

MiDAS Motion Trigger User Guide



Model TR-01/120VAC
Model TR-01/230VAC



Exciting
Technologies

MIDAS DOCUMENTATION AND LEGAL NOTICES

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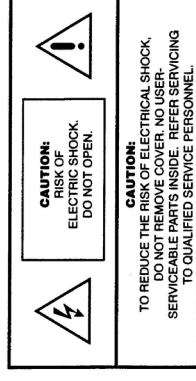


This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



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

Marks of Compliance



Introduction

The MiDAS Motion Trigger is a member of the family of specialty triggers for the MiDAS Motion and integrated Data Analysis System. The Motion Trigger allows operators to monitor live images and trigger MIDAS recordings when motion is detected in the user-defined field-of-view. The Motion Trigger integrates seamlessly with other MIDAS modules and accessories, including the MiDAS-DA data acquisition modules, the MiDAS-RC remote control modules and the MiDAS-TC IRIG/GPS modules.

Within your Motion Trigger package, you should have received:

- The Motion Trigger box
- A Power Supply (either 120VAC or 230VAC)
- (1) BNC-coaxial cable

You will also need a display (not included) to view the live images. We suggest a small NTSC or PAL video monitor or a computer graphics card with TV/Video input.

When motion is detected, the MiDAS Motion Trigger (1) sends a trigger pulse to MiDAS or the video camera, (2) provides a visual alert to the user in the form of a flashing LED on the front panel, and (3) sounds an audible alert. Both the visual and the audio alert will notify the user when the MiDAS Motion Trigger has reset.

Connecting the MIDAS Motion Trigger to the Camera

The MiDAS Motion Trigger is installed on the video output of the PCI camera card to be monitored. The video out (typically found on the camera card) is fed into the MiDAS Motion Trigger unit, and it is then looped through, passively, to any standard NTSC or PAL video monitor.

1. Connect the video out port of the camera to the VIDEO IN BNC-style connector on the back panel of the MiDAS Motion Trigger. The maximum distance that the Motion Trigger can be from the camera is 750 meters.
2. Connect one end of a coaxial cable to the BNC-style connector labeled VIDEO OUT on the back panel of the MiDAS Motion Trigger. Connect the other end of this cable to the input port of a video monitor or video-ready display adapter.

It is recommended that only good quality cable be utilized, as well as following standard grounding practices. This will not only protect your equipment from spurious electrical over-voltages, but will also reduce the possibility of accidental triggers.

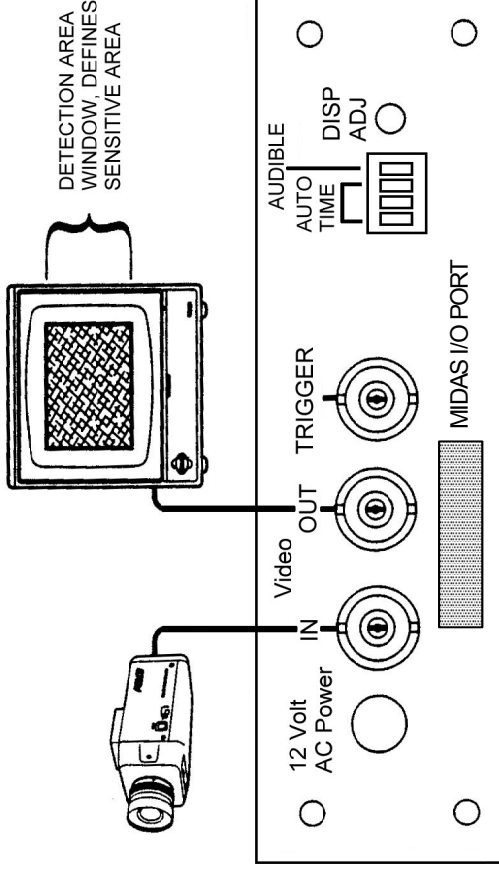


Figure 1: Connect the camera video output and display monitor or video-ready display adapter as shown.

Connecting the Trigger Cable

The MiDAS Motion Trigger sends a 10 volt **FALLING EDGE** signal out the TRIGGER connector when motion is detected. Use a BNC coaxial cable to connect the MiDAS Motion Trigger to the trigger input of MiDAS.

MIDAS software controls and synchronizes numerous clock sources resident within the data acquisition hardware, IRIG/GPS card, computer and camera. If you are using a camera being operated by MIDAS, MiDAS Professional or another MIDAS software, connect the other end of the BNC cable as prescribed in Table 1 below. If you are using a different camera or software, consult your camera/software operators manual for connection instructions.

If you have installed and enabled...

MiDAS with data acquisition (DA)

MiDAS with data acquisition (DA) and IRIG/GPS time code monitoring (TC)

MiDAS with IRIG/GPS time code monitoring (TC), but without data acquisition (DA)

MiDAS without both IRIG/GPS time code monitoring and data acquisition (DA)

Connect the trigger to...

MiDAS-DA Breakout Box

MiDAS-TC IRIG/GPS board

MiDAS-TC IRIG/GPS board

High-Speed camera trigger input

Table 1: Trigger connections based on MiDAS modules purchased.

NOTE: The MiDAS Motion Trigger does not terminate the video output. Normally, the video line will be terminated at the monitor. If multiple monitors and/or devices are to be installed, it is left to the user to terminate the video chain properly.

NOTE: The signal out of the MiDAS Motion Trigger is falling edge (e.g. negative going). Be sure to adjust the polarity of the camera software to look for this type of trigger pulse.

Power

- To apply power, connect the power transformer provided (120VAC or 230VAC to 12VAC.). Use only the power transformer supplied with the MiDAS Motion Trigger to prevent damage. When the correct power is applied, the green PWR light on the front panel will illuminate.
- To activate the MiDAS Motion Trigger, flip the ARM switch to the up position. To deactivate, flip the ARM switch to the down position.

