1 SeeChange MPO express output port
- Compact footprint reduces space in handholes and pedestals

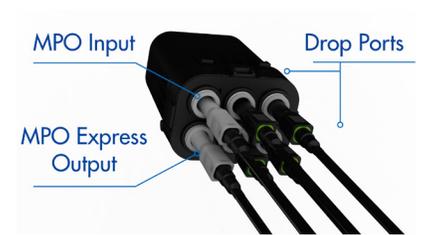
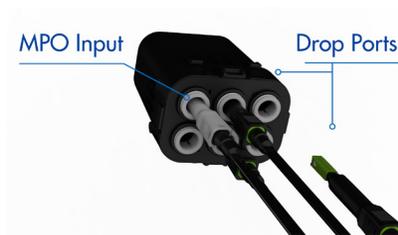
Investment

- Strategic configurations to reduce inventory and shorten lead times
- Repeatable design reduces engineering time
- Plug-and-play connections speed installations
- Centralized and distributed split configurations available
- Supports FTTx or 5G cellular application



Technical Specifications

SeeChange Terminal	
Dimensions	3 x 4 x 5.5" (83.8mm x 111.8mm x 139.7mm)
Mounting Options	Below Grade: handhole or flowerpot, Above Grade: Pole or Pedestal with mounting bracket, Aerial: Strand mount with Deltec strap and spacers
Material	Black UV Resistant Thermoplastic
Input Port	(1) SeeChange 14 mm MPO
Drop Ports	(2) or (4) SeeChange 14 mm SC/APC
Output Express Port	(1) SeeChange 14 mm MPO
Weight	13.3 ounces



Below Grade vault, hand hole or flowerpot pedestal



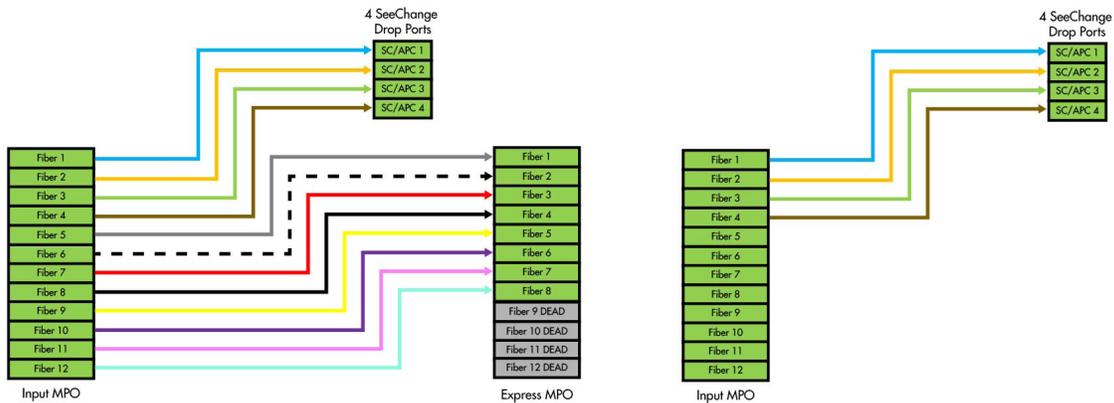
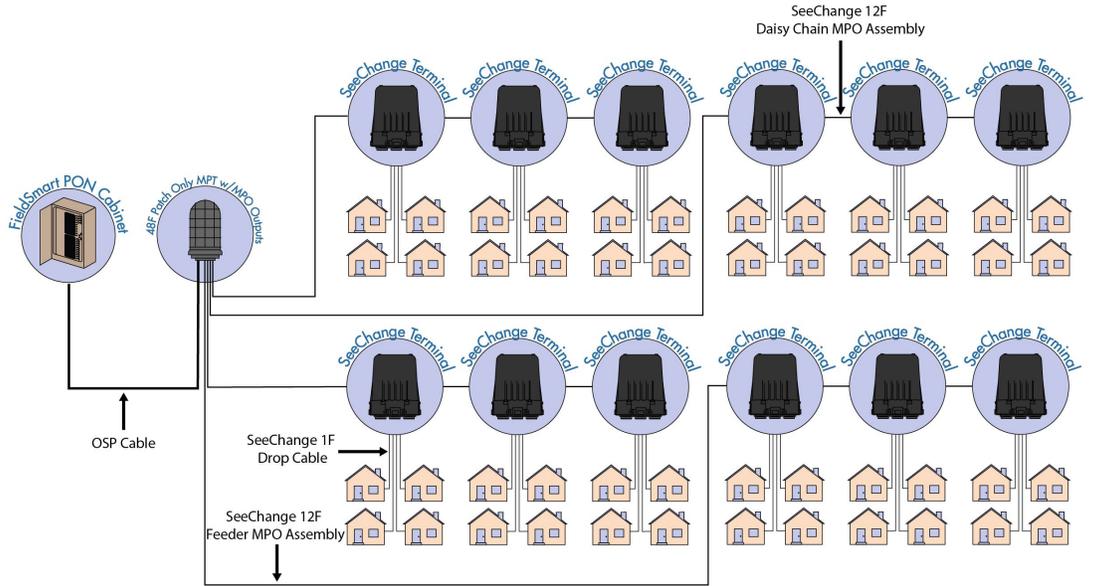
Above grade pedestal and pole mount



