

MD-755

Precision Motion Sensor for BrightSign® Solid State Digital Sign Controllers

Overview

The MD755 is a motion sensor designed to trigger **BrightSign** playlist content. Applications include:

- Automatic Sign Wake-Up
- Trade Show Exhibits
- Automated Greetings
- Advertisements
- Special Announcements and Instructions
- Hotel Lobbies
- Waiting Rooms
- Museums
- Facilities Directories
- Retail POS
- Kiosks
- Cinemas
- Security Systems

Unlike other motion sensors, the MD-755 plugs directly into a BrightSign interactive sign controller. It is easy to install, compact, and requires no additional support circuitry, customization, or separate power sources. The sensor can distinguish movement even in strong direct sunlit rooms and has an effective range of 6 meters (~ 19 feet).

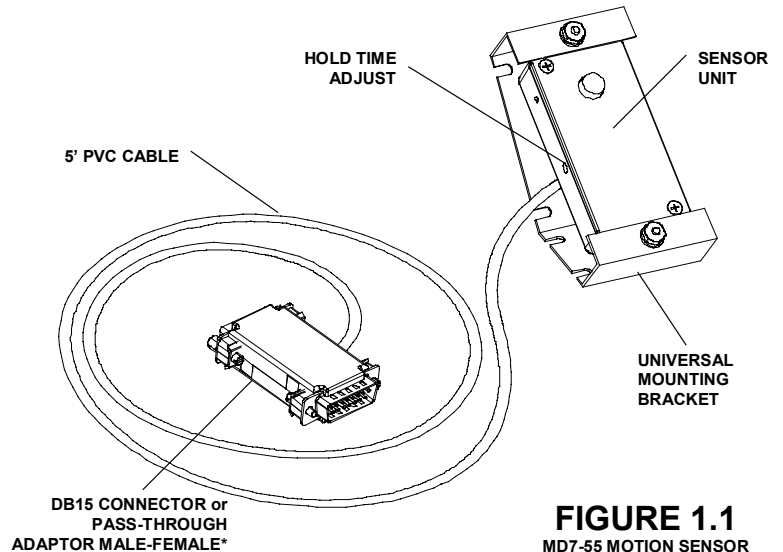


FIGURE 1.1
MD7-55 MOTION SENSOR
ACCESSORY

The MD-755 is compatible with BrightSign models HD410, 810, 1010, and 1010W via the BrightSign controller's DB15 GPIO port. Please refer to the BrightSign User Manual for more information on how to use this I/O port. Unless specified otherwise, the MD-755 ships with a standard Male DB15 connector (See Figure 1.9), however, an optional pass-through adapter is available which allows other GPIO lines to be used. The pass-through adapter is required if you intend to use a button board or other GPIO functions.

Sensor Detection

There are two versions of the MD-755 ****. The "W" version features a wide detection zone while the "N" version has a narrow or a "spot" detection zone. The "N" version is better suited for applications where there is a lot of movement and selective triggering is required. The "W" version's wide detection zone is better in areas where more coverage is desired, for example, when a person enters a large room.

Many BrightSign applications require even greater motion selectivity than what is offered by the "N" version. Therefore, the area that the sensor "sees" can be reduced by simply using black electrical tape to create a slit over the sensor's lens. The smaller aperture significantly reduces the amount of motion detected. You'll need to experiment a bit to find out just how much to cover the lens. Installers can drill a small aperture hole in a custom-made display panel, behind which, the sensor enclosure is placed.

Sensor Operation and Hold Time

When the MD755 detects motion, it performs the electrical equivalent of pushing a GPIO INPUT button and plays the corresponding playlist/content ***. Up to three sensors can be connected to a single BrightSign player's GPIO port using the optional pass-through adapter *.

