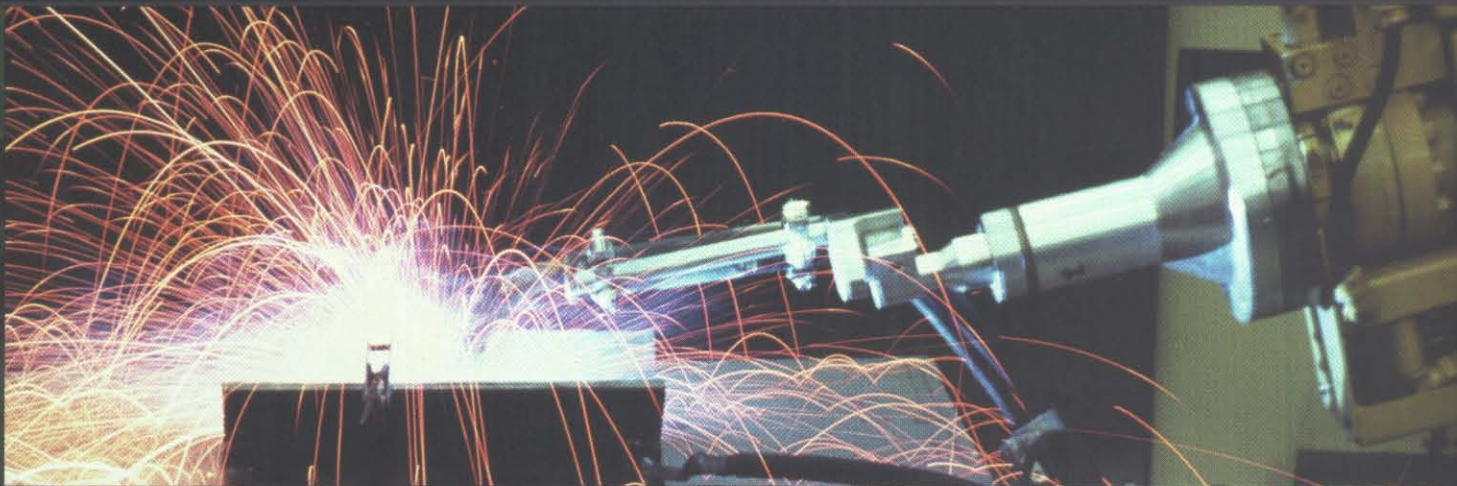
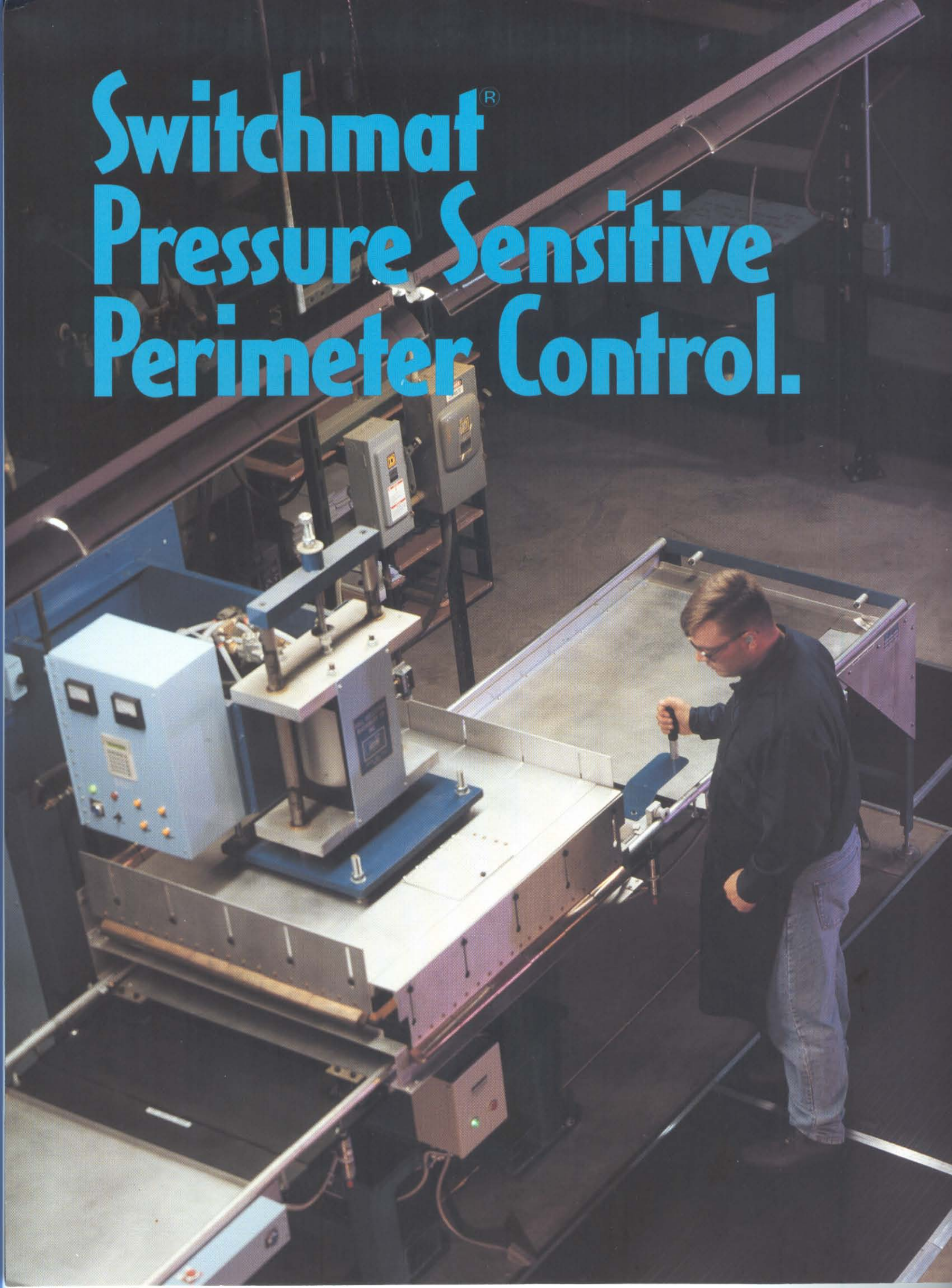


