



Industrial Power Protection

Multi-tap Medium Voltage Transient Voltage Protective Devices (TVPD) Devices

A TVPD is similar to TVSS, SPDs or Arrestors, a group of products generically referred to as surge suppressors. Surge suppressors are commonly used to protect sensitive or valuable equipment from transient overvoltages.

The Multi-Tap TVPD design is completely unique in the surge protection industry. Current products offered for protection of Low Voltage (up to 600 Volts AC) and Medium Voltage (1000 Volts AC to 4160 Volts AC) circuits are designed to protect equipment powered by a single voltage configuration. Medium Voltage TVPD devices are used to protect Pumps, Motors and Motor Controls. One of the largest markets for this type of product is in the Oil & Gas industry where large motors and pumps are used to remove the oil from the ground or inject fluid back into a well. These pumps and motors, and the equipment controlling them, are very expensive and susceptible to power surge damage. TVPD products are installed at the wellhead to protect this equipment from these damaging power surges. The most common voltage configurations for this application are 1000VAC, 1500VAC, 2000VAC, 2500VAC, 3000VAC, 3600VAC and 4160VAC.

Production optimization often requires the producer or operator to change the voltage configuration at the wellhead. For example, a new well with optimum downhole pressure will require smaller production equipment to get the oil out of the ground. The operator may begin production using 1000VAC pumps. As the well matures, various conditions make it harder to get the oil out of the ground. Larger, higher voltage pumps are needed. Production wells typically utilize Multi-tap Transformers that can deliver multiple voltage configurations to the site. Switchboards used to distribute power are configured for the highest voltage available. The transformer and switchboard therefore do not need to be replaced as well conditions change. However, current TVPD products designed for one voltage configuration must be changed out each time the voltage configuration changes. A typical well could require 3 or 4 voltage upgrades over the course of a few years, or in some cases, a few months. The operator has to purchase a new TVPD, get it shipped in, coordinate installation with that of the pumps and controls and figure out what to do with the old TVPD that probably still has some useful life left.

This is expensive and creates logistical problems for the operator. APT's new Multi-Tap Medium Voltage TVPD solves these problems. The Multi-Tap TVPD is available in two configurations. Model STAMT is available with voltage taps of 1000VAC, 1500VAC, 2500VAC and 3600VAC. Model STBMT is available with voltage taps of 1000VAC, 2000VAC, 3000VAC and 4160VAC. A single Multi-Tap TVPD can be installed at the well and remain in place throughout numerous voltage changes. Instead of having to purchase a new TVPD each time the voltage requirements change, the operator can simply change the voltage taps to the required voltage. The Multi-Tap TVPD has separate, color coded and voltage labeled phase conductors for each available voltage configuration. A non-conductive termination block is provided for termination and storage of unused phase conductors. Most production wells are located in remote and/or inhospitable locations. Using the Multi-Tap TVPD will save operators and owners considerable expense and logistical headaches.