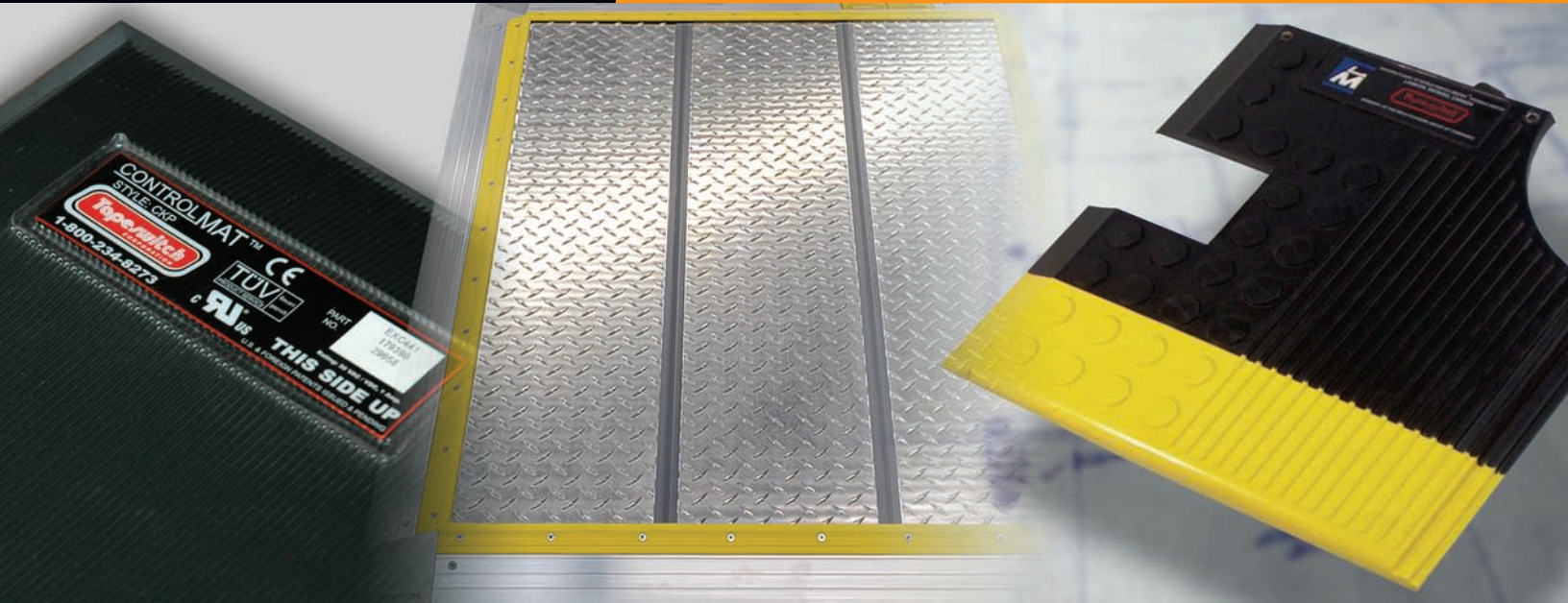




A full spectrum of sensing and signaling products for protection, detection, and safety



**SWITCH PRODUCTS**

**SAFETY & SIGNAL MATS**

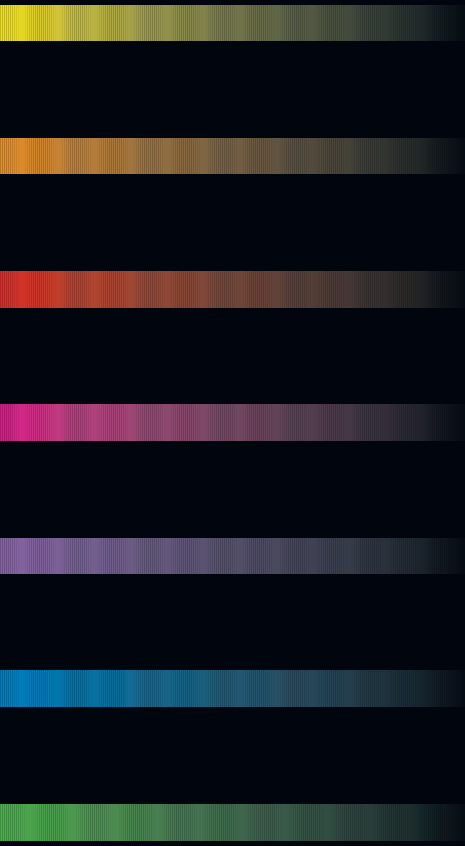
**SENSING EDGES**

**SENSING BUMPERS**

**INTERFACE CONTROLLERS**

**LIGHT CURTAINS**

**CUSTOM DESIGNS**



## Welcome to Tapeswitch

We design and manufacture innovative sensing, switching, and control products for use in a wide range of safety and non-safety applications. Our products include ribbon switches, sensing edges and bumpers, safety mats, touch pads, controllers, and light curtains.

If a standard product just won't do the job, we offer extensive custom design services. We manufacture many specially-designed products, so if you do not find precisely what you need within our standard product offering, we can still most likely meet your exact application needs.

Whether you have an immediate requirement or are planning a long-term project, you can count on our mechanical and electrical engineers to come through for you.

If you would like to speak to someone, give us a toll-free call at **1-800-234-8273**. For general product information, ask for Customer Service, or if you have a specific application that requires technical assistance, ask for Application Engineering. You will get a person and not an automated menu.



