

Video Ground Loop Isolator

Application Note



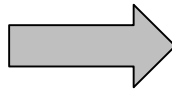
Video Ground Loop Isolator
P/N: E10500 (Camera End)
P/N: E10500D (DVR End)

The video ground loop isolator has been specifically designed to provide a cost effective solution to a common CCTV problem of multiple ground paths or ground loops which results in a rolling hum bar or instability in the picture being captured. Where it has been established that multiple ground paths is the cause of the problem and not the result of the power supply being used or poor video signal, the EQL Video Ground Loop Isolator will eliminate multiple ground paths and hence hum bar and related symptoms giving you a crisp clear picture. An added feature of the Video Ground Loop Isolator is the incorporation of a Transient Voltage Suppressor to protect against surges.

Designed as a passive device the EQL Video Ground Loop Isolator will be an essential component to incorporate in all CCTV installations where ground loops are a known problem and to future proof the installation from possible interference particularly for high security applications.



CCTV Image with Hum Bar Problem
Due to Multiple Ground Paths or Loops



CCTV Image with Ground Loop Isolator
to eliminate the Hum Bar

What is a Ground Loop

A ground loop occurs when there is a potential difference between inter-connecting equipment such as the camera and DVR and is due to an imbalance in the power loading of the two systems. The potential difference cause a loop current to flow between the two inter-connecting equipment and as a result any interfering source such as 50 Hz mains power is picked up by the ground current flowing through the braiding of the coaxial cable instead of it acting as a shield to protect the interfering source from entering the coaxial cable. See Figure 1.

The 50 Hz mains power or hum is then passed on along with the wanted video signal from the camera and displayed on the monitor as a rolling humbar.

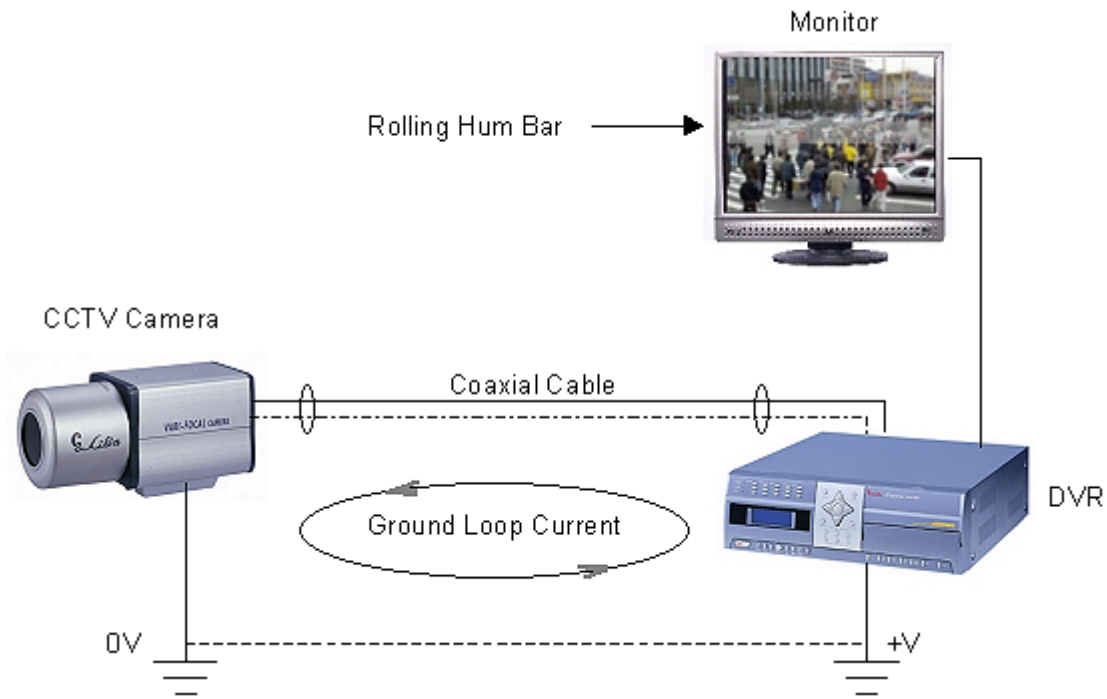


Figure 1

Where to Install the Ground Loop Isolator

The Video Ground Loop Isolator should be installed at the CCTV Camera end (E10500) or DVR End (E10500D) by connecting the BNC Male connector of the Isolator to the camera/DVR and the BNC Male connector of the coaxial cable to the BNC Female connector on the Isolator. In a multi-camera installation it is recommended that a Video Ground Loop Isolator be installed for each camera.

Specifications:

Insertion Loss:	< 0.5 dB
Frequency Range:	0 to 10 MHz (-3dB)
Input Impedance:	75 Ohm Nominal
Input Connector:	BNC Male
Output Impedance:	75 Ohm Nominal
Output Connector:	BNC Female
Cable Length:	10 cm
Isolation Voltage:	750 Volts DC
Insulation Resistance:	>100 M Ohm
Transient Voltage Suppression:	12 Volts rms
Casing Material:	ABS
Casing Color:	Black
Casing Size (L x W X H):	50mm x 30mm x 25 mm

Note: All specifications are typical and subject to change without notice

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