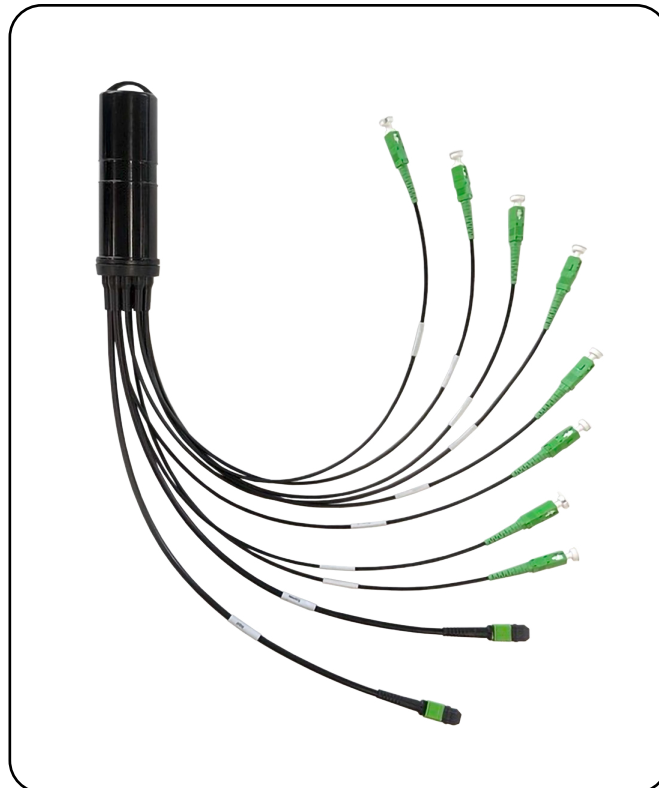


# TetherSmart Multi-Fiber Terminal

## Installation Manual

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# TetherSmart Multi-Fiber Terminal

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### Application

The TetherSmart Multi-Fiber Terminal is Clearfield's smallest, carrier grade, plug-and-play access terminal for use in FTTx applications, including Fiber to the Home and Fiber to the Business. It's 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 with express port options.

### Description

The TetherSmart Multi-Fiber Terminal is fully sealed and offers numerous configurations for centralized and distributed split with a single or multi-fiber input feeding to single fiber drop ports and an optional multi-fiber express output port. The express port is used to daisy chain to other terminals deeper in the neighborhood. Connections to the terminal can be made using industry standard SC, MPO and HFOC connectors that can be installed with entry level technicians for quick deployment. All terminations meet Clearfield's FiberDeep performance levels for low insertion loss (0.2dB max IL for single fiber and 0.35dB max IL for multi-fiber connectors). The terminal can be deployed in a pedestal as small as 6 inches.



### Technical Specifications

TetherSmart Multi-Fiber Terminal	
Dimensions	5.2" Length x 1.54" Outer Diameter
Mounting Options	Above Grade, Aerial, Below Grade
Network Design	1x2, 1x4, 1x8 (Optional: Centralized Split, Distributed Split)
Connector Types	Standard SC/APC, MPO Male, and HFOC (Optional input with spliced on tail, terminated or unterminated)
Port Density	Maximum 10 Ports (1 Feed, 1 Express, 8 Drops)