Upon detection, the sensor's HOLD TIME countdown clock is started, during which time, the red LED indicator is on. If no further movement is detected, the sensor will re-arm itself in roughly 10 seconds and await the next trigger. Realistically however, viewers will most likely remain within the sensor's detection zone. This continued movement adds to the HOLD TIME clock thereby increasing the length of time that the sensor remains disarmed. When no further movement is detected AND the HOLD TIME clock expires, the sensor is rearmed. This feature is necessary for many BrightSign displays, since it allows the presentation to flow uninterrupted. In other words, whether or not the sensor is rearmed, your BrightAuthor presentation will continue to play/loop to its media end.

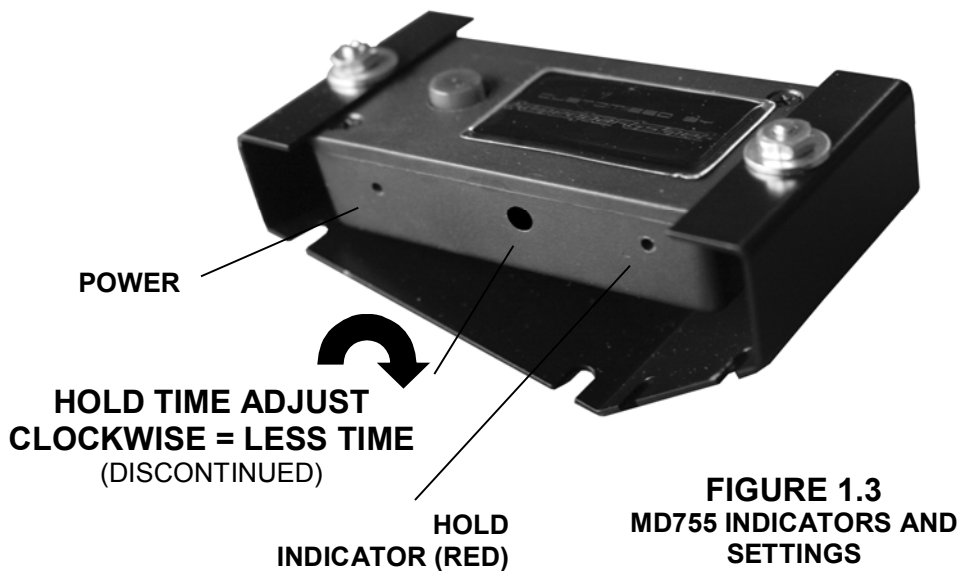
Keep in mind that constant motion within the MD-755's detection zone, such as that created at a busy trade show exhibit, will continuously add to the HOLD TIME. If the HOLD TIME clock keeps adding time, the sensor will never allow itself to be rearmed. Therefore, strategic placement of the sensor is crucial to your sign/display design. See "Mounting" for tips on how to limit the detection zone.

Refer to the BrightSign User Guide for more information regarding BrightSign presentations.

