VFD571

VIDEO FREEZE FRAME DETECTOR

INSTRUCTION BOOK
IB633201

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DESCRIPTION

The VFD571 Video Freeze Frame Detector is a video switch and alarm that provides an automatic transfer of video and stereo audio when there is a Freeze Frame interruption of video service. Freeze Frame interruptions can occur due to loss of signal in a digital transmission system, or loss of signal on an IRD Integrated Receiver Decoder.

The control circuitry constantly monitors the incoming video picture content at the primary input (A). When a Freeze Frame interruption of video occurs the device automatically switches to the secondary input (B). This feature controls a relay that can also be used to activate an external alarm or operate other equipment. The unit will work equally well with NTSC or PAL video signals.

Field Select time delay allows normal video to pause for a short period of time without causing an alarm condition. The delay is used when the video displays a still scene for a few seconds. This delay is user programmable from 7 seconds to 256 minutes. A front panel toggle switch allows for three alarm reset conditions. The AUTO reset position will switch back to the primary input (A) after normal video is restored. This gives the operator trouble free unattended switching of video preventing "DEAD-AIR" occurrences. The HOLD reset position will keep the video connected to the secondary input (B) until the reset switch is depressed manually, this is useful for unattended fault detection. The MANUAL reset position keeps the unit in reset, turning off the alarm while you solve the Freeze Frame problem, this also switches the unit to the primary input (A).

The video connections are BNC female. All inputs are automatically terminated with 75 Ohms to maintain the correct video levels. ALL OUTPUTS MUST BE TERMINATED WITH 75 OHMS FOR PROPER OPERATION. The balanced audio is connected by a 12 position removable screw terminal block.

FEATURES

On the front panel there are two Three Position **LOCKING SWITCHES**, to move these switches it is necessary to **PULL OUT THE HANDLE OF THE SWITCH** before trying to change its position. **DO NOT FORCE THE SWITCH.**

The unit features a three position locking toggle switch to manually select either Primary (A), Secondary (B), or the Automatic mode of switching from the front panel. If power is lost the unit will stay connected to the primary channel (A).

Two green LED front panel indicators monitor the presence of video Sync and Luminance levels on the primary video input (A). A red LED indicates when a Freeze Frame time out alarm has occurred.

CARD INSTALLATION AND OPTION SELECTION

The VFD571 Card fits into the PMS500 **P**anel **M**ount **S**ystem, which is a 19" X 1 3/4" built-in power supply and Mainframe for use in a standard 19" rack. This rack mount will hold up to three VFD571 cards. This lets you put three independent video freeze frame switchers in one vertical rack space. Remove the equipment from the packing materials. If unit needs to be mounted in the PMS500 follow these steps.

1. Remove top and bottom lids from the mainframe.
2. Insert card from the bottom into the rear of the mainframe.
3. Raise front of card until it contacts the frame and attach with supplied screws.
4. Connect the two wire Daisy Chain Power wire from the Power Supply to the gold Pins on the card marked PWR.
5. Apply the Front Label to the front panel of the Mainframe.
6. Push the Green LED's into the holes on the front panel marked SYNC and LUMA. Then push the Red LED into the hole marked ALARM/B.
7. Select the time-out with S1 (Two minutes is standard).
8. Select Video Switch on or off with S3.
9. Select video noise Sensitivity High or Low with S2.
10. Replace top and bottom lids.

SET-UP AND INSTALLATION

Locate a convenient place in your rack and mount the unit. Next attach the Primary video signal to the input BNC connector labeled (A INPUT). Then attach the Secondary video signal to the BNC connector labeled (B INPUT). The BNC connector labeled (COM OUTPUT) is the output of the video switch. The video that is selected either manually or automatically will appear at this connector.

SWITCH OPERATION

The switch on the Right hand side of the unit marked "SWITCH" is a manual/automatic selector for the video switch. When the switch is in the "A" position, the video switch will stay in the "A" mode. When the switch is in the "B" position, the video switch will stay in the "B" mode. If the switch is left in the "AUTO" position, the video switch will automatically switch from the "A" mode to the "B" mode when a freeze frame that exceeds the time out occurs on the "A" channel.

The switch on the Left hand side of the unit marked "RESET" is a manual/hold/auto, reset selector. When the switch is in the "MANUAL" position, the unit will be held in reset and no alarm will occur, this position is also used momentarily to clear any alarm condition. An alarm condition will operate the video switch if you have selected that option with S3.

