LOUROE ELECTRONICS®

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IF-PX
POE INTERFACE / POWER EXTRACTOR
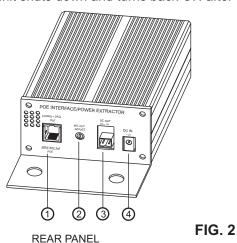## INSTALLATION AND OPERATING INSTRUCTIONS
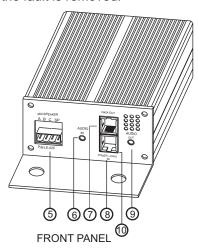
INTRODUCTION

Model IF-PX is a single zone POE in-line interface designed to extracts power from an Ethernet connection to power Louroe microphones, speaker/microphones and external devices that require a 12Vdc supply such as Encoders and Non PoE IP cameras. The IF-PX supports both one-way and two-way audio. Most commercial grade line level unbalanced microphones are compatible with this unit. Audio output has variable gain control.

Terminal blocks are employed to receive signal wiring from a Louroe Verifact microphone or an AOP-SP speaker/microphone. Two 3.5mm stereo male to 3.5mm stereo male audio cables are included to connect the unit to an IP camera or Encoder. Both Mode A and Mode B power options of IEEE802.3af are supported. Outputs for both PoE (Power+Data) and Non-PoE (Data Only) cameras and Encoders are included. The IF-PX has built-in thermal, overload and short-circuit protection that protects the unit from overcurrent and over temperature. The unit shuts down and turns back ON after the fault is removed.

FIG. 1

REAR PANEL   **FIG. 2**   FRONT PANEL

ILLUSTRATED PARTS

①	Power+Data Output Jack	Connects to PoE IP Cameras and/or Encoder
②	MIC Out Adjust	Adjust the audio output gain of the microphone
③	DC Out Terminal Block	Provides +12Vdc voltage to power external equipment such as Non-PoE cameras, encoders, relays, etc.
④	DC IN Power Jack	Receives 12Vdc power from external power supply (not supplied)
⑤	Mic/Speaker Audio Terminal Block	Receives wiring from Louroe Verifact Microphone and/or AOP-SP series
⑥	Audio Input Jack	Receives audio from IP Camera, Encoder, etc. and connects to audio output for talkback operation
⑦	Data Out Only Jack	Connects to data input of Non-PoE IP Cameras, and Encoders.
⑧	Power+Data Input Jack	Connects to PoE (802.3af) Switch or PoE (802.3af) Midspan
⑨	Audio Output Jack	Connects to audio input of IP cameras, Encoder, etc. Provides audio to IP Cameras, Encoder, etc.
⑩	Power Indicator	Lights Green indicating power is present to the unit

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CAUTION

1. Do not connect non-PoE complaint devices to Power+Data Output Jack①. Failure to do so may damage the powered equipment.

2. Do not connect wiring from external microphone or AOP-SP to the Mic/Speaker Audio Terminal Block⑤ until all the ethernet cables (RJ45) are connected and power is present to the camera. Failure to do so in sequence, the camera may not receive power.

NOTES

Plan ahead where to install before making any connections. The IF-PX is supplied with 6' audio cables for connections between the IF-PX and camera. The maximum distance between the IP camera and PSE is 100m or 328'.

CONNECTIONS AND OPERATIONS

CONNECTING PoE SWITCH TO PoE IP CAMERA OR ENCODER (See Fig. 3 and 4)

1. Connect Ethernet cable from PSE (Power Source Equipment) to the Power+Data Input Jack⑧ of the IF-PX.

2. Connect Ethernet cable from camera to Power+Data Output Jack① of the IF-PX. Camera should now have power and data running through it. Power Indicator⑩ lights up.