Adjusting Hold Time

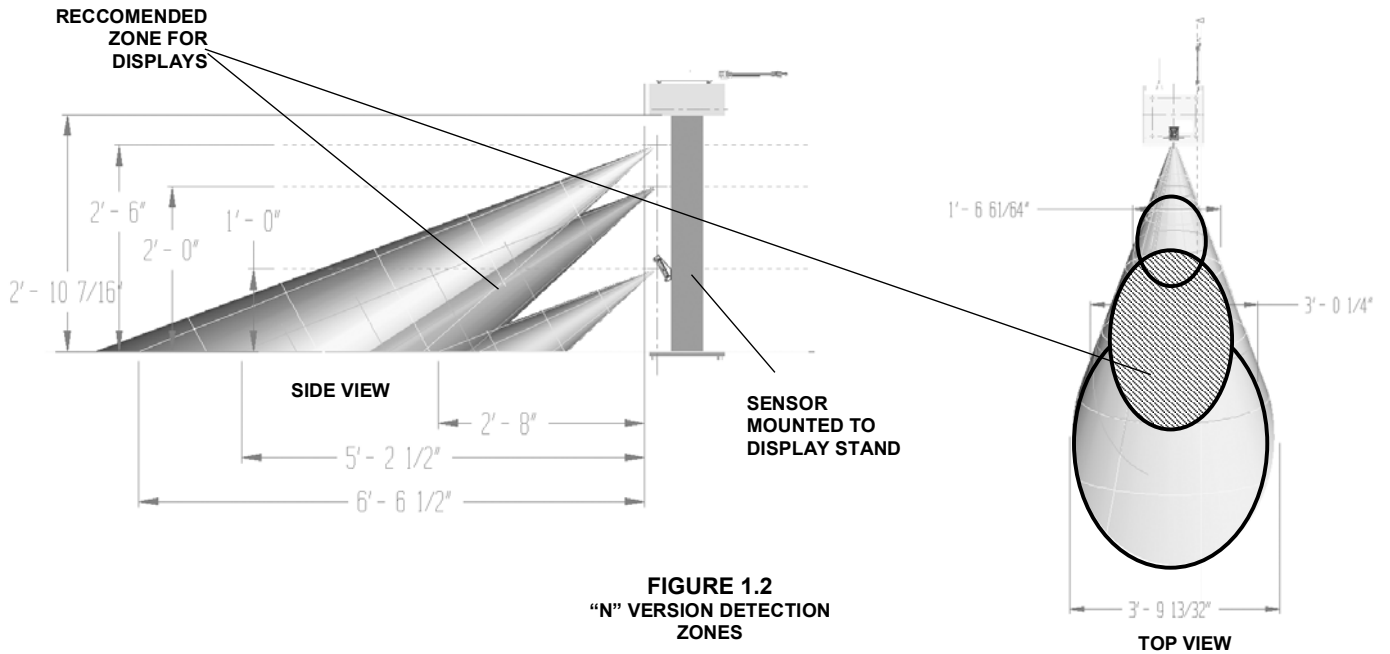
The following applies only to legacy Denon DNV-755 players using the MD-755, where HOLD TIME functionality is required. Note that sensor support for Denon models have been discontinued effective 2/2/10.

If you are using a discontinued MD-755 with a Denon A/V player, HOLD TIME can be set between approximately 5 and 60 seconds. Use a small flat head screwdriver to adjust the timer as shown in Figure 1.3. Turning the screw clockwise decreases the hold time. Stay out of the detection zone when making the adjustment to avoid triggering the sensor.



Mounting

The MD-755 is intended for indoor use only. A mounting bracket is included, which allows the sensor to be installed at different angles, providing more control over the detection zone. Figure 1.2 shows the MD755 “N” detection characteristics when mounted to a typical display stand. The standard “N” sensor detects motion +/- 27 degrees top to bottom, and +/- 20 degrees side-to-side. For example, when the sensor is mounted two feet from the floor, the detection zone extends roughly five feet in front and approximately three feet side-to-side, when mounted as shown.

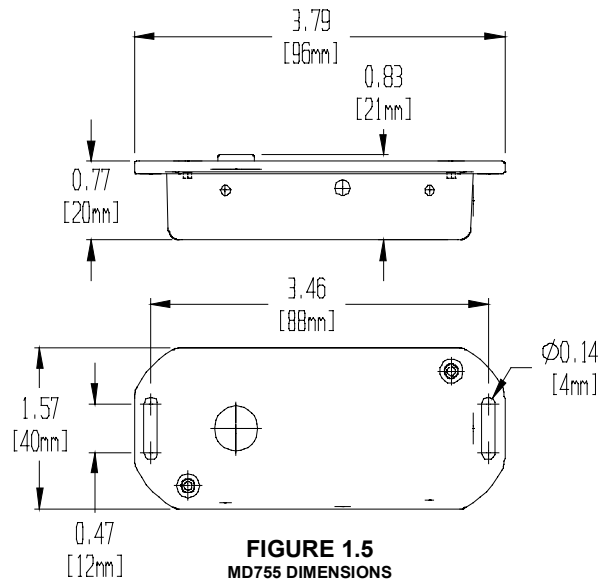


The sensor can also be installed without the supplied bracket. The following section is particularly useful for installers and integrators.

