



## Type “ZQPT”/“ZXLA” Available for System Voltages Up to 161kV

Users of electricity have become more and more demanding over recent years. The quality of the power they receive is critical to their operations. Sensitive electronic equipment cannot tolerate voltage fluctuations and many problems are directed to the utility. The heightened awareness of power quality has brought the issue to all levels of operations, including transmission.



In the area of transmission line power quality, MPS offers the “ZQPT”/“ZXLA” transmission line arrester and arrester insulator assembly. The lightweight construction makes it possible to easily mount arresters on transmission line structures. The arresters provide a preferred path between line and ground, guarding against insulator flashover.

Transmission line surge protection is a solution to troublesome outages and customer dissatisfaction. State-of-the-art protection of transmission lines using polymer MOV arresters provides higher power quality which will improve customer satisfaction.

“ZQPT”/“ZXLA” transmission line arresters and assemblies are available for system voltages up to 161kV. The metal oxide blocks are specially selected and wrapped under compression with a strong fiberglass wrap.

## Application

“ZQPT”/“ZXLA” transmission line arresters and assemblies are applied to:

- Improve power quality and overall line performance
- Supplement shield wire protection
- Provide protection for lines without a shield wire
- Create more space on structures by eliminating the shield wires
- Protect both new construction and retrofit

The factors that impact transmission line lightning performance include the following: The amount of lightning activity in a given area per year, the stroke magnitude and the wave shape of the lightning, the tower height and the amount of nearby natural shielding from trees or buildings, the tower footing resistance, the presence of an overhead shield wire and the shield angle, and the existing line insulation.

When selecting transmission line arresters for specific application, there are several things to keep in mind. The application is usually different for a line with an overhead shield wire than without. The arrester rating should be coordinated with the arresters in the substation. The transmission line arresters should be the same rating or larger so that they do not end up protecting the substation arresters.

The transmission line arresters should be sized by evaluating the line voltage and the line insulation. By using a high MCOV arrester the temporary overvoltage (TOV) capability will be increased and the energy capability will also be greater. With the added lightning exposure that may be expected on a transmission line, it is helpful to have higher capabilities in these categories. Also, higher rated arresters will not experience as much duty because the reference voltage is higher and will not turn on as soon as lower rated units.

## Benefits

Lightning is one of the major causes of power interruption. Currently, shield wires serve as lightning protection for transmission lines.

“ZQPT”/“ZXLA” transmission line arresters and assemblies provide these advantages over the use of shield wire alone:

- Minimize the requirement to lower ground resistance
- Protect against backflash
- Safeguard from induced surges caused by nearby lightning
- Limit effects of switching surges
- Install easily and economically
- Allow for reduction of structure BIL
- Reduce system breaker operations
- Provide protection for isolated problem areas
- Improve overall line performance
- Enhance customer relations