

## Custom Hangar Door Edges

### About Sensing Edges...

The Hangar Door Sensing Edge is a pressure sensitive electric edge which is custom manufactured to your exact specifications for length, width, height and sensitivity. When touched lightly the edge will send an immediate electrical signal to your controls to stop, and/or reverse operations.

It is completely flexible and will contour curved surfaces. The Sensing Edge is extremely versatile. Its profile can be square, rectangular or even angled. Contact us with your specifications and we will design the proper SensingEdge for your custom application.

### Standard Specifications

**Color:** Gray, Yellow, Black or White

**Length:** Per specification to the nearest 1/4"

**Sensitivity:** 15 pounds force

**Lead Wire:** 22 gauge - 4 Pin Micro Connector

**Wire Outlet Location:** per customer specifications

**Electrical Requirements:** 24 volts, 1/2 amp  
AC or DC power

**Electrical Diagram:** 4-wire, N.O. configuration

**Electrical Contact Element:** Alumaglas®

**Cover:** Heavy duty reinforced PVC

**Temperature Range:** -30° F to +155° F

**Mounting:** Double sided tape for easy alignment

### Options

- 2-wire N.O. configuration
- 4-wire control reliable safety controller (RT-6)
- Yellow/Black striped outer cover material
- 4-wire intrinsically-safe control panel (FSIS-25-4)
- Yellow XR-5 chemically resistant cover for protection against:
  - kerosene • 50% phosphoric acid
  - diesel fuel • JP-4 jet fuel • 50% hydrochloric acid
  - 50% acetic acid • salt water • SAE-30 oil



Edge section showing wiring located on the side



Double sided mounting tape for easy positioning

### Control Reliable...

Control reliable safety circuitry shall be designed, constructed and applied such that any single component failure shall not prevent the stopping action of the door.

REV. 1-26-05

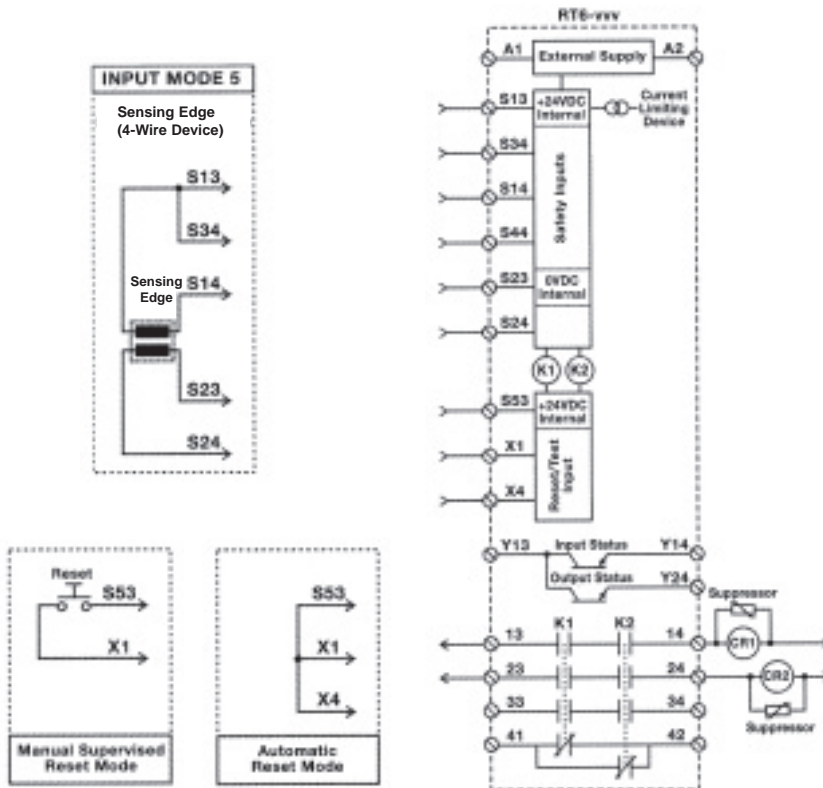
# Safety Relay Wiring Diagrams

## Mode 5: Sensing Edges (4 wire devices)

Sensing edges must be 4 wire devices. When the sensing edge is activated, a short circuit occurs between the input channels that energizes the safety relay, opens the safety outputs and causes the "Power On" LED to flash. The short circuit does not damage the safety relay, as the current is limited to 60mA at (S13)



Model FSC-57 Enclosure



### • Recommended 4-wire configuration

Safety experts recommend that a 4-wire configuration be specified for optimum protection. In the event of a continuity loss in the circuit, the door will revert to manual operation. The system works as follows:

The Relay is energized during normal operations.

