PELCO

by Schneider Electric

INSTALLATION

AUD-1 Audio and ALM-1 Alarm Accessories

External Audio and Alarm Accessories

C2985M-C (3/14)

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LEGAL NOTICE

SOME PELCO EQUIPMENT CONTAINS, AND THE SOFTWARE ENABLES, AUDIO/VISUAL AND RECORDING CAPABILITIES, THE IMPROPER USE OF WHICH MAY SUBJECT YOU TO CIVIL AND CRIMINAL PENALTIES. APPLICABLE LAWS REGARDING THE USE OF SUCH CAPABILITIES VARY BETWEEN JURISDICTIONS AND MAY REQUIRE, AMONG OTHER THINGS, EXPRESS WRITTEN CONSENT FROM RECORDED SUBJECTS. YOU ARE SOLELY RESPONSIBLE FOR ENSURING STRICT COMPLIANCE WITH SUCH LAWS AND FOR STRICT ADHERENCE TO ANY/ALL RIGHTS OF PRIVACY AND PERSONALTY. USE OF THIS EQUIPMENT AND/OR SOFTWARE FOR ILLEGAL SURVEILLANCE OR MONITORING SHALL BE DEEMED UNAUTHORIZED USE IN VIOLATION OF THE END USER SOFTWARE AGREEMENT AND RESULT IN THE IMMEDIATE TERMINATION OF YOUR LICENSE RIGHTS THEREUNDER.

REGULATORY NOTICES

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and television reception.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

WARRANTY STATEMENT

For information about Pelco's product warranty and thereto related information, refer to *www.pelco.com/warranty*.

Description

The AUD-1 and ALM-1 are external accessories that can be connected directly to the accessory port of compatible Pelco devices. The AUD-1 is compatible with Spectra® HD Series dome systems and Sarix® camera models that do not have built-in audio. The ALM-1 is compatible with Spectra HD Series dome systems and most Sarix camera models.

The AUD-1 audio accessory is designed to work with microphones that have an internal preamplifier and provide a line-level output. The AUD-1 encodes audio from the microphone into a digital G.711 format. The audio can be streamed with the video to be played back and recorded at the headend. The AUD-1 can also receive the G.711 digital audio from the headend and convert it to an analog signal to be played through a speaker.

The ALM-1 alarm accessory features four alarm inputs, one auxiliary (Form C) relay output, and one open collector auxiliary output that can be alternatively configured to operate on alarm. Up to four ALM-1 alarm accessories can be configured for one device, which may require a USB hub. Each accessory is automatically recognized and configured by the Pelco device.

The audio and alarm accessories can be used simultaneously; however, if the Pelco device has only one accessory port, a USB hub is required.

NOTE: The ALM-1 accessory is not supported by DS ControlPoint.

MODELS

AUD-1	External audio accessory
ALM-1	External alarm accessory

AUD-1 PARTS LIST

The following parts are supplied:

Qty	Description
1	AUD-1 audio accessory
1	Left-angle USB cable (for use with Sarix IM Series cameras)
1	Mini USB cable (for use with Sarix IX and ID Series cameras)

ALM-1 PARTS LIST

The following parts are supplied:

Qty	Description
1	ALM-1 alarm accessory
1	Left-angle USB cable (for use with Sarix IM Series cameras)
1	Mini USB cable (for use with Sarix IX and ID Series cameras)
1	Micro B USB cable (for use with Sarix Enhanced IXE and IME Series cameras)

USER-SUPPLIED PARTS LIST

The following tools are recommended:

Qty	Description
1	1.4 mm or 2.0 mm screwdriver

Installation

1. Locate the camera's USB accessory port.
2. Connect the accessory appropriate for one of the following camera types:
   - **IE Series and Spectra HD Series:** Connect the accessory directly to the camera's USB accessory port.

     NOTE: For Spectra HD Series cameras, the ALM-1 alarm accessory must be connected to the accessory port closest to the dome drive when installed (refer to Figure 1).
   - **IX Series and ID Series:** Connect the mini USB cable (supplied) to the accessory, and then connect it to the camera's USB accessory port.
   - **IM Series:** Connect the left-angle USB cable (supplied) to the accessory, and then connect it to the camera's USB accessory port.
   - **Enhanced IXE and IME Series:** Connect the micro B USB cable (supplied) to the accessory, and then connect it to the camera's USB accessory port.

