

VITECTOR

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PRODUCT CATALOG



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Changes

We reserve the right to change the technical information at any time in accordance with our constant efforts to improve our products. All details are without obligation, since mistakes and printing errors cannot be excluded.

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ENTRAPMENT PROTECTION AND SENSORS

Entrapment Protection

In order to protect against injuries and accidents that can be caused by an automatic door or gate, protection sensors must be installed. Such systems include photo eyes or sensing edges.

Sensing edges are used to safeguard the moving edge of a door or gate. As soon as a person or object hits the sensing edge; the dangerous movement is stopped.

Photo eyes are non-contact protection sensors. They detect objects in their line of sight, preventing dangerous door movements.

UL 325-2010

In August 2010 revision 5 of UL325 brought about stricter safety standards for the door and access systems industry. UL 325-2010 requires at least one monitored entrapment protection device to be installed on every commercial door.

Entrapment protection devices can be:

- Photo Eye, installed 6" from floor level
- Sensing Edge, installed on the bottom edge of the door

For compliance with the standard, at least one entrapment protection device has to fulfill the requirements of UL325 and has to be listed in the operator manual. For enhanced safety, a door may use two or more of these monitored systems.

VITECTOR's Optical Sensors are UL 325-2010 recognized for both photo-eye (OPTOEYE) and sensing edge (OPTOEDGE) applications. Both products can be used as entrapment protection on doors and gates and have been listed with most major North American operator manufacturers.

Partners



The Cookson Company
USA & Canada
+1-602-272-4244



Cornell Iron Works
USA & Canada
+1-800-233-8366



Lawrence Doors
USA, Canada & Mexico
+1-866-939-3399



Linear
USA & Canada
+1-800-421-1587



Manaras Opera
USA & Canada
+1-800-361-2260



Micanan
USA & Canada
+1-877-888-1116



MMTC
USA & Canada
+1-800-942-6682



Napoleon Lynx
New Jersey
+1-800-234-5969



Overhead Door
USA, Canada & Mexico
+1-800-929-DOOR



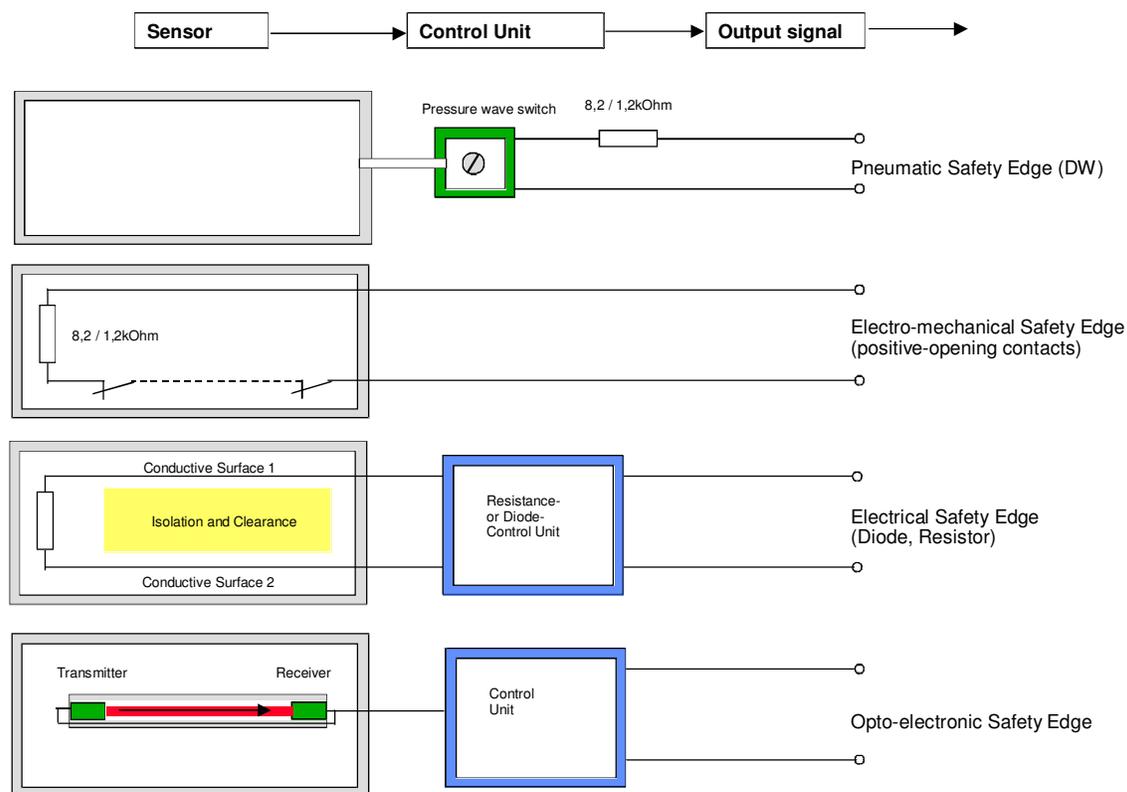
Raynor Garage Doors
USA & Canada
+1-800-472-9667



ZAP Controls
USA, Canada & Mexico
+1-931-510-4432

ENTRAPMENT PROTECTION AND SENSORS

Principles of Operation



Pneumatic switch

Actuation of the signaling element generates an air pressure wave which is detected by the pressure-wave switch; signaling the control system.

Electromechanical safety edge

The signaling element in this case comprises a series of positive-opening contacts. When actuated, the contacts open locally and interrupt the flow of current.

Electrical safety edge

The signaling element of an electrical safety edge comprises two separated electric conductors. The two conductors contact one another when the safety edge is deformed.

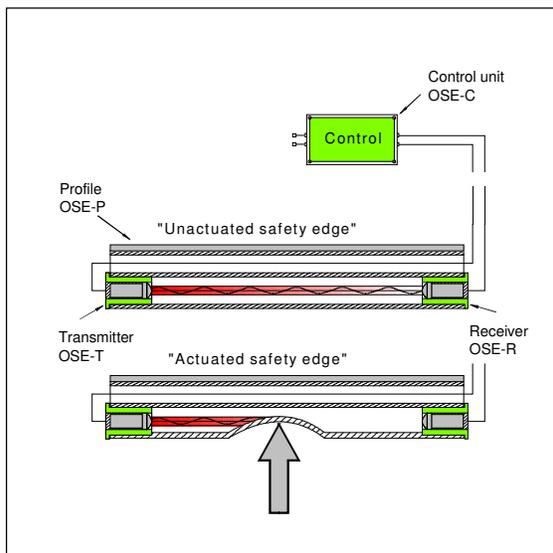
Opto-electronic sensing edge

A photo eye is installed in the rubber profile of the opto-electronic sensing edge. The light beam is interrupted when the signaling element is actuated.

ENTRAPMENT PROTECTION AND SENSORS

General function

The OPTOEDGE is comprised of an IR light beam enclosed in a hollow rubber profile. When the rubber profile is deformed, the signal is interrupted, causing the dynamic signal to fail. This is detected by the control unit which stops the hazardous movement.



