



Cat. No. XAM-H-A22

XAM-H

HEAVY DUTY SAFETY MAT



INSTRUCTION SHEET

Thank you for selecting INNO for your requirement.

This sheet describes the procedure and precautions required for installing and operating the product.

Kindly read this sheet before operating or installing the product. Store the sheet for future reference.

CAUTION FOR SAFETY

- ① Please keep this sheet for review before use of unit.
- ① Please observe the following:

⚠ WARNING
Serious injury/ death may occur if instructions are not followed

⚠ CAUTION
Product failure or injury can occur if instructions are not followed

⚠ WARNING

- DO NOT use this device where a risk assessment has determined that "control reliability" is required, such as for hazardous machinery.
- Use only in places where the worst case injury from an accident can be remedied by first aid.
- Do not use unless this device is installed and tested according to local safety standards and complying to the instruction manual.
- This device is compliant to UL 508 standard for Industrial Control Equipment, CSA C22.2 No.14 ICE, DIN EN 1760-1:1998, IEC 60204-1:2009, ANSI/RIA R15.06-1999, ANSI B11.19-2003. It is not to be used in places requiring last level safety control of machinery.
- The device as such does not conform to any standards of safety. It is to be used with a Safety Mat Controller to adhere to Type II/IV Safety standard.
- Do not disassemble this unit. It may lead to electric shock/ fire.

⚠ WARNING - FOR USERS

The device must be installed, configured and incorporated onto a machine or control circuit by sufficiently trained and qualified personnel. An unqualified person may not be able to perform the operations properly, this may cause a problem to go undetected and hence resulting in serious injury.

⚠ WARNING - FOR INSTALLATION

Make sure that the operation of the XAM-H is tested before and after installation to verify that XAM-H operates as intended. Make sure that the machine is powered down and not in operation till the test is complete. Not completing this check may result in the device not working as intended, resulting in accident.

It should be ensured that the XAM-H is installed at a safe distance from the hazardous part of the equipment. Otherwise, the machine may not stop before the person reaches the hazardous part, resulting in accident.

Ensure that a protective structure is installed around the hazardous part of the machine in such a way that the person can reach the hazardous part only by passing through the sensing area of the device. Also ensure that interlocks are present to prevent the machine from restarting once a person passes through the detection zone. Failure to do the above may result in an accident.

Install an interlock reset switch with all XAM-H mats. The switch should be in a location that provides a clear view of the entire hazardous zone but also remains at a safe distance from the hazardous zone.

XAM-H performs sensing based on pressure applied to the mat. It cannot detect objects/ personnel passing through or over the mat without contact on the mat surface.

Install the XAM-H in an even surface without any undulations/ slopes. Failure to do so may lead to false alarms & detection errors.

When using more than one set of XAM-Hs, install them in such a way that they are not in contact with each other and there is a gap of atleast 1mm between the mats.

⚠ WARNING - FOR WIRING

2 Wire direct connection - This is Connect the load in series with the mat. Red and White connected to Safety Mat Controller to comply with Safety norms.

The mat is pressure sensitive momentary action device. The output contacts are Normally Open.

Configure the system by connecting to a safety mat controller to perform the control function. Direct connection to a non-safety control device may result in output failure, resulting in accident.

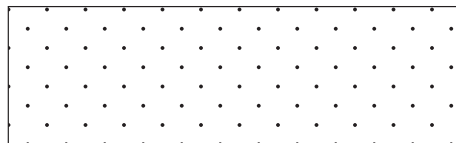
Reinforced insulation from hazardous voltage must be applied to input, output lines. Failure to do so may result in electric shock.

Do not have more than 3 cable joints between the mat and controller.

Extension of cable must be within 20 meters. If it isn't, output may not work properly, resulting in accident.

⚠ WARNING - FOR MACHINES

Do not use this sensor for machines that cannot be stopped by electrical control. Otherwise, the machine may not stop before the person reaches the hazardous zone, resulting in accident.