The Relay is de-energized when:

- the edge is actuated - the relay is shunted
- there is a short circuit - the relay is shunted
- there is a break in the lead wire or contacts current is interrupted
- there is a power loss



Model: FSIS-25-4A Enclosure

### Hazardous Locations...

Intrinsically safe controller for use with sensing edges in hazardous locations. **(Not Control Reliable)**

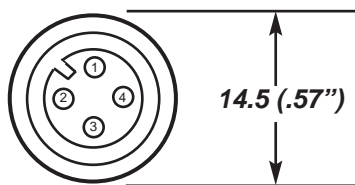
Model FSIS-25-4A - Controller in Enclosure

Model FSIS-25-4P - Controller Only

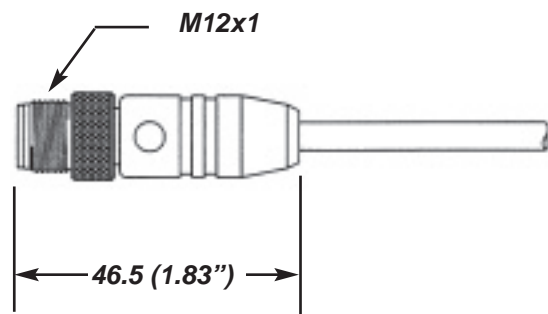
- Approved for hazardous locations - NEMA Class I, II, III, Div. 1, 2 Groups A - G
- Limits voltage and current to the sensor to a degree that any shortage or breakage will not cause a spark.
- One LED status indicator

# Wiring Multiple Edges in Series

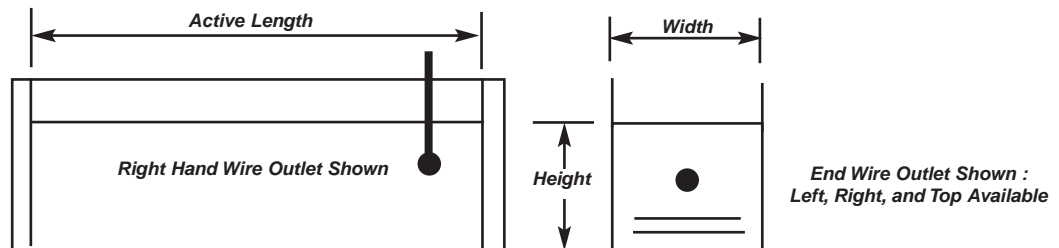
**Universal 4-Pin Micro-Connector - 4Pole, 22AWG, Shielded Cable**



