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## Wiremold

### **Cable Crossover in Dual-Channel Raceways**

Perimeter surface raceway systems have long been designed to accommodate power and data cabling using separate channels to provide a separation between the two. This required separation of power and data channels imposed certain restrictions on raceway system design that until now have limited the placement of receptacles and data jacks, and reduced a raceway's capacity to meet bend radius requirements. A new raceway design maintains complete separation of services, while offering improved function and flexibility.

### **Channel Separation**

In a typical commercial building, erratic fluctuations of load conditions subject power lines to electrical fast transient (EFT) disturbances that are generated when inductive-capacitive circuits are interrupted. These disturbances, in turn, can affect the integrity of the data on communications cabling located in the same raceway. Test results illustrate that the physical separation provided by a 1/8" divider between the raceway compartments is sufficient to achieve satisfactory LAN performance in the presence of EFT disturbances.

### **Design Limitations**

In conventional raceway systems, the separation of power and data channels means that power receptacles and data activation points cannot be adjacent to one another, and must be located on the front of the raceway. Receptacles are to be directly in front of the electrical channel while data jacks are positioned in front of the data channel. In essence, most divided raceways function as two completely separate units. This configuration limits the amount of space available for data cables, especially those that require a gentle bend radius. Aesthetics are compromised by a proliferation of unevenly spaced faceplates. And, the front-facing position exposes data activations in particular to damage caused by people or equipment coming into contact with them.

### **Crossover Solution**

A new raceway design enables receptacles and data activations to be positioned side-by-side in the same channel, rather than in separate channels. This new feature is the result of unique "crossover" units. These units, consisting of a shielded metal enclosure

and bracket, maintain the integrity of data channel separation when the cables cross over the power channel.

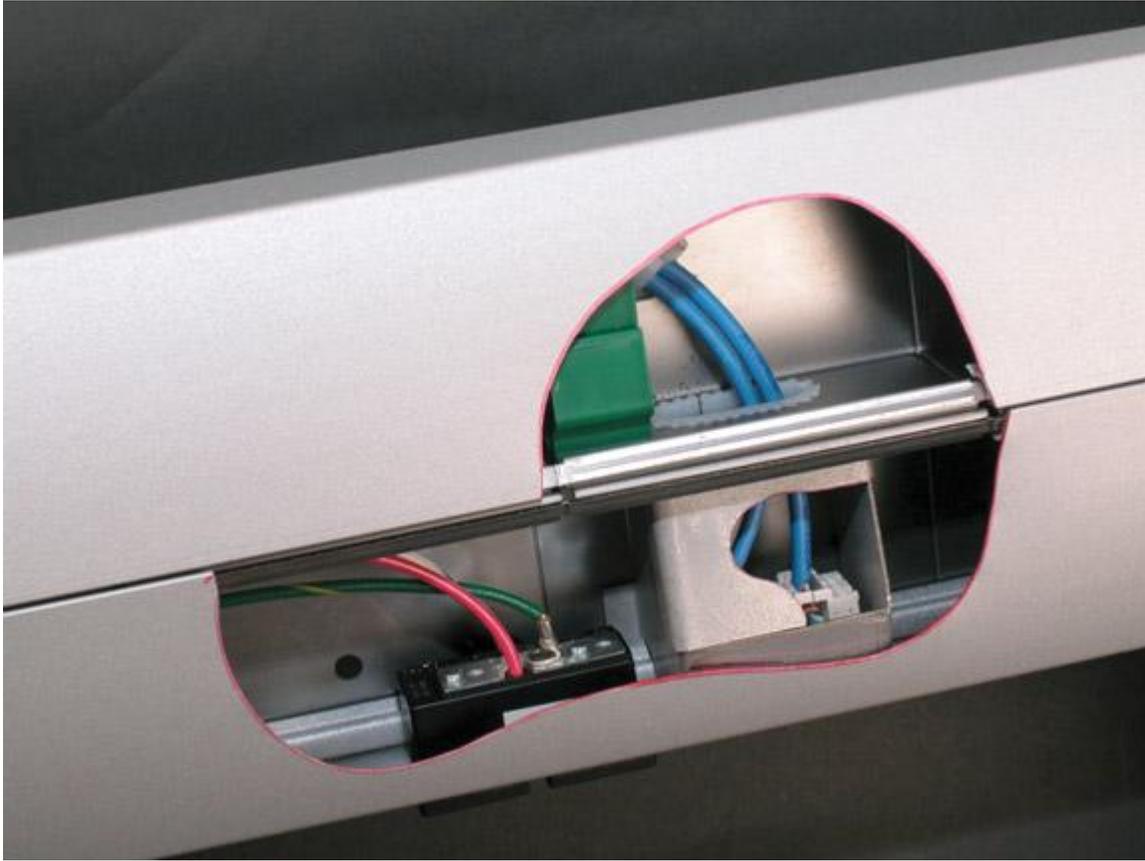


Figure 1: Crossover unit maintains complete separation of power and data, while allowing activations to be located in the same channel.

Power and data outlets can even be located on the downward facing surface of the raceway. Downward facing activations - as opposed to those that face away from the wall - mean that data cables and jacks are less susceptible to damage and the aesthetic appeal of the raceway is enhanced.

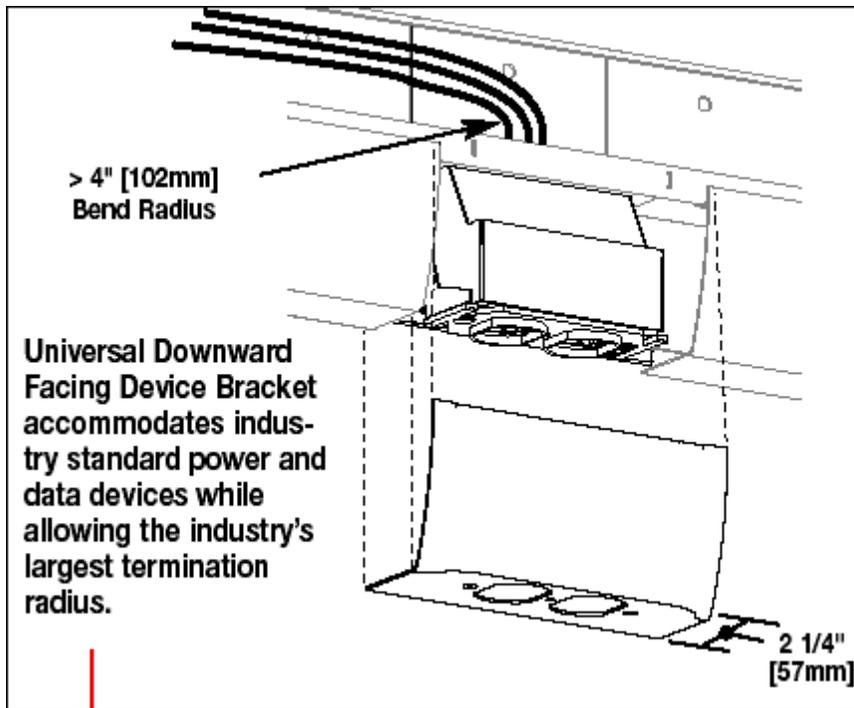


Figure 2: Schematic of downward facing configuration.

Enabling data cables to cross over the power compartment also has the effect of providing additional space within the raceway to meet cable bend radius requirements. Because the entire width of the raceway is available, rather than just one channel, the cable bend can be more gradual. This feature will take on additional importance in the near future as the Category 6 and Augmented Category 6 (10G) cabling will require additional capacity and bend radius control capability.