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INSTRUCTION BOOK

OPERATING INSTRUCTIONS

**TERMALINE<sup>®</sup> LOAD RESISTOR  
SERIES 8578A**



**Bird Electronic Corporation**  
Cleveland (Solon) Ohio USA

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## Safety Precautions

### Keep Away From Live Circuits

Operating personnel must at all times observe normal safety regulations. Do not replace components or make adjustments to equipment with the high voltage supply turned on. To avoid casualties, always remove power.

### Do Not Service Or Adjust Alone

Under no circumstances should any person reach into an enclosure for the purpose of service or adjustment of equipment except in the presence of someone who is capable of rendering aid.

### Safety Earth Ground

An uninterruptible earth safety ground must be supplied from the main power source to test instruments. Grounding one conductor of a two conductor power cable is not sufficient protection. Serious injury or death can occur if this grounding is not properly supplied.

### Shock Hazard

Do not attempt to disconnect an RF transmission line while RF power is present. Radiated RF power is a potential health hazard.

### Safety Symbols

#### WARNING


Warning notes call attention to a procedure, which if not correctly performed could result in personal injury.

#### CAUTION

Caution notes call attention to a procedure, which if not correctly performed could result in damage to the instrument.



This symbol appears on the equipment indicating there is important information in the instruction manual regarding that particular area.

 Note: Calls attention to supplemental information.

## Warning Statements

The following safety warnings appear in the text where there is danger to operating and maintenance personnel and are repeated here for emphasis.

### WARNING

Do not insert a screwdriver or any thin metal objects through the perforated cooling air grilles while the load is in operation. The power within the unit could arc over and will cause serious injury to personnel and damage to the unit.

### WARNING

Disconnect this unit from ac and RF power sources before any disassembly for repair or replacement procedures. The potential for electrical shock exists.

### WARNING

Surface can reach temperatures in excess of 100°C when power is applied to load.

### WARNING

Limit the interlock terminal to less than 30 Vrms. Although the interlock terminal is rated to 230 Vac, the potential for electrical shock exists.

## Caution Statements

The following equipment cautions appear in the text whenever the equipment is in danger of damage and are repeated here for emphasis.

### CAUTION

Connect ac line and interlock before RF operation.

### CAUTION

Do not apply more than the rated RF power to load. Excessive RF power will damage the load resistors.

### CAUTION

Do not block airflow. Air enters housing through perforated grilles at the top of the unit and exhausts through lower grilles of the unit. Blocking these grilles could cause unit failure.

## CAUTION

Ensure the 115/230 voltage selector on the 8578A is set to the proper voltage before ac power is applied.



### Safety Statements

#### USAGE

ANY USE OF THIS INSTRUMENT IN A MANNER NOT SPECIFIED BY THE MANUFACTURER MAY IMPAIR THE INSTRUMENT'S SAFETY PROTECTION.

#### USO

EL USO DE ESTE INSTRUMENTO DE MANERA NO ESPECIFICADA POR EL FABRICANTE, PUEDE ANULAR LA PROTECCIÓN DE SEGURIDAD DEL INSTRUMENTO.

#### BENUTZUNG

WIRD DAS GERÄT AUF ANDERE WEISE VERWENDET ALS VOM HERSTELLER BESCHRIEBEN, KANN DIE GERÄTESICHERHEIT BEEINTRÄCHTIGT WERDEN.

#### UTILISATION

TOUTE UTILISATION DE CET INSTRUMENT QUI N'EST PAS EXPLICITEMENT PRÉVUE PAR LE FABRICANT PEUT ENDOMMAGER LE DISPOSITIF DE PROTECTION DE L'INSTRUMENT.

#### IMPIEGO

QUALORA QUESTO STRUMENTO VENISSE UTILIZZATO IN MODO DIVERSO DA COME SPECIFICATO DAL PRODUTTORE LA PROIZIONE DI SICUREZZA POTREBBE VENIRNE COMPROMESSA.



#### SERVICE

SERVICING INSTRUCTIONS ARE FOR USE BY SERVICE -TRAINED PERSONNEL ONLY. TO AVOID DANGEROUS ELECTRIC SHOCK, DO NOT PERFORM ANY SERVICING UNLESS QUALIFIED TO DO SO.

## SERVICIO

LAS INSTRUCCIONES DE SERVICIO SON PARA USO EXCLUSIVO DEL PERSONAL DE SERVICIO CAPACITADO. PARA EVITAR EL PELIGRO DE DESCARGAS ELÉCTRICAS, NO REALICE NINGÚN SERVICIO A MENOS QUE ESTÉ CAPACITADO PARA HACERLO.

## WARTUNG

ANWEISUNGEN FÜR DIE WARTUNG DES GERÄTES GELTEN NUR FÜR GESCHULTES FACHPERSONAL.

