SHIELDING DOUBLE KNIFE EDGE SHIELDED DOOR

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- Precision-Machined Aluminum Hinges with Six Thrust Bushings 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 on Standard Modular and Welded Shielded Enclosure
- Optional Semi-Automatic Latching System
  - RCM (Recessed Contact Mechanism) for RF Shielding
  - Automatic Latching
  - Assisted Door Closing
  - Emergency Release
  - Long Life Expectancy with Minimal Maintenance
  - Interlock with Additional Electro-latch Doors
  - Battery Back-up Upgrad
  - Interface with Security Systems
  - Acoustic Package Option

ETS-Lindgren's Double Knife Edge (DKE) Door is engineered for durability in demanding industrial environments and high-traffic applications. Constructed from exceptionally rugged materials with built-in reinforcements, this heavy-duty door offers superior resilience. The DKE Door is compatible with welded enclosures, modular systems, and anechoic or ferrite-lined chambers, with an external mechanism that supports easy material application on the interior surface—making it an ideal choice for any setting requiring robust, high-performance access control.

Features

Construction

The ETS-Lindgren DKE Door features a factory-assembled leaf and frame that maintains continuous electrical contact around the perimeter, ensuring high RF integrity. The door panel is double-laminated with 22-gauge galvanized steel, with options for heavier gauges to enhance magnetic field performance. Each door is equipped with a durable bronze double knife-edge extrusion mounted on the door leaf, paired with a recessed contact mechanism receiver housing. The dual knife edges mate precisely with four rows of beryllium copper finger-stock, which are both easily maintainable and replaceable with standard tools, offering long-term serviceability.

For structural integrity, each door leaf is supported by three heavy-duty aluminum hinges for sag-free, reliable operation, and a three-point roller bearing latch assembly provides secure closure. These robust design features contribute to a high-reliability, low-maintenance door that delivers years of dependable service.

Available in standard sizes of 0.91 m to 1.22 m (3 ft to 4 ft) widths and 2.13 m (7 ft) height, the DKE Door is offered in both single and double-leaf options, with custom sizes available to meet specific application needs.

Operation

The DKE Door's latching system is manually operated using heavy-duty aluminum handles on both the interior and exterior sides. The door pivots securely on a minimum of three hinges, each supported by six thrust bearings to ensure smooth, stable movement. Its three-point latching mechanism is cam-driven and reinforced with a gear-driven welded latch bar, providing a robust and secure seal.

To maintain precise alignment, the latch bar is guided by two durable bearing blocks, while six precision-machined guides further stabilize the assembly on the door leaf. When engaged, three cam follower bearings on the door leaf are driven into corresponding door strikes mounted on the frame, creating a consistent and reliable RF-tight seal.

Performance

The standard SKE Door, when tested in accordance with the procedures of MIL-STD-285, NSA 65-6/NSA 94-106, ITSG-02/IEEE 299 or EN 50147-1, will exhibit shielding attenuation levels of 130 dB at frequencies up to 10 GHz, 100 dB up to 40 GHz, and 90 dB up to 100 GHz.

Semi-Automatic Electro-Latch Option

ETS-Lindgren's Semi-Automatic Electo-Latch option offers an automatic latching with assisted door closing system to deliver reliable shielding performance, ease of operation, and straightforward maintenance.

The emergency release system consists of two handles located at each side of the door, which when pulled to a horizontal position, can be removed to enable the door to be opened in the event of a power outage.

The personnel doors have three precision-machined aluminum hinges. Each is fitted with adjustable thrust bearings that enable the door leaf to be accurately adjusted within the frame and to compensate for varying loads conditions.

The Semi-Automatic Single Knife Edge (SKE) Door can interface with a variety of locks, latches and security systems. Locking hasps and panic release systems may be incorporated, as well as contact mechanisms for emergency power cut-off and fire detection closure systems. The door can also be equipped with a ramp for heavy equipment transportation into the shielded area.

Technical Specifications

Performance	
Magnetic Fields	20 dB @ 1 KHz, 70 dB @ 10 KHz, 90 dB @ 100 KHz, 100 dB @ 1 MHz, 120 dB @ 5 MHz to 30 MHz
Electric Fields	90 dB @ 1 KHz, 120 dB @ 10 KHz to 30 MHz
Plane Waves	120 dB @ 50 MHz to 10 GHz
Microwaves	100 dB @ 40 GHz, 90 dB @ 100 GHz

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