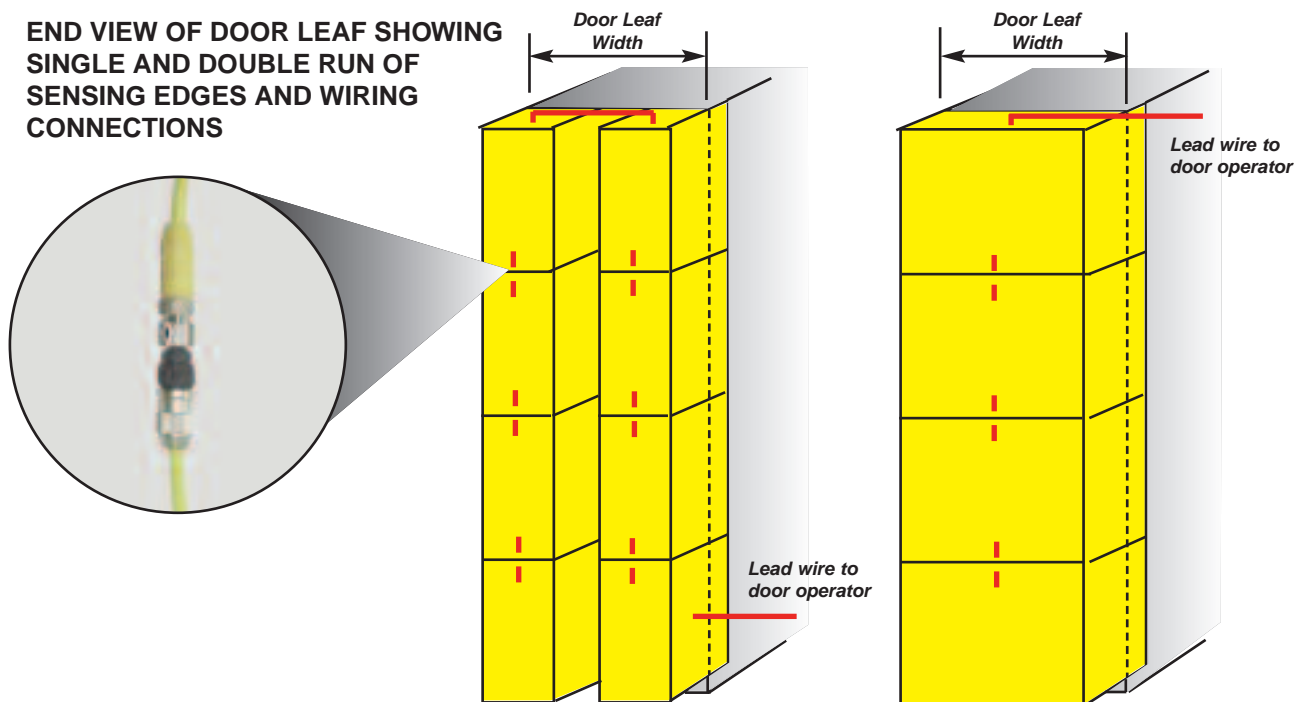
- 1- **BROWN WIRE** : Connect to Top Switch Contact
- 2- **WHITE WIRE**: Connect to Top Switch Contact
- 3- **BLUE WIRE**: Connect to Bottom Switch Contact
- 4- **BLACK WIRE**: Connect to Bottom Switch Contact



## TYPICAL SIDE AND END VIEW OF A SENSING EDGE SHOWING WIRE OUTPUT LOCATIONS



## END VIEW OF DOOR LEAF SHOWING SINGLE AND DOUBLE RUN OF SENSING EDGES AND WIRING CONNECTIONS



# ***Custom Hangar Door Edges***

---

---

## **Installation**

To install, remove edge from shipping container and lay out flat and straight. Close the air valve. Position the edge in desired location and attach with double sided tape, then screws through mounting flange at ends and center. Continue to attach edge by securing mounting flange with screws placed 24" apart. Do not place screws below seal line. For detailed information, reference the Installation Instructions which came with your shipment.

---

## **Trouble Shooting**

### **DO'S AND DON'TS**

- Do** - Be careful in handling the product. Caution should be taken to prevent damage when removing it from the packing cases. All Miller Sensing Edges are inspected before packing to insure against puncture and damage before leaving our plant.
- Do** - Always unpack and spread Miller Sensing Edge before installation in a warm, undercover area. This will allow the Miller Sensing Edge to assume its proper shape and dimension.
- Do** - Periodically check the Miller Sensing Edge.
- Don't** - Paint the sensing edge EVER. Paint solvents may damage the sensing edge.
- Don't** - Compress the sensing edge more than 1/4" maximum when the door is in its fully closed position.
- Don't** - Expect your sensing edge to be indestructible. It's tough and will resist wear, but it can be cut. Cuts may result in damage to the sensing edge.
- Don't** - Ever apply pressure to the air valve fitting.
- Don't** - Ever apply more than 24Volts AC or DC to the sensing edge.

---

## **Care of the Custom MU**

Minimum care is required for a Custom MU style SensingEdge, since they are manufactured with only the most durable materials and highest quality standards. However, it is strongly recommended that you observe good maintenance practices by including a check of the entire length of the SensingEdge at least once per month for any signs of damage, cuts, loss of sensitivity or water damage. Also check all of the wiring and be sure all connections are secure.

If you think there may be a damaged edge or component, do not attempt to adjust them. Contact a qualified installer or Miller Edge, Inc.