## Pressure-Sensitive Safety Mats



- 2 ■ The Fail-Safe Principle**  
How to apply safety mats properly
- 3 ■ ControlMat Industrial-Duty Safety Mats**  
Heavy-duty and abrasion-resistant  
Long life in factory settings
- 4 ■ ArmorMat Impact-Resistant Safety Mats**  
Extra heavy-duty and nearly puncture-proof  
Internal impact-resistant, penetration-resistant barrier
- 5 ■ Diamond Plate Aluminum Safety Mats**  
Super heavy-duty and nearly indestructible  
Withstands heavy industrial traffic, hot parts, welding debris
- 6 ■ Safety Zone Sensing Mats**  
Parallel-plate technology in a molded design  
Maximum protection against moisture intrusion
- 7 ■ Comfort Zone Sensing Mats**  
Anti-fatigue surface with pressure-sensitive switching  
Surface is Comfort King™ Zedland™ Vinyl Foam
- 8 ■ Custom Mats for Unusual or Difficult Applications**  
Nearly any shape or size with odd angles, curves, and cut-outs  
Multi-zone mats, special colors, and graphics
- 9 ■ Mat Edging Options and Accessories**  
Square edge, ramped edge, or framed edge options
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## Pressure-Sensitive Signal Mats for Non-Safety Applications



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Typically custom-designed for each application
- 16 ■ Wheelchair Lift Sensing Mats**  
For bus or van-mounted lifts  
Typically custom-designed for each application

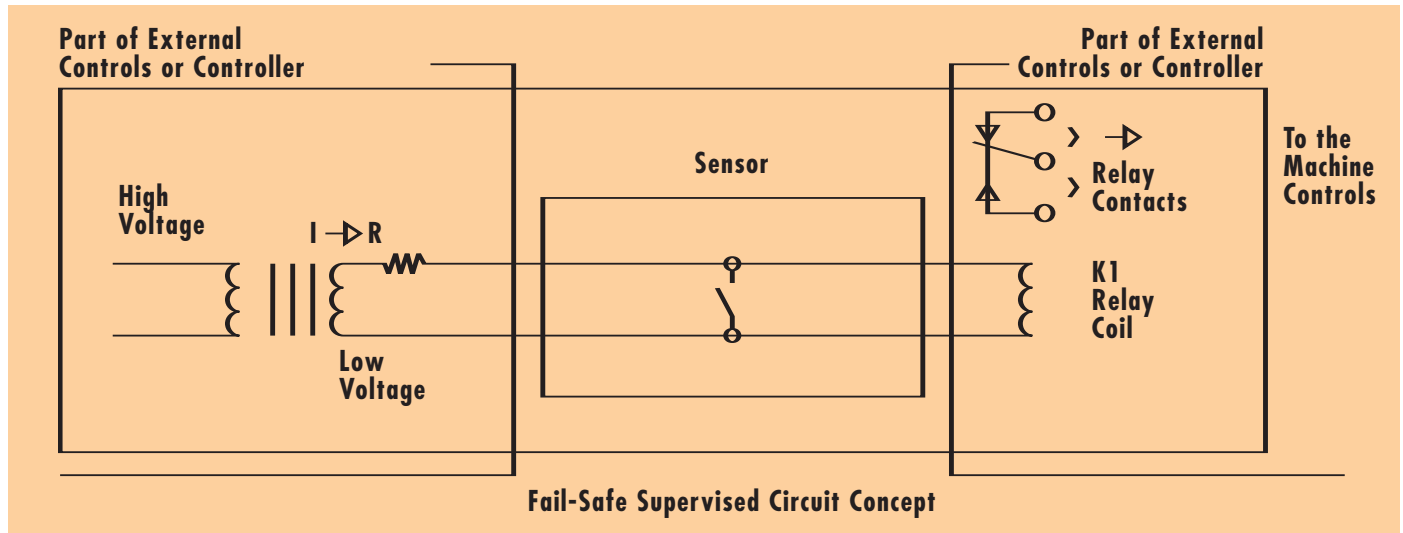
## How to apply safety mats properly

**Tapeswitch** safety mats often provide first-line of protection for personnel and equipment. They are highly sensitive and feature press-at-any-point actuation. Properly installed and connected, they continuously monitor the protected area. However, to properly function as safety devices, mats must be installed with a fail-safe monitoring circuit as shown below or with an equivalent fail-safe methodology. **Tapeswitch Offers Controllers that Employ the Fail-Safe Concept.**

### Understanding and Implementing the 4-wire Fail-Safe Concept

#### Principle of Safety

The fail-safe concept interrogates the sensor status at all times. In the event of a failure, the fail-safe concept will simulate a protected position. The “protected” position is when the sensor is activated (closed) and the “normal” or “run” position is when the sensor is not activated (open).



- Normal Conditions — constant current flow (I) holding relay coil (K1) energized
- Loss of Power — no current flow (I) and relay coil (K1) is de-energized
- Actuation of Sensor — relay coil (K1) is shorted and de-energized
- Failure of Sensor in the closed position — relay coil (K1) is shorted and de-energized
- Failure of Sensor in the open position — (broken wire, severed switch or conductor) leaves no path for current flow (I) and relay coil (K1) is de-energized
- Resistor R — limits current flow through the sensor when actuated

#### Fail-Safe (4 wire)

Fail-Safe is a shorthand term used to mean Fail to a Safe condition. In machinery with known hazards, the system is fail-safe when any failure leaves the machinery in a safe condition. The 4-wire fail-safe concept is illustrated in the figure above. A small current is constantly flowing through the sensor at all times, holding the relay coil energized at all times. The machine controls, interrupt, or stop circuitry is connected to the contacts of this relay. If the sensor is actuated, the relay coil will be shorted, causing the relay to de-energize. A resistor in series provides current limiting from overdrawing the power supply and limits the current through the sensor in the actuated position. If the sensor fails in the closed position the relay will be shorted and cannot be energized until the failure is corrected. If the sensor fails in the open position, the current path for the relay coil no longer exists and the relay coil cannot be energized until the current path is restored and the failure corrected.