ZUR VERMEIDUNG GEFÄHRLICHE, ELEKTRISCHE SCHOCKS, SIND WARTUNGSARBEITEN AUSSCHLIEßLICH VON QUALIFIZIERTEM SERVICEPERSONAL DURCHZUFÜHREN.

## ENTRETIEN

L'EMPLOI DES INSTRUCTIONS D'ENTRETIEN DOIT ÊTRE RÉSERVÉ AU PERSONNEL FORMÉ AUX OPÉRATIONS D'ENTRETIEN. POUR PRÉVENIR UN CHOC ÉLECTRIQUE DANGEREUX, NE PAS EFFECTUER D'ENTRETIEN SI L'ON N'A PAS ÉTÉ QUALIFIÉ POUR CE FAIRE.

## ASSISTENZA TECNICA

LE ISTRUZIONI RELATIVE ALL'ASSISTENZA SONO PREVISTE ESCLUSIVAMENTE PER IL PERSONALE OPPORTUNAMENTE ADDESTRATO. PER EVITARE PERICOLOSE SCOSSE ELETTRICHE NON EFFETTUARE ALCUNA RIPARAZIONE A MENO CHE QUALIFICATI A FARLA.



USE CORRECT VOLTAGE SETTING AND FUSE - SEE MANUAL.

UTILISER UNE TENSION ET UN FUSIBLE CORRECTS - CONSULTER LE MODE D'EMPLOI.

USE LA INSTALACION Y FUSIBLE DE VOLTAJE CORRECTO - VEA EL MANUAL.

AUSSCHLIESSLICH VORSCHRIFTSMÄSSIGE  
WECHSELSPANNUNGS-EINSTELLUNG UND  
SICHERUNG BENUTZEN - SIEHE DAZU HANDBUCH.

UTILIZZARE TENSIONE E FUSIBILE ADATTI - FARE  
RIFERIMENTO AL MANUALE.



BE SURE THE 115/230V AC VOLTAGE SELECTOR IS  
SET TO THE PROPER LINE VOLTAGE, AND THE COR-  
RECT AC LINE FUSE IS INSTALLED BEFORE AC  
POWER IS APPLIED.

S'ASSURER QUE LE SÉLECTEUR DE TENSION  
115/230V C.A. EST BIEN RÉGLÉ POUR LA TENSION DU  
RÉSEAU ET QUE LE FUSIBLE DE LIGNE C.A. COR-  
RECT EST EN PLACE AVANT DE METTRE SOUS TEN-  
SION C.A.

CERCIORESE QUE EL SELECTOR DE VOLTAJE DE  
115/230V CA ESTE COLOCADO A LA LINEA DE  
VOLTAJE APROPIADA Y QUE EL FUSIBLE ESTE  
INSTALADO A LA LINEA CA ANTES DE APLICAR LA  
CORRIENTE ALTERNA.

VOR EINSCHALTEN DER WECHSELSTROMZUFUHR  
SICHERSTELLEN, DASS DER 115/230V  
WECHSELSPANNUNGS-SELEKTOR AUF DIE  
VORSCHRIFTSMÄSSIGE LEITUNGSSPANNUNG  
EINGESTELLT UND DIE RICHTIGE  
WECHSELSTROM-HAUPTSICHERUNG EINGESETZT  
IST.

PRIMA DI EROGARE CORRENTE, ASSICURARSI CHE  
IL SELETTORE DI VOLTAGGIO 115/230 V.C.A. SIA  
REGOLATO CORRETTAMENTE E CHE IL FUSIBILE  
ADATTO ALLA LINEA DI ALIMENTAZIONE C.A. SIA  
INSTALLATO.



CONNECT INTERLOCK TO TRANSMITTER BEFORE  
OPERATING.

BRANCHER LE VERROUILLAGE À L'ÉMETTEUR  
AVANT EMPLOI.

CONECTE EL INTERBLOQUEO AL TRANSMISOR AN-  
TES DE LA OPERACION.

VOR INBETRIEBNAHME VERRIEGELUNG AM SENDER  
ANSCHLIESSEN.

PRIMA DI METTERE IN FUNZIONE L'APPARECCHIO,  
COLLEGARE IL DISPOSITIVO DI BLOCCO AL  
TRASMETTITORE.



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## About This Manual

This instruction book covers the models 8578A100 and 8578A150 Termaline Load Resistors.

This instruction book is arranged so that essential information on safety appears in the front of the book. Reading the Safety Precautions Section before operating the equipment is strongly advised.

The remainder of this Instruction Book is divided into Chapters and Sections. At the beginning of each chapter, a general overview describes the contents of that chapter.