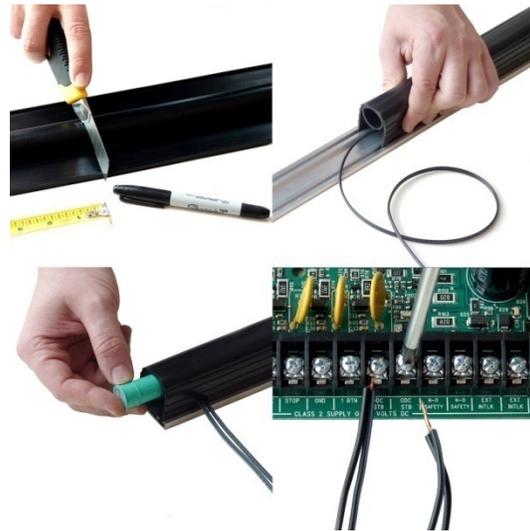
The OPTOEDGE does not require direct visual contact between transmitter and receiver. Since the infrared light beam is reflected by the surface of the rubber profile, operation of the sensing edge is not affected by minor bending due, for instance, to wind loads. Major compression of the optical channel, on the other hand, attenuate the light so strongly that the safety edge switches off reliably.

Fail Safe System

- The system is unaffected by ambient light as it uses a pulsing signal to filter out any other IR sources.

- The system also detects faults in electrical components. This is insured through the sensors being optically and physically connected.

Assembly and Ease of Installation



- Single components can be exchanged very easily. The retainer and the rubber profile are supplied as endless sections which are cut to the required length.
- Rubber profiles can be easily replaced without replacing sensors
- The Optical Sensors can be used as both a photo-eye or sensing edge. For the sensing edge, the transmitter and receiver are then inserted into the rubber profile and wired to the electronic control unit. It is not necessary to bond or preassemble the components.
- Sensors are sealed for NEMA 6 rating

OPTICAL SENSORS

Optical Sensors

Infrared sensors for use as optical sensing edge or photo eye. Sensors are UL325: 2010 recognized, fully sealed for NEMA6 rating and come with 3 ft. connection cable (other cable lengths are available upon request).

These sensors work similar to other photo-eye systems. If the signal between transmitter and receiver is interrupted, the sensor sends a stop signal to the operator to stop the door from moving further.



| Article Name | Article No. | Description | Remark |
|--------------|-------------|--|------------------------------------|
| OSE-S 5010 | 10011256-2 | Sensor Set, with 3 ft. connection cable | Dynamic 2-Wire Photo-Eye Interface |
| OSE-S 5012 | 10013694-2 | Sensor Set, with 50 ft. connection cable | |

| General data | |
|-------------------------------|--|
| Protection class | NEMA 6 |
| Operation temperature | -10 °F to +165 °F |
| Material of the housing | Polypropylene (PP) |
| Diameter of the housing | 3/4 in. |
| Length of the housing | 1 3/8 in. |
| Signaling cable | PVC Insulation, 2 x 22 AWG |
| Length of signaling cable | Max. length from sensors to signal processing unit: ~650ft |
| Length of the cable | 3 ft, customized lengths available |
| Sealing compound | Polyurethane (PUR) |
| Color of the sealing compound | Transmitter: grey Receiver: black |
| Voltage | +6 V DC to +40 V DC |

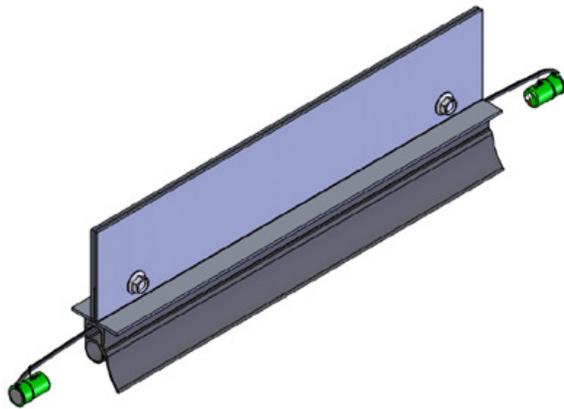
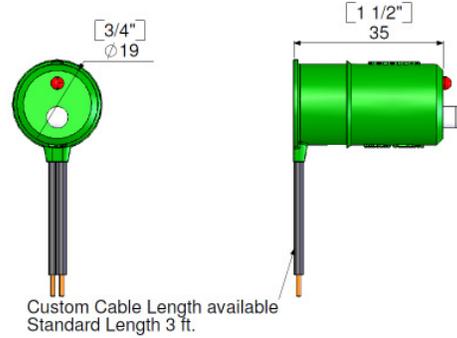
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OPTICAL SENSORS

Application and Drawings

These sensors are used for both the OPTOEYE photo eye and OPTOEDGE sensing edge system. The sensors are simply placed within the photo eye brackets (OPE-S) or the rubber profile (OSE-P) for each system respectively.



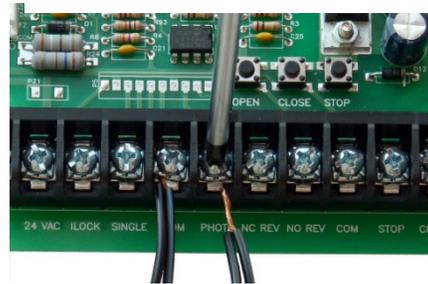
Sensing Edge



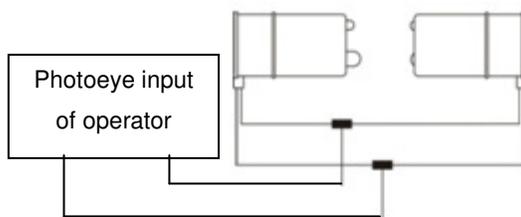
Photo Eye

Operator Connection

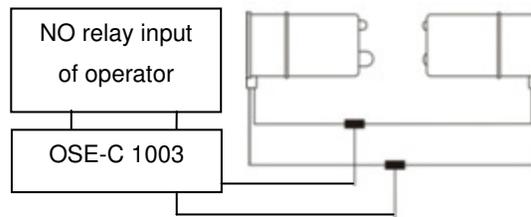
For either the OPTOEYE or OPTOEDGE systems the transmitter and receiver are connected in the same way as shown.



Logic Board Operators



Relay Style/ Hard-Wired Operators



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OPTOEYE - PHOTO-EYE BRACKETS

Photo-Eye Bracket

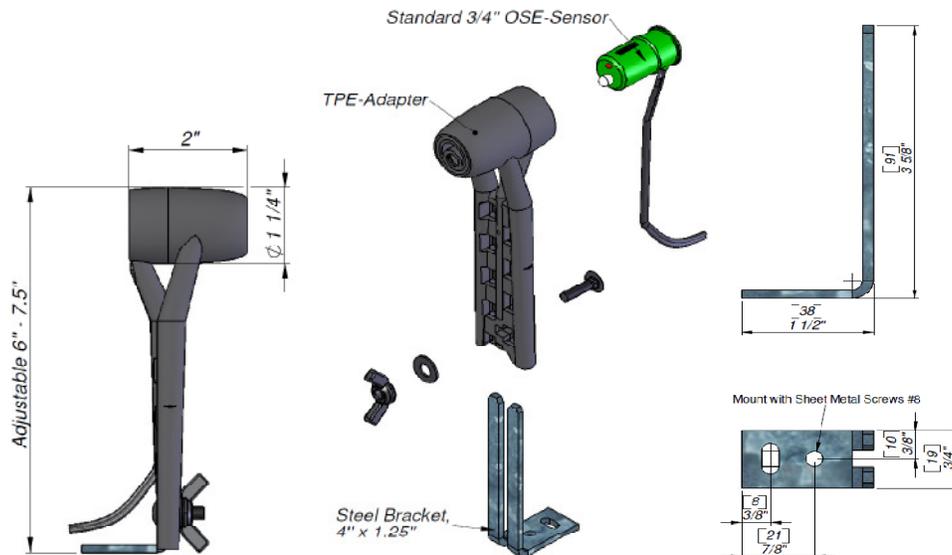
Flexible photo eye brackets to be used with VITECTOR Optical Sensors as OPTOEYE commercial photo eye. OPTOEYE has a range of 45 ft., is UL325:2010 recognized and has been NEMA4X rated by UL. Brackets come in a set with fasteners for installation.



