

**Car Wash Automation Systems**

Location – Quebec, Canada

**Project Introduction:** Jan van Kessel wants to wash your car, but don't expect him to sling suds from a bucket. Instead, he runs Kesseltronics Systems (A Division of Dover Corporation Canada Limited), a dynamic company specializing in high quality automation systems for car wash installations in over 400 car washes in Canada and hundreds more in the U.S., China, and Europe. The company provides:

- Point of sale code system for roll-over car washes.
- Operator-free tunnel wash control systems.
- Manufacturers UL and CSA approved motor control centers.
- Provides Turn-key automation services and designs custom electronics.

Kesseltronics has grown 30% annually selling to such companies as Shell Canada Ltd, Esso Canada Ltd and other Canadian oil companies. Demands continue to increase. According to Kevin Hart, an industry analyst, 90% of car washes are still the mom-and-pop affairs but computerized systems are the future. "North America is not like Europe, where there's a repairmen around every corner" agrees Van Kessel, "There's big savings in doing maintenance from a remote location." Taking all this into consideration and the requirements of car washes, the r-TC industrial-strength "brain boxes" were developed using Advantech products at its heart.

**System Requirements:****CODE SYSTEM**

- Touch screen used as a point of sale terminal
- Ethernet to access the web interface
- Serial Ports
  - Connect to gas pumps (protocol provided by pump company)
  - Printer to print codes
  - RS-485 to interface with car wash computer PLC (if no r-TC is used)

**CODE SYSTEM OFFSITE**

- Lower cost touch screen to sell codes at sites that do not have a carwash
  - Small Touch screen
  - One RS-232 port (Printer or Pump Interface)
  - One Ethernet Port

**r-TC Tunnel Controller**

Device that manages the carwash & controls I/O

- Touch screen used to configure and diagnose the wash
- Full VGA screen for more detailed information
- Ethernet to access the site through a web portal
- Compatible with in house designed I/O
- Serial Ports
  - RS-485 to connect VFD's using MODBUS

### **Project Implementation:**

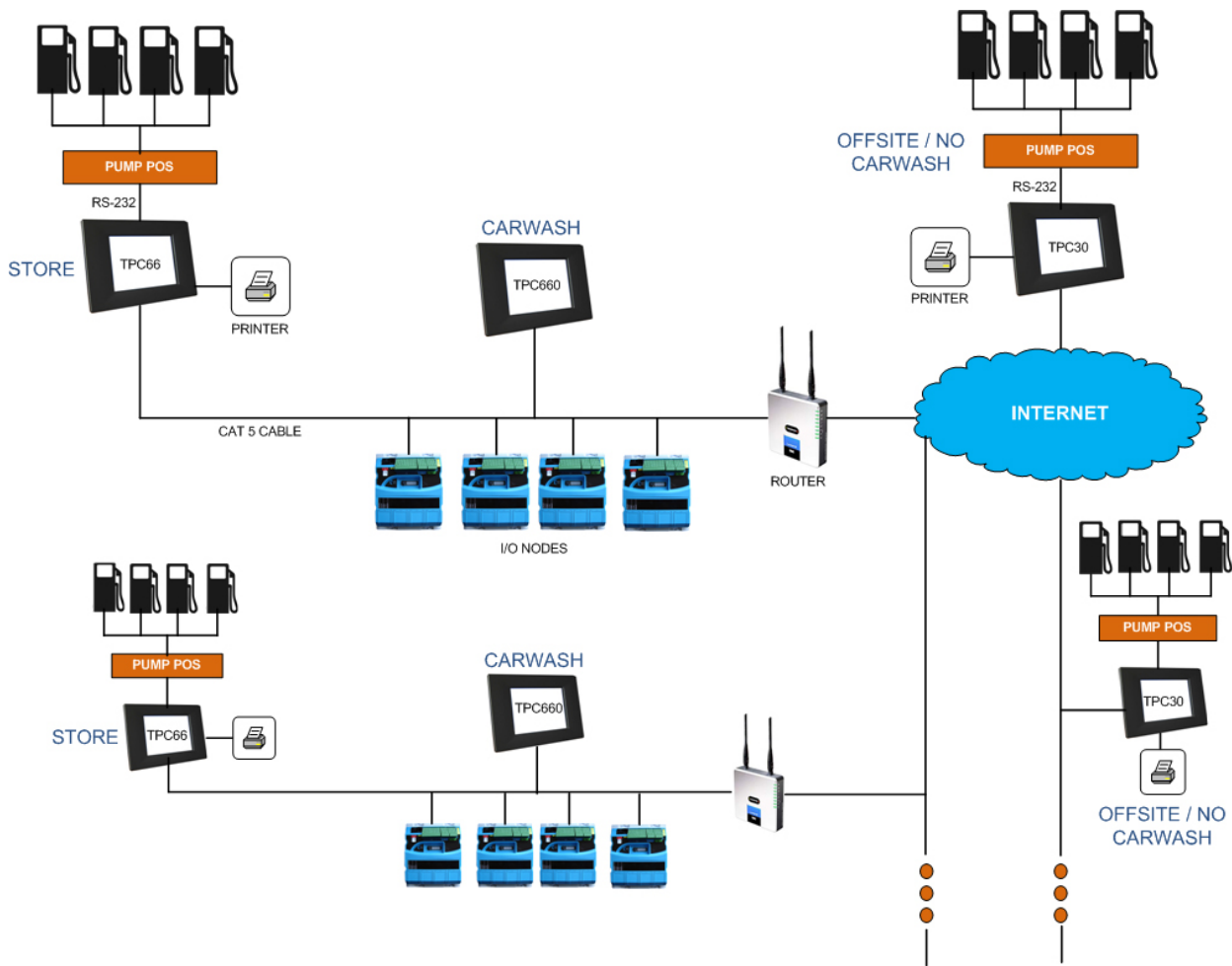
Advantech products used:      TPC-660G – 6.4" VGA TFT LCD Geode LX800 Touch Panel Computer  
   TPC-30T – 3.5" QVGA TFT LCD Xscale PXA270 Touch Panel Computer  
   TPC-66T – 5.6" QVGA TFT LCD Xscale PXA270 Touch Panel Computer

### **System Description:**

The tunnel control system, named r-TC, hosts a web interface used to allow computers to connect to the r-TC and monitor, diagnose and configure aspects of the car wash from just about anywhere. The system allows a user to complete these tasks remotely without interrupting the flow of business.

The length of the cars, chemical levels, hot water temperature, program purchased, etc. are all monitored by the r-TC. It also eliminates any confusion or guess work when no technician is on site by giving technicians a tool to remotely diagnose any problem. Basically, the r-TC is an all-in-one automated control system for the owner's car wash that can be run from any location when there is access to the internet.





**Conclusions:**

Advantech is a cost effective solution that replaces a traditional PLC with a man/machine interface and at the same time provides a much more flexible and integrated system to serve clients better.