The Switch Is On.



RECORA

Switchmat[®] Pressure Sensitive Perimeter Control.

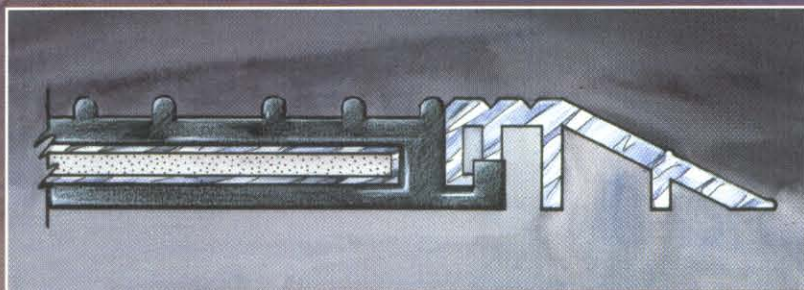


It's not just "dependable"...

The workplace today is driven by regulations. ANSI writes the rules, OSHA enforces them, and companies conform. Simple. The only question is, *how* to conform. That's the challenge.

Where pressure sensitive perimeter control is concerned, the "how" is a call to Recora. Recora develops Switchmat® solutions so companies can protect their workers and conform to all safety requirements. And conform *dependably*. Recora has been making the Switchmat for over 50 years. In all that time, in all the varied workplace environments—hot, cold, wet, dry, dusty, clean—Switchmats have an enviable record of reliable operation.

...not just "rugged"



Cross section of Switchmat with ramp edging.
Aluminum edging is included with all Switchmats.

Of course, Switchmats are industrial strength. 3/8" thick, completely molded in solid vinyl surrounding twin steel plates, they are designed and constructed to resist oil, dirt, weld splatter, chemicals and severe temperatures. And yet, for all their strength, Switchmats are sensitive to the slightest touch of a foot—over the entire surface.

...not just "inventive"...

Switchmats are available in a variety of configurations and adaptable for all kinds of environments. But we do much, much more than make safety mats. We develop a wide variety of pressure-sensitive systems to make the working world a safer place to be. Conforming to your needs is the number one reason why Recora has grown to be one of the leaders in the industry.

it's a switch to a new way of thinking!

Custom solutions don't just come off the shelf...



When your company does a risk assessment and discussions begin on perimeter control, Recora should be included in the conversation. We can help you determine how best to meet safeguarding requirements. Safety mats? Ribbon switches? Controllers?

Once the methods are determined, our engineers go into action. We develop a plan, adapt existing products—or even invent new ones—to solve the problem. Whatever it takes:

- Switchmats
- Sensi Switch® Fingertip Control
- Fail Safe Controllers—in any combination—

Recora delivers a proposal and a plan to get your workplace up to standards quickly and at a competitive cost.

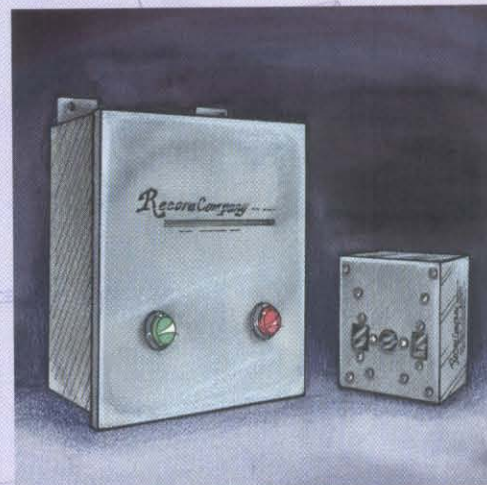
INSTALLA
NO. CB140
0625"=1"
RECORA C

HMAT SPEC
SIZE
10,000 X 3
10,000 X 4
11,500 X 6

TYPE &
P - PART NO.
CONNECTOR - PART NO.

SHOWN

A fail safe controller by Recora does more than ensure safety. We can design complete Safety Control Panels that control all aspects of the machinery—even high-tech robotic operations!



A healthcare solution: Recora designed a hospital bed sensor to alert the nursing staff when patients are moving around on- or leaving the hospital beds!



The Auto Alert® automobile traffic controller is used at hundreds of car washes. Resistant to water, soaps, chemicals and extreme temperatures, it's all in a days work to Auto Alert!



The Switch Is On ...to Recora Solutions in Perimeter Control

with NEW Active Edge for total protection

RECORA SWITCHMATS®

SWITCHMATS stop robots and machinery in their tracks!

Recora Series 14HD Switchmats provide effective safety barriers to both workers and vehicles entering hazardous or restricted machine and production areas. They can be wired to stop (or start) robots, machinery, doors, alarms...most any type of mechanical or moving equipment imaginable. Recora Switchmats are used in almost any environment, wherever safety and security are paramount.

