

ZNR Application Note

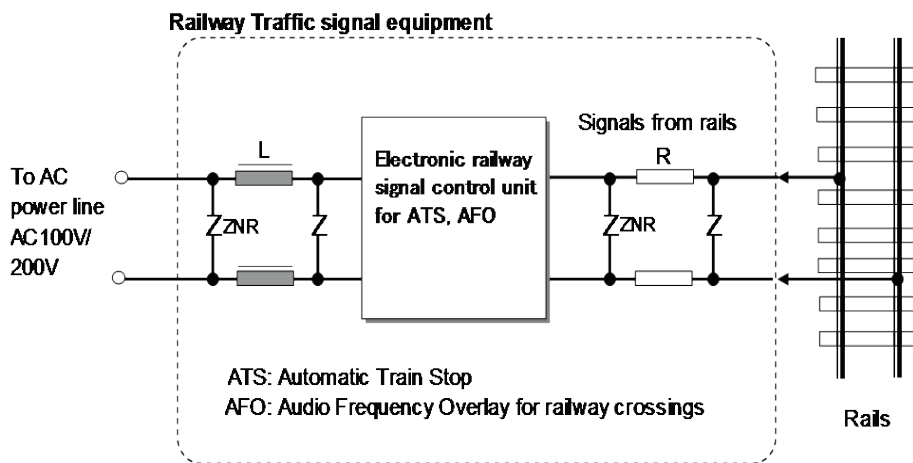
Railway Traffic Signal Equipment

1. Industry Segments:

Field of Industry: Traffic signal equipment

Product: Railway signal equipment - ATS (Automatic Train Stop), AFO (Audio Frequency Overlay)

2. Transient Surge Voltage and its Protection by Using ZNR:



Aim of ZNR Application:

AC power line(line-line) and Rails(rail-rail) : A ladder circuit via additional surge impedance

Problems with Surge Voltage:

Kind of surge voltage: Induced lightning surge voltage

Path of surge voltage: AC power line and rails

Failed parts or circuits: Damage of ATS, AFO signal controller

How to Apply ZNR to Circuit: (Blue Part Numbers Indicate NEW "E-Series")

Connection: AC power line(line-line) and Rails(rail-rail) : A ladder circuit via additional surge impedance

ZNR part number selection (representative):

ERZA20PK251, ERZA20PK501 (Plug-in type with a thermal disconnecter)

Protection circuit unit(Lightning protection box) is available

Precaution in surge protection designing (Parameters to be considered for ZNR selection):

Signal should not be disturbed by additional surge impedance and capacitance of ZNR.

L(Inductance) for AC line and R(Resistance) for high frequency application.

3. Relevant Technical Information and References:

Surge test specifications for railway signals

4. More Information:

Home page for up-to-date information: <http://na.industrial.panasonic.com/products/circuit-thermal-protection/circuit-protection/znr-transientsurge-absorbers>