3. **Microphone Connection (one-way listen):**
   a) Connect a 2 cond. shielded cable to the terminal block of Louroe's Verifact microphone. Connect the other end to the pluggable header (Mic/Speaker Audio Terminal Block⑤) of the IF-PX. Connect terminal A of microphone to terminal A of IF-PX; terminal B of microphone to terminal B of IF-PX; terminal C of microphone to terminal C of IF-PX. Terminal SP of IF-PX is not used when connecting microphone only (one-way listen).
   b) Using the patch cable (stereo plug to stereo plug), connect the Audio Output Jack⑨ of the IF-PX to the audio input of the camera.
   c) Adjust the Mic Out Adjust② potentiometer (as needed) by rotating it clockwise to increase the microphone output to the camera, or counterclockwise to decrease. This potentiometer is factory set for a gain of 0dB output. See interconnection diagram(Fig 3) on page 4.

4. **AOP-SP Connection (two-way audio): Before connecting the AOP-SP series, make sure that the Ethernet cables between the PSE, IF-PX and Camera are all connected.**
   a) Connect a 3 cond shielded cable between the AOP-SP and the pluggable header (Mic/Speaker Audio Terminal Block⑤ of the IF-PX. Connect terminal A of the AOP-SP to terminal A of IF-PX; connect terminal B of AOP-SP to terminal B of IF-PX; terminal C of AOP-SP to terminal C of IF-PX and terminal SP of AOP-SP to terminal SP of IF-PX.
   b) Using the patch cable (stereo plug to stereo plug), connect the Audio Output Jack⑨ of the IF-PX to the audio input of the camera or encoder. Connect the Audio Input Jack⑥ of IF-PX to audio output of the camera or encoder. See interconnection diagram on page 5.
   c) See installation instructions of AOP-SP for setting up and operation of the unit.

5. **Setup camera for video and audio monitoring.** Use an amplified speaker and a microphone to test the audio. A push to talk microphone is recommended to minimize the echo when doing two-way audio. See camera user manual for setting up the camera to the network.

The IF-PX can power most IP cameras and Encoders, check that the power requirements of the equipment does not go beyond the IF-PX power output. See IF-PX power output below.
Power output of IF-PX:
       12Vdc, 650mA with AOP-SP connected
       12Vdc, 850mA with a Louroe microphone only connected

CONNECTING PoE SWITCH TO NON-PoE IP CAMERA OR ENCODER (See Fig 5)
1. Connect Ethernet cable from PSE (Power Source Equipment) to the Power+Data Input Jack⑧ of the IF-PX.

2. Connect Ethernet cable from camera to Data Out Only Jack⑦ of the IF-PX.

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3. Connect 2 wires to the DC Out Terminal Block③. At least 20 AWG wires should be used between the IF-PX and the encoder or camera. Positive 12Vdc connects to terminal marked "+12Vdc" of IF-PX. Negative 12Vdc or ground connects to terminal marked "GND" of IF-PX. Connect the other end of the 2 wires to the power jack or terminal block of the encoder or camera. If the encoder or camera has a 2.1mm power jack, an adapter (2-pin terminal block to 2.1mm male plug) can be used. Connect the wires to the 2-pin terminal block (**observe polarity**) of the adapter. Plug the adapter to the 2.1mm power jack of the encoder or camera.

4. Repeat same procedure when connecting Louroe Verifact microphone or AOP-SP (steps 3 thru 5 from the previous page - Connections and Operations).

CONNECTING NON-PoE SWITCH TO NON-PoE CAMERA OR ENCODER (See Fig. 6 - Encoder shown)

1. Connect Ethernet cable from Non-PoE Switch to the Power+Data Input Jack⑧ of the IF-PX.

2. Connect Ethernet cable from Encoder or Camera to Data Out Only Jack⑦ of the IF-PX.

3. Connect DC Out Terminal Block③ to the power input jack of the encoder or camera. This Terminal block supplies 12Vdc power to the camera or encoder. It can also provide power to other external equipment such relays, etc. that require a 12Vdc power. Connect 2 wires to the DC Out Terminal Block ③. At least 20 AWG wires can be use between the IF-PX and the encoder or camera. Positive 12Vdc connects to terminal marked "+12Vdc" of IF-PX. Negative 12Vdc or ground connects to terminal marked "GND"of IF-PX. Connect the other end of the 2 wires to the power jack or terminal block of the encoder or camera. If the encoder or camera has a 2.1mm power jack, an adapter (2-pin terminal block to 2.1mm male plug) can be used. Connect the wires to the 2-pin terminal block (**observe polarity**) of the adapter. Plug the adapter to the 2.1mm power jack of the encoder or camera.