# TetherSmart Multi-Fiber Terminal

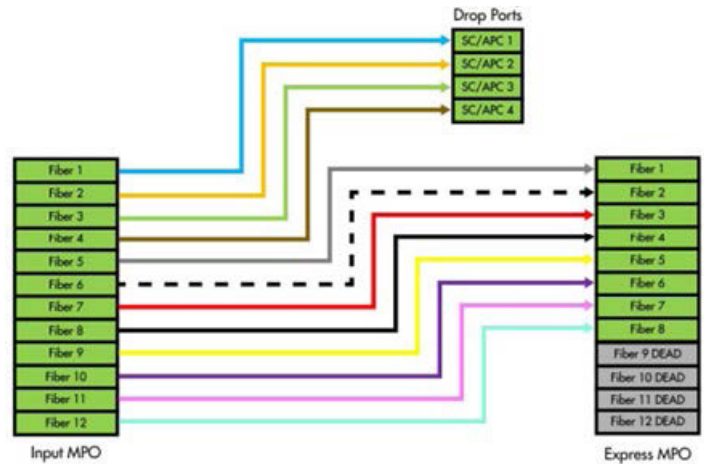
## Installation Manual



### Configurations

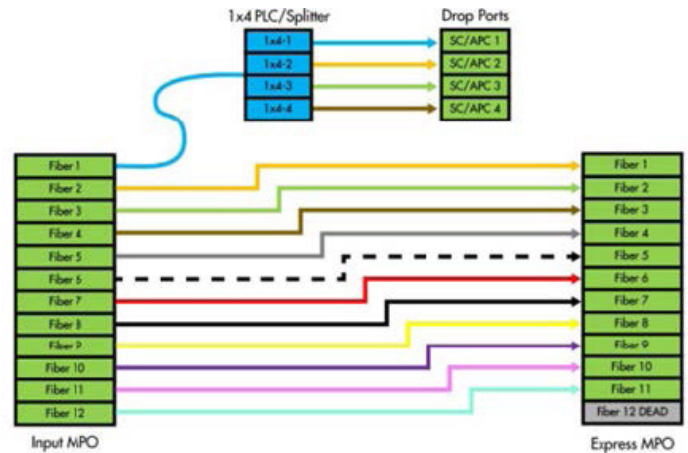
Centralized Split: Multi-fiber feeder with drops and expressed shifted output

- Input 12-fiber, 4X drops, 8-fiber shifted output
- Input 12-fiber, 6X drops, 6-fiber shifted output
- Input 12-fiber, 8X drops, 4-fiber shifted output



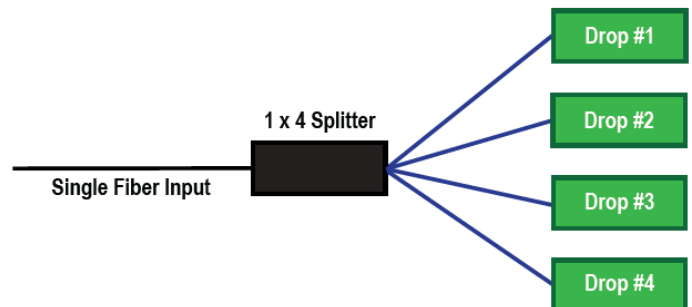
Distributed Split with Express Pass Through: Multi-fiber feeder with splitter/drops and expressed shifted output

- Input 12-fiber, 1x2 splitter, 2X drops, 11-fiber shifted output
- Input 12-fiber, 1x4 splitter, 4X drops, 11-fiber shifted output
- Input 12-fiber, 1x8 splitter, 8X drops, 11-fiber shifted output



Distributed Split: Single fiber feed with splitter/drops (no express output)

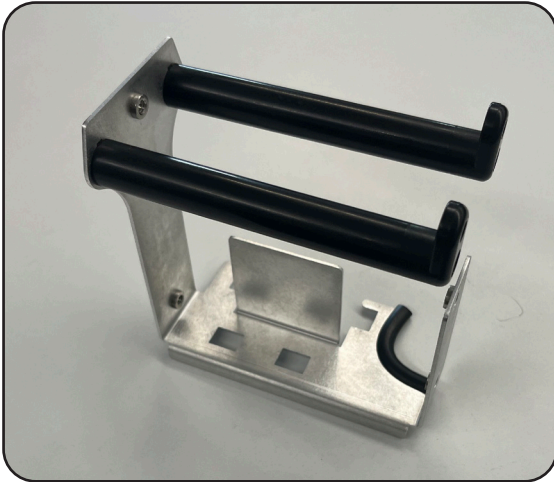
- Input 1-fiber, 1x2 splitter, 2X drops
- Input 1-fiber, 1x4 splitter, 4X drops
- Input 1-fiber, 1x8 splitter, 8X drops



### Installing SC/MPO Configurations in the 6" Pedestal

#### Installing the Adapter Plate Bracket

1. If not preinstalled, the adapter bracket must be mounted to the hoop of the pedestal. Align the top of the bracket below the lowest notch in the pedestal's hoop. Secure with the provided hardware.



