

# QS-402HR

## B&W Quad Operations Manual



### Features

- High Resolution 672x480 pixels
- 256 Gray Scales or 8 bit
- True Real Time 60Hz picture update
- 4 Alarm Inputs
- 1 Alarm Output
- Full Screen Call Up
- Camera Sequencing with 3 second dwell
- Freeze of each channel independently
- 12VDC Low Power consumption
- Removeable Screw terminals for alarms
- Rugged extruded aluminum case

**AVE**

American Video Equipment  
1617 E. Richey Rd. Houston, Texas 77073  
Tel 281-443-2300 Fax 281-443-8915

e-mail [aveus@ibm.net](mailto:aveus@ibm.net) website [www.americanvideoequipment.com](http://www.americanvideoequipment.com)

## Introduction

The QS-402HR is the state of the art high resolution monochrome quad compressor. This device accepts four 1V P-P video inputs from any RS-170 EIA source. Normally this device is connected to CCTV B&W cameras and used for video surveillance. The QS-402HR will then digitally compress the full screen incoming image to a 1/4 size image and display all four images simultaneously on the video monitor. The images are not separated by black or white lines to give the viewer the maximum possible viewing area. If something of interest is seen on any of the displayed quad pictures, just press the corresponding camera selection button and that camera will be visible full screen for better inspection. The user can automatically sequence through all the cameras if desired. Alarm inputs are provided for connecting to external trigger devices to call any particular camera full screen when the alarm is active. The QS-402HR has looping inputs but are terminated by a 75 ohm resistor so when looping out to other devices, these other devices must not be terminated. The 1 V P-P video output of the QS-402HR has two BNC connectors and can drive two 75 ohm loads directly.

## Connections

Power up your QS-402HR by plugging the included 12VDC wall adapter into the mains plug. Connect the DC coax connector end into the rear of the QS-402HR marked power. This is a 5.1x5.5mm DC coax type plug and jack. There are five



LEDs on the front of the QS-402HR. The green one to the far left will be illuminated continuously when power is applied. Next connect the four BNC video inputs to the unit from the cameras or video sources. As seen above they are labelled 1-4 corresponding to the four front panel buttons. The two BNCs to the left are the video outputs and should be connected to the video monitor. If connected directly to the video monitor and no other looping devices then this monitor should

be terminated by 75 ohms. If the video inputs are looped out to other devices then the other devices must not be terminated. The green connector to the far left is the alarm connections. All alarm inputs are normally open and a contact closure to ground will trigger the alarm. The alarm output is an open collector transistor and can only sink no more than 20mA of current at 12VDC. When all the video connections are made and the unit powered up the quad display will be visible on the monitor.

## **Operation**

As stated above upon powering up the QS-402HR with the proper connections, the quad display will be visible. Upon pressing camera 1-4 the unit will freeze the respective quad and pressing the same button again will unfreeze the quad. The QS-402HR automatically freezes the quad when video has been disconnected from the respective camera. If it appears the freeze is permanent, home to that camera to verify video is present. Upon power down and back up the QS-402HR will always return in the quad mode display. Pressing the Quad/Seq button while in the quad display mode will enter the unit into the sequencing mode. Each camera will sequence in order with a three second dwell. This dwell period is fixed and is not programmable. Pressing any other camera button in this mode will home to that camera. Pressing the same button twice will return to the sequencing from the homing mode. Pressing the Quad/Seq button while in the sequencing mode or the homing mode will return to the quad display mode.

## **Alarms**

The QS-402HR has 4 alarm inputs. Each alarm is associated with a camera input. When the alarm is active the QS-402HR will home manually full screen to that camera for the duration of the alarm. If the QS-402HR had been in the quad mode prior to the alarm condition, upon release of the alarm the QS-402HR will go back to the quad mode. If the QS-402HR had been in the sequencing mode the prior to the alarm condition the unit will revert back to the sequence mode after the alarm condition is cleared. If more than one alarm is active at any given time the unit will display the quad mode. The alarm inputs to the QS-402HR are contact closures to ground. Since they are high impedance inputs a TTL or CMOS 5 VDC digital signal will drive them also. The alarm output is an open collector 2N3904 NPN transistor. This transistor can sink up to 20mA at 12VDC. Never exceed these ratings on the alarm inputs or alarm output or permanent damage to the unit will result. The removeable screw terminal type connector make for easy connection and connector removal without disconnecting wiring.

## Specifications

Video Inputs	4 BNC 1V P-P RS-170 EIA Looping 75 ohm terminated
Video Outputs	2 BNC 1V P-P terminated 75 ohm or unterminated
Signal Format	EIA Monochrome B&W
Synchronization	Internal
Resolution	672 horizontal by 480 vertical pixels
Grayscale	256 levels of gray or 8 bit
Quad Picture Update Rate	60hz or 60 new pictures per second
Dwell Time	3 seconds fixed
Alarm Time	Manual or length of alarm
Alarm Inputs (NO)	4 removeable screw terminal HiZ Normally open contact closure to ground.
Alarm Output	1 open collector 12VDC @ 20mA
Indicators	5 LEDs - Power, Camera 1-4
Dimensions	8.75"Lx7.75"Wx1.75"H
Weight	2.65 lbs
Construction	Extruded aluminum 6060
Power	12VDC Unregulated @ 400mA approx. 5W
Operating Temperature	32F - 113F (0C -45C)
Wall Adapter	120VAC to 12VDC @ 1Amp Unregulated UL/CSA
Warranty	1 year parts and labor

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All specifications subject to change