#### In addition to the safety aspects achieved with Fail-Safe, it also provides:

- Isolation of the machine controls and sensor(s)
- Isolation of high amperage and high voltage machine switching from the low voltage sensors
- Conversion of a normally open switch to required normally closed machine controls

# CONTROLMAT INDUSTRIAL-DUTY SAFETY MATS

## Heavy-duty and abrasion-resistant

**Controlmat Industrial-Duty Safety Mats** are designed for personnel sensing around dangerous machinery and in hazardous locations. They are highly sensitive and feature press-at-any-point actuation.

Many standard sizes are in stock, but custom sizes and shapes are easily manufactured to order with short lead times. Mats can also be made with cutouts and multiple sensing zones to exactly fit specific applications.



### Features & Benefits

- Industrial-duty, pressure-sensitive mat for personnel sensing applications
- Moisture, chemical, and abrasion resistant for long life in factory settings
- Easy installation — no special floor preparation or add-on metal edging required
- Switching elements rated for several million cycles ensures long life
- 4-lead fail-safe wiring is standard

Field tested for more than twenty-five years, the **Controlmat** surface is both moisture and abrasion resistant. Ribbing on the top and bottom surfaces prevent water or oil buildup. The fully-protected switching elements are extremely rugged and reliable, with an operating life of several million cycles.

**Controlmat** sensing mats are available with square or ramped edges. They are easy to install and require no special floor preparation or add-on metal edges, although these are available as an option. All mats are supplied with 4-lead fail-safe wiring, and are compatible with Tapeswitch Interface Controllers.

### Applications — Detect presence of personnel for:

- Machine operation control
- Automated assembly line guarding
- Robot area guarding
- Automatic door operation
- Process cycle control
- General hazardous area guarding

### Specifications

|                                     |                                                          |
|-------------------------------------|----------------------------------------------------------|
| Actuation Force .....               | 22 lbs (100 N) nominal with 2 inch (50 mm) diameter disc |
| Recommended Voltage & Current ..... | 24 Vac or Vdc at 1.0 amps max                            |
| Environment .....                   | NEMA 4 & IP65 rated, 0 to 122 °F (-18 to 50 °C)          |
| Colors .....                        | Black (standard), yellow, blue (optional)                |
| Maximum Size .....                  | Up to 48" x 192" single-piece construction               |

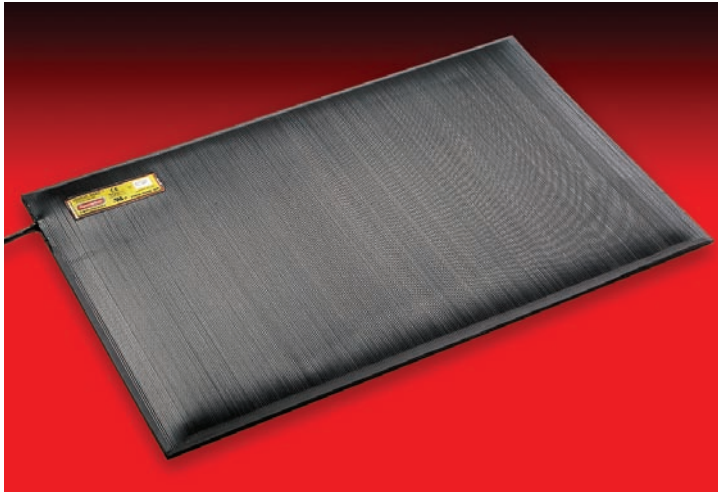


# ARMORMAT IMPACT-RESISTANT SAFETY MATS

## Extra heavy-duty and nearly puncture-proof

**ArmorMat Industrial Safety Mats** are designed for personnel detection under conditions that are not suitable for conventional mat products. They incorporate an impact-resistant, penetration-resistant barrier that easily withstands abuse that would destroy ordinary pressure-sensitive mats.

Many standard sizes are available. Custom sizes and shapes can be manufactured to order with short lead times.



### Features & Benefits

- Extra heavy-duty industrial safety mat survives harsh treatment
- Designed with an impact-resistant, penetration-resistant barrier
- Stands up to gouging by sharp objects and pounding by heavy work pieces
- Switching elements protected in separate moisture-proof compartment
- 4-lead fail-safe wiring is standard

**Armormat** extra heavy-duty switching mats are nearly impenetrable and withstand abuse such as repeated gouging by dropped sheet metal, piercing by a heavy spoke, and continual pounding by heavy work pieces.

In conventional mats, penetrating objects allow intrusion of moisture, leading to electrical failure. The **Armormat** design safeguards against this failure mode with an impact-resistant barrier that protects a separate moisture-resistant compartment containing the switching elements.

**Armormat** sensing mats are available with square or ramped edges. They are easy to install and require no special floor preparation or add-on metal edges, although these are available as an option. All mats are supplied with 4-lead fail-safe wiring, and are compatible with Tapeswitch Interface Controllers.