2. Install the adapters into the adapter plate.





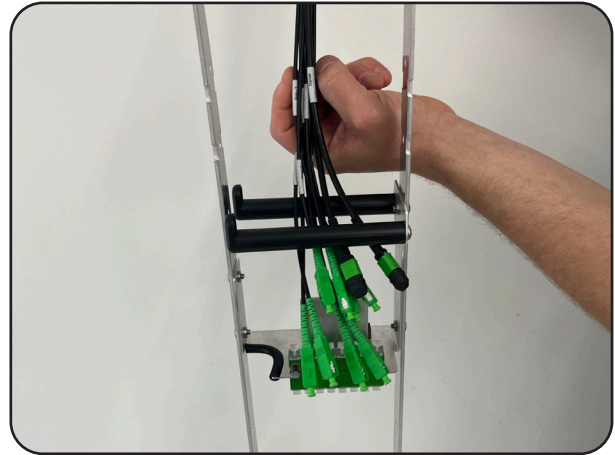
# TetherSmart Multi-Fiber Terminal

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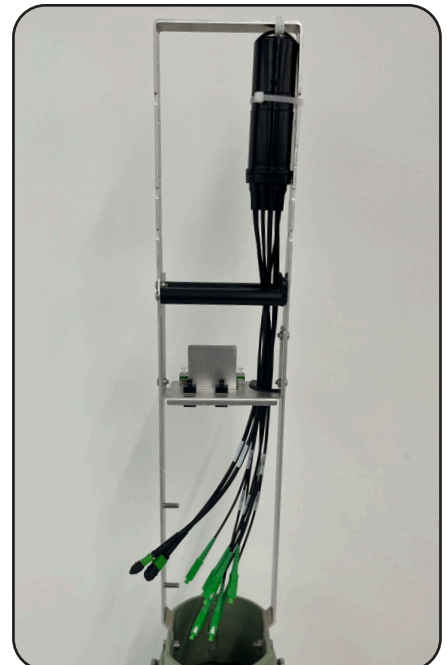
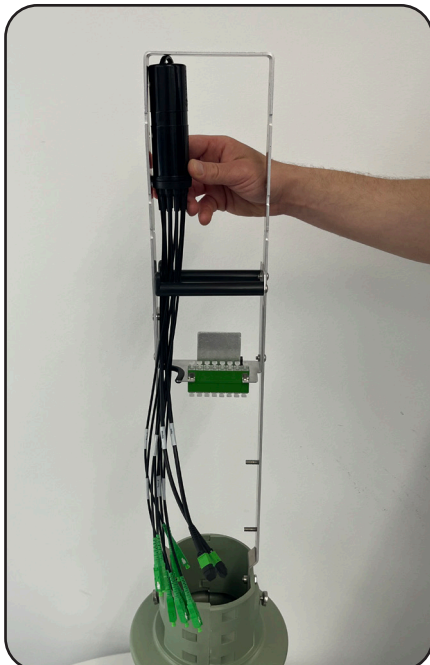