Aerial on a strand with Deltec strap

SeeChange Terminal - Centralized Split Applications

SeeChange Terminals can be configured to support centralized split Fiber to the Home (FTTH) architectures. To simplify engineering, the same 4 port SeeChange Terminal can be deployed in a daisy chain configuration where three terminals are combined in series to feed up to 12 homes. This simple to follow daisy chain practice can be repeated for all homes in a serving area.



MPO Drop and Express Terminal
Wiring Diagram

MPO Drop Terminal
Wiring Diagram

Configured Part Numbers

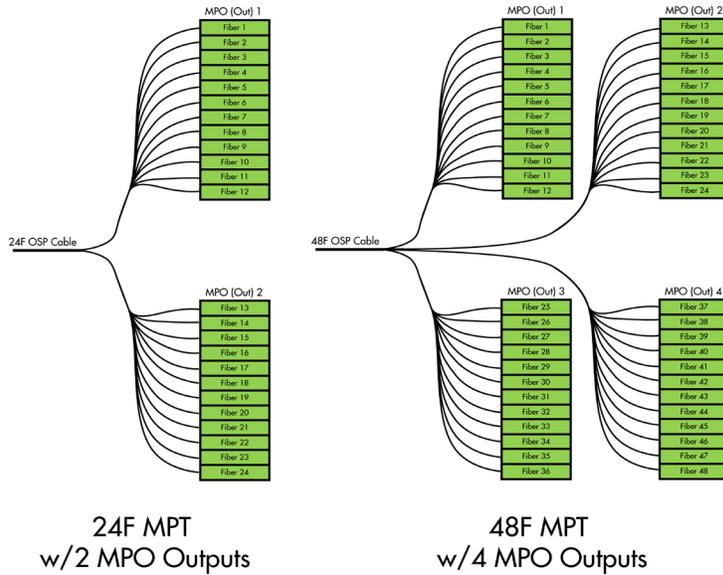
Application	Description	2-Port Part Number	4-Port Part Number
MPO Drop and Express	SeeChange Terminal with (1) 12F SeeChange MPO input port, 4 SeeChange SC APC drop ports, (1) 12F SeeChange MPO express output port	SCT-M5-02C-105	SCT-M5-04C-085
MPO Drop*	SeeChange Terminal with (1) 12F SeeChange MPO input port, 4 SeeChange SC APC drop ports	SCT-M5-02C-ZZZ	SCT-M5-04C-ZZZ



