

Metro Transit Agency Employs PACSystems™ Solutions to Operate 21 Underground Stations in an Infrastructure Critical to Human Safety

RESULTS

- TUV SIL-2 certified safety solution for underground stations tunnel ventilation to help assure human safety of over 2 million riders per day
- Comprehensive building management system controls highly disparate systems, ensuring seamless operations without delay
- Intelligent trends and insights to detect equipment breakdowns and provide alarms in real time
- Real-time connectivity to central control room ensures seamless control in case of emergency



APPLICATION

Tunnel ventilation and building management solution for 21 underground stations

CUSTOMER

Metro rail agency in a major city in Asia

CHALLENGE

A metro transit agency in Asia is tasked with providing an efficient metro railways network with daily ridership of 2 million across a 200+ mile network. Safety and high availability of operations are a cornerstone of such a safety-critical infrastructure. As part of a new extension to the metro rail, the agency required the newest control technology, which could provide high availability, precision control of highly disparate systems and immediate access to alarms.

SOLUTION

The agency selected Emerson to provide control infrastructure for 21 underground stations connected to a central control room in the center of the city. The scope of the project included design, implementation, commissioning and programming for the control and instrumentation solutions. Emerson provided 300+ PACSystems family controllers, including PACSystems RX3i PLCs, and SCADA for the solution. The solution was redundant across each station – located in the fore and aft of each station – to mitigate any loss of control or view in case of emergencies.

The Emerson system controls and visualizes data from disparate subsystems like the tunnel ventilation fans, fire system, escalators, elevators, electrical and mechanical systems, access control, plumbing and other systems.

INFRASTRUCTURE

The system controls and visualizes data from disparate subsystems like the tunnel ventilation fans, fire system, escalators, elevators, electrical and mechanical systems, access control, plumbing and other systems. It also provides control infrastructure for an energy management solution. The system is programmed to work automatically in various daily operations and emergency modes and ensure fire control and speedy evacuation of smoke in case of emergencies. PACSystems integrates easily with third-party devices and controllers, supporting different protocols across the infrastructure to provide a unified control and HMI infrastructure. Station operators and central control room operators have a single control and visualization platform and the ability to respond immediately to maintain safety-critical operation. The HMIs have a 3D layout, are interconnected and have an extremely user-friendly design that helps operators visualize the layout and immediately open the display of any area at the click of a mouse. The data from each station is historized in a central historian and helps derive actionable insights related to operator errors, equipment failure and operational status of different subsystems.

RESOURCES

PACSystems

www.Emerson.com/PACSystems

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