| Article Name | Article No. | Description | Remark |
|--------------|-------------|---|-------------------------------|
| OPE-S 1000 | 10009052-2 | OPTOEYE adapters pair for Photo Eye use | Plastic lens used on Receiver |

| General Data | |
|--------------------------|-------------------------------|
| Protection class | NEMA 4X (comparable to IP65) |
| Operation temperature | -10 °F to +165 °F |
| Material of the housing | Thermoplastic Elastomer (TPE) |
| Range / Working Distance | Up to 45ft |

Drawings



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OPTOEYE - CONNECTION SET

Connection Set

The Connection Set for the OPTOEYE includes a short section of flexible conduit and a junction box, allowing for installation in applications that require all wiring to be done in conduit. The Junction Box includes a round knock-out to jump into standard 1/2" conduit.



| Article Name | Article No. | Components |
|--------------|-------------|---|
| CS 2400 | 10010211-2 | 2 pcs. Junction Boxes // 2 pcs flexible Conduit |

Description (Components)

| Article Name | Description | Remark |
|--------------------------|-------------------------------|---|
| Flexible Conduit, 3/16 " | 3 ft. length, stainless steel | For protection of wiring in commercial/ industrial applications |
| JB 2817 | Junction Box | Junction box with wire-nuts |

OPTOEDGE - RUBBER PROFILE

Rubber Profile

Rubber extrusion to be used with Optical Sensors as OPTOEDGE sensing edge. OPTOEDGE can be used up to a length of 30 ft, is UL325:2010 recognized and can easily be assembled on-site.

The rubber profiles provide a chamber for the infrared light and should the profile be deformed, the signal is interrupted and the hazardous movement is stopped.



| Article Name | Article No. | Material | Dimensions (Width / Height) | Remark |
|----------------|-------------|----------|-----------------------------|------------------------|
| OSE-P 25 60 01 | 10008995-2 | EPDM | ~1¾ / ~2½ in. | Rolling Door Profile |
| OSE-P 40 40 00 | 10005677-2 | EPDM | 1 to 2 in. / 1½ to 2 in. | Sectional Door Profile |

General Data

| | |
|--|-------------------------------|
| Material Marking | EPDM |
| Chemical marking | Ethylene-Propylene-Terpolymer |
| Rebound elasticity at 20 °C | Good (> 25 %) |
| Resistance against permanent deformation | Good |
| Elongation at tear | > 400 % |
| General weatherproof-ness | Excellent |
| Ozone resistance | Excellent (degree 0) |
| Oil resistance | Poor |
| Fuel resistance | Poor |
| Chemical solvent-resistance | Poor |
| General resistance against acids | Good |
| Salt water resistance | Stable |
| Light-resistance | Good |
| Temperature-resistance | |
| Short term approx. | -60 °F to +250 °F |
| Long-term approx.. | -40 °F to +210 °F |

Recommendation for Storage

Due to the fact that the device is dependent on reacting to deformations in the profile, the profiles must be stored and shipped without kinks and sharp bends. A pollution of the hollow chamber during the storage should be prevented by a suitable package. A longer storage (> 6 months) in rolls should be avoided.

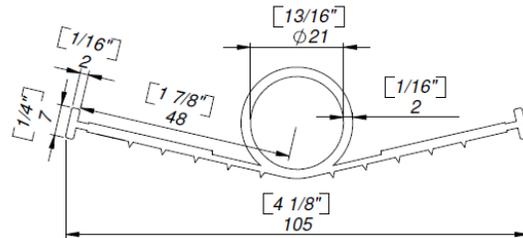
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OPTOEDGE - RUBBER PROFILE

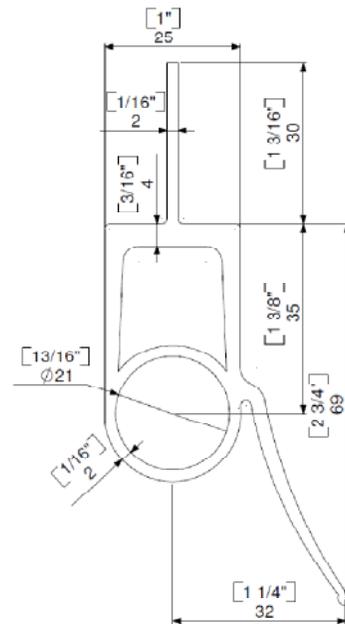
OSE-P 40 40 00

| General Data | |
|--------------------------|------------------|
| Art. Name | OSE-P 40 40 00 |
| Art. Number | 10005677-2 |
| Application | Sectional Doors |
| Mounting Situation | Double C-Channel |
| Range / Working Distance | Up to 30ft |
| Mounted Height | ~1½ to ~2 in. |
| Mounted Width | ~1 to ~2 in. |



OSE-P 25 60 01

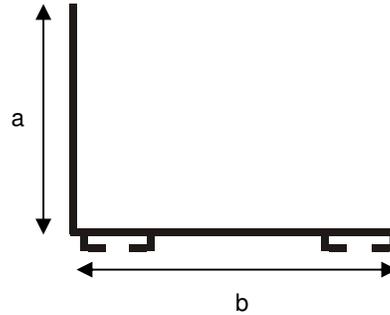
| General Data | |
|--------------------------|------------------|
| Art. Name | OSE-P 25 60 01 |
| Art. Number | 10008995-2 |
| Application | Rolling Doors |
| Mounting Situation | Double L Bracket |
| Range / Working Distance | Up to 30ft |
| Mounted Height | 2 ¾\"/> |
| Mounted Width | 1\"/> |



ACCESSORIES - RETAINER

Retainer

Most commercial doors are equipped with the proper retainer in order to install an OPTOEDGE rubber profile. For retro-fitting or door sections without the right retainer, VITECTOR offers special retainers for installation of OPTOEDGE sensing edges.



| General Data | |
|--------------|-----------------|
| Material | Aluminum or PVC |
| Usage | Sectional Doors |

Aluminum Profile Retainers

| Article Name | Article No. | Door Thickness (b) | Retainer Height (a) |
|--------------|-------------|--------------------|---------------------|
| ALU-3538 | 10005850-2 | 1 3/8 in. | 1 1/2 in. |
| ALU-4545 | 10009938-2 | 1 3/4 in. | 1 3/4 in. |
| ALU-5151 | 10009939-2 | 2 in. | 2 in. |

PVC Profile Retainers

| Article Name | Article No. | Door Thickness (b) | Retainer Height (a) |
|--------------|-------------|--------------------|---------------------|
| PVC-3538 | 10013006 -2 | 1 3/8 in. | 1 1/2 in. |
| PVC-4545 | 10013007-2 | 1 3/4 in. | 1 3/4 in. |
| PVC-5151 | 10013008-2 | 2 in. | 2 in. |

ACCESSORIES - CONNECTION SET

Connection Set

Connection sets contain everything required to electrically connect the OPTOEDGE to an operator. They include a junction box, coil cord, an offset bracket, and the respective bumper for that particular door.



