Exporting Signaling Expertise

Unipart Dorman have been contracted by Alstom Signaling to supply LED tri-color signal heads as part of the largest single station re-signaling project to have been undertaken in North America in recent history.

The signals are a combination of 3 aperture signal heads for mounting on gantries and signal masts and 3 aperture ground mounted dwarf signals.

The Signals are a variation on the Unipart Dorman 'Classic Signal' range, which are the established premium LED signal of choice on the UK Rail Infrastructure, based on their unparalleled reliability, field performance and ability to maintain true signaling colors throughout the wide temperature range.

The Union Station Project

Union Station is the largest and busiest rail passenger facility in Canada, functioning as a transportation hub for passenger, commuter and freight trains.

- Union Station currently handles almost 40 million passengers a year
- This number is expected to double over the next 20 years
- Daily ridership is approaching 160,000 and peak period arrivals at Union Station are close to 45,000
- VIA Rail and Amtrak are also expecting increased usage of the station
- Freight traffic continues to pass through Union Station from both Canadian National (CN) and Canadian Pacific (CP) railroads

Union Station and the adjacent Rail Corridor is known as the Union Station Rail Corridor (USRC). The USRC is some 6.4 km long and consists of a complex network of approach tracks, passenger platforms and four Interlocking's at Cherry Street, Scott Street, John Street and Bathurst Street.

- It has 14 station tracks with platform access
- More than 180 signals
- 250 switch machines
- 40 km of circuited track and all associated infrastructure

Within the USRC, TTR directs USRC rail operations using Train Movement Directors (TMDs) located at the three control offices, in the John, Scott and Cherry Street towers, and maintains the facility with a force of maintainers located throughout the territory. The TTR staffs the towers 24 hours/day-365 days/year. The TMDs

coordinate all train movement by voice communication and for movements through John, Scott and Cherry, operate a vintage electro mechanical signal system (built in the 1930's) by manually manipulating levers to line switches, set signals and clear routes. Track protection is achieved by physically placing "cans" over the levers to prevent their use during maintenance activities.

In recent years, the Union Station Railway Corridor has been undergoing major construction phases to renew the signaling, electrical and communications equipment to modern standards and improve capacity and throughput of the USRC resulting in a better customer experience for Go Transit passengers.

Works are expected to be fully finished and ready to receive the next generation of passengers in 2019/2020, with upgraded signals and track, a new roof and glass atrium over the passenger platforms, new staircases and access points as well as a completely new underground shopping concourse within the main building below the tracks.

Exceeding Global Client Expectations

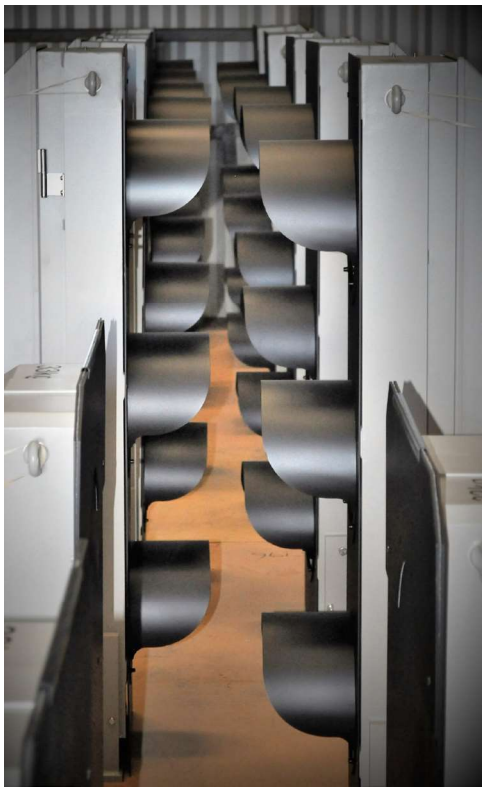
The Unipart Dorman team have been working for several years to export our 'Best in Class UK performance' onto the world stage and Union Station is just one example of how we are making an impact with the way we do business overseas.

The signaling upgrade followed the successful trial of approx 40 signals which were installed in the Union Station train shed and surrounding area back in 2010.

The signals have been monitored closely over the past 7 years and have worked flawlessly in terms of reliability and optical performance. As part of the signal trials in order to secure Transport Canada approval, Unipart Dorman submitted a Safety Case on the project and were informed during this process that it was the most comprehensive Safety Case on signals ever received.

Some examples of the specific differentiation to exceed client needs on the project were as follows:

- Plug and play, MIL standard coupled connections, making installation and testing quicker, safer and easier
- True current and optical based light out detection is provided as an integral element of the product design
- All signal heads have sighting scopes and are adjustable to ensure optimal signal sighting and alignment
- Patented design ensures LED signaling color maintained at temperature extremes
- Patented design ensures access can be performed from a position of safety at the rear of the signal
- Unique mountings to allow for the ground mounted, 9 aspect signals to be reclined when required for exceptional freight traffic



Unipart Dorman's innovation team worked closely with Hatch, Go Transit, Transport Canada and Toronto Terminal Railways.

Clive Porter - Signal Team Lead on the project for Unipart Dorman was quoted "work undertaken in Toronto has been very rewarding to date in particular the positive reaction from drivers to the new signals – we look forward to hopefully working on the USRC in the coming years and building on these foundations as we further expand our global presence and expertise". Feedback from all parties to date in Toronto has been very positive.

"Unipart Dorman were extremely responsive during the Safety Case approval process and we found their product to be highly functional and effective in its application".
Adrian Peach - Hatch

"The plug coupler cable harness design for the signal allowed straightforward installation whilst minimizing test requirements. The signals have been installed for over 3 years with no failures or light output degradation recorded. LED is definitely the way forward".
Lou Internicola - TTR