

Industrial security system
Edge and control module

新达
CYNDAR



AGV anti-collision/equipment anti-collision

SAFETY EDGE SE-NSOR

User Manual

Efficiently solve applications

All rights reserved E1.56

CE

广州市新达电子科技有限公司
GZ Cyndar Co., Ltd.

Catalog

1. Introduction to safety edge contact products.....1

2. Working principle, composition and arc shape.....1

3.Use cases 2

4. Safety edge model table.....2

5. Safety edge modelselection.....5

5.1 Model structure description.....5

5.2 Multi-piece edge wiring configuration for safety relays and edge controllers....6

5.3 Blind area description.. 6

6. Technical parameters of safety edge 6

7.Controller wiring instructions.....7

7.1.SRC106 safety relay wiring instructions.....7

7.1.1 Function description of the wiring terminal.....7

7.1.2 Description of LED and reset lever.....7

7.1.3 SRC106 safety relay wiring diagram.....8

A.Four-wire K-type wiring diagram.....8

B.Four-wire KR type with resistance wiring diagram.....8

C.Two-wire R-type built-in resistance wiring diagram.....9

7.1.4 Safety relay parameters.....9

7.1.5 Series wiring method of safety relay.....10

7.2 SEC-A67 Edge Controller(Economy type) Wiring Instructio.....10

7.2.1 Specification and parameters.....10

7.2.2 Wiring diagram.....11

7.3 Relay coil normally open wiring diagram.....12

7.4 PLC wiring diagram.....12

8.Installation instructions.....13

9. Precautions for safe edge contact.....13

10.Customized safety edge contact method.....14

Note: Please read the product information in this technical note carefully.It contains important information regarding the operation, safety and maintenance of the product.And please keep this technical note for future reference.

1. Introduction to safety edge contact products

The safety edge is a flexible and bendable strip or round object that can be fixed in places where there is a risk of extrusion such as tire building machines, lifts, safety gates, automatic unmanned vehicles, logistics AGV trolleys, machine tool workbenches and electric doors.on the edges of the component.

1.1When the moving parts equipped with safety edges hit the operator (or the operator hits the moving parts), these flexible safety edges will be compressed and send signals to the power source to stop the movement of these parts.

1.2 The safety edge and the controller together form a flexible and versatile emergency stop system.When using this system, the robot operator and installer must be able to stop the dragging device easily and conveniently.

1.3 The split Safety Edge edge includes an aluminum guide rail, a safety rubber sleeve and a built-in induction signal belt; the special shape of the Safety Edge edge (rubber side) can protect the signal belt from damage and allow the impact angle of the Safety Edge edge to exceed 90°.The induction signal tape can also be used alone (adhered with adhesive).If your device has hollow rubber strips, you can also use pass-through signal strips.

- Sensor length 200mm~7000mm.
- Can be bent, suitable for various mechanical protection occasions.
- Protection level IP65, suitable for use in various working conditions.
- More than 3 million mechanical service life.
- The outer cover is made of EPDM rubber, which is resistant to various chemical corrosion and is suitable for use in factories, general working conditions and civiloccasions.
- Not suitable for fast-moving robots to protect people from harm

2. Working principle, composition and arc shape

When a device is installed with a safety edge, if the outermost insulating layer of the safety edge touches a person or an obstacle during travel, the inner conductive layer will be squeezed, causing the upper and lower conductive layers separated by a specific distance to come into contact, causing current and resistance.changes and will send a valid signal to the controller; after receiving the signal, the controller will immediately stop the device's movement or return.There are split type and integrated type of safety edge.When the split type is installed correctly, as long as the conductive strip is not damaged, even if the outer cover of the safety edge is damaged, the entire safety edge system can still function normally.

There are a total of 6 categories of safety edges, and different types can be customized according to your own equipment.See Table 2.1 for details.







Output type	NO	NO	NO	NO type.Variable resistance type	NC
Structure	Split type, aluminum profile	One-piece, aluminum profile	One-piece, adhesive type	One-piece, penetration type	Split type, aluminum profile
Explain	Thread the conductive tape into the insulation jacket	The insulating jacket and conductive glue are extruded into one piece	The insulating jacket and conductive glue are extruded into one piece	The insulating jacket and conductive glue are extruded into one piece	Built in articulated signal strip, relatively hard, with a minimum R radius of 770mm

Safety edge classification

There are 3 types of arc customization for safety touch edges





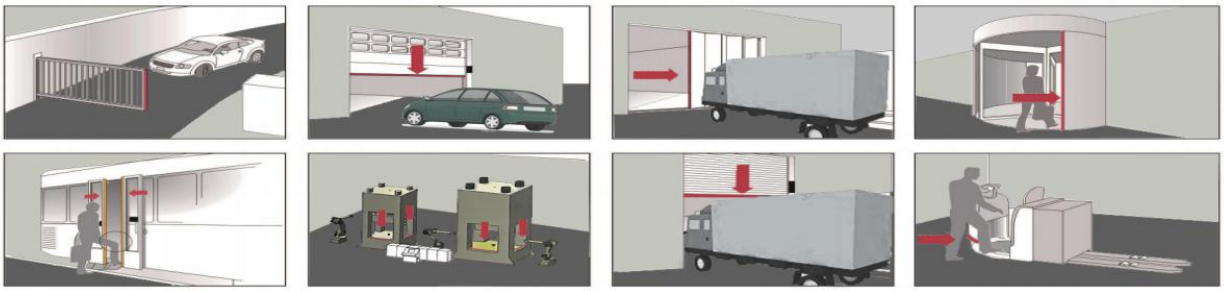
Bottom bend	Side bend	Back bend

Classification of safety edge arc

If you need a custom arc, please indicate the arc type on the drawing.

3.Use cases

Simple integrated structure integrates the sensor and original cover.Resistant to lateral forces.Can be used in a variety of applications



Scenario application

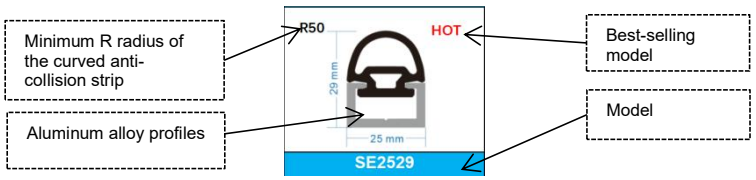
Selection suggestions

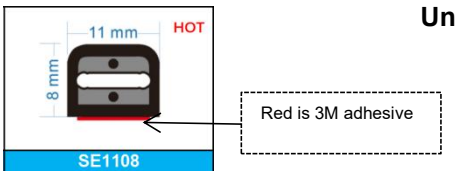
Small industrial vehicles, garage fly, equipment and instrument applications	Various small and medium-sized electric doors, elevators, industrial and civil applications	Large AGV vehicles, electric doors, lifts, industrial applications	Ultra-large AGV anti-collision, heavy industrial doors, machinery and industrial applications
Recommended use: SE2528、SE1108、SEA616	Recommended use: SE2528、SE2529、SE3030、SE2540、SE2544	Recommended use:SE3030、SE2541、SE2544、SE3044、SE3547、SE3050	Recommended use: SE3050、SE4060、SE3595、SE6035

