

Case Study

How MELTRIC Switch-Rated Plugs Quicken Traffic Light Repairs in Montreal

Montreal is the second largest city in Canada and the leading urban center of the province of Quebec. It has long been a transportation, manufacturing, and financial center due to its strategic location on the St. Lawrence River. It continues to be considered a modern, dynamic, and exciting destination to visit.

Over the last 50 years, Montreal has seen a steady rise in automobile usage and traffic congestion. One of the rarely mentioned consequences of high traffic areas are the vehicular accidents that damage Montreal's traffic lights.

Montreal's Traffic Light Repair Problem

For a long time, the City of Montreal experienced delays in repairing traffic lights that were damaged by accidents. These delays were often due to waiting for the electric utility, Hydro-Quebec, to dispatch a repair crew to disconnect power at the traffic light's control box, which is required prior to work being performed.

This caused a long-standing problem: the city's union electricians would have to wait a long time for Hydro-Quebec to arrive at the work site, which delayed the repair, and more importantly, created traffic flow disruptions. For years this problem was waiting for a solution until MELTRIC, a leading manufacturer of industrial plugs and receptacles, came along.

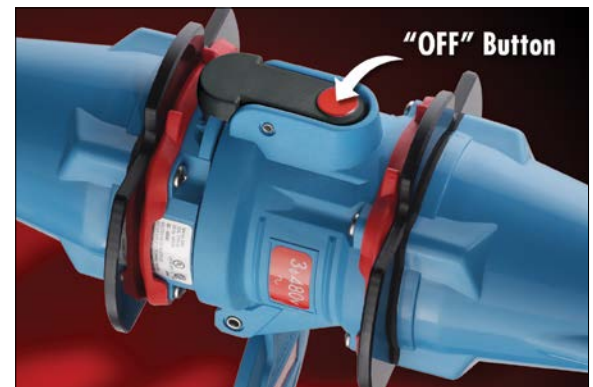
The MELTRIC Solution

MELTRIC contacted the City of Montreal with a solution to its problem: install MELTRIC Switch-Rated plugs and receptacles between the utility's incoming power line and the traffic light's electrical control box. Since the plug and receptacle features an integral switching mechanism that can be operated safely by any qualified worker, power could be disconnected without Hydro-Quebec on site.

MELTRIC Switch-Rated plugs and receptacles combine the safety and functionality of a disconnect switch with the convenience of a plug and receptacle. A dead-front design and enclosed arc chamber ensure that power is safely disconnected, and all live parts are isolated from the user before the plug can be removed. This design guarantees that operators are protected from exposure to live parts and arc flash while making and breaking power connections.



In Montreal, when a traffic light needs to be replaced or repaired, the City needs to contact Hydro-Quebec to send over a repair crew to disconnect power to the traffic light control box since it is connected directly to the utility.



A MELTRIC DSN60 Switch-Rated plug and receptacle was connected between the utility's incoming power line and the traffic electrical control box to provide a local power disconnect.



Safety shutters close over the receptacle contacts before the plug can be removed. Operators have no exposure to arcing or access to live parts at any time during or after the removal of the plug.

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The Switch-Rated plug's contacts are deenergized within the enclosed arc chamber before the plug can be physically removed. When the receptacle's red-colored OFF button is pushed, the spring-loaded operating mechanism within it instantly opens the contacts to break the circuit, ejecting the plug to its OFF position. It takes about 15 milliseconds to break open the contacts in the enclosed arc chamber, which minimizes arcing.

More Than a Power Connection Problem to Solve

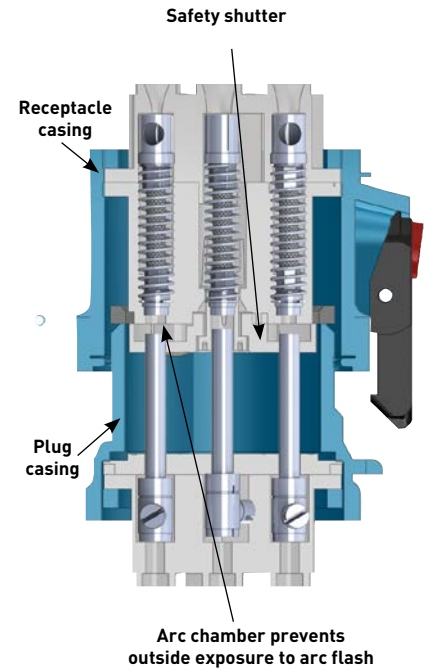
Prior to conducting a field test of the MELTRIC Switch-Rated plugs and receptacles, the City of Montreal needed to negotiate with its electricians' union because of the union's concern over the prospect of having non-electricians disconnecting power. In addition, the union was also concerned that if the MELTRIC solution worked, some electricians would lose their jobs.

After several years of negotiations, the City was finally ready to conduct a field test. Today, the union electricians continue to go on site, but now they disconnect power for the traffic light control box using a MELTRIC Switch-Rated device, without having to wait for the utility to arrive and disconnect power.

MELTRIC DSN60 in Traffic Light Applications

MELTRIC DSN60 Switch-Rated plugs and receptacles are now specified on all traffic light applications in the City of Montreal. Trelec (The MELTRIC sales representative in Quebec) helped Montreal's city engineer design a special box to mount the DSN60 between the concrete base and the pole. It is typically installed between the point of contact with Hydro-Quebec and the connection enclosure. Trelec performs the pre-assembly of the product, including a special cable gland with labelling on the MELTRIC device to accommodate the 3-mono #6 conductors from the utility.

The first order of MELTRIC Switch-Rated devices was for only two units. Today, about 600 units have been purchased by the City of Montreal with another 100 devices on order. The master contract has called for 800 units over the next 3 years. But this is only the beginning: Montreal has about 3,000 traffic light intersections, and less than 20 percent of them have been converted to MELTRIC Switch-Rated plugs and receptacles!



MELTRIC Switch-Rated devices isolate the making and breaking of the contacts in an enclosed arc chamber, which is inaccessible to the user.



A special box was built by Trelec to install the DSN60. This box goes between the concrete base and the pole.