COMMSCOPE®

White paper

Innovative installation techniques for fiber drop terminals

As fiber-to-the-premises (FTTP) deployments increase, innovative methodologies are being developed to make the installer's life easier. In the outside plant—from the central office (CO) to the optical network terminal (ONT) at each subscriber premises, new techniques and better products are helping to streamline the process of offering triple-play services to the consumer.

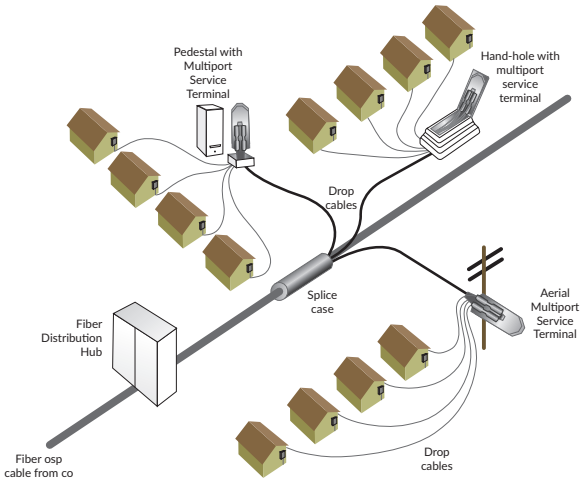
Making the FTTP network as modular as possible, with easy plug-and-play options, provides benefits, both during initial installation and throughout the operational life of the network. CommScope has achieved a leadership position in developing, testing, and delivering products that ensure flexibility, reliability, and scalability for today's FTTP initiatives.

This paper addresses one area in which CommScope heard the frustrations of FTTP installers and developed a unique product that alleviates those frustrations. The new multiport service terminal (MST) universal mounting bracket is designed to save time, reduce complexity, and streamline the process of mounting MSTs for installing drop cables in any FTTP deployment.

Adapting to the situation

CommScope developed a universal mounting bracket for installing MSTs. The most obvious benefit of the universal mounting bracket is its compatibility to any mounting scheme. It easily mounts to poles, in pedestals, in hand holes, or on strands.

Because the bracket adapts for all mounting situations, MST installations are accomplished in less time and with reduced complexity. It also eliminates the logistics of ensuring brackets are available for each type of mounting technique. Since it adapts to every mounting situation, there is no possibility of the installer suddenly discovering the appropriate bracket is not available.



Hardened connector architecture

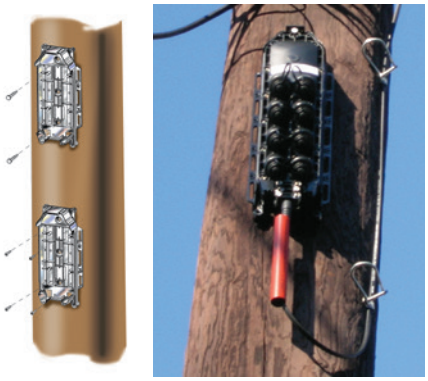
The snap-in/snap-out feature of the universal bracket makes the MST readily available for drop cable connections or re-connections. Its rigid plastic structure—using the same material as the MST—ensures it can withstand the same environmental exposures, including contracting and expanding with temperature variations.

A single, reinforced latch enables easy MST detachment from the bracket, while an audible engagement assures the MST is correctly snapped into place and properly seated in the bracket's cradle. The through holes align with the terminal and additional holes are available for edge mounting. Slots are provided for securing with tie wraps and Deltec straps.

Whether mounting on a pole, in a pedestal, in a hand hole, or on a strand, the universal mounting bracket reduces cost, time, necessary logistics, and the complexity of traditional mounting options.

Pole mounting

Mounting MSTs on poles typically required a separate mounting bracket costing $12 to $15. Besides additional cost, there were several additional issues related to pole-mounting. For example, part of the installation technique required the installer to hammer screws directly through holes in the terminal. Missing the screw meant hitting the terminal—possibly damaging the connector or cable. Placing the MST at risk in order to mount it on a pole is not a desirable option.



Another issue was in the logistics of ensuring the correct bracket was available, since the brackets were ordered separately. In some instances, installers would climb up the poles, discover they were missing the correct mounting bracket, and simply hammer the screws directly through the holes in the terminal—again, risking damage to the terminal.

The MST universal mounting bracket enables simplified pole mounting without risk to the terminal. The bracket is mounted

separately with two lag bolts or screws that can be hammered in place without risking damage to the terminal, cable, or full sized hardened adapters. The heads of the bolts or screws fit into recessed areas where they cannot interfere with the MST. Once mounted in place, the terminal simply snaps onto the universal mounting bracket with an audible snap to ensure the technician it has seated properly.