### Applications — Detect presence of personnel for:

- Machine operation control
- Robot area guarding
- Work cell hazard protection
- Process cycle control
- Automated assembly line guarding
- General hazard protection under harsh conditions

### Specifications

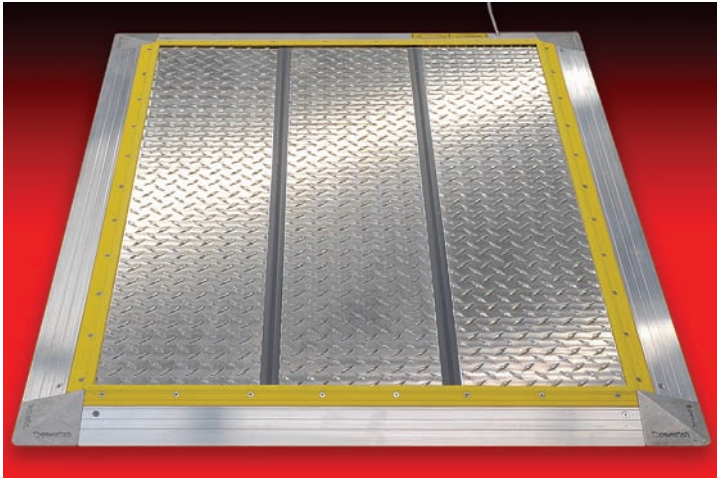
|                                     |                                                         |
|-------------------------------------|---------------------------------------------------------|
| Actuation Force.....                | 20 lbs (90 N) nominal with 2 inch (50 mm) diameter disc |
| Recommended Voltage & Current ..... | 24 Vac or Vdc at 1.0 amps max.                          |
| Environment.....                    | NEMA 4 & IP65 rated, 0 to 122 °F (-18 to 50 °C)         |
| Colors .....                        | Black (standard), yellow, blue (optional)               |
| Maximum Size .....                  | Up to 48" x 192" single-piece construction              |

# DIAMOND PLATE ALUMINUM SAFETY MATS

## Super heavy-duty and nearly indestructible

The **Diamond Plate Aluminum Safety Mat** is designed for personnel or vehicle detection in heavy industrial applications. Designed to withstand forklift traffic, steel wheel carts, pallet loaders and similar equipment, it also survives welding debris, hot parts, and metal chips.

This product is available in a range of standard sizes and can also be custom configured to form a protected area around a machine or work cell.



### Features & Benefits

- Heavy-gauge aluminum deck plate construction for heavy- industry manufacturing environments
- Designed to withstand factory traffic such as forklifts, steel carts and heavy rolling equipment
- Survives welding debris, hot parts and chips, and abundant sparking
- Straightforward installation and maintenance-free operation
- TUV approval to EN1760-1:1997 and 98/37/EC Machinery Directive
- Fail-safe wiring and stainless steel armored cable are standard

The **Diamond Plate Aluminum Safety Mat** is the most durable sensing mat available for heavy-industry manufacturing environments. The mat surface is heavy gauge aluminum deck plate, which is non-sparking and non-magnetic. The external wiring is encased in stainless steel armored cable.

In addition to handling factory vehicular traffic and heavy rolling equipment, it is also appropriate around welding operations or where hot parts, hot metal chips, or abundant sparking would destroy a non-metallic safety mat. Installation is simple and straightforward and, after installation, the **Diamond Plate Mat** is maintenance-free. It is supplied with 4-lead fail-safe wiring, and is compatible with Tapeswitch Interface Controllers.

### Applications – Detect presence of personnel for:

- Sensing and control around factory traffic
- Guarding of robotic work cells
- Protection in automated material handling areas
- Hazard protection around welding operations
- Operator presence sensing for machine control
- General hazard protection requiring extreme durability

### Specifications

|                                     |                                                           |
|-------------------------------------|-----------------------------------------------------------|
| Actuation Force.....                | Less than 45 lbs (200 N) with 2 inch (50mm) diameter disc |
| Recommended Voltage & Current ..... | 24 Vac or Vdc at 1.0 amps max.                            |
| Environment.....                    | NEMA 4 & IP65 rated, 0 to 122 °F (-18 to 50 °C)           |
| Options .....                       | Multiple zones, connectors, cable length and location     |

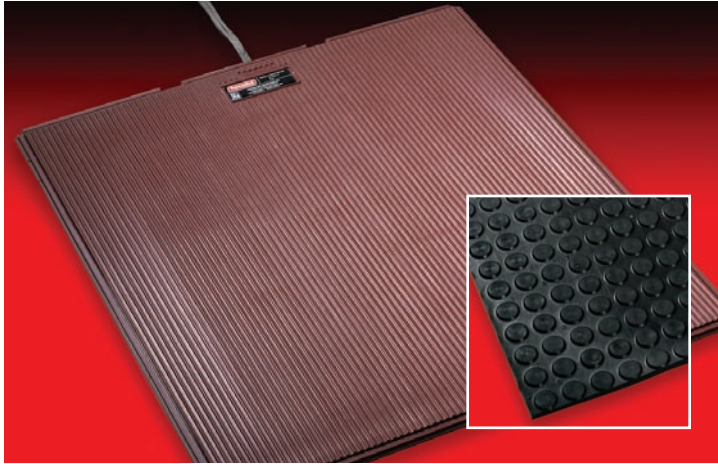


# SAFETY ZONE SENSING MATS

## Molded construction, parallel plate design

**Safety Zone Sensing Mats** are designed to protect against accidents and injury around machinery in an industrial or factory environment. They feature molded, seamless construction and, consequently, exhibit exceptional resistance to moisture intrusion as well as most acids, alkalis and salts.

Logos in any color or combination of colors can be molded directly into the mat surface. Mats can also be made with multiple sensing zones, and sensitivity can be adjusted to suit specific applications.



