

AOP-SP70

SPEAKERPHONE CONVERTER

INSTALLATION AND OPERATING INSTRUCTIONS



MODEL AOP-SP70
Speakerphone Conversion Unit



Outdoor Speaker/Microphone
MODEL TLO

DESCRIPTION

MODEL AOP-SP70 AUDIO CONVERSION UNIT

Model AOP-SP70 is usually paired with the TLO to convert the signals of Model TLO for compatibility with the receiving device for providing two-way audio. The AOP-SP70 drives the audio signals into the audio input and output of the IP Camera, etc, for transmission over the network and to an existing computer (or other devices) at the receiving site. Person at the receiving site hears the audio through the computer speaker or through a headphone. For talkback to the remote site (TLO location), the computer's microphone is used to transmit audio back through the network to the AOP-SP70. It is then amplified and sent out to the speaker portion of the remote TLO. The AOP-SP70 provides power to the TLO and contains adjustments for microphone gain and speaker volume. A 12Vdc power supply is included with the AOP-SP70.

MODEL TLO OUTDOOR SPEAKER/MICROPHONE

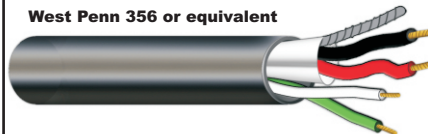
Model TLO is a two-way speaker and microphone and re-entry horn for high volume penetration. Weatherized for outdoor applications, the microphone and speaker horn are all within one housing. In operation, the TLO together with the AOP-SP70 provides hands-free bi-directional audio communication with the audio receiving device (DVR, IP Camera, etc.).

FOR TLO

WIRING REQUIREMENTS

- 4 Conductor consisting of:
- 2 Conductor **shielded**, 20 gauge with 22 gauge drain (microphone connection)
 - 2 Conductor **unshielded**, 18 gauge (speaker connection)
- All in the same jacket

West Penn 356 or equivalent

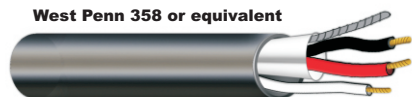


FOR AOP-SP70

WIRING REQUIREMENTS

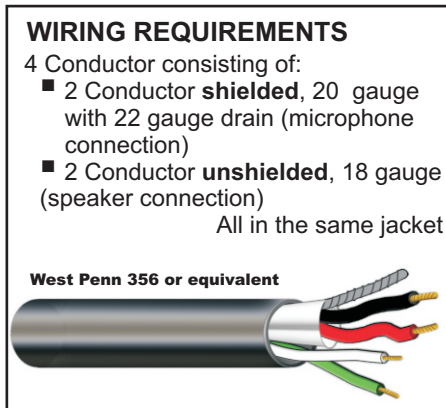
- 3 Conductor consisting of:
- 2 Conductor **shielded**, 20 gauge with 22 gauge drain
 - 1 Conductor **unshielded**, 20 gauge
- All in the same jacket

West Penn 358 or equivalent



INSTALLATION AND OPERATING INSTRUCTIONS

WIRING CONNECTIONS TO MODEL TLO



COLOR CODE FOR RECOMMENDED CABLE

Red - 12Vdc Power	}	Microphone Portion
Black - Audio Output		
Bare - Ground		
Green - Speaker Positive	}	Speaker Portion
White - Speaker Ground		

Color code may vary if using wiring from other manufacturers

MICROPHONE CONNECTION OF TLO

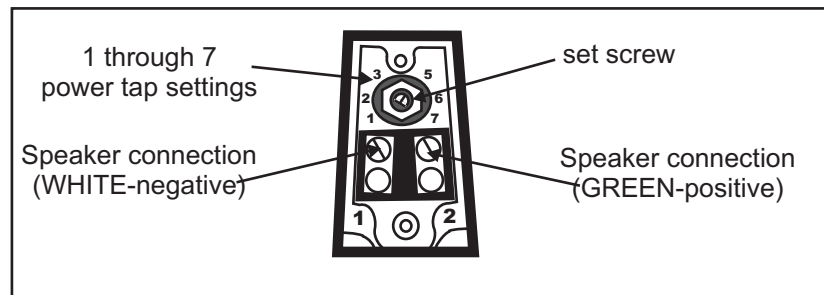
The short cable extending from the back of the TLO is the microphone connection and consists of three wires: **red**, **black** and **bare**. Using recommended wiring (West Penn 356 or equivalent), make microphone connections using 20 gauge wire nuts and matching **red** wire with **red**, **black** with **black** and **bare** wire with **bare** wire. See diagram next page.