### Operation

First time users should read Chapter 1 - Introduction, Chapter 2 - Theory Of Operation, and Chapter 3 - Installation, to get an overview of equipment capabilities and installation. An experienced operator can refer to Chapter 4 - Operating Instructions. All instructions necessary to operate equipment appear in this chapter.

### Maintenance

All personnel should be familiar with preventative maintenance found in Chapter 5 - Maintenance. If a failure should occur, the troubleshooting section will aid in isolating and repairing the failure.

### Parts

For location of major assemblies or parts, refer to the parts lists and associated drawings in Chapter 5.

### Changes To This Manual

We have made every effort to ensure this manual is accurate. If you should discover any errors or if you have suggestions for improving this manual, please send your comment to our factory. This manual may be periodically updated. When inquiring about updates to this manual refer to the part number and revision level on the title page.



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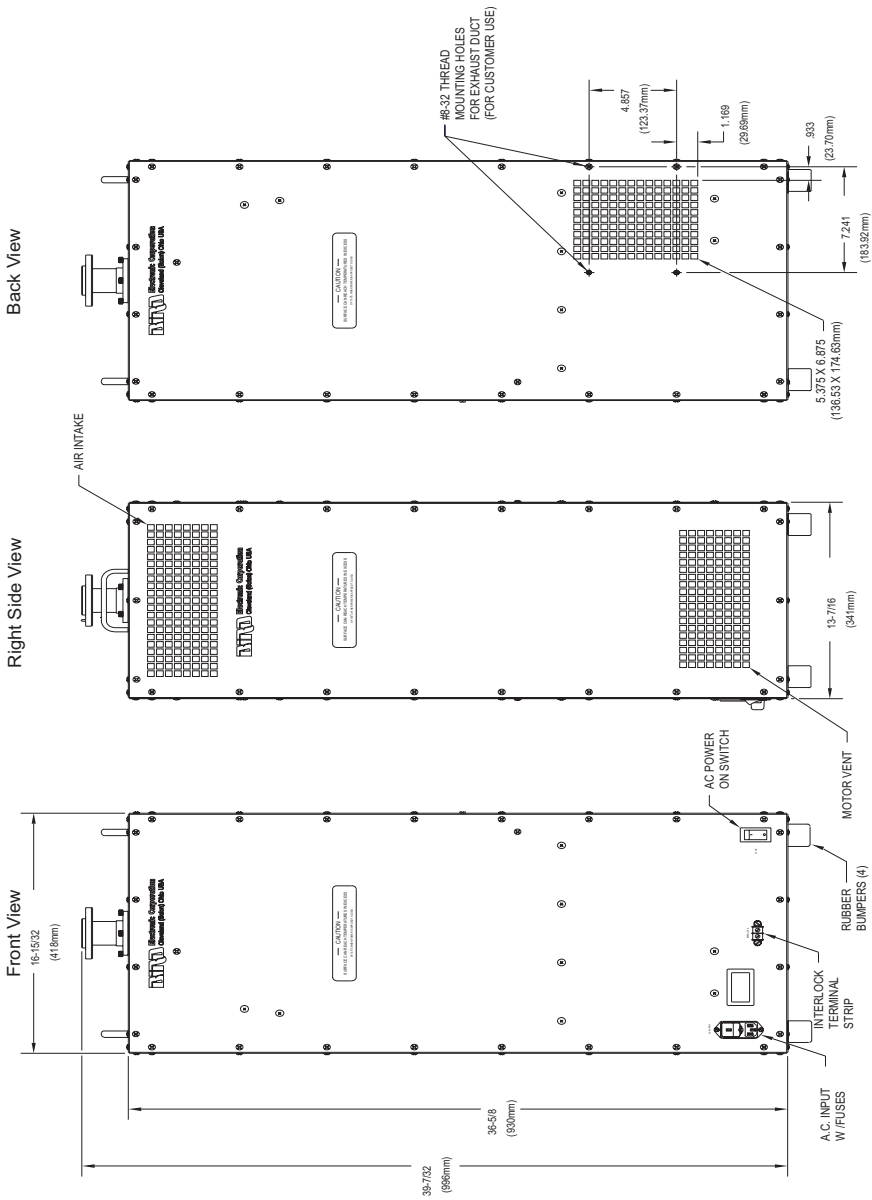
## Table Of Contents

