JAVELIN

JMCD10/16
10 & 16 Channel
Color Video Multiplexers
Installation Instructions

November 1997

The information in this publication is believed to be accurate in all respects. However, Javelin Systems cannot assume responsibility for any consequences resulting from the use thereof. The information contained herein is subject to change. Revision to this publication or new additions to it may be issued to incorporate such changes.

INSTALLATION GUIDE

INSTALLATION SITE LOCATION

1. Ensure that the AC power supply to which the unit will be connected is stable and is within 10% of the unit's rated voltage. If the power source is likely to have excessive spikes or power dips, power line conditioning or a UPS should be considered to avoid possible power resets or damage to the unit.

2. Ventilation: Ensure that the location planned for the installation of the unit is well ventilated. Take note of the locations of the cooling vents in the unit's enclosure. Ensure that they are not obstructed in the planned installation.

3. Temperature: Observe the unit's ambient temperature specifications when choosing an installation site. Extremes of heat or cold beyond the specified operating temperature limits may cause the unit to fail or to be damaged.

4. Other equipment: Do not install the unit in cabinets with or immediately above other equipment which may cause ambient temperatures around the unit to exceed the operating temperature limits for the unit.

5. Rack mount: If the unit is to be rack-mounted, ensure that the unit will be adequately supported and that the weight of other equipment is not directly on the unit. A rack-mount kit is available for the unit.

BASIC INSTALLATION STEPS

1. Connect Camera Inputs

1.1 On the rear panel, connect cameras to the top video inputs of the connector pair for each camera to be installed, using input 1 first. When the camera is not looping through to another device (i.e. monitor) then the unit will automatically terminate the video signal with a 75ohm load. See figures 1.1 or 1.2 depending on the model.

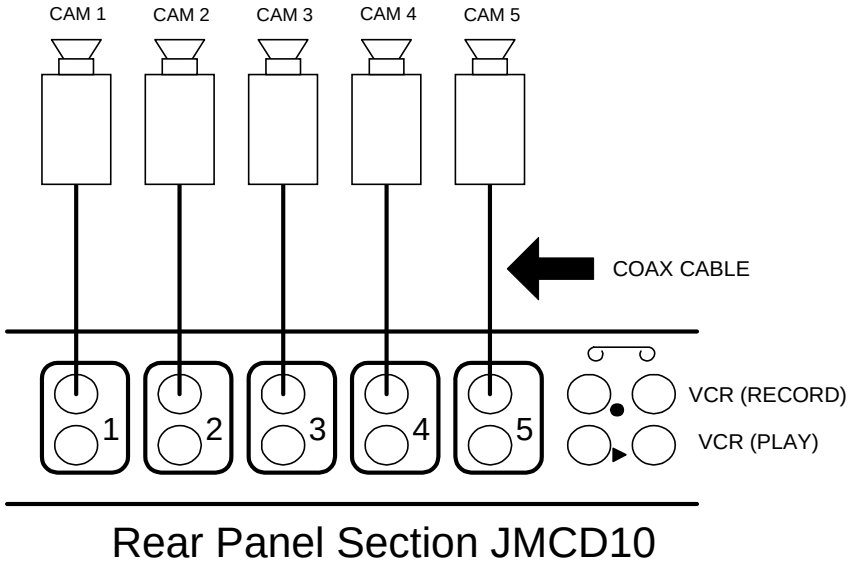


Figure 1.1 Camera Connections - JMCD10

NOTE

The camera input must be connected to the upper BNC connection for the multiplexer to display correct video.