SPEAKER CONNECTION OF TLO

Speaker connection is located near the rear of the TLO and has a plexiglass window. Remove window and connect the speaker portion of West Penn 356 (**green** and **white** wires) to the two terminal screws marked 1 and 2.

Green speaker wire goes to position 1 (positive)
White speaker wire goes to position 2 (negative)

see diagram below



POWER TAP SETTINGS OF TLO

Located above the speaker connection of TLO is a set screw with a dial numbered 1 through 7. Using a small screw driver, adjust the set screw to correspond to the proper power tap as shown below.

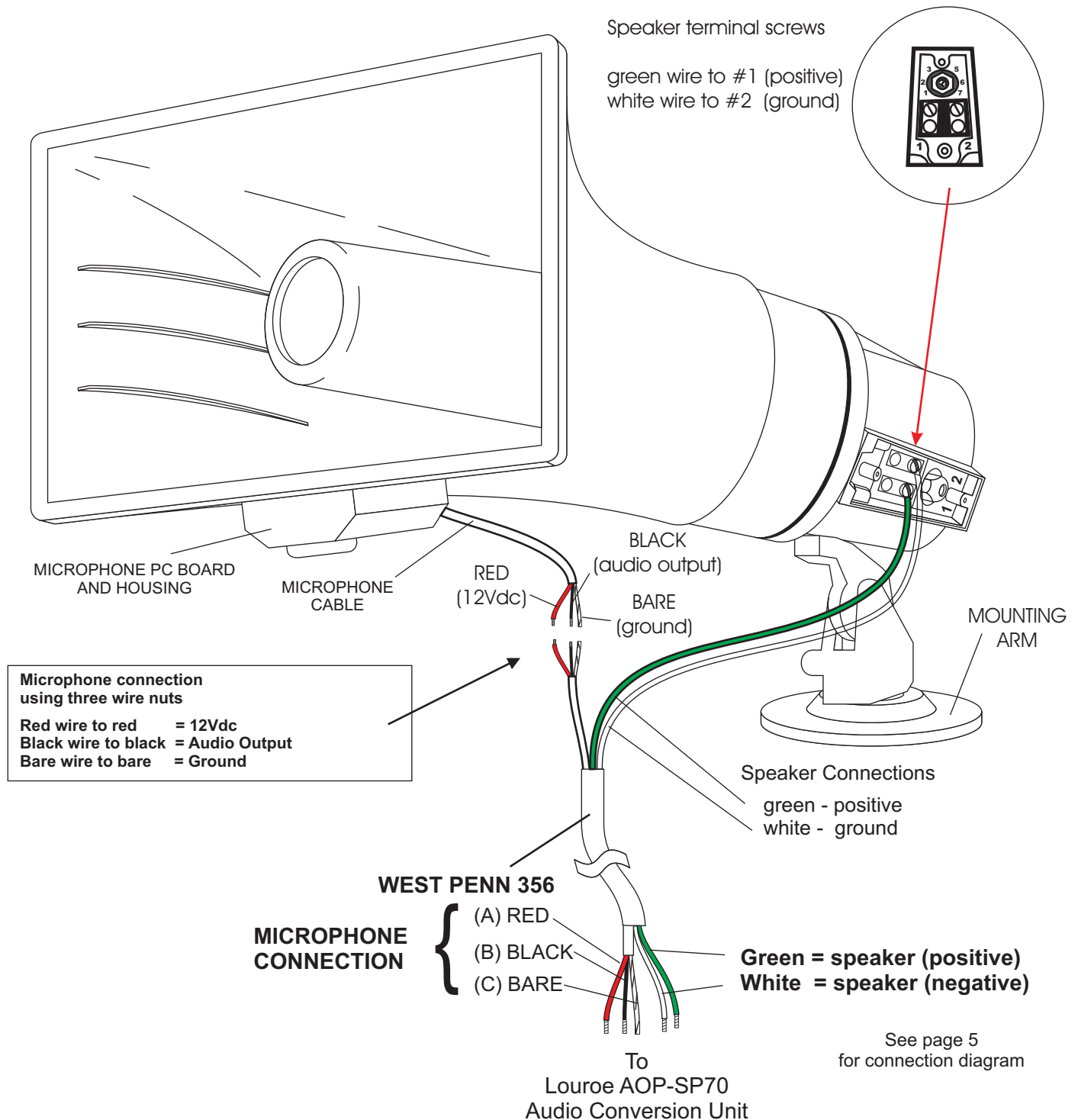
	Setting	Wattage
I Louroe Model TLO connected to Louroe AOP-SP70 conversion unit for interfacing with a DVR or IP Network Camera, use:	#2	3.8W

