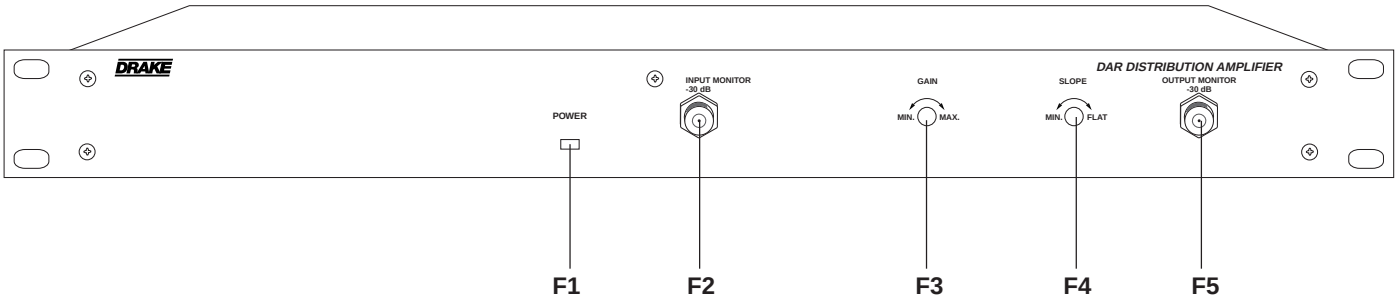


DESCRIPTION
The R.L. DRAKE models DAR8642, DAR8633, DAR8618, DAR7542, and DAR7533, are broadband distribution amplifiers designed for indoor headend use in both residential and commercial buildings where RF signal distribution in the frequency range of 54 to 860 MHz is required. Each model, except the DAR8618, incorporates a push-pull hybrid input preamp and a power doubled hybrid output amplifier to provide a very low distortion signal for launch amp applications in the output of an SMATV or CATV headend. The Gain and Slope controls both have a range of 10 dB minimum and operate between the preamp hybrid and the output hybrid to maintain a low noise figure over a wide range of gain and slope settings. Only the DAR8618 has a power doubled output hybrid with no input preamp and no adjustable gain and slope controls. All models have a provision for optional fixed input attenuators and equalizers. Double-sided, plated through hole, glass epoxy, printed circuit boards, and SMT are used for low losses and maximum reliability.

All DAR models include a built-in diplexer filter. This allows the return path energy that is present at the output port of the DAR to be separated from the DAR output and passed to the return path output port.

Input and output test connectors are provided for convenient monitoring of the signal path. The amplifier circuitry is designed for maximum stability, low distortion, low noise figure, and is protected in a rugged aluminum housing.

- The unit operates from a nominal 115 VAC, 60 Hz input.

- Input equalizer and fixed attenuator options are available.

F1 - POWER LED
This indicator illuminates when power is supplied to the unit.

F2 - INPUT MONITOR
This connector may be used to monitor input to the DAR. The levels will be 30 dB below the input levels at R3.

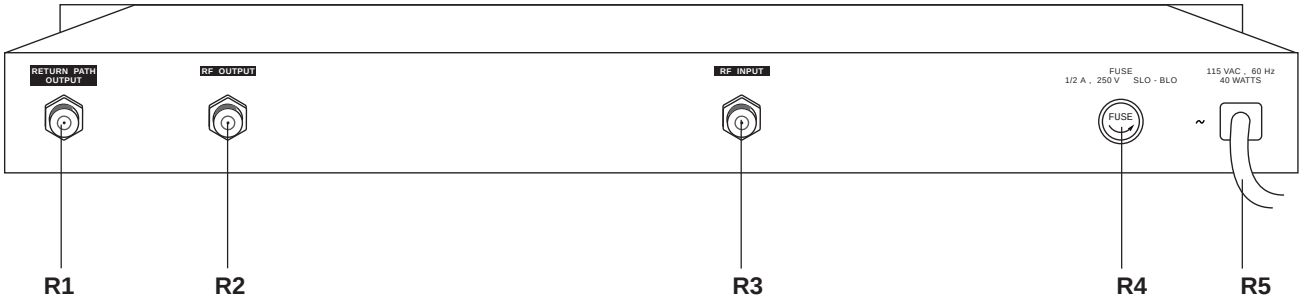
F3 - GAIN*
Adjusts the amplifier interstage attenuator.

F4 - SLOPE*
Adjusts the slope of the output signal.

F5 - OUTPUT MONITOR
This connector may be used to monitor the output of the DAR. Levels will be 30 dB below those present at R2. R2 must be terminated in 75 Ohms for an accurate reading.

