Fire detection - on track below Barcelona

Transports Metropolitans de Barcelona

Metropolitan Transport of Barcelona (TMB)

Hailed as one of the world's most modern and well-designed mass transit systems, TMB provides the primary means of transport throughout the city and its suburbs. Forming part of an integrated passenger service, the underground metro runs in conjunction with aboveground transport networks.

The underground railway operates on seven lines providing daily service amongst 125 stations. With a total route length of 90 km, trains run continuously throughout the daytime, evening hours and until late on Saturday nights. With over 60,000 journeys completed every hour during peak periods, TMB transports over 1.1 million passengers on a daily basis.

Pre-existing situation & GE Security's role

TMB's requirements called for a high level of fire detection and scalability across a city wide area – with over 120 stations connected to the communications network – up to 60 metres below the street level.

Operation of the fire detection system, along with all other safety and security facilities, from a central control room was necessary. At the same time, it was essential to provide TMB with individual local control and operation on a station-by-station basis.

High-risk areas below the ground, such as lifts and escalators, required special protection against any fire or smoke conditions, with the earliest possible warning and the mapping of the exact location.

GE Security's Solution

In order to attain the level of protection needed, an extensive network was developed, covering over 120 separate stations, each with its own fire detection and alarm system. The equipment can be operated locally by station personnel, or remotely from TMB's central control room.

The overall system is designed to operate on six existing copper and fibre optic ring networks.

The system comprises over 250 ZP3 control panels – operating 40,000 addressable devices – individually recognised and scanned every two seconds. Over 800 special sensors protect high-risk areas below escalators and above lift shafts.

Featuring either high sensitivity smoke detection or extract duct sampling, all alarm signals are addressed and are individually recognised at the control centre. The overall control and monitoring is carried out by 23 graphic terminals running on specially developed alarm management software.

GE imagination at work

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