When safety and security areas do not conform to standard Switchmat sizes, 14HD mats are ideal for customizing. By adding Recora's Snap-On Aluminum Connectors and Edging, Series 14HD can be configured to fit any size area needed. These Switchmat Systems can be customized for sensitivity, activation, layout design and sized to cover any area to help provide worker protection from restricted or hazardous machine areas...even around cut-outs for machine legs, posts, walls, etc. Recora's Fail-Safe Control Unit added to Series 14HD Switchmat Systems will provide level 3 protection.



Recora's new Active Mat Connectors provide 100% surface coverage for maximum safety.



Custom Solutions

RECORA EDGING/MAT CONNECTOR

Conduit Connector Ramp Edging Mat Connector Blunt Edging

CONSTRUCTION—Switchmats are 3/8" thick, completely molded in solid vinyl, not laminated, with corrugated surfaces. Mats resist dirt, oil, weld splatter and most harsh industrial liquids. Series 14H and 14HD are active over 100% of their surface area. Switchmats are designed for low voltage operation, Class II N.E.C. circuit operation, 100 watts at 24 volts AC or DC. All Recora Switchmats comply with ANSI/RIA standards for robot and machine guarding.

SENSITIVITY—Standard sensitivity is 10-15 lbs. Activation pressure can be manufactured to almost any sensitivity requirement.

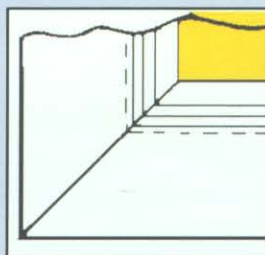
LEAD WIRES—One (1) 10' 18 AWG type SPT 2-conductor lead, 300 volt, 7 amp capacity, is standard for the Series 14H Switchmat. Series 14HD has two (2) 10' leads, the same type as 14H Series. Additional lead lengths are available. The 18AWG 2-conductor wire and our 4-conductor lead wire are other options.

COLOR—Standard colors are black, brown and yellow. Other colors are available.

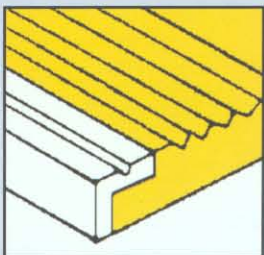
SIZES—See Standard Size Chart.



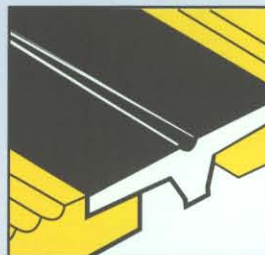
ACTIVE RAMP EDGING
for surface installations
and easy walk-on.
2" wide.
P/N: MSE



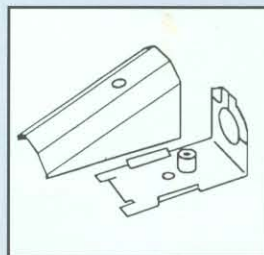
ACTIVE RAMP EDGING
with mitered corner.



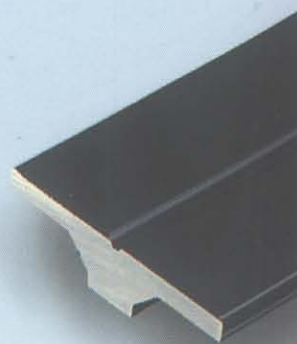
BLUNT EDGING
for recessed installations
or flush edges against
abutments on post.
3/4" wide.
P/N: REM

