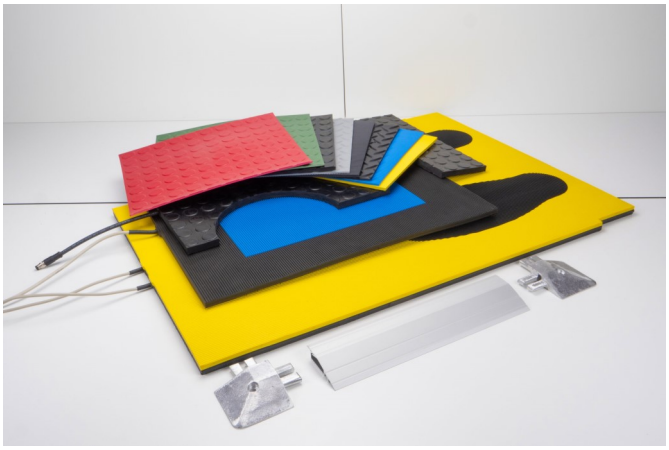
tapeswitch

Tapeswitch Mats

Information Sheet



Features

- Custom shapes & sizes
- Optional colours & top surfaces
- Optional sensitivities
- Company logos
- Aluminium edging
- Fail-safe operation
- Multiple switching zones

Tapeswitch mats are pressure-sensitive switches designed to detect personnel or objects in a variety of applications. A mat will operate when pressure (usually from a person's foot) is applied to the mat's surface.

When used as a safety device, mats are used to guard the floor around a machine or hazardous area. They can provide primary guarding, where other types of guarding may be impractical, and can also provide secondary guarding, i.e. they can be used in conjunction with an interlocked fence or light curtain to protect awkwardly shaped machines. In essence, a safety mat offers increased guarding flexibility as it can be used both to detect an operator entering a hazardous area and also to provide presence sensing of operators for as long as they remain inside a dangerous area.

Mats can also be used in non-safety applications where a floor sensor is preferred. We can incorporate colours, custom-shapes, -sizes, -sensitivities, multi-zone detection and moulded logos.

Mat Range

Tapeswitch is in the unique position of manufacturing mats with two different technologies. The CKP, Armormat and DPM mats use Tapeswitch ribbon switch technology whereas the LMI mat uses parallel steel plate technology. Each technology has its own advantages giving Tapeswitch a range of mats ideal for all applications.

Mat type	Description
CKP	Standard heavy-duty construction
Armormat	Impact-resistant construction, ideal for heavy traffic
DPM	Very heavy-duty diamond plate mat
LMI	Moulded parallel steel plate mat

Typical Applications

- Machinery safety
- Interactive
  play zones
  theme parks
  advertising
- Access control
  banks
  intruder alert

Where will you use yours!

When a system is used to provide primary guarding, i.e. it is used as a trip device, it is necessary to ensure that the dimensions of the sensor are such that the machine is brought to rest before a person can reach the dangerous parts. If a mat is being used in a secondary guarding capacity, it is necessary to ensure that the dangerous area between the primary guarding device and the machine is completely protected. It should not be possible for a person to be in or stand in this area without standing on the mat.

The safety mat should therefore be dimensioned such that the nearest point at which a person could first touch the mat is at a sufficient distance from the dangerous parts to prevent the person reaching them before they have stopped.

In order to determine the position of the front edge of the active zone, it is necessary to consider the stopping performance of the machine. From the instant that a person's foot touches the mat to the instant that dangerous motion actually ceases is called the overall system response time. The overall system response time, T, is given by the following calculation:

T = t1 + t2

where t1 =
the maximum response time of the safety device between the actuation of the sensor and the generation of the stop signal = 30ms.
(Measured according to DIN V 31006-1).

and t2 =
the response time of the machine between receiving a stop signal from the safety device and the dangerous parts coming to rest.

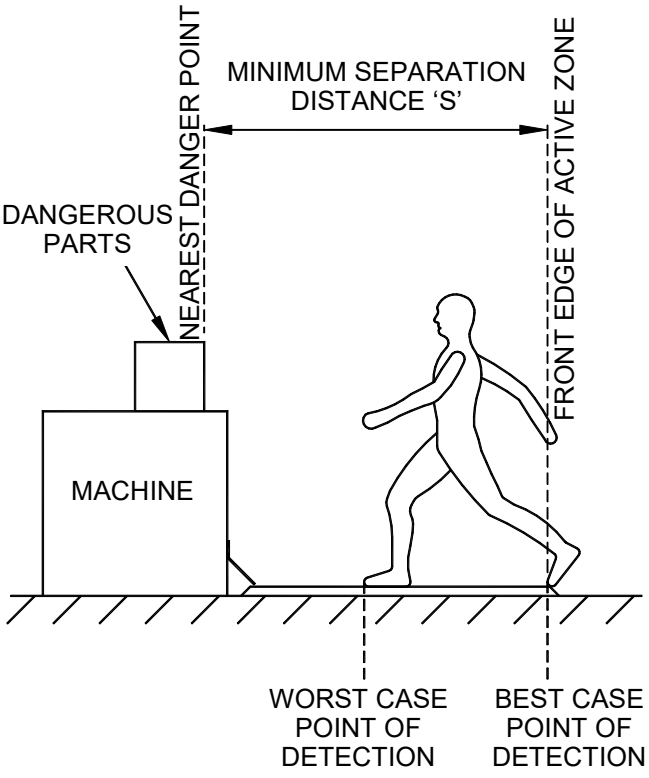
The dangerous parts will obviously continue to move during this time. The sensor must therefore be dimensioned such that a person cannot reach the dangerous parts before they have stopped.

According to BS EN999 the minimum separation distance, S in millimetres, can be calculated using the following formula:

S = (1.6xT) + 1200

Where T = overall system response time in milliseconds

When a mat is used to provide secondary guarding, i.e. it is used as a presence sensing device, the above formula does not apply. However, the mat(s) should be positioned so that it is not possible for a person to remain undetected in a dangerous position.



AE-13 Mat Edging

AE-13 aluminium edging provides a means of securing the mat to the ground and also provides an anti-trip feature. Please contact us for further details.

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Tapeswitch®

Information Sheet

Order Code

XXXX / XX / XXXX / XXXX / XXXX / XXXX

Sensor type

Edge preparation
SE - Square Edge

Cable position
LD - Long Edge, Two 2-Core Cables
SD - Short Edge, Two 2-Core Cables
LLS - Long Edge, Left Side, One 2-Core Cable
LRS - Long Edge, Right Side, One 2-Core Cable
SLS - Short Edge, Left Side, One 2-Core Cables
SRS - Short Side, Right Side, One 2-Core Cables

Long edge length mm

Short edge length mm

Cable length mm

This is only a sample order code. If you have any special requirements, please contact our sales team.

Lead Position Options