

SAFETY LIGHT CURTAINS

FOR MACHINES



Electronic Switches (I) Pvt. Ltd. presents Safety Light Curtains - Affordable safety solutions for your shop floor. Safety is the most integral part of working Environment. For over Three decades our products have ensured safety across millions of workplaces across India. Our products are designed for hands, fingers, body safety used in various machinery such as moulding machines, SPM Machines, Hydraulic & Pneumatic Power Press manufacturers etc.

FEATURES

Safety Light Curtains for
Finger, hand and body Safety
with Cross-beam features

Long Range Safety Light
Curtains for Conveyor
Application

Light Curtains for Height
Detection application

Diffuse Light Curtains for Area
Sensing Application

Retro-Reflective Light
Curtains

Light Curtains for Passage
Confirmation Application

For Bin Application
Picking Sensor for Pick to
Light Application

- Offers Safety Standard Type 4 when used with Controller.
- Easy to install & can be mounted in any position, Vertical / Horizontal.
- Non-Critical alignment between Emitter & Receiver.
- Blanking / By-Passing individual channel is provided .
- System operation is unaffected by mains power fluctuations.
- Machine OFF if screen is too dirty or oily.
- Barrier operates on cyclic scanning photo-electric infra-red techniques.
- Various barrier heights are available for covering 90 mm to 1890 mm .
- Higher covering heights available upon request.
- Use of solid state components & special construction technique ensures that barrier is not affected by normal vibrations & shocks.
- Sensor connections are provided through plug in connectors.
- Self Checking Circuitry with two outputs continuously monitors failure of any of the beam in the system and stop the machine if failure is detected.
- LED Indications are provided for status indication of each channel.
- LED indications are also provided for each output.
- Choice for suitable Control Unit available as per different working conditions.
- Flexible fixing arrangements to suit individual requirement.
- Increases productivity while maintaining required safety.

SENSOR SPECIFICATIONS

Series : LC / LX / FX / PX

Power Supply	: 12 - 24 Volts DC
Supply Protection	: Reverse Polarity Protected
Output	: Duel Output : PNP or NPN / NO or NC
Output Indications	: Through LEDs
Channel Indication	: LED indication for each channel
Response Time	: On to Off : 10 - 15 m sec. Off to On : 50 - 100 m sec
Restart	: Automatic
No of beams	: 6, 8, 10, 12,16, 20, 24, 32, 40, 48, 56, 64 nos.
Beam By Pass	: Provided in hand / body protection models
Protected Heights	: 90 - 1890 mm
Pitch offered	: 11 - 20 - 30 - 40 - 50 - 90 mm
Adjustable Range	: Up to 3 meters (Higher range up to 20 meters available)
Electrical Connections	: Plug in Connector for Emitter & Receiver
Standard Cable length	: 5 meters for emitter, 3 meters for receiver
Operating Temperature	: Up to 55 Degrees centigrade
Fastening Modes	: Slide Slot on the back with adjustable height
Cross Section	: 36 x 42 mm / 36 x 35mm
Applicable to	: Directly work with PLCs / Controllers
Suitable for	: Machines with quick emergency stop
Protections	: Output short circuit protected.
Vibration Resistance	: Amplitude : 0.75 mm (p) Freq : 10 - 55 Hzs Rate : 1 Octave / min
Operating ambient Light	: 500 Lux (max.) when source is places opposite to receiver : > 3000 lux when source placed at an angle of 20 degrees

CONTROLLERS



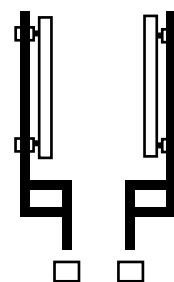
Control Unit : Wall Mount
Size: 235 x 120 x 50 mm
Model : 2CW