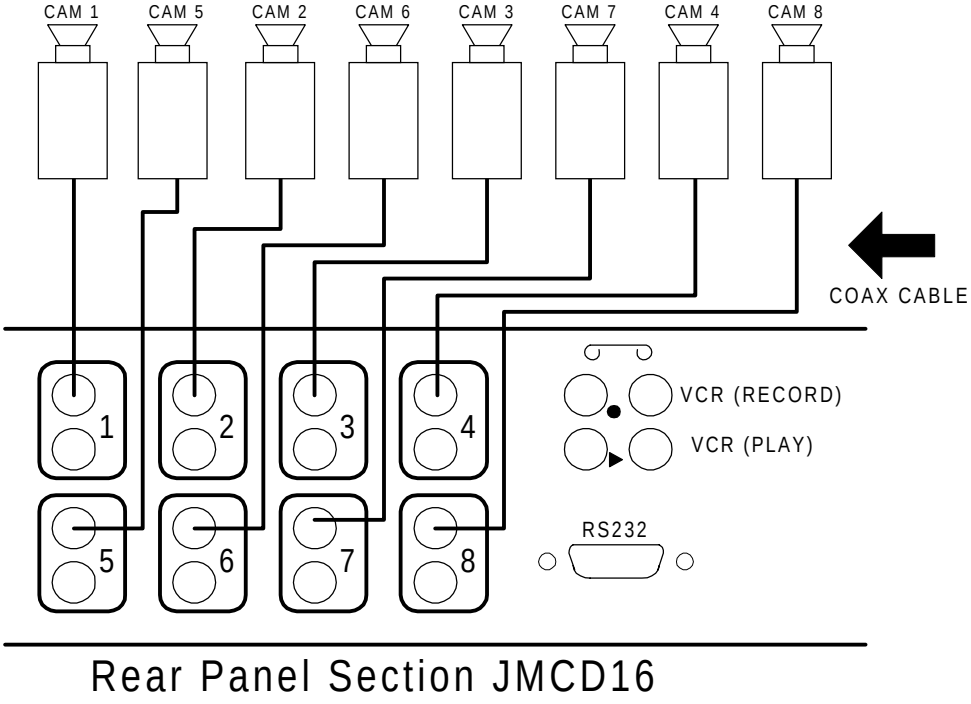


Figure 1.2 Camera Connections - JMCD16

NOTE

The camera input must be connected to the upper BNC connection for the multiplexer to display correct video.

1.2 If a camera is looped through from the lower connector to another device, the unit automatically switches to unterminated High Z. See figures 1.3 or 1.4 depending on the model.