### Features & Benefits

- Molded construction for exceptional moisture and chemical resistance
- Parallel-plate switching technology eliminates dead zones
- Can be installed on or in the floor and with or without edging
- 1/2" thick construction provides long life and wear resistance
- Choice of ribbed or eurodot surface to maximize traction

**Safety Zone Sensing Mats** are constructed with two highly-rigid metal plates separated by spacer buttons and O-ring seals. This switching mechanism is then covered with a molded virgin vinyl housing which seals out water and other contaminants. The result is a durable and long-lasting pressure-sensitive mat suitable for harsh factory or commercial conditions.

These mats are 1/2" thick with a choice of a ribbed surface for dry, oily, or wet conditions, or a eurodot surface for wash down applications. They are supplied with 4-lead, fail-safe wiring and are compatible with Tapeswitch Interface Controllers.

**Safety Zone Sensing Mats** are available that are form, fit, and function replacements for most brands of pressure-sensitive safety mats. These mats feature the same durability, long life and exceptional moisture resistance as the standard models. For more information on these products, contact Tapeswitch.

**Special Options:** The following design elements of Safety Zone mats can be customized to suit your application.

- |                      |                  |                   |
|----------------------|------------------|-------------------|
| ■ Shape              | ■ Edge design    | ■ Colors          |
| ■ Wire or cable type | ■ Wire locations | ■ Molded-in logos |
| ■ Number of zones    | ■ Connectors     |                   |

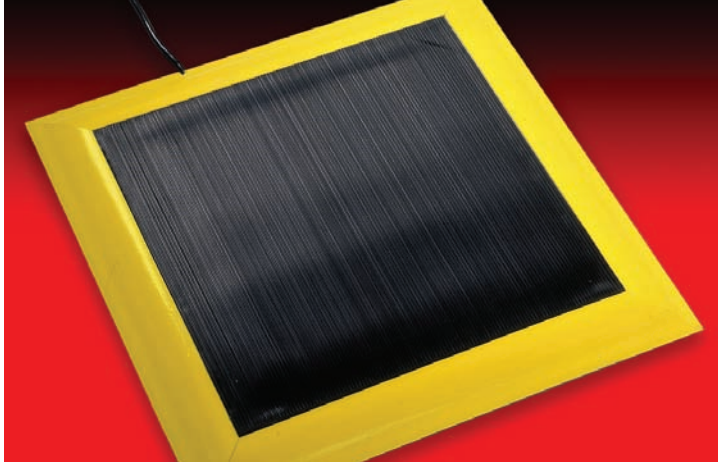
### Specifications

|                                     |                                                          |
|-------------------------------------|----------------------------------------------------------|
| Actuation Force.....                | 33 lbs (147 N) nominal with 2 inch diameter (50 mm) disc |
| Recommended Voltage & Current ..... | 12 to 48 Vac or Vdc at 50 mA min. to 1.0 amp max.        |
| Environment.....                    | NEMA 6 & IP67 rated, -31 to 122 °F (-35 to 50 °C)        |
| Safety Standards .....              | ANSI/RIA R15.06-1999, TUV EN1760-1:1997                  |
| Maximum Size .....                  | Up to 40" x 60" single-piece construction                |

# COMFORT ZONE SENSING MATS

## Anti-fatigue surface with pressure-sensitive switching

**The Comfort Zone Anti-Fatigue Switchmat** is the only mat that combines the safety of a pressure-sensitive switching mat with the comfort of an ergonomically-designed anti-fatigue mat. This unique product is intended for safety applications in which an operator must stand on a safety mat frequently or for extended periods during machine cycle times.



### Features & Benefits

- A unique combination of safety and ergonomic comfort in one mat
- Integral safety-yellow ramped edge minimizes trip hazard
- Built-in edging means out-of-the-box installation
- 4-lead fail-safe wiring is standard
- Meets or surpasses ANSI/RIA 15.06-1999 and TUV EN1760-1:1997

**The Comfort Zone Anti-Fatigue Switchmat** melds parallel-plate switching technology with premier Comfort King™ Zedland™ Vinyl Foam to create a unique dual-purpose mat. A highly-visible yellow ramped edge greatly reduces any trip hazard, while providing out-of-the-box service. All **Comfort Zone** mats are supplied with 4-lead fail-safe wiring, and are compatible with Tapeswitch Interface Controllers.

### Standard Sizes

24" x 36" (610 mm x 910 mm)

36" x 48" (910 mm x 1220 mm)

24" x 48" (610 mm x 1220 mm)

36" x 60" (910 mm x 1520 mm)

24" x 60" (610 mm x 1520 mm)

36" x 72" (910 mm x 1830 mm)

24" x 72" (610 mm x 1830 mm)

Custom sizes are also available

### Specifications

Actuation Force.....22 lbs (100 N) nominal with 2 inch (50 mm) diameter disc

Recommended Voltage & Current .....12 to 48 Vac or Vdc at 50 mA min. to 1.0 amp max.

Environment.....NEMA 4 & IP65 rated, -0 to 122 °F (-18 to 50 °C)

Switch Life.....1 million operations at any point

# CUSTOM MATS FOR UNUSUAL OR DIFFICULT APPLICATIONS

## Mats designed to solve specific problems

**Tapeswitch** is the industry leader in custom mats for unusual or difficult applications. If you do not find precisely what you need within our standard product offering, we can still most likely meet your exact application needs.

We can supply nearly any size and shape, including mats with odd angles, curves, and cutouts for obstacles. With our engineering capabilities, knack for innovation, and range of available technologies, we can handle nearly any application.



