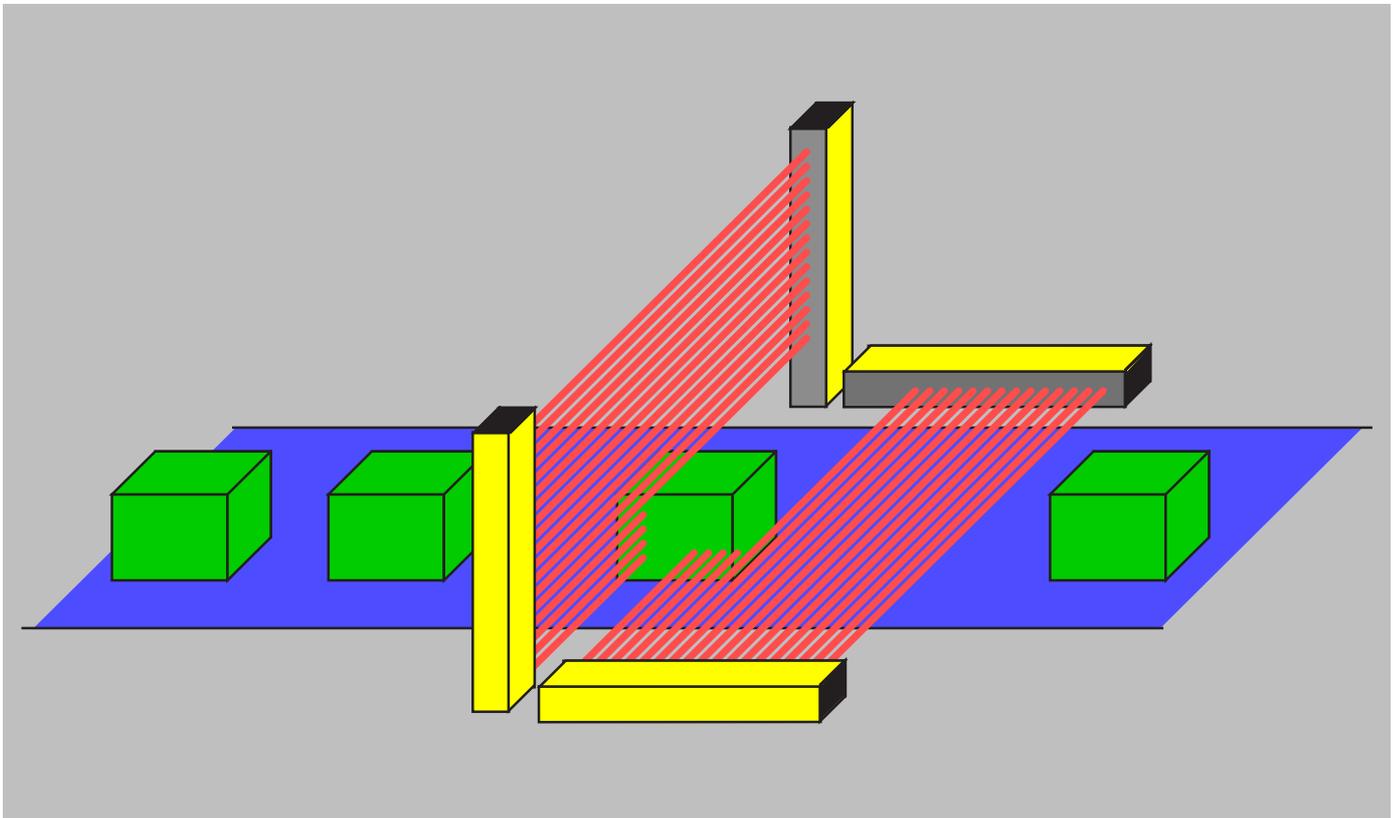


Scanning Light Curtain MLVT



Parallel scanning - therefore no error of measurement

Sensor-Range up to 1,9 m x 7 m, beam spacing 7,5 mm (0,29 in.)

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

High speed scanning, reaction time 1,2 ms

Serial Communications - SPS or IPC

Application:

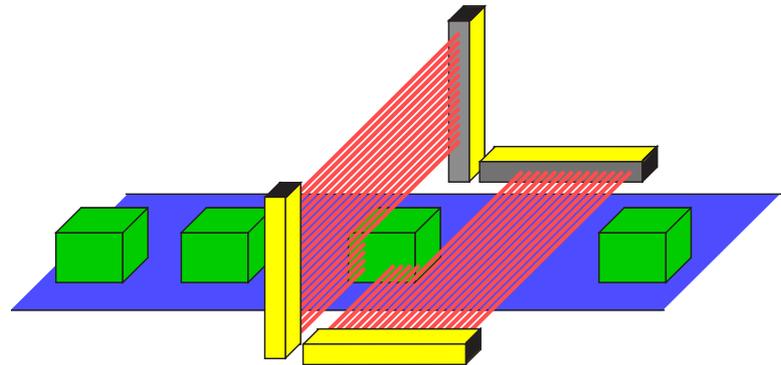
The scanning light curtain **MLVT** is used for measuring non-transparent objects.

With a beam spacing of 7,5 mm (0,29 in.) and a huge scanning field of max. 1900mm (74,80 in.) X 8000mm (314,96 in.) this light curtain can be used very flexibly for many applications.

