



A simple guide to barrier selection

Every intrinsically safe (IS) circuit must be protected by a suitable intrinsically safe barrier.

There are two types of IS Barrier:

a) **ZENER BARRIERS.** These protection devices use a combination of zener diodes, resistors and fuses to protect the IS circuit. Designed in the early 1980s, MTL700 series barriers must be replaced if the internal non-replaceable fuse blows. The more recently designed 7700 series have electronic fuses. Note that the negative rail of the compatible barriers listed below connects directly to earth; this can cause problems when used in conjunction with control panels fitted with earth fault monitoring facilities.

b) **GALVANIC ISOLATING BARRIERS.** These devices isolate the hazardous area from the safe area and using opto-isolator technology. They are fully resettable and do not contain fuses. The IS Circuit can be left floating or earthed at any one point thus avoiding potential earth loop faults which may be experienced using zener barriers. Although more expensive than zener barriers they provide a simpler engineering solution for IS circuit design.

Each of the barriers listed below will provide sufficient power to drive one sounder or beacon.

The barriers must be located in the safe area. They may be housed within the control panel or in a suitable enclosure. A table of enclosures and the quantity of barriers they can hold is given below.

Manufacturer	Model	Zener barrier	Isolating barrier
E2S	all IS models	MTL 728+	MTL5025
		MTL7728+	MTL5525
C & S	Y04 ISA & Y05 ISA	MTL 728+	MTL5025
		MTL7728+	MTL5525
MEDC	DB5	MTL 728+	MTL5025
	DB8	MTL7728+	MTL5525
	SERIES 60 & ORBIS		MTL 5061*
APOLLO	SERIES 95	REFER TO OUR SALES OFFICE	
	DISCOVERY	REFER TO OUR SALES OFFICE	

* 2 Zones each containing 5 detectors can be protected by 1 barrier

Barrier enclosures

Barrier enclosures come complete with mounting rails, fixings, IS circuit warning labels. The quantity of barriers each enclosure will hold varies by barrier type as per following table:

Enclosure	5000 Series	5500 Series	7700 Series	700 Series
DX070	4	4	5	n/a
DX170	10	10	13	n/a
DX430	26	26	33	n/a
MT2	n/a	n/a	n/a	2
MT5	n/a	n/a	n/a	5
MT12	n/a	n/a	n/a	12
MT20N	n/a	n/a	n/a	20



LGM Products Ltd, Unit 3, Quantum Business Park, Beacon Hill Road, Fleet GU52 8DY



+44 1252 725257



sales@lgmproducts.com



support@lgmproducts.com



technical@lgmproducts.com



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