* This configuration can be used as an end terminal in a daisy chain configuration or as a stand-alone drop terminal for Fiber to the Home, Business or 5G Smartpole applications

MPT Terminal - Centralized Split Applications

In centralized split applications, the MPT Terminal can be deployed between the FDH splitter cabinet and SeeChange Terminals. Rather than home running SeeChange Terminals back to the FDH cabinet, the MPT acts as a consolidation point for clusters of SeeChange Terminals in a neighborhood. The MPT is configured with either a 24, 48, 72 or 96 fiber cable stub which is routed to the FDH cabinet.

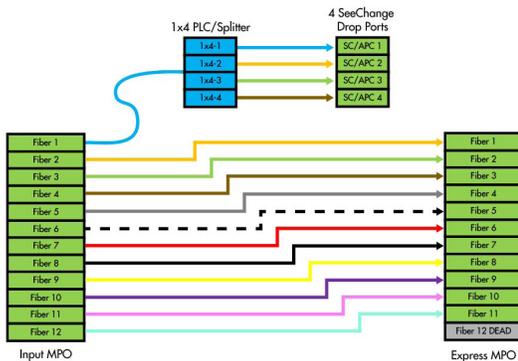
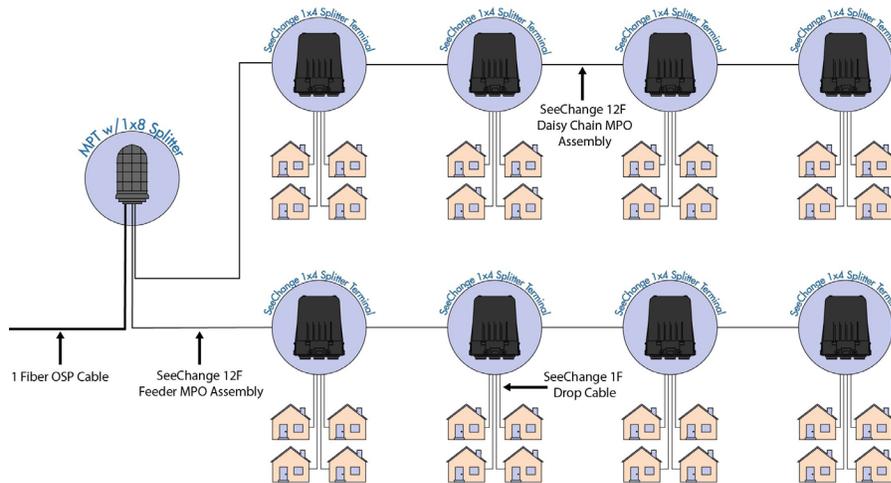


Configured Part Numbers

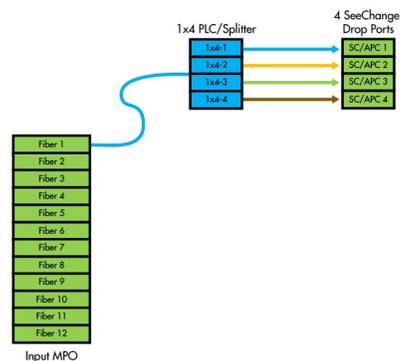
Description	Number of MPO Outputs	Armored Ribbon OSP	Non-Armored Ribbon OSP
24 MPT with 500 ft. Tail	2	MPT-245-Z2M-ZZH 0500F	MPT-245-Z2E-ZZH 0500F
24 MPT with 1,500 ft. Tail	2	MPT-245-Z2M-ZZH 1500F	MPT-245-Z2E-ZZH 1500F
48 MPT with 500 ft. Tail	4	MPT-485-Z2M-ZZH 0500F	MPT-485-Z2E-ZZH 0500F
48 MPT with 1,500 ft. Tail	4	MPT-485-Z2M-ZZH 1500F	MPT-485-Z2E-ZZH 1500F
72 MPT with 500 ft. Tail	6	MPT-725-Z2M-ZZH 0500F	MPT-725-Z2E-ZZH 0500F
72 MPT with 1,500 ft. Tail	6	MPT-725-Z2M-ZZH 1500F	MPT-725-Z2E-ZZH 1500F
96 MPT with 500 ft. Tail	8	MPT-965-Z2M-ZZH 0500F	MPT-0965-Z2E-ZZH 0500F
96 MPT with 1,500 ft. Tail	8	MPT-965-Z2M-ZZH 1500F	MPT-0965-Z2E-ZZH 1500F