### Installing the TetherSmart Multi-Fiber Terminal

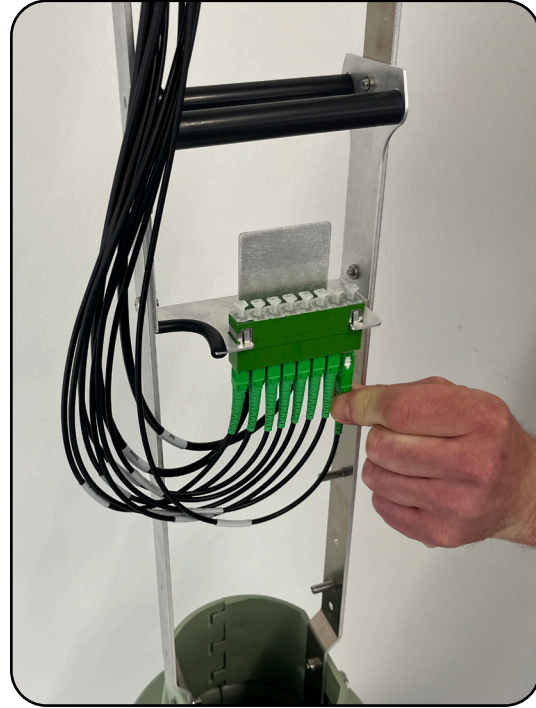
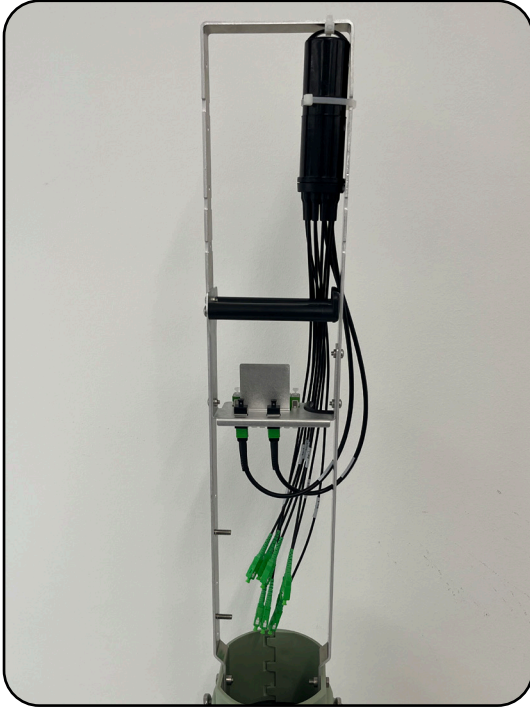
1. Feed the legs of the MFT down through the gap between the two radius fingers on the top of the adapter plate bracket.



2. Bring the body of the MFT up to the top corner of the pedestal's hoop.
3. Secure the MFT to the hoop with a cable tie, utilizing the notch in the hoop and the indented ring on the MFT body to prevent it from sliding down.
4. Optionally, a second cable tie can be used on the bridge located at the top of the MFT, securing the MFT to the top of the hoop as well.



5. Inspect, clean if necessary, then connect each leg into the adapters.



6. Optionally, secure the legs to the pedestal's hoop with velcro.





# TetherSmart Multi-Fiber Terminal

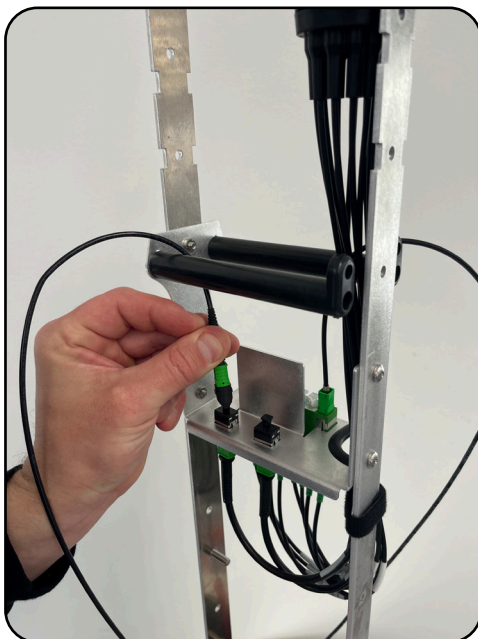
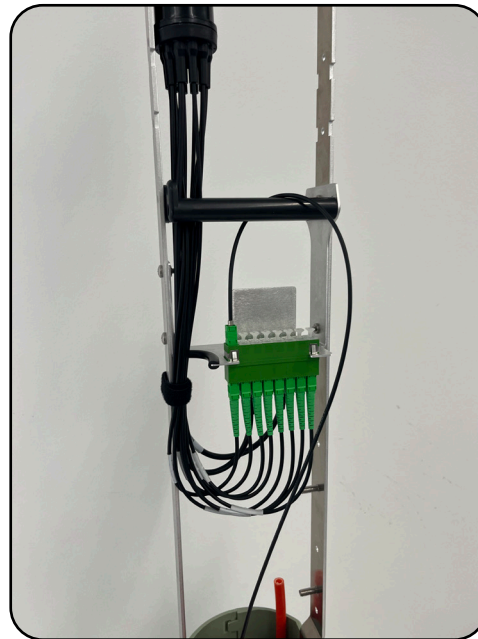
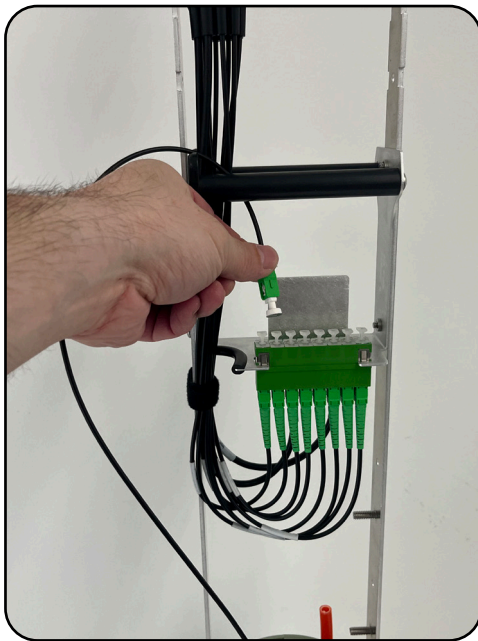
## Installation Manual

