

Application Note



A Standards-Based Alternative for Installing IP Devices

Intelligent buildings use automation and integration of building systems to provide a more efficient use of the building. The IT network is the natural and preferred method to enable different systems to communicate. Another benefit of using IT network cabling is the ability to centrally power devices using PoE. TIA is revising the ANSI/TIA-862 *Building Automation Systems Cabling Standard* to provide design guidance as these new applications converge on the IT network. The current ANSI/TIA-862-A standard will be updated to become ANSI/TIA-862-B *Structured Cabling Infrastructure Standard for Intelligent Building Systems*.

Intelligent building system IP devices are different from voice/data applications. They are not typically placed on a desktop and are considered “fixed” installations with little need for movement. Having exposed patch cords is undesirable for security reasons. They may be surface mounted, ceiling mounted, or even placed above the ceiling. Because of this, cabling may route through or terminate in an air plenum.

Without viable alternatives, contractors have had to adapt. They have attached RJ45 plugs directly to horizontal cabling. Jacks have been terminated to horizontal cabling and left loose above the ceiling or installed in 1-port surface mount housings and left loose or stuffed into electrical boxes. Contractors and designers need an alternative that is cost effective and standards based.

For applications requiring surface mounted IP devices like WAPs, cameras, and clocks, a mounting method that provides a standards-based, testable Permanent Link is needed. A stable connector mounting point reduces the chance of damage during The Leviton In-Wall and In-Ceiling Brackets provide contractors and designers the mounting points they need for above-ceiling and in-wall applications.

So why use a field terminated jack when you can put on a plug and be done? Jacks provide a standards-based, testable Permanent Link that can be tested and warranted right away for immediate and operational confidence. Combined with a stable connector mounting point, it reduces the chance of damage during construction, avoids finger-pointing between the trades, and avoids high cost rework especially for hard to reach connections. Also, many consultants and contractors believe that a field-terminated plug is less reliable.

Many who use plugs reference ANSI/TIA-862-A as the standard that allows for direct connection of equipment to horizontal cabling with a plug. Caution must be taken when invoking this standard. Installing a plug onto a horizontal cable that runs directly from the Telecom Room is NOT allowed in the BAS standard (**Figure 1**). Compliance with the BAS standard requires a consolidation point between the TR and the plug. This will also be true for the ANSI/TIA-862-B standard as well.

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NS-AN-15-0015-030215

Date:
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Product Line:
AV

Part Numbers Affected:
49223-BA*, 49223-CBC, 49223-CB0

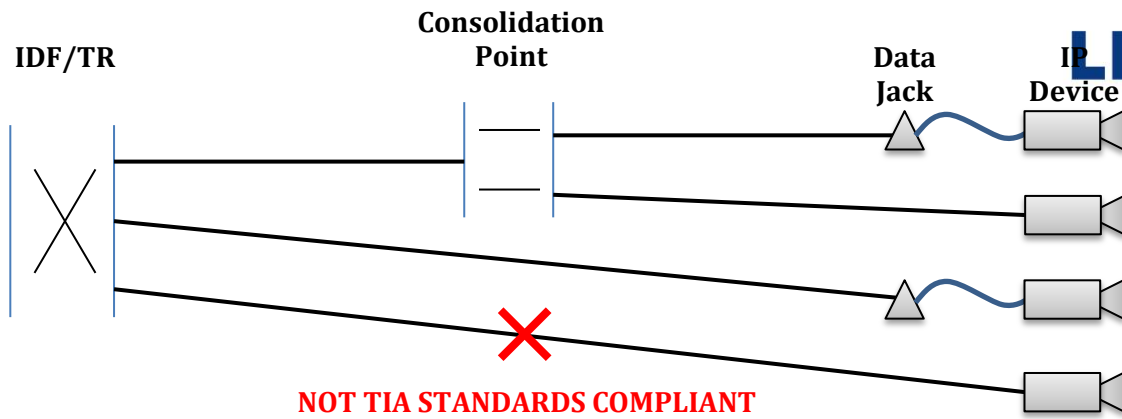


Figure 1.