The MD-755 can be back mounted on a panel having a pre-drilled aperture hole. Double-sided foam tape and wood screws are used to secure the sensor to a $\frac{3}{4}$ " panel. For proper detection, a $\frac{1}{2}$ " opening in the panel is recommended. A smaller aperture hole will limit the lens's ability to “see”, but may be a desired characteristic of your BrightSign display.

Note: The MD755 will not detect motion if placed behind a transparent surface such as glass or plexiglass. The sensor's lens must be exposed to the detection environment.

Sensor Dimensions



Applications

Figure 1.7 shows two MD-755 sensors connected to a single BrightSign interactive player via the optional pass-through adapters.



FIGURE 1.7
MULTIPLE SENSORS

The pass-through adapter allows added GPIO functionality such as adding a button board or other input/output devices that utilize other available GPIO inputs. Since most BrightSign motion detection applications do not require the need to use other GPIO's, the

MD-755 ships with a standard DB15 connector making for a more compact installation, since connecting pass-through adapters end-to-end, as illustrated in Figure 1.7, adds to the overall depth of the BrightSign hardware installation.

The MD-755 can also be ordered without the plastic enclosure and mounting bracket. This option is especially useful to BrightSign integrators and installers that have custom application requirements.

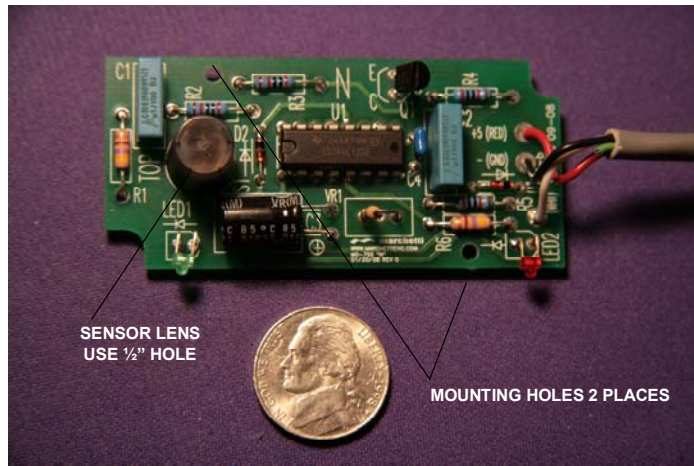


FIGURE 1.8
PRINTED CIRCUIT
BOARD ONLY

Figure 1.8 shows the circuit board assembly as shipped ¹, which includes 5' cable and standard DB15 connector. Two 5/8" standoffs are also included (not shown), which can be used to fasten the circuit board to your custom panel or enclosure. A 1/2" hole is recommended to expose the sensor's lens. Note that the sensor will not operate if the lens is behind any materials such as glass or plexiglass.

1. POWER LED INDICATOR IS NOT PROVIDED WITH PC BOARD ONLY OPTION. RED TRIGGER LED IS MOUNTED ON BACK OF PC BOARD.

Scripts

Custom BrightSign Scripts are also available that add increased functionality to a display using the MD-755. For example, it is possible for the MD-755 sensor to trigger multiple events, play content randomly, disable/enable the BrightSign player's GPIO ports etc. If you are interested in a customized BrightSign script, please call us.



FIGURE 1.9
STANDARD DB15
CONNECTOR

For more information and volume pricing, please visit www.intelli-sign.com or call:

978-534-0400 x 301

* Specify connector when ordering.

** Specify "W" or "N" when ordering.

*** Unless otherwise requested, GPIO 0 is the default. When ordering, specify the particular GPIO port to program.

**** Effective 06-01-11 "W" version discontinued