Selection recommendations

4. Safety edge model table

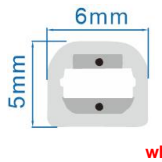
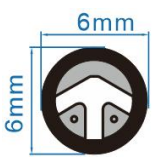
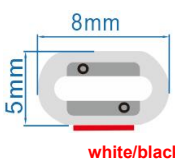
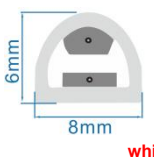
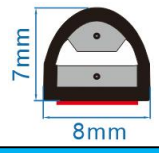
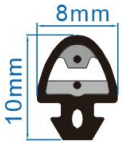
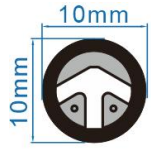
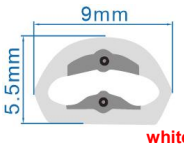
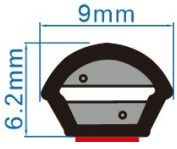
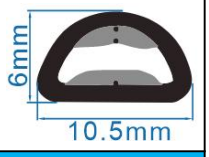
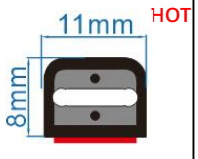
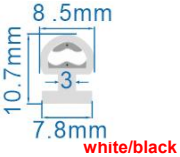
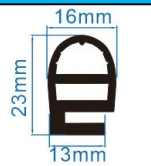
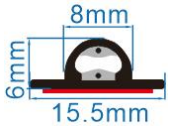
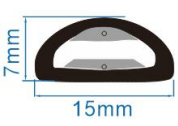
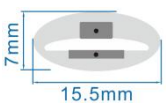
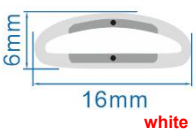
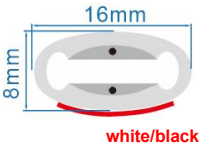
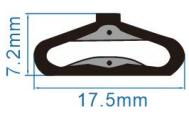
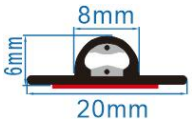
(Note: Due to the increase in product specifications and the modification of some dimensions, our company decided to name the model according to the size. The original model is only for comparison. Please send the latest model when placing an order)

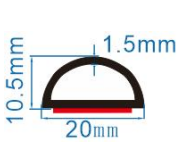
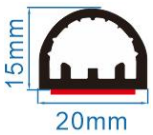
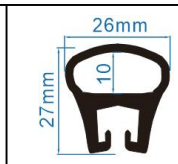
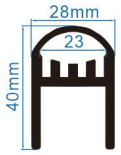
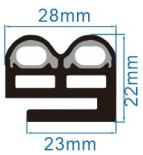
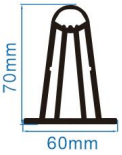
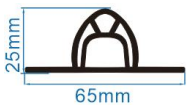




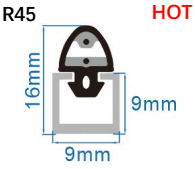
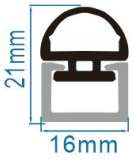
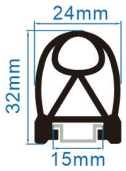
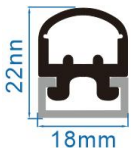
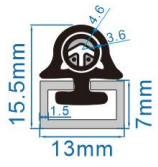
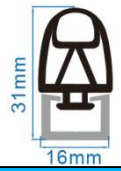
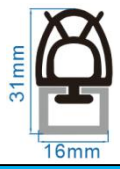
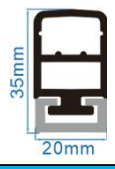
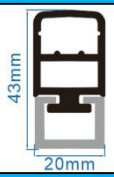
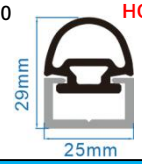
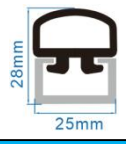
Unit: mm

Adhesive self - sticking type / Insertion type / Integrated type - For the integrated type, the wire - outlet method is limited to: 01/03. (Self - sticking adhesive: 3M adhesive or grid - type adhesive is available, with 3M adhesive as the default option.)

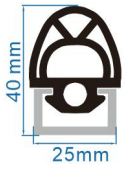
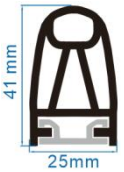
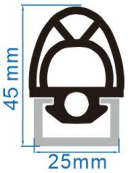
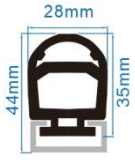
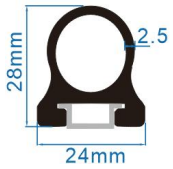
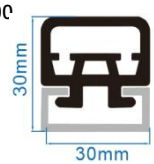
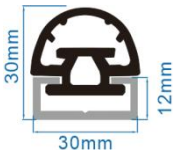
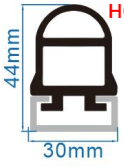
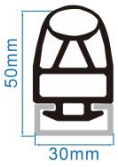
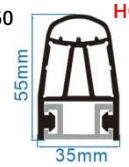
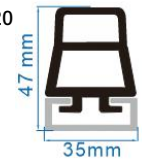
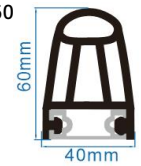
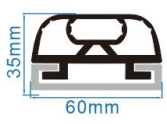
						
SE0512	**SE0605**	**SE0606**	**SE66**	**SE0706**	**SE0805**	**SE0806**
Original Model-SE1643-Colors can be customized.	Colors can be customized.	Original Model-SE1630-Colors can be customized.	New model	Colors can be customized.	Original ModelSE1633-Colors can be customized.	New model
						
SE0807	**SE0810**	**SE1010**	**SE0906**	**SE0907**	**SE1013**	**SE1106**
Original Model-SE1631-Colors can be customized.	Original ModelSE1632-Colors can be customized.	New model-Colors can be customized.	New model	Colors can be customized.	Colors can be customized.	New model
						
SE1108	**SE1109**	**SE1206**	**SE1314**	**SE1323**	**SE1325**	**SE1506**
Original Model-SE1627-Colors can be customized.	New model	-Colors can be customized.	Original Model-SE1624-Colors can be customized.	New model	Original Model-SE1629	Colors can be customized.
						
SE1507	**SEA607**	**SEA606**	**SEA608**	**SE1808**	**SEA616**	**SE2006**
Colors can be customized.	New model	New model	Original Model-SE1628-Colors can be customized.	New model	Colors can be customized.	Colors can be customized.

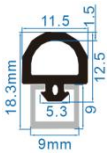
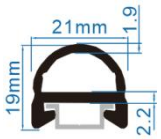
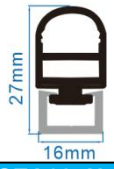
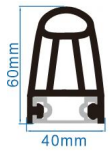
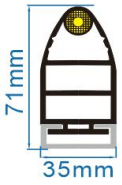
						
SE2011	**SE2015**	**SE2212**	**SE2627**	**SE2840**	**SE2322**	**SE6070**
New model-Colors can be customized.	New model-Colors can be customized.	New model	Original Model-SE1606-Colors can be customized.	Original Model-SE1613	New model	Original Model-SE1626
R95 						
SE6525						
Original Model-SE1625-Colors can be customized.						

Small - sized series - Matched with Aluminum profile - Wire - outlet method: not restricted (SE0916: 01/03)

R45 HOT 	R40 		R70 	HOT 	R50 HOT 	
SE0916	**SE1515**	**SEA621**	**SE2432**	**SE1822**	**SE2320**	**SE1316**
Original Model-SE1615	Original Model-SE1636-Colors can be customized.	New model	Original Model-SE1605	Original Model-SE1637	Original Model-SE1603	Original Model-SE1662
Aluminum profile AP1	Aluminum profile AP2	Aluminum profile AP5	Aluminum profile AP3	Aluminum profile AP6	Aluminum profile AP3	Aluminum profile AP28
R38 HOT 			R65 		R50 HOT 	R70 HOT 
SEA631	**SEB631**	**SEC631**	**SEA2035**	**SEA2043**	**SE2529**	**SE2528**
Original ModelSE1635	New model	New model	Original ModelSE1621	Original ModelSE1663	Original ModelSE1639	Original ModelSE1608
Aluminum profile AP4	Aluminum profile AP5	Aluminum profile AP4	Aluminum profile AP9	Aluminum profile AP23	Aluminum profile AP25	Aluminum profile AP10