**Not present on models with gain below 20 dB.*

2 Rear Panel Connections



R1 - RETURN PATH OUTPUT
Any return path signals from 5 to 42 MHz that are present at R2 will be passed to this port.

R2 - RF OUTPUT
This is the RF output for CATV distribution and is the amplified output of channels that are input to port R3 from 54 MHz and higher. At this port, any return path channels from 5 to 42 MHz will be passed at unity gain to port R1.

R3 - RF INPUT
This connector accepts the RF input from a headend combiner output, 54 MHz and higher.

R4 - FUSE
If necessary, replace this fuse only with a fuse of the same indicated rating.

R5 - AC LINE CORD
Connect this line cord to a 115 V / 60 Hz AC power source.

INSTALLATION

1) Unpack the distribution amplifier.

2) Mount the amplifier in the desired location in the rack. Be sure to leave at least one open rack space above and below the amp to allow proper ventillation.

3) Connect input and output cables to the amplifier.

4) Plug the power line cord into a 115 VAC/60 Hz power source.

5) Preset slope control fully clockwise.

6) While monitoring the output levels at the Output Monitor -30 dB test port, adjust the Gain control for desired output at the high end of the band. Then monitor the lowest channel and adjust slope control to equalize this channel to the desired level (usually equal to but not higher than the high end of the band). Since there can be a slight interaction between the slope and gain settings, it is advised to repeat this step a few times to ensure the desired levels are attained.

NOTE: The -30 dB input and output test ports can be used to monitor input and output levels. These are only accurate when the load is connected to the amplifier output and power is on.

A WORD CONCERNING INPUT LEVELS

It is important to keep the input level to the amplifier within an optimum range. If the level is too high, higher nonlinear distortion will result and if the level becomes too low, C/N might be less than desired. As a general rule, stay within the optimum input level range listed in the specifications. The listed levels assume a fully loaded channel complement. Higher levels may be used if the channel loading is less.

In general, install a fixed input attenuator if required to set the highest frequency channels in the input to within the optimum range. Then set the amplifier gain to achieve the desired output level, not to exceed the maximum output level listed in the specifications. Then, if the low frequency channels are above the optimum input level range, a fixed input equalizer can be installed to drop the low frequency channels to within this range. Use the slope control to make fine adjustments.

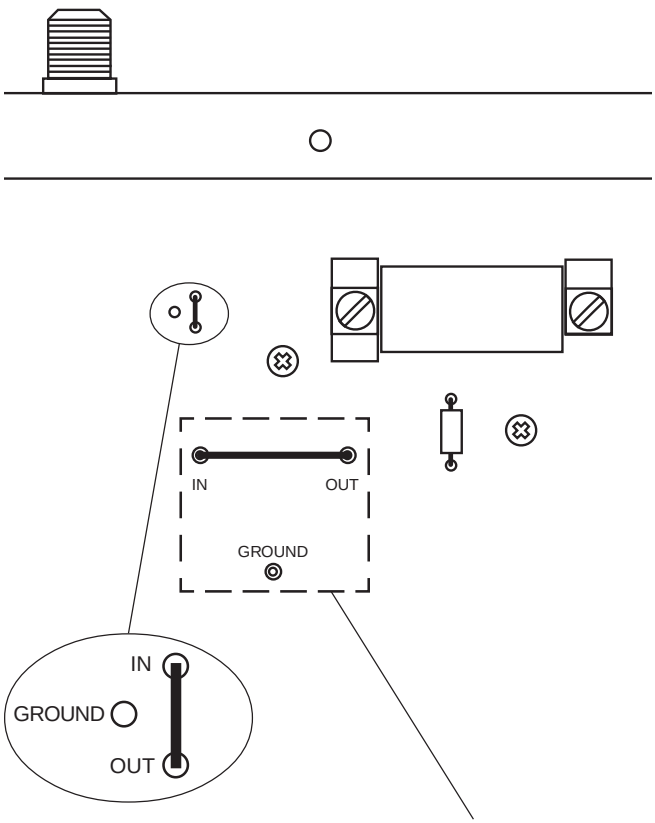
INSTALLING FORWARD PATH INPUT ATTENUATOR

Remove top cover as described below. If input levels are enough to cause a high distortion level in the input amplifier, a fixed input attenuator may be added. Choose an SXP type attenuator of the value required, and install at the location indicated below. Remove the 0 dB wire jumper to allow insertion of the attenuator.

INSTALLING AN INPUT EQUALIZER

Follow the same basic procedure as described above for the input attenuator except that the equalizer is installed at the equalizer location shown below:

RF INPUT OF REAR PANEL



FIXED INPUT ATTENUATOR LOCATION

A factory installed jumper is installed here for no attenuation. To install an input attenuator, remove jumper and plug in a "SXP" type attenuator rated for the same or higher frequency as the amplifier.

