



TRI-TRONICS®

Made in the U.S.A.

Elevator Door Control Solutions

LEADING EDGE



SAFE PASSAGE™



ELEVATOREYE™



All elevators at the American Falls Observation Tower in Niagara Falls, NY are equipped with **TRI-TRONICS'** waterproof arrays.

THEY LIKE IT WET!



The **LEADINGEDGE®** elevator door control system is designed for the most demanding applications in the world. Our track record for success has been proven in real life extreme situations, from the observation deck at Niagara Falls, to NASA's launch site at Cape Canaveral. Our edges have been tested and proven to withstand the extreme cold winters of Canada to the heat and direct sunlight of Florida.

Unique Features and Benefits:

- **100% waterproof edge with waterproof power supply**
- Standard weatherproof models for less extreme environments
- Robust metal housing withstands harsh environments such as vibrations, collision, and abuse
- Totally immune to ANY ambient light, including strobes, fluorescent and direct sunlight!





LEADINGEDGE®

LIGHT SCREEN DOOR CONTROL

The **LEADINGEDGE®** light screen elevator door edge control system was carefully designed to outperform, in every aspect, all door edge controls on the market. Save time and money with our unique built-in test procedures. The control board features a test button simulator for beam break (hold for obstruction/release to clear) and a push-to-test button that energizes the master control relay.

Our light beam/receiver arrays can also operate independent of our power supply by connecting directly to **your existing power supply/controller**.

The output from the receiver array is continuously short-circuit protected, and the array cable connectors that plug into the power supply are interchangeable. The array supply voltage requirements are 12 to 30 VDC @ 125mA, and the current drops to 65mA while the doors remain closed.

Rugged NEMA 1 or NEMA 4 power supply enclosure is designed for **easy installation**.

The array's unique nylon snap-in fasteners simplify the mounting to the door jam.

The array cables are Hi-Flex robotic grade for extended life and are "connectorized" for ease of installation.

THE "RELIABLE" LIGHT SCREEN DOOR EDGE CONTROL UNIQUE FEATURES AND BENEFITS:

- ⚙️ Totally immune to ANY ambient light, including strobes, fluorescent and direct sunlight!
- ⚙️ All edges are "Weatherproof". Optional "Waterproof" models are available. Fully functional from -25° to +158°F (-32° to +70° C).
- ⚙️ Edges available to match elevator décor. Black is standard; also available in bright silver and bright gold!
- ⚙️ All models can be installed in either center or side parting doors.
- ⚙️ Automatic Dynamic Sensitivity Adjustment (DSA) compensates for severe misalignment, condensation and damaged or dirty lenses; also provides "on-the-fly" dynamic adjustments of sensitivity as doors open or close.
- ⚙️ Unique installation and test procedures can be easily performed by one person.



Wide-beam optics eliminate all alignment problems even on round elevators.

THE **LEADINGEDGE®** SERIES

LEADINGEDGE® arrays function perfectly – our wide-angle lenses allow for the sharp turning radius of closing doors on round elevators.

Reliability, superior light immunity, and weatherproof...the **LEADINGEDGE®** means less down time for your elevator's door operation.

THE **LEADINGEDGE®** WATERPROOF "W" SERIES

Technology originally developed for the NASA shuttle launch site is now available for you. Great for wash-down environments, outdoor elevators, parking garages, or any extreme or wet conditions.

Ratings: NEMA 4, IP67





FEATURES AND SPECIFICATIONS

FEATURES:

- ⚙️ 64 redundant IR LED's (first introduced by **TRI-TRONICS** in 1995).
- ⚙️ Diagnostic LED indicators in both arrays and in the power supply monitor all critical system functions.
- ⚙️ Dual voltage power supply 120/240 VAC.
- ⚙️ Accessory nudge/buzzer plug-in PCB assembly is easily installed at initial installation or at a later date.
- ⚙️ Replaceable accessory relay operates in either the delayed nudge mode or in the redundant mode for added reliability and safety (switch selectable).
- ⚙️ Nudge/buzzer "ON" delay timer is adjustable from 5 to 45 seconds. Buzzer can be easily disabled with selector switch.
- ⚙️ Independent Systems: Wire direct to your Power Supply/Controller. Fast, economical installation without the need of an additional power supply!