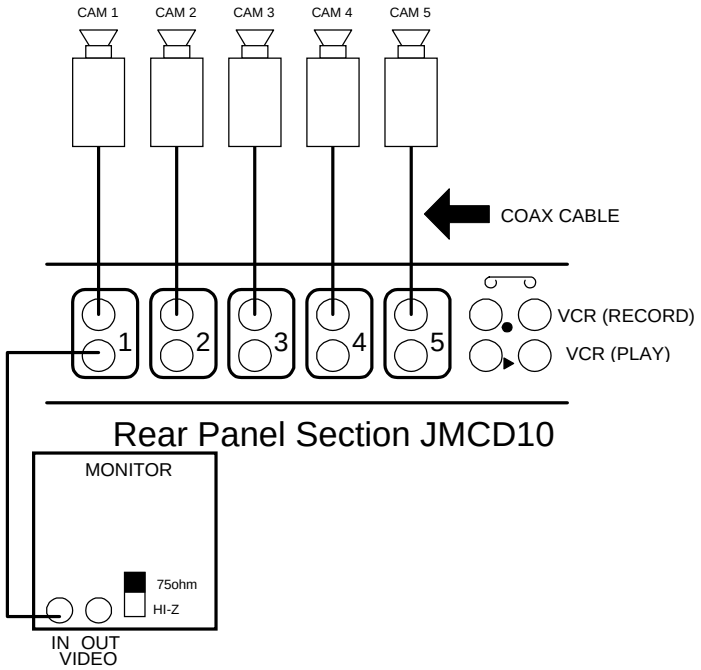


Figure 1.3 Terminating The Video Signal With A 75ohm Load - JMCD10

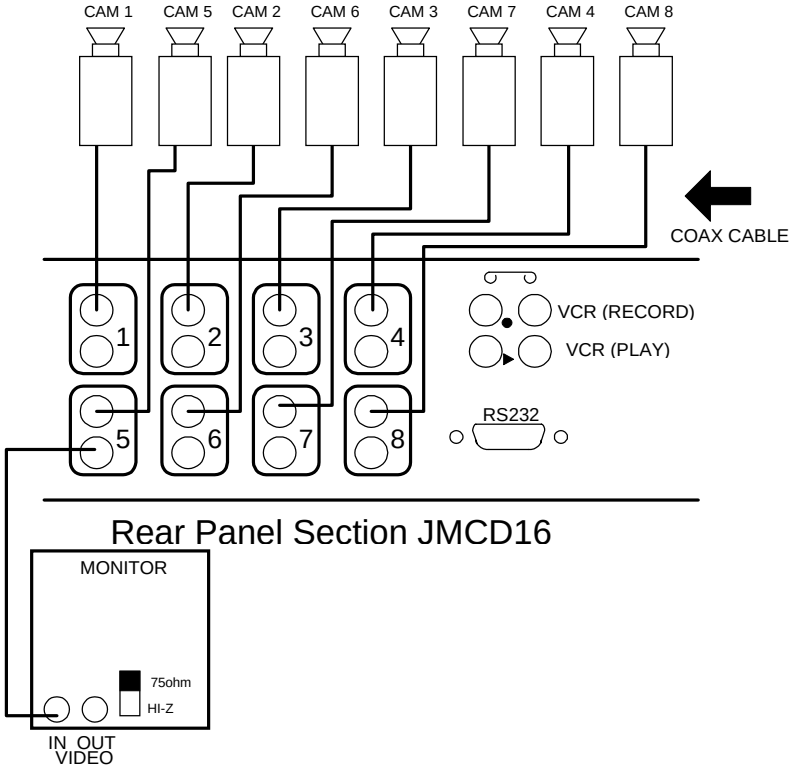


Figure 1.4 Terminating The Video Signal With A 75ohm Load - JMCD16

2. Connect Monitor Outputs

2.1 Connect the monitor(s) to the output(s) on the rear panel of the unit. Monitor "A" is used