---

## **Warranty**

We will replace within one year of shipment from our factory, any SensingEdge subject to normal use which is found to have defective materials or workmanship, as determined solely by our factory representative. Replacements will be shipped to you freight collect. This warranty is void where evidence of misuse or abuse is present.

US Patent # 4,396,814

CANADIAN Patent # 1,048,066

Other Patents Apply

# **HANGAR DOOR SPECIFICATIONS**

USACE / NAVFAC / AFCEA

## **UNIFIED FACILITIES GUIDE SPECIFICATIONS**

Division 08 - Doors and Windows - SECTION 08342 - STEEL SLIDING HANGAR DOORS

### **SECTION 2.3.6 SAFETY EDGES**

Provide fail-safe safety edges on (each edge of each leaf of individually operated doors) (each leading and trailing edge of drive leaves for floating group doors) (the leading edge of the drive leaf of anchored group doors) from 25 mm one inch above the floor to the top of the door leaf. For leaves 300 mm 12 inches thick or less, provide a single run of safety edge the full width of door. For leaves over 300 mm 12 inches thick (including siding,) provide a double run of safety edges spaced to provide the maximum degree of safety in stopping the leaves. For leaves over 300 mm 12 inches thick (including siding) provide a double run of safety edges on the outer edge of each side of the door leaf covering no less than 80% of leaf.

a. Design: Provide safety edges to provide a minimum of 90 mm 3 1/2 inches of overtravel after actuation until solid resistance is met and door motion comes to a complete stop. If door requires more than 90 mm or 3 1/2 inches to come to a complete stop, provide additional overtravel built into safety edge the distance required for door motion to come to a complete stop. Use electric safety edges.

b. Specs: Use sensing edges of reinforced polyvinyl chloride cover or other Government-approved material with chemical resistance to diesel and JP-4 fuel, hydraulic fluids, SAE-30 oil and salt water. Use cover that provides hermetic seal for weather and moisture resistant protection of internal foam and contact elements. Internal foam may be polyurethane and/or latex foam per military specification MIL-R-5001, medium density. Use two contact elements separated by perforated foam or other Government-approved materials and design to perform the switching function when the sensing edge encounters an obstruction along any portion of its active length.

c. Operation: Actuation of the safety edge on leading edge of a group of leaves shall stop movement of the group. Actuation of a safety edge shall lock out the motor control in the direction of travel until reset, but shall permit the door to be reversed away from the obstruction which tripped the safety edge. Safety edges shall be alive only when doors are moving. Safety edges shall be reset by moving doors away from the obstruction. The lower portion of the safety edges to a height of approximately 1500 mm 5 feet shall be independently removable for convenience in servicing or repair. The remainder of the edge may be in one piece up to a maximum of 6000mm 20 feet.

d. Bumper(s): Each door leaf edge provided with a safety edge shall be protected by a spring type bumper(s). Bumper shall be designed to absorb 150 percent of the door drive force when door is pushed in an emergency. For continuous safety edges, bumpers shall extend to the sides. For sectional safety edges, the bumper can interrupt the safety edge for a distance not greater than 305 mm 12 inches.

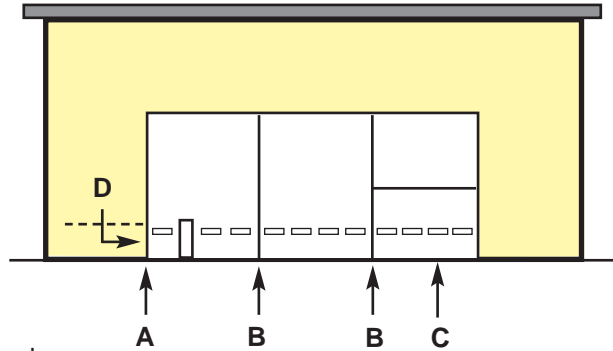
e. Keyed bypass: Provide a keyed bypass to the door controls to render the safety edges in a temporary "repair" mode, if necessary. The door drive shall be restored from its "fail safe" mode by activation of the keyed bypass.

