

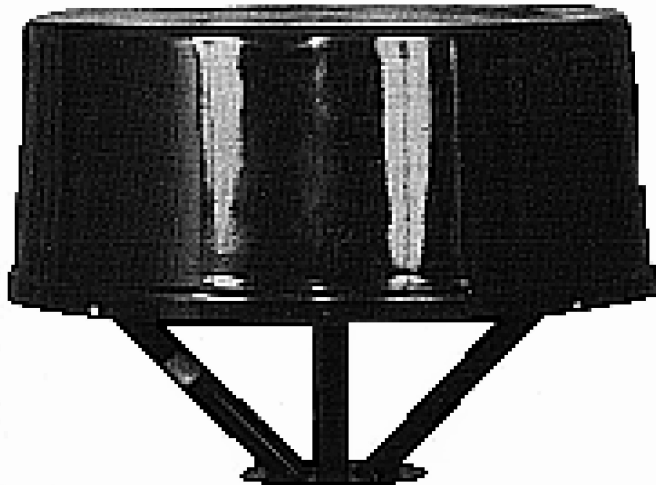
## Technical Data



WATKINS-JOHNSON

May 1996

# VHF/UHF Low-Profile DF Antenna WJ-9887



### Features

- VHF/UHF ranges
- Lightweight & compact
- Balanced-element design
- Flexible mounting capability

The WJ-9887 Direction Finding (DF) Antenna is designed for applications requiring a low profile, lightweight and compact DF array. The antenna covers VHF/UHF ranges in one small, lightweight assembly designed for use with four-channel vector correlation DF systems such as the WJ-8996-1.

At low frequencies, the antenna is configured as four terminated loops. At the higher frequencies, the antenna is configured as a set of leaded TEM horns. The antenna elements and feeds are balanced with respect to ground to minimize currents in the support

structure, thereby eliminating the need for a ground plane. Preamplifiers are embedded in the elements to sustain sensitivity, while allowing reduced element size.

The antenna is constructed of fiberglass and plastic with the elements printed on fiberglass boards. The boards serve as a substrate for the elements, as well as a major structural part of the complete antenna assembly. This makes for a rugged design suitable for harsh environmental conditions.

**HEIGHT** 9in(22.86cm)  
**WEIGHT** 15lbs(6.79kg)

**DIAMETER** 20.5in(52.07cm)

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This material provides up-to-date general information on product performance and use. It is not contractual in nature, nor does it provide warranty of any kind.

WJ-9887

Specifications

**Frequency Range** ..... 20 to 1200 MHz  
 (1200 to 2000 MHz with degraded performance)  
**Type** ..... Hybrid loop or TEM Horn  
**Polarization** ..... Vertical

Typical Sensitivity

Frequency	AF	XFER Function	Gain DBI
20	34	.02	-37
50	30	.03	-26
100	28	.04	-18
200	28	.04	-12
500	28	.04	-4
1000	28	.04	+2
2000	28	.04	+8

DF performance is dependent upon numerous factors such as processing gain and antenna correlation sidelobes. With processing times in the 100 to 200 ms range, DF sensitivities of 20  $\mu$ V/m at the low frequency end, and a 0.5  $\mu$ V/m at the high end, can be realized.

**Operating Temperature Range** ..... -30 to +60°C  
**Vibration & Shock** ..... Contact Factory  
**Humidity** ..... 95% non-condensing

Options

Nomenclature	Function	Physical Characteristics
WJ-9887/86I Interface Adapter Unit	<ul style="list-style-type: none"> <li>Provides interface to WJ-8986 DF processor</li> </ul>	<ul style="list-style-type: none"> <li>5 x 3 x 1 in (12.7 x 7.62 x 2.54 cm) adapter unit</li> </ul>