KINTRONIC LABS™

An ISO 9001 registered company

KTL FM DUMMY LOAD DL-5/7.5K-FM

INSTALLATION INSTRUCTIONS

INSTALLATION INSTRUCTIONS – KTL DUMMY LOAD DL-5/7.5K-FM

MAILING ADDRESS: PO Box 845, Bristol, TN 37621-0845

SHIPPING ADDRESS: 144 Pleasant Grove Rd., Bluff City, TN 37681

PHONE: +1 423 878-3141 **e-mail:** KTL@kintronic.com **website:** www.kintronic.com

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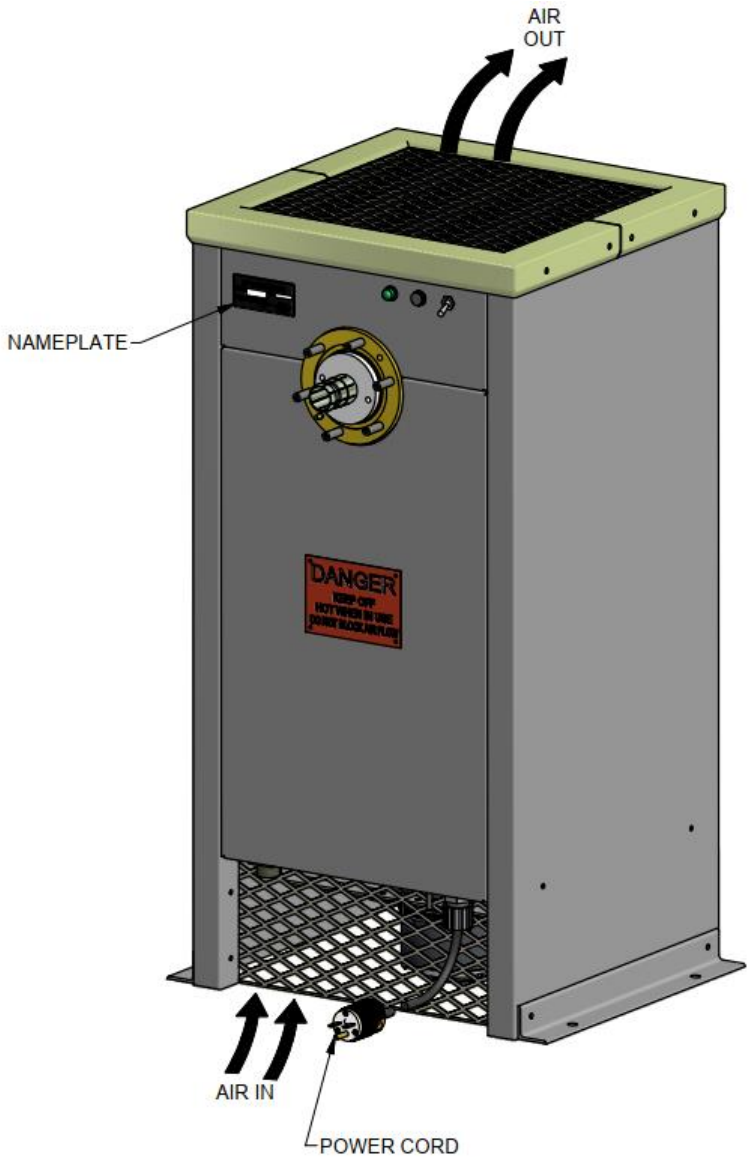

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INTRODUCTION

The DL-5/7.5K-FM is a dry, convection cooled, resistive type dummy load. The unit has no fans or blowers and requires no line power to operate.

Kintronic Labs Inc. has prepared this manual to ensure the most effective use of the test load. However, before attempting to use this product, it is important that this manual be carefully reviewed. Particular attention should be given to cautionary remarks and statements, which involve the proper operation of the product and the safety of the operator.

Please carefully read over the following:

*****WARNING*****
CABINET HOUSING WILL BECOME
HOT DURING OPERATION – DO NOT TOUCH

This unit may be operated at full power rating only when ambient air temperature is not above 125°F (51.67°C).

Be sure to provide adequate clearance for free flow of air through the unit.