SPECIFICATIONS

LIGHT BEAM AND RECEIVER ARRAYS

Size: 1.57" W x 81.125" L x .75" D (39.7 mmW x 2061 mmL x 19 mmD)
Cable Length: 15 ft (4.6 m), connectorized
Distance between bottom of receiver housing and lowest detector:
 2 inches (50.8 mm)
Distance between bottom of receiver housing and highest detector:
 64 inches (1625 mm)
Range: Up to 16 ft (4.9 m)
Number of light beams: 64 (2 per detector operating in a redundant mode)
Operating Voltage Range of Arrays: 12-30 VDC
Maximum allowable installed misalignment: ± 20 degrees @ 3 ft
Response Time: 50 milliseconds nominal, 75 milliseconds max.
Maximum Current Draw: 130 mA total of both arrays
Light Immunity: 100,000 LUX
Ratings: NEMA 1 for Standard Leading Edge; NEMA 4, IP67 for Waterproof Arrays
Diagnostic Indicators:
Receiver Array Indicators:
 TOP RED LED: DSA™ Indicator (Dynamic Sensitivity Adjustment)
 LOWER RED LED: Output Status Indicator
Light Beam Array:
 RED LED: Flash Rate Indicator. Flash Rate denotes Operational Status.

Exceeds ADA (Americans with Disabilities Act) requirements

POWER SUPPLIES

Size: Non-metallic, 3.25"H x 9.2"W x 6"D (82.5 mmH x 233.7 mmW x 152 mmD)
 Metallic Waterproof, NEMA 4, 4"H x 10"W x 8"D (101.6 mmH x 254 mmW x 203 mmD)
Voltage Requirements: 120 or 240 VAC Power Supply
Power Consumption: 5 VA maximum
Plug-In Output Relay: MASTER CONTROL RELAY...SPDT action with contacts rated up to 10 A @ 250 VAC or 30 VDC. Relay de-energizes when obstruction is detected.
Models Equipped with NUDGE-1 PCB Assembly:
Accessory Relay Switch Selectable Options:
Option 1: Functions as a Nudging Relay that energizes after adjustable delay.
Option 2: Functions as a Redundant Relay, i.e., Master Control Relay and Accessory Relay operate simultaneously.
Buzzer Options: ON-OFF Switch Selectable...energizes after Adjustable Delay.
Diagnostic Indicators: Main output relay status indicator
 Nudge relay status indicator on Nudge Board
 DC power ON indicator
Nudge Time Out: Adjustable from 5 to 45 seconds
Power Supply Enclosures: NEMA 1 for Non-Metallic
 NEMA 4, IP67 Metallic for "W" Series
Operating Temperature Range: -36° to +158° F (-38° to +70° C)
Operating Humidity Range: Up to 95% relative humidity at 104° F (40° C)



ANODIZED ARRAY COLORS:

- Bright Gold
- Bright Silver
- Black

HOW TO SPECIFY

LEADING EDGE	DESCRIPTION
Standard Systems Include Power Supply	
EDGE-4	Black Leading Edge
EDGE-4S	Silver Leading Edge
EDGE-4G	Gold Leading Edge
EDGE-4N	Black Leading Edge with Nudging Circuit
EDGE-4NS	Silver Leading Edge with Nudging Circuit
EDGE-4NG	Gold Leading Edge with Nudging Circuit
Waterproof Systems Include Power Supply	
EDGE-5W	Complete Waterproof System
EDGE-5NW	Complete Waterproof System with Nudging Circuit
Independent Systems (less the Power Supply): Wire direct to your Power Supply/Controller. Arrays require 12-30 VDC, provides NPN Output. NOTE: Elevator Interface Adaptor Cable is required for easy installation.	
EDGE-6	Black Leading Edge
EDGE-6S	Silver Leading Edge
EDGE-6G	Gold Leading Edge
EDGE-6W	Black Leading Edge Waterproof System
Elevator Interface Adaptor Cables, required for direct installation	
ECI-1	For standard Power Supply/Controller, provides NPN Output
ECI-3	Designed for GAL MOVFR Operator

All models contain the EGAC-4 kit which includes all mounting brackets and hardware. The NUDGE-1 PCB assembly can be field installed on any model power supply.

NEW

SAFE PASSAGE® with REMOTE CONTROL ELEVATOR AND HOISTWAY DOOR PROTECTION AT THE PUSH OF A BUTTON



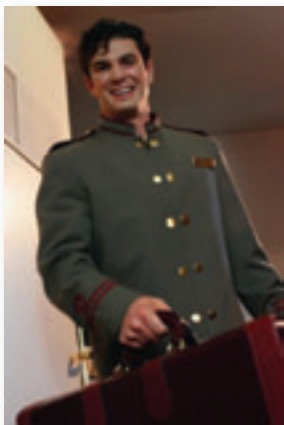
Lab Technician

"Safety is the most important thing while transporting hazardous materials."



Independence

"I can now enter the elevator without fear of the doors closing on me."



Courtesy Services

"Not only can we deliver better customer service, but it makes my job easier too."

SAFE PASSAGE® is the NEW state-of-the-art elevator door protection system in the LEADINGEDGE® family. This system provides both the customary light screen protection as well as a secondary form of protection activated by a remote control device. When properly used, the Remote Control feature will provide Safe Passage of passengers and appliances past both the hoistway and elevator doors. The additional protection can be utilized while either entering or exiting the elevator ensuring Safe Passage of passengers, luggage racks, service carts, refuse containers, hospital beds, gurneys and portable hospital equipment.

FEATURES & BENEFITS:

- Activation by Remote Control commands the elevator door(s) not to close until Safe Passage has occurred
- SAFE PASSAGE® can be activated for entering or exiting the elevator
- The system requires NO added installation time
- No field adjustments are required
- Eliminates hoistway door damage from collisions
- Eliminates unsafe practice of rushing towards closing elevator doors
- System does not require a lengthy preset timer to ensure Safe Passage
- Increase elevator performance
- Infrared Remote Control will not interfere with other electronic devices
- Remote Controls work with all SAFE PASSAGE® systems
- Remote Control range up to 16 ft

APPLICATIONS:

- Hospitals
- Hotel Passenger cars for bellhops and handicap guests
- Retirement communities
- Industrial applications
- Service Cars
- Freight Elevators



RC4D Transmitter

Patent Pending

HOW TO SPECIFY

COMPLETE SYSTEM

Model EDGE-4-4D

Includes standard LEADINGEDGE® power supply, transmitter array, SAFE PASSAGE® Receiver Array and (one) Remote Control.

UPGRADE

Model RA-2-4D

Upgrade ANY existing LEADINGEDGE® system to include the SAFE PASSAGE® Receiver Array. Simply replace the standard Receiver Array with Model RA-2-4D [includes (one) remote control].

REMOTE CONTROL

Model RC4D

Simply push the button to ensure the elevator doors will not attempt to close until you have safely walked in or out of the elevator.



“INDIVIDUAL” PHOTO-EYES

Back Up any Mechanical Door Edge Control with Our Dependable Elevator Door Controls...That Cost Less!