INSTALLATION AND OPERATING INSTRUCTIONS

POSITIONING TLO

After TLO has been mounted to desired structure (wall, pole, etc.), horn should be tilted in a downward position. This will protect the microphone element from water damage.

WIRING DIAGRAM OF MODEL TLO OUTDOOR SPEAKER/MICROPHONE



INSTALLATION AND OPERATING INSTRUCTIONS

CONNECTING TLO TO AOP-SP70 UNIT AND TO RECEIVING DEVICE (DVR, IP NETWORK CAMERA, ETC.)

(Refer to Diagram on page 5)

MICROPHONE CONNECTION OF AOP-SP70

On the AOP-SP70 PC board locate the 3-pin terminal block marked A, B, C. This is the microphone connection.

- 1) Connect **RED** wire to pin A (12Vdc)
- 2) Connect **BLACK** wire to pin B (Audio Output)
- 3) Connect **BARE** wire to pin C (Ground)

SPEAKER CONNECTION OF AOP-SP70

Located on the AOP-SP70 Transformer are two wires, **Green** and **White**.

- 1) Connect **Green** wire of AOP-SP70 Transformer to **Green** wire from TLO (speaker positive) using a wire nut.
- 2) Connect **White** wire of AOP-SP70 Transformer to **White** wire from TLO (speaker ground) using a wire nut.

WIRING CONNECTION FROM AOP-SP70 TO THE AUDIO RECEIVING DEVICE (DVR, IP NETWORK CAMERA, VIDEO SERVER, SOUND CARD, ETC.)

WIRING REQUIREMENTS

- 3 Conductor consisting of:
- 2 Conductor **shielded**, 20 gauge with 22 gauge drain
 - 1 Conductor **unshielded**, 20 gauge
- All in the same jacket

West Penn 358 or equivalent



CONNECTION TO AOP-SP70

Locate the 4-pin terminal block (marked A, B, C, SP) and connect as follows:

- 1) Red wire goes to Pin B Audio Output
- 2) Black wire goes to Pin C Ground (audio)
- 3) Bare wire goes to Pin C Ground (speaker)
- 4) White wire goes to Pin SP Speaker Output

NOTE: Pin "A" is not used. Both black and bare wire connect to Pin C.

CONNECTION FROM AOP-SP70 TO DVR, IP NETWORK CAMERA, ETC.

After wiring connection has been applied to the 4-pin terminal block of the AOP-SP70, run other end of cable to the audio receiving device's audio **Input/Output** (usually either RCA, 3.5mm **mono** or 3.5mm **stereo**). If Audio In/Out of DVR, IP Camera, etc. is 3.5mm type, refer to the specific instructions to determine if **mono** or **stereo**. Solder on the appropriate plugs to match the "Audio In" and "Audio Out" of the DVR, etc. as shown on page 5.