4. Connect an external power supply (not included) to the DC In Jack④ to power the IF-PX and the encoder or camera. We recommend using a 12Vdc, 2A power supply.

5. Repeat same procedure when connecting Louroe Verifact microphone or AOP-SP (steps 3 thru 5 from the previous page - Connections and Operations).

SPECIFICATIONS

▪ Ethernet Connectors	RJ45 CAT 5 Input and Output Jacks
▪ Voltage Input	36V - 57V
▪ DC Output	12Vdc, 800mA
▪ Optional Power Supply	12Vdc, 2A, Ext. Power Supply (Not Supplied)
▪ Operating Temperature	-20°C to +45°C
▪ Connectors	RJ-45, DC Jack, Terminal Block for Microphone/Speaker 3.5mm Stereo Jacks for Audio IN/OUT
▪ Audio Output/Input	Line level
▪ Audio Output Gain	up to +15dB
▪ Material	Black Anodized Al 14 Ga
▪ Dimensions	6"L x 3 1/2"W x 2 1/8"H
▪ Weight	13oz.

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INTERCONNECTION DIAGRAM BETWEEN A PoE SWITCH, IF-PX, IP CAMERA
AND VERIFACT A MICROPHONE FOR ADDING ONE-WAY AUDIO

FIG. 3

PoE (802.3af) SWITCH

A B C SP

POWER+DATA IN

POWER+DATA OUT

IF-PX

AUDIO OUT

A B C SP

3.5MM STEREO PATCH CABLE

PoE IP CAMERA

AUDIO IN

2 COND SHIELDED 22AWG
WITH 24AWG DRAIN WIRE

A B C

VERIFACT A MICROPHONE

A B C

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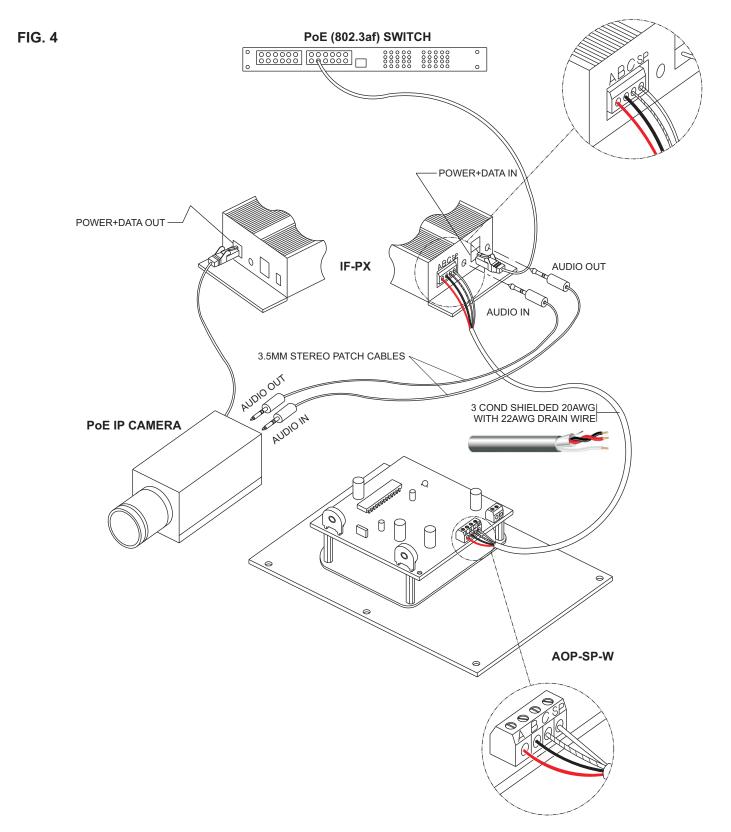**website: www.louroe.com   e-mail: sales@louroe.com**
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INTERCONNECTION DIAGRAM BETWEEN A PoE SWITCH, IF-PX, IP CAMERA AND AOP-SP SPEAKER/MICROPHONE UNIT FOR ADDING TWO-WAY AUDIO