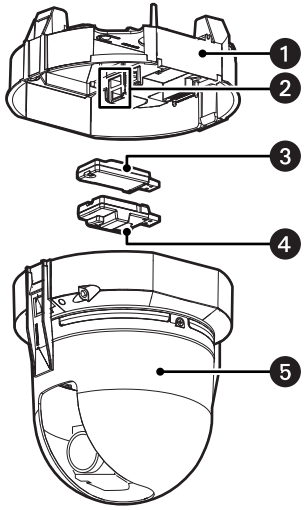

Figure 1. Installing the AUD-1 and ALM-1 into a Spectra HD Series Camera

1. Spectra HD Dome Drive Receiver (located inside the back box)
2. USB Ports
3. AUD-1 Audio Accessory
4. ALM-1 Alarm Accessory
5. Spectra HD Dome Drive

3. Connect the appropriate wiring (refer to *Wiring* on page 7).
4. Log on to the host camera, and enable the camera's audio or alarm streams as needed. Refer to the installation/operation manual shipped with the camera for complete instructions.

NOTE: Improper use of audio/visual recording equipment may subject you to civil and criminal penalties. Applicable laws regarding the use of such capabilities vary between jurisdictions and may require, among other things, express written consent from the recorded subjects. You are solely responsible for ensuring strict compliance with such laws and for strict adherence to any/all rights of privacy and personalty.

Wiring

AUDIO

NOTES:

- The maximum recommended cable length for the audio wiring is 304.8 m (1,000 ft).
- The AUD-1 is designed to work with microphones that have an internal preamplifier and provide professional line-level output (+4 dBu).
- If your microphone requires more than 12 VDC power, you will need to use a separate power line to power the microphone unit.
- If your microphone is a consumer line-level device (–10 dBu), the audio output may be quieter than you expect. Mic-level devices are not recommended as they must be amplified to a line-level signal, which often results in excessive noise.

To connect the wiring for the AUD-1:

1. Connect UTP wiring from an external microphone to pins 2 and 3 of the AUD-1 TB2 connector.
2. To supply power to the microphone, connect UTP wiring to the power terminals of the microphone and terminate them at pins 1 (12 VDC) and 4 (return) of the AUD-1 TB2 connector.
3. Connect UTP wiring from the external speakers to pins 1 and 2 of the AUD-1 TB1 connector.

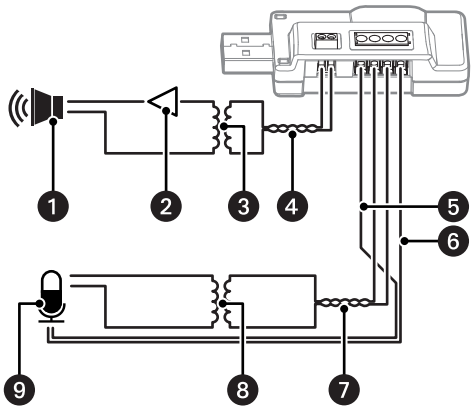

Figure 2. Wiring the AUD-1

1. Speaker
2. Amplifier
3. 600-Ohm Impedance Matching Transformer
4. UTP Wiring
5. +12 V Wire
6. 0 V (zero volt) Return Wire
7. UTP Wiring
8. 600-Ohm Impedance Matching Transformer
9. Line-Level Microphone

ALARM

1. Connect one wire of a UTP wire pair from each of your alarm input switches to pins 1 to 4 of the ALM-1 TB1 connector.
2. Connect the remaining wire of the UTP wire pair from your each of your alarm input switches to a wire nut or terminal block, and then run a single wire to the return pin 5 of the ALM-1 TB1 connector.
3. Connect UTP wiring from your alarm output devices to the ALM-1 TB2 connector.

