



Electronic Corporation

A Member of Bird Technologies Group

30303 Aurora Road

Solon, Ohio 44139-2794

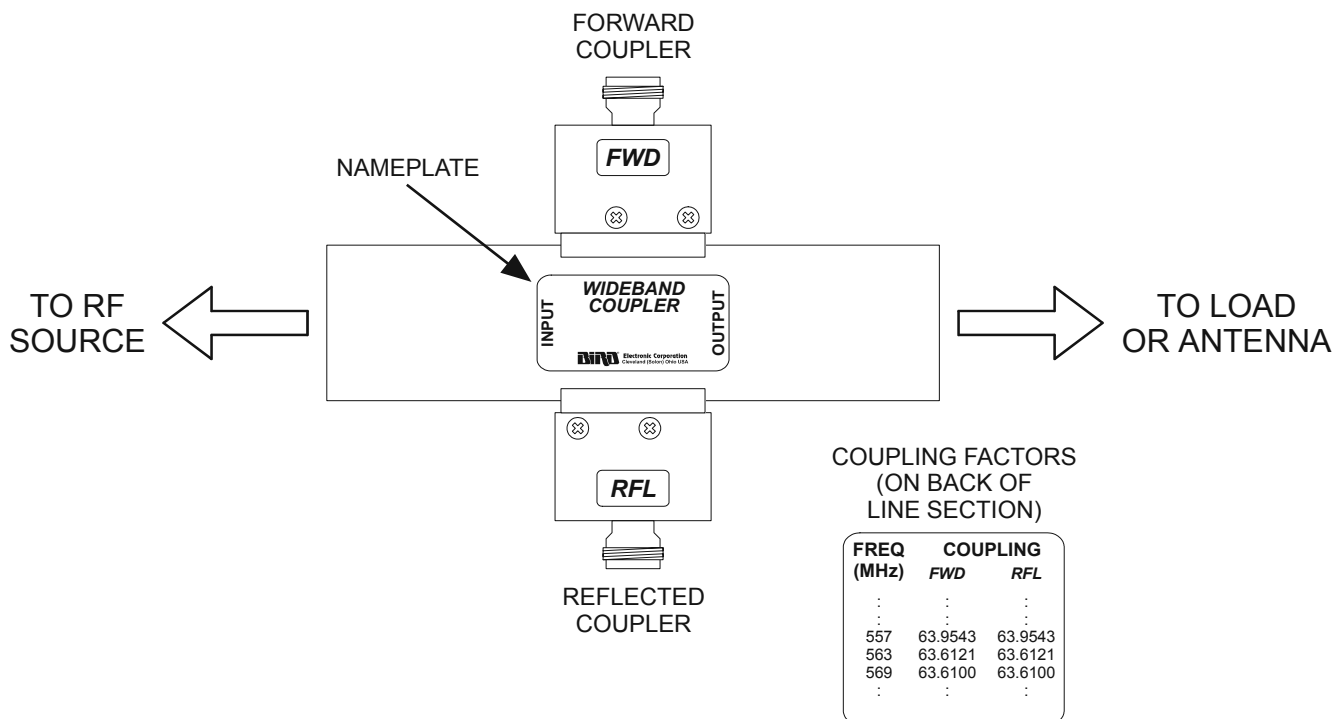
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Instruction Sheet Wideband Coupler

Description

The Bird Wideband Coupler is a short length of line section with two directional couplers, allowing the RF power in the line to be sampled with the Bird 5011 Terminating Power Sensor (TPS). Couplers are available for either UHF or VHF operation in a variety of line sizes and power ratings.

To provide accurate power readings, the Wideband Coupler is measured across its frequency band to determine the exact coupling factors. These are provided on a label on the back of the unit.



Installation

The Bird Wideband Coupler can be inserted directly into the RF line with standard coupling kits.

WARNING


Never attempt to connect or disconnect RF equipment from the transmission line while RF power is being applied.
Leaking RF energy is a potential health hazard.

CAUTION

Do not remove or switch directional couplers.
Calibration will be voided.

Swivel Flanged Coupling

- Insert the center bullet and push it in until it is fully seated.
- Connect the coaxial input in a straight line and push carefully on the center conductor to close.