Conventional 25 - 60 series. Wire - outlet method: not restricted

R100 			R53 HOT 	R80 	R50 	
SE2540	**SE2541**	**SE2545**	**SE2544**	**SE2550**	**SE2835**	**SE2428**
Original ModelSE1609	Original ModelSE1602	Original ModelSE1610	Original ModelSE1620	Original ModelSE1638	New model	New model
Aluminum profile AP25	Aluminum profile AP08	Aluminum profile AP25	Aluminum profile AP25	Aluminum profile AP25	Aluminum profile AP25	Aluminum profile AP03
R100 		R60 HOT 		R350 HOT 	R120 	R150 
SE3030	**SEB3030**	**SE3044**	**SE3050**	**SE3555**	**SE3547**	**SE3572**
Original Model-SE1607	New model	Original Model-SE1619	Original Model-SE1601	Original Model-SE1617	Original Model-SE1614	New model
Aluminum profile AP13	Aluminum profile AP13	Aluminum profile AP13	Aluminum profile AP13	Aluminum profile AP24	Aluminum profile AP14	Aluminum profile AP14
	R350 	R350 	R120 HOT 			
SE3595	**SE4060**	**SE4080**	**SE6035**			
Original Model-SE1616	Original Model-SE1612	Original Model-SE1611	Original Model-SE1623			
Aluminum profile AP13	Aluminum profile AP15	Aluminum profile AP15	Aluminum profile AP21			

Nitrile material and flame - retardant material. Wire - outlet method: not restricted						
		R50 				
SE0919N	SE2119N	SEA627N	SE4060F			
New model-Nitrile rubber	New model-Nitrile rubber	New model-Nitrile rubber	New model-flame - retardant type			
Aluminum profile AP01	Aluminum profile AP03	Aluminum profile AP05	Aluminum profile AP15			
NC type series - Trigger distance: 15 - 30mm. Wire - outlet methods: 01, 03. The NC type is not applicable to vibrating equipment, and the length should not exceed 2m.						
R770 HOT 			 HOT			
SE2043	SE2549	SE2547	SE3571			
Original Model-SE1604	New model	New model	Original Model-SE1622			
Aluminum profile AP9可换AP23	Aluminum profile AP25	Aluminum profile AP10	Aluminum profile AP14			
The minimum radius of the arc and changes in shape dimensions will not be immediately reflected in the instruction manual. Please consult the manufacturer.						

Edge dimension drawing

Corresponding aluminum profile dimensions

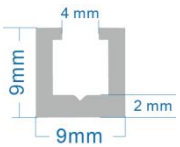
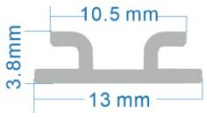
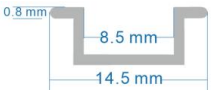
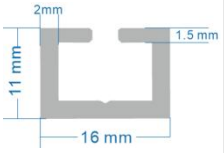
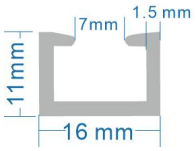
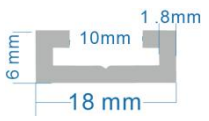
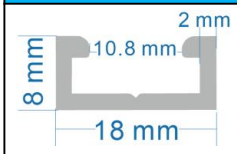
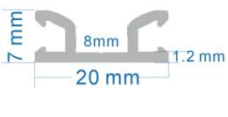
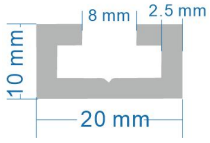
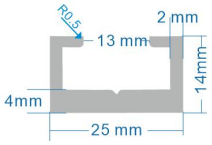
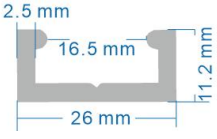
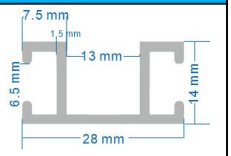
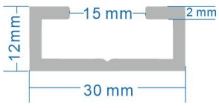
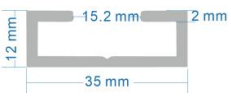
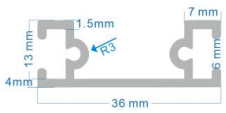
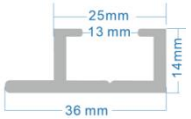
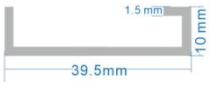
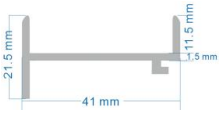
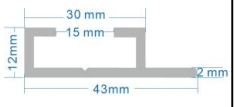
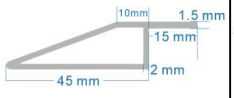
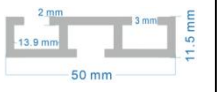
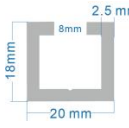
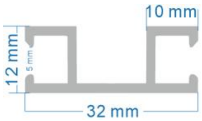
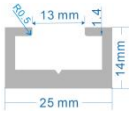
					
AP1	AP2	AP3	AP4	AP5	AP6
					
AP7	AP8	AP9	AP10	AP11	AP12
					
AP13	AP14	AP15	AP16	AP17	AP18
					
AP19	AP20	AP21	AP22	AP23	AP24
					
AP25	AP27				

Table of profile dimensions

5.Safety edge model selection

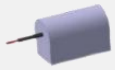
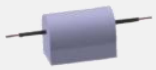
5.1 Model structure description

Model Structure	A	-	B	-	C	-	D	-	E
Description	Model Code		Length		**Outlet method and technical configuration**		Cable length		**Controller**
Remarks	See P2 Selection Chart		Unit: mm				0.4m standard		SRC A67 IR

A— Model code: such as SE2527、SE2540、SE3547、SE3050 etc.

B— Length description: in millimeters, for example, SE2527-500, also has a length of 500mm

C — Outlet configuration or other shape customization:

Code 1	01	02	03	04	05	05 (02)	06	S
Outgoing image								
Code 2 For cable configuration, please refer to Table 5.	R/NC/F	R/NC/F	K	K	R/F		K	
Explain	Single side straight lead One of the standard features	S ingle bottom lead One of the standard features	Straight leads on both sides	Dual bottom leads	Single side lead		Double side leads	Other shapes customized
Series Description	Cannot be connected in series	Cannot be connected in series	Can connect multiple Safety edges in series	Can connect multiple Safety edges in series	Cannot be connected in series		Can connect multiple Safety edges in series	Customized according to drawings

Technical configuration instructions

Select the outgoing line technology configuration according to the configuration controller

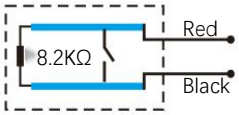
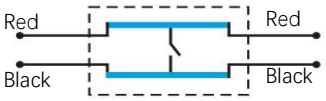
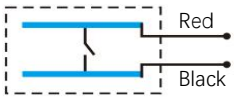
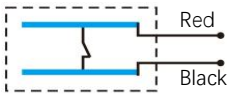
Outgoing configuration code	Explain	Internal circuit diagram	Outlet type	Wiring instructions
R Type	2-wire system.Built-in resistor		01、02、05 **(Single side lead)**	Built-in 8.2KΩ resistor; can be connected to safety relay SRC106 or contact edge controller SEC-A67 (with wire break detection).Intermediate relay can be connected (no wire break detection)
K Type	4-wire system.External resistor can be connected.2 sets of passive NO points		03、04、06 **(Double-sided leads)**	An external resistor can be connected and then equipped with safety relay SRC106 or contact edge controller SEC-A67 (with wire break detection); DC24V intermediate relay, PLC- (0V control).
F Type	2 - wire system 1 set of passive NO contacts		01、02、05 **(Single side lead)**	It can be connected to a DC24V intermediate relay and PLC - (0V control). There is no wire breakage detection (not recommended).
NC Type	2-wire system.NC.		01、02、05 **(Single side lead)**	NC output, only available for models SE1604/SE1622; It is relatively hard and requires 1-3 centimeters of deformation to trigger, with a minimum R radius of 770mm; Can be connected to intermediate relays, PLCs, safety relays (model: SRC106, please ask the salesperson for the Chuzhi resistor manual)

Table 5 Out and technical configuration

D— Cable length:

Code	Not writing	1m	2m	3m	4m	Number m
Explain	**Length 0.4m**	**Length 1m**	**Length 2m**	**Length 3m**	**Length 4m**	**Custom meter length**

E— Controller options:

	Security Type	**Safe and economical type**	**No safety circuit**	**No relay**
Code	SRC	A67	IR	
Explain	Safety relay It has a disconnection monitoring function and meets the safety level; it has a reset function.	Edge controller SEC-A67 With wire break monitoring; parameters can be found in P9; line configuration can only be selected	Coil relay No disconnection monitoring: No restrictions on outlet configuration	Not writing

	Parameter reference P5: The output configuration can only be selected as R type (up to two contact edges) or K type (multiple contact edges can be connected in series)	as R (1 contact edge) or K type (multiple contact edges can be connected in series)		

Model description

Aluminum Cutting Instructions: For shipments outside China, aluminum sections exceeding 1 meter will be cut into two sections, leaving the anti-collision strip intact. If not cut, please contact the freight forwarder for in-person pickup.

