

Owner's Manual

QSC

OT-300a
70 Volt Output
Transformer



Rev. A

INSTRUCTIONS FOR OT-300a 70 VOLT OUTPUT TRANSFORMER

I. PACKING LIST

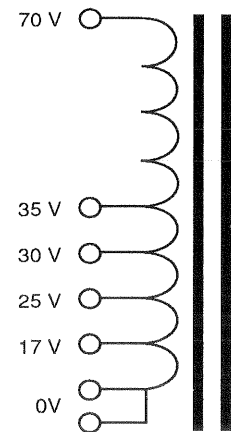
Items/Description	QSC Part No.	Qty.
OT-300a Output Transformer	XF-000301-00	1
Transformer Label	LB-000032-00	1
"Common" wire, 18" Black	WC-000032-00	1
"Speaker" wire, 18" Red	WC-000032-01	1
#8 X 1/4" P/P "B" Black Screw	SC-082041-PP	4
Instruction Sheet, OT-300a	TD-000300-00	1

II. DESCRIPTION

The QSC OT-300a is an audio output auto-transformer designed to convert the output of 70-300 watt amplifiers to 70 volts for sound distribution systems. The OT-300a may also be used, in a step down configuration, as a speaker transformer for high-power applications.

III. SPECIFICATIONS

Frequency Response:	35 Hz–15 kHz (\pm 1dB)
Distortion —300W:	Less than 0.1% THD, 35 Hz–15 kHz
Power Capacity:	70-300 watts
Insertion Loss:	Less than 1 dB
Dimensions:	3.125"H x 3.75"L 4.0" across coil
Mounting Centers:	3.0" x 3.125"
Weight:	6.75 lbs.
Terminals:	1/4" male quick disconnect push-on terminals



IV. MOUNTING

QSC Amplifier models 1200, 1400, USA 370, and USA 850 have mounting positions for one or two transformers on the rear of the chassis, between the AC cord and rear vents. The transformer should be mounted with the laminations vertical, and the terminals facing outwards, to avoid shorting between the connections of the two channels. **DO NOT USE MOUNTING SCREWS LONGER** than the 1/4-inch screws provided as longer screws may protrude too far into the chassis and short out internal parts. The chassis thickness and size of the tapped hole should ensure a strong mounting.

With other amplifiers, the transformer may be mounted to a convenient surface, such as the side or rear of a rack cabinet, using the appropriate hardware (NOT supplied). Be careful not to create a mechanical or electrical safety hazard when choosing a location and mounting method.

The self-adhesive label provided should be applied to the core of the transformer so it is visible while installing or servicing.

V. TRANSFORMER WIRING

The OT-300a is an auto-transformer with voltage conversion ratios as shown by the sequence of terminals: “0” or common, “17”, “25”, “30”, “35” and “70”.

A. Conventional Two Channel Step-up Operation

Connect wiring as follows, keeping each channel separate:

1. The black “common” wire should connect the black “speaker” binding post to the “0” terminal of the transformer.
2. The red “speaker” wire should connect the red “speaker” binding post to transformer terminals “17”, “25”, “30” or “35” as follows:
 - a) The “17” terminal is used for QSC amplifier model 1100 or any other amplifier having a 4-ohm power rating of 65-80 watts per channel.
 - b) The “25” terminal is used for QSC amplifier models 1200 and USA 370 or any amplifier having a 4-ohm power rating of 135-175 watts per channel.
 - c) The “30” terminal is used for QSC amplifier models MX 700 or any amplifier having a 4-ohm power rating of 200-250 watts per channel.
 - d) The “35” terminal is used for QSC amplifier models 1400, USA 850 and EX 800 or any amplifier having a 4-ohm power rating of 275-350 watts per channel.
3. The 70V speaker line should be connected to the “0” and “70” terminals. An Additional terminal is provided for ease in making this connection.

CAUTION: Since the OT-300a is a non-isolated auto-transformer, neither side of the 70V line should be separately grounded.