### Guard machines, work cells, robot installations that require:

- Odd shapes
- Curves & angles
- Cutouts
- Special colors
- Large-area coverage

### Protect areas that have:

- Forklifts, steel carts, pallet loaders, other vehicular traffic
- Hot parts, welding debris, sparks
- Accidental dropping of heavy parts
- Conditions that destroy standard mats



### Specify mats that require:

- Multiple sensing zones
- Color-coded areas
- Logos and graphics
- Other unusual features

Whether you have an immediate requirement or are planning a long-term project, you can count on our mechanical and electrical engineers to come through for you. We have built our reputation on rapid response, customer commitment, and common-sense solutions.

If you would like to speak to someone, give us a toll-free call at **1-800-234-8273**. For general product information, ask for Customer Service, or if you have a specific application that requires technical information, ask for Application Engineering.

# MAT EDGING OPTIONS AND ACCESSORIES

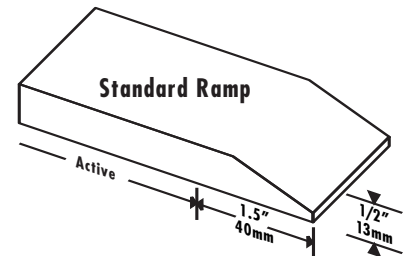
## Mat edge styles and aluminum trim options

**Tapeswitch** safety mats are supplied with a choice of edge styles and do not require additional edging in many applications. In some cases, however, aluminum edging may be used to secure the mat to the floor, provide a wire chase for the leads, or to add a safety-yellow edge marking.

### Edge Styles

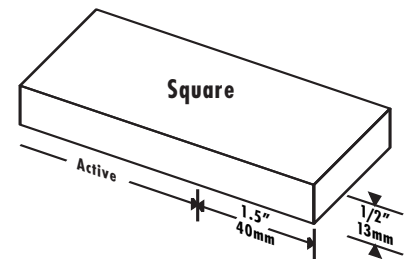
#### Ramp Edge

- Provides a smooth transition between the floor and the mat, minimizing any trip hazard
- Suitable for single mat installation where permanently affixing the mat is not required



#### Square Edge

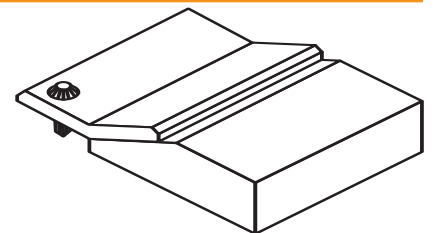
- Suitable when multiple mats are placed side by side or when aluminum edging is to be used
- Use when mat will be butted up against a machine or wall



### Optional Edging

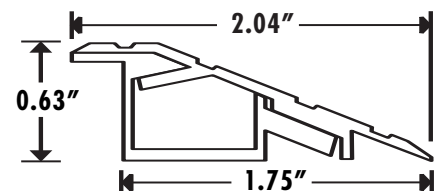
#### Aluminum Edging Type AE-1

- One-piece extrusion used to secure the mat to the floor
- Can be used with both square and ramp edged mats



#### Aluminum Edging Type AE-2

- Heavy-duty, two-piece aluminum extrusion
- Secures mat to floor and provides built-in wire chase
- Used for square edge mats only



#### Aluminum Edging Type AE-3

- Heavy-duty aluminum extrusion with yellow PVC cover
- Secures mat, provides wire chase and highlights mat edge with yellow
- Snap-on corner pieces have lead exits



# HOW TO ORDER SAFETY MATS

## Things to know before you order



### CONTROLMATS and ARMORMATS

#### 1. Specify the mat size

ControlMats are available in sizes up to 48" x 192".

Armormats are available in sizes up to 48" x 120".

#### 2. Pick a lead exit

Mats are supplied with one 4-wire lead.

The lead outlet options are:

**LLS** Long side, Left, Single lead

**LRS** Long side, Right, Single lead

**SLS** Short side, Left, Single lead

**SRS** Short side, Right, Single lead

#### 3. Pick a mat color

Color choices are: Black, Yellow, and Blue.

#### 4. Pick an edge treatment

Choices are: square or ramped.

#### 5. Pick edging if required in your application

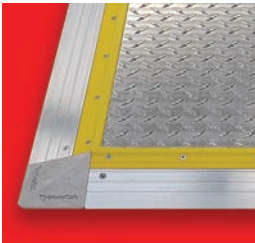
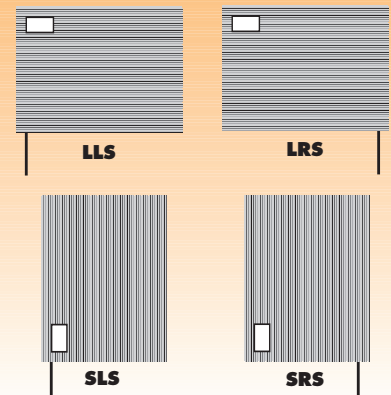
For ramped edges, choose AE-1.

For square edges, choose AE-2 or AE-3 (Controlmats only).

#### 6. Pick an interface controller, if required (see page 11)

Choose C6, PRSU/4, or PSSU for high risk applications.

#### Lead Exit Options



### DIAMOND PLATE MATS

#### 1. Specify the active area required (up to 48" x 120")

Diamond Plate Mats have 3.5" trim on each edge, which is inactive.

#### 2. Pick a lead exit

Mats are supplied with one 4-wire lead. See the diagram for ControlMats and Armormats above.