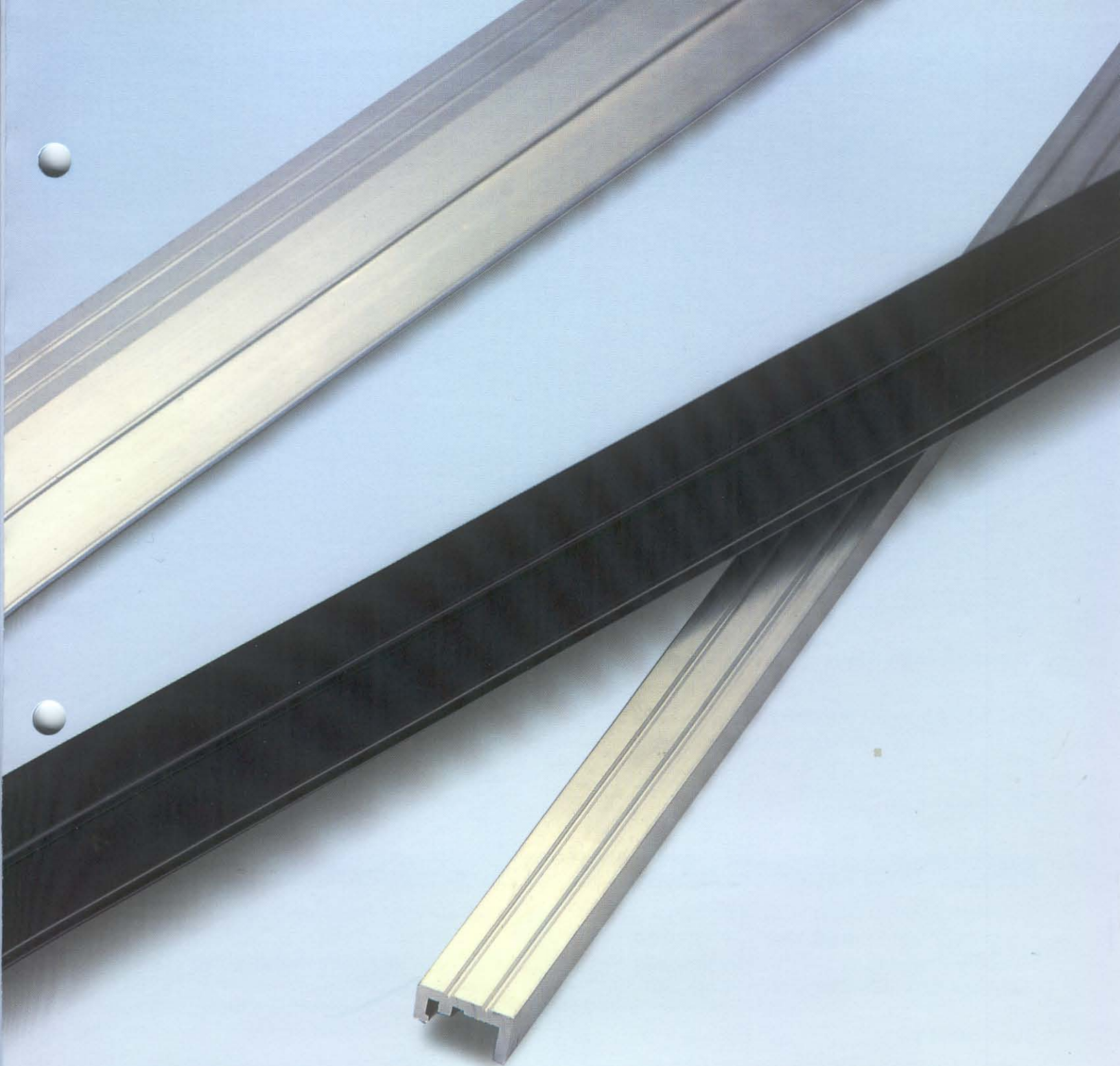


ACTIVE MAT CONNECTOR
joins mats for large area
installations.
1-1/2" wide.
P/N: NE



CONDUIT CONNECTOR
for connecting 1/2"
trade size conduit to
switchmat edging.
P/N: 1585





Snap-on Active edging is used on the 14H and 14HD Series Switchmats to secure them to the floor. It allows easy walk-on accessibility and can be used to join large area installations, recessed installations or flush edges.

Meets OSHA standard for non-removal.

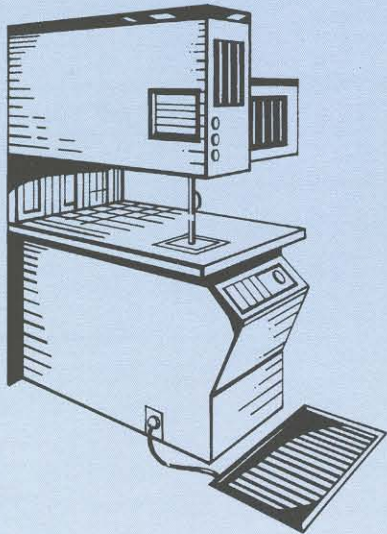
Due to the customizing of our 14H and 14HD Series Switchmats, aluminum edging and/or connectors are cut to your specific requirements. The maximum length for one continuous strip of aluminum edging is 12'.



The Switch Is On ...to Recora Solutions in Operator Control

RECORA SWITCHMATS®

SERIES 12, 15 & 30 Switchmats



SERIES 12, 15 & 30 Switchmats have been designed for presence sensing applications for stand alone operator detection in smaller areas. Just place on a smooth surface, connect lead wiring and you're ready! Depending on how these Switchmats are combined with the machine control wiring, these models can require the operator to step on the Switchmat, or off the Switchmat before the machine will cycle or operate. Series 12, 15 & 30 are thin (3/8") versatile Switchmats; perfect coverage when actuating bells, alarms, door signals or safety cut-outs.

Series 12 & 30 have a corrugated surface with a molded ramp edging. Series 15 has a smooth surface with molded blunt edge.

When HD (dual leads) Series Switchmats are being used for machine protection, the Recora Fail-Safe Control (FSC-6) provides fail-safe operation against severed leads, transformer failure or power outage. (See Fail-Safe Control information on literature sheet.)

CONSTRUCTION—Switchmats are completely molded, not laminated—mats resist dirt, oil, weld splatter



and most harsh industrial liquids. As with all Recora Switchmats, Series 12, 15 & 30 are active over 95% of their surface areas.

Mats are designed for low voltage operation, Class II N.E.C. circuit operation, 100 watts at 24 volts AC or DC. Switch is single pole, single throw, normally open, momentary contact type.

SENSITIVITY—Standard sensitivity is 10-15 lbs.

LEAD WIRES—Series 12H, 15H & 30H leads are single 6' 18AWG 2-conductor wire, 300 volt, 7 amp capacity. Series 12HD, 15HD & 30HD have dual leads for connecting to a Fail-Safe Control Unit. 4-conductor lead wires are optional.

COLOR—Brown is standard for Series 12; standard color for Series 15 & 30 is black. Other colors are available for Series 12, 15 & 30 Switchmats.

SIZES—See Standard Size Chart.

