

INSTRUCTION SHEET

FOR
80 SERIES

TERMALINE®

LOAD RESISTOR

These loads are portable, general purpose 50 ohm coaxial transmission line terminations. They are self-contained units, liquid free and air cooled, requiring no outside power source or additional equipment. They provide accurate, dependable, and practically nonreflective terminations for testing and adjusting RF transmitters under nonradiating conditions. These loads are useful for the following purposes:

- a. As a substitute antenna.
 1. For tuning RF transmitters under nonradiating conditions.
 2. For making routine tests and adjustments.
- b. As a substitute for any circuit loading element.
- c. To measure, with a suitable indicating device, the power output of any coaxially transmitted RF signal within their rating.

They can absorb their maximum rated RF power continuously and dissipate it harmlessly as heat over their entire frequency range. Because they are dry, they are attitude insensitive and can therefore be used in any position. These loads are normally equipped with a fixed RF connector, and the only other item required is a mating connector on the coaxial transmission line to which the load will be connected. Consult the Specification Table, for a listing of individual load details.

Allow at least six inches of clearance around these units to permit an unimpeded access of convection air currents for adequate heat dissipation. Place the loads to permit the shortest possible cable length between the units and the transmitting equipment.

These loads by design are used for portable operation; however, they may be used in fixed installations. They are, in general, light enough to be attached directly to the mating RF connector of another device such as a Bird THRULINE® Wattmeter or simply set on the workbench. Attach the load resistor as close as possible to the equipment output and use only good connectors. Try to connect direct to minimize cable length and avoid the use of adapters as much as possible.

The resistive element in these TERMALINE® dry loads is individually selected for its accuracy, and enclosed in a heat sink housing. The housing is specially contoured inside to provide the load with its unusually low reflection characteristics throughout its entire frequency range.

These loads, being passive devices, have no indicators or operating controls and therefore no initial adjustments are required. They also require no special operating procedures or surveillance when the stated performance limits are not exceeded.

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*****
*                               C A U T I O N                               *
*                               *                                           *
* Do not operate these loads continuously above their *
* maximum power rating. *
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Connect the load to the transmitter equipment under test with 50 ohm coaxial cable where necessary (RG-8A/U, RG-9/U, RG-213/U or equal) equipped with a suitable plug which mates with the RF input connector of the load. After the transmitter has been connected to the load, proceed according to the transmitter manufacturer's instructions. When reconnecting the antenna, it may become necessary to slightly readjust the transmitter due to possible differences in VSWR between the load and the antenna system.

These units will sustain an input power moderately greater than their maximum rated power for short periods of time. Such loading must be spaced at reasonable intervals to allow sufficient time for cooling to a safe temperature. Apply the overload for a few minutes at most and allow at least a half hour for adequate cooling before again exceeding the rated maximum power limit. Because of the excess heat generated by overloading, touch the load with caution to avoid painful burns.

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*****
*                               W A R N I N G                               *
*                               *                                           *
* Never attempt to disconnect the equipment from the *
* transmission line while RF power is being applied. *
* Leaking RF energy is a potential health hazard. *
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TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Excessive Overheating	Transmitter power too high	Reduce transmitter power.
	Faulty RF resistor	Return to factory for repair.
High or Low dc Resistance Values	Faulty RF input connector	Return to factory for repair.
	Faulty RF resistor	Return to factory for repair.

The principle maintenance required by the operator is occasional cleaning of the load. Excessive collection of dust or dirt on the cooling surfaces could interfere with the efficient dissipation of heat. If the Teflon insulator or metallic contact surfaces of the connector should become dirty or grimy, wipe them off with a soft cloth. Use a contact cleaner that is self-drying and non residue-forming to clean the inaccessible internal parts.