### **SECTION 2.3.6.1 ELECTRICAL SAFETY EDGES**

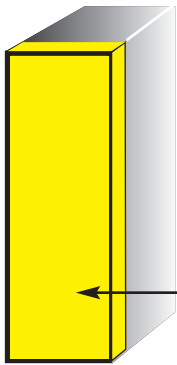
Connect the safety edge in series with the necessary relays and resistors to make the system complete. The service should not be more than 24 volts and the circuit shall be normally energized so that the malfunction of any of the component parts will make the door inoperative. Wire sensing edges to provide for control reliable 4-wire operation of hangar door so that any power loss to the sensing edges is experienced, then the door shall become inoperable until power is restored and a reset operation is initiated. Install sensing edges to operate through a normally energized relay so that when the sensing edge is compressed the relay contacts shall open. Install relay contacts shall also open if any component in the sensing edge control circuit is broken so as to break continuity. Use 100 volts electrical service to the control circuit. Ensure service to the sensing edge does not exceed a nominal 24 volts. Install a large red indicator light and/or a loud siren, to be simultaneously activated with the actuation of any sensing edge, to indicate the presence of an obstruction.

# Illustrated Guide to Hangar Door Specifications

- A- Proper location of a Sensing Edge on each leaf of individually operated doors.  
The edge should be positioned one inch above the floor to the top of the door leaf.
- B- Proper location of a Sensing Edge on the Leading and Trailing edge of drive leaves for floating group doors.  
The edge should be positioned one inch above the door to the top of the door leaf.
- C- Proper location of a Sensing Edge on the Leading Edge of a bi-fold door. The edge should be positioned to cover the entire width of the door.
- D- The lower portion of the Sensing Edges to a height of approximately 1500 mm 5 feet shall be independently removable for convenience in servicing or repair. The remainder of the edge may be in one piece up to a maximum of 6000mm 20 feet.



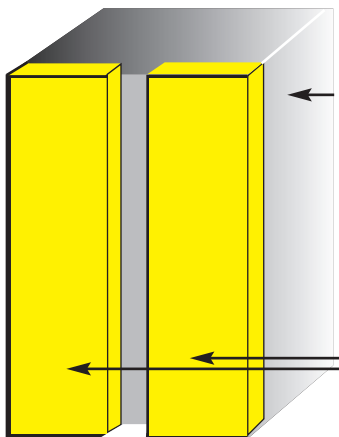
## Hangar Door Leaf Profiles



Leaf Cross Section  
(12 inches thick or less)

For leaves 300mm 12 inches thick or less, provide a single run of sensing edge the full width of the door.

Sensing Edge



Leaf Cross Section  
(12 inches thick)

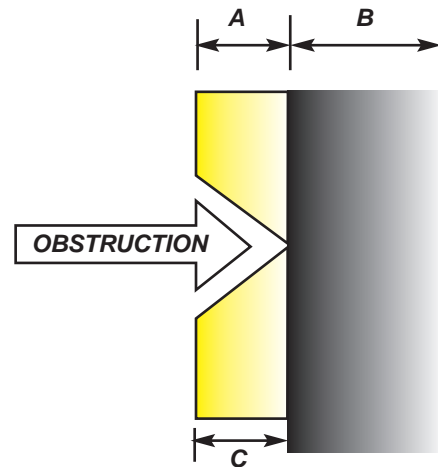
For leaves over 300 mm 12 inches thick (including siding) provide a double run of sensing edges on the outer edge of each side of the door leaf covering no less than 80% of leaf.

Sensing Edges

## Door Overtravel

Provide sensing edges to provide a minimum of 90 mm 3 1/2 inches of overtravel after actuation until solid resistance is met and door motion comes to a complete stop. If door requires more than 90 mm or 3 1/2 inches to come to a complete stop, provide additional overtravel built into safety edge the distance required for door motion to come to a complete stop. Use Electric Sensing Edges.

### Side View of Door & Edge



A- Minimum 3 1/2" of Edge Overtravel before solid resistance

B- Edge of door leaf

C- Sensing Edge mounted on edge of door





# Custom MU Easy Order Form

For ease of quoting your next order, we have provided you with this simple form to fill out. By filling in the the blanks, we will be able to provide you with an accurate quote.

