



# **EHX\*E Series Explosionproof Camera Enclosure**



**C417M-L (7/03)**



## IMPORTANT SAFEGUARDS AND WARNINGS

Observe the following WARNINGS before installing and using this product.

1. Installation and servicing should be done only by qualified service personnel and conform to all local codes.
2. Only use replacement parts Pelco recommends.
3. The installation method and materials should be capable of supporting four times the weight of the enclosure, pan and tilt, camera and lens combination.
4. The camera and lens combination shall not exceed 20 lb (9.06 kg).
5. For marine applications, the installation shall be in accordance with the Electrical Engineering Regulations of the USCG, Subpart J, C.G. 259 (46 CFR Parts 110-113).
6. This enclosure has not been evaluated for use on vessels less than 65 feet (19.81 m) long.
7. Thermal shock of window was conducted at 83°C. If the temperature of the window is greater than 73°C in the end product, the thermal shock test must be repeated.
8. Connection facilities must be provided as part of the end product.
9. External or internal grounding connection must be provided for a minimum size conductor of 1.02 mm<sup>2</sup> (18 AWG).
10. Earthing or bonding facility for equipotential conductor should be provided inside the terminal compartment near the other connection facilities.
11. An EEx d IIB stopping box or cable gland must be provided as part of the end product.
12. When included in an end use installation, it must conform to the ATEX requirements.

The product and/or manual may bear the following marks:



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

**CAUTION:**

RISK OF ELECTRIC SHOCK.  
DO NOT OPEN.

Please thoroughly familiarize yourself with the information in this manual prior to installation and operation.

## DESCRIPTION

The EHX\*E Series of nonpressurized, explosionproof camera enclosures is designed to meet the rigorous requirements of explosionproof and dust-ignitionproof electrical equipment for installation and use in hazardous locations.

The EHX\*E Series is constructed of aluminum and available in 4-, 6-, and 8-inch diameters to accommodate most camera and lens combinations. They come equipped with a unique camera mounting sled and track assembly that allows fast, easy positioning of the camera assembly and can be securely locked in place.

## MODELS

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**NOTE:** Dimensions are inside dimensions.

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EHX4E	Explosionproof, nonpressurized enclosure, 4-inch diameter x 12-inch length (10.16 cm x 30.48 cm)
EHX6E	Explosionproof, nonpressurized enclosure, 6-inch diameter x 24-inch length (15.24 cm x 60.96 cm)
EHX6E-16	Same as EHX6E except 16-inch length (40.64 cm)
EHX8E	Explosionproof, nonpressurized enclosure, 8-inch diameter x 24-inch length (20.32 cm x 60.96 cm)

# INSTALLATION

The following parts are supplied:

- 1 Enclosure with attached mounting cradle
- 1 3/16-inch Allen wrench
- 1 5 mm Allen wrench
- 2 1/4-20 x 1/2-inch screws
- 2 Appleton explosionproof sealable fittings
- 1 Desiccant bag
- 1 Sealing instructions for fittings (C903M-A)
- 1 Service kit
  - 1 Rear O-ring
  - 4 Rear plate mounting screws
- 1 Tube of Loctite® 222 low-strength thread locker

A service kit is included in case you need these spare parts in the future. Save this kit.

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**NOTE:** If installing a heater or blower, do it first. Refer to C1495M-A (accessories manual) for instructions on installing heaters and blowers.

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1. Attach the cradle to a mount or pan and tilt unit. Follow the instructions supplied with the mount or pan and tilt unit.
2. Remove the enclosure's rear plate with the supplied 5 mm Allen wrench.
3. Remove the camera sled from the rail in the body by removing the Allen screw in the end of the sled. Use the supplied 3/16-inch Allen wrench.
4. If the camera lens is adjustable, extend the lens to its maximum length.
5. Position the camera over the appropriate mounting holes on the sled and fasten the camera to the sled with the two provided 1/4-20 x 1/2-inch screws. Make sure the lens does not extend beyond the front edge of the sled. This ensures the lens does not contact the enclosure window after installation.

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**NOTE:** You will need to use elevation blocks (EB1 or EB2) to properly elevate cameras with either a low optical center line or a large-diameter lens.