Applications of the **MLVT** are:

Measurement of length, volume, holes, loops

paint shops - controlling of the spray guns
assembly lines - assorting of cardboard boxes
wood industries - classification of tree circumferences



Measuring of box volumes

Features

The scanning light curtains MLVT are characterized by the following features:

- beamspacing only 7,5 mm (0,29 inch)
- **high speed scanning**
only 1,2 ms up to 10,3 ms, depending on length
- scanning length 100 mm up to 1900 mm
in steps of 100 mm
- **small guards / valves directly connectable**,
2 short-circuit-safe non-equivalent semiconductor outputs, PNP, connecting capacity 0,5A/24V
- **protective system IP 65**
- **operating range 7m**
- **Serial Communications (RS 458) for IPC or SPS**
interface converter (optionally available as accessory)

Dimensions



Construction

The system MLVT 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 mm through 1900 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 7,5mm) are evaluated in the receiver in synchronous action with the transmitter.

The diodes are checked one after the other whether all beams are free or if there is any obstacle. By doing this, a verification of the current status of all diodes is realized. Via a serial interface, these data can be processed further. If there is an object in the detection field, both receiver outputs are activated.

resolution 14 mm			
sensor field heights/ no. of beams mm	overall length mm	Order code	max. reaction time m/s
100 / 13	196	MLVT100/13	1,2
200 / 26	296	MLVT200 / 26	1,7
300 / 39	396	MLVT300 / 39	2,2
400 / 52	496	MLVT400 / 52	2,7
500 / 65	596	MLVT500 / 65	3,2
600 / 78	696	MLVT600 / 78	3,7
700 / 91	796	MLVT700 / 91	4,2
800 / 104	896	MLVT800 / 104	4,7
900 / 117	996	MLVT900 / 117	5,2
1000 / 130	1096	MLVT1000 / 130	5,7
1100 / 143	1196	MLVT1100 / 143	6,2
1200 / 156	1296	MLVT1200 / 156	6,7
1300 / 169	1396	MLVT1300 / 169	7,2
1400 / 182	1496	MLVT1400 / 182	7,8
1500 / 195	1596	MLVT1500 / 195	8,3
1600 / 208	1696	MLVT1600 / 208	8,8
1700 / 221	1796	MLVT1700 / 221	9,3
1800 / 234	1896	MLVT1800 / 234	9,8
1900 / 247	1996	MLVT1900 / 247	10,3

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

communication

Serial RS-485 port. Simple and easy-to-handle connection to other communication devices. These scanning curtains can be optionally connected via an external converter to an RS 232 C-interface or to a profibus-DP field bus.

On reception of a demanding signal issued by the computer or by the SPS, the receiver emits the number of the darkened emitting diodes (or light beams) in binary code (polling). As demand signal, any byte issued from the PC or the SPS will suffice. The transmission Parameters are: 9600, N, 8, 1 (Baud, No Parity, Databits, Stopbit)

For special applications, the according software will be available on demand.

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. 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 MLVT 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.

There are various custom-made connection plugs available. The connection of the transmitter is realized by a 3-core cable, the receiver by a 7-core cable.

Connection

The connection is realized following the enclosed diagrams. The non-equivalent 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.

Serial port RS458: 2-core cable simplex connection

Connection 3 is A (+) connection 4 is B(-).

Mounting transmitter and receiver

Please make sure that the plugs of both transmitter and receiver have to 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 clip, while loosening both adjustment screws on the other clip.

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

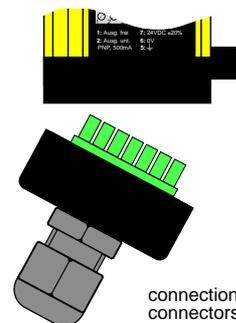
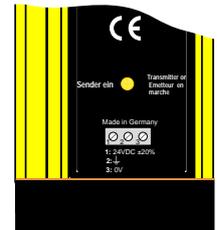
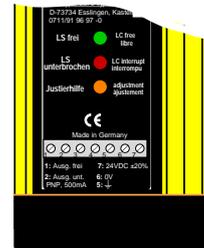


Longitudinal axis

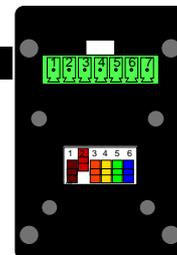
Lateral axis



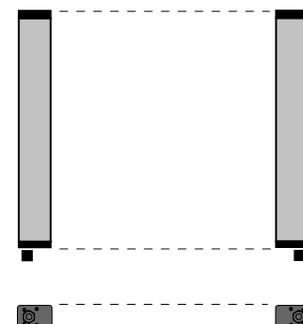
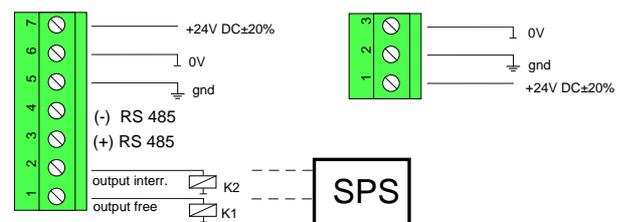
Serial RS-458 port 2-core cable simplex connection
Connection 3 is A (+) connection 4 is B(-).



connection lid with plug-in connectors, receiver 7-cored

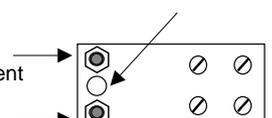


transmitter 3-cored



7 mm diameter hole for fastening

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



characteristic data	MLVTS... / MLVTE...	
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	
Mechanical data		
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	
Operating data		
Protective System	IP 65	
Protective class	III	
Temperature of operational area	between -10 and 55 °C	
Storing temperature	between -25 and 70 °C	
Electric data	Transmitter MLVTS	Receiver MLVTE
Voltage	24 V DC SELV, ±20 %	24 V DC SELV, ±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 ²	5-cored, max. 1,5 mm ²