FIG. 4

PoE (802.3af) SWITCH

POWER+DATA IN

POWER+DATA OUT

IF-PX

AUDIO OUT

AUDIO IN

3.5MM STEREO PATCH CABLES

PoE IP CAMERA

AUDIO OUT

AUDIO IN

3 COND SHIELDED 20AWG WITH 22AWG DRAIN WIRE

AOP-SP-W

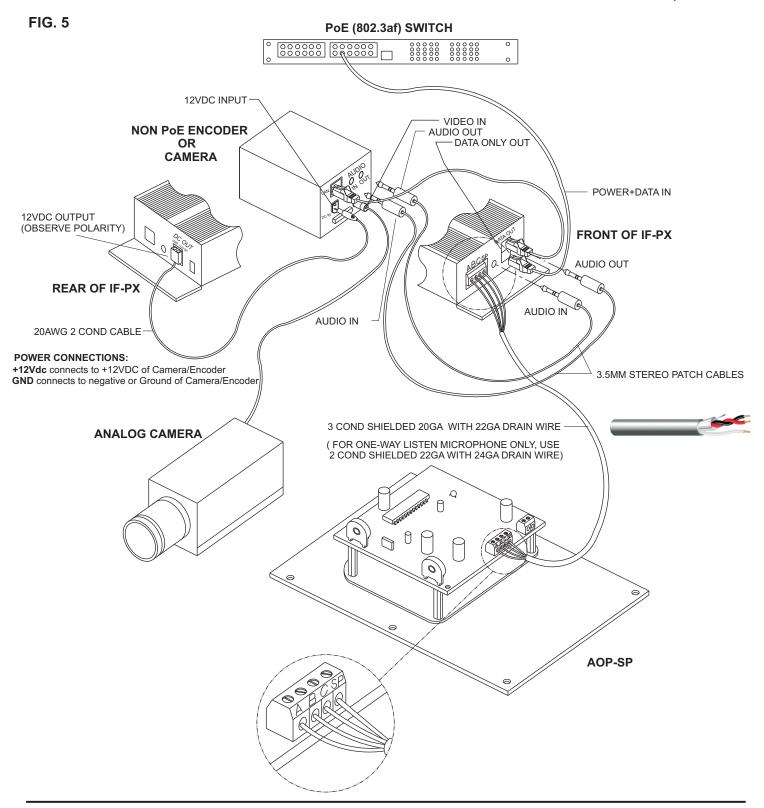**LOUROE ELECTRONICS® 6 9 5 5 V A L J E A N AVENUE, VAN NUYS, CA 91406 TEL (818) 994-6498 FAX (818)994-6458**
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INTERCONNECTION DIAGRAM BETWEEN A PoE SWITCH, IF-PX, NON-PoE ENCODER AND AOP-SP SPEAKER/MICROPHONE UNIT FOR ADDING TWO-WAY AUDIO
(WHEN USING LOUROE MICROPHONE FOR ONE-WAY LISTEN, JUST CONNECT ONLY THE AUDIO OUTPUT OF THE IF-PX TO THE AUDIO INPUT OF CAMERA OR ENCODER)

FIG. 5

PoE (802.3af) SWITCH

12VDC INPUT

VIDEO IN
AUDIO OUT
DATA ONLY OUT

NON PoE ENCODER OR CAMERA

AUDIO IN OUT

POWER+DATA IN

12VDC OUTPUT
(OBSERVE POLARITY)

DC OUT

FRONT OF IF-PX

DATA OUT

AUDIO OUT

REAR OF IF-PX

AUDIO IN

20AWG 2 COND CABLE

AUDIO IN

POWER CONNECTIONS:
+12Vdc connects to +12VDC of Camera/Encoder
GND connects to negative or Ground of Camera/Encoder