Safety Precautions. . . . .	i
Warning Statements. . . . .	ii
Caution Statements . . . . .	ii
About This Manual . . . . .	vii
<b>Introduction . . . . .</b>	<b>.1</b>
General . . . . .	.1
Description. . . . .	.1
Items Supplied . . . . .	1
Specifications . . . . .	.2
Unpacking and Inspection . . . . .	.3
Site and Shelter Requirements . . . . .	.3
<b>Theory Of Operation . . . . .</b>	<b>.5</b>
General . . . . .	.5
RF Section Description. . . . .	.5
Heat Transfer . . . . .	.5
Interlock Control Circuit . . . . .	.5
<b>Installation . . . . .</b>	<b>.7</b>
Location Mounting . . . . .	.7
Placement . . . . .	.7
Interlock Connections . . . . .	.7
AC Line Attachment. . . . .	.8
Connecting RF Line . . . . .	.8

Removal of the 1-5/8" EIA Swivel Flange Connector.. . . . .	.8
Attachment of the 3-1/8" Unflanged Conductor . . . . .	.9
<b>Operating Instructions . . . . .</b>	<b>.11</b>
General. . . . .	.11
Load Power . . . . .	.11
Operation Under Normal and Abnormal Conditions . . . . .	.11
Shut Down . . . . .	.11
Measurement and Monitoring of RF Power . . . . .	.12
<b>Maintenance . . . . .</b>	<b>.13</b>
Troubleshooting . . . . .	.13
Cleaning . . . . .	.14
Outside Surfaces . . . . .	.14
Interior Surfaces . . . . .	.14
Enclosure Disassembly . . . . .	.14
Diagnosing the RF Assembly. . . . .	.15
Replacing resistors . . . . .	.15
Assembly. . . . .	.15
Motor Blower Assembly Replacement . . . . .	.16
Reinstallation . . . . .	.16
Fuse and AC Line Module . . . . .	.17
Replacement of the AC Line Module . . . . .	.17
Customer Service . . . . .	.18
Preparation for Storage or Shipment . . . . .	.19
Storage . . . . .	.19
Shipment . . . . .	.19
Replacement Parts List . . . . .	.20



Figure 1  
Model  
8578A10  
0



**General** The Models 8578A100 and 8578A150 are air cooled, high powered Termaline Load resistors designed to be quiet, rugged and trouble free. They are rigid RF line terminations used as dummy antennas. They are forced air cooled and are capable of dissipating RF line power up to 10 or 15 kW, depending on the model. Virtually maintenance free and simple to operate, these units should provide years of trouble free operation yet are field repairable in the event of failure of the load resistor or other components. The RF sections are composed of a parallel combination of resistors.

**Description** The units are rectangular in shape. They are supported on the bottom by four bumper feet. The RF input connector is located on the top center of the unit. Perforated side panel grilles at the top and bottom of the units allow for direct forced air cooling of the resistors. The ac power receptacle, ON/OFF switch and transmitter interlock are located on the front panel of the unit. The rear and side panels are removable for servicing. Refer to Figure 1, Outline Drawing.

### WARNING

Do not insert a screwdriver or any thin metal objects through the perforated cooling air grilles while the load is in operation. The power within the unit could arc over and will cause serious injury to personnel and damage to the unit.

### Items Supplied

The following items are supplied with the 8578A.

- (1) — Instruction Book
- (2) — Fuses, 6.3A, T, for 115V operation
- (2) — Fuses, 3.15A, T, for 230V operation
- (1) — AC Line Cable

## Specifications

Impedance	50 ohms nominal
<b>VSWR</b>	
Model 8578A100	1.15:1 maximum dc-108 MHz
Model 8578A150	1.15:1 maximum 87.5-108 MHz
<b>Connectors</b>	Standard— 1-5/8" Diameter Swivel Flange Optional— 3-1/8" Diameter Unflanged
<b>Power Rating</b>	
Model 8578A100	10 kW continuous duty
Model 8578A150	15 kW continuous duty
<b>Frequency Range</b>	
Model 8575A100	dc - 108 MHz
Model 8578A150	87.5 - 108 MHz
<b>Dimensions:</b>	
without connector:	13-7/16"L x 16-15/32"W x 39- 7/32"H (341 x 418 x 996 mm)
with connector:	13- 7/32" x 16-15/32" x 36-5/8" (341 x 418 x 930 mm)
<b>Ambient Temperature</b>	-40°C to +40°C (-40°F to 104°F)
<b>Interlock contact rating</b>	10 Amp @ 120 Vdc 5 Amp @ 250 Vac
<b>Cooling Method</b>	Forced air cooled
<b>Weight, Nominal</b>	70 lb (31.8 kg)
<b>AC Power Requirements</b>	115Vac, 5 Amps Nominal 230Vac, 2.5 Amps Nominal 50/60 Hz.
<b>Fuses:</b>	
115 Volt operation	5 x 20mm Time-delay 6.3 Amp
230 Volt operation	5 x 20mm Time-delay 3.15 Amp
<b>Finish</b>	Grey Powder Coat



**Unpacking  
and  
Inspection**

1. Carefully inspect the shipping container for signs of damage. If damage is noticed, do not unpack the unit. Immediately notify the shipping carrier and Bird Electronic Corporation of the damage.
2. If the container is not damaged, unpack the unit. Save the packing materials for repacking.
3. Inspect all of the components for visual signs of damage. Immediately notify the shipping carrier and Bird Electronic of equipment damage or missing parts.