for full-screen or multi-screen displays of live video and for playback. Monitor "B" is used for full screen live video of an individual camera or a sequence of cameras. See figure 2.1 or 2.2 depending on the model.

Figure 2.1 Connecting Monitors - JMCD10

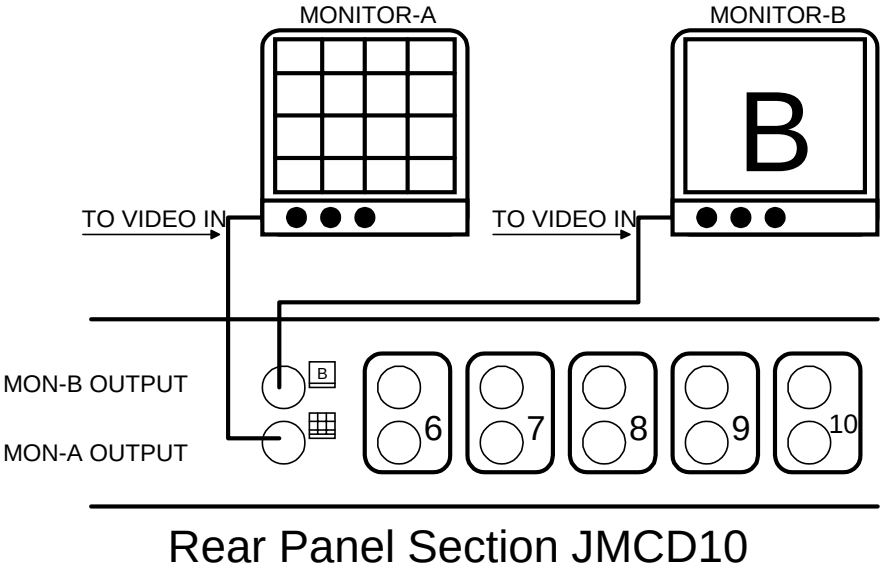
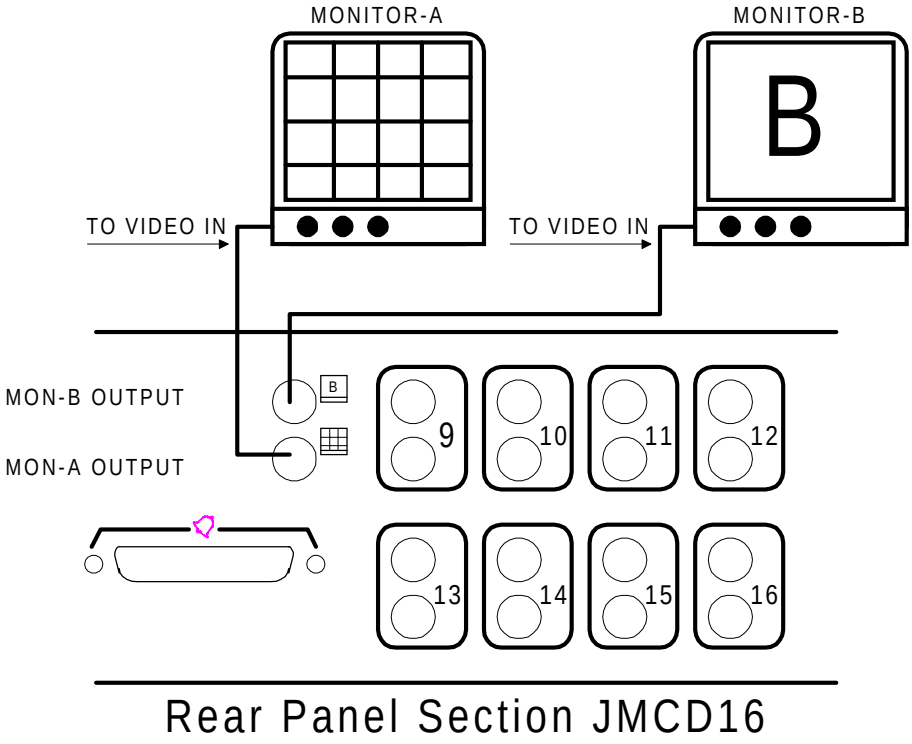