#### 3. Pick an interface controller, if required (see page 11)

Choose C6, PRSU/4, or PSSU for high risk applications.



### SAFETY ZONE MATS

#### 1. Specify the mat size

Safety Zone Mats are available in sizes up to 40" x 60".

#### 2. Pick a mat color

Color choices are: Black and Yellow. Other colors optional.

#### 3. Pick an edge treatment

Choices are: square or ramped.

#### 4. Pick edging if required in your application

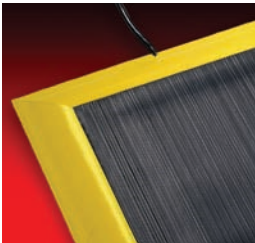
For ramped edges, choose AE-1.

For square edges, choose AE-2 or AE-3.

#### 5. Pick an interface controller, if required (see page 11)

Choose C6, PRSU/4, or PSSU for high risk applications.

Note: Standard lead location is mid-point on short side. Other locations optional.



### COMFORT ZONE MATS

#### 1. Specify the mat size.

Comfort Zone Mats are available in sizes up to 40" x 60".

#### 2. Pick a lead exit.

Mats are supplied with one 4-wire lead. See the diagram for ControlMats and Armormats above.

#### 3. Pick an interface controller, if required (see page 11)

Choose C6, PRSU/4, or PSSU for high risk applications.

Note: Mat has black sensing surface with ramped, safety yellow edges.

# INTERFACE CONTROLLERS FOR MATS

## Compatible controllers for safety applications

**Tapeswitch** manufactures interface controllers that are compatible with all of the mat products shown in this catalog. These devices provide an interface between the low-voltage mat sensors and the machine or device being activated. Be certain to select the appropriate controller for the application.

**Safety applications require the use of both a fail-safe mat and a fail-safe rated interface controller.** For non-safety applications, any mix of fail-safe and non-fail-safe devices may be used.

### C6 Multifunction Interface Controller

- Fully fail-safe for hazardous applications
- Self-contained, supports up to 6 zones
- Detects sensor, cabling or internal faults
- NEMA enclosure with LED status display



### PRSU/4 Control Unit

- Fully fail-safe for hazardous applications
- Detects sensor, cabling or internal faults
- Uses 24 Vac or Vdc supply
- DIN rail mounting



### PSSU Control Unit

- Fully fail-safe for highest-risk applications
- Detects sensor, cabling or internal faults
- 100/240 Vac or 24 Vdc
- DIN rail or wall mounting options



### PSCU Control Unit

- Suitable for low-risk applications only
- 100/240 Vac or 24 Vdc
- 11-pin plug-in or DIN rail mounting



See the Tapeswitch Interface Controllers Catalog for detailed specifications.



## ABOUT SIGNAL MATS

Tapeswitch **Signal Mat Products** are intended for presence sensing in **non-safety** applications. They are typically used to detect the presence of a person or object and then operate a device or counter. Applications include lighting controls, entrance annunciators, intrusion alarms, or initiation of non-hazardous processes or machines. Products are available for:

- General commercial applications to detect the presence of a person
- Vehicle detection in car wash or environmentally demanding applications
- Transit-type applications for signaling, door opening, or counting

### Custom Designs with Short Lead Times

Tapeswitch routinely designs custom mats for unusual or difficult applications. We can provide nearly any shape or size, including products with odd angles, curves and cutouts.

Our special capabilities include:

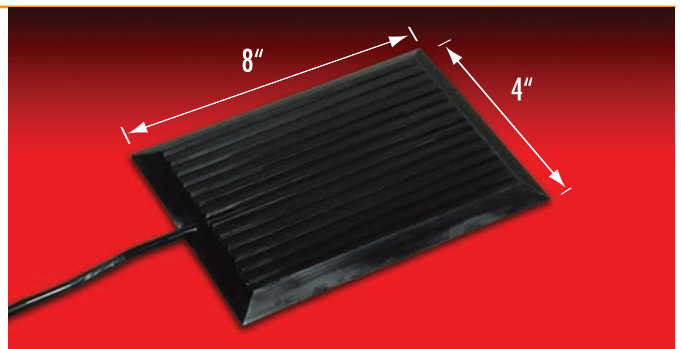
- Ultra-thin mats — Sensing mats that are only 3/16" thick



- Multi-zone mats — Different output signals from different areas of the mat
- Multiple colors and graphics — Special colors, logos or text molded in



- Custom sizes — Specify the size and shape you need



If you have a custom requirement and would like to speak to someone, give us a toll-free call at **1-800-234-8273** and ask to speak to an application engineer.

## Commercial duty, non-safety

**CVP Switching Mats** are designed for commercial control, signaling, and counting applications. They feature minimum thickness, maximum durability and low cost. CVP Mats are flexible and conform to irregular surfaces, so installation is simple and straight-forward. They are water-resistant, but not immersible. Only 5 pounds of force is needed for operation. **CVP Sensing Mats are not suitable for, and should not be used for, industrial safety applications or personnel protection.**



### Features & Benefits

- Slimmest profile of any sensing mat
- Only 5 lbs of force needed for operation
- Flexible and water resistant
- Concealable under carpeting or matting
- May be placed under Masonite or plywood for heavy duty applications
- All models are UL listed

CVP Mats use field-proven ribbon switch technology, which eliminates the need for plates or screen mesh switching elements. They operate as normally open switches and can be used to control relays, lights or alarms from a low voltage source. CVP Mats can function as hidden switches when placed under carpeting or matting. For heavy duty applications, they can be placed under plywood or Masonite.

