

ESCC Series

Vehicle Separation Light Curtain



Product Introduction

ESCC series is a kind of light curtain specially designed for highway, toll collection by weight, highway detection station, custom or other vehicle detection site that can mainly achieve function of vehicle height limit, vehicle separation, detection of vehicle speed and vehicle driving direction etc. Stainless steel or cold rolled steel plate enclosure for ESCC is built in heating glass, temperature & humidity controller, realize automatic heating when humidity is too high or temperature is too low so as to ensure that the curtain can be used in wet areas, rainy and snowy weather.

Product Feature

- Special design for vehicle separation detection;
- High energy and penetration rate imported photocell is used to keep stable and reliable performance. It is easy to install and align, when used for 4.5m lane, the excess gain value can reach 5 times. Well work even through harsh environment with dust, rain, fog, special temperature;
- NPN or PNP output signal of vehicle detection and fault detection;
- High self-diagnosis function: it can send alarm in time when monitoring that objects block beams and it can automatically shield abnormal beams to ensure light curtain work continually until the exception is cleared and stored;
- RS485 and RS232 signal can detect the status of blocked beams;
- It can communicate with host computer and support secondary development;
- Unique programing, and effective signal can be set to output until the object blocking beams reach specified size.
- Industrial ambient temperature: under -40-55°C, the maximum relative humidity 95%(50°C), Protection rate IP67; It can be used in highly cold and hot area stably.
- The enclosure temperature can be adjusted automatically.

Product Parameter

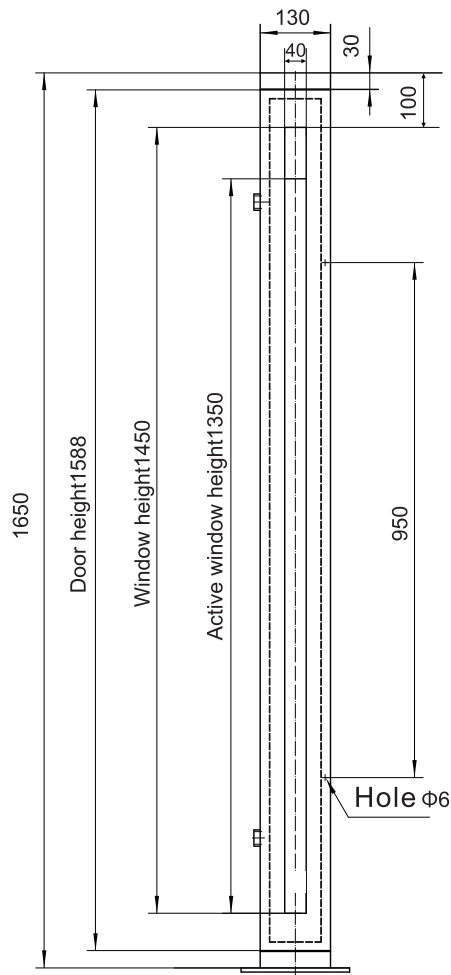
Light Curtain Electric Parameter	
Power Supply	DC24V±15%
Beam Space	20mm/40mm
Resolution	25mm/45mm
Beams	20mm: 32, 64
	40mm: 16, 32
Light Wavelength	940nm
Capacity	<5W
Sensing Distance	20m (Remark: please let us know when with reflectivity)
Against Optical Interference	100,000 Lux (angle >5°)
Sensing Method	Thru-beam
Output	NPN, PNP, Digital output RS485 (option)
Signal Output	NPN or PNP transistor, when the load is less than 120mA, the residual voltage is less than 1V (except the voltage caused by cable extension), and the leakage current is less than 1mA.
	RS485 output: Modbus communication protocol, user-defined protocol.
Protective Circuit	Overvoltage protection, power supply reverse protection and overcurrent protection.
Output Signal	OSSD1 output beam blocked signal, OSSD2 output fault signal
Transmitter Indicator Light	Normal: green steady on
Receiver Indicator Light	Alignment well: green steady on; Alignment error: red steady on. Synchronization error: red blink
Insulation Resistance	≥100MΩ
Ambient Operating Temperature	-40°C~55°C
Storage Temperature	-55°C~80°C
Ambient Operating Humidity	When temperature 20°C, the humidity max. 85%
Enclosure Protection Grade	IP65
Sectional Dimension	35*50mm (Remark: protection sectional size is 130*130mm)
Protection Enclosure Parameter	
Operating Voltage	24V±10%
Working Current	10A
Humidity Switch	Mechanical nylon film trigger switch, relative humidity 20%-80%
Main Control Unit	When heating component work, the red light on
Enclosure Structure	Stainless steel (201/304)
Window	Adjustable self-heating glass
Heating Glass	Heating glass (cable is not provided) needs to be equipped with 2-core No.14 standard cable with grounding wire.
Door Opening Method	Front opening
Door Closing Method	Front door screw fixed

