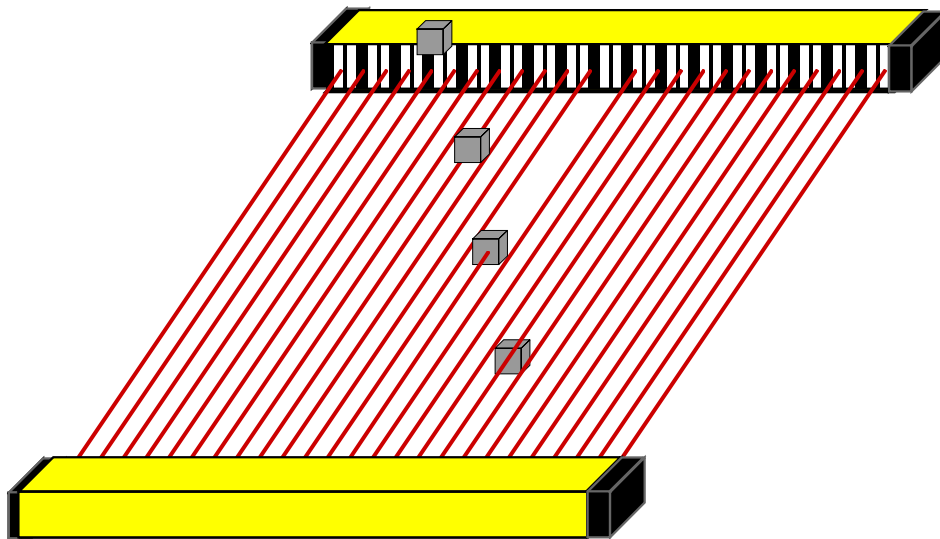


## Area Sensor for controlling and counting

**SLVT**



**resolution 14 mm**

**Sensor range up to 1,9 m x 24 m, beam spacing 7,5mm (0,29 in.)**

**Scan length in 100 mm (3,94 in.) steps**

**high speed scanning, short response time from 1,0 ms, depending  
on constructional length**



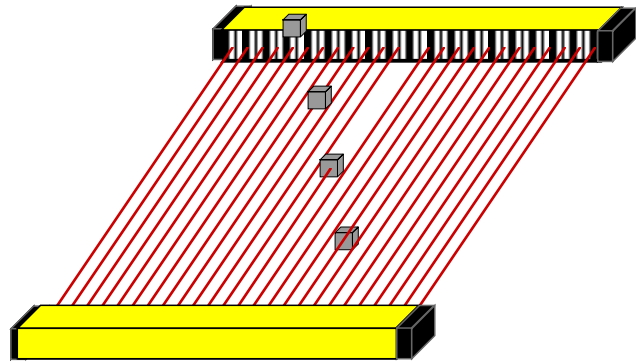
### Application:

The Area Sensors for controlling and counting of the SLVT series are used for detecting of small objects ( $\geq 14\text{mm}$ ) in a sensor field of up to  $1,9\text{m} \times 7\text{m}$ .

Applications of the **SLVT** are:

- for counting falling parts from uncertain positions in wide areas
- suspended trolleys
- paint shops

For classification or for measuring of objects, the SLVT series with serial interface are available. With this interface, the current state of every single beam can be verified.



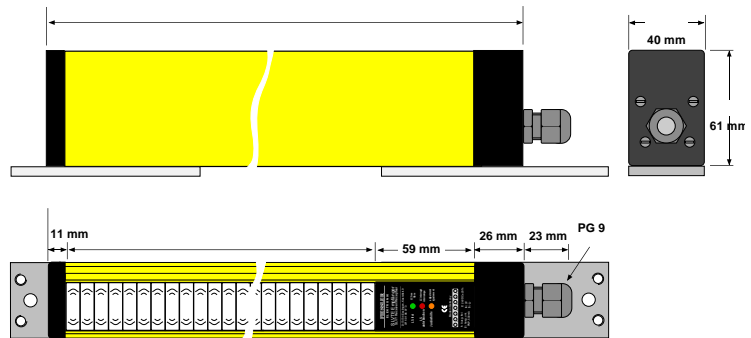
application example: counting falling parts

### features

The Area Sensors for controlling and counting **SLVT** are characterized by the following features:

- smallest object detection (resolution  $14/30\text{mm}$ )
- **short response times**  
only  $1,0\text{ ms}$  up to  $10,3\text{ ms}$ , depending on length
- scanning lengths  $100\text{ mm}$  up to  $1900\text{ mm}$  in steps of  $100\text{ mm}$
- **small guards / valves directly connectable**,  
2 short-circuit-safe non-equivalent semiconductor outputs, PNP, connecting capacity  $0,5\text{A}/24\text{V}$
- protective system IP 65
- operating range  $7\text{m}$  with resolution  $14\text{ mm}$
- operating range  $24\text{ m}$  with resolution  $30\text{ mm}$

### dimensions



### Construction

The system SLVT consists of two components: transmitter and receiver. Their detection ranges and -heights are defined by the distance between both transmitter and receiver and by their constructional lengths.