Reset Timing

The MiDAS Motion Trigger can be reset three ways. A “reset” re-arms the MiDAS Motion Trigger so that motion can be detected. While the device is resetting itself and therefore is not armed, a visual alert LED (ALRT) on the front panel flashes and the audible alarm is sounded.

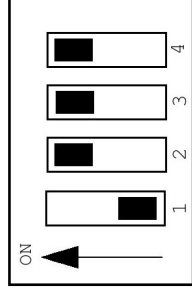
Manual Reset

The MiDAS Motion Trigger can also be reset manually from the front panel. Set the RESET switch on the front panel to MAN. When switched to manual, the MiDAS Motion Trigger will continue to suspend monitoring until the red manual reset switch is pressed. This reset switch can be pressed at any time, regardless of mode, to reset the trigger.

Automatic Time Reset

The MiDAS Motion Trigger has five pre-programmed automatic reset times that can be configured from the blue dipswitch box on the back panel.

- Make a sample recording with MiDAS.
- Save the recorded image to the hard drive (or over the network). Use of the MiDAS Auto-download feature simplifies this process.
- Measure the duration of the recording and the save function.
- Set the RESET switch on the front panel to AUTO. Set the blue left three dip-switches on the back panel labeled **AUTO TIME** to the closest time that exceeds the time measured in the above steps, as shown in Table 2.



Switch 1	Switch 2	Switch 3	Automatic Reset Time
On	On	On	1 second
Off	On	On	30 seconds
Off	Off	On	1 minute
On	On	Off	3 minutes
Off	Off	Off	4.5 minutes

Table 2: Automatic Reset Time Chart (times are approximate)

- Make a few recordings and save the samples to the hard drive. If the Reset Time Duration is too short, reconfigure the rear panel dipswitch settings.

Reset via the MiDAS I/O Port

The MiDAS I/O Port connects directly to MiDAS computers via a DB9 M-F shielded cable (not included). When connected, MiDAS will control the reset functions of the MiDAS Motion Trigger to optimize throughput and minimize required user interaction. Consult your MiDAS User Guide for more information about the MiDAS I/O Port.

Audible Alert

To enable the audible alert buzzer, flip dipswitch 4 (the right switch) to the on (up) position. To disable the audible alert, flip dipswitch 4 down.

Display On/Off/Color

The active field of view (e.g. the detection window) is outlined on the display monitor when the DISPLAY switch on the front panel (see Figure 2) of the MiDAS Motion Trigger is set to the ON (up) position. When enabled, an outline box appears on the display monitor. To turn off the outline box, flip the switch to the OFF (down) position.

To change the level of gray of the outline box for better viewing, turn the DISP ADJ screw control on the back panel. Turn the screw clockwise for black or counterclockwise for white.

Setting Field of View and Sensitivity

On the front panel are 5 screw controls to set the active field of view and the sensitivity, as shown in Figure 2. The active field of view is the window enclosed by the white box on the display monitor.

To adjust the vertical detection field of view, turn the screws labeled P (Vertical Position) and S (Vertical Size).

To adjust the horizontal detection field of view, turn the screws labeled H (Horizontal Position) and S (Horizontal Size).

To adjust the Sensitivity, turn the screw labeled SEN. Clockwise rotation of the screw increases sensitivity. Counterclockwise rotation decreases sensitivity. The optimum setting is best determined at the actual test site with simulated motions. The setting should be high enough to avoid false triggers, but low enough to exclude unwanted motions within the field of view.

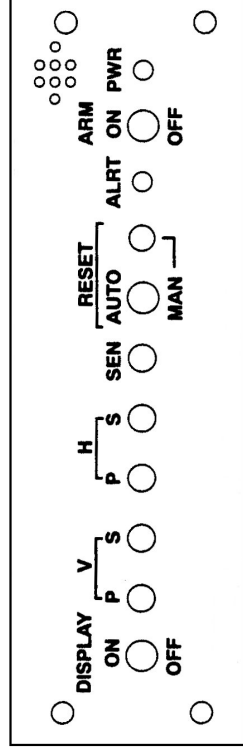


Figure 2: Front Panel showing display controls, power and reset options.

Troubleshooting

Common causes of false triggers are:

- Sensitivity control set too high
- Automatic Reset Time is set too low
- Loose or defective video connectors or cables
- Spurious moving objects or blinking lights (e.g. fluorescents) in field of view
- Field of view (detection window) is set too large.

Common causes of excessive misses are:

- Sensitivity control set too low
- Automatic Reset Time is set too high
- MiDAS I/O Port is not connected properly
- Object in motion is too small.

Specifications

Operating Range:	32°F to 120°F (0°C to 49°C)
Physical:	5.5" (14 mm) x 8.8" (22.4 mm) x 1.75" (4.5 mm), 2.2 lbs (1.0 kg)
Power:	120VAC or 230VAC wall transformer supplied
Frequency:	50/60 Hz
Video In/Out:	525 lines at 60Hz, 625 lines at 50 Hz.
Trigger Out:	0-10VDC FALLING EDGE
Connectors:	Three (3) BNC Connectors, One (1) 12VAC power adapter, One(1) DB9 MiDAS I/O Connector.
Alerts:	Flashing LED, Audible
Settings:	Vertical field of view, horizontal field of view, reset time, display on/off, display color, sensitivity, audible alert on/off, arm on/off reset auto/manual.
Maintenance:	There are no user serviceable parts inside.
Video Input Cable Max Length:	RG59: 750 feet (230 m) ; RG6: 1,000 feet (300m); RG11: 1500 feet (450m)
Video Cable:	75 ohms, shielded.



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