

# APPLICATION NOTE

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DETECTORS

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# MTL BARRIERS FOR USE WITH HOCHIKI I.S. DETECTORS APPLICATION NOTE

This Application Note covers the MTL Barriers compatible with Hochiki's Intrinsically Safe Conventional Detectors.

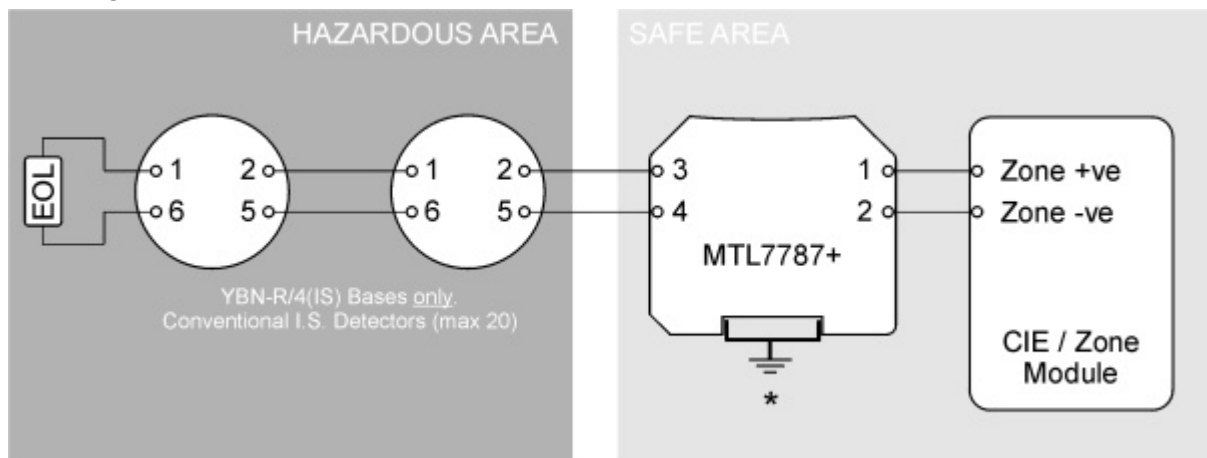
The two barriers manufactured by MTL and recommended by and available from Hochiki Europe are the MTL7787+ Zener Barrier and the MTL5061 Galvanic Isolator. The following Hochiki products can be utilised with these barriers:

Part No.	Description
SLR-E-IS	Intrinsically Safe Conventional Photoelectric Smoke Detector
DCD-E-IS	Intrinsically Safe Conventional Heat Detector
YBN-R/4(IS)	Intrinsically Safe Conventional Base
CCP-E-IS	Intrinsically Safe Conventional Call Point
CHQ-Z(IS)	Intrinsically Safe Compatible Dual Zone Monitor ( <i>MTL5061 only</i> )

## Application

Each type of barrier has its own application in the I.S. system, please refer to the following diagrams:

### MTL7787+ ZENER BARRIER



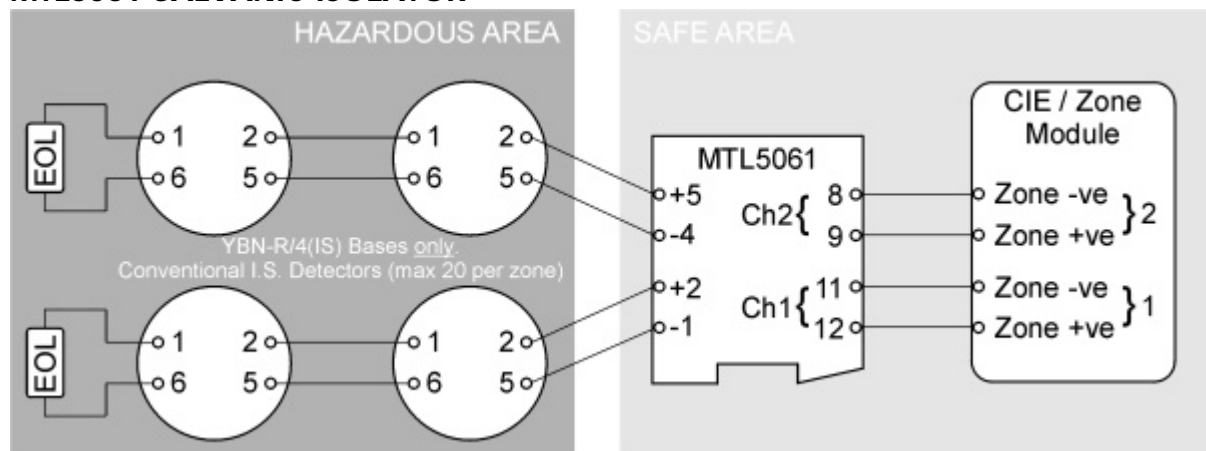
\* Zener Barriers require earthing in accordance with standards (typically <math><1\text{ ohm}</math> to main building earth point).

## Specification

Ordering Code	MTL7787+
Safety Description:	
Maximum voltage of Zener diode when fuse blows	28V
Minimum value of terminating resistor	300Ω
Maximum short-circuit current	93mA
Number of Channels	2
Maximum end-to-end resistance	333Ω
Working Voltage	26.6V
Maximum Voltage	27.2V
Fuse Rating (continuous)	50mA
Operating Temperature Range	-20°C to + 60°C (continuous working)
Storage Temperature Range	-40°C to + 80°C

Maximum Humidity	95%RH - Non Condensing (at 40°C)
Dimensions	H90mm x W105mm x D12.6mm
Weight	140g (approx.)
Mounting Method	DX070 Box

### MTL5061 GALVANIC ISOLATOR



### Specification

Ordering Code	MTL5061
Safety Description:	
Maximum voltage of Zener diode when fuse blows	28V
Minimum value of terminating resistor	300Ω
Maximum short-circuit current	93mA
Number of channels	2
Current Range	1 to 40mA, nominal
Response Time to step input	Settles to within 500μA of final value within 30ms
Maximum Output Voltage in hazardous area	28V (from 300Ω)
Transfer Accuracy at 20°C	Better than 400μA
Temperature Drift	<10μA/°C (-20°C to 60°C)
Loop Supply Voltage	6 to 35V dc
Quiescent safe-area current at 20°C	<400μA/channel, Vin = 24V dc
Operating Temperature Range	-20°C to + 60°C (continuous working)
Storage Temperature Range	-40°C to + 80°C
Maximum Humidity	95%RH - Non Condensing (at 40°C)
Dimensions	H110mm x W104mm x D16mm
Weight	110g (approx.)
Mounting Method	DX070 Box

#### End Of Line Resistor (EOL)

To ensure that the surface temperature of the resistor remains below that of the flash-point of the hazardous material present it is certified that the overall surface area must be greater than 230mm<sup>2</sup>.

#### Mounting

Both types of barrier should be mounted onto standard DIN rail within a protective enclosure, such as the DX070 Box (available from Hochiki Europe). In the case of the MTL7787+ Zener barrier, the DIN rail should also be the earth source (see wiring diagram). The DX070 Box will hold up to 5 MTL7787+ Zener barriers and up to 3 MTL5061 Galvanic Isolators.