Each set contains all components listed below; except CS 2200 comes with the bumper OSE-B 4532 used with sectional doors and CS 2001 comes with the bumper OSE-B 3035 used on rolling doors.

| Article Name | Article No. | Door Type |
|--------------|-------------|------------|
| CS 2200 | 10009960-2 | Sectional* |
| CS 2201 | 10009961-2 | Rolling** |

Description (Components)

| Article Name | Article No. | Description | Remark |
|--------------|-------------|---------------------|---|
| OSE-A 5001 | 10008813-2 | Adapter Sleeve | For installation in OSE-P rubber profiles |
| JB 2814 | 10009128-2 | Junction Box | Small junction box with wire-nuts |
| JB 2817 | 10010069-2 | Junction Box | Medium junction box with wire-nuts |
| SC 2360 | 10009954-2 | Coil Cord | For all Sensing Edges |
| AC 2001 | 10009209-2 | Offset Bracket | Optional, depending on door height |
| CS 5030 | 10010097-2 | Connection Cable | Cable for connecting junction boxes |
| *OSE-B 4532 | 10010086-2 | Bumper Modular | Bumper for ends of sectional door edge |
| **OSE-B 3035 | 10010086-2 | Rolling Door Bumper | Bumper for ends of rolling door edge |

ACCESSORIES - BUMPERS

Bumpers

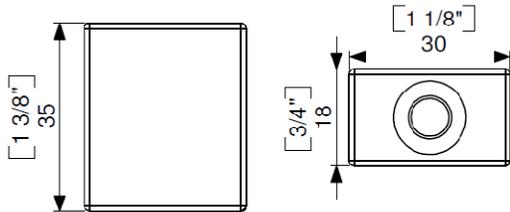
Bumpers are necessary on both ends of the sensing edge as they protect the Optical Sensors from damage from hitting the ground or object.



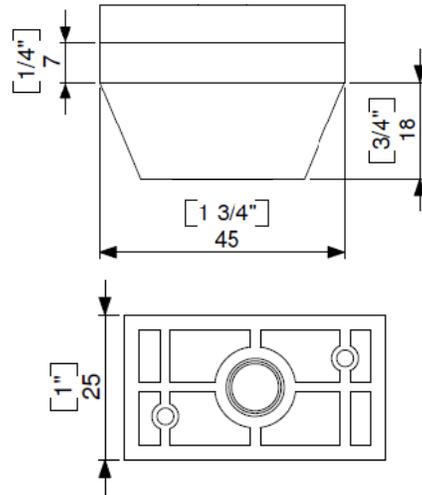
| Article Name | Article No. | Remark |
|--------------|-------------|--|
| OSE-B 3035 | 10010086-2 | For Rolling Door Profiles |
| OSE-B 4632 | 10009942 -2 | For Sectional Door Profiles (Modular Type) |

Drawings

Rolling Doors OSE-B 3035



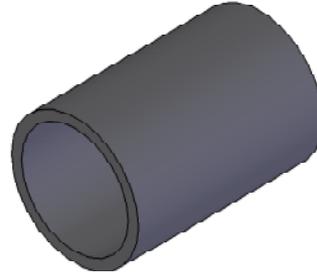
Sectional Doors OSE-B 4632



ACCESSORIES - ADAPTER SLEEVE

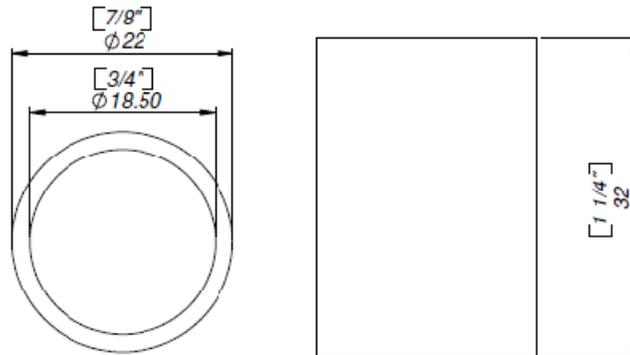
Adapter Sleeve

Adapter sleeves allow for the Optical Sensors to fit tightly into the OSE-P rubber profile / weather-seal. They are placed fully over the sensor before installation in the edge.



| Article Name | Article No. | Remark |
|--------------|-------------|---|
| OSE-A 5001 | 10008813 -2 | Adapter Sleeve for use with Optical Sensors |

Dimensions



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ACCESSORIES - MEDIUM JUNCTION BOX

Junction Box

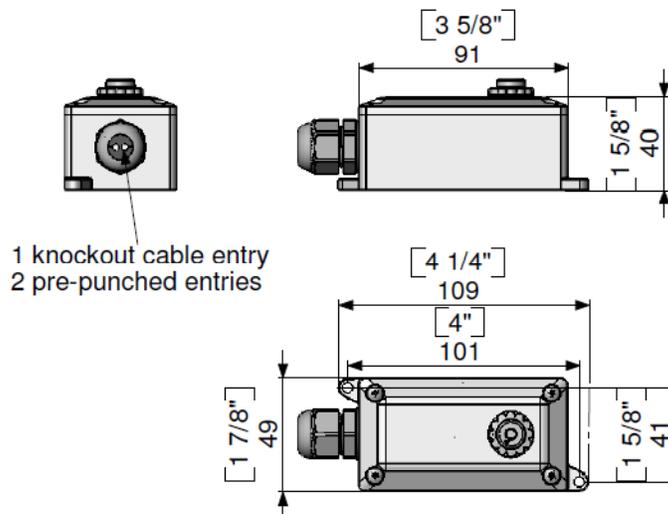
The JB 2XXX junction boxes are fitted with two open cable entries (M16) in the lid and in the box. One M16 cable gland with bending protection sleeve is included and one M16 gland with a two-holed grommet is installed. A knockout cable entry in the wall of the box allows for an additional M16 or M20 cable entry. A pair of wire nuts for the OSE connection comes with the box; mounting screws are included.



| Article Name | Article No. | Remark |
|--------------|-------------|--------------|
| JB 2814 | 10009128-2 | Junction Box |

| General Data | | | |
|------------------------------------|----------------------------|-------|-----------|
| Material | ABS, light grey (RAL 7035) | | |
| Protection Class | NEMA 4 | | |
| Dimensions (without cable entries) | Length | Width | Height |
| JB 2814 | 3½ in. | 2 in. | 1 5/8 in. |

Drawing



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ACCESSORIES - COIL CORD

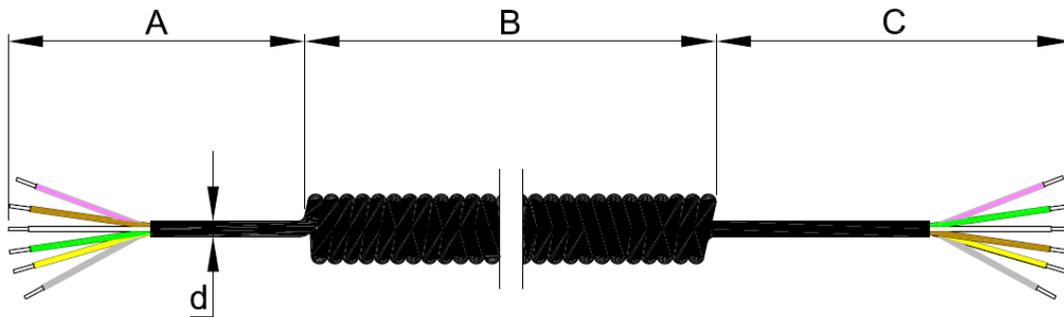
Coil Cord

VITECTOR coil cords are used for connecting sensing devices to the door operator. These coil cords are made of durable TPU material, which makes them highly resistant against shearing or ripping.