SeeChange Terminal - Distributed Split Applications

SeeChange Terminals can be configured to support distributed split Fiber to the Home (FTTH) architectures. To simplify engineering, the same 4 port SeeChange terminal can be deployed in a daisy chain configuration where four terminals are combined in series to feed up to 16 homes. This simple to follow daisy chain practice can be repeated for all homes in a serving area.



MPO Splitter Drop and Express Terminal Wiring Diagram



MPO Splitter Drop Terminal Wiring Diagram

Configured Part Numbers

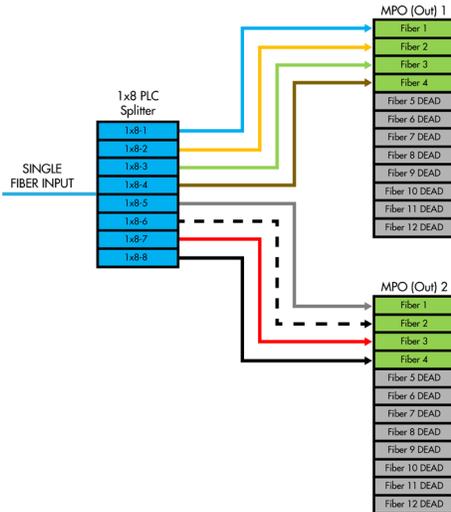
Application	Description	2-Port Part Number	4-Port Part Number
MPO Drop and Express	SeeChange Terminal with (1) 12F SeeChange MPO input port, 1x4 Splitter, 4 SeeChange SC APC drop ports, (1) 12F SeeChange MPO express output port	SCT-M5-02C-EZZ-115	SCT-M5-04C-8ZZ-115
MPO Drop*	SeeChange Terminal with (1) 12F SeeChange MPO input port, 1x4 Splitter, 4 SeeChange SC APC drop ports	SCT-M5-02C-EZZ	SCT-M5-04C-8ZZ



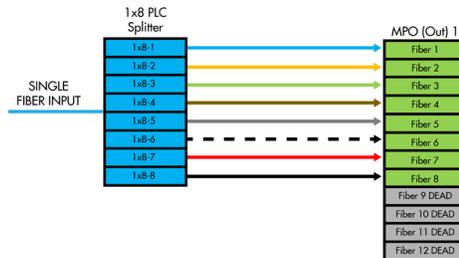
* This configuration can be used as an end terminal in a daisy chain configuration or as a stand-alone drop terminal for Fiber to the Home, Business or 5G Smartpole applications.

MPT Terminal - Distributed Split Applications

In distributed split applications, the MPT Terminal can be deployed between the Central Office OLT and SeeChange terminals. A single fiber is routed to the input of the MPT where it is spliced to a 1x8 splitter. The outputs of the splitter are wired internally to MPO output ports. The MPT acts as a consolidation point for clusters of SeeChange Terminals in a neighborhood.