SWITCHMAT - PART NO. 1423-30H

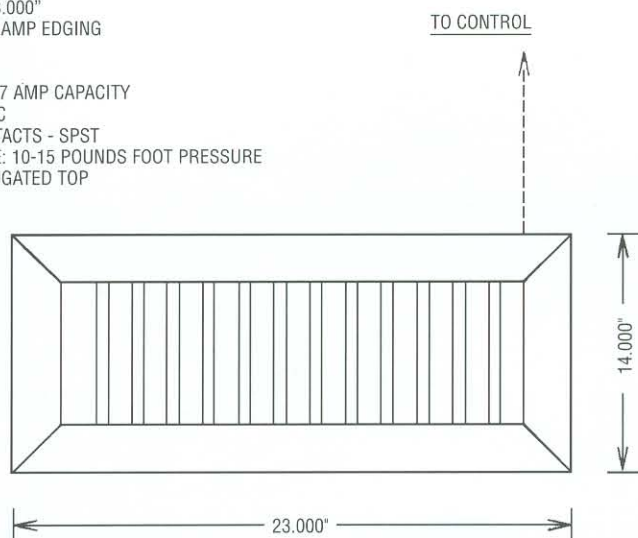
DRAWING NO. CB1400914

SCALE: NONE

VENDOR: RECORA COMPANY - BATAVIA, IL

SWITCHMAT SPECIFICATIONS

MAT SIZE: 14.000" X 23.000"
 EDGE TYPE: MOLDED RAMP EDGING
 MAT WEIGHT: 11 LBS.
 LEAD TYPE: 18 AWG
 300 VOLT, 7 AMP CAPACITY
 100 WATTS - 24V AC/DC
 NORMALLY OPEN CONTACTS - SPST
 ACTIVATION PRESSURE: 10-15 POUNDS FOOT PRESSURE
 COLOR: BLACK, CORRUGATED TOP

**STANDARD MODELS**

12, 15 & 30

SERIES 12

P/N	SIZE	WT. (lbs)
1017	10" x 17"	9
1423	14" x 23"	11
1830	18" x 30"	20
3030	30" x 30"	35

SERIES 15

P/N	SIZE	WT. (lbs)
824	8" x 24"	5
827	8" x 27"	6
1212	12" x 12"	7
1616	16" x 16"	10

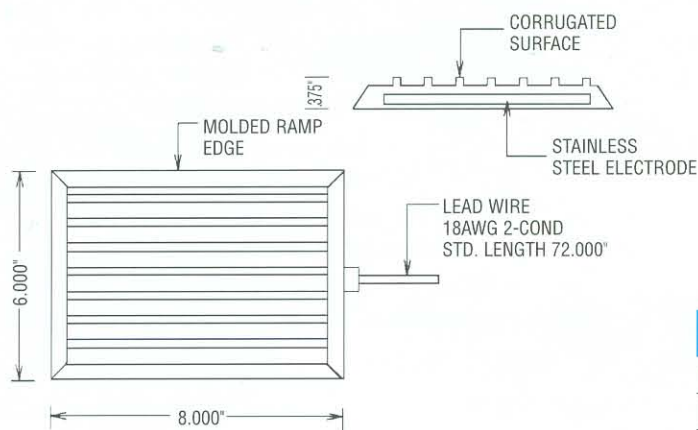
SERIES 30

P/N	SIZE	WT. (lbs)
1017	10" x 17"	9
1423	14" x 23"	11
1830	18" x 30"	20
3030	30" x 30"	35

NEPTUNE FOOTSWITCHES

The 10-15 lb. sensitivity of the Neptune Footswitch makes it ideal wherever foot controls are needed to actuate machines, doors or alarms. No mounting is necessary; just lay it down on any reasonably smooth surface, connect it to the power source and the Neptune Footswitch is ready. Molded of tough, pliable vinyl, this versatile footswitch is only 3/8"

thick...yet able to withstand thousands of pounds of pressure on the entire electrode surface without damage. The Neptune Footswitch is unaffected by water, extreme temperature changes and most common chemicals. There are no bearings or springs to wear out...no burned or worn out contacts. Black is the standard color, but other colors are available.

**STANDARD MODEL**

PART NUMBER	SIZE	WT. (lbs)
NF-2	6" x 8"	2

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Batavia, IL 60510

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Fax: (630) 406-9797

www.recora-co.com

e-mail: info@recora-co.com

The Switch Is On ...to Recora Solutions in Fail Safe Controllers

RECORA FSC-6, FSC-5, CB1R

The safety mat controllers designed for tomorrow are here today.



FSC-5



FSC-6



CB1R (Mini-Control)

Recora FSC-6



Design Principles

The Recora FSC-6 Safety Mat Controller is designed as a complete, self-contained, mat controller suitable to use at all levels of risk mitigation requirements in industrial applications. The FSC-6 integrates a number of sophisticated safety design concepts to ensure the highest degree of safe operation along with the best possible protection for equipment and personnel. The FSC-6 is available in various configurations to match the appropriate level of protection to the potential risk without sacrificing productivity.

SAFETY FEATURES INCLUDE:

- Full dual channel operation
- Positive operation state indicators
- Force guided relays
- Redundant critical control components
- Configuration for ANSI B11.19 guidelines
- Controlled access for installation, operation
- NEMA 12 and 13 enclosure
- Factory configured and inspected

CONTROLLERS

Model	Size	Description
FSC-6-R	1.75" x 3" x 4.75"	Din Rail Relay
FSC-6-1Z	8" x 8" x 4"	1 Zone
FSC-6-2Z	10" x 8" x 6"	2 Zone
FSC-6-3Z	14" x 8" x 6"	3 Zone
FSC-6-4Z	14" x 8" x 6"	4 Zone

Special control configurations available.
Send requirements to Recora Company.