Model Example: SE2527-3000-02R-2m-SRC. This indicates the SE2527 model, 3000mm length (the aluminum section will be spliced into 2-3 sections, the rubber strip will remain a single piece), a single bottom lead, 2 meters of connecting wire, a built-in 8.2kΩ resistor, and an SRC-106 safety relay.
Model Example: SE2527-3000-04K-A67. This indicates the SE2527 model, 3000mm length (the aluminum section will be spliced into 2-3 sections, the rubber strip will remain a single piece), double bottom leads, 0.4m at each end, self-connected external resistors, and an SEC-A67 edge controller.
Model Example: SE2527-1000-R-S. Indicates model SE2527, length 1000mm (aluminum is a whole piece), customized according to the diagram, wiring method as shown in the diagram, built-in 8.2KΩ resistor, does not include a controller

5.2 Multi-piece edge wiring configuration for safety relays and edge controllers

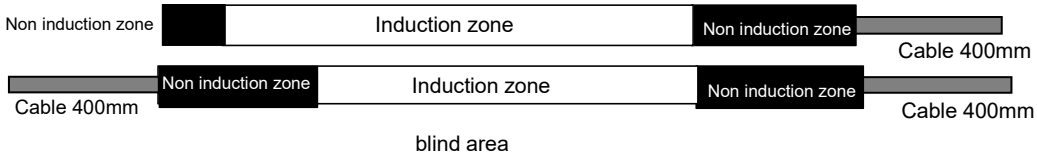
This series connection method can connect up to 10 safety edges in series, with a total edge length of no more than 30 meters and a total cable length of no more than 60 meters.

Controller wiring method - N safety touch edges connected in series



5.3 Blind area description

- The cable length is 450~500mm, which can be customized and lengthened
- One end of the safety line is no action area (blind area), and the length is about 15~30 (mm)
- The non outgoing end of the Safety Edge is a dead zone, with a length of approximately 5-10 (mm)



6. Technical parameters of Safety Edge

Project	Safety edge	
Detection mode	Pressure sensing mode	
Maximum induction angle	〈 90°	
Trigger force (according to specification and use)	≥ 20n ~70n (smaller size, smaller trigger force)	
Trigger distance	3~5mm ; nc : 10~20mm	
Switch current \ voltage	Max.100ma \5v	
Max. Controller voltage	Dc24v	
Signal mode 1	**Passive NO** (not directly connected to the power supply, with a special safety relay and Safety Edge controller can be nc output)	Only one of them Signal output
	NC output (only SE1604 and SE1622 models have nc output with a trigger distance of 10-20 mm)	
Hit count	20,000 times	
Material of the surface	TPE elastomer, epdm rubber (black)	

protective layer	
Ambient temperature	-20℃ ~55℃
Levels of protection	IP65 (customizableIP67)
Maximum humidity (23 degrees)	95% (condensation)
Response time	13 ms
Common difference	± 3mm below 1m; ± 6mm below 3 mm; ± 15mm above 6m;
Hole distance / bend	Hole distance tolerance ± 0.5~1mm; bending tolerance ± 1~2mm
Standard wiring harness	Length: 40 cm (customizable); wire diameter: 3.5mm; copper core section: 0. 25mm^2 ; ≥60n
Length / tanof number	Single unit length of 6m; series not exceeding 5 strands
Backglue strength	≥60n/mm
Corrosion preventive	Resistance to mild acid and alkali
Accord with	The safety contact system composed of a safety edge and a Tner-A31 \ SRC106 \ CDSR-DN1104 safety relay meets the following standards. EN1760-2 EN ISO13856-2 EN62061 EN ISO13849-1 EN IEC61508 EN60204-1

Note: Please contact the manufacturer for other customized specifications

Technical parameters of Safety Edge

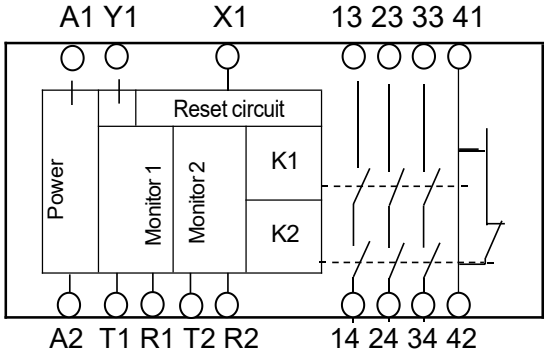
7. Controller wiring instructions

Note: The Safety Edge must not directly contact the power supply, and need the auxiliary use of the safety relay or other switch mode relay.

This product comes with detection: four wire Safety Edge and 2 wire with resistance Safety Edge wiring is correct, whether the connection is virtual function. If the wiring is wrong, or the line is broken, the safety relay will actively respond to the safety function.

7.1. Safety relay wiring instructions

Safety forced disconnection relay output
3 NO transient Safety Edges (3NO)
1 NC transient Safety Edge (1NC)
Automatic reset switch
The automatic / manual reset switch can be configured
Safety features
Redundant circuit and with a self-monitoring function
Dual channel, when the components of the failure, the safety function is still effective
Safety Edges are automatically disconnected and closed during each open-close cycle



System module diagram



Figure 5 Safety relay

7.1.1 Function description of the wiring terminal

A1	Power Supply Positive Pole (24VDC)	A1 and A2 serve as the power supply
A2	Power negative (0V)	
T1	Channel 1 signal output	Type I signal source
R1	Channel 1 is a safe place of input	Accept type I signal input with short circuit, open circuit detection and channel 2 inspection
T2	Channel 2 signal output	Type II signal source
R2	Channel 2 is a safe place for the input	Accept type II signal input, with short circuit, open circuit detection and channel 1 mutual test
X1	Reset input (manual reset or automatic reset) Automatic reset to DC24V, manual reset button (open point)	Automatic reset: If the input condition is satisfied, the unit is activated immediately Manual reset: the input conditions are met, and the reset loop is then manually closed, the unit is activated
Y1	Transistor signal output	The output state signal indication can be input as a PLC signal or connected to an external indicator light
13/14	NO instantaneous Safety Edge (output NO when Safety Edge trigger)	The unit can be connected to the safety relay unit on the contact to increase the number of contacts
23/24		
33/34		
41/42	NC transient Safety Edge (output NC when touching edge trigger)	Can be used as an external signal lamp or the control of other devices

Safety Relay Terminal Functions

7.1.2 Description of LED and reset lever

The LED indicator light status

■Normally bright ★☆Flash □ Off				
Function	**State**	**Power LED**	**Import LED**	**Output LED**
Safety Edge / carpet with resistance 2 wire	Input connection is disconnected / the connection is abnormal	■	★☆	□
	Safety Edge / rug is continuously pressed	■	■	★☆
	Safety Edge / carpet connection correctly / not reset	■	■	□
	Safety Edge / carpet connection correctly / reset	■	■	■
	System failure	★☆	□	□
	Input connection disconnected (detection not supported)	■	★☆	□
	Input connection exception	■	■	★☆
	Safety Edge / rug is continuously pressed	■	■	★☆