Control Unit : Panel Mount
Size : 96 x 96 x 120 mm
Model : 2CP



Control Unit : DIN Rail
Size : 100 x 70 x 114 mm
Model : 2CD



Mounting Stand
Model : MS

CLAMPS



Vibration Dampers
Model : VD



S-TYPE



S-TYPE



L-TYPE



L-TYPE

SAFETY LIGHT CURTAINS

Series : LC / LX



TYPE-4

IEC Standard:
IEC 61496-1-2

HAND Protection : Models with 2 Outputs

Supply : 12 - 24 Volts DC

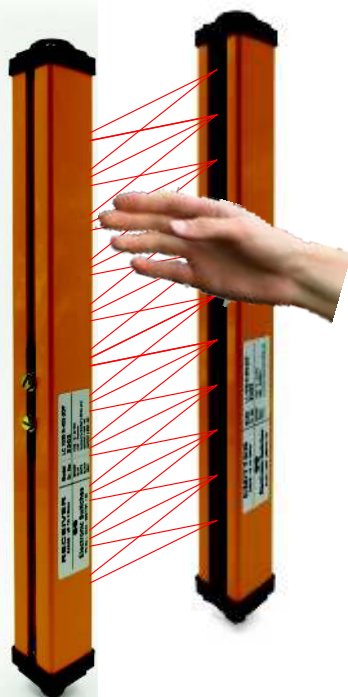
Covered Range : LC : 300 mm - 3/5/10/15/20 mtr

LED Indication and By-Pass for each beam

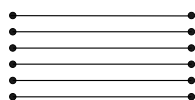
Output : PNP / NPN - NO / NC

LX : 500 mm - 3/5/10/15/20 mtr

LX (Pitch50):1- 3/5/10/15/20 mtr



LC MODELS



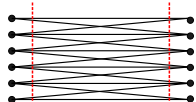
Type : Parallel Beam

No of Beams : 6 nos

Active Beams: 6 nos

Min.Range : 300 mm

LX MODELS



→More Effective←

Type: Cross Beam

No of Beams: 6 nos

Active Beams: 16 nos

Min.Range: 500 mm

Models Available in:

- CE - Type 4 : LC & LX Series with 2OP
- 2 OP (Two Outputs) All Series
- 1 OP (One Output) All Series

PROTECTED HEIGHT	PARALLEL BEAM		CROSS BEAM		PITCH	OVERALL HEIGHT
mm	Models		Models	Beam	mm	mm
150	LC 0630	6	LX 0630	16	30	245
180	LC 1020	10	LX 1020	28	20	295
200	LC 0640	6	LX 0640	16	40	295
210	LC 0830	8	LX 0830	22	30	295
250	LC 0650	6	LX 0650	16	50	345
270	LC 1030	10	LX 1030	28	30	365
280	LC 0840	8	LX 0840	22	40	370
300	LC 1620	16	LX 1620	46	20	405
330	LC 1230	12	LX 1230	34	30	410
350	LC 0850	8	LX 0850	22	50	440
360	LC 1040	10	LX 1040	28	40	455
380	LC 2020	20	LX 2020	58	20	485
440	LC 1240	12	LX 1240	34	40	545
450	LC 1050	10	LX 1050	28	50	545
450	LC 1630	16	LX 1630	46	30	530
460	LC 2420	20	LX 2420	70	20	570
500	LC 2620	26	LX 2620	76	20	615
570	LC 2030	20	LX 2030	58	30	650
600	LC 1640	16	LX 1640	46	40	685
620	LC 3220	32	LX 3220	94	20	740
690	LC 2430	24	LX 2430	70	30	770
750	LC 1650	16	LX 1650	46	50	840
760	LC 2040	20	LX 2040	58	40	855
780	LC 4020	40	LX 4020	118	20	885
810	LC 2830	28	LX 2830	82	30	890
920	LC 2440	24	LX 2440	70	40	1010
930	LC 3230	32	LX 3230	94	30	1010
940	LC 4820	48	LX 4820	142	20	1050
1050	LC 3630	36	LX 3630	106	30	1130
1080	LC 2840	28	LX 2840	82	40	1170
1100	LC 5620	56	LX 5620	166	20	1205
1150	LC 2450	50	LX 2450	70	50	1240
1170	LC 4030	40	LX 4030	118	30	1255
1240	LC 3240	32	LX 3240	94	40	1335
1290	LC 4430	44	LX 4430	130	30	1385
1400	LC 3640	36	LX 3640	106	40	1500
1410	LC 4830	48	LX 4830	142	30	1490
1530	LC 5230	52	LX 5230	154	30	1620
1550	LC 3250	32	LX 3250	94	50	1650
1560	LC 4040	40	LX 4040	118	40	1665
1650	LC 5630	56	LX 5630	166	30	1730
1720	LC 4440	44	LX 4440	130	40	1830
1880	LC 4840	48	LX 4840	142	40	1970
1890	LC 6430	64	LX 6430	190	30	1970
2040	LC 5240	52	LX 5240	154	40	2160

