

Elimination of ground loops in LAN

Application notes



Despite standardized protection mechanisms according to IEEE 802.3, we still encounter ground loops in LAN installations. Their impact on network stability and integrity is often fatal. The most common causes are:

Metallic connections

Connecting devices at different points in the ground system using shielded cabling (STP/FTP) creates a closed loop. The voltage difference between these points induces buffer currents in the shielding that induce interference into the data pairs and compromise the integrity of the ports.



Failure to comply with IEEE802.3 requirements

Absence or poor design of isolation elements (in violation of IEEE 802.3). This problem is common in lower cost PoE system components that lack the prescribed isolation strength (typically 1500 VAC).