⚠ WARNING - GENERAL

Perform daily 6-month inspections for XAM-H using the local authorised service technician. Otherwise the system may fail to work properly, resulting in accident.

Ensure that power cables and high frequency radio/ signal cables do not pass near the XAM-H installation, the same may result in may result in false triggers and the output may malfunction resulting in accident.

Ensure that the power supply and output lines are free of EMI noise, as the same may cause disturbances in the internal functioning of the XAM-H resulting in false triggers.

Do not touch the cable terminals when power is on.
RISK OF ELECTRIC SHOCK!



⚠ CAUTION

- This unit shall not be used outdoors or in places with direct sunlight, humidity, oily and corrosive environments or other harsh conditions.
- Do not use the unit in areas exposed to vibration or shock levels higher than that given in the specifications.
- Do not use the unit in environments where flammable or explosive gases are present. Doing so may result in explosion.
- Do not connect the outputs to loads beyond 100mA.
- Do not use water or oil based detergent for cleaning the unit.
- When replacing or extending the cables/ connectors with other than specified type, ensure a protection degree of IP65 or more.
- Cable extensions must not exceed 20meters.
- Do not use excessive force to fasten the unit and do not hammer the unit.
- Please process it as industrial waste and dispose responsibly.

PRECAUTION FOR CORRECT USE

Observe the precautions described below to ensure proper functioning of the product and to avoid undesirable effects on product performance.

- Do not install, use or store the product for a long time at a temperature and humidity out of the specified range.
- Do not use the device in altitudes above 2000ft.
- Do not operate the control system until 3 seconds or more after turning on the power to the XAM-H
- Be sure to route the cable of the XAM-H through an exclusive conduit, to avoid interference from other power/ signal cables.
- Do not use thinner, benzene or acetone for cleaning because they affect the casing and paint on the extrusion.
- The XAM-H cannot detect objects that do not come in contact with the mat surface even if they pass through the mat area.

LIMITATIONS OF LIABILITY

INNO SHALL NOT BE RESPONSIBLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH A CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Inno is not responsible for the proper functioning of the product unless it has been installed by a certified Class C electrical technician.

In no event shall the responsibility of INNO or its end supplier for any act exceed the individual price of the product on which liability is asserted.

In no event shall INNO be held responsible for the mal-functioning of the product once it has been opened/ disassembled or modified by unauthorised personnel.

OTHER IMPORTANT INFORMATION

PLEASE READ AND UNDERSTAND THIS DOCUMENT BEFORE USING THE PRODUCT.
CONTACT US IN CASE OF ANY QUESTIONS OR COMMENTS.

Suitability for Use:

INNO shall not be responsible for conformity with any standards, codes or regulations that apply to the combination of products in the customer's application or use of the product.

At the request of the customer, INNO shall provide documents relating to the specification and ratings of the product. This information however by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system or any other application or use.

① The device is not intended for use in environments given below. This list is not intended to be exhaustive list, but rather a general coverage of most critical environments.

- Outdoor use, uses involving potential chemical contamination or conditions/ environments described in this document.
- Nuclear energy control systems, Combustion systems, Railroad systems, Aviation systems, Medical equipment, Amusement machines, Vehicles, Military installations.
- Systems, machinery & equipment that could present a risk to life or property.

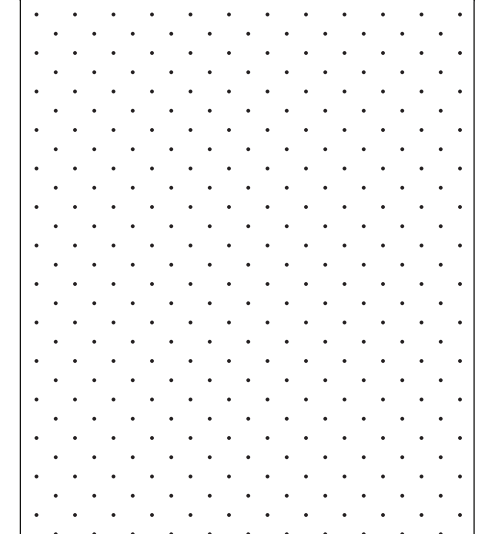
Know and observe all prohibitions of use applicable to the product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE XAM IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Errors and Omissions:

The information in this document has believed to be accurate; however no responsibility is assumed by INNO for any errors present.