Sensor field heights from  $100\text{ mm}$  through  $1900\text{ mm}$  are available due to the modular design of the components. On demand, construction of special dimensions units for intermediate-sized applications is possible.

### Function

The transmitter generates infrared light beams which are continuously flashing at high speed. The parallel light beams (beam spacing  $7,5\text{mm}$ ) are evaluated in the receiver in synchronous action with the transmitter. The beam spacing of  $7,5\text{mm}$  provides a resolution of  $14\text{ mm}$ .

If an object with a diameter of  $\geq 14\text{ mm}$  is placed into the detection field, i.e. at least one of the light beams is interrupted, both receiver outputs are activated.

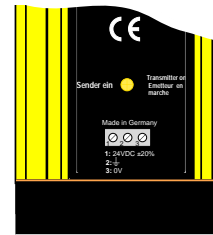
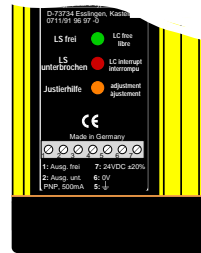
scanning lengths (mm)	overall length (mm)	resolution 14 mm		resolution 30 mm	
		order code range 7 m	* re- sponse time in ms	order code range 24 m	* re- sponse time in ms
100	196	SLVT100 / 13	1,2	SLVT100 / 7	1
200	296	SLVT200 / 26	1,7	SLVT200 / 14	1,3
300	396	SLVT300 / 39	2,2	SLVT300 / 21	1,6
400	496	SLVT400 / 52	2,7	SLVT400 / 28	1,8
500	596	SLVT500 / 65	3,2	SLVT500 / 35	2
600	696	SLVT600 / 78	3,7	SLVT600 / 42	2,4
700	796	SLVT700 / 91	4,2	SLVT700 / 47	2,7
800	896	SLVT800 / 104	4,7	SLVT800 / 56	2,9
900	996	SLVT900 / 117	5,2	SLVT900 / 63	3,2
1000	1096	SLVT1000 / 130	5,7	SLVT1000 / 70	3,5
1100	1196	SLVT1100 / 143	6,2	SLVT1100 / 77	3,8
1200	1296	SLVT1200 / 156	6,7	SLVT1200 / 84	4
1300	1396	SLVT1300 / 169	7,2	SLVT1300 / 91	4,3
1400	1496	SLVT1400 / 182	7,8	SLVT1400 / 98	4,6
1500	1596	SLVT1500 / 195	8,3	SLVT1500 / 105	4,8
1600	1696	SLVT1600 / 208	8,8	SLVT1600 / 112	5,1
1700	1796	SLVT1700 / 221	9,3	SLVT1700 / 119	5,4
1800	1896	SLVT1800 / 234	9,8	SLVT1800 / 126	5,7
1900	1996	SLVT1900 / 247	10,3	SLVT1900 / 133	5,9

\* max. detection and reaction time = Minimum sojourn time of the object in the sensor field until the reaction of outputs.

### LED-displays

The respective operational mode is indicated by several LEDs on the receiver front plate. Therefore, any interruption of the sensor area, or any dirt or faulty adjustment of the transmitter/or receiver can be easily detected .

After switching on the system, both transmitter and receiver must be adjusted in a way that the green LED "free" lights up and the red LED "off" does not light up when the sensor area is free. In order to guarantee sufficient reserve, the orange LED "alignment gear" should not light up.

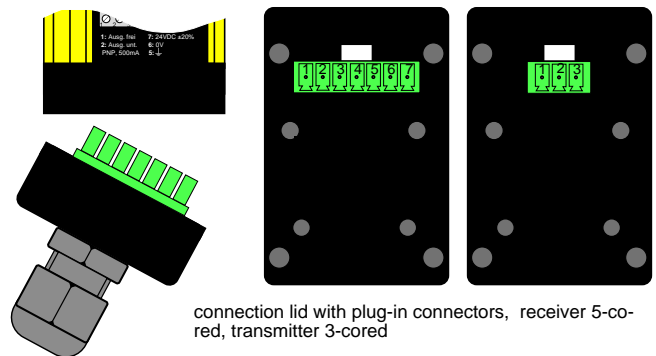


### Integrated plug-in connection in the connection lid

The standard of the product series SLVT includes an extra flat plug-in connection located in the connection lid. This lid may be removed **without** cutting the connection cable plug. The housing itself remains tightly **closed**.

