

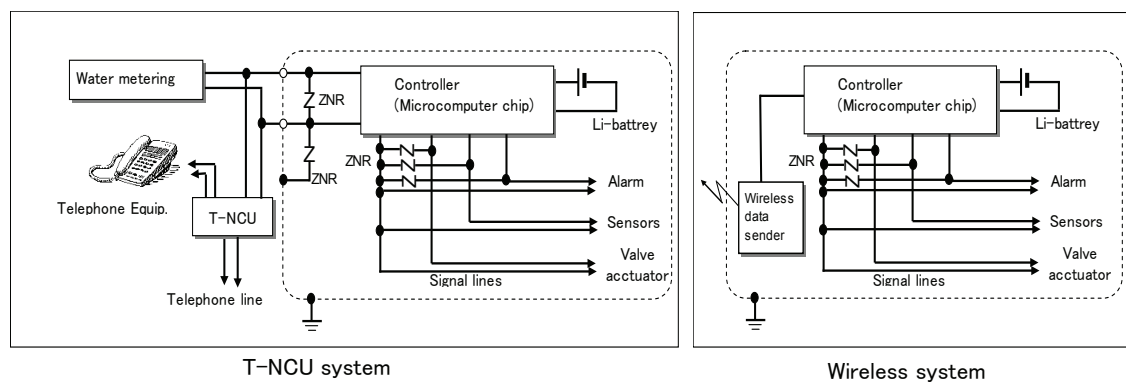
## ZNR Application Note

## Electronic Gas Meter

### 1. Industry Segments:

Field of Industry: Energy Distribution Equipment  
Product: Electronic Gas Meter (Membrane Type, Ultrasonic Type)

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



### Aim of ZNR Application:

Protection of the measuring, data logger, communicating circuits in the electronic gas meter against lightning surge voltage.

### Problems with Surge Voltage:

Kind of surge voltage: Induced lightning surge  
Path of surge voltage: Control, sensor, and communication lines  
Failed parts or circuits: Damage of gas metering controller

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

Connection: Telephone lines(line-line and line- ground), signal/sensor lines (line-line)

#### ZNR part number selection (representative):

Telephone lines: ERZE07A471 or 621, ERZE08A471 or 681 for line-to-line, ERZV10D102 for line-to-ground  
Signal/sensor lines(line-line): ERZV05D220

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

Surge voltage test should be conducted, if there is any safety standards for gas meters.  
Company in-house specification for surge voltage test should be taken into account.

### 3. Relevant Technical Information and References:

JISB8571 Gas meters  
OIML R137-1 Gas meters-Part1: Requirements

### 4. More Information:

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