MPT w/1x8 Splitter
and (2) MPO Output



MPT w/1x8 Splitter
and (1) MPO Output



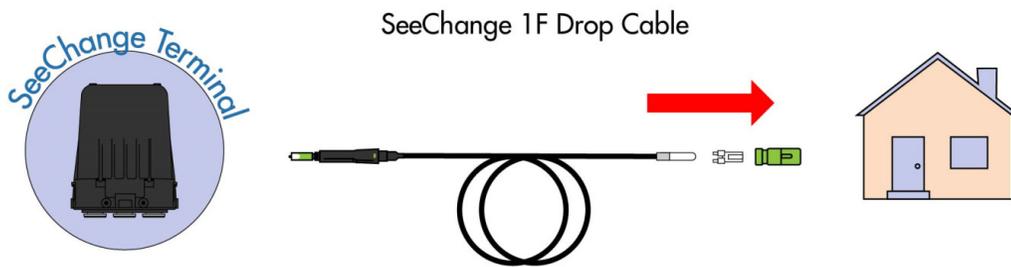
Pre-Configured Part Numbers

Part Number	Application	Description
MPT-085-Z1F-5ZS-01	Interface between Central Office OLT and SeeChange Terminals	MPT loaded with (1) 1 x 8 splitter. Single input fiber is spliced to internal splitter with (2) 4 fiber MPOs output ports
MPT-085-Z1F-5ZH-01	Interface between Central Office OLT and SeeChange Terminals	MPT loaded with (1) 1 x 8 splitter. Single input fiber is spliced to internal splitter with (1) 8 fiber MPO output port

SeeChange Assemblies

SeeChange Hybrid Drop Assemblies

Single Fiber SeeChange Hybrid Drop Assemblies are used between drop ports on the SeeChange Terminal and the NID (Network Interface Device) or TAP box at the home. One end of the assembly is terminated with the SeeChange SC APC connector. The opposite end is terminated with a FieldShield pushable SC APC connector which can be pulled inside a conduit direct buried or hung aerially. SeeChange Hybrid Drop Assemblies are available with FieldShield Small Form Factor (SFF) FLATdrop 900µm peelable cable. Standard lengths of 100, 150, 200, 250, 300, 350, 400, 450 and 500 feet long and can be ordered with or without a tone wire. SeeChange Drop Assemblies are also available with a stub or blunt end at the house when a field installable connector is used or the drop is spliced to a pigtail.



Configured Part Numbers

Cable Type	Connector at Terminal	Connector at House	Toneable Cable	Non-Toneable Cable
FieldShield Small Form Factor FLATdrop with 900 um Peelable Sub-unit	SeeChange SC/APC	Pushable SC/APC	SEE-41-001-C2ZZ-D3A xxxxF	SEE-31-001-C2ZZ-D3A xxxxF
FieldShield Small Form Factor FLATdrop with 900 um Peelable Sub-unit	SeeChange SC/APC	None/Blunt End	SEE-41-001-C2ZZ-ZZZ xxxxF	SEE-31-001-C2ZZ-ZZZ xxxxF

SeeChange Drop Cables are available in standard lengths of 100, 150, 200, 250, 300, 350, 400, 450 and 500 feet.

SFF Pushable SC Pulling Bullet

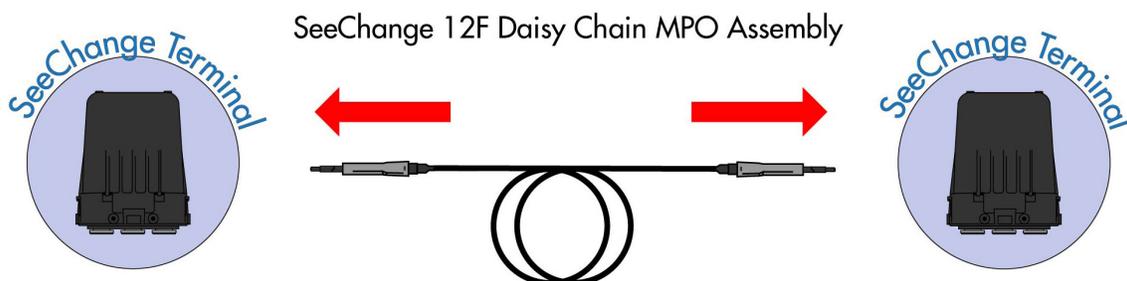
The SC/APC end of the drop cable is protected during installation with a bullet case and eye loop with string. The pull string eye loop is rated for 50 lbs. maximum pull force. When using the FS-PUL-5-9-MM pulling sock accessory, the rated maximum force is 100 lbs. The minimum recommended conduit size for SeeChange Hybrid Drop Assemblies is 3/4" diameter.