INSTALLATION NOTES



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DEVICE TEST PROCEDURE

WARNING Failure to perform this test procedure properly could result in accident and serious injury to personnel.

The following test procedure is to be performed before initial installation and commissioning of the mat, regular inspection schedule and after any adjustment or modification to the mat or the guarded machine/ area. This test ensures that the mat, safety system and the machine control system work in conjunction without any problems.

1. Disable the guarded machine and Power OFF. Apply power only to the control circuit (including the mat).
2. Visually inspect the machine to ensure that access to the danger point is only through the detection area of the mat. If not, additional guard including mechanical barriers may be added. Verify that all additional guarding devices and barriers are installed working properly.
3. Verify that the mounting distance of the mat is equal to or greater than the minimum calculated safety distance from the hazardous zone. Ensure that the operator cannot enter the hazardous zone without stepping on the mat.
4. Check for signs of external damage to the mat, the machine and the electrical cables and wiring. If damaged, replace damaged equipment.

6. Re-connect the mat wiring with the control circuit. Drop the standard test object on the mat surface from a fixed height of 1 meter. If the contact is made the mat is working properly.

6. Start the machine. While the machine is in motion, drop the test object in the detection zone. The machine should stop immediately, else check the control wiring.

7. Verify that the braking system is working properly. If the machine does not stop within the desired time period, adjust the braking system or increase the distance from the detection zone to the hazardous area.

8. If the safety devices or the machine fails any one of these tests, do not run the machine. Immediately tag or lockout the machine to prevent use and initiate process to rectify the faults. Re-run all the above test procedures once the fault has been rectified.

STANDARD TEST OBJECT

The standard test object is any object with the following dimension and weight.

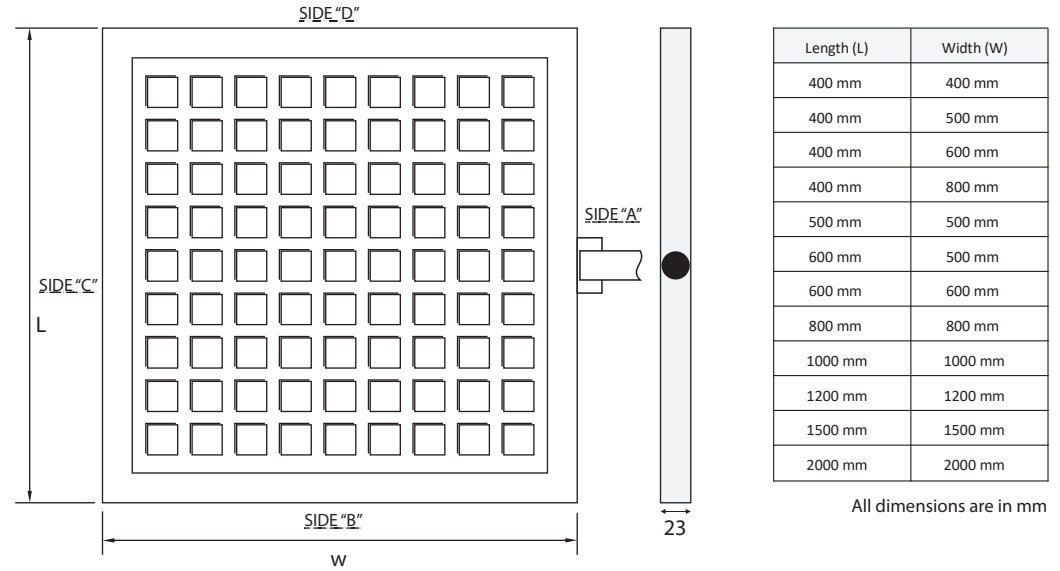
Length: 200mm
Width: 200mm
Weight: 40Kg
Test Object Drop Height: 1 meter