The **49223-BA5 Quickport™ In-Wall Bracket** is perfect for surface mount applications (WAP, IP camera, IP clock, etc.) where there may be no other way to permanently fix a jack. Whether the box is surface mounted or flush mounted in a wall, the 49223-BA* fits the standard NEMA mounting scheme (**Figure 2**). Many active device manufacturers have optional mounting brackets (**Figure 3**) that are a perfect complement to this device (**Figure 4**). For surface mount applications it is not advised to use a flat ring but, instead to use a 1/4" high ring so that the mounting bracket does not interfere with the screws used to mount the ring (**Figure 5**). Where two category cables are required, the use of a dual gang ring with two 49223-BA5 adapters mounted in opposite directions is advised (**Figure 6**). For Category 6A installations it is recommended that a 5" x 5" box is used to help maintain the bend radius requirement for that cable type. A 4-5/8" x 4-5/8" box is adequate for Category 6 cabling while a 4" x 4" box is acceptable for Category 5e.

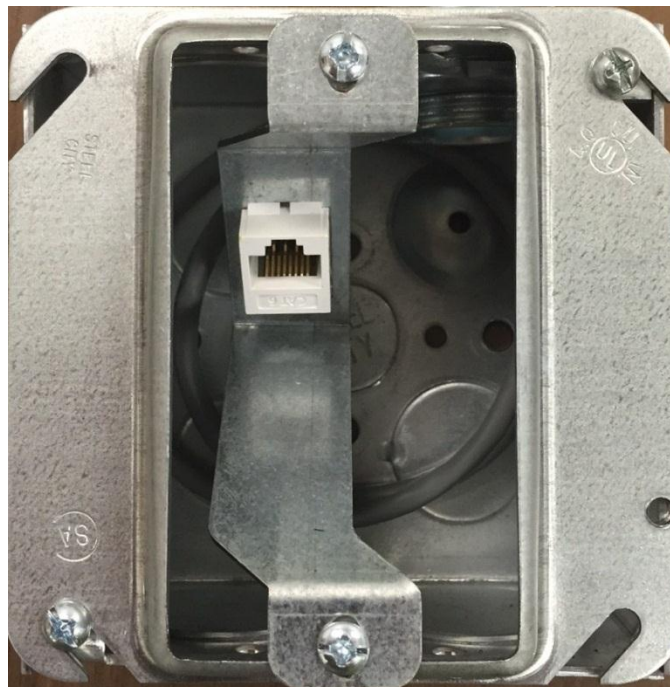


Figure 2.

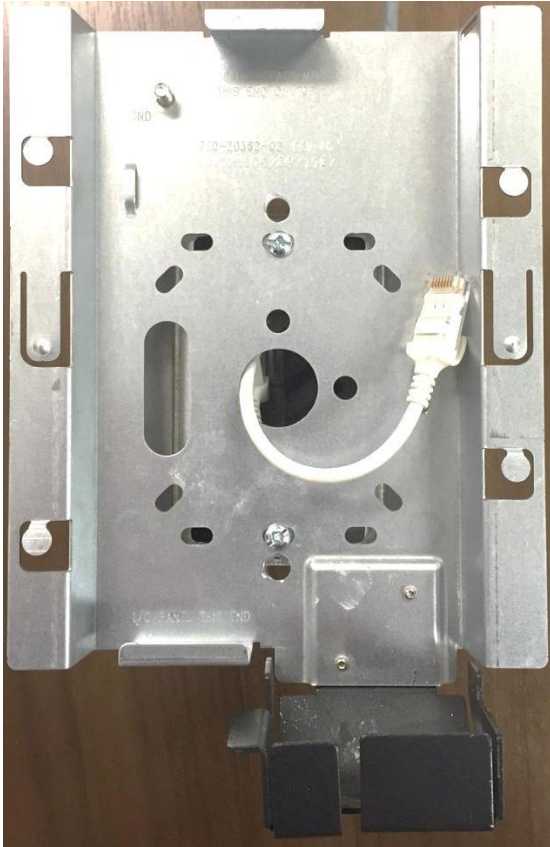


Figure 3.