SLEEK SAFETY LIGHT CURTAINS

Series : SLC / FX / RLC



HAND Protection : Models with 2 Outputs

Supply : 12 - 24 Volts DC, Covered Range : 300 - 3000 mm,
Dual PNP NC Output, LED Indication for each channel, By-Pass facility for each beam,
Cross Section : 27.5 x 26 mm, Easy Mounting. Control Unit can be used for
Relay output & 230V AC power supply.

PROTECTED HEIGHT	PARALLEL BEAM		CROSS BEAM		PITCH	OVERALL HEIGHT
mm	Models	Beam	Models	Beam	mm	mm
280	SLC 0840 - 2OP	8	SLX 0840 - 2OP	22	40	385
350	SLC 0850 - 2OP	8	SLX 0850 - 2OP	22	50	455
440	SLC 1240 - 2OP	12	SLX 1240 - 2OP	34	40	555
550	SLC 1250 - 2OP	12	SLX 1250 - 2OP	34	50	655
600	SLC 1640 - 2OP	16	SLX 1640 - 2OP	46	40	705
750	SLC 1650 - 2OP	16	SLX 1650 - 2OP	46	50	855
760	SLC 2040 - 2OP	20	SLX 2040 - 2OP	58	40	865
920	SLC 2440 - 2OP	24	SLX 2440 - 2OP	70	40	1025
950	SLC 2050 - 2OP	20	SLX 2050 - 2OP	58	50	1050
1080	SLC 2840 - 2OP	28	SLX 2840 - 2OP	82	40	1195
1150	SLC 2450 - 2OP	24	SLX 2450 - 2OP	70	50	1255
1240	SLC 3240 - 2OP	32	SLX 3240 - 2OP	94	40	1365
1350	SLC 2850 - 2OP	28	SLX 2850 - 2OP	82	50	1455
1550	SLC 3250 - 2OP	32	SLX 3250 - 2OP	94	50	1655

FINGER PROTECTION : MODELS WITH 2 OUTPUTS



Supply : 12 - 24 Volts DC, Covered Range : 150 - 3000mm
LED Indication for Output, Output : PNP / NPN - NO / NC

PROTECTED HEIGHT	PARALLEL BEAM	CROSS BEAM		PITCH	OVERALL HEIGHT
mm		Models	Beam	mm	mm
100	NA	FX 1011	28	11	205
165	NA	FX 1611	46	11	275
245	NA	FX 2411	70	11	370
340	NA	FX 3211	94	11	455
430	NA	FX 4011	118	11	545
515	NA	FX 4811	142	11	630
605	NA	FX 5611	166	11	720
695	NA	FX 6411	190	11	805
781	NA	FX 7211	213	11	905

RETRO-REFLECTIVE AREA SENSOR

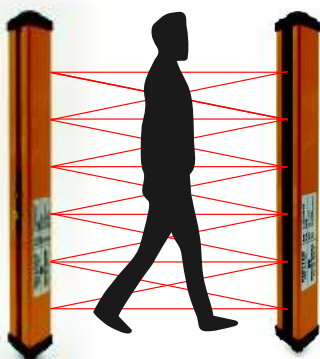


Supply : 12 -24 Volts DC, Covered Range : Up to 500 mm
PNP NC Output, LED indication for output

PROTECTED HEIGHT	PARALLEL BEAM		PITCH	OVERALL HEIGHT
mm	MODELS	BEAM	mm	mm
100	RLC 0620	6	20	185

BODY PROTECTION AREA SENSOR

Series : LC / LX / DA

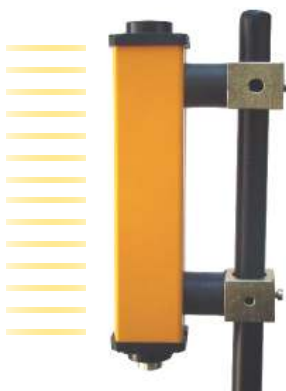


Supply : 12 -24 Volts DC, Covered Range : 500 - 3000 mm,
LED indication and Beam By-Pass for each channel, 1OP / 2OP Output
Output : PNP / NPN - NO / NC