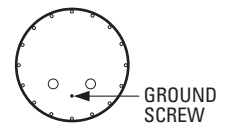
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6. Replace the camera sled in the enclosure, but do not reinstall the 1/4-20 Allen screw that holds the sled in place.
7. Install the sealing fittings on the rear of the enclosure. If you only need one fitting for wiring, install the supplied pipe plug in place of one of the fittings.
8. Bring the wiring through the fitting(s) for camera video and power and, if applicable, power for the accessories (heater and/or blower). Refer to Table A for 24 VAC applications only (accessories and camera).
9. Attach the video cable to the camera. Connect power to the camera and, if applicable, to the accessories.
10. Attach a ground wire to the 10-32 x 3/8-inch screw on the inside of the rear plate.

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**IMPORTANT NOTE:** The internal grounding terminal must be used for the equipment grounding connection and the external terminal is for a supplementary bonding connection where local codes or authorities permit or require such connection.

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**Figure 1.**  
Grounding Location

11. Push the camera sled all the way into the enclosure and fasten the sled with the 1/4-20 Allen screw.
12. Leave the desiccant bag inside the enclosure to absorb moisture. Replace the rear plate. Apply Loctite to the screws. Loctite 222 low-strength thread locker prevents corrosion between the stainless steel screws and aluminum enclosure parts. Corrosion causes the parts to seize, resulting in damage to them during disassembly.

13. If required, attach a ground wire to the terminal lug on the rear plate.

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**IMPORTANT NOTE:** The internal grounding terminal must be used for the equipment grounding connection and the external terminal is for a supplementary bonding connection where local codes or authorities permit or require such connection.

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14. Connect the video and power wiring from the sealing fittings to their sources through fittings and conduit suitable for hazardous locations.
15. For U.S. and Canada Only – Seal the fittings as specified by the manufacturer’s installation instructions in manual C903M-A. Sealant is not supplied or available from Pelco.

**Table A. 24 VAC Wiring Distances**

The following are the recommended maximum distances for 24 VAC applications and are calculated with a 10 percent voltage drop. (Ten percent is generally the maximum allowable voltage drop for AC-powered devices.)

**EXAMPLE:** An enclosure that requires 80 VA and is installed 35 feet (10 m) from the transformer would require a minimum wire gauge of 20 AWG.

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**NOTE:** Distances are calculated in feet; values in parentheses are meters.

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		Wire Gauge					
		20 AWG (0.5 mm <sup>2</sup> )	18 AWG (1.0 mm <sup>2</sup> )	16 AWG (1.5 mm <sup>2</sup> )	14 AWG (2.5 mm <sup>2</sup> )	12 AWG (4.0 mm <sup>2</sup> )	10 AWG (6.0 mm <sup>2</sup> )
Total VA consumed	10	283 (86)	451 (137)	716 (218)	1142 (348)	1811 (551)	2880 (877)
	20	141 (42)	225 (68)	358 (109)	571 (174)	905 (275)	1440 (438)
	30	94 (28)	150 (45)	238 (72)	380 (115)	603 (183)	960 (292)
	40	70 (21)	112 (34)	179 (54)	285 (86)	452 (137)	720 (219)
	50	56 (17)	90 (27)	143 (43)	228 (69)	362 (110)	576 (175)
	60	47 (14)	75 (22)	119 (36)	190 (57)	301 (91)	480 (146)
	70	40 (12)	64 (19)	102 (31)	163 (49)	258 (78)	411 (125)
	80	35 (10)	56 (17)	89 (27)	142 (43)	226 (68)	360 (109)
	90	31 (9)	50 (15)	79 (24)	126 (38)	201 (61)	320 (97)
	100	28 (8)	45 (13)	71 (21)	114 (34)	181 (55)	288 (87)
	110	25 (7)	41 (12)	65 (19)	103 (31)	164 (49)	261 (79)
	120	23 (7)	37 (11)	59 (17)	95 (28)	150 (45)	240 (73)
	130	21 (6)	34 (10)	55 (16)	87 (26)	139 (42)	221 (67)
	140	20 (6)	32 (9)	51 (15)	81 (24)	129 (39)	205 (62)

Maximum distance from transformer to load

## OPERATION

If your enclosure has a heater, the heater turns on at 40°F (4°C) and turns off at 60°F (16°C).

If your enclosure has a blower, the fan operates continuously.

## MAINTENANCE

### REGULAR MAINTENANCE



**WARNING:** Do not remove the front cover. If you do, Pelco cannot be held responsible for the loss of explosionproof rating, UL listing, or ability of enclosure to contain an explosion.

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Regularly scheduled maintenance will help to prolong the operational life and appearance of the equipment.