With the rugged and simple construction of the loads, periodic inspection will be necessary only at about six month intervals. Inspection should include the items listed below:

a. Cleanliness - Keep the housing and connector free of grime.

b. DC Resistance - Check the condition of these load resistors by accurate measurement of the dc resistance between the inner and outer conductors of the RF input connector. Use a resistance bridge or ohmmeter with an accuracy of 1 percent or better at 50 ohms. The measured resistance should be a nominal 50 ohms.

c. Inspect the load for completeness and general condition of the equipment.

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*****
*                               W A R N I N G                               *
*                                                                 *
* Do not attempt to remove the resistive element from          *
* the load. Potentially toxic materials are used in            *
* it's construction.                                           *
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Due to the unitized nature of the construction of these loads, no repairs in the field are possible. Return the equipment to Bird Electronic Corporation for service. Please consult the factory.

SPECIFICATIONS FOR 80 SERIES TERMALINE® LOAD RESISTORS

Impedance.....	50 ohms nominal
Ambient Temperature.....	-40°C to +45°C (-40F to +113F)
Cooling Method.....	Natural Air Convection
Operating Position.....	Any

Continued

MODEL	MAX.	VSWR	CONN.	MAX. WATTS	FREQ. MHZ	SIZE	WT. OZ.	PLATED FINISH
8010	1.06 1.08 1.12	dc-1000 1000-2000 2000-3000	N-F	2	dc-3000	1-5/8"L x 11/16" DIA (41.3 x 17.5 mm)	1.75 (49.6 g)	Nickel
8011	"	"	N-M	2	dc-3000	1-3/4"L x 11/16" DIA (44.5 x 17.5 mm)	1.75 (49.6 g)	Nickel
8015	"	"	TNC-M	2	dc-3000	1-1/2"L x 11/16" DIA (38 x 17.5 mm)	1.75 (49.6 g)	Nickel
8016	"	"	TNC-F	2	dc-3000	1-11/32"L x 11/16" DIA (34 x 17.5 mm)	1.75 (49.6 g)	Nickel
80F	1.1 1.2 1.3	dc-1000 1000-3500 3500-4000	N-F	5	dc-4000	3-1/4"L x 11/16"Hex (82.6 x 17.5 mm)	4 (113 g)	Silver
80M	"	"	N-M	5	dc-4000	3-3/8"L x 11/16"Hex (85.7 x 17.5 mm)	4 (113 g)	Silver
80CF	"	"	C-F	5	dc-4000	3-3/16"L x 11/16"Hex (81 x 17.5 mm)	4 (113 g)	Silver
80CM	"	"	C-M	5	dc-4000	3-13/32"L x 11/16"Hex (86.5 x 17.5 mm)	4 (113 g)	Silver
80BNCF	"	"	BNC-F	5	dc-4000	3-7/64"L x 11/16"Hex (79 x 17.5 mm)	4 (113 g)	Silver
80BNCM	"	"	BNC-M	5	dc-4000	3-5/16"L x 11/16"Hex (84 x 17.5 mm)	4 (113 g)	Silver
80TNCF	"	"	TNC-F	5	dc-4000	3-7/64"L x 11/16"Hex (79 x 17.5 mm)	4 (113 g)	Silver
80TNCM	"	"	TNC-M	5	dc-4000	3-5/16"L x 11/16"Hex (84 x 17.5 mm)	4 (113 g)	Silver
80SCF	1.1 1.2 1.3	dc-1000 1000-3500 3500-4000	SC-F	5	dc-4000	3-9/16"L x 11/16"Hex (90.5 x 17.5 mm)	4 (113 g)	Silver
80SCM	"	"	SC-M	5	dc-4000	3-41/64"L x 11/16"Hex (92.5 x 17.5 mm)	4 (113 g)	Silver
8052	1.1 1.2	dc-1000 1000-3500	N-F	10	dc-3500	3-11/32": x 11/16"Hex (85 x 17.5 mm)	4.7 (133 g)	*
8053	"	"	N-M	10	dc-3500	3-15/32": x 11/16"Hex (88 x 17.5 mm)	4.7 (133 g)	*

*Nickel Plate plus Lusterless Black Enamel (Federal Specification TT-E-527)