All units are tested at 1 ampere, 115 volts ac. For floor switching, however, 24 volts or lower is strongly recommended.

### Applications — Personal sensing or detection:

- Entrance annunciators for stores and offices
- Pedestrian counting
- Display advertising lighting
- Foyer lighting control
- Cash register protection
- Burglar and intrusion alarms
- Confessional booth signaling
- Check cashing photography
- Stairway lighting control
- Aged invalid alarm

### Specifications

Actuation Force.....5 lbs nominal with 2 inch (50 mm) diameter disc  
Recommended Voltage & Current.....24 Vac or Vdc at 1.0 amps max  
Standard Sizes (Custom sizes available) .....6" x 23", 17" x 23", 23" x 35", 30" x 32", (3/32" thick)  
Colors.....Olive green (for special colors, contact Tapeswitch)

# CAR WASH VEHICLE SENSING MAT

## For harsh, wash down environments

The **Car Wash Vehicle Sensing Mat** is designed to sense the downward or angular pressure of an automobile tire in the harsh environment of vehicle wash down systems. It is molded from 100% PVC Plastisol and features anti-wicking Dri-Run cable which provides exceptional protection from moisture intrusion through the electrical lead wires. The Car Wash Sensing Mat has a moisture rating of IP-67.

Many standard sizes are in stock, but custom sizes and shapes are easily manufactured to order with short lead times. Mats can also be made with cutouts and multiple sensing zones to exactly fit specific application requirements.



### Features & Benefits

- Heavy duty steel base plate provides solid mounting points
- Edge options allow a choice of recessed or surface mounting
- Dri-Run cabling prevents moisture wicking through the lead wires
- Completely submersible, IP67 rated mat ensures a long operating life

### Specifications

|                                     |                                        |
|-------------------------------------|----------------------------------------|
| Actuation Force.....                | 15 lbs nominal                         |
| Recommended Voltage & Current ..... | 24 Vac or Vdc at 1.0 amps max.         |
| Environment.....                    | IP67 rated, 0 to 122 °F (-18 to 50 °C) |
| Material .....                      | Molded PVC                             |
| Lead Wires .....                    | 18/2 AWG Dri-Run Cable                 |
| Standard Color .....                | Gray                                   |
| Mounting.....                       | 3/16" holes (4) in steel base plate    |

# MATEX® TREADLE SWITCH MATS

## For trains, buses, and other public transit



**Matex® Treadles** are used on buses, trains, and trams for door Safety, door Opening, and passenger Counting. They can also be used at electric turnstiles or gates, ticket dispensing equipment, and other traffic control installations in the transit industry. Energy and maintenance savings can be achieved through their use for controlling escalator operation. Treadle mats are usually specifically designed for each application.

Customers for Matex® Treadles have included the following companies and transit authorities: Nova Bus, New Flyer Industries, Orion Bus, S.N.C.F., Amtrak, British Railways, Renault, Transit Authorities in Paris, Melbourne, Sydney, Toronto, Winnipeg, Edmonton, Vancouver, Copenhagen.

**Usually placed in the rear stairwell of a vehicle, a treadle mat sends a signal when stepped on. This signal usually serves one of four functions:**

- 1.** To prevent the rear doors from closing on a passenger
- 2.** To open the rear doors for an exiting passenger when the bus is stopped. The passenger steps down on the mat and the doors open
- 3.** To be used as part of a passenger counting system
- 4.** Installed on wheelchair lifts to signal that the wheelchair is in position for lift operation



### Features & Benefits

- Molded design and durable switching technology provide long operating life
- Simple screw-down mounting system for easy installation and maintenance
- Cutouts available to accommodate door pivots, door guides, hand rails, etc.
- Standard or custom colors can be used to match vehicle color scheme
- Two-zone activation is available to implement “open” and “hold” door functions

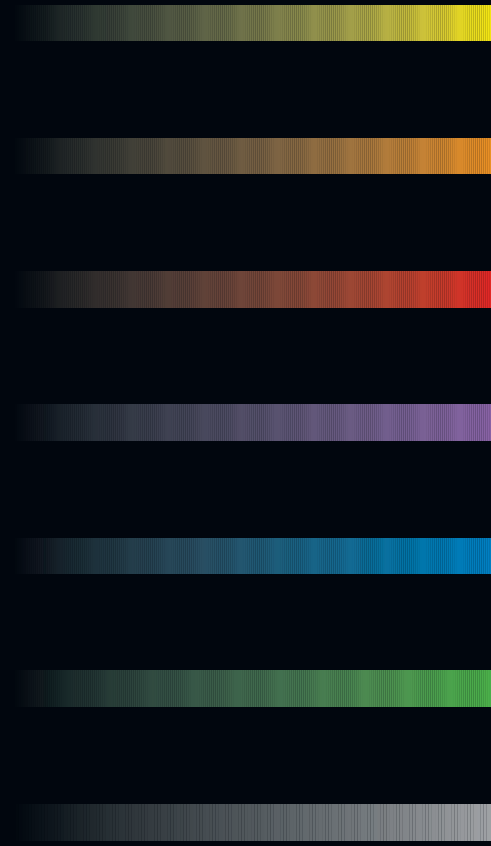
### Specifications

|                                     |                                                  |
|-------------------------------------|--------------------------------------------------|
| Recommended Voltage & Current ..... | 30 Vac or Vdc at 1.0 amps max.                   |
| Product Life.....                   | One million actuations                           |
| Environment.....                    | NEMA 4 & IP65 rated, -35 to 120°F (-35 to 50 °C) |
| Actuation Force.....                | 33 lbs (147 N) nominal                           |





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