No resistance 2-wire Safety Edge / carpet	Safety Edge / carpet connection correctly / not reset	■	★☆	□
	Safety Edge / carpet connection correctly / reset	■	■	■
	System failure	★☆	□	□
4-line Safety Edge / carpet	Input connection is disconnected / the connection is abnormal	■	★☆	□
	Safety Edge / rug is continuously pressed	■	■	★☆
	Safety Edge / carpet connection correctly / not reset	■	■	□
	Safety Edge / carpet connection correctly / reset	■	■	■
	System failure	★☆	□	□
	Output interference / input inlet water	■	★☆	★☆

For system failure, check whether the side dial and front dial switch (automatic reset and manual reset wiring) are correct, provide a separate DC24V power to the safety relay

Functions of the safety relay terminal

Reset the rod operation

	State	Explain
Reset the rod	A	Can be configured as automatic reset function (x1 to the power supply)
	M	Can only be configured as a manual reset function (x1 connects to the power cathode through the reset button, refer to the connection legend)

Description of the reset lever

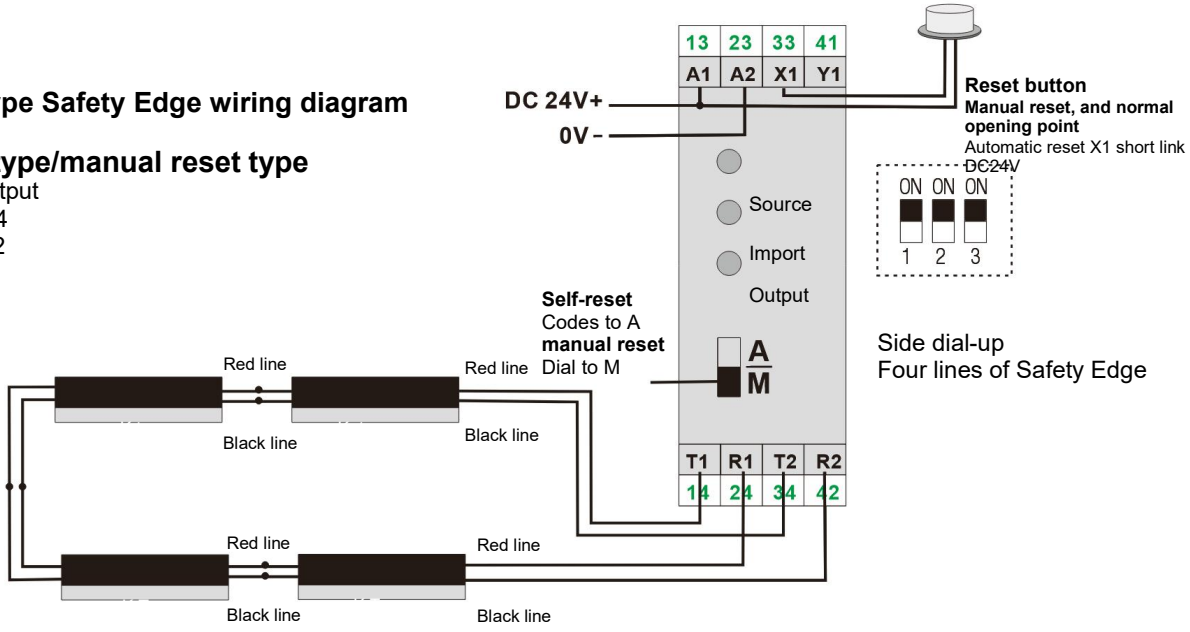
7.1.3 SRC106 Safety relay wiring diagram

The Safety Edge can be selected as a four core (K-type/KR type) wiring method or a 2-core (R-type) wiring method with live resistance. Before wiring, determine whether the Safety Edge is 4-core or 2-core; Choose between automatic reset or manual reset wiring method

A. Four-wire K-type Safety Edge wiring diagram

Automatic reset type/manual reset type

Relay contact point output
13 / 14; 23 / 24; 33 / 34
Often open use 41 / 42

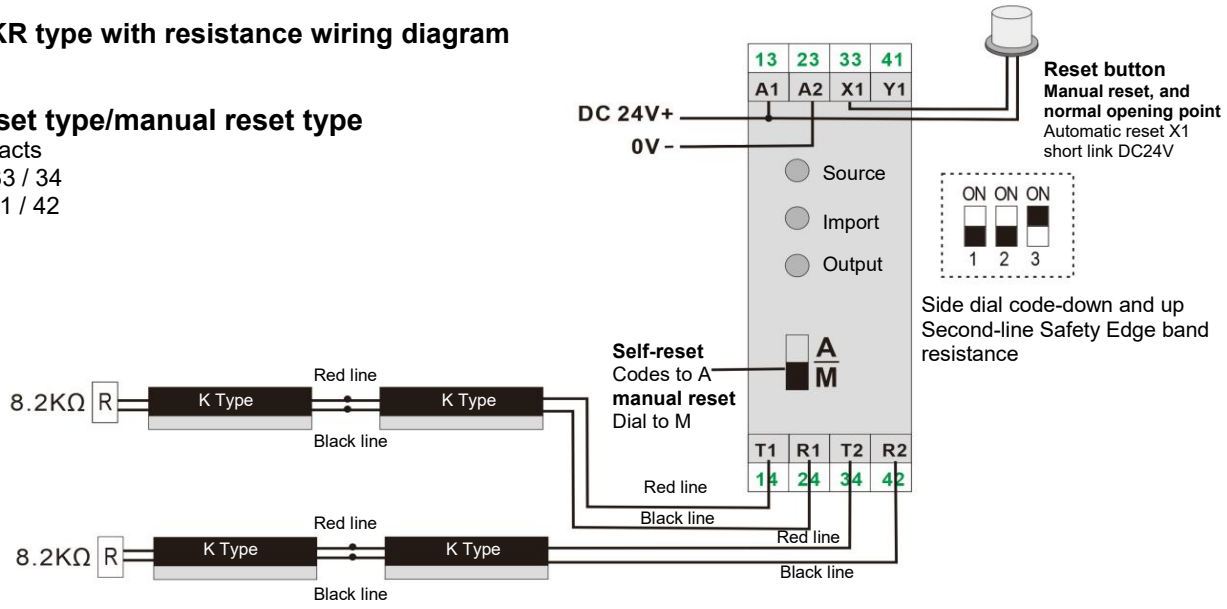


Four-wire K-type wiring diagram

B. Four-wire KR type with resistance wiring diagram

Automatic reset type/manual reset type

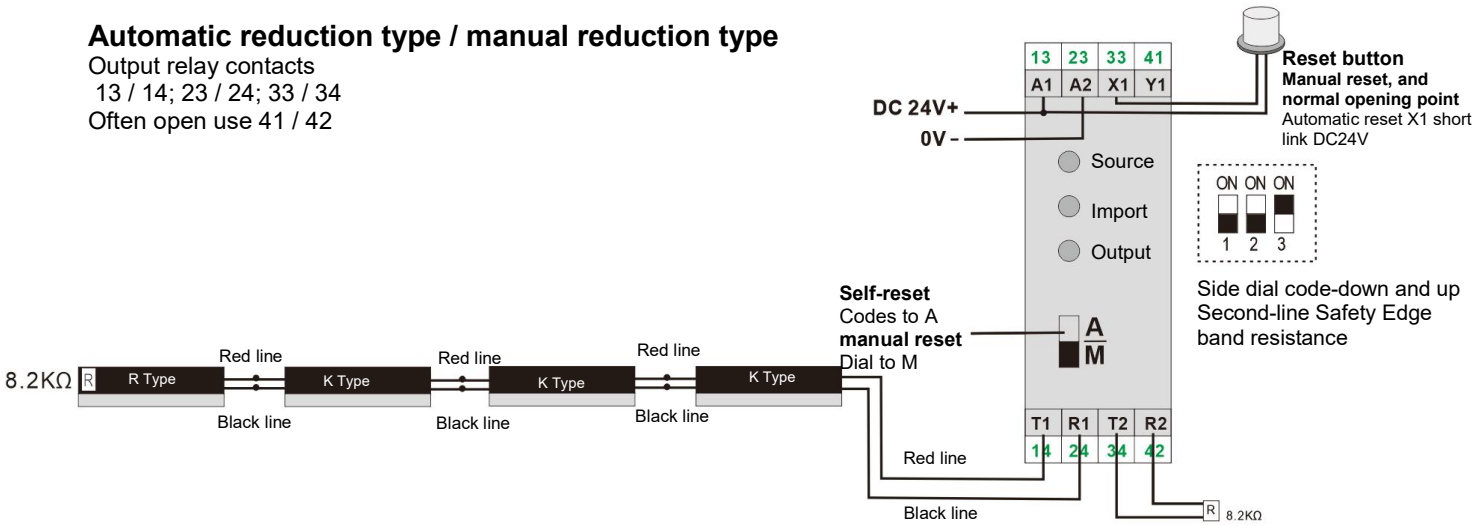
Output relay contacts
13 / 14; 23 / 24; 33 / 34
Often open use 41 / 42