**Site and  
Shelter  
Requirements**

The equipment is not intended for outdoor use, or use in areas of condensing humidity. The surrounding air must be free of contaminants or particles that could be drawn into the air intakes. These load resistors have no intermediate dielectric fluids or coolant and require no cooling water hookups. The unit should be placed where adequate space is available for air circulation and an ac power source is available.

Do not enclose the unit in a small room or closet without proper ventilation. In small rooms or restricted areas, the heat given off by the unit may increase the ambient temperature to an unacceptable level for sufficient cooling of the resistors.



## **Chapter 2**

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### **Theory Of Operation**

<b>General</b>	The 8578A series consists of high powered, air-cooled, RF loads used for termination of coaxial transmission lines. The RF energy, when converted into heat, is transmitted directly to the surrounding area by the forced air system.
<b>RF Section Description</b>	The RF section, of the 8578A series, is composed of a parallel combination of tubular resistors. These resistors are carefully positioned to provide a reduction in surge impedance proportional to the distance along the resistive system, which finally terminates to the housing forming the return path for the coaxial circuit. This produces a very uniform and almost reflectionless line termination over the stated frequencies of the load resistor.
<b>Heat Transfer</b>	The resistors used in the 8578A are of a tubular type, situated in a vertical position within their housing. When the unit is in operation, a fan located at the bottom of the unit draws air into the top grille openings and directs it over the RF resistor network. The heat, developed in the resistors from dissipation of the RF energy, is carried off by the flow of air over the resistors surface. The hot air is then exhausted through the lower grille openings in the unit.
<b>Interlock Control Circuit</b>	The interlock control circuit provides fail-safe protection of the transmitter and load resistor in the event of an ac power failure to the blower assembly. This protection is necessary because dissipation of the heat generated by the RF power is critically dependent upon a required minimum flow of cooling air at all times. If the airflow over the resistor array should stop or be restricted and the temperature in the RF chamber should rise beyond a safe limit, the heat sensor unit will sense the change and actuate the interlock relay to reverse the process and turn off the transmitter. The interlock system will not permit re-operation of the transmitter until the air flow is restored and a safe low temperature in the RF housing is once again attained.



### Location Mounting

There are no provisions for mounting of these units. These units are designed for use in a vertical position, however, if the situation should arise, they may be used in any position. If the unit is to be used in any other position, be sure the mounting is substantial and clearance around the load is maintained for cooling.

#### CAUTION

Do not block airflow. Air enters housing through perforated grilles at the top of the unit and exhausts through lower grilles of the unit. Blocking these grilles could cause unit failure.

### Placement

For ease of movement, hold the two handles on each side of the RF input connector, located at the top center of the unit. Move the unit into position, and rest it on the four bumper feet.

#### WARNING

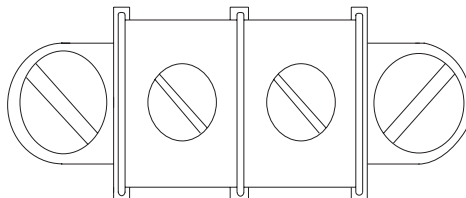
Limit the interlock terminal to less than 30 Vrms. Although the interlock terminal is rated to 230 Vac, the potential for electrical shock exists.

### Interlock Connections

There are two terminals on the interlock connection of the load, with a rating of 10 A @ 120 Vac and 5 A @ 250 Vac. Check the requirements of the transmitter interlock and make the connections to the appropriate terminals as required.

1. Attach the transmitter interlock connections to the two binding posts on the control panel. See figure 2.

*Figure 2  
Interlock  
Terminal*




**CAUTION**

Ensure the 115/230 voltage selector on the 8578A is set to the proper voltage before ac power is applied.

**AC Line Attachment**

The ac power supply may be either 115 or 230 volts depending on the unit requirements. AC is supplied to the power entry module by means of a cable and matching plug that is furnished with the load equipment. For proper protection, if a 3-wire type plug and outlet is not used, fasten the green wire at the supply end to a satisfactory ground. Do not apply RF power to the unit unless the power cord is connected and the ON/OFF switch is in the ON position.

 **NOTE:** Make sure the proper fuses are used. The unit is shipped with fuses installed for 115V usage. If the unit is to be used at 230V, install the 3.15A fuses as shown on page 17.