ADDITIONAL PROTECTION FEATURES (OPTIONAL)

- Illuminated reset button
- Additional light tower indicators
- Key operated mandatory reset
- Padlock kit for lock-out

Enclosure

Standard - NEMA-12
Optional - 4X

Enclosure Fastening Technique

Standard - Front panel screw - tamper resistant
Optional - Key-lock, mechanical lockout

Power

Standard - 120 VAC 60 HZ
Optional - 24 VDC or 220 VAC
Rated voltage - 120 VAC
Rated consumption at 50 HZ - 2.5 watts
Rated frequency - 50 to 60 HZ
AC: Short-circuit proof transformer

Presence Sensor Inputs

Standard - Single safety mat
Optional - Multiple zone inputs
Light screen
Gate switch
Limit switch
Positive sensor identification

Front Panel Indicators

Standard -
Normal: GREEN
Halt: RED

Front Panel Controls

Optional -
Manual RESET
Key operated RESET

Machine Controls Outputs

Standard - 2 channel safe circuit
Contacts - 2 N.O. safety contacts
Contact type - Forced contact
Contact material - Ag-Alloy; Gold-plated
Switching voltage - 230/230 V AC/DC
Maximum continuous current per contact - 6 amps
Mechanical lifetime - 10 x 10⁶ switching cycles
Recovery time (without RESET monitoring) - 8000 mSec
Working range ambient temperature - -25 to +55 °C

Internal Configuration

DIN 35mm rail design
Cage-Clamp wire design, touch safe isolated power, Switchmat, and machine control inputs

Risk Assessment

The level of safety protection required for a given application is based on the risk associated with that application. The risk associated with an operation is based on a number of factors that must be taken together and evaluated in total to establish the risk level for any equipment or operation.

Partial Listing of Applicable Safety Standards

ANSI B11.19-1990 Machine Tools - Safeguarding when referenced by other B11 machine tool safety standards - performance criteria for the design, construction, care, and operation
ANSI/RIA R15.06-1992 - for Industrial Robots and Robot Systems - Safety Requirements
ANSI Z244.1-1982 Personnel protection - Lockout/tagout of energy sources - Minimum safety requirements
ANSI/ASME B15.1 - 1984 Safety standard for mechanical power transmission apparatus
ANSI/NFPA 79-1991 Electrical standard for industrial machinery
ANSI/ASC Z49.1-1988 - Safety in Welding and Cutting
UL 1740 - Safety standard for industrial robots and robotic equipment
OSHA Instruction PUB 8-1.3 - Guidelines for Robotic Safety
OSHA 29 CFR 1910.147 - Control of Hazardous Energy Sources (Lockout/Tagout)
OSHA 29 CFR 1919.333 - Selection and Use of Work Practices
EC Machinery Directive

Recora FSC-5



This 8" x 8" x 4" hinged lid metal box enclosure is a NEMA 12 and NEMA 13 dust proof, oil proof, weather proof industrial control housing with circuitry utilizing one relay to interface with machine control circuitry. Primary supply is 120 VAC, 60 Hertz and secondary supply is a nominal 24 VAC 60 Hertz. Circuitry includes "mat operational" and "circuit energized" signal lights plus step-down transformer for low voltage (24 V) operation. When used with HD (dual leads) Series Switchmats for machine protection, FSC-5 provides level 1 protection.

The control circuit automatically resets when the mat circuit is restored to normal. Machines drawing up to 1,000 watts can be powered.

OPTIONAL EQUIPMENT

- 220 V 60 HZ Power Source
- DPDT Relay Available
- Mandatory Reset Available

CB1R (MINI-CONTROLLER)

The CB1R is a convenient control unit for controlling one or more 120 V electrical devices from a Recora Switchmat. The 4" x 5" x 3" box provides low voltage to the mat. The control unit contains a 24 VAC step-down transformer, a relay with a switching capacity of 15 amps, two AC outlets (one normally ON and one normally OFF), and a socket and plug provided for connecting the 24 VAC to the Recora Switchmat or Sensi-Switch.

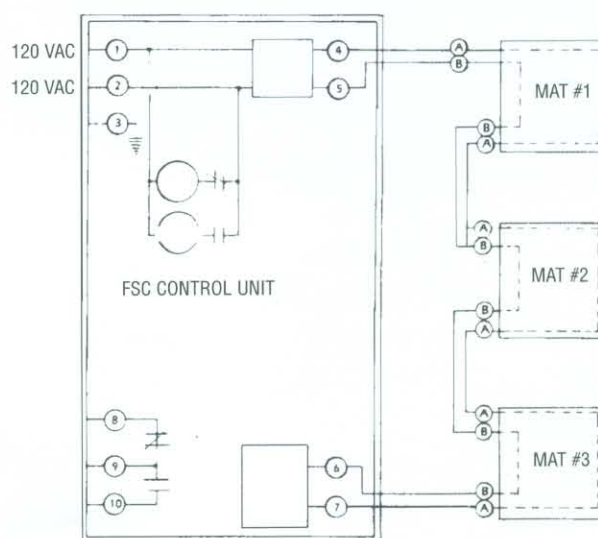
TYPICAL 3-MAT WIRING DIAGRAM

This typical 3-mat wiring diagram would have the following items listed when ordering.