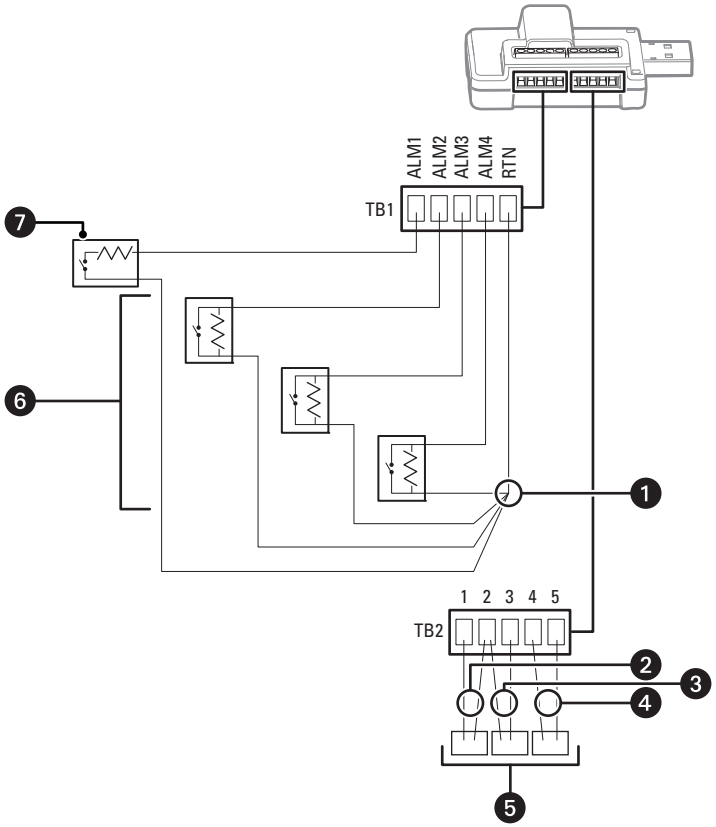

Figure 3. Wiring the ALM-1

1. Common Return
2. N.C. Wire Pair
3. N.O. Wire Pair
4. Solid-State Relay Wire Pair
5. Customer Relay Devices
6. N.O. Alarm Input Switches
7. N.C. Alarm Input Switches

CONNECTING A RELAY DEVICE

The ALM-1 has four outputs for activating external devices. It supports both momentary and continuous relay operation.

You can operate the relays interactively during an active connection, or they can operate automatically to coincide with certain events. Typical applications include turning on lights or other electrical devices or activating a door, gate, or lock.

⚠ **WARNING:** Do not exceed the maximum relay ratings of 40 V, 2 A, or 60 W.

CONNECTING ALARMS

The ALM-1 provides four alarm inputs for external signaling devices, such as door contacts or motion detectors. Both normally open and normally closed devices are supported.

Supervised Alarms

When an alarm is configured as a supervised alarm, the ALM-1 maintains a constant electrical current through the alarm circuit (3.3 VDC, 1 kohm). If the alarm circuit length changes, due to an electrical short or a bypass, the voltage fluctuates from its normal state and activates an alarm.

NOTE: Install the 1-kohm resistor as close to the switch as possible.

Figure 4 illustrates the alarm and no alarm conditions of a supervised alarm input. Whether the alarm is normally closed or normally open, neither a cut nor a bypass can defeat these alarms.

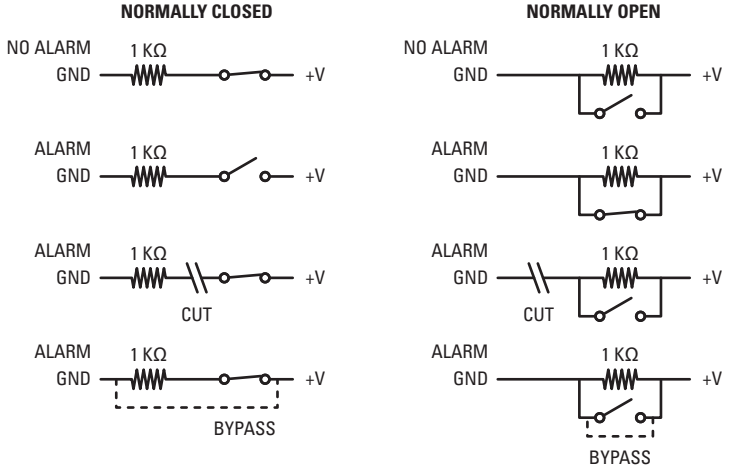

Figure 4. Supervised Alarm Conditions

Figure 5 illustrates the wiring configuration for supervised alarm inputs.

Figure 5. Supervised Alarm Input Wiring

Unsupervised Alarms

When an alarm is configured as an unsupervised alarm, an alarm is only activated when the normal alarm state (open or closed) changes.

Figure 6 illustrates the alarm and no alarm conditions of an unsupervised alarm input.

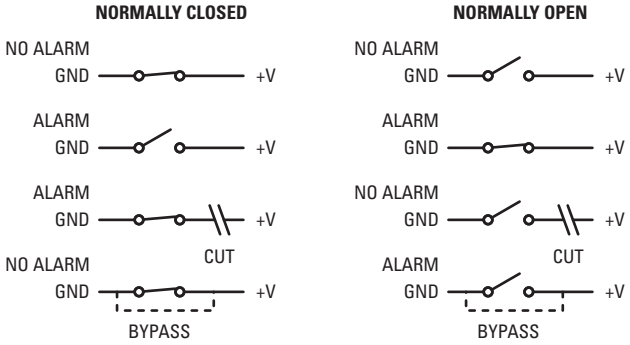

Figure 6. Unsupervised Alarm Conditions

Figure 7 illustrates the wiring configuration for unsupervised alarm inputs.

