

Installation & Operation Manual

X684

V8-80HS-1 SERIES OF HIGH-SPEED MOTORIZED ZOOM LENSES

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Dear Valued Customer:

Thank you for selecting Vicon systems and products for your video needs.

Since Vicon's beginning in 1967, our only business has been the design, engineering, and production of the highest quality video systems and equipment for use in a wide variety of security, safety, control, surveillance, and communication applications.

We stand behind the quality and dependability of every product with an industry leading Beneficial Use warranty.

If you are not satisfied with a Vicon product or service, I would like to know. Your complete satisfaction is the mission of every Vicon employee.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth M. Darby". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth M. Darby
President

Introduction

The information in this manual covers the installation, operation and maintenance of the V8-80HS-1 Series of High-Speed Motorized Zoom Lenses. These units should be installed by a qualified technician using approved materials in conformance with national, state and local electrical codes. Read these instructions through completely before attempting installation.

The V8-80M-HS-1 lens features motorized zoom, focus and iris functions. This model is appropriate for indoor use. The V8-80MS-HS-1 lens features motorized zoom, focus, and iris and is equipped with a neutral-density spot filter to permit use in a wide range of lighting conditions. With this lens, a sensitive camera can operate effectively in both partial darkness and high-light-level conditions. The V8-80MS-HS-P-1 has the same features, but it adds preset-position potentiometers to the zoom and focus controls.

The V8-80AC-HS-1 lens has the same features as the V8-80MS-HS-1 plus video-drive autoiris operation. This additional feature provides optimum viewing contrast regardless of light conditions or brightness variations within the scene. In the AC lens, the iris is controlled by a stepping motor, which is virtually unaffected by vibration or operating position. The microcomputer iris control provides precise responsive iris operation. The V8-80AC-HS-P-1 has the same features, but it adds preset-position potentiometers to the zoom and focus controls. Refer to Table 1 for a full list of models.

The preset-position option consists of precision potentiometers built into the lens that provide position feedback information for zoom and focus to an appropriate control unit.

Table 1
V8-80HS-1 Models

Model	Product Code	Description
V8-80M-HS-1	5863	Motorized zoom, focus and iris
V8-80MS-HS-1	5864	Motorized zoom, focus and iris; neutral-density spot filter
V8-80MS-HS-P-1	5864-01	Motorized zoom, focus and iris; neutral-density spot filter; preset position potentiometers
V8-80AC-HS-1	5865	Motorized zoom, focus; video-drive autoiris; neutral-density spot filter
V8-80AC-HS-P-1	5865-01	Motorized zoom, focus; video-drive autoiris; neutral-density spot filter; preset position potentiometers

Notes

Installation

Unpacking and Inspection

All Vicon equipment is tested and inspected before leaving the factory. It is the carrier's responsibility to deliver the equipment in the same condition as it left the factory.

Inspect the cartons upon delivery and, if damage is present, make detailed notes on the carrier's bill. Then obtain the carrier's agent signature and file a damage claim as soon as possible.

Open the cartons and inspect the equipment for damage. Save the cartons and packing material. If damage is present, contact the carrier and file a damage claim immediately. If the equipment must be returned for repair, refer to the Shipping Instructions Section of this manual.

Mounting the Lens

Do not exceed the maximum recommended distances between a lens and its control unit.

Note: *The front element of a zoom lens moves in and out as the lens focus is changed. The closest focusing position corresponds to the greatest extension of the lens. When installing a lens in a housing, make sure that the lens is fully extended. Allow ¼inch (6 mm) of clear space between the extended lens and the window.*

⚠ Caution: *Control units having the three-position distance switch MUST NOT be set for longer than recommended distances or the lens may be seriously damaged.*

⚠ Caution: *Do not mount an autoiris lens on a camera that is installed on an autopanning unit. Such use causes excessive wear, as the iris mechanism constantly compensates for different light levels.*

1. Screw the lens firmly into the mount on the camera (V8-80HS-1 lenses have C mounts). If the lens is not oriented correctly after screwing it into the camera, proceed with step 2.
 2. Rotate the lens in either direction against the friction clutch in the lens mount to obtain the best installation angle.
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Wiring the M and MS Lenses

The M and MS lenses are supplied with AMP Miniature Rectangular (MR) connectors for zoom, focus, iris, and preset functions. The lens has a single cable with multiple conductors. The number of conductors depends on the lens model. Connect cables from the lens control to the MR mating connector in the accessory pack.