| Article Name | Article No. | Conductors | Extendable Length | Dimensions | | | |
|--------------|-------------|------------|-------------------|------------|-------|-------|-------|
| | | | | d | A | B | C |
| SC 2360 | 10009954-2 | 2 x AWG24 | 13 ft. | 1/4 in. | 6 in. | 3 ft. | 5 ft. |

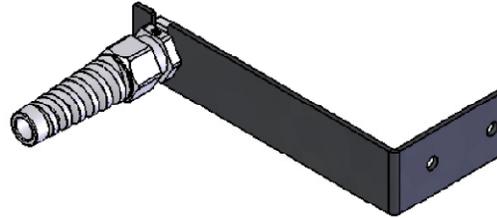
| General Data | |
|-------------------|--|
| Cable structure | Lif 11 Y 11 Y, Copper fine wired, stranded |
| Wire insulation | TPU |
| Jacket insulation | TPU, black |
| Cable ends | open |
| Temperature Range | -40 °F to +190 °F |



ACCESSORIES - OFFSET BRACKET

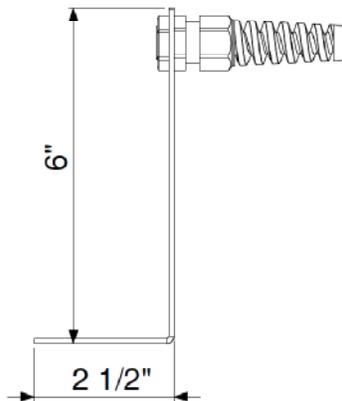
Offset Bracket

The offset bracket is made from galvanized steel. It is used to fix the coil cord to the guide rail or wall at half the total height of the door to help prevent coil cord damage. The offset bracket is supplied with an M16 bend protection to extend the lifetime of the coil cord.



| Article Name | Article No. | Remark |
|--------------|-------------|------------------------------------|
| AC 2001 | 10009209-2 | Offset Bracket for Sectional Doors |

Drawings



ACCESSORIES – CONVERTER BOX

Converter Box

The converter box is used to connect up to two sensing devices on a relay style operator.

The converter box is able to convert the dynamic signal of the optical sensors to a NO dry contact relay output that can be connected to a relay style operator.



| Article Name | Article No. | Remark |
|--------------|-------------|---|
| OSE-C 1003 | 10005699-2 | Used for relay style operators (no logic board) |

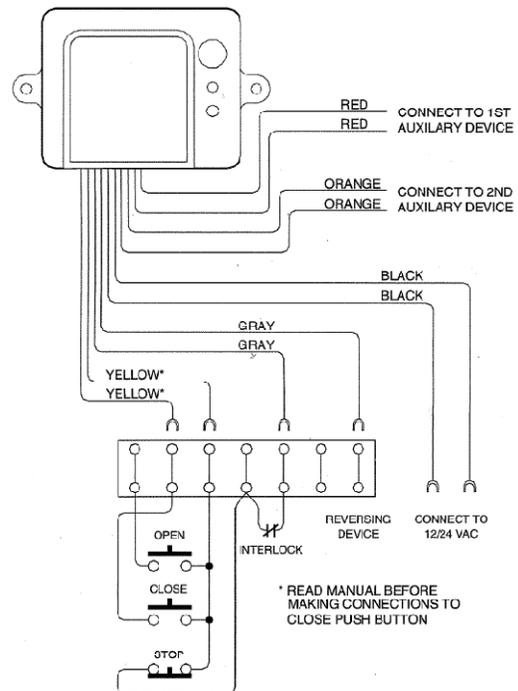
Controller OSE – C 1003

| General Data | |
|--------------|--|
| Black | 12 / 24 V AC Input |
| Gray | Normally Open Dry Contact Relay Output |
| Red | Primary OSE Input |
| Orange | Secondary OSE Input (optional) |
| Yellow | Close Door Button (optional) |

Push Button Sensing

When used on some brands of operators, the OSE-C 1003 can monitor the close push button and allow a constant contact to close if the controller detects a fault with one of the external sensing edges. Typically this feature will not work with instant reversing or 3-phase motors.

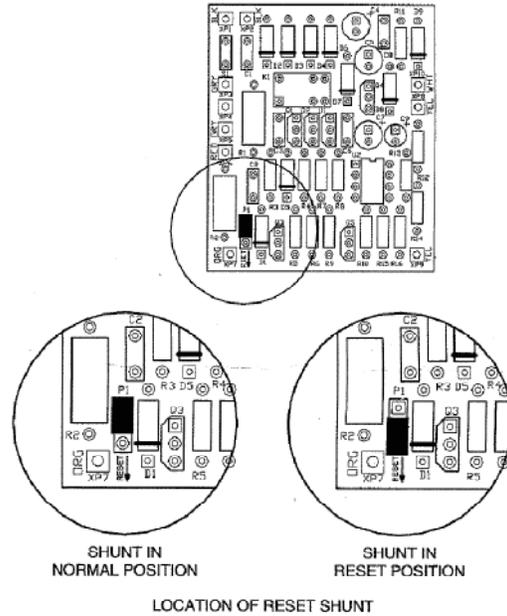
Connection Diagram



ACCESSORIES – CONVERTER BOX

Reset Procedure

Once the OSE-C 1003 detects a sensing edge, it saves this status to permanent memory. When power is removed and reapplied, the OSE-C 1003 expects the device to be present. If not, it will activate the reversing signal. To reset the controller first disconnect power. Then disconnect any sensing edge and one of the gray wires from the operator. Remove the back of the OSE-C 1003, locate the shunt jumper on the printed circuit board and place it in the reset position. Apply power to the controller for 2 seconds with the shunt jumper in the reset position. Disconnect power from the unit and move the shunt jumper back to the original position. Reconnect the gray wire (removed above) to the operator. Finally reconnect the sensing edge(s) and return power to retest and resume operation.



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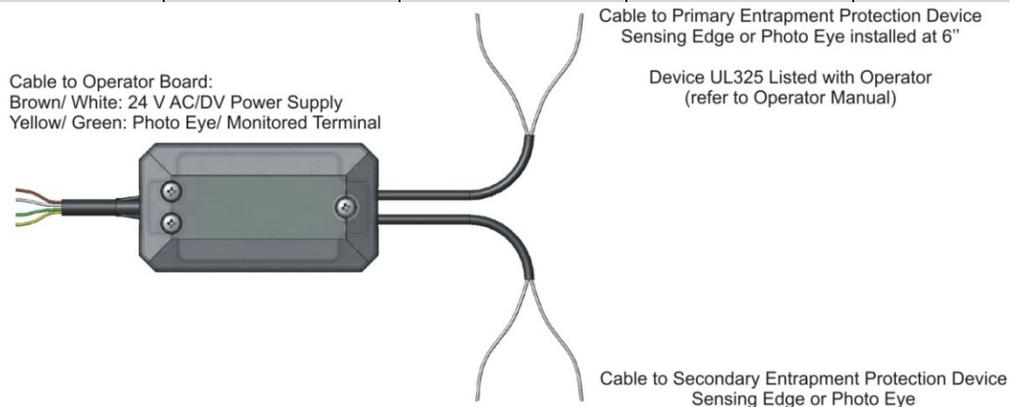
ACCESSORIES - Y-CONNECT

Y-Connect

The Y-Connect allows for the connection of two independent entrapment protection devices into the monitored input of a door operator board. It will give an obstruction signal to the operator if either of the devices senses an obstruction. If both devices do not sense an obstruction the operator receives a valid dynamic signal.



| Article Name | Article No. | Length | Width | Thickness |
|--------------|-------------|--------|-----------|-----------|
| YC 1000 | 10013081-2 | 3 in | 1 5/8 in. | 1/2 in |



Circuitry and Connections

The signal of the primary entrapment protection device is fed through the Y-Connect and monitored by the operator. The sensor connected to the primary input is the monitored device and has to be: A UL325 recognized monitored sensing edge or A UL325 recognized photo-eye system placed 6" above the ground.

