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Large Floor Pressure Mat

RS Stock number 788-4969

Description:

Pressure Mats were initially designed for security applications to comply with the British standard BS 4737 Part 3: Section 3.9.
Pressure mats will covertly detect a person standing or walking on them. The smaller pressure pads may also be used as a floor mat, in a chair to detect a person sitting in a seat or even operated by hand pressure. Many applications have been found for pressure mats/pads, covert detection, sensors for interactive toys, the health care industry, detecting a person sitting in a vehicle seat or chair, sensors for interactive multimedia systems, i.e. when a person stands on a floor mat a multimedia presentation is triggered therefore providing accurate targeting. There are many possible applications.
Pressure mat sensors should **not** be used in or relied on in safety related applications.

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Construction and principles of operation and use

The switch element is welded into a PVC envelope and is completely dust proof and sealed to IP64 (not waterproof).
Pressure mat sensors have a normally open contact which closes or shorts when a person walks onto or stands on the mat and then re opens or breaks as the person moves off of the mat.

Operating pressure guide

The nominal operating pressure for the standard sensitivity pressure mat is 25Kg applied to the surface of the mat over a 50mm disc. The increased sensitivity versions will operate when 16Kg is applied to the surface of the mat over a 50mm disc.
In reality the standard sensitivity pressure mat sensor placed under a carpet will always be sensitive enough to detect a person walking over it. The more sensitive version would usually be used to detect a lighter weight, hand pressure or detecting a person sitting in a seat or chair.

Fitting and adjustment

Pressure mat sensors should be fitted on a flat smooth surface and covered with a conventional floor covering such as carpet or lay flat rubberized matting. The covering is important to both protect the pressure mat sensor from damage and also to ensure there are no trip or slip hazards. Care should be taken not to stress the cable to pressure mat junction; this is especially important where long leads are fitted.

When fitting a pressure pad to a chair seat the pad must be fitted to the flat rigid base of the seat, covered with a layer of protection, usually cushion foam or padding and then upholstered. As there are variables in foam thickness, density, upholstery material and fitting, customers will need to test for themselves the viability of a pressure pad in this type of application.

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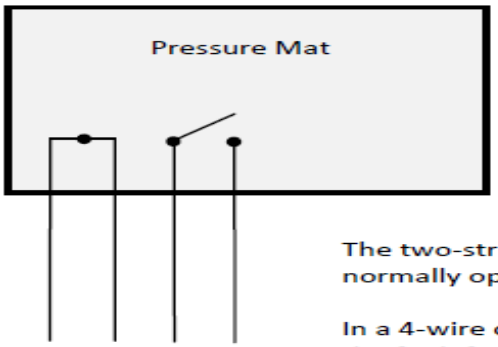
Specifications and maximum ratings

Specification	Pressure Mat Sensors
Contact form	N/O normally open
Max contact rating	10 VA
Max switching voltage	25 VDC
Max switching current	0.25 Amps DC resistive
Max carry current	0.25 Amps DC resistive
Contact resistance	Typically 1 Ω dependant on applied pressure
Temperature range	-10 to 70 °C
Environmental protection	IP64 not waterproof
Standard operating pressure	Nominal 25Kg over 50mm disc
Increased sensitive operating pressure	Nominal 16Kg over 50mm disc
Cable 2 or 4 separate wires	150mm of 7 x 0.22^2
RoHS	Compliant

Schematic diagram for a 4 wire pressure mat



The two-stripped wires on the right are the normally open pressure mat switch.

In a 4-wire configuration the two wires on the far left are the tamper loop. As the tamper loop is only needed when connecting to an alarm control panel, it may be ignored in all other applications.

Product Codes

Order Code	Standard Pressure Mat Sensors	Dimensions mm
317-140	Stair Tread Pressure Mat 4 wire	595 x 170 x 3
317-156	Standard Floor Pressure Mat 4 wire	720 x 390 x 3
788-4969	Large Floor Pressure Mat 4 wire	720 x 560 x 3
788-4978	Circular (Disc) Pressure Pad 2 wire	305 Ø x 3
788-4971	Small Pressure Pad 2 wire Increased sensitivity	230 x 160 x 3