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### Installing Multi-Fiber Express Cables and Single Fiber Drops

When connecting express and drop cables into the adapters, bring the fibers up and over the radius finger on the side in which the connection will be made. Prior to connection, inspect the endfaces of the connectors and clean if necessary.

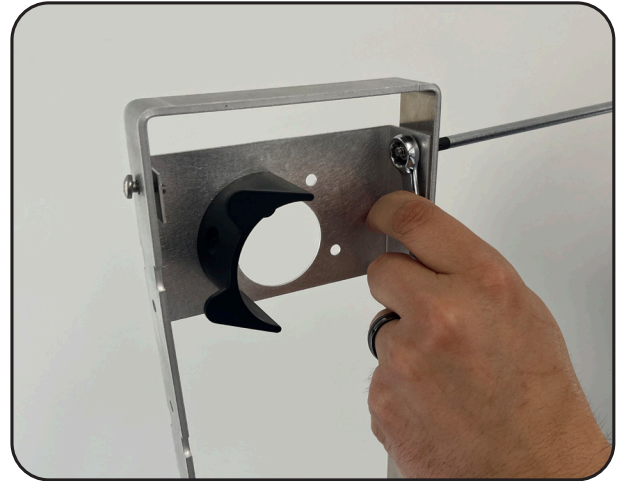




### Installing HFOC Configurations in the 6" Pedestal

#### Installing the Radius Limiter Bracket

Install the radius limiter bracket with the provided hardware at the top of the pedestal's hoop.



#### Installing the TetherSmart Multi-Fiber Terminal

HFOC configurations of the MFT install with the legs facing upwards. Secure the MFT to the hoop with a cable tie, utilizing the notch in the hoop and the indented ring on the MFT body to prevent it from sliding down. Route the MFT's legs around the radius limiter and allow them to hang. Proceed to connecting drops as needed, inspecting and cleaning when necessary prior to connection.



# TetherSmart Multi-Fiber Terminal

## Installation Manual



### Connector Cleaning Procedure

Whether factory terminated or field spliced, clean connectors are essential for proper system operation. Even the smallest dust particle can cause transmission problems, so for optimal network performance inspect, and if necessary, clean connectors and adapters prior to mating.

#### Inspect Then Connect

These are Clearfield recommended products/applications. Use the product you feel will complete your cleaning procedures. Create a “best practice” for your company and follow those procedures.

The use of Chemtronics end face and bulkhead cleaning products and techniques ensures a clean end face, no matter the type of contamination.

Before cleaning any connector, be sure you know what type of contaminate you are cleaning (dry, fluidic, or combination). All the available products are good, it's the process that you need to be aware of. Using a dry cleaning method to clean “dirt” can lead to scratching of the end face. Learn the process of cleaning properly.

**Note:** It is **NOT** recommended to use isopropyl alcohol to clean the end face.

### Cleaning an SC/LC Connector

#### Cleaning the End Face

- Place one wiping paper on QbE-2 FiberSafe™ Cleaning Platen. (Figure 1)
- Apply small amount of precision cleaner (about 1” in diameter) with Electro-Wash MX pen on to one end of the wipe. (Figure 2)
- Hold end face at a 90 degree angle. For APC connection, adjust by slightly tilting the container or end face. Angle is correct when no drag is felt on the end face. (Figure 3)
- Draw end face from wet to dry part of the wipe 3 times. Use just enough pressure to ensure complete contact between end face and the wipe.