PROTECTED HEIGHT	PARALLEL BEAM		CROSS BEAM		PITCH	OVERALL HEIGHT
mm	Models	Beam	Models	Beam	mm	mm
270	LC 0490	4	LX 0490	10	90	405
630	LC 0890	8	LX 0890	22	90	765
990	LC 1290	12	LX 1290	34	90	1125
1350	LC 1690	16	LX 1690	46	90	1485
1710	LC 2090	20	LX 2090	58	90	1845
2070	LC 2490	24	LX 2490	70	90	2205
2430	LC 2890	28	LX 2890	82	90	2555

DIFFUSE AREA SENSOR

Supply : 12 -24 Volts DC, Covered Range : Up to 2000 mm
PNP NO / PNP NC Output, LED indication for output



PROTECTED HEIGHT	DIFFUSED SCAN		PITCH	OVERALL HEIGHT
mm	Models	Beam	mm	mm
100	DA 0620	6	20	185
280	DA 0840	8	40	370
350	DA 0850	8	50	440
270	DA 1030	10	30	365
440	DA 1240	12	40	530
600	DA 1640	16	40	685
750	DA 1650	16	50	840
760	DA 2040	20	40	855
920	DA 2440	24	40	1010
1080	DA 2840	28	40	1170
1150	DA 2450	24	50	1240
1240	DA 3240	32	40	1335
1550	DA 3250	32	50	1640

HAND PROTECTION AREA SENSOR

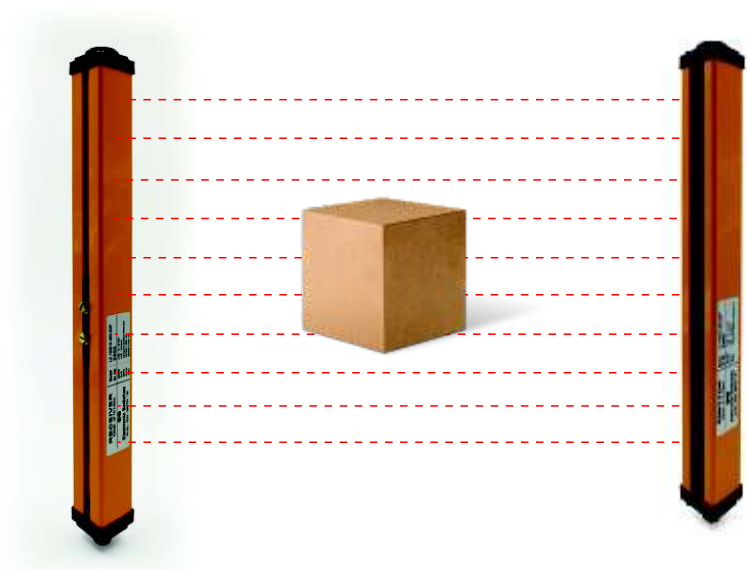
Supply : 12 -24 Volts DC, Covered Range : Up to 500 mm
PNP / NPN - NO / NC Output, LED indication for output



PROTECTED HEIGHT	PARALLEL BEAM		CROSS BEAM		PITCH	OVERALL HEIGHT
mm	Models	Beam	Models	Beam	mm	mm
90	LC 0430 - 1OP	4	LX 0430 - 1OP	10	30	180
100	LC 0620 - 1OP	6	LX 0620 - 1OP	16	20	185
120	LC 0440 - 1OP	4	LX 0440 - 1OP	10	40	210
150	LC 0450 - 1OP	4	LX 0450 - 1OP	10	50	240

HEIGHT PROFILE SENSOR

Series : HS / LC



Supply : 12 -24 Volts DC, Covered Range : 500 - 3000 mm,
Output : BCD
LED indication and Beam By-Pass for each channel.

