HIGH VOLTAGE PADMOUNT TRANSFORMER

PTI TRANSFORMERS SINCE 1989

Partner Technologies Incorporated
info@partnertechnologies.net

Phone: 306.721.3114
www.partnertechnologies.net

1155 Park Street
Regina, Saskatchewan
S4N 4Y8 CANADA

The Power of Partnership

In the late 1990s, Manitoba Hydro sought to reduce capital costs while maintaining its high standard of reliability. The construction and maintenance of distribution substations were a significant capital cost, and although a task force identified some obvious improvements, savings were minimal. It was time to rethink energy distribution.

Pad-mounted transformers were familiar to utilities, but no company had ever attempted a high voltage padmount. Upon issuing a Request for Proposals across North America to large multi-national corporations and regional niche manufacturers, only Partner Technologies Incorporated (PTI), based in Regina, Saskatchewan, had the imagination to give form to an innovative idea, like a high voltage padmount transformer. *Combining the innovation of Manitoba Hydro and the transformer expertise of PTI, the two companies created the High Voltage Padmount. Used in a Distribution Supply Centre (DSC), the HV Padmount increases reliability and efficiency, decreases property costs, simplifies installation, accommodates and adapts to the current load demand, and ensures public safety.*

The Power of the Distribution Supply Centre

Sophisticated Innovation; Simple Installation

The HV Padmount does not change how voltage transformation occurs, it changes the way a high voltage transformer is connected to the system. Using the patented HV padmount design in what we are now calling a High Voltage Padmount Transformer Station or HVPT Station, will allow customers to be served at a significant cost saving when compared to building a conventional distribution substation. The new concept uses an HV pole mounted switch and HV fuse structure. Combined with other padmounted secondary devices, the HVPT Station eliminates the need for a large station structure, station yard, and fence.

Design features incorporate the ability to ship on a standard trailer completely assembled. This eliminates any onsite transformer erecting and oil processing. Installation or removal is easy as the design allows both HV and LV cable terminations to be left in place. Sizes are available in the standard configuration up to 20 MVA at 138 kV, 650BIL. Short Circuit Testing by KEMA has been successfully performed on a 10 MVA, 115 kV design.

High Voltage; Low Maintenance

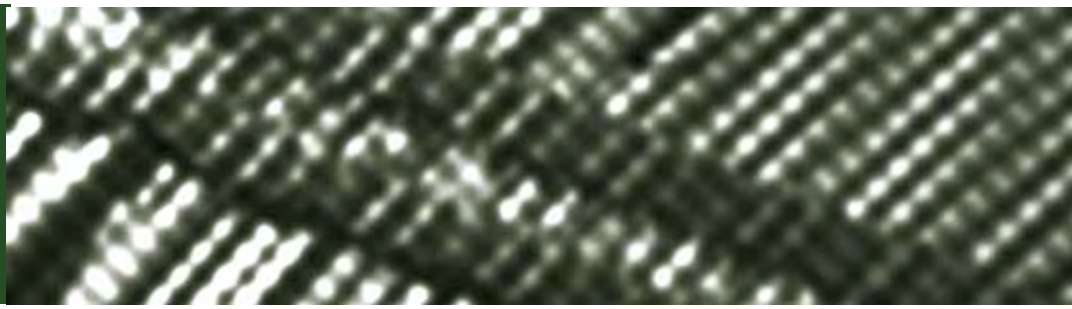
Ratings

Range	Primary Voltage	Secondary Voltage
up to 20 MVA	Up to 138 kV Class*	5 to 34.5 kV**

* dual volt also available
** contact PTI for other options

The HV Padmount uses sealed tank construction with a blanket of dry nitrogen above the oil.

The HV Padmount is designed to be maintenance free. Condition monitoring such as periodic visual inspection of the unit and gauges can be done.



Safe to the Public; Safe from the Public

A tamper resistant enclosure to ANSI C57.12.28 ensures the HV Padmount is safe from damage from the elements, humans and wildlife. The public is also protected without the need for fencing.

Appropriate grounding designs exceed the requirements of IEEE 80 to ensure public safety with respect to step and touch potential.

Maximized Efficiency; Minimized Footprint

The HVPT Station includes:

- a high voltage pole mounted switch
- a high voltage fuse & arrester structure
- cable & terminators
- HV Padmount Transformer

Combined with other pad-mounted secondary devices, the HVPT Station eliminates the need for a large station structure, station yard and fence. The compact modular design allows the HV Padmount to be installed in spaces as small as a residential lot.

Back to the Future

With rising property costs, utilities have turned to fewer, larger stations with longer feeders. They often require capacitors and regulators for voltage support. The processes of design, approval and installation are lengthy with costs escalating over time. The HVPT Station reverses these trends. Instead, small and inexpensive installations to fit in minimal spaces. Shorter feeders minimize voltage drop, losses, and increases reliability.

The Power of Choice

Selecting PTI's HV Padmount transformer has helped Manitoba Hydro reduce capital costs spent on distribution substations. Manitoba Hydro can now use the millions of dollars it has saved to build and maintain its reputation for safety, affordability, reliability, customer satisfaction and environmental leadership.

The Power of Partner Technologies

PTI began in 1989 as a small maintenance and repair shop. When PTI started manufacturing single phase distribution transformers, its expertise grew to the point of recognition as leading innovators of transformer technology.

Customers appreciate the opportunity to phone up PTI's helpful staff to tap their knowledge of transformer technology. The responses are quick; the solutions, innovative.

Operating with the flexibility and resourcefulness of a small company, PTI's 100+ employees are ready to take on the world! Registered to the current version of ISO 9001 and a registered patent, PTI is gaining the respect and business of international markets, including the United States, Caribbean, South America, Europe and Africa.

Like its expertise and reputation for manufacturing high quality transformers, Partner Technologies continues to grow.

69kV Switch & Fused Pole Structure

HV Padmount installation for an industrial load

Installation for a school in northern Manitoba

Primary Deadfront Bushing Wells

Deadfront Secondary Terminations

On-site installation

Why this .....?

..... when you can have this!

CANADA'S BEST MANAGED COMPANIES

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