INPUT EQUALIZER LOCATION

A factory installed jumper is installed here for no equalization. Install desired "QSA" type equalizer here. If equalizer is not used, the jumper must be connected between the IN and OUT connections.

SPECIFICATIONS COMMON TO ALL MODELS (unless otherwise noted)

Forward Gain Adjustment Range:	10 dB minimum (except DAR8618).
Slope Control Adjustment (54 MHz):	10 dB minimum (except DAR8618).
Input/Output Impedances:	75 Ohms.
Input and Output Monitor Ports:	- 30 dB.
Fixed Input Attenuator:	Plug-in (SXP type) available.
Fixed Input Equalizer:	Plug-in (QSA type) available.
Hum Modulation:	- 70 dB.
Frequency Coverage (return port):	5 to 42 MHz.
RF Shielding:	Leakage complies with FCC Part 76.
Power Requirement:	Models DAR7533, 7542, 8633, 8642 - 115 VAC, 60 Hz, 24 Watts; Model DAR8618 - 115 VAC, 60 Hz, 18 Watts.
Operating Temperature Range:	- 20 deg. to + 60 deg. C.
Size:	19.00" (48.3 cm) W x 7.5" (19.1 cm) D x 1.75" (4.5 cm) H.
Weight:	6 lbs. 4 oz. (2.9 Kg).

ADDITIONAL SPECIFICATIONS FOR SPECIFIC MODELS

	DAR7533	DAR7542	DAR8633	DAR8642	DAR8618
Frequency Coverage (forward path):	54 to 750 MHz.	54 to 750 MHz.	54 to 860 MHz.	54 to 860 MHz.	54 to 860 MHz.
Forward Gain:	33 dB.	42 dB.	33 dB.	42 dB.	18 dB.
Noise Figure:	7 dB maximum.	6.5 dB maximum.	7.5 dB maximum.	7 dB maximum.	7.5 dB maximum.
Return Loss, Input & Output:	14 dB.	14 dB.	14 dB.	14 dB.	14 dB.
Channel Loading:	110 CH.	110 CH.	129 CH.	129 CH.	129 CH.
Output Level (maximum per channel for distortions listed below):	+44 dBmV.	+44 dBmV.	+40 dBmV.	+40 dBmV.	+40 dBmV.
Input Level (maximum without using fixed input attenuator):	+20 dBmV.	+10 dBmV.	+18 dBmV.	+7 dBmV.	+22 dBmV.
Optimum Input Level Range for Best Performance:	+10 dBmV to +15 dBmV.	+0 dBmV to +5 dBmV.	+7 dBmV to +12 dBmV.	-3 dBmV to +2 dBmV.	N/A
Nonlinear Distortions-					
Composite Triple Beat:	- 58 dB.	- 58 dB.	- 60 dB.	- 60 dB.	- 61 dB.
Composite Second Order:	- 58 dB.	- 58 dB.	- 60 dB.	- 60 dB.	- 60 dB.
Cross-modulation:	- 60 dB.	- 60 dB.	- 64 dB.	- 64 dB.	- 68 dB.

THREE YEAR LIMITED WARRANTY

R.L. DRAKE COMPANY warrants to the original purchaser this product shall be free from defects in material or workmanship for three (3) years from the date of original purchase. During the warranty period the R.L. DRAKE COMPANY or an authorized Drake service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship. At its option, R.L. DRAKE COMPANY may replace a defective unit.

- To obtain such warranty service, the original purchaser must:

(1) Retain invoice or original proof of purchase to establish the start of the warranty period.

(2) Notify the R.L. DRAKE COMPANY or the nearest authorized service facility, as soon as possible after discovery of a possible defect, of:
(a) the model and serial number,
(b) the identity of the seller and the approximate date of purchase; and
(c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.

(3) Deliver the product to the R.L. DRAKE COMPANY or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

- Correct maintenance, repair, and use are necessary to obtain proper performance from this product. Therefore carefully read the Instruction Manual. This warranty does not apply to any defect that R.L. DRAKE COMPANY determines is due to:

(1) Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.

(2) Misuse, abuse, neglect or improper installation.

(3) Accidental or intentional damage.

- All implied warranties, if any, including warranties of merchantability and fitness for a particular purpose, terminate three (3) years from the date of the original purchase.

- The foregoing constitutes R.L. DRAKE COMPANY'S entire obligation with respect to this product, and the original purchaser shall have no other remedy and no claim for incidental or consequential damages, losses or expenses. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

- This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty shall be construed under the laws of Ohio.

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