Figure 7. Normally Closed and Normally Open Unsupervised Alarm Input Wiring

NOTE: A normally closed alarm input can be defeated with a bypass; a normally open input can be defeated with a cut.

Alarm Connections

Figure 8 shows how to wire the ALM-1 to an alarm.

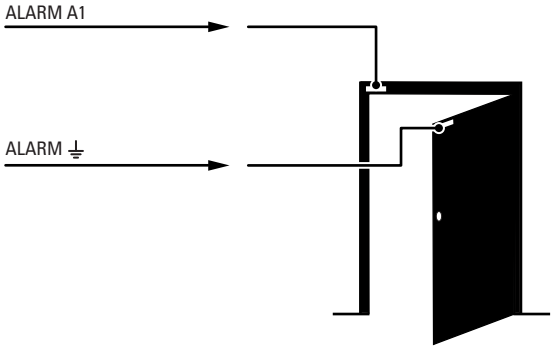

Figure 8. Alarm Connections

Troubleshooting

If the following instructions fail to solve your problem, contact Pelco Product Support at 1-800-289-9100 (USA and Canada) or +1-559-292-1981 (international) for assistance. Be sure to have the serial number available when calling.

Do not try to repair the unit yourself. Leave maintenance and repairs to qualified technical personnel only.

Table A. Troubleshooting the AUD-1 and the ALM-1

Problem	Possible Cause	Suggested Solution
Cannot enable the accessory.	The accessory is not correctly installed.	Ensure that the accessory is installed completely and correctly.
	The accessory is not enabled.	Enable the accessory.
	The accessory settings were not saved.	Save the settings after configuring the accessory.
The AUD-1 does not respond.	There is a problem with the wiring.	Ensure that the wiring is properly installed.
	The sampling rate is set incorrectly.	Set the sampling rate to 8 kHz.
	The microphone you are using is not a line-level device.	Use a line-level microphone.
The audio signal is weak.	There is no power to the microphone.	Apply power to the microphone (refer to *Wiring* on page 7).
	There is no speaker amplification.	Ensure that the line out wiring includes an amplifier.
	You are not using the correct type of transformer.	Use a 600-ohm impedance matching transformer.
	The wiring distance between the audio equipment may be too long.	Test the equipment using a shorter wiring distance.
	The gain is not properly adjusted.	If you are using an external amplifier and it has an adjustable gain, increase the gain until the signal is acceptable.
	You are using a consumer line-level microphone.	Use a professional line-level microphone.
		Add an external amplifier to your circuit and or adjust the gain.
The audio signal is noisy.	You are using a mic-level microphone rather than a line-level microphone.	Use a line-level microphone.
		Add an external amplifier that will bring the signal to line level.

Specifications

AUD-1

GENERAL

Compression	G.711
Sampling Rate	8 kHz
Bit Rate	64 kbps (8 kHz)
Dimensions	62.2 x 29.2 x 16.0 mm (2.45" L x 1.15" W x 0.63" H)
Weight	0.02 kg (0.04 lb)

ELECTRICAL

Power Input	5 VDC powered from USB

MECHANICAL

Audio Input	UTP 600 ohms mono using 4X terminal block (screw connection) with balanced line input and 12 VCD power source
Audio Output	UTP 600 ohms mono using 2X terminal block (screw connection) with balanced line output
Connector	USB 2.0 'A' male

ENVIRONMENTAL

Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	–20° to 60°C (–4° to 140°F)

ALM-1

GENERAL

Dimensions	59.2 x 31.8 x 17.2 mm (2.33" L x 1.25" W x 0.68" H)
Weight	0.02 kg (0.04 lb)

ELECTRICAL

Power Input	5 VDC powered from USB
Power Requirement	100 mW (17 mA, 5 V)
Mechanical Relay Limits	
Switching Load	60 W maximum continuous power dissipation
Maximum Current	2 A
Maximum Voltage	<40 V
Solid State Relay Limits	
Maximum Continuous Current	150 mA
Maximum Voltage	32 VDC

MECHANICAL

Alarm Input	Cat5 cable or 26 gauge wire
Auxiliary Input/Output	Cat5 cable or 26 gauge wire
Connector	USB 2.0 'A' male

ENVIRONMENTAL

Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	–20° to 60°C (–4° to 140°F)

This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

REVISION HISTORY

Manual #	Date	Comments
C2985M	2/11	Original version.
C2985M-A	3/11	Revised the ALM-1 accessory note in *Description*.
C2985M-B	9/13	Revised the ALM-1 parts list in *Description*. Updated warranty information. Added Enhanced IXE and IME to *Installation*.
C2985M-C	3/14	Clarified Parts List for AUD-1 and ALM-1 accessories.

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