PROTECTED HEIGHT	PARALLEL BEAM		PITCH	OVERALL HEIGHT
mm	Models	Beam	mm	mm
375	HS 0675	6	75	560
375	HS 1625	16	25	560
750	HS 3125	31	25	1060

LONG RANGE LIGHT CURTAIN

Supply : 12 -24 Volts DC, Covered Range : 3 / 10 / 15 / 20 / 30 / 40 mtr
LED indication for each channel, Output : PNP / NPN - NO / NC,

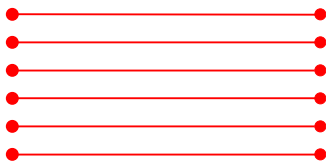


PROTECTED HEIGHT	PARALLEL BEAM		CROSS BEAM		PITCH	OVERALL HEIGHT
mm	Models	Beam	Models	Beam	mm	mm
270	LC 0490	4	LX 0490	10	90	405
630	LC 0890	8	LX 0890	22	90	765
990	LC 1290	12	LX 1290	34	90	1125
1350	LC 1690	16	LX 1690	46	90	1485
1710	LC 2090	20	LX 2090	58	90	1845
2070	LC 2490	24	LX 2490	70	90	2205
2250	LC 2690	26	LX 2690	76	90	2385
2430	LC 2890	28	LX 2890	82	90	2555
2610	LC 3090	30	LX 3090	88	90	2715
2790	LC 3290	32	LX 3290	94	90	2925
3150	LC 3690	36	LX 3690	106	90	3285

HOW TO ORDER

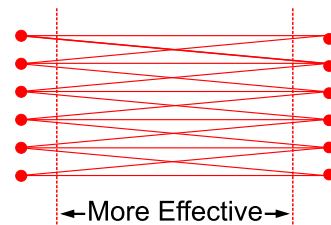
Model	LC	-	1030	-	4	-	03	-	20P	-	D
	LC LX FX		MODELS		4 3 2 1		03 05 10 15 20		CE TYPE 4 2OP 1OP		D CW CP CD
	SLC SLX DA RLC								2OP 1OP		
SLC/SLX LC LX FX DA/RLC	SLEEK PARALLEL CROSS CROSS DIFFUSE/RETRO										
MODELS	SAFETY LIGHT CURTAIN										
4 3 2 1	OUTPUT - PNP - NC OUTPUT - PNP - NO OUTPUT - NPN - NC OUTPUT - NPN - NO										
03 05 10 15 20	RANGE - 03 METERS RANGE - 05 METERS RANGE - 10 METERS RANGE - 15 METERS RANGE - 20 METERS										
CE TYPE 4 2 OP 1 OP	OUTPUT - 2 OUTPUTS OUTPUT - 2 OUTPUTS OUTPUT - 1 OUTPUT										
D CW CP CD	DC TYPE - BUILT-IN CONTROLLER - OUTPUT PNP OR NPN CONTROL UNIT - WALL MOUNT - 220 VAC - RELAY OUTPUT CONTROL UNIT - PANEL MOUNT - 220 VAC - RELAY OUTPUT CONTROL UNIT - DIN MOUNT - 220 VAC - RELAY OUTPUT										

LC MODELS



Type: Parallel Beam | **No of Beams:** 6 nos
Active Beams: 6 nos | **Min.Range:** 300 mm

LX MODELS



Type: Cross Beam | **No of Beams:** 6 nos
Active Beams: 16 nos | **Min.Range:** 500 mm

PICK TO LIGHT Model : PAS 0523



Electronic Switches offers Pick to Light sensor for assembly or sub-assembly operation. These devices together form a system that helps Industrial automation manufacturer to reduce risk of errors in assembly process, boosting product quality and improving time required for production.

- 16mm Slim ABS plastic enclosure / Fast Response
- Easy mounting with flat base / LED Indication at side & at front
- PICK LED - Green LED / Sense LED - Red LED
- Range upto 1.5 mtr
- Microcontroller based IR Technology
- With M 12 Male connector at end of 6 inch cable / 2 mtr cable
- Elimination of Synch wire makes installation easy



AREA SENSORS - Model : AS 1606 & AS 0523



AS Series Area Sensors feature a flat and compact body size made of ABS Plastic. The sensors use high performance.

MODELS	AS 1606	AS 0525
No. of Beams	16	5
Pitch	6.2mm	23mm
Protected Height	92mm	92mm
Overall Height	127mm	127mm
Sensing Range	1.5 meter	1.5 meter

PICK TO LIGHT SYSTEM



Electronic Switches offers PICK TO LIGHT (PTL) system for various Assembly Line operations, Warehousing Solutions, or Large Factory Store operations. System operates with micro-controller based state of arts devices to ensure smooth and error free operations. Pick To Light devices are used with Computer based System, PLC or dedicated custom build controller.