Figure 2.2 Connecting Monitors - JMCD16



3. Connect VCR Video Cables

3.1 For Simplex recording, connect the record output (S-VHS or the BNC) on the rear panel to the VCR's video input. Connect the play input (S-VHS or the BNC) on the rear panel to the VCR's video output. This setup allows the operator to record all cameras unless the VCR is being used for playback. . See figure 4.1 or 4.2 depending on model. For Duplex recording, refer to paragraph 3.2

3.2 Duplex recording and playback is achieved by installing two (2) VCR's -- one for playback of a previously recorded tape and one for recording of live action video. This allows for viewing tape of an incident without losing any activity currently being recorded. Playback will be on monitor "A". The playback VCR has no connection to the multiplexer for the head switch pulse. See figure 3.1 or 3.2 depending on model.

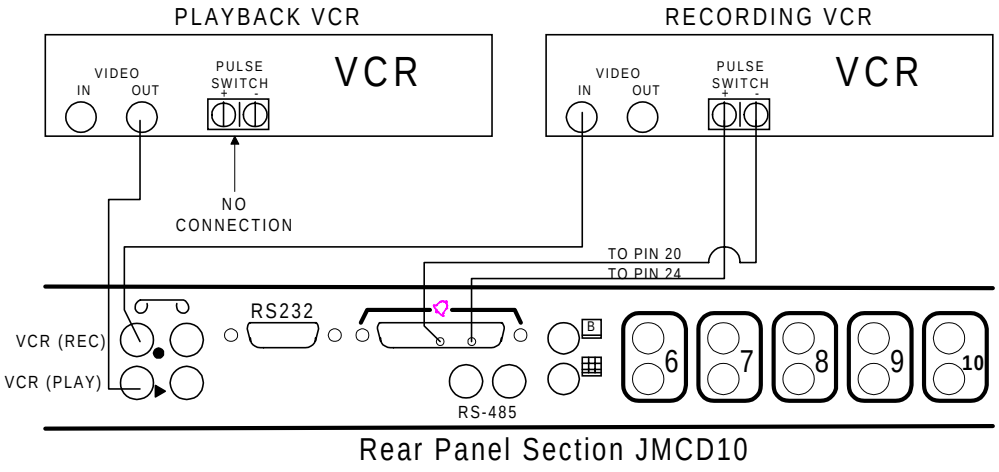


Figure 3.1 Connecting Two VCRs For Duplex Recording and Playback - JMCD10

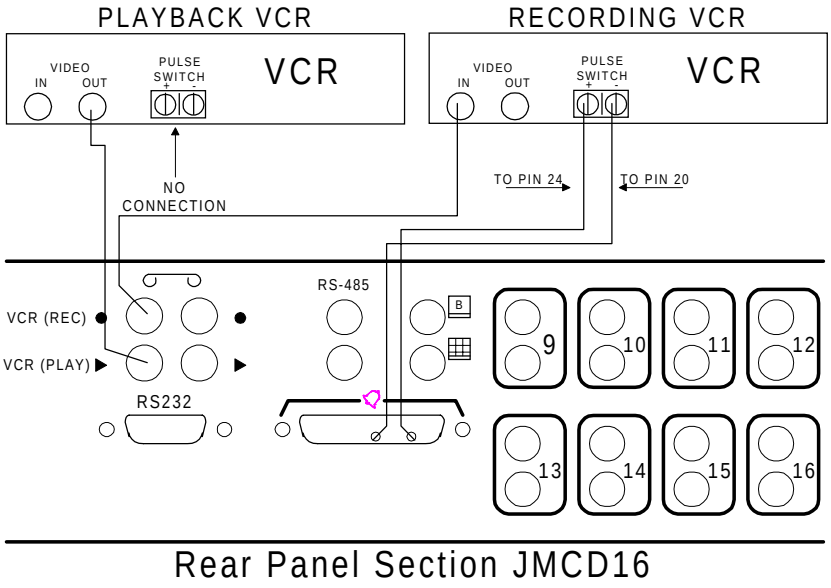


Figure 3.2 Connecting Two VCRs For Duplex Recording and Playback - JMCD16

4. Connect VCR Synchronous (Record Timing) Cable

4.1 **YOU MUST CONNECT THE VCR SWITCH PULSE** to the unit's DB-25 pin connector. This will synchronize the VCR head switch pulse and the multiplexer frame capture rate. This will ensure proper recording. **If this connection is not made** the playback of a recorded tape will be unreliable and video will be sporadic. Connect the switch pulse out from the VCR to pin 24 on the DB-25 and the common of the switch pulse to pin 20. If the multiplexer accepts the connection from the VCR, a record speed indication in the upper right side of the video on monitor "A" will show (R EXT). See figure 4.1 or 4.2 depending on model. **If you see unreliable or sporadic video reference Appendix A.**