3.5MM STEREO PATCH CABLES

ANALOG CAMERA

3 COND SHIELDED 20GA WITH 22GA DRAIN WIRE

(FOR ONE-WAY LISTEN MICROPHONE ONLY, USE
2 COND SHIELDED 22GA WITH 24GA DRAIN WIRE)

AOP-SP

A B C SP

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INTERCONNECTION DIAGRAM BETWEEN A NON-PoE SWITCH, IF-PX, NON-PoE ENCODER AND AOP-SP SPEAKER/MICROPHONE UNIT FOR ADDING TWO-WAY AUDIO

(WHEN USING LOUROE MICROPHONE FOR ONE-WAY LISTEN, JUST CONNECT ONLY THE AUDIO OUTPUT OF THE IF-PX TO THE AUDIO INPUT OF CAMERA OR ENCODER)
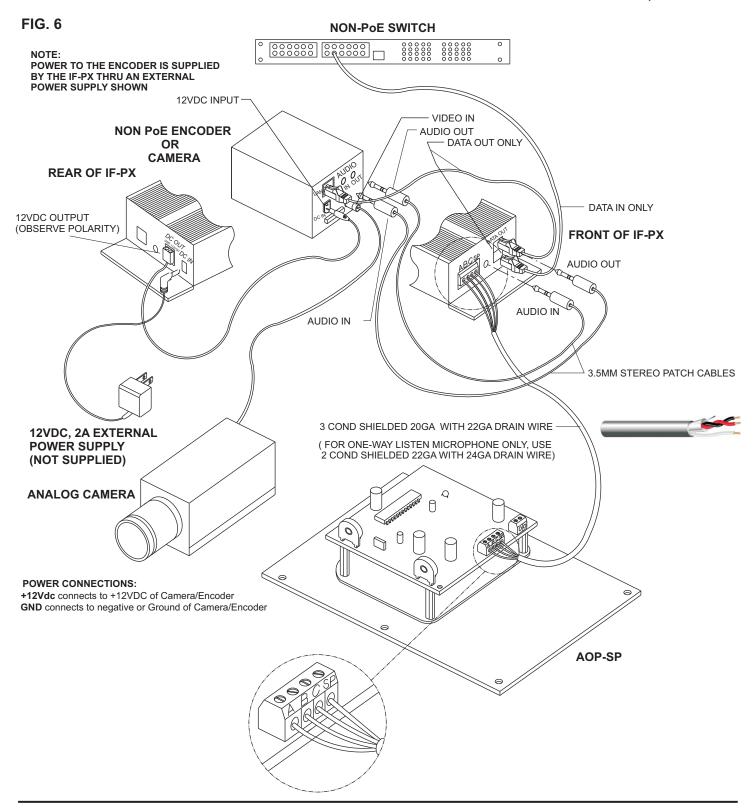
FIG. 6

NON-PoE SWITCH

NOTE:
POWER TO THE ENCODER IS SUPPLIED BY THE IF-PX THRU AN EXTERNAL POWER SUPPLY SHOWN

12VDC INPUT

VIDEO IN
AUDIO OUT
DATA OUT ONLY

NON PoE ENCODER OR CAMERA

REAR OF IF-PX

DATA IN ONLY

12VDC OUTPUT
(OBSERVE POLARITY)

FRONT OF IF-PX

AUDIO OUT

AUDIO IN

AUDIO IN

3.5MM STEREO PATCH CABLES

12VDC, 2A EXTERNAL POWER SUPPLY (NOT SUPPLIED)

3 COND SHIELDED 20GA WITH 22GA DRAIN WIRE

(FOR ONE-WAY LISTEN MICROPHONE ONLY, USE 2 COND SHIELDED 22GA WITH 24GA DRAIN WIRE)

ANALOG CAMERA

AOP-SP

POWER CONNECTIONS:
+12Vdc connects to +12VDC of Camera/Encoder
GND connects to negative or Ground of Camera/Encoder

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MANUFACTURED
IN THE

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. A decal notice is included with each microphone shipped.

AUDIO
MONITORING
On
These Premises
LOUROE
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Federal Law References:
Federal Regulations, US Code, Title 18. Crime and Criminal Procedure, Sec 2510.

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