IP VIDEO AND THE ETHERNET EXPANDER
Get the most from your Ethernet connection

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The use of IP video is on the rise, and with it comes new products to make maximum use of this new digital technology. One such product is called an Ethernet Expander. As the name implies it expands the use of your 10/100 BaseT Ethernet wire connection.

When installing IP video equipment the typical installation uses an 8 conductor CAT-5 or better twisted wire cable with an RJ-45 (8P8C) connector at each end. Non-POE "Power Over Ethernet" digital video installations require 2 of the 4 available wire pairs on the cable, this leaves 2 wire pairs available to use for other signals.

The interconnecting wire is either a "straight 568B" cable connector configuration on both ends of the wire, or a Crossover cable using one 568B cable connector configuration on one end and a 568A cable connector configuration on the other.

The Crossover cable swaps the number 1-2 and 3-6 wire pairs from one end of the wire to the other effectively crossing over the two pairs of wires hence the name "Crossover cable". An Ethernet Expander works equally well with Straight and Crossover cables.

Digital camera installations can use Token ring, Star, and Home Run cabling configurations depending on the equipment used and the physical locations involved. However the most effective configuration and one of the most used is the Home Run configuration. That is where the Ethernet cable runs directly from the camera to the DVR or receiving hub with one cable for each camera. This home run method gives you the maximum operating bandwidth without having to share the data line with any other equipment.

When a data cable goes from the camera to the receiving hub it is possible to add additional signals onto that cable and send them along with the camera data in either or both directions.

These additional signals can be analog or digital signals of any type. As an example you can add two UTP analog cameras to an existing IP digital cable, or run alarm contacts and control signals on the same cable with your IP camera.

Use it to carry RS-422 and RS-485 signals on the same cable or retro-fit old PTZ control systems with new IP cameras running the PTZ data on the same cable.

You can add AC or DC low voltage on your IP cable to power analog or digital equipment. Use it for door access and alarm contacts on the same IP camera cable.

This unit will carry card access data or cash register data on the same cable with the IP camera data. Use it to add any UTP twisted pair video or audio applications. You can supply power up the cable for non-POE digital IP cameras or connect any loop current application for physical security on the same Ethernet cable. The two-channel two-way communication path is handy for any application AC or DC. Use any combination of two applications with your existing IP camera.

You can also add new equipment without having to run new cable or break into walls and ceilings. This is one of the more important uses of the Ethernet expander. Clearly when you are cabling a new job it is easy to run in extra pairs of twisted wire, but all too often after the wire is installed near the end of the job the customer tells you he wants one more camera installed somewhere.

The Ethernet Expander can be installed on the existing cable run and the extra camera can be added without having to pull more wire. This ability to quickly add an additional device will save you time and give you the flexibility to get in and get out without the disruption and damage of pulling ceiling tiles, drilling holes to run more wire or trying to fish one more cable through a packed wire conduit.

This unit gives you access to the un-used wires in your Ethernet cable to add additional features or equipment and leaves your customer with a neat clean easily traced installation.
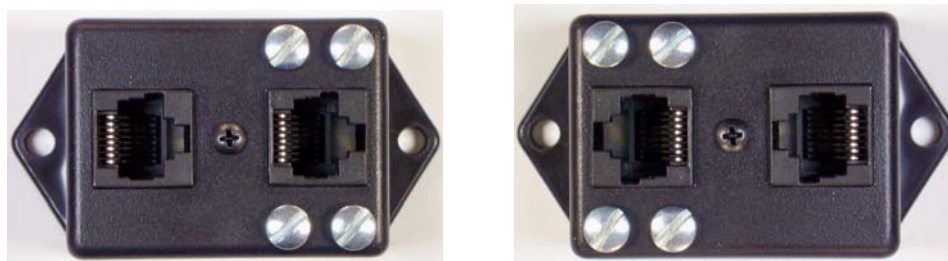
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