Reference Prague Subway

Safely on your way: Complex fire protection concept in the Prague subway system

The subway is the most important means of transport of the Czech capital, with 54 stations and a length of 54.7 kilometers. Since 1974, already more than ten billion passengers have used the Prague subway. Today, over a million passengers use the three underground lines per day. Thus about 40 percent of the entire volume of city transport is allotted to the Prague subway.

As the operator of the Prague subway, the Dopravní podnik hlavního mesta Prahy limited company had already invited bids for renovating the then obsolete fire alarm system on the C line at the end of the nineties. Honeywell Life Safety Austria GmbH won this bid. In the years following, the professional and successful handling of the project led to follow-up jobs even up to the present day.

ESSER

by Honeywell

The task

IQ8Quad O^2T speech alarm detector

The objectives of modernizing the fire protection concept were:

- The safeguarding of the individual stations
- The networking of the subway stations through the existing telephone cables
- The transmitting of information to the management system several kilometers away

For the protection of the passengers, the new fire protection concept should consider the following aspects:

- The respective environmental conditions of the individual subway stations
- The special protection and informational needs of larger crowds
- The special importance of alarm organization

The solution

Customized systematic technology was used at 54 stations of the three Prague subway lines:

- More than 124 8000 M, IQ8Control M and 8007 fire alarm control panels
- At least two panels in every subway station, each equipped with a ¼ VGA display, some with a printer
- A fire alarm control panel with modem in every subway station
- Modern fibre optical cable (FOC)
- Nine networks via essernet
- Supervisor management system – specially developed for the Prague subway

Various types of fire detectors were employed:

- 1,500 optical heat detectors, 340 fixed heat detectors as well as 540 manual call points
- Only the patented O^2T multisensor detectors were installed since their market launch. Today 5,700 of the more than 8,000 detectors are O^2T detectors
- IQ8Quad with speech output for optimal organization of alarms and evacuation

The benefits

Modern optical waveguides guarantee the secure connection of all control panels, even over wide distances. By equipping the control panels with modem equipment in every subway station, remote diagnostics are possible via TEDIS software. Due to the large number of control panels, nine networks were created via the so-called essernet – each one with their own serial essernet interface (SEI).

The SEI data are sent via the FOC to a hub which is situated some kilometers away. A central computer is installed there which distributes the data of all nine networks into three separate management systems which run under Windows. Every management system contains the complete graphics of the subway stations as well as customer-specific access authorizations for more security and comfort.

The concentration on the O^2T detectors is based on the extremely small false alarm rate of this type of detector – even under difficult environmental conditions. In order to save human lives by avoiding panic in the event of an emergency and to reduce panic through an arranged evacuation, the operators of the Prague subway decided to additionally use IQ8Quad detectors with speech output in several preselected places.

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