SPECIFICATIONS

*For details on Customized/ Special Models contact Seller

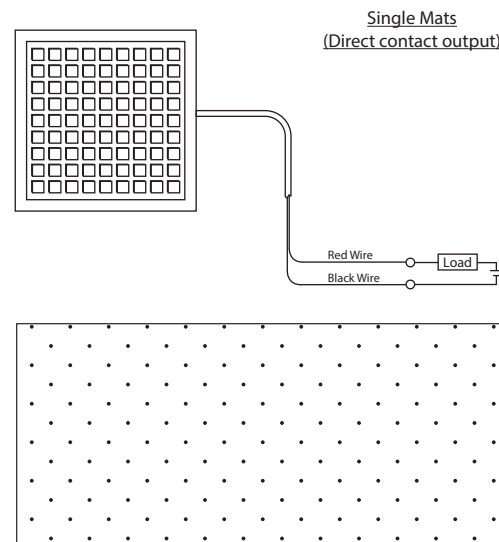
Models	XAM - H - _ - _
Detection Method	Pressure sensing switch
Switch Type	2- Lead wire type
Operating Voltage	10-30VDC
Switch Function	Normally Open; Momentary Action
Switch Activation Life	upto 1 million cycles
Max. Allowable Load	200 kg
Activation force	< 30kg
Ambient Temperature	Operation: -18° ~ 50°C; Storage: -25° ~ 60°C (non- freezing; non- condensing)
Ambient Humidity	Operation: 15 ~ 85% RH; Storage: 15 ~ 95% RH (non- condensing)
Dielectric Strength	750 VAC for 1 minute
Protection Class	IP 56
Weight	26.4 lbs 7.1 kg /sq. ft.
Mat Thickness	23mm
Flammability	"A" rating as per MVSS 302
Chemical Resistance	Water, Alcohols, Caustics, Petroleum Solvents, Aldehydes and Ketones, Oils
Material	Industrial Grade rubber
Cables	1 meter, 2 wire oil resistance rubber PVC

DIMENSIONS

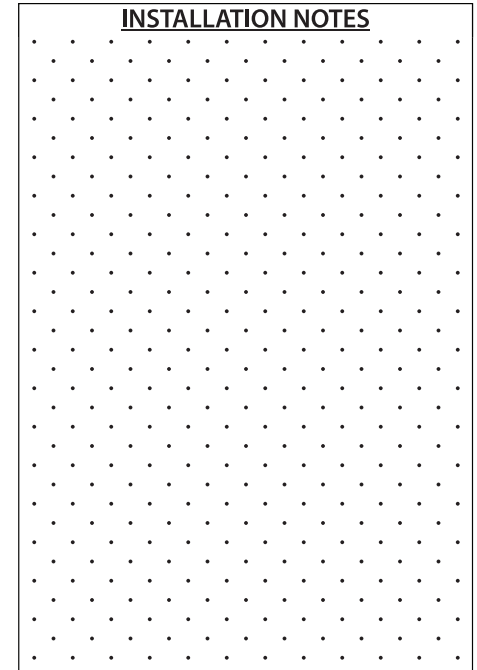


The safety mats provide contact outputs that can directly be connected to a relay coil or be used as input signal (current not exceeding 200mA). It is however recommended that the mat be used in conjunction with a Safety Mat Controller when used for safety control. For 4 wire connection to a Safety Mat controller Black is Red wire's pair and White is Green wire's pair. Pl. check for continuity before commencement of wiring. Wiring diagram between a Mat Controller and a 4-wire Mat is to be provided by the controller manufacturer.

CONNECTION DIAGRAM



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