Scan for Pulling
Bullet Video.

SeeChange Daisy Chain Assemblies

Twelve Fiber SeeChange Daisy Chain Assemblies are used between two SeeChange Terminals when expressing output fibers from one terminal to the input of the other terminal. Both ends of the assembly are terminated with SeeChange MPO connectors. SeeChange MPO Daisy Chain Assemblies are available with conventional 12 fiber flat drop cable. Standard lengths of 100, 150, 200, 250, 300, 400 and 500 feet long and can be ordered with or without a tone wire. The minimum recommended conduit size for SeeChange Daisy Chain Assemblies is 1 1/4" diameter.



Configured Part Numbers

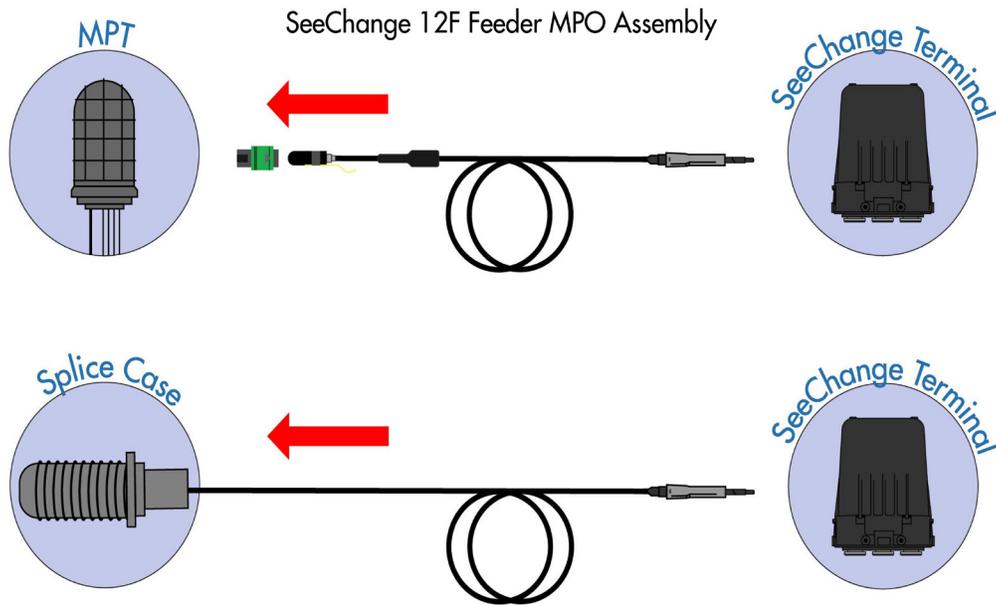
Cable Type	Connector at Terminal 1	Connector at Terminal 2	Toneable Cable	Non-Toneable Cable
Conventional 12F Flat Drop	SeeChange MPO	SeeChange MPO	SEE-U1-012-62ZZ-62ZZ xxxxF	SEE-T1-012-62ZZ-62ZZ xxxxF

SeeChange MPO Daisy Chain Cable Assemblies are available in standard lengths of 10, 100, 150, 200, 250, 300, 400 and 500 feet

SeeChange Hybrid MPO Feeder Assemblies

12 Fiber SeeChange Hybrid MPO Feeder Assemblies are used between a YOURx Multi-Purpose Terminal (MPT) and a SeeChange Terminal. One end of the assembly is terminated with a SeeChange MPO connector. The opposite end is terminated with a 12 fiber pushable MPO to connect into the ports of the MPT terminal. SeeChange Hybrid MPO Feeder Assemblies are available with conventional 12 fiber flat drop cable. Standard lengths of 100, 150, 200, 250, 300, 400 and 500 feet long and can be ordered with or without a tone wire.

