

RF SHIELDED DOORS Double Knife Edge Door

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ETS-Lindgren's Double Knife Edge Door (DKE) is a heavy-duty door, constructed of exceptionally rugged materials with designed-in reinforcements, making this door suitable for heavy industrial environments or frequent use applications with frequent use. Additionally, the ETS-Lindgren DKE Door is suitable for welded enclosures, modular systems and anechoic and ferrite-lined chambers, where the external mechanism makes it ideal for material application on its interior surface.

Key Features

- Precision-Machined Aluminum Hinges with Six Thrust Bearings for Sag-free Mounting and Smooth Operation
- A 5.08 cm (2 in) Bronze Center Bushing, Capped with 10.16 cm (4 in) Brass Cover Plates, Penetrating the Door Leaf Core
- Four Rows of Beryllium Copper Finger-stock Around the Perimeter of RCM Receiver
- Heavy-duty Cam Latch Strikes for Three-point Latching, Guided by Precision Machined Latch Bar Guides
- Easy-to-retrofit with Existing Door on Standard Modular and Welded Shielded Enclosure

Features

Construction

The ETS-Lindgren DKE Door consists of a factory assembled leaf and frame which maintain electrical contact around the perimeter. The door panel is laminated on both sides with 22 gauge galvanized steel. Heavier gauges are available for improved magnetic field performance. The bronze double knife edge extrusion is mounted on the door leaf and the receiver housing is mounted to the frame. The two knife edges of the leaf mate with four rows of beryllium copper finger-stock mounted in the bronze recessed contact mechanism receiver housing. The beryllium finger-stock is easily maintainable and replaceable with standard tools.

Each door leaf is supported by three heavy-duty aluminum hinges for sag-free mounting and latched by a three-point roller bearing latch assembly. These features serve to provide a high reliability door which will deliver many years of trouble-free service.

The DKE Door is available in the standard size of 0.91 m to 1.22 m (3 ft to 4 ft) width and 2.13 m (7 ft) height, both single and double leaf, and custom fabricated sizes.

Performance

The DKE maintains 120 dB attenuation to 10 GHz, and 100 dB at 26 GHz. When tested in accordance with MIL-STD 285/IEEE-299, the DKE design exceeds the test requirements of NSA 65-6, NSA-94-106 and CID/09/12A.

Attenuation Levels

Magnetic Fields: 20 dB @ 1 KHz rising to 70 dB @ 14 KHz and 100 dB @ 200 KHz

Electric Fields: 90 dB @ 1 KHz rising to 120 dB from 10 KHz to 50 MHz

Plane Waves: 120 dB from 50 MHz to 10 GHz

Microwaves: 100 dB from 10 GHz to 26 GHz, decreasing to 80 dB @ 40 GHz

*DKE performance above 10 GHz can be enhanced using microwave absorber material.

Operation

Latching is accomplished manually by a heavy duty aluminum handle on both interior and exterior sides. The door pivots at a minimum of three hinge points on six thrust bearings. The cam driven, manual three-point latching mechanism consists of a gear driven welded latch bar, which is held in alignment by two latch bar bearing guide blocks. The six precision machined latch bar guides secure the assembly on the door leaf and drive three cam follower bearings into the door strikes mounted on the door frame.