**Note:** **DO NOT** retrace previous step.



Figure 1



Figure 2



Figure 3

### Cleaning the Ferrule

- Lightly moisten the fiber optic swab (2.5mm/38542F or 1.25mm/38040) by spotting a small amount (about 1") of Electro-Wash PX or Electro-Wash MX pen onto the QbE. Hold the swab, 1 side down to the wetted area and hold for a count of 1-2-3-4-5. (**Figure 4**)



Figure 4

- Insert swab into side of ferrule, wet side to the ceramic ferrule and circle around 2-3 times and remove. Turn swab to dry side and repeat. (**Figure 5**)



Figure 5

### Cleaning the Mate Through an Adapter AND the Adapter Itself

- Lightly moisten the fiber optic swab (2.5mm/38542F or 1.25mm/38040) by spotting a small amount (about 1") of Electro-Wash PX or Electro-Wash MX pen onto the QbE. Hold the tip of the swab onto the wetted area and hold for a count of 1-2-3-4-5.
- Insert the swab into the adapter to the connector, press lightly against the connector, twist 2-3 times, remove and discard.
- Dry with a second dry swab.
- Inspect, repeat cleaning if necessary, and test for signal strength.
- Use additional swabs to clean inside the actual adapter. Moisten swab, like above, and insert through hole and remove while twisting. (**Figure 6**)

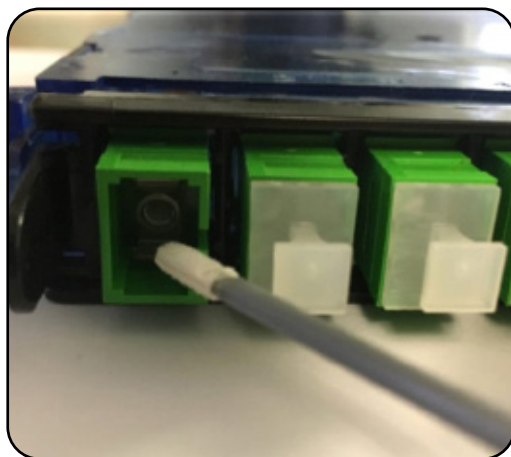


Figure 6



# TetherSmart Multi-Fiber Terminal

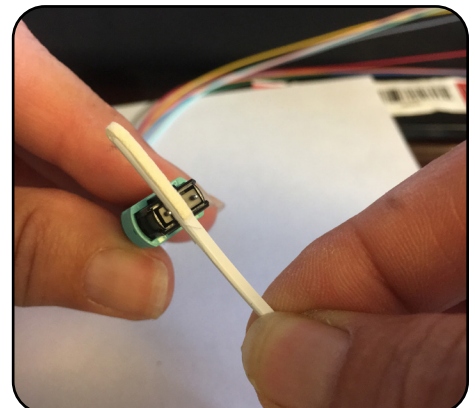
## Installation Manual



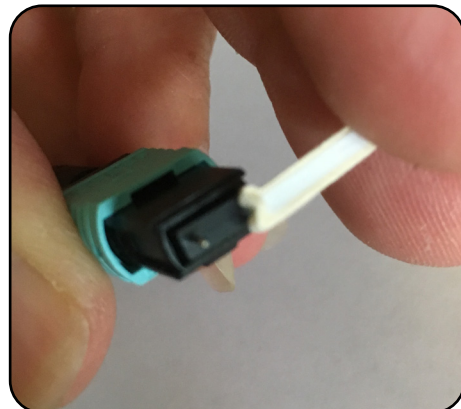
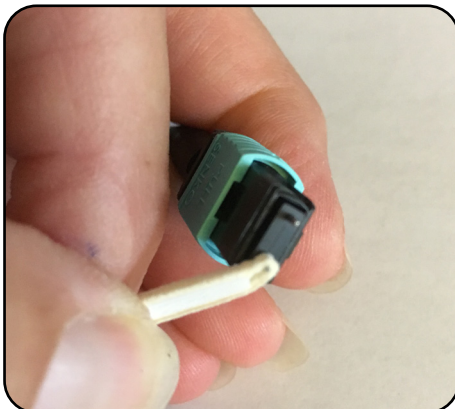
### Cleaning an MPO/MTP Connector