 NOTE: The swivel flange on the line section makes connection independent of the orientation of the fixed flange on the RF line.

- Insert the bolt sets and tighten evenly all around to the RF line manufacturer's recommended torque. Use all of the bolts.

Unflanged Coupling

- Insert the center bullet and bottom it on the midpoint nibs.
- Position the outer sleeve, with clamping bands, over the line section connector.
- Set the RF line snugly against the coupling stops.
- Position the clamping bands evenly about 3/4" from the ends of the sleeve.
- Tighten the clamping bands.


Operation

 NOTE: These instructions are for measuring the transmitted, or forward, power. To measure reflected power, follow the same instructions but substitute "Reflected" instead of "Forward" where a direction is specified.

WARNING

Never attempt to connect or disconnect RF equipment from the transmission line while RF power is being applied.
Leaking RF energy is a potential health hazard.

- Make sure the RF power is off.
- Connect a TPS to the Forward Coupler.
- Connect the TPS to a Bird Digital Power Meter (DPM) or Bird Site Analyzer.
- Look at the coupling factor label on the Wideband Coupler. Note the Forward Coupling Factor at the operating frequency. Enter this as an offset into the power meter.

 NOTE: Refer to the power meter manual for instructions on entering an offset.

- Turn on RF power.
- Measure the power.

Customer Service

If you need to return the unit for any reason, contact the Bird Service Center for a return authorization. All instruments returned must be shipped prepaid and to the attention of Bird Service Center.

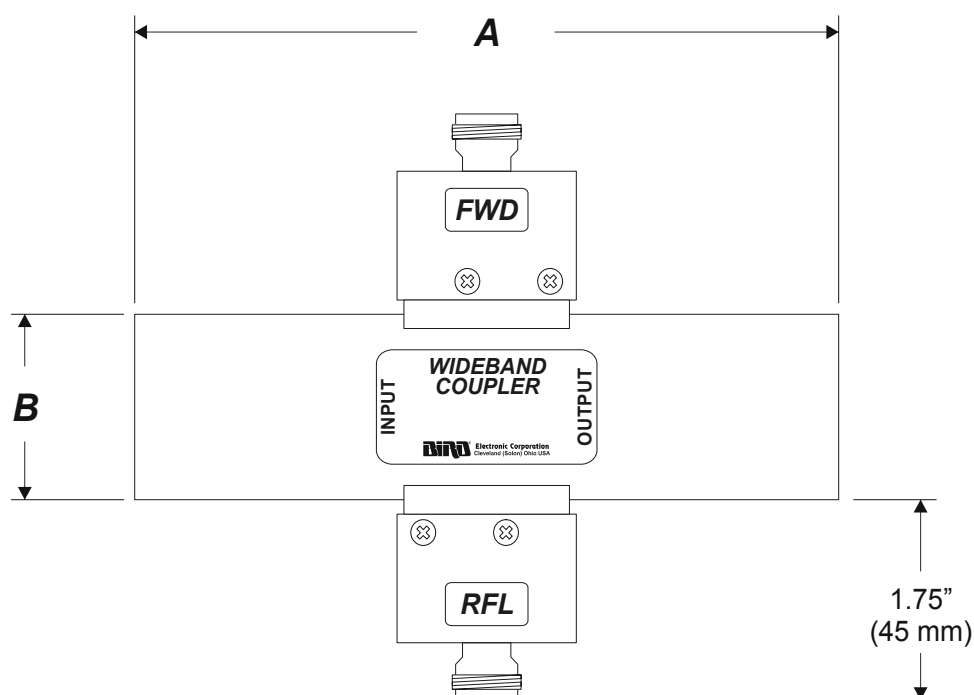
Bird Service Center

30303 Aurora Road
Cleveland (Solon), OH 44139-2794
Phone: (440) 519-2298
Fax: (440) 519-2326
E-mail: bsc@bird-technologies.com

For the location of the Sales Office nearest you, give us a call or visit our Web site at:

<http://www.bird-electronic.com>

Dimensions

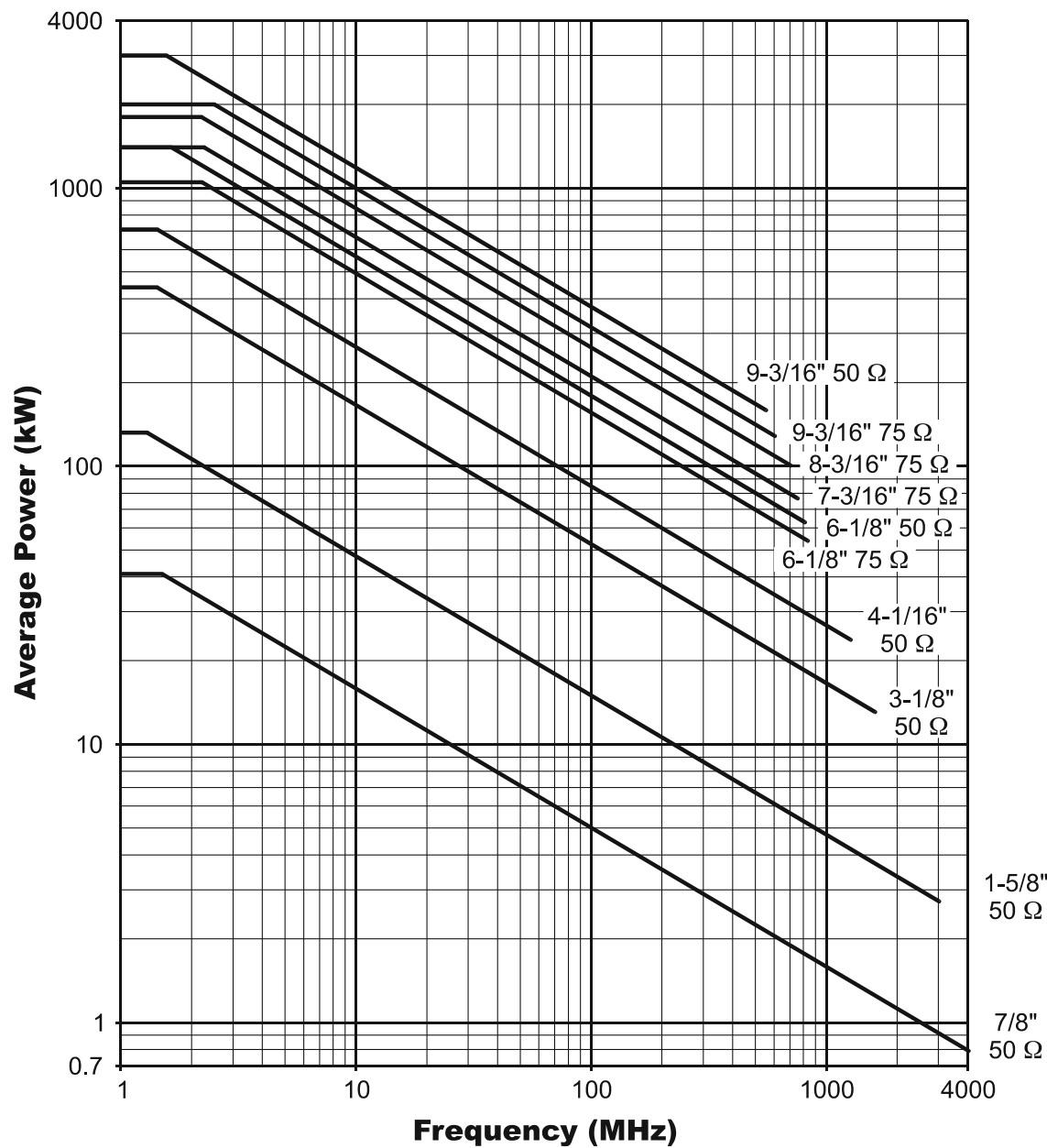


MODEL	LINE SECTION	DIM. A		DIM. B	WEIGHT
WBC1	1- $\frac{5}{8}$ " Flanged	6.75"	(171 mm)	2" (51 mm)	3.7 lbs. (1.7 kg)
WBC1U	1- $\frac{5}{8}$ " Unflanged	6.38"	(163 mm)	1.625" (41 mm)	1.8 lbs. (0.8 kg)
WBC3	3- $\frac{1}{8}$ " Flanged	7.03"	(179 mm)	5.25" (133 mm)	6.0 lbs. (2.7 kg)
WBC3U	3- $\frac{1}{8}$ " Unflanged, Recessed Center Conductor	6.5"	(165 mm)	3.125" (80 mm)	2.8 lbs. (1.3 kg)
WBC3UF	3- $\frac{1}{8}$ " Unflanged, Flush Center Conductor	6.5"	(165 mm)	3.125" (80 mm)	2.8 lbs. (1.3 kg)
WBC4	4- $\frac{1}{16}$ " Flanged	8.38"	(213 mm)	6.2" (158 mm)	8.9 lbs. (4.0 kg)
WBC4U	4- $\frac{1}{16}$ " Unflanged	7.5"	(191 mm)	4.063" (103 mm)	2.9 lbs (1.3 kg)
WBC6	6- $\frac{1}{8}$ " Flanged	10.22"	(260 mm)	8.375" (213 mm)	13.2 lbs (6.0 kg)
WBC6U	6- $\frac{1}{8}$ " Unflanged	9.63"	(245 mm)	6.125" (156 mm)	7.2 lbs (3.3 kg)

Specifications

Frequency Range	45 – 230 MHz (VHF Band)	
WBCxx-45	450 – 890 MHz (UHF Band)	
WBCxx-400	450 – 800 MHz	
WBC6x-400 (6" line section only)		
Maximum Power	Transmission line and frequency dependent. See graph below.	
Nominal Coupling	VHF	UHF
WBC1x	62 ± 2 dB	59 ± 2 dB
WBC3x	69 ± 2 dB	64 ± 2 dB
WBC4x	70 ± 2 dB	67 ± 2 dB
WBC6x	75 ± 2 dB	72 ± 2 dB
Directivity	28 dB Min.	
Coupled Arm Connector	Female "N"	
Coupled Arm VSWR	1.2 Max	
Line VSWR	1.1 Max	
Coupling Uncertainty (After Correction)	± 0.05 dB Max	
Temperature		
Operating	10 to 40 °C (50 to 104 °F)	
Storage	–20 to +85 °C (–4 to +185 °F)	

Maximum Average Power vs. Frequency



Limited Warranty

All products manufactured by Seller are warranted to be free from defects in material and workmanship for a period of one (1) year, unless otherwise specified, from date of shipment and to conform to applicable specifications, drawings, blueprints and/or samples. Seller's sole obligation under these warranties shall be to issue credit, repair or replace any item or part thereof which is proved to be other than as warranted; no allowance shall be made for any labor charges of Buyer for replacement of parts, adjustment or repairs, or any other work, unless such charges are authorized in advance by Seller.