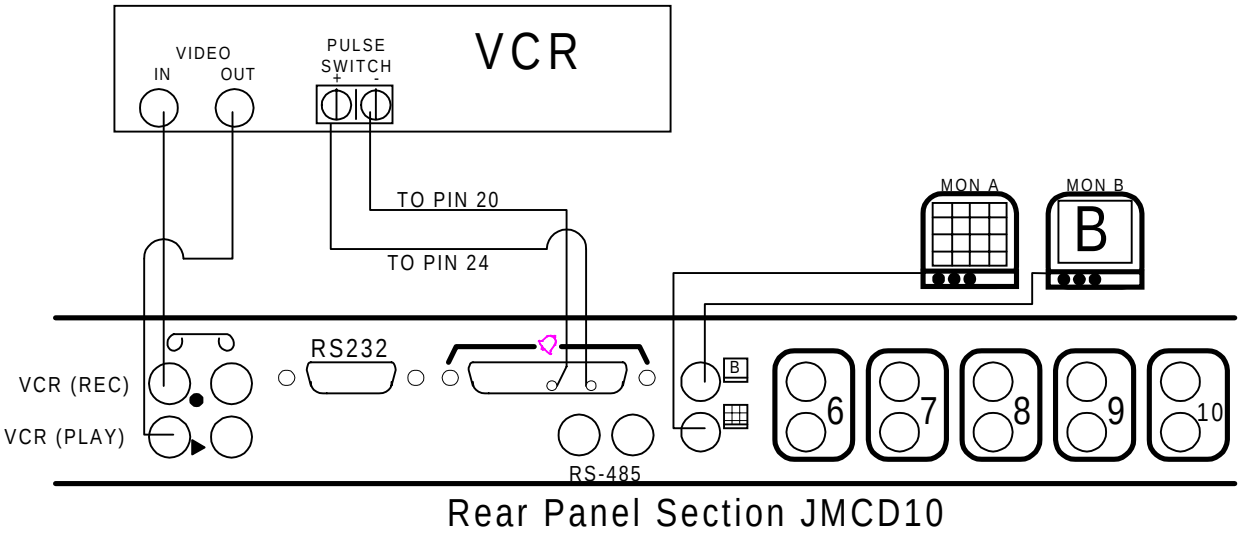


Figure 4.1 Connecting VCR - JMCD10

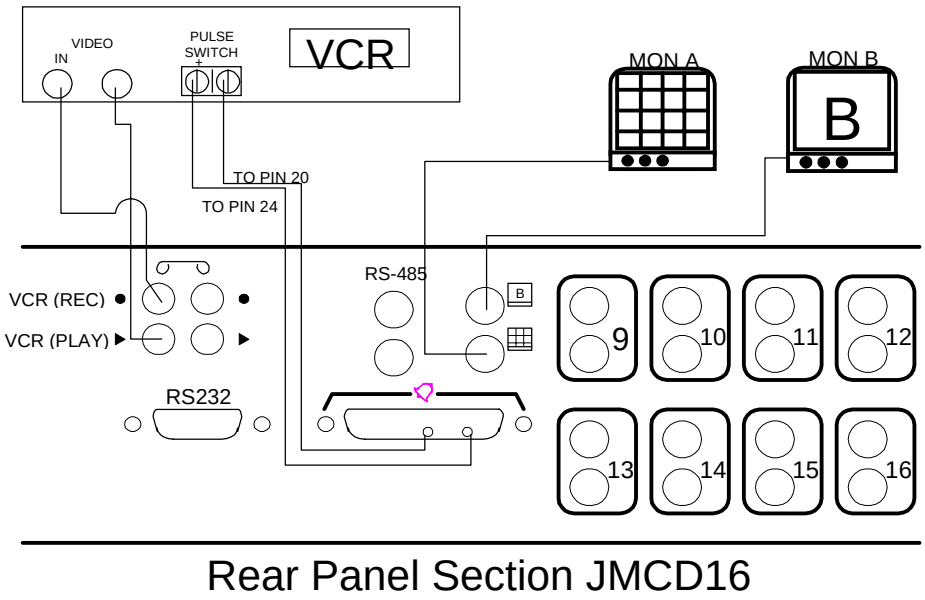


Figure 4.2 Connecting VCR - JMCD16

5. Connect Alarm Inputs

5.1 Connect the Alarm inputs to the rear panel DB-25 connector. NOTE that inputs must be dry contacts (no voltages). Each input is individually programmable in the menus as N/Open or N/Closed depending on the alarm circuit being fed into it. See figure 5 for the pinouts.

6. Connect Alarm Outputs

6.1 Connect the Alarm output relays as needed on the rear panel DB-25 connector. These are programmable form C relays which can be Open or Closed depending on how they are set up in the on-screen menu programming. *Do not exceed the rated current for the relay* (500ma continuous or 1.0A momentary). See figure 5 for the pinouts.

