



BART Power Distribution and Facilities Management SCADA System

Client: Bay Area Rapid Transit District

Location: San Francisco, CA



System Features

- PLCs
- Redundant DH+ Networks
- Fiber Optics
- Redundant Control Strategy

In 1972, the BART system opened for revenue service. That same year the San Francisco Airport Access Project report recommended linking BART to the San Francisco International Airport (SFO). Today, that vision is being realized in the BART-SFO Extension Project.

In 1991, BART initiated Phase I of a \$2.6 billion extensions program that expanded its service, adding five stations and twenty-one miles of track, creating a total system of ninety-five miles of double track and thirty-nine stations.

In 1997, the next phase of construction commenced with BART moving further down the San Francisco Peninsula. The extension of BART to SFO added 8.7 miles of new track to the existing system and new stations in South San Francisco, San Bruno, Millbrae, and a station located inside the airport at the new international terminal. The BART-SFO Extension Project was completed in 2002.

Transdyn provided the Supervisory Control and Data Acquisition (SCADA) System that monitors power distribution, station fire alarms and facilities, and also provides ventilation control for the extension's two tunnels.

A triple-redundant system was provided for the monitoring and control of the extension's Millbrae and Colma tunnels. Control commands can be issued from either the local or central ventilation control panel (VCP) workstation, or from BART's ICS control system. In the event that communications with all three control locations are lost, the vent structure control PLCs automatically enter an isolated "safe-mode" to ensure the continuous operation of the tunnel ventilation system.

The Emergency Backup Panel (EBP), a workstation located at BART's Operational Control Center, monitors and provides backup control of the extension's power distribution system. In the event that it loses communication over the primary PLC communication network, a backup dial-in modem automatically reestablishes communications within seconds and ensures continuous operation of the system.

02-08-07