When the switch is in the "HOLD" position, if an alarm occurs the alarm will stay on until the unit is manually reset. This is useful in finding intermittent alarm conditions. This will also cause the video to switch to the "B" channel and stay there until the unit is manually reset.

SWITCH OPERATION (cont.)

If the switch is set to the "AUTO" position, the alarm condition will be automatically reset when normal video returns to the "A" channel input. The video switch will also switch back to "A" channel if you have selected that option on S3. NORMAL OPERATION WILL HAVE BOTH SWITCHES IN THE "AUTO" MODE.

AUDIO/ALARM SWITCHING

The unit is equipped with a set of relays that are used to switch stereo audio with the video. These contacts can also be used as alarm contacts to operate other equipment when a freeze frame occurs. The contacts are accessible from the rear panel through a 12 position removable screw terminal connector. This connector can be pre-wired and then snapped into position at installation. There are two "C FORM" relays available for audio switching or for use as alarm contacts. They are marked "LEFT INPUT, RIGHT INPUT, T for TIP, and R for RING". The output is marked "OUTPUT". The output is the common for A and B inputs TIP and RING respectively.

If an alarm only output is desired the video switching portion of the devise can be turned off. Simply select no video switching by removing the jumper jack S3, then only the audio/alarm contacts will operate when a freeze frame occurs.

REMOTE SWITCHING FEATURE

The RCA connector on the rear panel is for REMOTE SWITCHING. If a ground is applied to this connectors center lead and the toggle switch on the front panel marked "SWITCH" is in the "AUTO" position, the unit will switch to "B" channel and stay there until the ground is removed. (SEE SPECIAL JUMPER FUNCTIONS) This feature allows the operator to remotely switch to an alternate channel if so desired. For the remote feature to be enabled, the right hand switch on the front panel must be in the "AUTO" position.

SELECT JUMPER FUNCTIONS

S1 Used to select the time delay after a freeze frame in seconds (S) and Minutes (M) before the alarm and switching occurs.

S2 Sensitivity of the detection system, On is high sensitivity and Off is Low sensitivity for high noise video. In the Low sensitivity position a control accessible from the front panel (under the plug) can be adjusted between Low and high sensitivity. Clockwise adjustment is more sensitivity, and counter-clockwise is less sensitivity.

S3 If this jumper is removed the internal video A/B switch will be disabled. If the jumper is ON the video A/B switch will be active.

SPECIAL JUMPER FUNCTIONS

When the ALARM TONE jumper is on an alarm tone will be heard to alert the operator that a freeze frame has occurred and the timer has reached alarm. If the jumper is removed the alarm will not sound.

The REMOTE CONTROL jumper selects the Rear RCA connector as an input or an output function. If the jumper is in the OUT position the RCA connector will be used as a relay contact output. The Normally Open or Normally Closed condition of the relay can be selected by the REMOTE ALARM OUTPUT jumper. If the REMOTE CONTROL jumper is in the IN position then the RCA connector becomes an input control to force the video relay to the "B" position as a remote control function.

MAINTENANCE

There are no field adjustments or calibrations required with the VFD571.

SPECIFICATIONS

VIDEO	**SPECIFICATION**
Standard	NTSC or PAL (Auto-Select)
Level (Composite Video)	0.5 to 2 Vp-p (1.0 Vp-p STD.)
Input Impedance	75 Ohm
Frequency Response	> 0.2 dB from DC to 40MHz
Video Sync Indicator	Green LED (Front Panel)
Video Luma Indicator	Green LED (Front Panel)
Freeze Frame Indicator	Red LED (Front Panel)
Cross-Talk (Pri/Sec input)	< 75 dB
Cross-Talk (Channel 1 to 2)	≤ 80 dB
Signal to Noise Ratio	≤ 90 dB

AUDIO	
Frequency Response	Flat from DC to 50KHz
Cross-Talk (Pri/Sec)	< 80 dB
Cross-Talk (Left/Right)	≤ 80 dB
Signal to noise ratio	≤ 90 dB

Mechanical	
Power requirement	-24 VDC (PMS500 Power Supply)
Rack Mounting	One of three spaces in PMS500
Video Connectors	BNC (Female)
Audio Connector	12 Position Screw Terminal
Video Mode Switch	3 Position Locking Toggle
Alarm Reset Mode Switch	3 Position Locking Toggle
Field Select Time Delay	12 Position Internal Jumper