B. Bridged Mono Step-up Operation

Connect wiring as follows, keeping each amplifier separate:

1. The black “common” wire should connect the RED “speaker” binding post of Ch. 1 to the “0” terminal of the transformer.
2. The red “speaker” wire should connect the RED “speaker” binding post of Ch. 2 to transformer terminals “17”, “25”, “30” or “35” as follows:
 - a) The “17” terminal is used for any amplifier having a bridged 4-ohm power rating of 65-80 watts.
 - b) The “25” terminal is used for QSC amplifier model 1100 or any amplifier having a bridged 4-ohm power rating of 135-175 watts.
 - c) The “30” terminal is used for any amplifier having a bridged 4-ohm power rating of 200-250 watts.
 - d) The “35” terminal is used for any amplifier having a bridged 4-ohm power rating of 275-350 watts.

3. The 70V speaker line should be connected to the "0" and "70" terminals.

CAUTION: Since the OT-300a is a non-isolated auto-transformer, neither side of the 70V line should be separately grounded, in order to avoid shorting the amplifier outputs.

C. Speaker Transformer Operation

For higher-power speakers, the OT-300a can be used to convert 70 volts back to 4 or 8-ohm speaker levels.

1. As above, connect the 70-volt line to the "0" and "70" terminals.
2. Connect the speaker negative (black) to the "0" terminal.
3. Connect the speaker positive (red) terminal as follows:
 - a) The "17" terminal gives 35W/8-ohm or 70W/4-ohm.
 - b) The "25" terminal gives 75W/8-ohm or 150W/4-ohm.
 - c) The "30" terminal gives 110W/8-ohm or 225W/4-ohm.
 - d) The "35" terminal gives 150W/8-ohm or 300W/ 4-ohm.
4. Use these values to determine System Loading.

VI. POLARITY

The transformer maintains the same polarity for all terminals with respect to "0". In other words, the polarity of the amplifier speaker output will be preserved at the "70" terminal.

VII. SYSTEM LOADING

There is no need to calculate impedance when using 70-volt systems. Simply add up the total wattage of the individual speaker-transformer taps in use, and ensure that this number does not exceed the power rating of the amplifier. It is wise to allow 20-30% extra amplifier power, for reduced stress, insertion loss and to permit the addition of a few extra speakers if ever required.

VIII. AMPLIFIER PROTECTION

The QSC OT-300a output transformer is designed to avoid excessively low impedance at low frequencies; however, the same may not be true of the individual speaker transformers. Thus, it is common to roll off the amplifier input below 40 or 50 Hz. This will avoid amplifier overheating and stress, and will reduce speaker and transformer distortion below these frequencies.

IX. 25-VOLT SYSTEMS

Any amplifier rated higher than 150W/4-ohms will drive a 25 Volt system directly, without the need for a step up transformer. For small and medium-sized installations, 25Volt systems provide an attractive alternative to 70V systems.

X. WARRANTY AND DISCLAIMERS

QSC Audio Products, Inc. is not liable for any damage to speakers, amplifiers, or any other equipment that is caused by negligence or improper installation and/or use of the OT-300a.

Product Warranty

QSC Audio Products, Inc. guarantees the OT-300a to be free from defective material and/or workmanship for a period of three years from date of sale, and will replace defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use—provided the unit is returned to our factory via prepaid transportation with proof of purchase (sales receipt). This warranty provides that examination of the returned product must disclose, in our judgement, a manufacturing defect. This warranty does not extend to any product which has been subject to misuse, neglect, accident, improper installation, or where the date code has been removed or defaced.

Warranty and Service Repair Instructions

1. Pack the product safely making sure to include a copy of the sales receipt, your name, return address, and phone number. Mark the package: Attention Service Department.
 2. Ship the product prepaid to QSC Audio Products. We recommend UPS.
 3. We will determine if the product is under warranty:
 - a. If it is, we will repair and ship it back to you at no charge.
 - b. If it is not, we will contact you and inform you of the charges. Upon your approval, we will repair the product and ship it back freight and services charges collect (COD).
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