The Secondary Device is connected to and monitored by the circuitry of the Y-Connect. An obstruction of the sensor will interrupt the main monitored dynamic 2-wire signal going to the door controller.

The secondary entrapment protection device is there for added protection. For compliance with UL325 it is extremely important that the UL325 certified sensor is connected as the Primary Entrapment Protection Device.

| Signal | Cable | Description |
|--------|------------------|---|
| Input | Primary Device | UL325 listed Entrapment Protection Device |
| | Secondary Device | Second Protection Sensor for added safety |
| | Brown | 24 V AC/ +24 V DC |
| | White | 24 V AC/ Ground |
| Output | Yellow | Monitored Input of Operator |
| | Green | |

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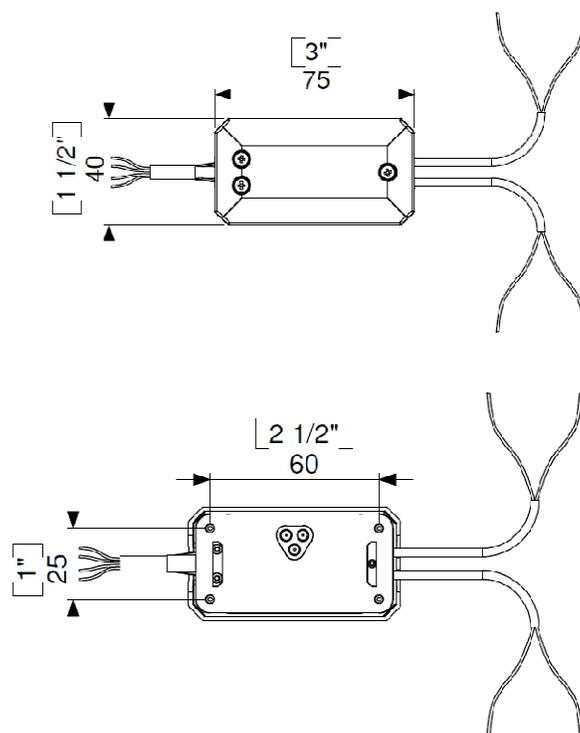
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ACCESSORIES - Y-CONNECT

| General Data | |
|-----------------------|---------------------------------------|
| Protection Class | NEMA4 |
| Housing Material | ABS/PA6 GF30/TPE |
| Operation Temperature | -10 °F to 170°F |
| Supply Voltage | 24 V AC/DC |
| Power Consumption | < 15 mA |
| Response Time | 33 ms obstruction time with Secondary |

| LED Characteristics | | |
|---------------------|--------|---------------------------------------|
| LED | Status | Description |
| YELLOW | ON | Power ON |
| GREEN | OFF | No valid dynamic signal / Obstruction |
| GREEN | ON | Valid dynamic signal / No obstruction |

Diagrams and Drawings



PNEUMATIC SWITCHES

Pneumatic Switches

Pneumatic Switches are sensing devices used to detect obstruction of a moving edge. A signal is received when a deformation generates a pressure wave which is detected by the pneumatic switch. There are three types of contacts; normally open contact (S), normally closed contact (O), and change over contact (W).



Pneumatic switches - DW

| Article Name | Article No. | Description |
|----------------|-------------|---|
| DW 2S-100 | 10005733-2 | round connector plugs 90°, NOC |
| DW 2O-100 | 10005859-2 | round connector plugs 90°, NCC |
| DW 3S-100 | 10005652-2 | screw type connectors, NOC |
| DW 3S-200 | 10005688-2 | screw type connectors, NOC, in medium-sized enclosure |
| DW 3S-300 | 10008797-2 | screw type connectors, NOC, in big enclosure |
| DW 3O-100 | 10005713-2 | screw type connectors, NCC |
| DW 3O-200 | 10005687-2 | screw type connectors, NCC, in medium-sized enclosure |
| DW 3O-300 | 10007432-2 | screw type connectors, NCC, in big enclosure |
| DW 3O-306 | 10007379-2 | NCC on PCB, large housing, 2 x stop circuit |
| DW 3W-420 | 10005797-2 | screw type connectors, NOC/NCC changeover contact, galvanized steel mounting flange |
| DW 3W-220 | 10005795-2 | screw type connectors, NOC/NCC changeover contact, in medium-sized enclosure |
| DW 5S-100 | 10005856-2 | 6,3 mm flat connector type, NOC |
| DW 5O-100 | 10005857-2 | 6,3 mm flat connector type, NCC |
| mounting kit * | 10005918-2 | small mounting angle and 2 pieces M3x25 screws |

* = this part is equipped as standard by the DW-3W 420

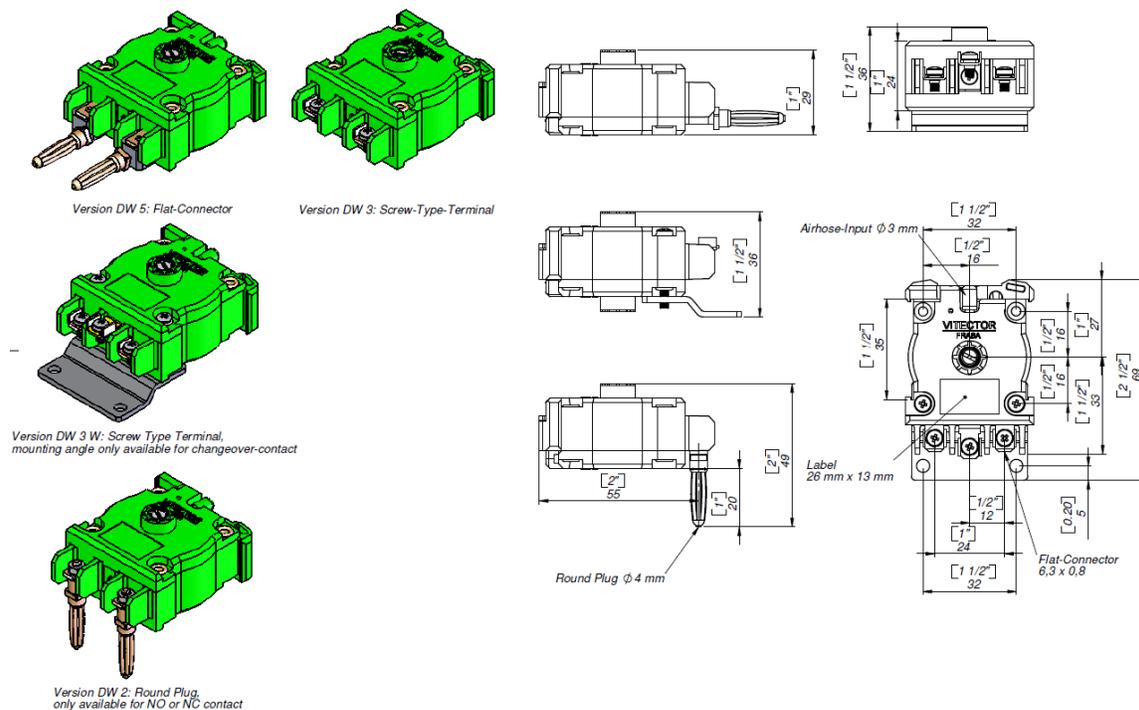
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PNEUMATIC SWITCHES