If Seller's products are claimed to be defective in material or workmanship or not to conform to specifications, drawings, blueprints and/or samples, Seller shall, upon prompt notice thereof, either examine the products where they are located or issue shipping instructions for return to Seller (transportation-charges prepaid by Buyer). In the event any of our products are proved to be other than as warranted, transportation costs (cheapest way) to and from Seller's plant, will be borne by Seller and reimbursement or credit will be made for amounts so expended by Buyer. Every such claim for breach of these warranties shall be deemed to be waived by Buyer unless made in writing within ten (10) days from the date of discovery of the defect.

The above warranties shall not extend to any products or parts thereof which have been subjected to any misuse or neglect, damaged by accident, rendered defective by reason of improper installation or by the performance of repairs or alterations outside of our plant, and shall not apply to any goods or parts thereof furnished by Buyer or acquired from others at Buyer's request and/or to Buyer's specifications. Routine (regularly required) calibration is not covered under this limited warranty. In addition, Seller's warranties do not extend to the failure of tubes, transistors, fuses and batteries, or to other equipment and parts manufactured by others except to the extent of the original manufacturer's warranty to Seller.

The obligations under the foregoing warranties are limited to the precise terms thereof. These warranties provide exclusive remedies, expressly in lieu of all other remedies including claims for special or consequential damages. SELLER NEITHER MAKES NOR ASSUMES ANY OTHER WARRANTY WHATSOEVER, WHETHER EXPRESS, STATUTORY, OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS, AND NO PERSON IS AUTHORIZED TO ASSUME FOR SELLER ANY OBLIGATION OR LIABILITY NOT STRICTLY IN ACCORDANCE WITH THE FOREGOING.