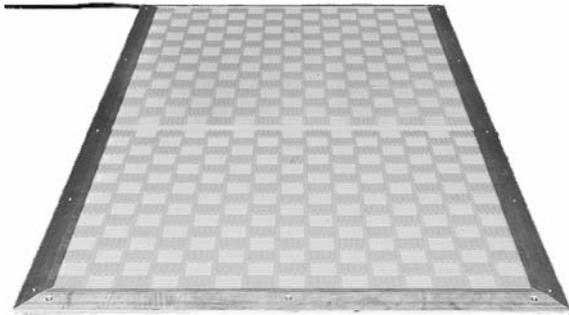


Presence Sensing Safety Devices

MatGuard™ Mats



Description

The MatGuard safety mat is a pressure-sensitive safeguarding product that is designed to detect the presence of people on its sensing surface.

The MatGuard safety mat has two conductive hardened steel plates that are held apart by non-conductive compressible separators. Each four-wire mat, operating on only 24V DC, is pre-wired and connected in series with other mats to form a floor level guarding system for hazardous areas. The circuit through the mat must be monitored by a safety-rated control unit, which may be a Minotaur Safety Relay, MatGuard control unit, or MatGuard Mat Manager. When the mat is clear, the control unit provides a signal to the machine control circuit.

When a mat is stepped on, the conductive plates touch and the resistance in the circuit falls to zero. This is monitored by the control unit, which sends a shutdown signal to the machine.

Since the MatGuard safety mat is completely sealed (IP67), water, liquids and coolants present no problem. In addition, the tough vinyl will resist bleaches, acids, salts and many industrial chemicals.

The unique molding process allows the long life and reliability of the mat.

Features

- Hardened steel plate construction
- No dead spots
- 4-wire system to detect opens and shorts
- Can withstand a static pressure of 4500 psi
- IP67 rated

Specifications

Standards	EN1760-1, EN954-1, ISO 13849-1, IEC/EN60204-1, ANSI RIA R15.06, ANSI/B11.19, AS4024.5
Category	Cat. 1 device per EN954-1, suitable for Cat. 3 systems
Certifications	CE Marked for all applicable directives, cULus Listed, CSA Z432-04, and TÜV
Power Supply	24V DC, -20% +10%, provided by the control unit
Connection Wire Length, Max.	200 m (656 ft)
Cable Length	4.5 m (15 ft) standard (see Product Selection)
Detection Weight	30 kg (66 lbs) minimum on an 80 mm (3.125 in.) diameter circular disk
Maximum Pressure Applied to Mat	31,034 kPa (4500 psi)
Zone Size	100 m ² (1076 ft ²), maximum
Mechanical Life	10,000,000 operations
Operating Temperature [C (F)]	-25...55° (-14...131°)
Relative Humidity	100%
Enclosure Type Rating	IP67 (NEMA 6P)
Vibration	5 g, 10...200 Hz
Shock	11 ms 10 g/16 ms 10 g
Terminal Protection	IP 20 DIN 0470
Wire Size	0.75 mm ² (18 AWG), 2 wire; 3.8 mm x 7.4 mm (0.15 in. x 0.29 in.) jacket OD
Weight	10.9 kg/m ² (2.2lbs/ft ²)
Material	Plastisol Vinyl
Color	Yellow or Black
Trim Material	6063 Aluminum
Mounting	Flat surface
Thickness	16 mm (0.63 in.)

Product Selection—Standard Mats

Mat Size [mm (in.)]	Cat. No.	
	Standard Perimeter Trim Kit	Safety Mat
500 x 500 (19.7 x 19.7)	440F-T1010	440F-M1010BYNN
500 x 1500 (19.7 x 59.1)	440F-T1030	440F-M1030BYNN
500 x 750 (19.7 x 29.5)	440F-T1015	440F-M1015BYNN
750 x 750 (29.5 x 29.5)	440F-T1515	440F-M1515BYNN
750 x 1500 (29.5 x 59.1)	440F-T1530	440F-M1530BYNN
500 X 1000 (19.7 X 39.4)	440F-T1020	440F-M1020BYNN
750 X 1000 (29.5 X 39.4)	440F-T1520	440F-M1520BYNN
1000 x 1000 (39.4 x 39.4)	440F-T2020	440F-M2020BYNN
1000 x 1250 (39.4 x 49.2)	440F-T2025	440F-M2025BYNN
1000 x 1500 (39.4 x 59.1)	440F-T2030	440F-M2030BYNN
1000 x 1800 (39.4 x 70.9)	440F-T2036	440F-M2036BYNN
Recommended control unit. For other control units, see page 5-69.		440R-C23139

Examples of Standard System Configurations

Bill of Materials		
Description	Quantity	Cat. No.
Mat	1	440F-M2030BYNN
	2	440F-M1010BYNN
Mat	1	440F-M1030BYNN
Perimeter Trim*	2	440F-T3210
Perimeter Trim*	1	440F-T3310
Active Uniting Trim Used to join two mats to ensure no dead spots	1	440F-T3220
MatGuard Controllers	1	440F-C4000S
Corner Trim	4	440F-T3012

2-Safety Mats

Bill of Materials		
Description	Quantity	Cat. No.
MatGuard Safety Mats	1	440F-M2025BYNN
	1	440F-M1010BYNN
	1	440F-M1015BYNN
Perimeter Trim*	1	440F-T3310
Corner Trim	1	440F-T3012
Uniting Trim	2	440F-T3020
MatGuard Controllers	1	440F-C4000P

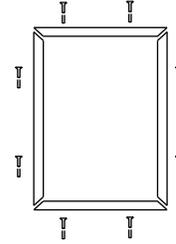
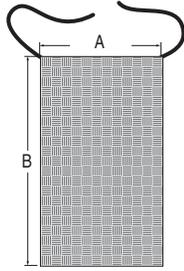
* Customer must cut trim to proper length.

Presence Sensing Safety Devices

MatGuard™ Mats

Product Selection—Configurable Mats

MatGuard safety mat and trim kit cat. nos. can be configured by selecting the appropriate codes from the tables below.



Mats: 440F M 13 23 A Y NN

a b c d

Trim Kit: 440F T 13 23

e a b

2-Safety Mats

a

"A" Dimension [mm (in.)]	
Code	Description
2 digit number	Length of the mat in millimetres/50 Must be in 50 (1.97) increments Min. allowed 150 (03); Max. allowed 1000 (20) The length of A must be equal to or shorter than B.

b

"B" Dimensions [mm (in.)]	
Code	Description
2 digit number	Length of the mat in millimetres/50 Must be in 50 (1.97) increments Min. allowed 200 (04); Max. allowed 1800 (36) The length of A must be equal to or shorter than B.

c

Cable Exit	
Code	Description
A	Two 4.5 m (15 ft) 2-wire cables—exit out the A corners
B	Two 4.5 m (15 ft) 2-wire cables—exit out the B corners
C	One 9.1 m (30 ft) 4-wire cable with M12 male connector exits out of upper left corner
D	One 9.1 m (30 ft) 4-wire cable without connector exits out of upper left corner
F	One 0.76 m (2.5 ft) 4-wire cable with M12 male connector exits out of upper right corner
G	One 9.1 m (30 ft) 4-wire cable with M12 male connector exits out of upper left corner for use with 898D Distribution Box
H	One 9.1 m (30 ft) 5-wire cable with M12 male connector exits out of upper left corner for use with ArmorBlock Guard I/O

d

Color	
Code	Description
B	Black
Y	Yellow

e

Trim Options	
Code	Description
K	Cable Channel Trim
T	Standard Trim

Note: Order controller separately, see page 5-68 for selection details.