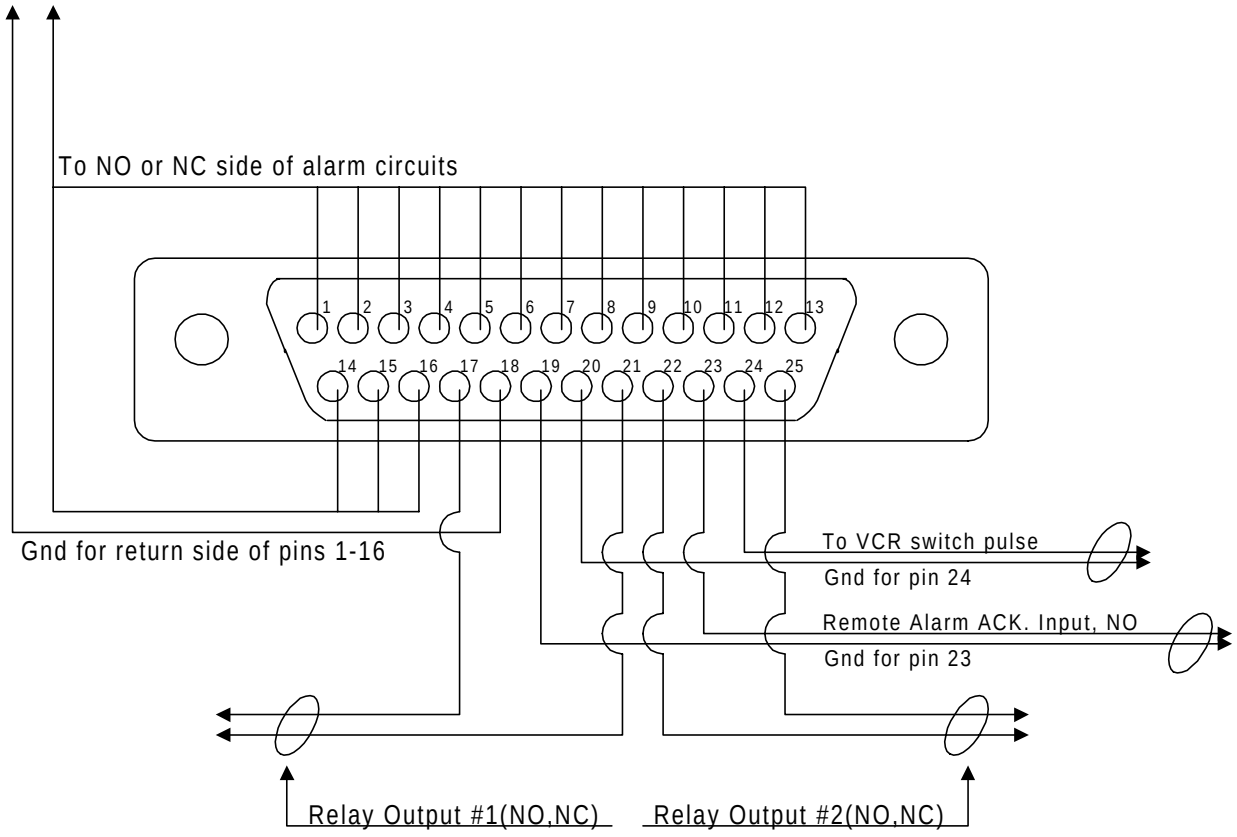


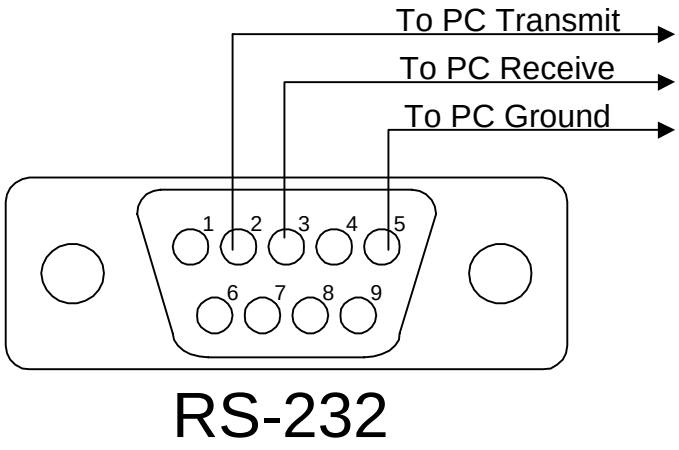
Figure 5. DB-25 Connector Pinouts

OTHER CONNECTIONS

1. Remote Programming

1.1 The RS-232 connector is used for remote communication from a PC or similar controller. See the Operation and Programming manual for the command formats. See figure 6 for the pinouts.

Figure 6. Connecting RS-232 Remote Communication

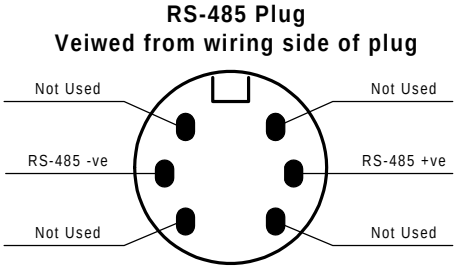


2. Remote Control

2.1 RS-485 connectors (6 pin mini-DIN) are used to connect to the Javelin RKT-1016 Remote Keyboard. All information on the pinouts and configurations can be found in the keyboard manual.

2.2 Also multiplexers can be connected together to utilize the master / slave clock option. See figure 7 for pinouts.

Figure 7. RS-485 pinouts



3. Remote Alarm Acknowledge Button

3.1 Install a N/Open button in the desired location, then connect the N/Open side of the button to pin 23 and the common of the button to pin 19. This allows the operator to acknowledge alarm conditions on the multiplexer from a short distance away (i.e., another desk in the office). See figure 5 for the pinouts.

POWER UP, DEFAULTS AND TESTS

NOTE

READ ALL OPERATION AND PROGRAMMING PROCEDURES BEFORE OPERATING THE UNIT! The unit has many advanced features. It is essential to read and understand the setup and operation before proceeding. Front panel controls: Refer to following pages.