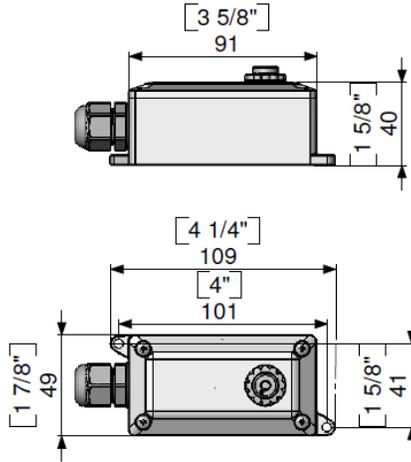
| General data | |
|-----------------------|--|
| Diaphragm material | 0.01" EPDM (-20 °F to +300 °F) |
| Weight | 1/8 lbs |
| Dimensions | 2 1/8 in x 1 3/4 in x 1 1/4 in |
| Contact loads | 220 V, 0.5 A |
| Number of operations | max. 10/sec |
| Response sensitivity | 0.2 to 50 mbar |
| Standard setting | 3 mbar |
| Mechanical resistance | 200 mbar |
| Ventilation screw | Factory preset open, tighter setting available on request |
| Types of Housing | grey, type 200 or 300 |
| Mounting | Mounting plate with 4mm holes; Various Mounting Angles; Mount to DIN Rail |
| Connectors | 1/4" flat connectors |

Drawings

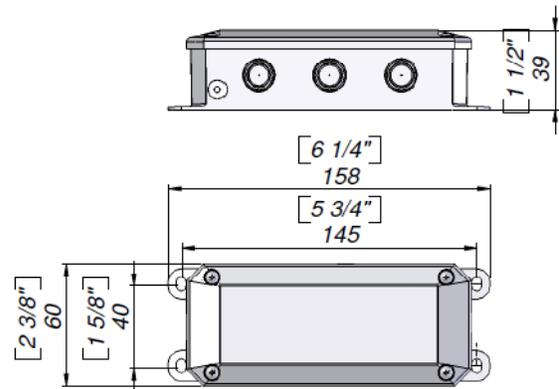


PNEUMATIC SWITCHES

Optional Housing (NEMA 4)



Housing Type 200



Housing Type 300

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PNEUMATIC SWITCHES - RADIOSWITCH

Wireless Pneumatic Switch

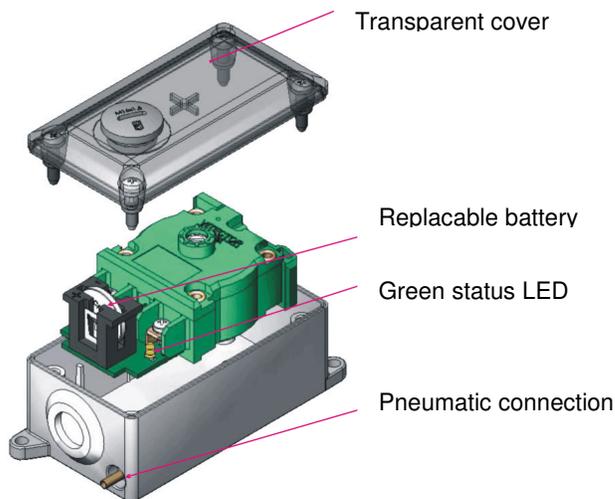
RADIOSWITCH made by VITECTOR is a pneumatic switch that sends a radio signal to the receiving unit upon activation. The small radio transmitter unit and the pneumatic switch are packaged within the DW 3S-200 case while the receiver is built into a NEMA4 case. For easy connection to a control unit it is equipped with a NCC (normally closed contact) or NOC (normally open contact) relay.



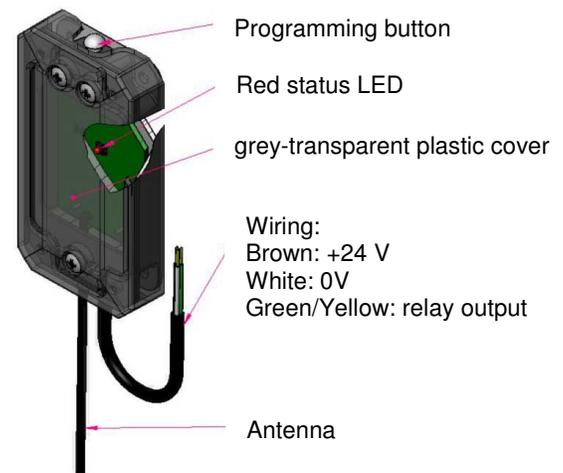
| Article Name | Article No. | Remark |
|------------------------|-------------|--------------------------------------|
| DW TR-200 | 10012830-2 | Transmitter Unit with Airwave Switch |
| RSW-R 1502, 433MHZ NCC | 10012813-2 | Receiver Unit, NCC Relay Output |
| RSW-R 1502, 433MHZ NOC | 10013858-2 | Receiver Unit, NOC Relay Output |

Diagrams

Transmitter



Receiver



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PNEUMATIC SWITCHES - RADIOSWITCH

| Transmitter General Data | |
|--------------------------|---|
| Frequency band | 433 MHz, modulated frequency |
| Coding | Fixed codes, 65,000 different codes available |
| Protection class | NEMA 4 |
| Temperature range | -5 °F to +140 °F |
| Transmitting range | Up to 330 ft |
| Battery | Lithium CR2032, 3,0 V, 220 mAh, replaceable |
| Battery Lifetime | up to 75,000 activations, max. 4 years |
| Status LED | Green |

| Receiver General Data | |
|-----------------------|---|
| Receiving channels | 1 |
| Response time | Minimum 35 ms (without radio interference) |
| Protection class | NEMA 4 |
| Case material | ABS transparent grey, PA6 GF30, TPE |
| Dimensions | 2.95 x 1.57 x 0.51 inch without wiring |
| Connection | 4-core connection wire LIYY 4x0,14 ² Length 3.28 ft Cable head 1.97 inch dismantled, twisted and tinned isolation stripped 0.2 inch Brown: +24V(AC/DC), White: 0V, Green/Yellow: relay output |
| Current drawn | max. 30 mA |
| Signal/ Relay output | NCC (normally closed) NOC (normally open) |
| Status OK | Closed Open |
| Status Crash/ Error | Open Closed |
| Status LED | red |

PNEUMATIC SWITCHES - RADIOSWITCH

Factory Default Setting

Transmitter with fixed code, receiver not programmed, upon switching on the receiver the status LED is permanently red, receiver has to be programmed before first use. When receiving a signal from any compatible transmitter, the status LED flashes briefly before going back to red permanently.