Various custom-made connection plugs are available to the customer.

The connection of the transmitter is realized by a 3-core cable, the receiver by a 5-core cable.



connection lid with plug-in connectors, receiver 5-core, transmitter 3-cored

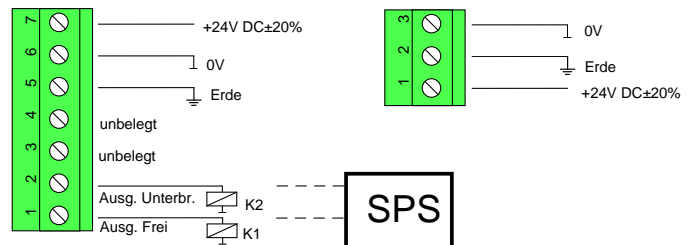
### Connection

The connection is realized following the diagrams at the right hand side. The antivalent PNP-ports are short-circuit-safe and can be connected and evaluated independently from each other.

The switching capacity of 0,5A/24V permits the direct connection of small guards, relays or SPS.

If the sensor field is free, the PNP port "free" is conducting and the PNP port "interrupted" is not conducting.

If the sensor field is interrupted, the SPS port "interrupted" is conducting and the PNP port "free" is not conducting.



### Mounting transmitter and receiver

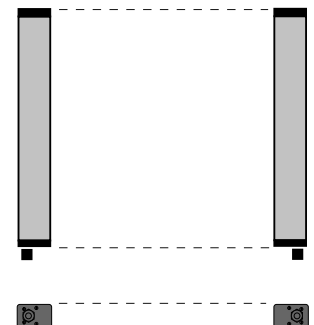
Please make sure that the plugs of both transmitter and receiver must be located at the same side of the units. They have to be aligned parallel to each other.

In order to swivel around the longitudinal axis: turn one single adjustment screw on one fastening bracket, while loosening both adjustment screws on the other bracket.

In order to swivel around the lateral axis: turn both adjustment screw evenly on one fastening bracket, while loosening both screws on the other bracket.

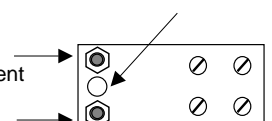


longitudinal axis



7 mm diameter hole for fastening

adjustment screws with lock nuts for swivel movement around longitudinal / lateral axis



characteristic data	SLVTS... / SLVTE...	
sensor field heights	100 mm ... 1900 mm (according to number of beams)	
sensor field widths (range)	0,1... 7 m	
construational lengths	196 mm ... 1996 mm (according to number of beams)	
definition	detection of smallest obstacles (14 mm)	
number of beams	13... 247 beams	
detection/reaction time	max. detection and reaction time = Minimum sojourn time of the object in the detection field until the reaction of outputs: see table on page 2	
<b>Mechanical data</b>		
Housing design	Aluminum-profile, plastic laminated RAL 1020 yellow, end pieces consist of acidproof synthetic (Polyamide) reinforce globes. Light emerging and detection areas made from plexiglass, optional solventproof silikate glass.	
attachment	Adjustable fixing link on backof housing	
weight	Transmitter: 0,45 kg up to 4,5 kg according to constructional height Receiver: 0,5 kg up to 5,0 kg according to constructional height	
<b>Operating data</b>		
Protective System	IP 65	
Protective class	III	
Temperature of operational area	between -10 and 55 °C	
Storing temperature	between -25 and 70 °C	
<b>Electric data</b>	<b>transmitter SLVTS</b>	<b>receiver SLVTE</b>
Voltage	24 V DC ±20 %	24 V DC ±20%,
Power consumption	max. 200 mA	max. 200 mA (at no charge)
Outputs (Receiver)	-	outputs "free" and "interrupted": PNP-outputs, short-circuit-safe, max. 0,5 A RS-485 (+) and (-)
Electrical connection	integrated plug-in connector with PG9 as traction relief. Alternative: custom made connection plugs	integrated plug-in connector with PG9 as traction relief. Alternative: custom made connection plugs
Cables	3-cored, max. 1,5 mm <sup>2</sup>	5-cored, max. 1,5 mm <sup>2</sup>