With the ElevatorEye™ you can select “Individual” eye systems that fit any door application to back up the mechanical safety edge. The reflectors, mounting brackets, and all hardware are included. They are easy to install and even easier to maintain. They provide dependable operation up to 12’ using infrared invisible light and are unaffected by light from other sources. They meet or exceed state and local codes, even the ADA (Americans with Disabilities Act) requirements, and have the highest quality and reliability. There is an Automatic Disable Timer model available. The ElevatorEye™ is sealed in a high-impact plastic case, which is dirt and moisture resistant.

- ⊕ Dependable, self-contained, retroreflective ON/OFF eyes.
- ⊕ Automatic Disable Timer model available.
- ⊕ Only 1” overall width to allow mounting in tight spaces.
- ⊕ Easy-to-see LED output indicator.
- ⊕ High impact plastic case is dirt and moisture sealed.
- ⊕ Polarized filter model available. Eliminates problems caused by reflective light from shiny objects. Consult factory.



HOW TO SPECIFY

Model	Description
UEER1	Standard eye includes one UMB-1 eye mounting bracket, one CA-1 1/2” conduit adapter, one 98-S reflector, 6’ of cable and hardware.
UEER2	Same as UEER1 with addition of adjustable Automatic Disable Timer with ON/OFF switch.
UEER3	12-24VDC w/ NPN Output

SPECIFICATIONS - “INDIVIDUAL” EYES

Power Input: From 24 to 130 VAC or VDC
Power Consumption: 2 VA
Temperature Range: 14° to 122°F/85% RH (-10°C to 50°C)
Output Relay: (SPDT) 5 A @ 120 VAC or 24 VDC
Relay Operation: Normally de-energized before input occurs
Response Time: 10 milliseconds
Disable Timer on UEER2: Adjustable from 10 to 45 seconds
Light Source: Infrared (invisible)
Wavelength: 880 nm
Output Indicator: (Red LED) Follows status of output relay
Cabling: 6’ standard, 5-conductor, 22 AWG
Size: 2.75” H x 3.5” L x 1” W (69.85 mmH x 88.9 mmL x 25.4 mmW)
Mounting Holes: 2.25” center to center, .125” ID

Connections – “Individual” Eyes

Black } 120 VAC	Brown – N.C.	} Relay Contacts Before Beam is Broken
White } 50/60 Hz	Red – Common	
	Green – N.O.	

“COMPLETE” DUAL EYE SYSTEMS

The “Complete” Prewired System from ElevatorEye™ is a dependable, ready-to-install system. It has a unique redundant operation...if one eye fails, the other continues to operate the door. We have designed the “Complete” Prewired System for easy installation; the eyes are easily field-replaceable via quick-disconnect connectors...no need to remove the mounting brackets. There are convenient ON/OFF switches built in for each eye. The system is so lightweight that it weighs less than one pound. There is also a polarized filter model available which eliminates problems caused by reflected light from shiny objects.

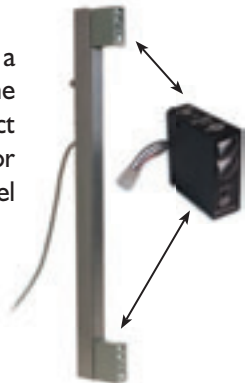
HOW TO SPECIFY

Model	Description
UEES-1A	Standard prewired system includes two ESB-1 assembly mounting brackets, two 98-S reflectors, two RB-2 reflector mounting brackets and 15’ of cable.
UEES-2A	Same as UEES-1A with addition of adjustable Automatic Disable Timer with ON/OFF switch for each eye.

- ⊕ Dependable, ready-to-install systems with unique redundant operation. If one eye fails, the other continues to operate the door.
- ⊕ Automatic Disable Timer model available.
- ⊕ Eyes are easily field-replaceable via quick-disconnect connectors...no need to remove the mounting brackets.
- ⊕ Convenient ON/OFF switches built in for each eye.
- ⊕ Lightweight...system weighs less than one pound.
- ⊕ Fused (1 A).
- ⊕ Polarized filter model available. Eliminates problems caused by reflected light from shiny objects. Consult factory.