C .Two-wire R-type built-in resistance wiring diagram

Automatic reduction type / manual reduction type

Output relay contacts
13 / 14; 23 / 24; 33 / 34
Often open use 41 / 42



Second-line type R wiring diagram

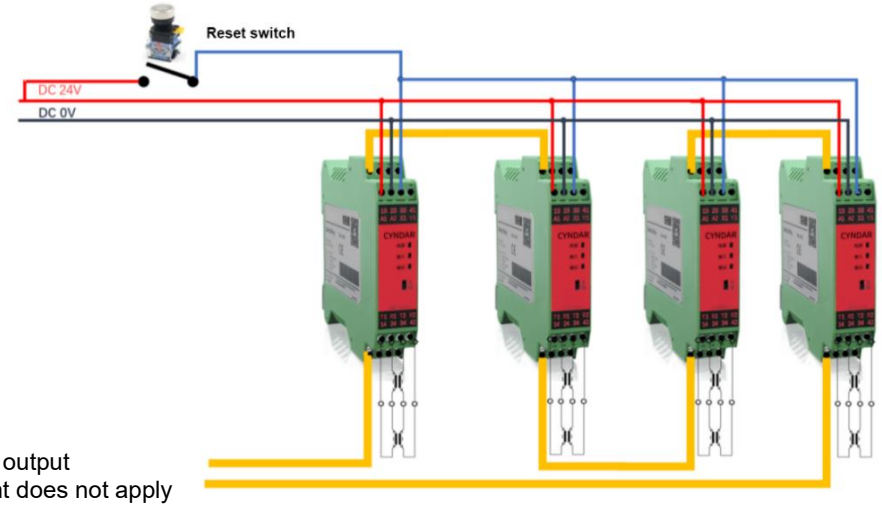
7.1.4 Safety relay parameters

Source	
Power supply voltage	24v dc
Voltage tolerance	+10%/-20%
Power dissipation	2.9w
Output	
Relay safety output	3no+1nc
Transistor signal output	<500ma 24vdc
Relay contact capacity	
Ac-1	6a/250vac/1500va
Ac-15	4a/240vac
Dc-1	6a/24vdc/150w
Dc-13	4a/24vdc
Maximum switching capacity	12a (assigned to all safety output contacts)
Contact resistance	<100mω
Minimum load	10ma/5v
Touch material	Agsno2 + 0.2μmau
Conventional parameters	
Output fuses (external)	5a gl/gg
Release response time	<30m s (from input to output),
Check the resistance at the end of the input component (Safety Edge / carpet)	1kω ~ 10kω
Electrical life	And 80,000 times
Class of pollution	2
Working temperature	-25℃ ~ 85℃
Working humidity	35% -85% (unfrozen or condensed)
Impulse withstand voltage	2.5kv
Levels of protection	Housing ip30, terminal ip20, recommended for cabinet or housing ip54
Storage temperature	-40℃ ~ 105℃
Case material	Flame-retardant pa66
Way to install	Standard 35 mm din, guide rail / spring snap buckle
Size	114.5mm×100.5mm×22.5mm

Weight	172g
Connection parameter	
Rrigid wire wire available cross-section range	0.5~2.5mm²
Flexible wire has an available cross-section range	0.5~2.5mm²
Minimum conductor cross-section	AWG 24
Maximum conductor cross-section	AWG 12
The strip length	8mm
Minimum fastening torque	0.5 nm
Maximum fastening torque	0.6 nm
Standard application	
Accord with	EN 60947-1:2007A2:2014
	EN 60947-5-1:2004/A1:2009
	EN ISO 13849-1:2015
	CE

Safety Relay arameters

7.1.5 Series wiring method of safety relay



NC-point signal output
Often open point does not apply

7.2 SEC-A67 Safety Edge controller(Economy type) wiring instructions

The Safety Edge often open signal to often close signal, improve product safety, single channel.

Check the alarm, monitor the system for any short circuit or open circuit, and display its status with the LED indicator light.

Support the traditional normal open type and string resistance type safe Safety Edge wiring (no line break detection).

One group of NO and one group of NC signal output.

Standard 35mm guide rail type installation.

Internal resistance support 1 KΩ -12 KΩ 2, trigger resistance maximum support 500 Ω.

12V-36V wide voltage input.

Support multiple safe Safety Edge series, broken line independent output.



SEC-A67

7.2.1 Specification and parameters

Product model	SEC-A67
Number of safety edge	6~7 pieces and 20m in total length
Rated voltage	Dc 24v
Voltage range	Dc 12v~36v
Maximum current	50ma

Safe output	Max dc24v 3a
Load resistance	3KΩ~30kΩ
Trigger resistance	0Ω~500Ω
Durability	One million times
Case material	Abs
Levels of protection	Ip20
Use ambient temperature	-20~55℃
Use ambient humidity	85 RH(no condensation phenomenon)
Appearance size	L95*w25*h47mm
Weight	50g±10%

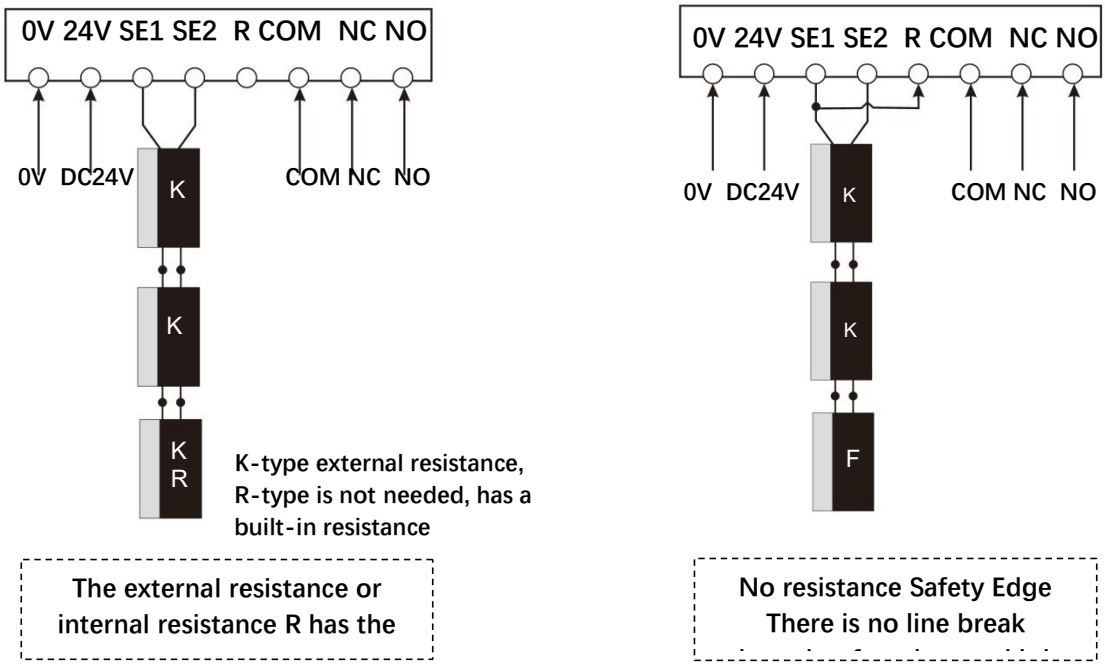
Safety Edge controller parameters

Debugging

Fault phenomenon	Check and confirm	Treatment measure
Buzzer warning	Whether the safety edge is not cross resistance	Confirm that the safety edge is a cross resistance
	Whether the safe Safety Edge is well connected	Verify that the safety edge is properly connected
No-output	Whether the power supply is normal	Confirm that the power supply is normal
	Whether the resistance value is too large after the safety edge trigger	Verify that the post-trigger resistance value is 500Q

