

# case study

## I-Gard Provides Electrical Reliability for Data Centres

One of the largest infrastructure growth sectors in North America are data centers. In order for a data center investment to last the 10 to 15 years for which they are designed, the designs need to either be specifically tailored to the business' needs or they need to have the inherent flexibility to adapt as their needs change.

# unparalleled protection

### Industry

Data Centre

### Need

Need to reduce costs

### Benefit

Reduce cost of repairs, low maintenance, less equipment failure



### Sample installations

- ▶ TD Canada Trust, Ontario
- ▶ Ontario Provincial Police, Ontario
- ▶ Telus Communications, BC
- ▶ Bank of America, Delaware, USA
- ▶ Rogers Communications, Ontario
- ▶ Bank of Montreal, Ontario

### About I-Gard

I-Gard provides both industrial and commercial customers with the products and application support they need to protect their electrical equipment and the people that use them. Since 1982, I-Gard is committed to electrical safety and reliability.

A constant issue facing data centers is electrical reliability. Significant focus, attention and capital are applied to backup power systems, which include generators, batteries and UPS. These systems protect critical processes and power factor correction equipment but an often overlooked issue remains electrical ground faults. It has become standard for data centers to utilize high-resistance grounding as the method of choice.

Originally, high-resistance grounding as a technology was applied to process industries as diverse as food processing, mining and petrochemical. In the last 10 years it has been increasingly applied to commercial installations such as airports, data centers and hospitals to enhance the reliability and uptime of power distribution equipment.

However, standard high-resistance grounding has several inherent application issues that can still negatively impact electrical reliability. This impact includes the loss of the neutral path due to poor connection, broken wires, corrosion, etc. Even the occurrence of a second ground fault can cause serious damage and process interruptions. Both of these concerns are addressed by applying the I-Gard DSP relay system, the industry's most advanced and complete HRG relay.

With the I-Gard DSP relay, the neutral path is continually monitored and an alarm is given should the system deviate from normal conditions. There is also the option to install a second redundant resistor circuit for fail-safe operation. In addition, only the I-Gard DSP relay offers critical process protection where a second ground fault will be detected and a single low-priority feeder will be isolated rather than the whole system being compromised.

## DSP-OHMNI

# DSP-OHMNI



Phase and feeder indication resulting in quicker fault location

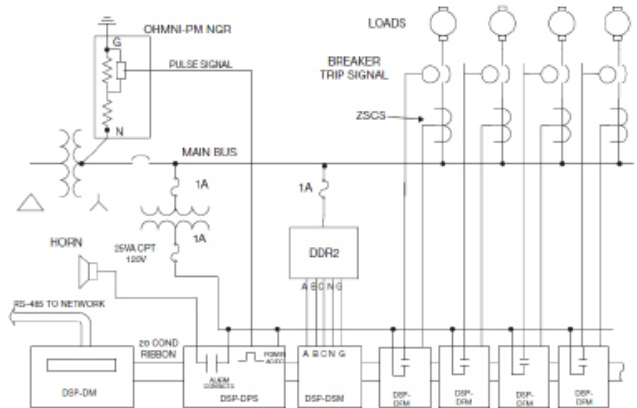
Monitors and protects up to 50 feeders on one relay

Available 1<sup>st</sup> fault alarm, 1<sup>st</sup> fault trip or 1<sup>st</sup> fault delay trip

Integral resistor monitoring module eliminates requirement for separate monitoring relay

Unique selective instantaneous feeder trip (sift) on occurrence of 2<sup>nd</sup> ground fault

DSP-OHMNI



FEATURES	BENEFITS
DIN-rail parts	Compact mounting reduces space requirements.
Compact Feeder Modules DSP-DFM	Large systems up to 50 circuits / DSP-OHMNI can be accommodated.
Selectable MUTE ON/OFF function	Allows alarm contact to be used for other applications.
Selectable trip on 1 <sup>st</sup> fault or 2 <sup>nd</sup> fault operation	Provides user the option of maximizing continuity of service (2 <sup>nd</sup> fault trip) or minimizing fire/damage risk (1 <sup>st</sup> fault trip). Both can be used on the same system.
0-99 min. delay setting on 1 <sup>st</sup> fault trip	Allows time to locate fault and/or orderly shutdown of equipment.
10-90% Alarm Level setting	User selected sensitivity in 10% increments, allows maximum sensitivity to be used while preventing nuisance alarms.
Switching Modules DSP-CAS	Provides co-ordination between systems either vertically (between zones) or horizontally (same zone) on multi-zone or main-tie-main systems.
NGR monitor DSP-DRM	Monitors the status of grounding resistor in one DSP-OHMNI compatible unit.
Password Protected Setup	Four digit codes selectable by user prevent unauthorized setup changes while still allowing self-test and read-only data.
Self-Test of Modules	Internal self-test of DSP-DFM, DSP-DSM verifies connections to provide assurance of functionality.
MODBUS Communications	Allows the operator to remotely monitor which feeder has faulted as well as the leakage currents of all feeders for trending purposes.