Qty: \_\_\_\_\_

Sales Order#: \_\_\_\_\_

Dimensions: \_\_\_\_\_ W \_\_\_\_\_ H

Active Length: \_\_\_\_\_

# of Wires: \_\_\_\_\_

Outlet Location: \_\_\_\_\_

Color: \_\_\_\_\_ Yellow XR-5 Option  End Blocks: Yes  No

Special Info: \_\_\_\_\_

Company Name: \_\_\_\_\_

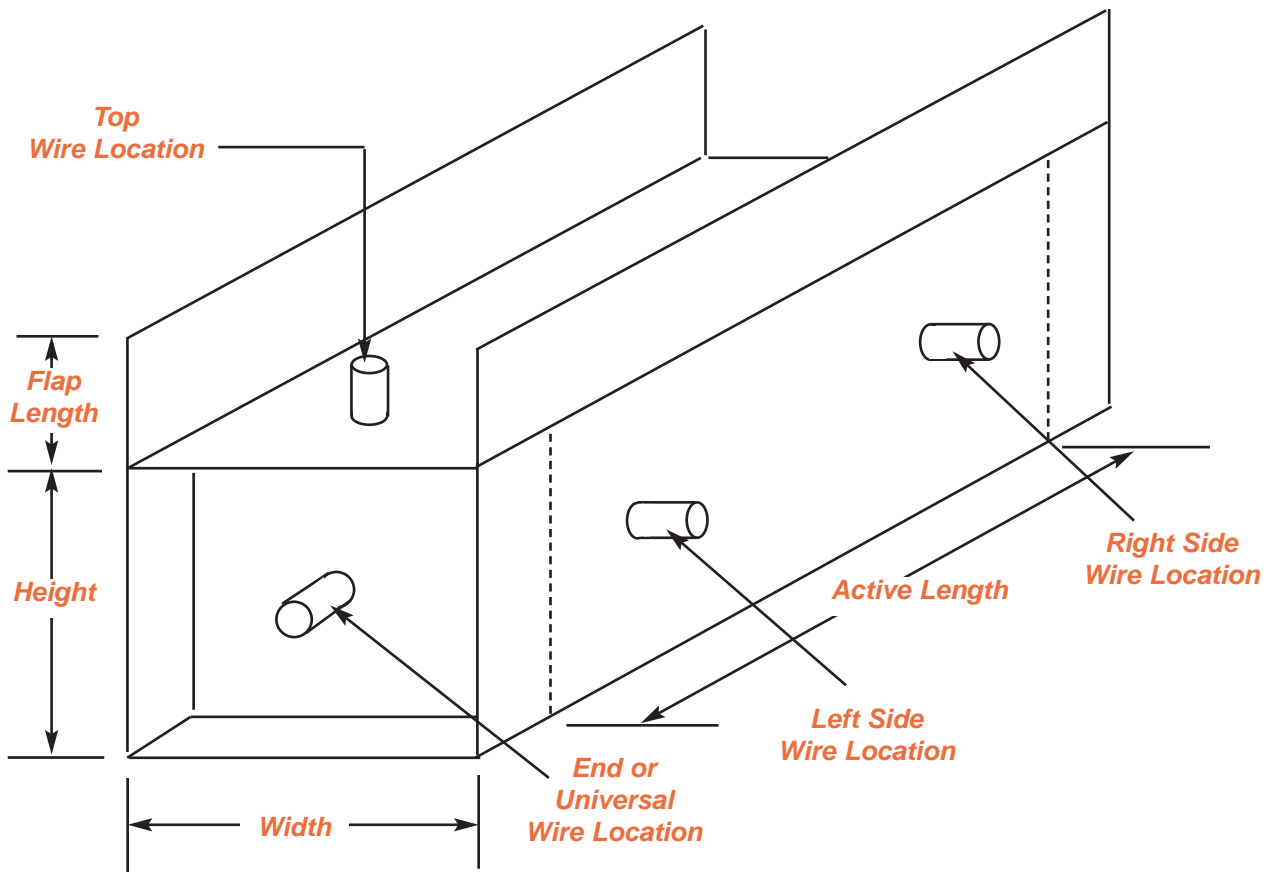
Contact: \_\_\_\_\_

Phone#: \_\_\_\_\_

Purchase Order#: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_





Early Miller Edge Hangar Door Sensing Edge Installation -1957