Pick to Light (PTL) devices uses standard RS 485 MODBUS RTU protocol to communicate with master controller (Computer / PLC /Dedicated Controller) Normally input devices such as Bar code reader are connected to Master Controller. Based on the input received to the Master, it will switch ON light indication and display the quantity of item to be picked. This will indicate operator to pick material from that particular bin.

PAPER CUTTING MACHINE CONTROLLER



Model : PCM 03 / PCM 04 : For 3 / 4 beams
 Power Supply : 220 VAC or 110 VAC , Output : Relay Contacts @ 2 A (max),
 Controller : Metal Enclosure, Sensors : 18D x 35L (mm) , Non critical alignment
 Range : 3 Meters (max) , LED indication for each channel,
 By Pass switches for each beam, Total Guard By-Pass for unit

TWO HAND SAFETY CONTROLLER



Supply : 220 Volts AC, Output : Relay Contacts , Housing : Wall Mount or DIN Rail Used for Safety of Operator working on Machines, Also used on Mechanical Rolling Key Power Presses

PRESSURE SENSITIVE SAFETY MATS



SM MODELS



Max Contact Rating :200 mA
 Max Switching Voltage:10-30 VDC
 Cable :Pre Wired- 1 meter
 Maximum Weight :100 KG
 Thickness :10mm
 Dimensions :As per Chart
 Contact :Normally Open Type
 Connections :In series with Load

CSM MODELS



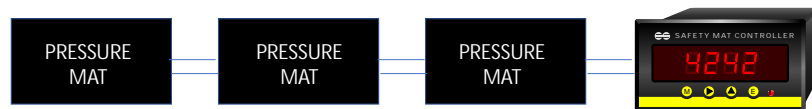
Rubber Mat : Anti-Skid Coined
 Max Contact Rating : 200 mA
 Max Switching Voltage: 10-30 VDC
 Cable : 1 meter
 Maximum Weight : 100 KG
 Thickness : 15mm
 Dimensions : As per Chart
 Contact : Normally Open
 Connections : In series with Load

INTELLIGENT CONTROLLER FOR SERIES CONNECTION

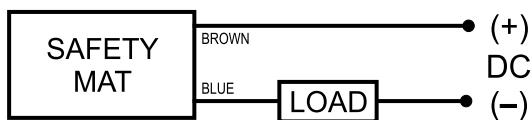


This Controller is for Series Models

Power - 230 V AC | Panel Mount Controller | Display : ½ Inch Seven segment display
 Dimensions - 48 x 96 x 110 mm | Display will indicate which mat has been pressed
 Advance Teach Facility is given for mat connection | Input - From safety mat in series connection
 Output 1 - Relay1 NC-C-NO This output will be activated when any mat is pressed.
 Output 2 - Relay 2 NC-C-NO This output will be ON if any of the interconnecting cable gets open .