1 Power up the cameras and monitors.

2 Power up the unit. A red LED will be lit which indicates that power is on.

3 The firmware version and model number will be briefly displayed on the main monitor and the default power-on multi-screen will appear.

4 Select each camera full-screen on MON-A (*not MON-B)* and check picture quality. If any picture quality is poor, check the loop-through termination's, line amplifiers, incoming signal levels and ground loops. If any picture quality is still poor, check the camera iris settings, including auto-iris settings. Try to adjust each *camera* to match the picture quality of the best camera. When comparing cameras, keep the monitor settings the same.

5 Check the VCR record and playback modes to ensure that the multiplexer is in sync with the VCR.

SYSTEM DEFAULTS ON INITIAL POWER UP

The on-screen menus contain the following initial factory settings:

Alarms: Input Configuration is N/Open for all inputs.
Alarm Latching is Transparent.
Alarm Action is all cameras set to freeze and trip relay output #1.
External Alarm Action is set to none.
Record Mode is Interleaved.
Enable/Disabled Alarms is set to All Enabled.
Link to Macro is set to no alarms linked to macros.
Full-Screen Alarm is set to No.
Relay Config is set to N/Open for both relays.

Playback Format: MX Decode
Camera Titles: Title Display is set to On.

Camera Titles are: Camera 01 to Camera 16 respectively.

Sequencing: Full-Screen Sequence List is 1 to 16.
Multi-Screen Dwell is 3 seconds.
Full-Screen Dwell is 3 seconds.

Recording: Record List is 1 to 16.
Normal Speed is 2 hr.
Alarm Speed is 2 hr.
Switch Input is Enabled.
EXT Switch Edge is Negative.
VCR Type is “A”.

Communications: RS-232 baud rate is 9600.
RS-485 ID is 001.

Change Password: Password for access to on-screen programming -- press the FRZ button 4 times.

Camera Enable: All Cameras are Enabled.

Motion Detection: All Cameras are Disabled.
All Zones are Active for each camera.

Setup Parameters:	Sens.:	05	Rate:	4X
	Reject:	LOW	Relays:	2
	Size:	001	Alarm:	NONE

Indicate Detection is set to YES.

TESTING

Program the Date and Time. If less than the full amount of cameras are being connected to the multiplexer, then disable those cameras in the CAMERA ENABLE menu. This will eliminate blank screens when sequencing. Program any other menu options as needed. Refer to the Operation and Programming manual for setup programming information. Take the time to read all manual sections. After all of the programming parameters are set, activate any alarm inputs while checking for correct system display response and alarm output. Check the recording playback for picture quality.

APPENDIX A

MANUAL VCR RECORDING RATES

A.1.1 GENERAL INFORMATION

How multiplexed recording works:

To record several camera inputs on one video output, single fields are digitally captured from each of the video input (Cameras) and then stacked consecutively to form a continuous video signal of time-sliced fields. The multiplexed video fields can then be recorded onto a single VCR via the VCR OUT connector located on the back panel of the multiplexer.

Example of 3 multiplexed inputs:

Input: Camera A video fields:

	A1	A2	A3	**A4**	A5	A6	**A7**	. . . . etc.

Input: Camera B video fields :

	B1	**B2**	B3	B4	**B5**	B6	B7	. . . . etc.

Input: Camera C video fields:

	C1	C2	**C3**	C4	C5	**C6**	C7	. . . . etc.

Output: Multiplexed video stream to VCR

. .	A1	B2	C3	A4	B5	C6	A7	. . . . etc.

The speed or rate that the multiplexer sends these fields is determined by the speed or rate your VCR can record these fields. If you send these fields faster or slower then your VCR can record them, you will miss whole fields or the fields may not be complete. Both types of problems may appear in Playback as no video or incorrect cameras displayed. **Make sure you have your VCR and the MUX both set to the same VCR record rate(speed).**Your VCR must be set up with the same Field Rate as those listed in Table A.1 below.

Table A.1

Record Speed	**2**	**12**	**24**	**48**	**72**	**120**	**168**	**240**	**360**	**460**	**600**	**720**
Fields /Sec.	**60**	**10**	**5**	**2.5**	**1.67**	**1.0**	**.71**	**.50**	**.33**	**.25**	**.20**	**.17**

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