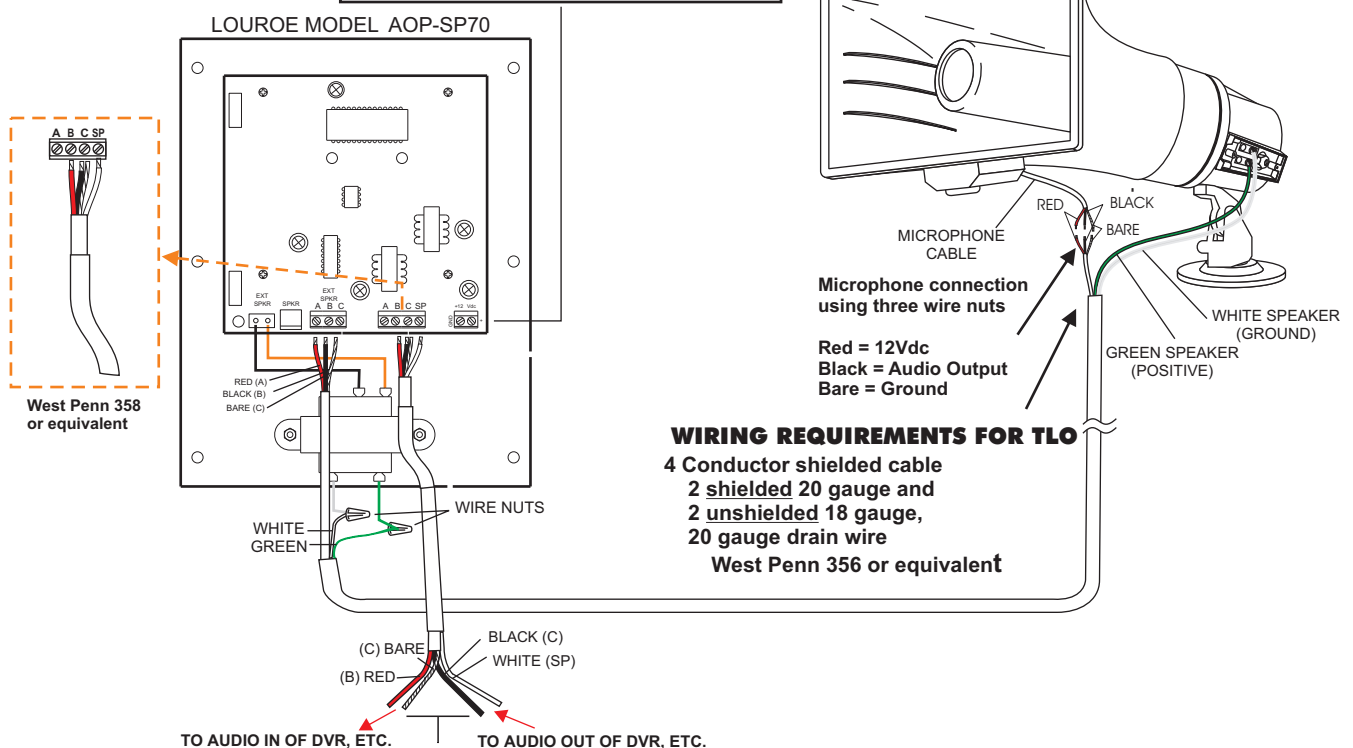
INSTALLATION AND OPERATING INSTRUCTIONS

INTERCONNECTION DIAGRAM

LOUORE MODEL AOP-SP70 SPEAKERPHONE CONVERSION UNIT, AND LOUORE MODEL TLO SPEAKER/MICROPHONE CONNECTION TO DVR, IP NETWORK CAMERAS OR VIDEO SERVER

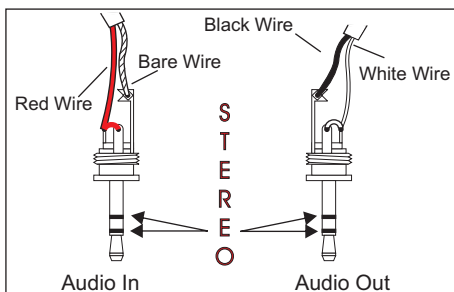
Using power supply (included), connect as follows:
Positive 12Vdc connects to terminal marked "+"
Negative 12Vdc or ground connects to terminal marked "GND"(wire with white stripes)

Model TLO is Designed For Outdoor or Moist Applications

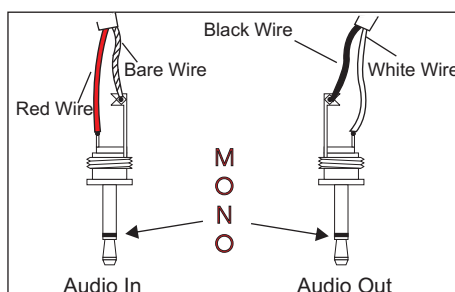


For connection to DVR, IP Network Camera, etc., solder the appropriate plug (RCA, 3.5mm mono or 3.5mm stereo) to match the audio inputs of the receiving device as shown below.
Refer to IP Camera's instruction to determine if 3.5mm audio is mono or stereo