- (3) Three Recora Switchmats. P/N: 2727
- (2) Two Mat Connectors P/N: NE
(each 27.5" long)
- (2) Two Ramp Edging P/N: MSE
(each 31.5" long)
- (2) Two Ramp Edging P/N: MSE
(each 89.5" long)
- (1) One Fail Safe Control (FSC-5) P/N: FSC-5

All mat models are 14HD Type mats that have dual 10' 2-conductor leads for use with the Fail-Safe-Control Unit. All Switchmats are designed for low voltage operation, Class II N.E.C. circuit operation, 100 watts at 24 volts AC or DC. Switch is single pole, single throw, normally open, momentary contact type designed to activate with standard foot pressure.

For Fail-Safe operation the control relay is normally in the energized state.



Recora Switchmat®

For over 50 years Recora Company has manufactured and designed a full line of standard and custom electrical Switchmats and flexible pressure sensitive switches. Offering effective and reliable solutions to problems found in industrial environments wherever presence or absence detection is essential.

Used for Machinery Safety, Auto Industry, Automated Equipment and Personal/Vehicle Detection. Consultants are available to assist you with your standard requirements or your most complex applications. Standard Product Line: Switchmat, Sensi-Switch, Auto Alert, Controls and Footswitch.

Specializing in custom design applications to suit individual requirements.

You may contact us at 1.866.2RECORA with requests for any custom size Switchmats and special sensor applications.

The Switch Is On...To **RECORA**

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Batavia, IL 60510

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www.recora-co.com

e-mail: info@recora-co.com

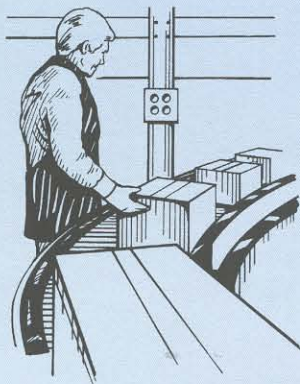
The Switch Is On ...to Recora Solutions in Fingertip Control

RECORA SENSI-SWITCH®

- Positive protection for hazardous locations
- Weather resistant for indoor and outdoor use

VERSATILE

Embedded electrical switch provides positive safety control.



SENSITIVE

Molded urethane strip stands up to the toughest industrial conditions.

FLEXIBLE

ECONOMICAL

Aluminum Sensi-Track® available for mounting of Sensi-Switch

A light touch activates switch. The entire strip is active—NO DEAD SPOTS!

When flexible, reliable sensing in a harsh, hazardous work environment is the problem, Sensi-Switch is the solution! Sensi-Switch is a safety switch for conveyors, machinery, lift tables, assembly lines...any place you want an emergency shut-off device for safety. Molded into a tough urethane strip, it can span the entire length of a conveyor to put automatic safety or operation control at each employee's fingertips. Just a simple touch (3 to 5 lbs.) can activate an alarm or shut down a system; it's sensitive throughout its entire length. Temperature and weather-resistant, Sensi-Switch can be used indoors or out, and under just about any type of industrial condition. And because it's molded, contaminants can't get inside the Recora Sensi-Switch.

Sensi-Switch contacts are specially tempered stainless steel and will not rust or corrode. Sensi-Switch is long on protection and extremely economical. Lead exits can be designed to your specific requirements.

- **CONSTRUCTION**—Sensi-Switch is a 1/2" thick, 1" wide molded urethane half circle configuration with a 1/2" radius. Standard modular sections are 10' in length for ease of handling. Longer lengths are available.
- **SENSITIVITY**—Standard sensitivity is 3 to 5 lbs. Custom sensitivity is available.
- **LEAD WIRES**—Standard lead length is 2' 18AWG SVT 2-conductor wire. Optional leads can be up to 100', 4-conductor wire is also an option.
- **COLORS**—Black, red, yellow; but any color is available.
- **SIZES**—See standard size chart on reverse.

SENSI-SWITCH - PART NO. T-120

DRAWING NO. CB1400780

SCALE: NONE

VENDOR: RECORA COMPANY - BATAVIA, IL

SPECIFICATIONS

SIZE: .500" THICK

.500" RADIUS

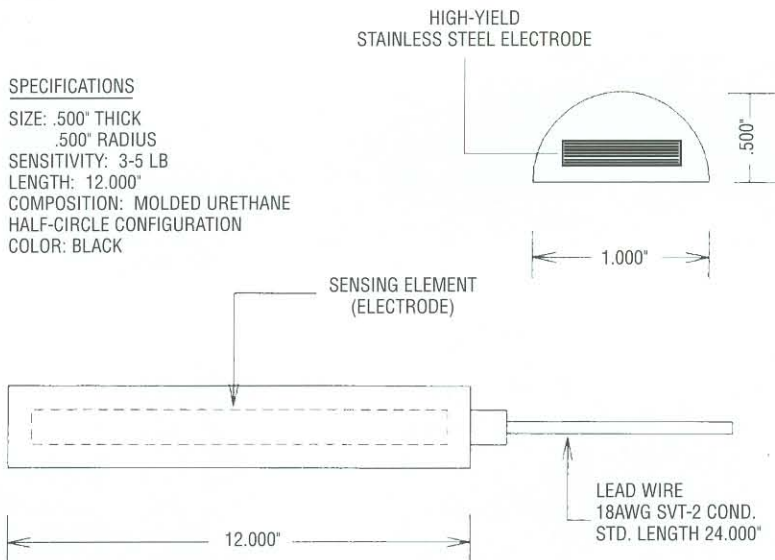
SENSITIVITY: 3-5 LB

LENGTH: 12.000"

COMPOSITION: MOLDED URETHANE

HALF-CIRCLE CONFIGURATION

COLOR: BLACK



STANDARD MODELS

PART NUMBERS	SIZES	WT. (lbs)
T-120	1" x 12"	1
T-240	1" x 24"	1
T-360	1" x 36"	2
T-480	1" x 48"	2
T-600	1" x 60"	3
T-720	1" x 72"	3
T-840	1" x 84"	3
T-960	1" x 96"	4
T-1080	1" x 108"	4
T-1200	1" x 120"	5

Standard lead length is 2' (Unless otherwise specified.)