1. Periodically look inside the window of the enclosure and check the humidity indicator on the roof. Lavender indicates normal at the desired level of humidity. Pink indicates excessive dampness and blue indicates dryness. For example, if you want to maintain a humidity level of 20%, the 20% dot should be lavender.
2. Clean the window regularly with a mild nonabrasive detergent in water to help maintain picture clarity. For a heavily soiled window, use a glass cleaner.
3. Inspect the sealing fittings frequently for the condition of the sealant.

A service kit contain a rear O-ring and four rear plate mounting screws is included with the enclosure. Use these spare parts if the original parts are damaged or lost during maintenance or repair of the enclosure.

### SERVICE MANUAL

If you need to service the enclosure, obtain a service manual in one of the following ways:

- Go to Pelco's web site at <ftp://www.pelco.com> and find service manual C417SM.
- Call Pelco's DataFax service at 1-559-292-0435 and request document 24178.
- Contact Pelco's Literature Department and request service manual C417SM.

## SPECIFICATIONS

Cable Entry:	2 explosionproof sealable fittings.
Window:	Ground and polished, fully tempered plate glass
Window Viewing Area:	
EHX4E	3.19 in. (8.10 cm) diameter
EHX6E	3.00 in. (7.62 cm) diameter
EHX6E-16	3.00 in. (7.62 cm) diameter
EHX8E	4.25 in. (10.80 cm) diameter
Window Thickness:	
EHX4E	0.475 in. (1.21 cm) thick
EHX6E, EHX6E-16, EHX8E	0.500 in. (1.27 cm) thick
Maximum Camera and Lens Size:	<b>(Without Blower or Heater)</b>
EHX4E	1.750 (H) x 3.375 (W) x 12.0 (L) inches (4.45 x 8.57 x 30.48 cm) 12.0 (L) x 3.0 (diameter) inches (30.48 x 7.62 cm)
EHX6E	3.750 (H) x 4.375 (W) x 24.000 (L) (9.53 x 11.11 x 60.96 cm) 24.0 (L) x 5.0 (diameter) inches (60.96 x 12.70 cm)
EHX6E-16	3.750 (H) x 4.375 (W) x 16.000 (L) inches (9.53 x 11.11 x 40.64 cm) 16.0 (L) x 5.0 (diameter) inches (40.64 x 12.70 cm)
EHX8E	5.740 (H) x 5.125 (W) x 24.000 (L) inches (14.58 x 13.02 x 60.96 cm) 24.0 (L) x 7.3 (diameter) inches (60.96 x 18.54 cm)
	<b>(With Heater Only)</b>
EHX4E (only)	1.750 (H) x 3.375 (W) x 10.375 (L) (4.45 x 8.57 x 26.35 cm) 10.38 (L) x 3.00 (diameter) inches (26.36 x 7.62 cm)
	<b>(With Blower Only or Blower and Heater)</b>
EHX4E	1.750 (H) x 3.375 (W) x 9.000 (L) inches (4.45 x 8.57 x 22.86 cm) 9.0 (L) x 3.0 (diameter) inches (22.86 x 7.62 cm)
EHX6E	3.750 (H) x 4.375 (W) x 22.250 (L) inches (9.53 x 11.11 x 56.52 cm) 22.25 (L) x 5.00 (diameter) inches (56.52 x 12.70 cm)
EHX6E-16	3.750 (H) x 4.375 (W) x 14.250 (L) (9.53 x 11.11 x 36.20 cm) 14.25 (L) x 5.00 (diameter) inches (36.20 x 12.70 cm)
EHX8E	5.740 (H) x 5.125 (W) x 22.250 (L) (14.58 x 13.02 x 56.52 cm) 22.25 (L) x 7.30 (diameter) inches (56.52 x 18.54 cm)
Construction:	Aluminum 6061 T6
Finish:	Gray polyester powder coat
Dimensions:	See Figure 2



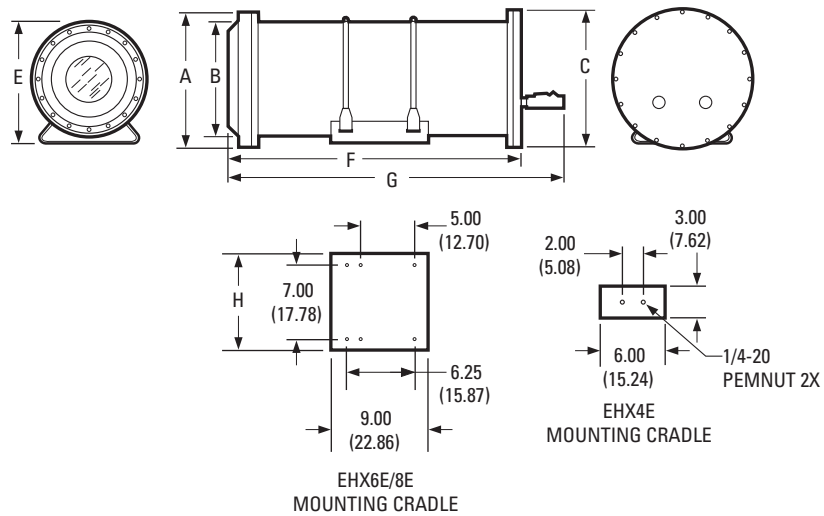
Certifications  
and Ratings:

Classified by Underwriters Laboratories Inc. as to explosion and fire hazard only  
 Type 4X enclosure for use in hazardous locations  
 Class I, Groups C and D – Class II, Groups E, F, and G  
 Class I, Zone 1, AEx d IIB, Ex d IIB  
 Ⓢ 03 ATEX 0318166U  
 0035 Ⓢ II 2 G EEx d IIB  
 Ⓢ II 2 D, IP 66  
 Suitable for marine outside (saltwater) use, for vessels over 65 feet in length

Weight:

EHX4E	15 lb (6.79 kg)
EHX6E	31 lb (14.04 kg)
EHX6E-16	27 lb (12.23 kg)
EHX8E	45 lb (20.41 kg)

(Design and product specifications subject to change without notice.)



DIM	EHX4E	EHX6E-16	EHX6E	EH8E
A	Ø7.00 (17.78)	Ø8.00 (20.32)	Ø8.00 (20.32)	Ø10.13 (25.72)
B	Ø4.50 (11.43)	Ø6.63 (16.83)	Ø6.63 (16.83)	Ø8.63 (21.92)
C	Ø7.00 (17.78)	Ø8.75 (22.23)	Ø8.75 (22.23)	Ø13.00 (33.02)
D	Ø3.19 (8.10)	Ø3.00 (7.62)	Ø3.00 (7.62)	Ø4.25 (10.80)
E	6.75 (17.15)	7.85 (19.94)	7.85 (19.94)	9.65 (24.51)
F	14.25 (36.20)	18.70 (47.50)	26.70 (67.82)	26.67 (67.74)
G	18.25 (46.36)	22.70 (57.66)	30.70 (77.98)	30.67 (77.90)
H	N/A	8.57 (21.77)	8.57 (21.77)	9.12 (23.16)

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

Figure 2. EHX\*E Series Dimension Drawing



## PRODUCT WARRANTY AND RETURN INFORMATION

### WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on FT/FR8000 Series fiber optic products.
- Three years on Genex® Series products (multiplexers, server, and keyboard).
- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.
- Two years on standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.
- Two years on Spectra®, Esprit®, ExSite™, and PS20 scanners, including when used in continuous motion applications.
- Two years on Esprit® and WW5700 Series window wiper (excluding wiper blades).
- Eighteen months on DX Series digital video recorders, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

### RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

*If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:*

Service Department  
Pelco  
3500 Pelco Way  
Clovis, CA 93612-5699

*If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:*

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco  
3500 Pelco Way  
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors  
473 Eccles Avenue  
South San Francisco, CA 94080 USA  
Phone: 650-737-1700  
Fax: 650-737-0933

### REVISION HISTORY

Manual #	Date	Comments
C417M-I	7/97	Rev. I. Updated manual to new format. Revised installation instructions and added assembly drawings to show all new enclosures, which were redesigned by Engineering to meet additional and more stringent standards for global certification. Model numbers changed.
	9/97	Added service kit per ECO# 97-401.
	11/97	Added instructions to apply Loctite® to screws per ECR# 1182. Removed column for 22-gauge wire from Table B.
	4/98	Added Important Note in Section 3.0. In Figure 12 changed dimension D for EHX4E per ECO #97-335.
C417M-J	8/98	Rev. J. Moved all material relating to heaters and blowers to new accessories manual C1495M, including the enclosure accessory wiring distances table. Moved exploded assembly diagrams, wiring diagrams, and parts lists relating to the enclosures to a new service manual, C417SM. Renumbered sections, figures, and tables.
C417M-K	7/99	Added maximum camera and lens sizes. Modified Figure 1, and window and weight specifications. Updated to new format.
C417M-L	6/03	Removed references to model EHX10E, updated Certifications and Safeguards and Warnings sections, and added Figure 1.

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