Model Selection (e.g.: ESCC6420RH1NRY-20)

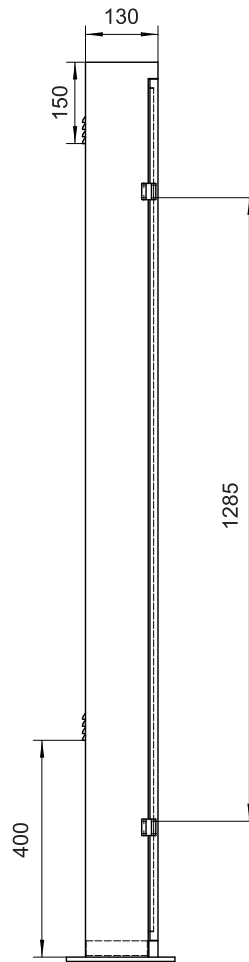
Product Series	Beams	Beam Space	Installation	Output	Digital Output	Sensing Distance
ESCC	64	20	RH1	N	RY	20
	16, 32, 64 16 beams only suitable for 40mm beam space	20mm 40mm	RH1:CRH-201-1000 (Cover) RH2:CRH-304-1000 (Cover) RH3:CRH-201-1650 (Cover) RH4:CRH-304-1650 (Cover) L1: L1 side mounting	N: NPN P: PNP	No mark: no need RS485; RY: RS485 output response; RZ: RS485 output active.	20:0.1~20m (Remark: please let us know when with reflectivity)

Safety Light Curtain

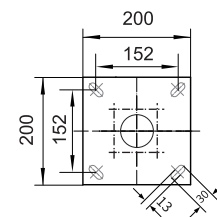
Enclosure Size



Front View



Side View



Fixed Base



1. The positive and negative poles of the power supply cannot be reversely connected, otherwise the LED glass heating indicator light will not work ;
2. The heating power is $70 \times 2 = 140\text{W}$, so the heating power supply shall not be less than 200W, otherwise the power supply can't work.
3. When plugging and unplugging the plug-in connector on the glass, please press the bottom of the connector to ensure that the connector does not fall off from the glass. Do not break the plug-in connector on the glass by hand. If the joint falls off, it must be restored by welding or conductive adhesive bonding.
4. Please be careful of the glass during installation and pay attention to the heating wire on the glass.

ESCC Model Selection Table

- Beam space 20mm, resolution 25mm

Beams (n)	Protection Height (mm)	Total Height (mm)	Model	Enclosure	Material
32	620	705	ESCC3220	CRH-201-1000	210 stainless steel
				CRH-304-1000	304 stainless steel
64	1260	1345	ESCC6420	CRH-201-1650	210 stainless steel
				CRH-304-1650	304 stainless steel

- Beam space 40mm, resolution 45mm

Beams (n)	Protection Height (mm)	Total Height (mm)	Model	Enclosure	Material
16	600	685	ESCC1640	CRH-201-1000	210 stainless steel
				CRH-304-1000	304 stainless steel
32	1240	1325	ESCC3240	CRH-201-1650	210 stainless steel
				CRH-304-1650	304 stainless steel

Remark: curtain height can be customized according to requirements besides above model.

Fault and Solution

Fault Symptom	Possible Reason	Solution
Light curtain not work, all indicators are off	No power supply	Check power supply and wire connection
Light curtain intermittently works, and indicator light ON/OFF switching	The wire connection in poor contact	Fasten control cable
	Bad alignment	Re-adjust to make it normally
	Poor grounding or interference with the ground line	To ground or remove interference reliably
	Luminous surface of the emitter and receiver is shielded by spot.	Clean the luminous surface
Green and red indicator of receiver blink at the same time.	CP synchronization cable poor connection or broken	Re-connect CP wire or re-change cable
The glass on heating state	The humidity control switch is set to a lower scale	Adjust the humidity control to 60%-70%
Heating glass cannot work	The humidity switch control range is too high	Adjust the humidity switch to 60%-70%

Output Setting

- Only when 6 consecutive beams are blocked at the same time (e.g.: when the vehicle head enters the detection area), NPN OSSD 1 will output high level signal, and remains active until all beams switch ON. The purpose of the setup is to reliably detect the trailer hook, and eliminate the interference of birds, stones, hands and other external factors.
- When a beam or several beams are blocked for more than 3 minutes, system will automatically shield (eliminate) the beam and ensure that the vehicle can still be normally detected. At the same time, NPN output 2 (alarm) will be activated to remind the staff to remove the alarm source. The reasons for long time blocking of the beam may include mud, insects stuck to the glass window, and the failure of the photocell itself. After the cause of the failure is eliminated, the system automatically removes the shielding function immediately, and the alarm output is removed at the same time. Factory setting can block up to 6 beams of light.

Application