#### Male Connector

- Use of Chemtronics MTP Connector Cleaning Swabs (CC505F) is recommended. Even after cleaning with a probe cleaner, you should always clean the pins with this (or an equivalent) type swab. Cleans ALL MTP/MPO connector end faces. This swab also cleans the “pins” of the male connector
- Lightly “spot” a QbE-2 wipe on the platen with Electro-Wash PX Fiber Optic Cleaner, the FiberWash or MX Pen.
- Lightly touch short side of the MTP/MPO Connector Swab to the wetted area (3-5 secs) to absorb some cleaning solution (DO NOT over saturate the swab).
- Wipe connector areas to be cleaned, sliding pad from bottom of pad across and forward to tip of swab, from 1 side to the other, turn over and use long side to dry in same movement.

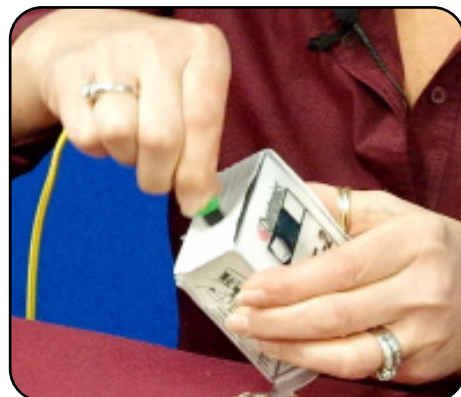


- Use the hole on end of pad to clean one alignment pin, then press the end of the swab into the other pin to clean.
- Check your work with a fiber scope. This can take several attempts to get the endface clean.



### Female Connector (without pins)

- Cleaned like a single fiber connector, using a cleaning platform. The receptacles will be cleaned as long as you are using a combination cleaning process as recommended.
- Again, using a platen, moisten the platen with cleaning solvent on one end to accommodate 3 swipes of the MPO female endface.
- Holding the connector (If APC, slightly at an angle to accommodate for 8° angle) swiping with medium pressure, from the wet area into the dry area 3 times, without wiping over previous area.
- Inspect, and if clean, make the connection. If NOT, repeat above steps until clean or if determined that the end face is damaged (based on standards of 5 cleanings per connection), replace.



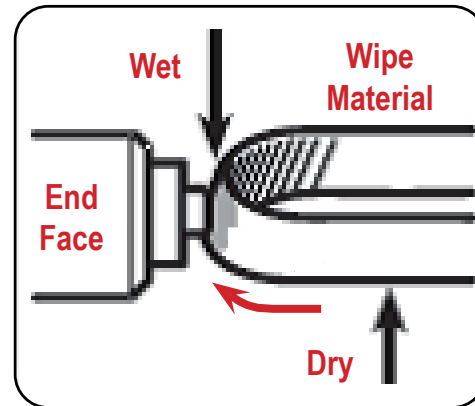
# TetherSmart Multi-Fiber Terminal

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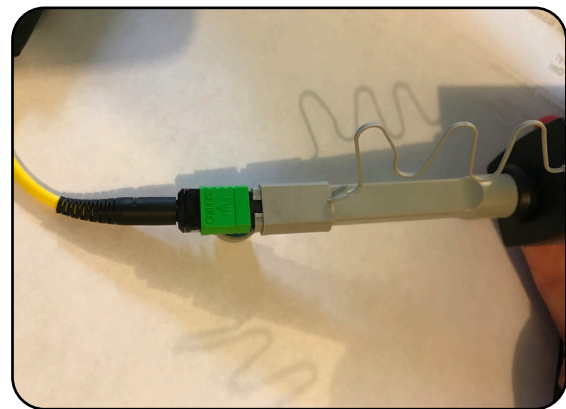
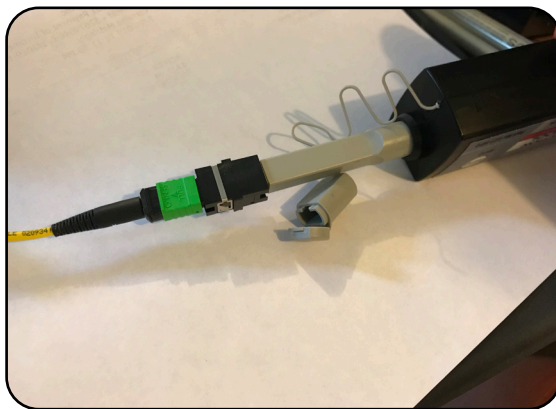