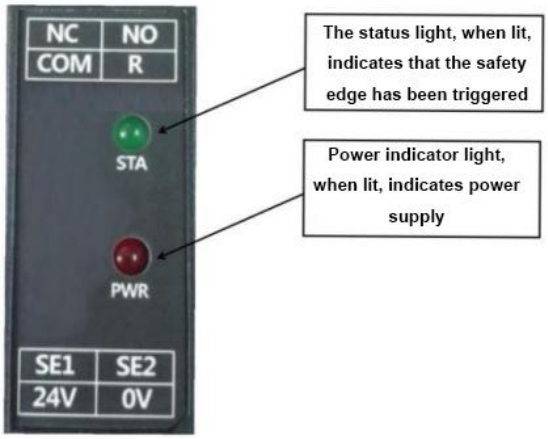
Troubleshooting

7.2.2 Wiring diagram



Wiring diagram of the Safety Edge controller

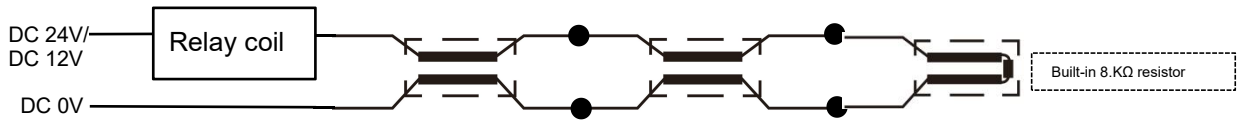
SEC-A67: COM and NC are connected, and COM and NO are disconnected. When the Safety Edge is triggered, the STA light is on, COM is disconnected from NC, and COM and NO are turned on. When the safety edge is broken, the STA light is on, COM and NC are disconnected, COM and NO are on, and the buzzer alarms.



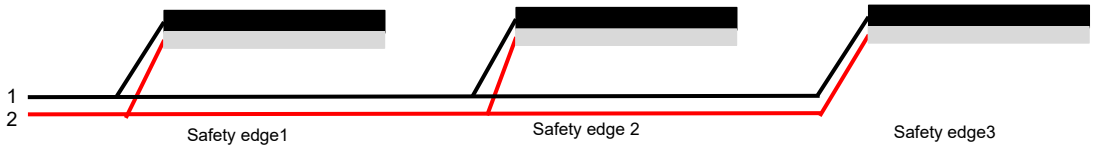
The indicator light

7.3 Relay coil normally open wiring diagram—— This diagram is a non-safe circuit wiring mode

The safety contact edge is a passive contact output. The maximum voltage and current cannot exceed DC24V, 100mA. If it exceeds, it will burn out. It cannot be directly connected to the power supply.



Another parallel connection method for N safety edges



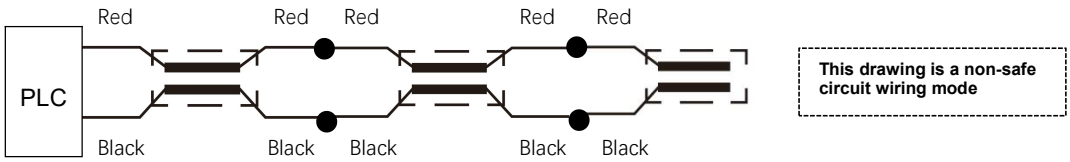
Whether in series or parallel mode, triggering any safety edge will trigger a signal.

- Wiring Instructions:
- Red wire to the negative terminal of the relay coil
- Black wire to the negative terminal of the power supply
- Note: The current should not exceed 100mA

7.4 PLC wiring diagram

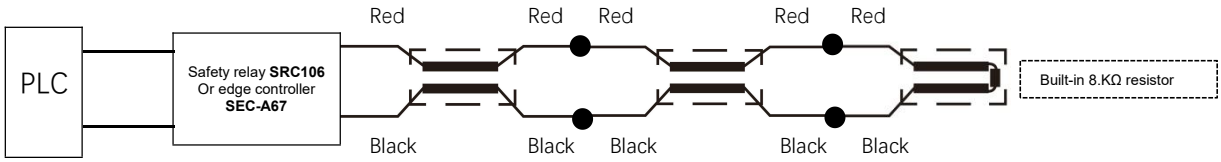
The safety contact edge is a passive contact output. The maximum voltage and current cannot exceed DC24V, 100mA. If it exceeds, it will burn out. It cannot be directly connected to the power supply.

①NO model - edge wiring



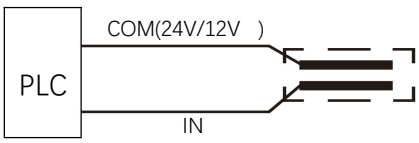
NO Type wiring instructions:
Black line connected to PLC common terminal (0V)
Red wire connected to PLC input terminal
Note that the current should not exceed 100mA

②Wiring for built - in resistance touch - edge type



The controller can monitor whether there are short - circuit or open - circuit conditions in the system and display its status through an LED indicator.

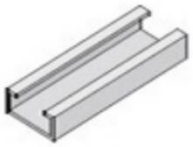
③Wiring for NC model



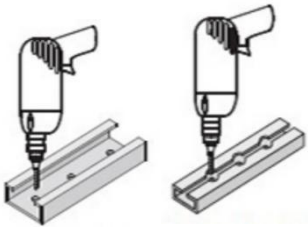
8. Installation instructions

Safety Edge must be installed by the designated person

1. For convenience, Safety Edge installation. The mounting base shall be fixed to a flat surface. If the Safety Edge need to be installed in a certain arc. The bending radius shall not be less than the specified minimum value.



2. The installation base can be fixed with sink / flat head, screws or rivets. The diameter is 3~4mm enough. The nail hole is the one of 3.5~4.5mm. Must be evenly distributed over the entire length of the mounting base. Hole spacing shall not exceed 300mm: the sunk holes must be processed by screw size.

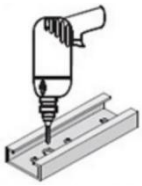


When using a special base, drill a guide hole in the groove to ensure that the head of the sink screw can through (about 8mm).

3. If there are cables in the small base, you cannot use flat or round head screws. It may damage the connecting wires in the installation base,

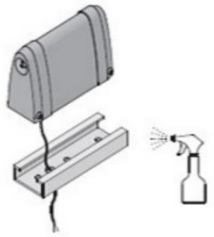


4. The cable passes through the base to drill a 5mm hole in place for the outgoing line. Carefully remove the burrs from both sides.

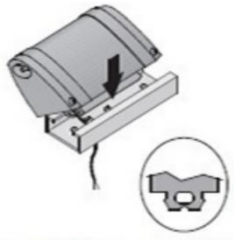


5. If it is a K-type Safety Edge, the end Safety Edge can be insulated with the remaining cable or the terminal resistance cable end placed in the base.

6. To make Safety Edge easier to install. Soap water should be sprayed on the installation base and the Safety Edge side. The soapy water after evaporation. Safety Edge can be firmly fixed to the aluminum base,



7. In order to avoid, Safety Edge, after sliding, do not use talc, oil and other effects of lasting lubricant



Type C base

8. For Safety Edge with a C-shaped base, one side must be buckled into the mounting base. Then press into the whole C-shaped base. Pushing and pulling the Safety Edge in the installation base will cause the Safety Edge loss.try to avoid.