**Connecting RF Line**

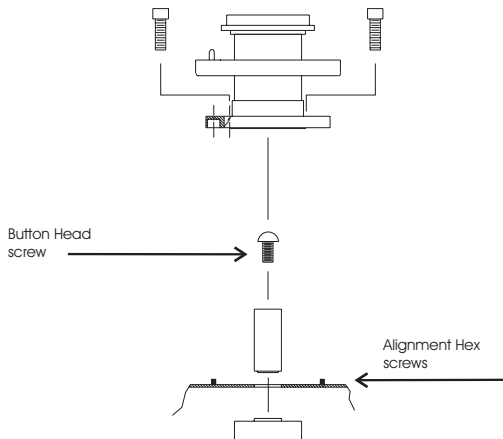
After installation of the load, the coaxial RF transmission line may be attached using the standard 1-5/8" EIA Swivel Flange Connector or the optional 3-1/8" Unflanged Connector kit p/n 8731A700.

**Removal of the 1-5/8" EIA Swivel Flange Connector.**

While following these instructions, refer to figure 3.


1. Using a Hex Key, remove and retain the 4 hex screws holding the Swivel Flange Connector to the top of the unit.
2. Remove and retain the Button head screw located in the center of the Inner Conductor.

*Figure 3  
Replacement  
of Flanged  
Connector.*



### **Attachment of the 3-1/8" Unflanged Conductor**

1. Attach the new Inner Conductor using the button head screw.
2. Attach the 3-1/8" Unflanged Connector with 2 hex screws to the unit by aligning the alignment holes over the 2 hex screws in the top of the unit.

 Note: The coupling must be fastened with all 4 of the screws. Tighten evenly all around.





### General

The Models 8578A100 and 8578A150 have only one operating control, the ON/OFF switch. When installed the only requirement is for the ON/OFF switch to be placed in the ON position. The unit is now ready to accept RF power. Once the unit is set, there is no need for the presence of an operator.

### Load Power

#### CAUTION

Do not apply more than the rated RF power to the load. Excessive RF power will damage the load resistor.

Do not operate above the rated capacity; i.e. 10kW or 15kW of power. The unit will handle a small percentage of overload until the interlock system's sensor relay opens due to over temperature and turns off the transmitter. If a large amount of overloading occurs, resistor failure is eminent before the interlock system reacts.

Shortly after load power has been applied, the RF line may be too hot to touch. Disconnect only while following the Shut Down procedure.

#### WARNING

Limit the interlock terminal to less than 30 Vrms. Although the interlock terminal is rated to 230 Vac, the potential for electrical shock exists.

### Operation Under Normal and Abnormal Conditions

The interlock is for proper operation at the rated ambient condition of 40°C (104°F).

Model 8578A100 - The normally closed relay opens at 86°C  $\pm$  3°C (186.8°F  $\pm$  5.4°F) and closes at 80°C  $\pm$  3°C (176°F  $\pm$  5.4°F).

Model 8578A150 - The normally closed relay opens at 125°C  $\pm$  3.5°C (257°F  $\pm$  6.3°F), and closes at 100°C  $\pm$  5°C (212°F  $\pm$  9°F).

### Shut Down

When operation of the load has been completed, follow these steps for shut down.

1. *Always*, turn transmitter off first.

**WARNING**

Surface temperatures in excess of 100°C when power is applied to load.

2. The RF Line may be disconnected at this time.
3. Allow fan motor to continue running for a few minutes to cool the resistive elements and the surface.
4. Remove ac power.

**Measurement  
and  
Monitoring of  
RF Power**

The Models 8578A100 and 8578A150 Load Resistors may be used in conjunction with any one of the various Bird rigid coaxial line Thruline Wattmeters. When fitted with the appropriate line section and wattmeter, either model becomes a useful tool for tuning and adjusting a transmitter as well as monitoring RF power directly in watts. Call a Bird Sales office for more information about Thruline wattmeters.

Troubleshooting

WARNING

Disconnect this unit from ac and RF power sources before any disassembly for repair or replacement procedures. The potential for electrical shock exists.

For corrections requiring repair or replacement of components, refer to the appropriate section for your specific model. Only those functions within the scope of normal maintenance are listed. This manual can not list all malfunctions that may occur, or corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify a qualified service center.

Problem	Possible Cause	Possible Correction
Load is not operating.	No ac power.	Make sure the ac line cord at the wall and at the ac line modules are completely inserted.
		Place power switch in the ON position.
		Replace fuse at the ac line module.
Interlock is active.	Overheating	Lower power at source.
		Make sure input or output openings for air are not restricted.
		Replace thermoswitch.
		Replace the blower assembly.
High resistance	One or more resistors failing.	Replace resistor or resistors.