Lenses without the preset function are supplied with a 6-pin connector, while lenses with presets have a 9-pin connector. The wiring of both connectors is shown in Figure 1. Tables 2 and 3 show the color-coding of the cables from the lens.

Table 2
Wiring for M and MS Lenses

Pin Number	Wire Color	Function
1	White	Iris drive
2	Red	Zoom drive
3	Green	Focus drive
4	Black	Common
5	-	Not used
6	White/Black	Ground or shield

Table 3
Wiring for M and MS Lenses with Presets

Pin Number	Wire Color	Function
1	White	Iris drive
2	Red	Zoom drive
3	Green	Focus drive
4	Black	Lens common
5	Gray	Potentiometer return (-)
6	Brown	Potentiometer supply (+)
7	Blue	Zoom wiper
8	Yellow	Focus wiper
9	White/Black	Ground or shield

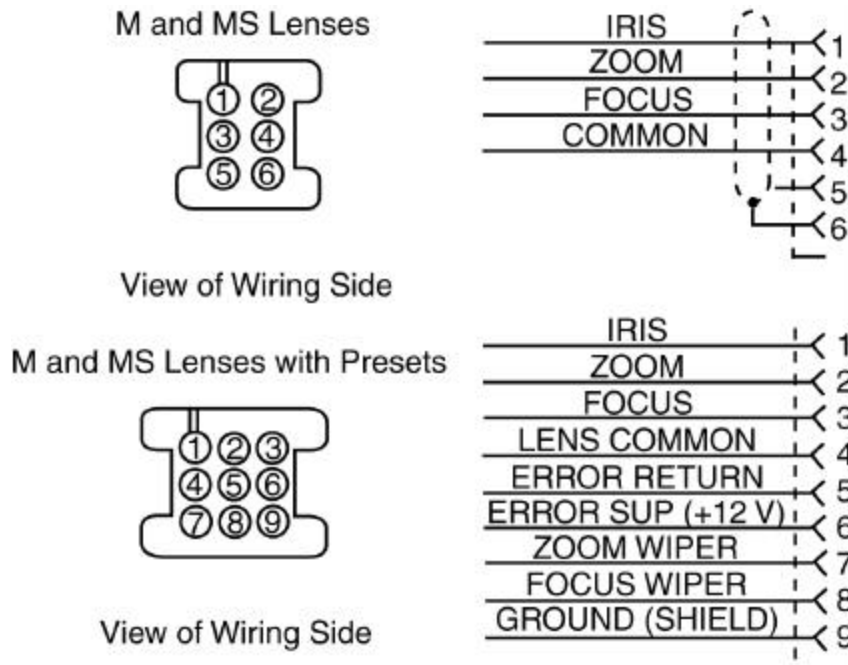


Figure 1
Connector Diagram, M and MS Lenses

Wiring the Autoiris (AC) Lens

AC lenses have two cables. One cable has a AMP MR (Miniature Rectangle) connector. This provides connection for the zoom, focus and preset controls. Lenses without the preset function are supplied with a 6-pin connector, while lenses with presets have a 9-pin connector. The wiring of both connectors is shown in Figure 2. Table 4 shows the color-coding of the control cables and Table 5 shows the color coding for the control and preset cables. The second cable is connected directly to the video drive connection on the camera and does not have a connector. Most cameras provide either a screw terminal connector or a spring-loaded pushbutton connector on the back of the camera for video-drive autoiris lenses. If the camera requires a separate connector for the autoiris cable, it is supplied with the camera and should be wired according to the instructions provided with the camera. The cable controlling the autoiris drive in an AC lens may consist of three or four conductors and a shield. For proper operation, the shield of the cable MUST be grounded to the same pin as the black (common) conductor. If the autoiris cable has four conductors, the green conductor is not used and may be cut off. Table 6 shows the coding for the autoiris cable.