9. For Safety Edge with a T-shaped base, it should be inserted from the side along the slot of the mounting base.



T-shaped base

Other fastening methods should be used. Prior consultation with the manufacturer is required.

10. For some rubber strips without a base, the 3M back adhesive installation method is adopted.

11. For the Safety Edge, there will be signal output without collision after the installation. Due to the special elasticity of the rubber material, the electrical conductor is squeezed during the installation, which needs to be removed and straightened before reinstalled.

9. Precautions for safe edge contact.

9.1 Storage environment and use environment

Storage and use environment requirements Do not store or use this product in a long-term direct sunlight environment.

Do not save and use outside of ambient temperature-35℃ to + 80℃.

Do not save and use outside the pressure 86 " 106 KPa.

Do not preserve and use them in an environment containing highly corrosive or combustible gases;

9.2 Notes for installation

Do not lift or move the safe Safety Edge by pulling the cable.

Use a special bracket to install the Safety Edge.

Do not fold or punch a hole on the Safety Edge.

Do not install Safety Edges in a raised area, but on a smooth, smooth surface.

9.3 Notes for use

Be sure to use the Safety Edgees in the labeled voltage range of this article or in conjunction with the safety relays included in this description.

Do not apply a load on a position of the Safety Edge for a long time, otherwise it may cause Safety Edge damage.

Do not immerse safe touches in water or for frequent splashing.

Please use it strictly in accordance with the chemical resistance of the product

10. Precautions for safe edge contact.

10.1 Safety edge customization method

1). Select the model first and confirm that the cross-sectional dimensions of the model can be installed on your equipment.

2). Confirm the length of the safety edge customization; if it is a customized arc, please send a drawing (plan or CAD drawing).

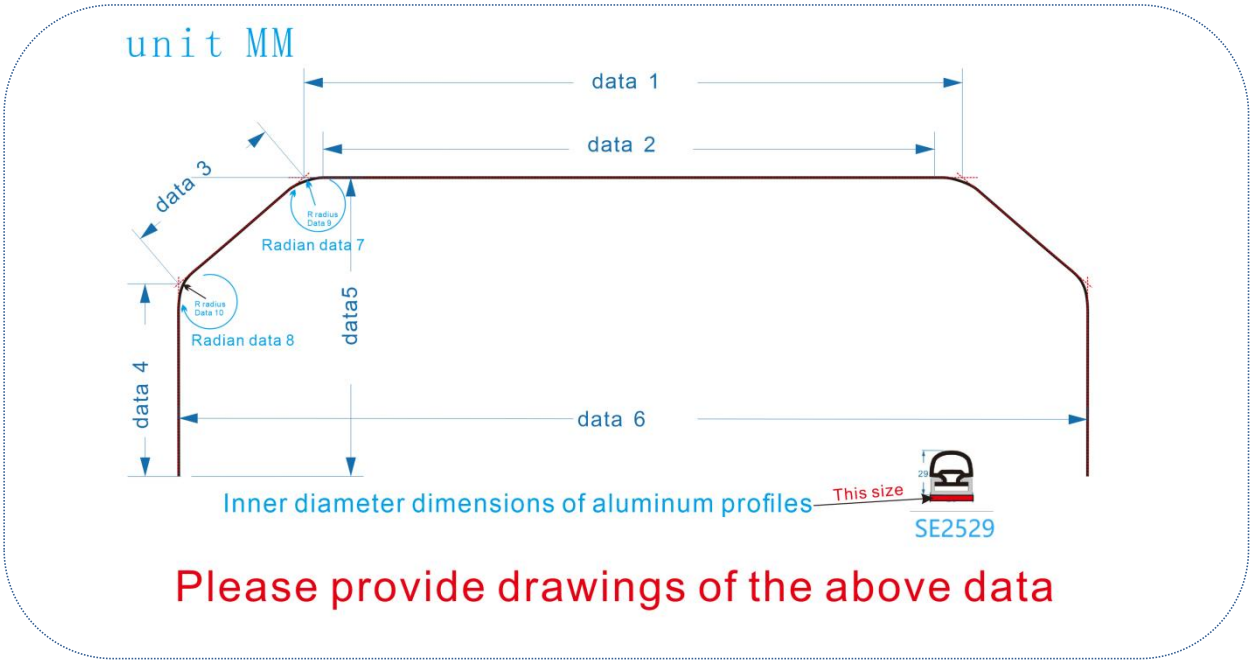
3). Then determine the wiring method.

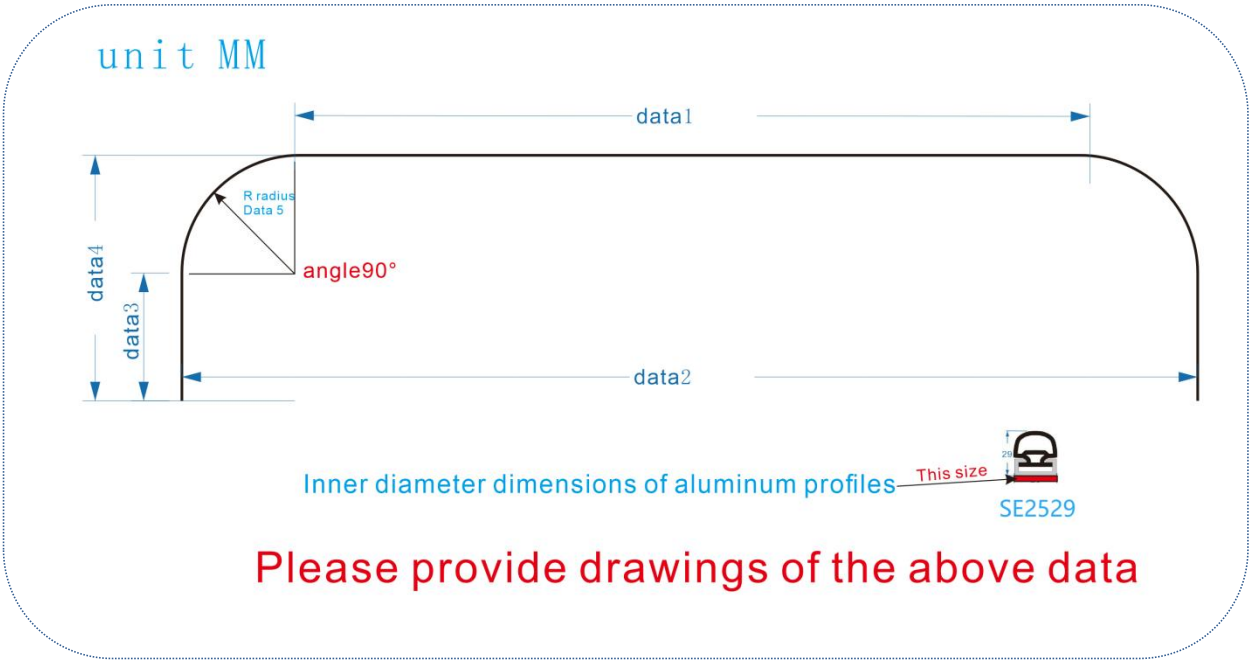
4). Confirm whether it is necessary to equip the safety relay SRC106 or the edge controller SEC-A67. Note that the edge will burn out if it is directly connected to the power supply. The controller has a disconnection detection, and the output has a normally closed point and a normally open point.

5). If you need us to drill holes, please provide drawings and mark the drilling positions. Please note that there will be errors in drilling holes, and only round through holes can be drilled, and other types of holes cannot be drilled.

10.2 Drawing Examples

All data must be provided





CYNDAR

GZ Cyndar Co., Ltd.
Address: No.3, Qingxu Street, Tianhe District, Guangzhou City
Tel/WhatsApp/WeChat: +86-18922155361 Email: sale1@cyndar.net

Official Website



GZ CYNDAR CO.,LTD.