

## ULTRA-HIGH VACUUM MICROWAVE FEED-THROUGH, N FEMALE

### FEATURES

- High-performance microwave design
- Extreme environment capability
- High-reliability precision connector interfaces
- MTBF >10,000,000 hours per MIL-HDBK-217
- UHV materials
- Designed for welded installations
- Easily modified for custom designs

### APPLICATIONS

- Beam position monitors for particle accelerators
- Plasma deposition chambers
- Sputtering
- High power levels
- Anywhere a microwave signal must be brought through a process barrier (vacuum, pressure, environment, etc.)



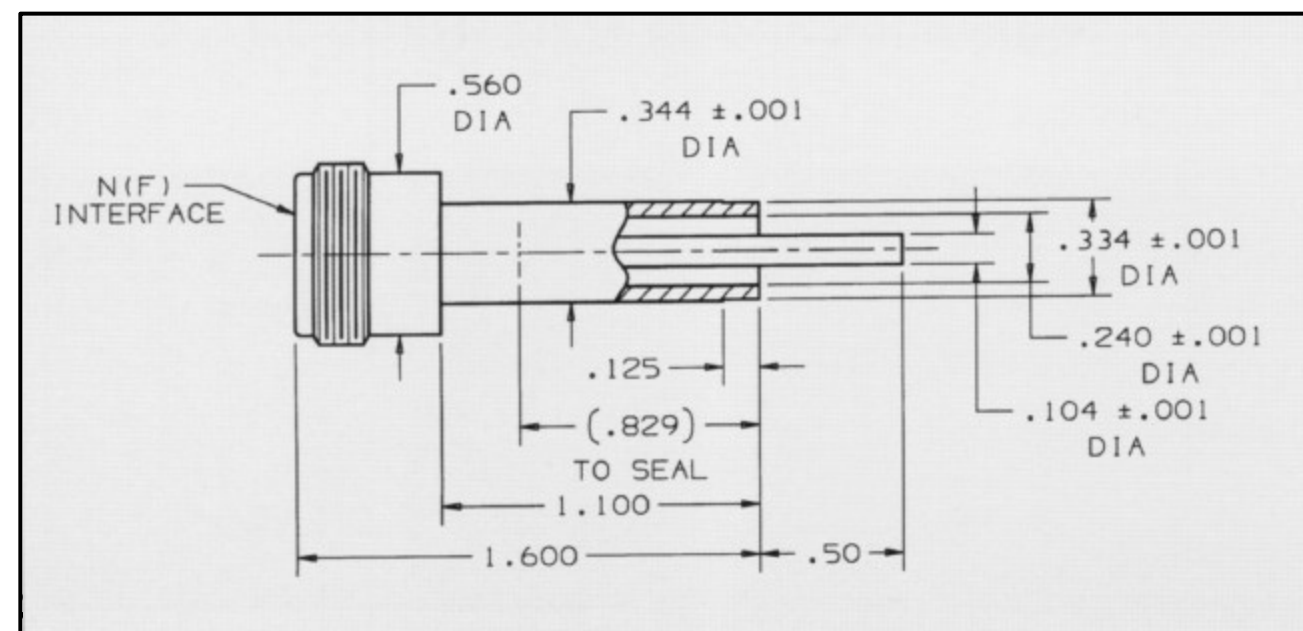
MSSSI part #853831

Meggitt Safety Systems Inc. (MSSSI) designed this type N UHV feed-through specifically for beam position monitoring (BPM applications that require a pure 50-ohm impedance with a long center pin extension for welding to strip line section. The user can directly weld the feed-through body into a beam pipe assembly using e-beam, laser, and even TIG methods.

As with all of our connector designs, MSSSI accurately predicted electrical performance using sophisticated microwave analysis tools. We accomplished impedance matching with proven techniques for precision broadband microwave devices. This close attention to microwave principles results in a high-performance electrical design with low reflections to 12 GHz. The type N interface offers the optimum geometry for a highly reliable and rugged connection at higher power levels.

With an assortment of materials available, MSSSI can easily modify this basic design for a wide range environments. Please give us a call for your custom requirements.

## ULTRA-HIGH VACUUM MICROWAVE FEED-THROUGH, N FEMALE



**Impedance:** 50 ohms

**Frequency Range:** DC to 20 GHz

**VSWR:** 1.03:1 max to 3 GHz;

1.15:1 max to 20 GHz

**Insertion loss:** 0.10 dB max @ 3 GHz;

0.50 dB max @ 20 GHz.

**Insulation resistance:** >10<sup>12</sup> ohms

**Voltage:** 1,500 VRMS

**Operating temperature range:**

Based on outer body material –

304 stainless steel: 77°K to 573°K (-196°C to +300°C)

316 stainless steel 4°K to 573°K (-269°C to +300°C)

Inconel®: 77°K to 773°K (-196°C to +500°C)

**Hermeticity:** <1x10<sup>-11</sup> cc He/sec

**Radiation:** >200 megarads gamma

**Connector interface:** SMA per MIL-C-39012

### Materials:

**Outer body:** 304 stainless steel, 316L stainless steel, or Inconel®.

**Center conductor:** TZM molybdenum per ASTM B365.

**Insulator:** AL<sub>2</sub>O<sub>3</sub> strengthened boro-silicate seal (130,000 psi compressive strength).

**Connector contact:** Gold-plated BeCu.

**Custom materials:** Cupronickel, monel, and titanium.



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