### Cleaning Using a Probe-Style Cleaning Tool

- The probe style cleaning tools are capable of cleaning a connector end face separately or through the adapter.
- Slightly engage probe by pulling back but do not allow to click. Lightly “spot” a QbE-2 wipe on the platen with Electro-Wash PX Fiber Optic Cleaner, this will help alleviate “over saturation” of the material.
- Lightly touch the tip of probe and release.



- Insert connector or insert probe through adapter and click 2-3 times to move past the wet area and allow material to dry wipe.



- Inspect connector, repeat if necessary (following standards)
- If cleaning a male connector, clean the pins (see above)





# TetherSmart Multi-Fiber Terminal

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### Standard Warranty

Clearfield warrants to the original purchaser of the Product sold hereunder is free from defects in material and workmanship under normal use and service, subject to exceptions stated herein. Product purchased is warranted as follows: Clearfield designed and branded Products are warranted for three (3) years; Products manufactured by Clearfield to customer prints and/or specifications are warranted for one (1) year; and any Product Clearfield acquires from or through a third-party manufacturer or distributor and resells to Customer as the original customer will carry the manufacturer's pass-through warranty, if any. In all cases, the warranty period commences on the date of shipment to the original purchaser.

### Warranty Claim Procedure

If any Product purchased from Clearfield is found defective under the above warranty, the following basic procedure must be followed:

1. Customer must contact Clearfield and obtain a Return Materials Authorization
2. Following authorization, the Customer ships the product-freight collect to Clearfield's manufacturing facility
3. Clearfield shall repair or replace the defective Product at its sole option and discretion, and return the repaired or replacement Product to Customer's site, freight prepaid

Note: If the Product is not found to be defective by Clearfield, the product will be returned to the Customer and the customer billed for freight in both directions.

View our warranty policy here: <https://www.seeclearfield.com/warranty.html>

### Limitations of Warranty

Correction of defects by repair or replacement, at the option of Clearfield Inc, shall constitute the exclusive sole remedy for a breach of this limited warranty. Clearfield shall not be liable under any circumstances for any special, consequential, incidental, punitive, or exemplary damages arising out of or in any way connected with the product or with agreement to sell product to buyer, including, but not limited to damages for lost profits, loss of use, or for any damages or sums paid by buyer to third parties. The foregoing limitation of liability shall apply whether the claim is based upon principles of contract, warranty, negligence or other tort, breach of statutory duty, principles of indemnity or contribution, the failure of any limited or exclusive remedy to achieve its essential purpose, or otherwise.

Clearfield will not be responsible for any labor or materials costs associated with installation or incorporation of Clearfield products at customer sites, including any costs of alteration, replacement or defective product, or any field repairs.

### Other Limitations

Clearfield assumes no warranty liability regarding defects caused by:

1. Customer's modification of Product, excepting installation activities described in Clearfield documentation
2. Customer re-packaging of Product for shipment to third parties or destinations other than those originally shipped to by Clearfield, or any defects suffered during shipping where the Product has been re-packaged
3. Customer's installation or maintenance, excepting activities described in and performed in accordance with Clearfield documentation
4. Customer's improper or negligent use or application of Product
5. Other causes external to the Product, including but not limited to accidents, catastrophe, acts of God, government action, war, riot, strikes, civil commotion, sovereign conduct, or the acts or conduct of any person or persons not party to or associated with Clearfield
6. Environmental factors and weathering resulting in aging and damage not necessary or applicable to the function of the product

# TetherSmart Multi-Fiber Terminal

## Installation Manual

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However, no guarantee is given or implied that the document is error free or that it is accurate with regard to any specification.

### Technical Support

Clearfield, Inc. can be contacted for any issues that arise with the supplied product.

If you need to return the supplied product, you must contact the Clearfield, Inc. Customer Service Department to request a Returned Materials Authorization (RMA) number.

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