**Flexibility makes it
ideal for AGV's.**

Sensi-Track mounting is available in standard and custom lengths.

CUSTOM RF SEALING

Radio Frequency sealing or RF sealing is a manufacturing method of electronically welding two pieces of materials together, usually vinyl type material, to either encapsulate, assemble, or protect another product. The heat sealing process is a cost effective method for both low and high volume production.

RF sealed products have a variety of applications in today's market. Current production includes RF sealing pressure sensitive thin switches used in detecting presence in hospital beds and wheelchairs.

Typical applications include:

- Medical products
- Packaging
- Vinyl specialties
- Pharmaceutical packaging
- Switch enclosures
- Bladders
- Inflatables

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e-mail: info@recora-co.com

The Switch Is On ...to Recora Solutions in Automotive Traffic Control

RECORA AUTO ALERT®

An automatic vehicle detector for commercial and industrial use

Rugged, weather-resistant detector with Auto Alert Ramp is built to last. Saves on costly maintenance.

Simple electrical switch embedded in the trip device.

Ideal for car washes and industrial traffic control

Auto Alert provides automatic vehicle detection without frequent maintenance worries. Auto Alert is an extremely effective, yet uncomplicated, economical vehicle detection device, perfect for any drive through oriented business, parking system or as an industrial door control. The vehicle simply passes over the molded weather-resistant vinyl detector and the system is activated. Auto Alert is easily wired to lights, horn, bells, or any signaling device.

For industrial use, the Auto Alert can provide an efficient method of traffic management. Located

strategically around the plant, the detectors can be wired to open and close doors, activate warning signals, or actuate machinery.

The car wash industry finds the Auto Alert ideal for turning equipment on and off without touching cars. The Recora Auto Alert is rugged enough to work under multi-ton trucks, yet sensitive enough to react to the smallest, lightest cars. The Auto Alert is safer, faster and easier to move to any spot in the wash tunnel or on the apron for exact timing control. The Auto Alert has hundreds of uses.

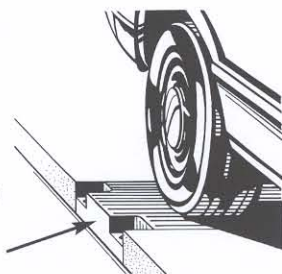
AUTO ALERT - PART NO. N-240

DRAWING NO. CB1400795

SCALE: NONE

VENDOR: RECORA COMPANY - BATAVIA, IL

Recessed, it performs its function without getting in the way of regular maintenance and cleaning.



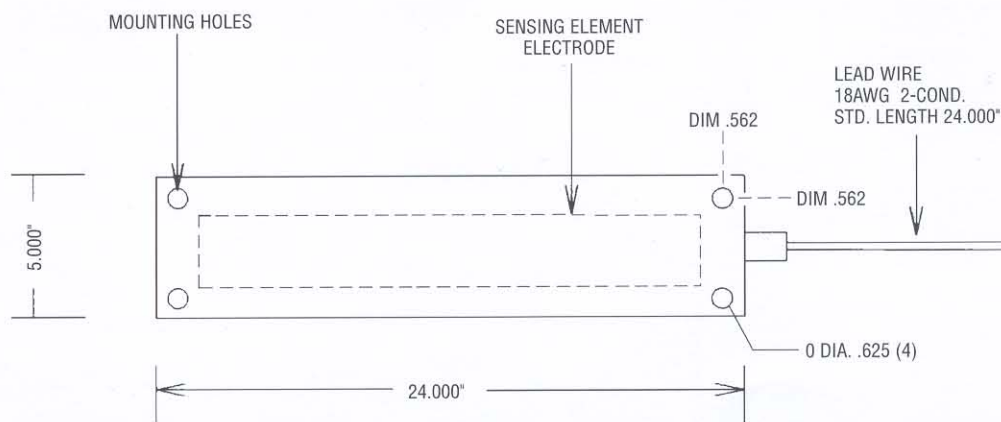
Auto Alert Ramp

Auto Alert Ramp



The new Auto Alert Ramp is ideal for surface mount applications of our Auto Alert treadle switches.

Typical Auto Alert Top View



STANDARD MODELS

SPECIFICATIONS

PART NUMBERS	SIZE	WT. (lbs)
N-170	5" x 17"	13
N-240	5" x 24"	15
N-320	5" x 32"	18
N-480	5" x 48"	25
N-600	5" x 60"	35
N-720	5" x 72"	45

Contacts:

SPST Normally Open
24 Volts AC/DC

Thickness:

100 Watts

Color:

.875" Thick
Black

CONSTRUCTION – Auto Alert is molded (not laminated) to 3/16" steel base plate, 7/8" thick, mounting holes in corners.

SENSITIVITY–Standard sensitivity is 10-15 lbs.

LEAD WIRES– Standard lead wires are 2' 18AWG 2-conductor cable, 300 volt, 7 amp. Lead lengths can be made up to 150'.

COLOR–Black is standard color.

SIZES–See standard size chart.

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