CommScope's universal mounting bracket is integrated with the terminal design and shipped together as one unit. This eliminates the need for incremental inventory in terms of separate additional mounting brackets and saves about $15 per installation.

Pedestal mounting

Mounting MSTs in pedestals would seem a relatively simple proposition. Prior to the introduction of the universal mounting bracket, the terminal was semi-permanently affixed to the pedestal with nuts and bolts. Often, consideration for mounting the pedestal would need to include which pedestal was being used, adding another layer of complexity and cost to FTTP deployment. Should maintenance to the pedestal or terminal be required, removing the terminal was inconvenient, often adding unnecessary time and effort to a simple maintenance procedure.

The universal mounting bracket provides flexibility in allowing MST to snap in and out of the pedestal in a matter of seconds and not minutes. The bracket itself is semi-permanently affixed to the pedestal or pedestal center panel using two small screws.

In a pedestal mounting environment, the universal mounting bracket removes complexity and cost from FTTP deployments.

Hand hole mounting

The same universal bracket can be used below ground in hand holes that currently use two mounting techniques – the swing arm and waffle bracket. The swing arm is a separate bracket that swings up from the hand hole for terminal mounting. The waffle bracket hangs on the side of the hand hole and lifts out for mounting the terminals.

In some cases, either no mounting technique was used or installers neglected to order any brackets, so terminals were simply placed in the bottom of the hand hole. Since hand holes can often fill with water, this is not a desirable method. Even with brackets, when it is time to connect drop cables to the terminals, they must be removed from the hand hole for cleaning and drying before attaching the cables.

CommScope's universal mounting bracket is compatible with both the swing arm bracket and the waffle bracket. It provides hanger loops that enable it to be hung on any existing hanger bracket. The universal bracket can also be anchored to the lip of the hand hole, just below the cover, with two self-threading screws. Regardless of what mounting technique is used, terminals are easily snapped in and out of the universal bracket for connecting drop cables.

By eliminating the need for separate waffle brackets or swing arms, installers save $17 to $25 per installation. The single latch removal feature and simple snap installation allows the terminal to be removed easily from the hand hole and easily re-installed.

Strand mounting

When mounting to a pole is not possible due to a lack of space, strand mounting is the common alternative. During an installation, the MST universal bracket is easily strand mounted using standard materials already available to the installer. A separate strand mounting bracket can sell for as much as $15 and, again, may not always be readily available or even the proper one for a particular deployment. The same universal bracket that mounts easily to a pole or into a hand hole—and is shipped with the MST—is contoured for strand mounting with standard heavy-duty tie wrap fasteners or Deltec.

The universal bracket is also compatible with stand-off tools used for traditional strand mounting. The bracket can be secured to either fiber-optic or copper cable. MST placements are accomplished in a variety of ways, depending on the deployment, and may even be deferred until any point in the future. In the advanced termination system (ATS), for example, installers opt to place a multifiber connection (MFC) at the tethered access point (TAP), enabling them to go back at any time in the future and install an MST using a plug-and-play approach.

Compatibility, ease, and lower cost

The key advantages to using the MST universal mounting bracket for pole, pedestal, hand hole, or strand mounting are worth mentioning again:

- Same bracket can be pole, pedestal, hand hole, or strand mounted
- Eliminates the need for more inventory and additional materials in the field
- Reduces or eliminates the use of extra fasteners
- Uses materials already available to the installer
- Minimizes the risk of damage to the MST
- Saves cost of additional mounting brackets ($12 to $25 per installation)
- Easily engages/disengages MST with an audible snap engagement and single latch release
- Eliminates logistics—no need to order other brackets
- Rigid plastic construction—same as MST—will expand or contract with MST
- Stands up under high vibration or stress created by cables placed in the MST

The bracket was developed by CommScope as a direct result of customer feedback about issues they were experiencing in the field with MST mounting. The design concept evolved as an answer to these deployment issues—and the result is the MST universal bracket—simplifying MST mounting even where legacy equipment already exists. By reducing MST installation time and complexity, CommScope has again helped bring the benefits of fiber directly to the end user.

Everyone communicates. It's the essence of the human experience. *How* we communicate is evolving. Technology is reshaping the way we live, learn and thrive. The epicenter of this transformation is the network—our passion. Our experts are rethinking the purpose, role and usage of networks to help our customers increase bandwidth, expand capacity, enhance efficiency, speed deployment and simplify migration. From remote cell sites to massive sports arenas, from busy airports to state-of-the-art data centers—we provide the essential expertise and vital infrastructure your business needs to succeed. The world's most advanced networks rely on CommScope connectivity.

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