Table 4
Wiring for AC Lenses

Pin Number	Wire Color	Function
1	-	Not used
2	Red	Zoom drive
3	Green	Focus drive
4	Black	Common
5	-	Not used
6	White/Black	Ground or shield

Table 5
Wiring for AC Lenses with Presets

Pin Number	Wire Color	Function
1	-	Not used
2	Red	Zoom drive
3	Green	Focus drive
4	Black	Lens common
5	Gray	Potentiometer return (-)
6	Brown	Potentiometer supply (+)
7	Blue	Zoom wiper
8	Yellow	Focus wiper
9	White/Black	Ground or shield

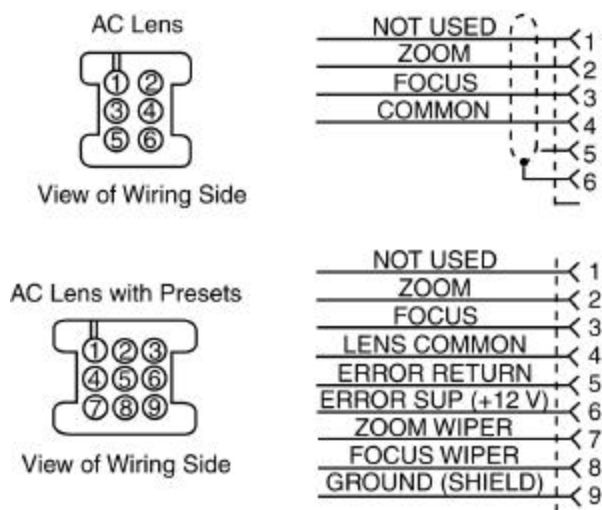


Figure 2
Connector Diagram, AC Lenses

Table 6
Wiring for Autoiris Cable of AC Lenses

Wire Color	Function
Red	9 – 10 VDC
White	Video

Black	Ground
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Zoom and Focus Adjustment Procedure

The following procedure should be used to obtain the best results in setting optical and mechanical focus.

1. Adjust the zoom function to the maximum telephoto setting, then focus on a convenient distant object. Readjust the zoom to the maximum wide angle setting and check the focus. The focus should remain reasonably sharp. If it does not, the back focus (mechanical focus) of the camera must be adjusted according to steps 2 and 3.
2. Adjust the back focus by positioning the camera 25-50 feet (7.6-15 m) from a flat vertical surface suitable for focusing. (A textured wall or a page of a newspaper are good focusing targets.) Open the iris to its maximum. If the lens has an autoiris, reduce the lighting to open the iris up to its maximum. This is necessary to obtain the most accurate back focus adjustment.
3. Zoom in to the maximum telephoto position and focus the lens. Zoom out, watching the focus on the monitor. If the image goes out of focus, adjust the back focus. Repeat the process until optimum focus is obtained. Lock the back focus mechanism in place.

Zoom Speed Control: The time required to zoom from maximum wide angle to maximum telephoto settings is adjustable from 2 to 7 seconds. To make the adjustment, remove the cap over the potentiometer and turn to adjust the speed. Turn the potentiometer clockwise to increase the speed. Refer to Figure 3.

Focus Speed Control: The time required to adjust focus from the closest setting to infinity is adjustable from 2 to 8 seconds. To make the adjustment, remove the cap over the potentiometer and turn it to adjust the speed. Turn the potentiometer clockwise to increase speed. Refer to Figure 3.