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INSTALLATION

1. Unpack unit from shipping container and inspect for possible shipping damage. *Claims for damage in shipping must be filed promptly with the transportation company.*

2. Place unit in operating location. Be sure that there is sufficient clearance on each side for free flow of air through intake and outlet grates. Do not install unit near other heat sources.

3. Use unit grounding stud to provide a secure electrical ground separate from RF ground.

   --- The RF TEST LOAD DL-5/7.5K-FM is now ready for operation ---

4. If optional interlock is included, prepare cable using plug provided and connect transmitter to interlock circuit receptacle on the front panel. See schematic for interlock circuit pin identification and accompanying theory for an explanation of interlock circuit operation.

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OPERATION

1. Check that installation requirements were properly carried out particularly with regards to the following:

    a. Be sure that there is no obstruction to air flow at both top and bottom of unit.

    b. Be sure that there exists an electrical ground to unit frame which is separate from RF input.

2. Connect transmitter RF cable to load RF input. If necessary, provide support to prevent any shearing or bending stress to connector.

3. While performing the following steps, be sure that transmitter power output, including modulation, does not exceed 5 kW continuous or 7.5 kW intermittent (30 min. on; 30 min. off).

***** WARNING *****
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4. Apply power to the transmitter and proceed with normal operation.

5. To discontinue operation:

    a. Shut down transmitter.

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MAINTENANCE

***** WARNING *****
DISCONNECT AC POWER BEFORE SERVICING UNIT

Access to components can be gained by removal of top cover, which is secured by eight Phillips screws.

PERIODIC INSPECTION AND SERVICING

1. The RF input connector should be kept clean at all times. It is recommended that a protective cover be placed over the RF connector when the coaxial cable is not installed.

2. The following should be performed at intervals of one to six months, depending upon usage:

    a. Remove accumulations of dust, dirt and other obstructions to air flow.

    b. Inspect and tighten hardware as required.

3. Cabinet may be cleaned with mild detergent and warm water.

LOAD TESTS AND REPAIRS

1. The load should be stabilized at room temperature before making any measurements.

2. A vector-impedance meter should be used to measure VSWR across resistive load at RF input connector.

3. Use matching coaxial adapters (50 Ω) between the vector-impedance meter and RF input to load.

4. Impedance measurements should be made at frequencies that fall within the frequency range of particular load used.

5. If high VSWR is noted, the DC resistance of the load may be checked at the RF connector. A bridge-type (Wheatstone) ohmmeter should be used for DC resistance measurements.

6. Any value between 47.5 and 52.5 Ω is acceptable. Individual resistors should measure within 10% of indicated value.

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THEORY OF OPERATION

The DL-5/7.5K-FM Dummy Load consists of sixteen 200Ω resistors arranged in two parallel banks. Each bank contains two decks in series consisting of four parallel resistors. Each parallel bank of resistors provides 100Ω of resistance. Together, the two parallel banks provide 50Ω resistance. This resistance can be measured between the center and outer conductors of the coaxial connector.

The associated transmitter output is applied to the resistor load at the 1-5/8" EIA (or optional 3-1/8" EIA) coaxial connector. This same output power is dissipated as resistive heat. The heat is then removed by the circulation of ambient air currents.

The schematic illustrates operation of optional interlock circuit. Contacts are shown in overtemperature (unsafe) position.

The interlock thermostat is set for 250°F. Excessive temperatures will cause the normally-closed circuit between terminals A and B to OPEN and the normally-open circuit between terminals A and C to CLOSE.

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APPENDICES

Recommended Spare Parts

Reference No.	Description	Part No.
R1 – R16	200Ω resistor	KTL-FM200
	Mounting Clip	W92-X112-10
	RF Connector, 1-5/8	STO-250
	(Optional 3-1/8")	KUP14A55120VAC
	Interlock Connector	KTL-25KW-FM-M
	Interlock Mating Plug	1052A5
	*Interlock Thermostat	MS3102A16S-5P

*If supplied as option with unit

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SPECIFICATIONS

RF CHARACTERISTICS	
Rated power, continuous	5 kW
Rated power, intermittent (30 min on; 30 min off)	7.5 kW
Frequency Range	DC – 110 MHz
VSWR (maximum)	1.1:1
Impedance, nominal	50Ω
Input connector	1-5/8" EIA
(optional)	3-1/8" EIA
OPERATING PERAMETERS	
Power Requirements	None
Ambient Temperature	-40 to 125°F (-42.78 to 51.67°C)
Ambient Humidity	0 to 95%
DIMENSIONS	
Width	21 inches (53cm)
Depth	21 inches (53cm)
Height	35 inches (89cm)
Weight	65 pounds (29.4kg)

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FACTORY SERVICE

Kintronic Laboratories, Inc.

