



# PATH Rapid-Transit Traction Power Control System

**Client: Port Authority of New York & New Jersey**

**Location: Metro New York City, NY**



## System Features

- DYNAC® Software
- SCADA Server
- Redundant PLCs & I/Os
- TIWAY PLC Interface
- Positive Relay Feedback on Outputs



The Port Authority of New York and New Jersey operates a rapid-transit system under the name Port Authority Trans-Hudson (PATH). Transporting over 215,000 passengers each day, PATH currently connects midtown Manhattan (from a terminal at 33rd Street and 6th Avenue) with Hoboken, Jersey City and Newark, New Jersey.

PATH's Newark terminal is located in Penn Station and allows easy transfers to the Newark City Subway, New Jersey Transit commuter trains and Amtrak. PATH also serves New Jersey Transit's commuter rail terminal in Hoboken.

Transdyn provided a traction power control, life safety monitoring, and facilities management system for the entire PATH system. The system consists of eleven fully redundant and seven non-redundant control systems in the eighteen stations on the PATH line. Each fully redundant system consists of dual Programmable Logic Controllers (PLCs), redundant I/O, redundant relaying and positive feedback from each control output relay. Seven of the stations have an emergency backup control system consisting of a local computer controlled system executing the DYNAC® software suite, a local workstation, and network interface to the PLC. The local control center backup systems provide data acquisition and control capabilities for over 5000 I/O points allocated for power distribution, safety circuits, ventilation, security and other station facilities.

Each of the station sites are connected to a master control center system located in the Journal Square operations center. All control system hardware, networks, and associated subsystems are fully redundant to insure the highest availability possible given the critical nature of the system and life safety concerns.

The control strategies and sequences reside in the PLCs, rather than the SCADA servers. This programming strategy minimizes the potential for interruption of service in the event both the master and local computer-based SCADA systems become inoperable. In such a scenario, operators can monitor and control the facilities via hardwired controls located at the individual stations.