Iris Speed Adjustment

Iris speed is adjustable on the MS lens, which provides remote manual iris control. The AC lens, which features autoiris operation, does not have an iris speed adjustment.

The iris speed of the MS lens can be adjusted from full open to closed in from 1.5 to 8 seconds. Remove the cap over the potentiometer (refer to Figure 3) and turn the potentiometer to adjust the speed. Turning it clockwise increases the speed.

Autoiris Adjustment

Autoiris (AC) zoom lenses must be adjusted for optimum picture quality. Although two adjustments, automatic light control (ALC) and video level (LEVEL), are provided on the lens, the level control is preset at the factory and should not be readjusted unless other methods of optimizing the picture are unsuccessful.

Before making any attempt to adjust the lens, perform the following monitor setup procedure: turn the BRIGHTNESS and CONTRAST controls on the monitor fully counterclockwise, then turn them back to approximately midscale. These controls vary from monitor to monitor, but these settings are adequate for initial adjustment.

Automatic Light Control (ALC)

This control adjusts the contrast level of the picture. The limits of the adjustment are labelled P (peak) and A (average), and the control is set at average at the factory. When making an adjustment, turn the potentiometer a

little at a time. If the contrast is too strong, turn the potentiometer clockwise, toward P; if the contrast is too weak, turn the potentiometer counterclockwise, toward A.

Video Level (LEVEL)

The level control is preset at the factory for optimum performance, so normally no adjustment is required. Adjusting this control when it is not necessary may spoil the picture quality. If all other adjustments fail to produce a satisfactory picture, adjust the LEVEL potentiometer. The adjustment limits are low (L) and high (H).

Note: When making an adjustment, turn the potentiometer a little at a time.

1. Set the camera AGC to OFF.
2. Remove the rubber cap from the potentiometer and adjust it. If the contrast is too strong, turn the potentiometer counterclockwise, toward L; if the contrast is too weak, turn the potentiometer clockwise, toward H.
3. Reset the camera AGC to ON.

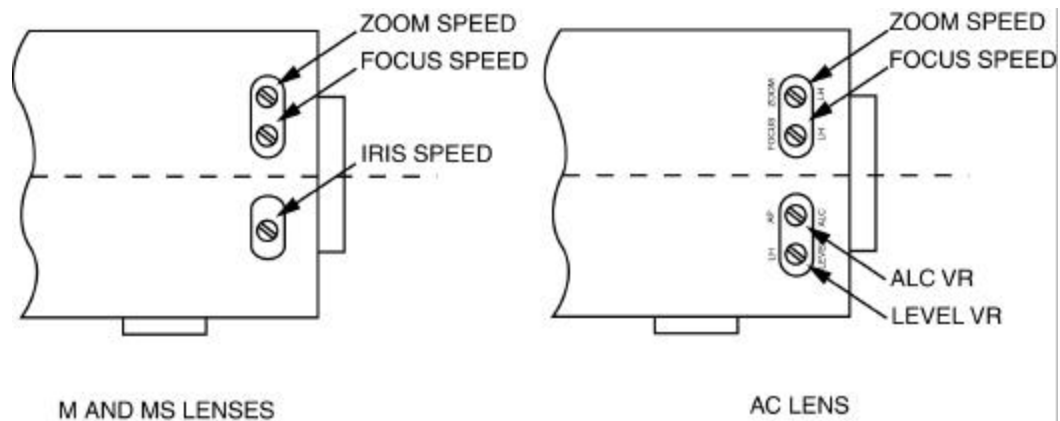


Figure 3
Lens Adjustment Location

Shipping Instructions

Use the following procedure when returning a unit to the factory:

1. Call or write Vicon for a Return Authorization (R.A.) at one of the locations listed below. Record the name of the Vicon employee who issued the R.A.