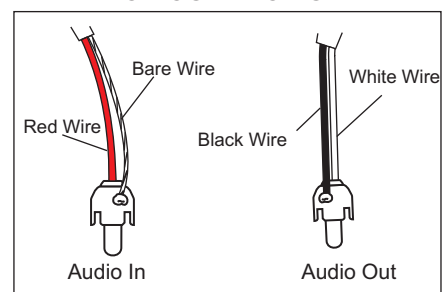
3.5mm STEREO CONNECTION



3.5mm MONO CONNECTION



RCA CONNECTION



APPLYING POWER TO AOP-SP70

AOP-SP70 requires 12Vdc, 500mA power. A 12Vdc power supply is included. Connect the stripped ends of the power supply to the 2-pin terminal block located in the far right of the pc board marked "12Vdc". Positive 12Vdc connects to the terminal marked "+" and negative 12Vdc or ground connects to the terminal marked "GND".

TLO SPECIFICATIONS

SPECIFICATIONS (MICROPHONE)

Sensitivity	-45 dBV/Pa 1 Pa = 94 dB SPL
Frequency Response	50 Hz to 15 kHz
Output	Line Level (0 dBV, 600 Ω @ 1kHz)
Current Drain	10mA
Supply Voltage	12 Vdc
Microphone Housing	High Impact Anti-Static ABS
Dimensions	2 5/8" L x 2 1/8" W x 1 1/16" H

SPECIFICATIONS (SPEAKER)

Power rating	30W max @ 167 Ω (setting 5)
Dimensions	11"W x 6 5/8"H x 12 3/4"D
Frequency response	350Hz to 14 kHz
Input	70V constant
Voice coil impedance	8 Ω
Weight of TLO	5 Lbs 5 oz

SPECIFICATIONS FOR AOP-SP70

Audio output impedance	600 Ω
Audio input impedance	600 Ω
Talkback power output	1W @ 70V
Power Input	12 Vdc, 500 mA
Dimensions	8 3/8"L x 7 3/8"W x 2 3/4"H
Weight	3 lbs 8.5 oz
Shipping Weight	6 lbs

INSTALLATION AND OPERATING INSTRUCTIONS

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IMPORTANT NOTICE

When this equipment is used as part of an audio monitoring system, the law requires that the public be given notice of **AUDIO MONITORING ON THE PREMISES**. To protect the installing dealer and his customers, when this equipment is used as part of an audio monitoring system, a decal stating **AUDIO MONITORING ON THESE PREMISES** (provided by Louroe Electronics) must be installed in a visible location at the entrances and exits of both private and public buildings and vehicles.

This is to comply with United States Code, Title 18, Section 2510(2) regarding rights of privacy, it states:

“Oral communication means any “oral communication” uttered by a person exhibiting an expectation that such communication is not subject to interception under circumstances justifying such expectation.”

By definition of the code section, a person cannot have an expectation of privacy, nor can he or she expect that communication will not be intercepted. **THIS IS THE CASE ONLY IF THERE ARE PUBLIC SIGNS POSTED, INDICATING THAT THE COMMUNICATION IS BEING MONITORED.**

These laws vary from state to state. If you are not informed on these matters, consult a qualified attorney or contact the appropriate state agency.

A decal notice is included with each microphone shipped from Louroe Electronics.

EXTRA DECALS ARE AVAILABLE FOR FREE

Call (818) 994-6498

or

email sales@louroe.com



WARRANTY

LOUROY ELECTRONICS® warrants that at the time of shipment products manufactured by LOUROY ELECTRONICS® to be free of defects in material and workmanship. Should a defect appear within one year (12 months) from date of shipment, LOUROY ELECTRONICS® will, at its sole discretion, repair or replace the defective equipment. This equipment shall not be accepted for repair or return without prior notification by LOUROY ELECTRONICS®.

This warranty does not extend to any Louroe product that has been subjected to improper or incorrect installation, misuse, accident, or in violation of installation instructions provided by LOUROY ELECTRONICS®.

Returned shipments to LOUROY ELECTRONICS® shall be at customer's expense. LOUROY ELECTRONICS® will return the equipment prepaid via best way.