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Mailing Address: PO Box 845, Bristol, TN 37621

Phone: (423) 878-3141

E-mail: ktl@kintronic.com

12 MONTH LIMITED WARRANTY

Kintronic Laboratories, Inc. warrants each unit of its manufacture to be free from defects in material and workmanship for a period of 12 months. Our obligation under this Warranty is limited to servicing and/or replacing defective parts of any unit returned to our factory for that purpose, and to making good at our factory any part or parts thereof, except those parts which normally wear out and have a short life, such as, but not limited to, bulbs, fuses, belts, filter cartridges, semi-conductor devices, seals and wear items, within 12 months after shipment from our plant as determined by original invoice to the original purchaser.

Repaired materials and associated labor are covered for a 6 month period only on the work performed. Similarly, repair parts sold separately are covered for a six month period and are limited to repair or replacement of the part(s) at our plant.

The defective equipment must be brought to our attention in writing and must be returned to us only if we have so authorized in writing, with round-trip transportation charges having been prepaid by buyer, for examination and correction by us, if the defect is covered under this Warranty, as determined by our inspection. If the defect has been caused by misuse, customer installation error, abnormal conditions of operation, neglect, repair or attempted repair by anyone not authorized by **Kintronic Laboratories, Inc.**, or if the repairs are for ordinary, minor adjustments, calibration adjustments, and/or ordinary maintenance items, the same are deemed not to be covered by this Warranty and will be repaired, corrected and/or replaced and will be billed under the normal rate schedules of **Kintronic Laboratories, Inc.** In such case, an estimate will be submitted by **Kintronic Laboratories, Inc.** to customer before such work is undertaken and a written authorization to proceed will be required of buyer prior to initiation of repair functions.

If any fault develops, the following steps should be taken:

1. Notify us, giving full details of the difficulty, and include the model number and serial number, your name, email, and telephone number. On receipt of this information, we will give you service instructions and/or shipping instructions.

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2. On receipt of shipping instructions, forward the unit, round-trip freight prepaid and insured to the factory and repairs will be made at the factory subject to the foregoing.

Kintronic Laboratories, Inc. reserves the right to make changes in design at any time without incurring any obligation to install same on units previously sold.

This Warranty is expressly in lieu of all other obligations or liabilities on the part of **Kintronic Laboratories, Inc.** and **Kintronic Laboratories, Inc.** neither assumes nor authorizes any other person to assume for them, any other liability in connection with the sale of **Kintronic Laboratories, Inc.** products.

This Warranty applies regardless of conditions to the contrary that are included as part of the buyer's purchase order.

THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE AND THE SAME ARE HEREBY DISCLAIMED IN WHOLE OR IN PART, BY THE SELLER, AS BUYER HAS THOROUGHLY EXAMINED AND INSPECTED THE SUBJECT EQUIPMENT AND HAS ACCEPTED THE SAME IN "AS IS" CONDITION. IN THE EVENT LOCAL LAWS PROHIBIT THIS DISCLAIMER, THE DURATION OF THESE WARRANTIES SHALL BE LIMITED TO THE LENGTH OF TIME OF THIS WARRANTY.

The obligation of **Kintronic Laboratories, Inc.** under this Warranty is limited strictly to the terms set forth herein above and buyer, consumer or user of the products shall claim no setoff or counterclaim from any monies which may be due and owing **Kintronic Laboratories, Inc.** as a result of the sale of such product to such buyer, consumer or user, and **Kintronic Laboratories, Inc.** shall not be liable for any damages of any kind, whether incidental or consequential or otherwise, except for repair or replacement as set forth above.

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