Vicon Industries Inc.
89 Arkay Drive
Hauppauge, NY 11788
Phone: 631-952-CCTV (2288); Toll-Free: 1-800-645-9116; Fax: 631-951-CCTV (2288)

For service or returns from countries in Europe, contact:

Vicon Industries (U.K.) Ltd
Brunel Way
Fareham, PO15 5TX
United Kingdom
Phone: 44/(0)1489/566300; Fax: 44/(0)1489/566322

2. Attach a sheet of paper to the unit with the following information:
 - a. Name and address of the company returning the unit
 - b. Name of the Vicon employee who issued the R.A.
 - c. R. A. number
 - d. Brief description of the installation
 - e. Complete description of the problem and circumstances under which it occurs
 - f. Unit's original date of purchase, if still under warranty
3. Pack the unit carefully. Use the original shipping carton or its equivalent for maximum protection.
4. Mark the R.A. number on the outside of the carton on the shipping label.

Technical Information

OPTICAL

Focal Length:	8-80 mm (10X).
Effective Aperture Range:	M Lens: f/1.4.- f/22. MS, AC Lens: f/1.4.- f/360.
Horizontal Angle of View:	Wide: 45.9°. Telephoto: 4.6°.
Vertical Angle of View:	Wide: 34.4°. Telephoto: 3.5°.
Diagonal Angle of View:	Wide: 57.6°. Telephoto: 5.7°.
Minimum Focusing Distance:	4.9 ft. (1.5 m).
Flange Focal Distance:	0.690 in. (17.5 mm).

ELECTRICAL

M and MS Lenses

Motor Drive Voltage:	6 - 12 VDC.
Operating Current:	Zoom: 40 mA max. Focus: 40 mA max.
Connectors:	Standard lens: Vicon part number 8000-9800-00 on pendant cable. (Mating connector 8000-9736-00 supplied.) Preset lens: Vicon part number 8000-9801-00 on pendant cable. (Mating connector 8000-9645-00 supplied.)
Cable Requirements:	Without presets: 4 conductor, shielded. With presets: 8 conductor, shielded.

AC Lenses

Input Voltage:	Iris: 8 – 16 VDC. Zoom and focus: 7.5 VDC.
Operating Current:	Iris: 40 mA max. Zoom and focus: 43 mA max. per motor.
Connectors:	Iris: 3-conductor shielded pendant cable supplied for iris. Zoom and focus: Standard lens; Vicon part number 8000-9800-00 on pendant cable. (Mating connector 8000-9736-00 supplied.) Preset lens; Vicon part number 8000-9801-00 on pendant cable. (Mating connector 8000-9645-00 supplied.)

Cable Requirements: Without presets: 3 conductor, shielded.
With presets: 7 conductor, shielded.

Video: Requires video from 0.5 V to 1.0 V peak-to-peak for proper iris operation.

OPERATIONAL

Duty Cycle: Intermittent.

Iris Speed: M, MS Lens: 1.5 – 8 sec at 8 VDC, adjustable.
AC Lens: 2.0 sec, not adjustable.

Focus Speed Range: 2 - 8 sec, adjustable.

Zoom Speed Range: 2 - 7 sec, adjustable.

MECHANICAL

Dimensions: Height: 2.6 in. (66 mm).
Width: 3.0 in. (76 mm).
Length: 4.7 in. (119 mm).
Optical center to bottom: 1.3 in. (34 mm).
Distance from bottom mounting hole to mounting flange:
1.2 in. (31 mm).

Weight: 1.43 lb (0.65 kg).

Mount Type: C mount.

Filter Threads: Diameter: 58 mm.
Pitch: 0.75 mm.

Maximum Lens Penetration into Camera: 0.28 in. (7.1 mm).

Mounting Hole: ¼20 thread x ¼in. deep.

ENVIRONMENTAL

Operating Temperature: 14 - 122° F (-10 – 50° C).

Storage Temperature: -40 to 150° F (-40 to 65° C).

Storage Humidity: Up to 90% relative, noncondensing.