## Cleaning

### Outside Surfaces

A main factor in effective preventive maintenance is cleanliness. For optimum performance and service life, the load must be kept in a clean, and dust-free condition. During periods of inaction, or if the unit is to be stored for a period of time, keep the unit covered with a cloth or plastic sheet. Keeping the unit covered prevents the intrusion of dust, dirt or moisture, especially to the RF connector. The outside surface of the unit should be wiped free of dust and dirt occasionally. When necessary the inner RF housing and the outside housing may be cleaned with a mild detergent solution on a cloth.

### Interior Surfaces

The back and side panels may be removed without difficulty for cleaning purposes. Give particular attention to the air intake and exhaust grilles. These grilles must be kept clear of dust, lint or any matter that may cause restriction of air-flow. Occasionally check the condition of the RF coaxial connection. If required, disconnect the unit from the transmission line and clean the RF connector parts, both metallic and insulator surfaces. When cleaning these parts and all other electrical parts, use an aerosol contact cleaner or any dry cleaning solvent. Use a cloth to wipe the surfaces; a swab stick is also useful for this purpose. When using solvents provide adequate ventilation and observe normal safety precautions.

## Enclosure Disassembly

### WARNING

Disconnect this unit from ac and RF power sources before any disassembly for repair or replacements procedures. The potential for electrical shock exists.

As mentioned previously, the Model 8578A100 and 8578A150 RF Loads are field repairable. To disassemble the enclosure proceed with the following steps:

1. Remove and retain the 22 Phillips head machine screws from the left side panel. Remove the housing panel.
2. Remove and retain the 22 Phillips head machine screws from the right side panel. Remove the housing panel.

With the RF housing panels removed, the resistor assembly can be tested and replaced if necessary.

**Diagnosing  
the RF  
Assembly**

The RF section for the Model 8578A100 is comprised of a parallel combination of 9 resistors resulting in a total nominal resistance of 55 ohms. The RF section for Model 8578A150 is comprised of a parallel combination of 12 resistors resulting in a total nominal resistance of 60 ohms. If there has been a drastic change in the resistance of the load or if you have reason to suspect a resistor has failed, the following procedure may be helpful in finding a faulty resistor.

1. Make a visual inspection of all the resistors.  
Check for cracks or burned spots on the surface of each resistor. If no visual discrepancies are found to indicate resistor failure, it will be necessary to take resistance measurements on each resistor individually.
2. Using a digital multimeter or an ohmmeter with an accuracy of 1% at 50 ohms. Connect the test leads across each resistor end. For the Model 8578A100, individual resistance measurements at 25° C (77° F) should be 500 ohms  $\pm 20\%$ . For Model 8578A150, individual resistance measurements at 25° C (77° F) should be 720 ohms  $\pm 20\%$ .
3. Record the value of the resistance. If resistors are found that greatly exceed the respective ranges, they should be replaced.

**Replacing  
Resistors**

The resistors are held very firmly in their clips. Use caution and carefully remove one end of the resistors at a time. Do not use excessive force, as there is the possibility of the resistors chipping or cracking

**Assembly**

To reassemble the RF assembly and panels, reverse the disassembly instructions given above. Be sure to install all of the screws in the panels.

**WARNING**

Disconnect this unit from ac and RF power sources before any disassembly for repair or replacement procedures. The potential for electrical shock exists.

### **Motor Blower Assembly Replacement**

When replacing the motor blower assembly, the following steps should be followed.

1. Remove and retain the 22 Phillips head machine screws from the edges of the left side panel. Remove the panel.
2. Disconnect the wires from the motor to the power supply. These are quick disconnects and may be easily detached.
3. Support the blower housing to enable the removal of the front panel. Remove and retain the 32 Phillips head screws from the front panel. Remove the panel.
4. Remove the truss head screws on top of the blower housing bracket.
5. Remove the motor blower assembly from the cabinet.
6. Remove the blower housing support bracket.

### **Reinstallation**

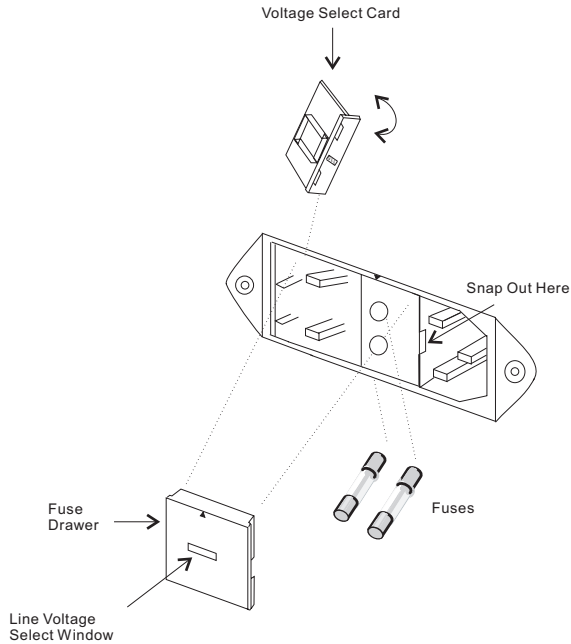
When reinstalling the motor blower assembly:

1. Attach the blower housing support bracket.
2. Set the blower housing under the mounting bracket and re-install the truss head screws.
3. Replace the front panel, insure that all of the support brackets are tightened and all of the panel screws are replaced.
4. Connect the wires from the motor to the power supply.
5. Connect the ac power supply to insure that the blower unit is operational.
6. Remove the ac power supply until completion.
7. Replace the side panels, insuring that all of the panel screws are replaced.
8. Re-connect the RF coaxial cable.
9. Connect the ac power supply.
10. Turn on RF power and interlock circuitry

## Fuse and AC Line Module

The fuses are located in a fuse drawer in the ac line module. To replace the fuses follow these steps. Refer to figure 4.

*Figure 4  
Fuse  
Replacement*



1. Use a small flat-blade screwdriver and gently pry the tab out to open the fuse cover door.
2. Replace the fuses in the holder according to the ac mains voltage supplied, 6.3A, T (P/N 5A2257-24) for 115V and 3.15A, T, (P/N 5A2257-21) for 230V applications.
3. Place the drawer into the ac line module. Push the drawer until it snaps in place.

## Replacement of the AC Line Module

For replacement of the AC line module, follow these steps.

1. Unplug the power cord from the ac line module.
2. Remove and retain the screws at each end of the module.
3. Remove the ac line module by pulling it straight out through the front panel.

4. Detach the wires that connect to the module.  
These are quick disconnects and can be removed easily.
5. Replace the power module by reversing this procedure.

**Customer  
Service**

Any maintenance or service procedure beyond scope of those provided in this section should be referred to a qualified service center.

All instruments returned for service must be shipped prepaid and to the attention of the Customer Service Group.

**Service Group**

**U.S.A. Sales and Manufacturing**

Bird Electronic Corporation  
30303 Aurora Road  
Cleveland (Solon), Ohio 44139-2794  
Phone: (440) 248-1200  
Fax: (440) 248-5426

**Sales Offices**

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

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



## **Preparation for Storage or Shipment**

**Storage** If the unit is to be unused or stored for any length of time, cover it with a cloth or plastic sheet and store it in a moisture free, cool, dry place. There is no special preparation for the unit however; moisture will be the greatest concern. Storage temperatures should remain -40° to 70° C (-40° to 158° F) and the relative humidity percentage should remain low.

**Shipment** To reship or return the unit to the factory, first secure all loose parts such as the power cord and swivel flange. Pack and seal securely in a sturdy wooden box or equivalent, with sufficient padding to avoid shock damage. If possible, keep the original shipping carton for reshipment.

**Replacement Parts List**      **Model 8578A100**

Item	Qty.	Description	Part Number
1	9	Load Resistor	5A2388
2	1	Blower assy. 115/230V, 50/60Hz	8578A006
3	1	Rocker Switch	5A2384
4	1	AC Power Module	5A2380
5	1	Thermal Switch	5A2382
6	1	Power Cord, 115V	4421-055
7	1	Power Cord, 230V Harmonized	5A2416
8	18	Resistor Clip	8450-014
9	1	1-5/8" EIA Swivel Flange	8578A008
10	1	Conductor	8578A021
11	1	Terminal Strip	5-1840-2
12	2	Fuse, 5x20mm 6.3Amp (for 115V operation)	5A2257-24
13	2	Fuse, 5x20mm 3.15Amp (for 230V operation) Time-Delay	5A2257-21
14	1	3-1/8" Flanged Connector Kit	8731A700

**Model 8578A150**

Item	Qty.	Description	Part Number
1	12	Load Resistor	5A2393
2	1	Blower assy. 115/230V, 50/60Hz	8578A006
3	1	Rocker Switch	5A2384
4	1	AC Power Module	5A2380
5	1	Thermal Switch	5A2417
6	1	Power Cord, 115V	4421-055
7	1	Power Cord, 230V Harmonized	5A2416
8	24	Resistor Clip	8450-014
9	1	1-5/8" EIA Swivel Flange	8578A008
10	1	Conductor	8578A021
11	1	Terminal Strip	5-1840-2
12	2	Fuse, 5x20mm 6.3Amp (for 115V operation)	5A2257-24
13	2	Fuse, 5x20mm 3.15Amp (for 230V operation)	5A2257-21
14	1	3-1/8" Flanged Connector Kit	8731A700

## **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. 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.