For some applications, the SeeChange Terminal feeder cable is spliced directly into the network in place of routing to an MPT terminal. In this situation, the SeeChange MPO feeder will be terminated with a SeeChange MPO connector on one end with no connector on the other end.



Configured Part Numbers

Cable Type	Connector at MPT or Splice Case	Connector at SeeChange Terminal	Toneable Cable	Non-Toneable Cable
Conventional 12F Flat Drop	Pushable MPO	SeeChange MPO	SEE-U1-012-62ZZ-PQD xxxxF	SEE-T1-012-62ZZ-PQD xxxxF
Conventional 12F Flat Drop	None/Blunt End	SeeChange MPO	SEE-U1-012-62ZZ-ZZZ xxxxF	SEE-T1-012-62ZZ-ZZZ xxxxF

Pushable MPO to SeeChange MPO Cables are available in standard lengths of 100, 150, 200, 250, 300, 400 and 500 feet

SeeChange[®]

Terminal - Accessories



Accessory	Part Number	Description	Picture
Terminal Mounting Bracket	SCT-MTG-BRACKET	Terminal L-Mounting Bracket, plate and wing nut for pole, wall or pedestal mount	
Aerial Mounting Clip	SCT-AER-BRACKET	Spacer clip for strand mounting using Deltec strap (not provided) and locking clip (not provided)	
SeeChange Connector Cleaning Kit	SCT-CLEANING-KIT	Includes click style SC and MPO cleaners and wash pen	See Kit Items Below:
SC Cleaner	SCT-SCAPC-CLEANER	Click style SC connector cleaner	
MPO Cleaner	SCT-MPO-CLEANER	Click style MPO connector cleaner	
Connector Wash Pen	SCT-WASH-PEN	Wash Pen	
SeeChange End-Face Inspection Kit	SCT-SCOPE-KIT	Includes LighTel scope, SC long neck tip and MPO long neck tip	See Kit Items Below:
Optical Scope	SCT-SCOPE	End Face Scope-LighTel	
Long Neck SC Inspection Tip	SCT-SCOPE-TIP-SCAPC	SC Long Neck end face inspection tip	
Long Neck MPO Inspection Tip	SCT-SCOPE-TIP-MPO	MPO Long Neck end face inspection tip	
Pull Sock Drop Cables	FS-PUL-5-9MM	Pulling Sock for pushable SC SFF drop cables, 100 lb. max. pull force	

SeeChange[®]

Terminal - Accessories



Accessory	Part Number	Description	Picture
Pull Sock MPO Cables	SEE-PULLING-SOCK	Pulling sock for SeeChange MPO connectors, 50 lb. max. pull force	
Protection Sleeve Kit	SEE-CONN-PROTECT-10	(10) reusable protective microduct sleeve to cover connector ends during installation	
SeeChange SC Test Cable	SEE-TEST-SCAPC-SEESCAPC-2F	Test cable, SeeChange SC/APC to standard SC/APC, 2 feet long	
SeeChange MPO Test Cable	SEE-TEST-MPO-SEEMPO-2F	Test cable, SeeChange MPO female to standard MPO Female, 2 feet long	
SeeChange MPO Breakout Test Cable	SEE-TEST-SCAPC-SEEMPO-2F	Test cable, SeeChange MPO female to 12 standard SC APC connectors, 2 feet long	
SeeChange Terminal - Flower Pot	FPB1019	Flower pot, 10" W x 18" L (254.00 mm x 457.00 mm) round top, green, bolt on cover	