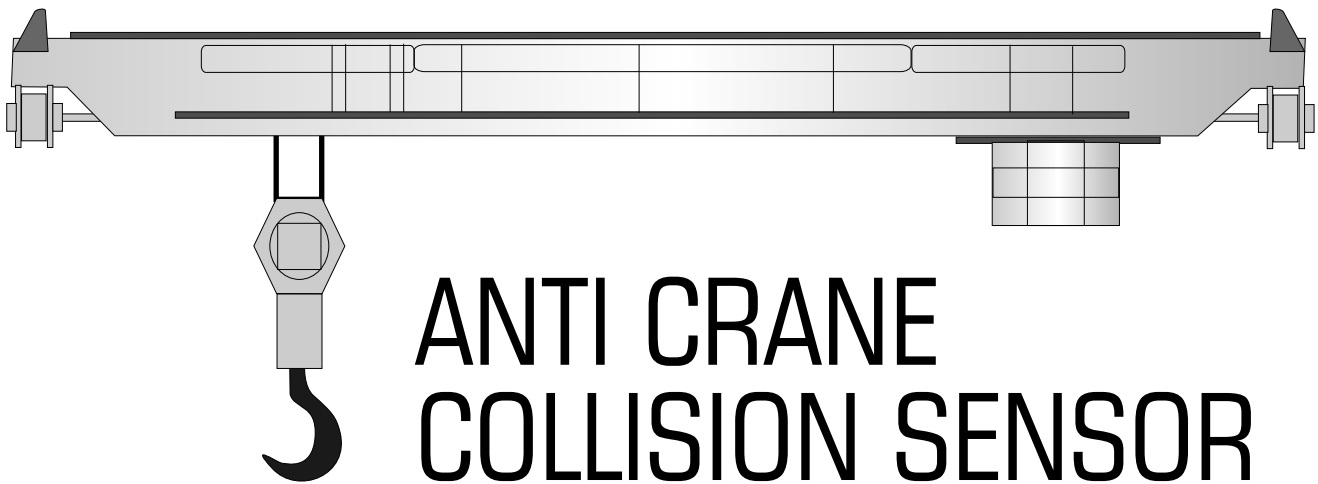


WIRING DIAGRAM :



MODEL SELECTION CHART

Sr. No.	Model	Length (L)	Width (W)	Height (H)
1	SM 520 X 390	520	390	10
2	SM 520 X 780	520	780	10
3	SM 750 X 750	750	750	10
4	SM 1000 X 500	1000	500	10
5	CSM 520 X 390	520	390	15
6	CSM 520 X 780	520	780	15
7	CSM 750 X 750	750	750	15
8	CSM 1000 X 500	1000	500	15



Electronic Switches offers Anti Crane Collision Switch for two over head cranes on the same rail. These units are installed on two cranes on the same rail approaching each other. With these units, the two cranes on the same rail will never collide with each other & thus the damage caused due to collision can be avoided. The minimum distance in between two cranes can be set and will always be maintained. The cranes will be able to move away from each other but not closer.

DUST-PROOF HOUSING (DP)	Model : ACC 03 Model : ACC 10 / 15	Model : ACC 102 (2 Set Points)	Model : ACC 102 LS
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(275 x 160 x 90 mm)



SPECIFICATIONS			
Model :	Model : ACC 03 / 10 / 15 / 20	Model : ACC 102 : 2 set Points	Model : ACC 102 LS : 2 set Points
Range:	3 / 10 / 15 / 20 Meters	8 and 10 Meters	10 Meters
Supply Voltage :	110 V AC or 220 V AC (User Selectable)	110 V AC or 220 V AC (User Selectable)	110V AC or 220 Volts (User Selectable)
Supply type :	Fixed supply voltage	Fixed supply voltage	Fixed supply voltage
Laser Alignment tool :	For Alignment of sensor and reflector	For Alignment of sensor and reflector	Laser Distance Sensor
No of set points :	Single Set Point	Two Set Points independently adjustable	Two Set Point
No of output / Relay :	Single Output / Single Relay	Two Outputs / Two Relays	Two Output / Two Relay
Output :	Potential Free Relay Contacts	Potential Free Relay Contacts	Potential Free Relay Contacts
Contacts Rating :	3 Amps (max.) at 220 V AC	3 Amps (max.) at 220 V AC	3 Amps (max.) at 220 V AC
Range Adjustment :	Provided (up to 50 % approx.)	Provided (up to 50 % approx.)	Provided
Adjustment through :	POT	POT	Distance setting - TEACH type
Reflector size :	130 x 75 mm	130 x 75 mm	Without Reflector
Dimensions :	180 mm X 145 mm X 55 mm	180 mm X 145 mm X 55 mm	140 x 150 x 110mm
Housing :	Metal Housing	Metal Housing	Metal Housing
Supply Available :	24V DC / 24V AC / 48V AC	24V DC / 24V AC / 48V AC	24V DC / 24V AC / 48V AC

Working Principle : This is used for Two overhead cranes on the same rail. This model is suitable for 3 meters or 10 meters range. Output is offered through relay contacts which can be interlocked with coil of contactor in respective direction. Alignment of Sensor and Reflector is very easy.

This is used for Two overhead cranes on the same rail. This model is suitable for 10 meters. There are two outputs. One output can be used for audio alarm for operator and another output is interlocked with coil of contactor in respective direction.

It displays measurement in centimeter. unit has TEACH type facility for Range adjustment, No reflector requirement. Unit is with 2 set point and 2 relay output. Display will show actual distance