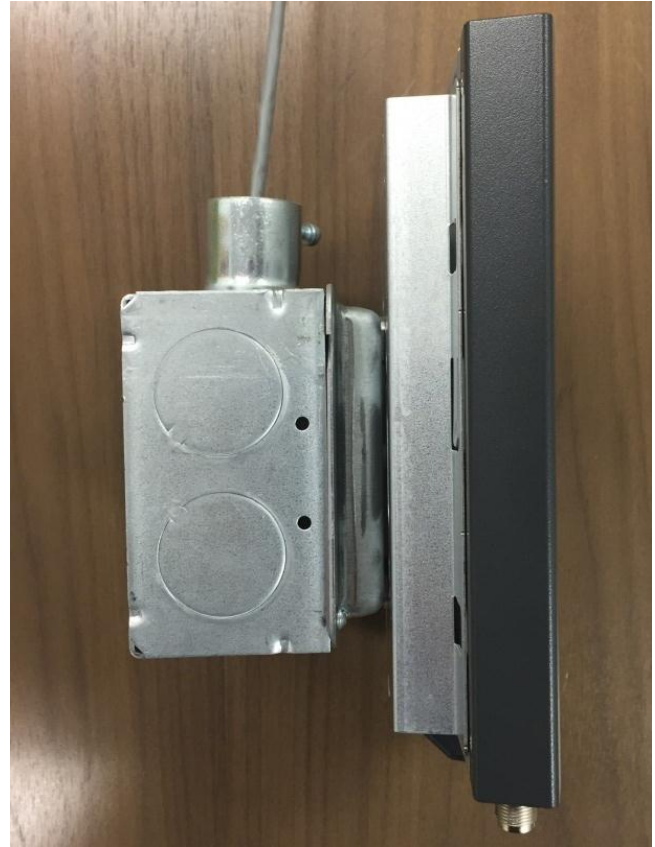


Figure 4.

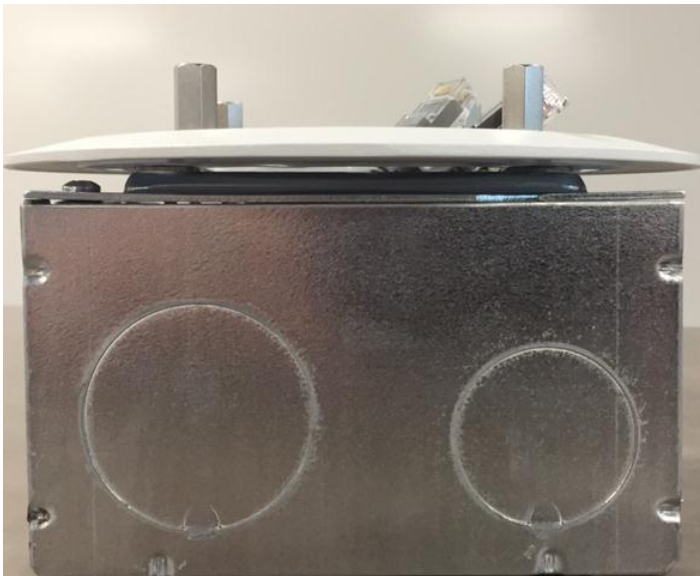


Figure 5.

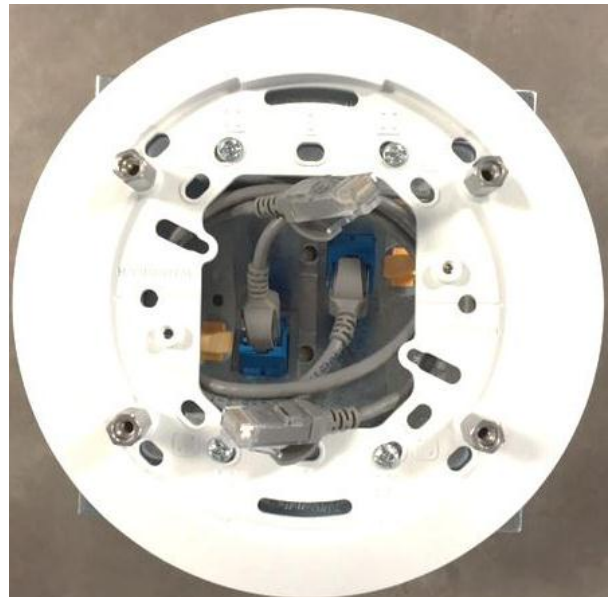


Figure 6.

The **49223-CB* In-Ceiling Bracket** is useful for applications requiring the permanent fixture of a jack above a ceiling grid. The 49223-CBC includes a “batwing” clip that can be used to mount the adapter to a wire or ¼” threaded rod (**Figure 7**). When used in this fashion a new ceiling wire or rod should be installed as code does not allow existing ceiling support structure to be used for any other purpose. It is often helpful to identify a non-structural wire by attaching it to a yellow plastic clip on the grid instead of attaching it directly to the grid. There are many different clips on the market for this purpose. The 49223-CB0 is the same adapter plate without the “batwing” which allows directly attaching the adapter to structure with screws (**Figure 8**).



Figure 7.



Figure 8.

These new products make it easier to install a standards-based permanent link for IP devices where traditional wallplate connections are not practical or feasible. This makes these systems easier to test, less likely to be damaged during construction, and provides the reliability of a jack termination.