ZETTLER

The benefits of installing
MZX Technology into a Prison

// Overview:

The Requirements for installing a fire detection and alarm system within a prison would be determined by the authority responsible within the region and could be a combination of both manual devices and automatic detection. Detection in individual cells could be a requirement which can be accomplished by installing the detector directly into the cell or within a duct housing within the cell extract system. Air sampling within the air extract system is another way of providing detection in individual cells. The detection device, (sensor), should be responsive to both smouldering and flaming fires and resilient to both cigarette smoke and the omissions from other sources such as joss sticks. In some modern prisons, cells may contain an integral shower, which will generate steam, to which the system should also demonstrate immunity, although the positioning of the sensor, if located in the cell, may have to be adjusted to avoid direct contact. The normal scenario within a prison house block is for the ventilation system to be running continuously when cells are occupied, although the system may have to be proven with the ventilation switched on and off. Unwanted alarms are especially troublesome as investigations will take longer due to restricted access and movement. Alarms will also in many cases aggravate the inmates and cause annoyance to the prison staff.
The **MZX** fire detection and alarm system has been successfully installed into many prisons. Some of the systems key features are highlighted below.

// Risk: Cigarette smoking is commonplace in prisons.

Inmates may also be allowed to burn certain types of scented sticks which release fragrant smoke to mask odours and create a more relaxed atmosphere. Group of prisoners may congregate and smoke which will create a heavier concentration of stale smoke within a confined area.

// Solution:

By installing the **850PC mutisensor** in each cell, or cell extract duct via the **DPK 4 duct probe unit**, the smoke created by either of these two phenomena **WILL NOT** trigger an alarm.

The sensor is still highly sensitive to the products of combustion generated by a smouldering or flaming fire and will raise an alarm even before a normal sensitivity smoke detector, based on its ability to sense the combustion gas, Carbon Monoxide. The sensor is responsive to a wood, paper and fabric based fire whether started accidentally and smouldering or intentionally and flaming. The ICAM IAS Air Sampling Smoke Detection unit is available as a twin inlet pipe system and is suitable for the protection of two adjacent cells. The **ICAM AS 460 and 461** single or dual air sampling system combines the best of the **850PC mutisensor** with proven air sampling techniques. The 850 series of sensors are available in 10 standard colours, are available with and without an integral short circuit isolator and use sophisticated digital signalling to ensure reliable communications with the MZX control panel. A hand held engineering management tool communicates with the sensor via a 2 way infra-red link making access for addressing, servicing and testing easy and fast, from floor level with no need for steps or ladders.

// Risk: Access and movement around the prison is slow and time consuming. At the commissioning stage all detectors and ancillary modules have to be addressed during which time cells and/or service cupboards need to be unlocked allowing access to the device.

Any devices located within duct housings or air sampling equipment incurs additional time as the covers have to be removed.

// Solution:

The 850 Engineering Management Tool is a powerful and flexible tool used during the installation, commissioning and servicing of MZX 850 series devices. The tool provides Infra-Red communication up to a distance of 15 metres, even with the covers in place, which is especially beneficial where height or access is a problem. It contains the system's configuration programme and can read and write to both detectors and ancillary devices. The unit will display the detector's outputs, (temperature, CO and smoke obscuration levels), and has the ability to test both the device's led and control outputs. The tool can be used to change the devices settings and will record and store any changes made, providing a valid audit trail. Service data is also stored and offers a true record of all devices, detectors, ancillaries and sounders that have been tested during the visit. All data is stored onto a USB flash drive. **MZX technology offers additional value which continues throughout the lifetime of the system.**

// Risk: Prison systems can be some of the largest in existence.

Detection can be installed throughout the house blocks making the overall size of the system extremely large, cable runs extensive and the transmission of data around the site a challenge. Response to an incident needs to be fast; therefore information needs to be distributed around all control panels allowing the responder to visit the nearest panel. Integrity is key as prisons cannot be evacuated in the normal way and therefore time is always of the essence.

// Solution:

MZX technology offers a range of controllers from the compact MZX250 single loop, through the modular MZX2 panel which extends up to 8 loops. Controllers can be easily networked by adding the **TLI800EN network card** up to 99 panels (99000 addresses), with panels interacting with each other where required. The MZX network is a true peer to peer network which remains unaffected by a single node failure. Furthermore failure of any panel's main processor will not inhibit transmission of any fire alarm or fault signal from that panel across the network to a designated panel's zonal display. **The network is LPCB, EN54-2 and EN54-13 approved.** Additionally a windows based **graphics system** can be installed providing a layout of the buildings, with additional text, emergency file data, instructions to staff and other useful functions, ideal for the larger sites.

// Risk: Testing sounders in most types of premise is an extensive and time consuming task; often occupants of the building are asked to participate. In a prison this would be difficult as staff are not always in the right place and inmates might not be expected to co-operate in such an exercise.

// Solution:

Every MZX control panel programme has the ability for sounder tests to be set up and run from the panel. **Reflective Sound Monitoring** enables all sounders to be tested at high volume simply by initiating a test for approximately 15 seconds, after which any sounder not operating will be reported back to the control panel. Sounders can be tested in groups, floor by floor, zone by zone, depending on how the test is set up. An essential operation that could take two or more persons a full day can now be completed single handed in a matter of minutes.

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Fire Protection Products