Relay opened – no door/ gate function

Programming

Press programming button for 3 seconds, LED flashes slowly. Now activate the DW switch within 5 minutes. Upon receiving the DW signal, the receiver LED rapidly flashes 8 times while the code is being saved. After that, the LED turns off.

Normal Operation

Upon activation of its pneumatic switch, the transmitter generates the code signal and sends it to the receiver 20 times. The receiver's minimum response time is approx. 35 ms. if a signal cannot be transmitted due to interference problems, the

remaining attempts provide a certain level of reliability. After approx. 700 ms transmission is terminated and the transmitter's LED flashes once.

Upon receiving the transmitted signal, the receiver's LED lights up for 4 seconds. Simultaneously the clearance signal (relay output) is being activated for 4 seconds

Delete Programming or Re-Program

Pressing the programming button for 3 seconds deletes the currently saved code from memory and the receiver can be re-programmed as described above.

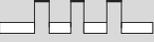
Low Battery

If the battery voltage drops below a certain value, the transmitter's LED flashes twice (instead of once) and battery replacement should be considered. Additionally, if the battery is not replaced the receiver's LED will flash from now on. If the voltage drops below a critical level, the receiver LED will flash slower indicating that the relay gate is no longer being set.

PNEUMATIC SWITCHES - RADIOSWITCH

Status LED Conditions

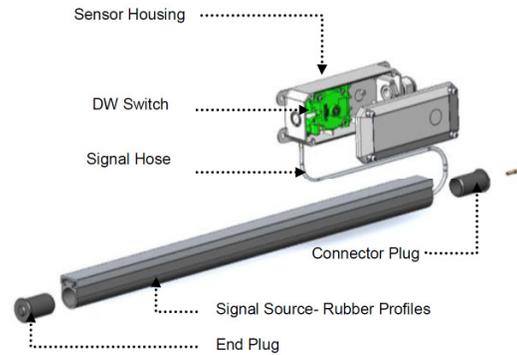
| Transmitter LED | | |
|-----------------|---|---|
| Activity | LED | Description |
| Off |   | idle |
| Flashes once |   | activation signal is being transmitted. System OK |
| Flashes twice |   | Activation signal is being transmitted with reduced power, battery is low. Replace battery! |
| Flashes 3 x |   | Activation signal is being transmitted with heavily reduced power, battery is nearly empty, no relay activation Replace battery immediately! |

| Receiver LED | | |
|----------------------|---|--|
| Activity | LED | Description |
| Off |   | idle |
| Flashing steadily |   | Ready for being programmed |
| Rapidly flashes 8 x |   | Transmitter code is being saved |
| Flashes once |   | Relay gate is being set. System OK |
| Flashes permanently |   | Relay gate is being set. Transmitter battery low, consider replacing |
| Blinking permanently |   | Relay gate is not being set. Transmitter battery very low, Replace immediately |

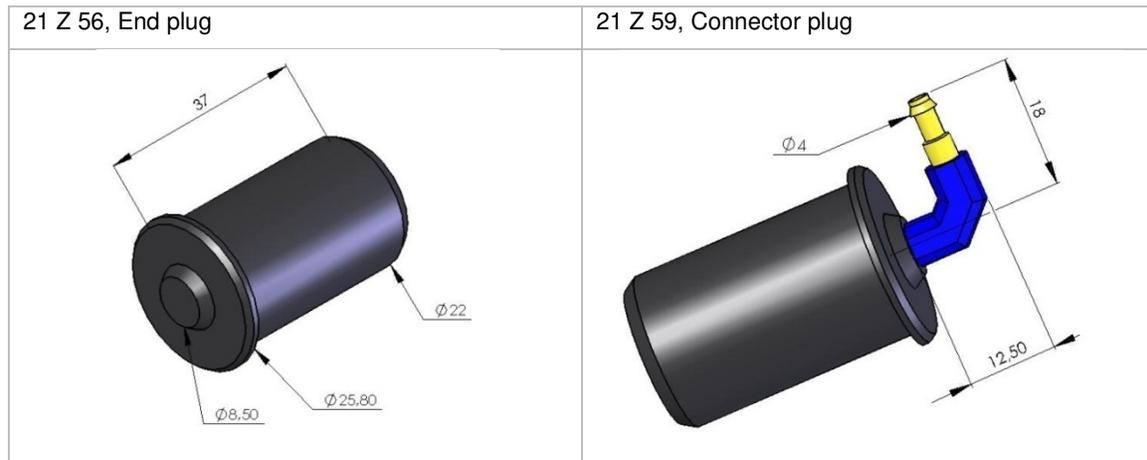
PNEUMATIC SWITCHES - ACCESSORIES

Accessories

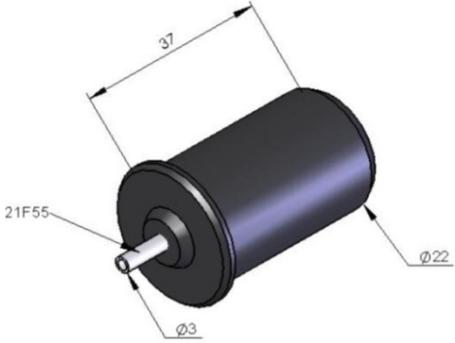
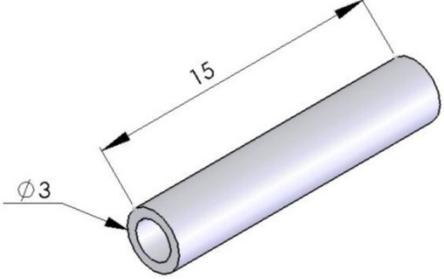
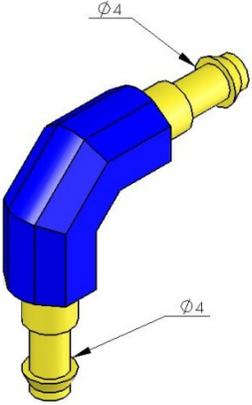
Various accessories can be purchased to complete a pneumatic sensing edge system for almost any application.



| Article Name | Article No. | Description |
|------------------------|-------------|-----------------------------------|
| 21 Z 56 | 79221956-2 | End plug |
| 21 Z 60 | 79221960-2 | Straight Connector plug |
| 21 Z 59 | 79221959-2 | 90° Connector plug |
| Silicone hose 2 x 5 mm | 79220001-2 | Silicone Hose, i.D. 2mm, o.D. 5mm |
| 21 F 53 | 79220453-2 | 90° Angle connector |
| 21 F 55 | 79220455-2 | Straight Connector |



PNEUMATIC SWITCHES - ACCESSORIES

| | |
|--|---|
| 21 Z 60, Connector plug | 21 F 55, Connectors $\varnothing 2 \times 4$ mm |
|  <p>Technical drawing of a black cylindrical connector plug. It features a central shaft with a diameter of $\varnothing 3$ mm. The total length of the plug is 37 mm. The outer diameter of the main body is $\varnothing 22$ mm. The part number 21F55 is indicated on the shaft.</p> |  <p>Technical drawing of a grey cylindrical connector. The length is 15 mm and the outer diameter is $\varnothing 3$ mm.</p> |
| 21 F 53, Angle-connector $\varnothing 2 \times 4$ mm | |
|  <p>Technical drawing of a blue and yellow L-shaped angle connector. Both the horizontal and vertical ports have an outer diameter of $\varnothing 4$ mm.</p> | |

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COMPANY



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Hamilton/ NJ, U.S.A.



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