REPLACEMENT EYES

UEER-1M / UEER-2M
See page 6 for details.



SPECIFICATIONS - “COMPLETE” SYSTEM

Power Input: From 24 to 130 VAC or VDC
Power Consumption: 4 VA maximum
Temperature Range: 14° to 122°F/85% RH (-10° to 50°C)
Output Relay: (SPDT) 5 A @ 120 VAC or 24 VDC
Response Time: 10 milliseconds
Disable Timer: Adjustable from 10 to 45 seconds
Range: Up to 12’ (3.7 m) (depending on size & type of reflector used)
Beam Spacing: 24’ center to center, to be mounted at 5” and 29” (ADA)

Connections – “Complete” Systems

Black } 120 VAC	Red – Common	} Relay Contacts Before Beam is Broken
White } 50/60 Hz	Blue – N.O. Bottom Eye	
Green – Ground	Brown/Yellow – N.O. Top Eye	

REPLACEMENT PARTS

LEADING EDGE AND SAFE PASSAGE	
PSC-4	Power Supply in Non-metallic Housing
PSC-4N	Power Supply in Non-metallic Housing with Nudging
PSC-5W	Waterproof Power Supply in Metallic Housing
PSC-5NW	Waterproof Power Supply in Metallic Housing with Nudging
NUDGE-1	Nudging Control Board with Buzzer Circuit
LA-2	Light Array
RA-2	Receiver Array
LA-2W	Waterproof Light Array
RA-2W	Waterproof Receiver Array
EGAC-4	Mounting Accessory Kit
LA-2CABLE	Light Beam Array Replacement Cable, 15 ft.
RA-2CABLE	Receiver Array Replacement Cable, 15 ft.

RA-2-4D	Safe Passage Upgrade Receiver Array with Remote
RC-4D	Safe Passage Remote Control Transmitter

ACCESSORIES	
ECI-1	Elevator Cable Interface, Wire Direct to any Door Operator
ECI-3	Elevator Cable Interface for GAL MOVFR Operator
LEEC-25	Extension Power Cable - 25 Ft
LEEC-50	Extension Power Cable - 50 Ft
M12-4F	Field Attachable 4-Pin Connector Female, Waterproof*
M12-4M	Field Attachable 4-Pin Connector Male, Waterproof*

*Required for replacing waterproof system cables.
Contact factory for other accessories.



Complete Standard System

Field Attachable Connectors Waterproof



M12-4F
4 Wire Female/Receptacle

M12-4M
4 Wire Male/Plug

ELEVATOR EYE & DUAL BEAM SYSTEMS

ACCESSORIES - REFLECTORS	
UEER1M	Replacement eye with connector for Model UEES-1A
UEER2M	Replacement eye with connector for Model UEES-2A
78P	Clear reflector, 4.4" x 1.9" - screw mounted
98S	Clear reflector, 3.2" x 1.45" - adhesive mounted
ESB-1	Elevator system bracket used with UEES system
UMB-1	"L" mounting bracket for UEER1, UEER2
USB-1	Bracket sub-assembly used with UMB-1 for vertical mount
RB-1	Reflector bracket assembly, includes 98S reflector
RB-2	Reflector bracket assembly, use with 98S reflector
507-5643	UEES elevator system replacement cable
CA-1	1/2" conduit adapter

Contact factory for additional reflectors.



Elevator Door Control Solutions



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ABOUT OUR COMPANY

TRI-TRONICS designs, manufactures, and supplies high-quality elevator door edge control products. This elevator brochure is specifically designed to simplify the process of selecting the proper door edge control to fit a particular elevator requirement. Using this brochure, in combination with the expertise of a local TRI-TRONICS representative, should provide quick answers to your questions regarding our elevator door controls.

Contact us for the name and location of the nearest TRI-TRONICS representative.

Products subject to change without notice.

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