



**Model Number**

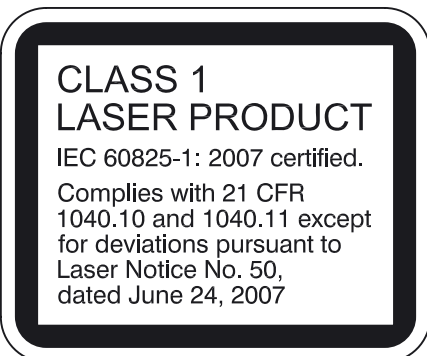
**VLD700-F280-2E2-1000**

Laser light sensor for field monitoring

**Features**

- Intelligent exposure time control
- Laser class 1, eyesafe
- Data Matrix control codes for parameterization

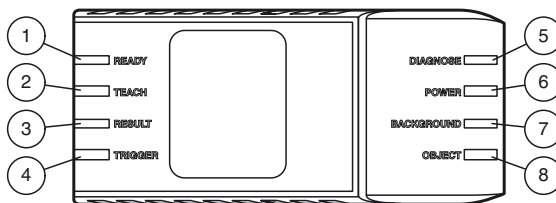
**Laserlabel**



**Function**

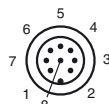
The SmartRunner Detector performs high-precision area monitoring and switches as soon as the smallest objects enter the field of detection. The detector is based on innovative Smart-Runner technology and combines the light section method for detecting height profiles with a 2-D vision sensor. The light section method involves projecting a laser line onto an object. This laser line is then detected by a camera at a specific angle. A height profile is then created using the triangulation principle. This innovative laser technology provides reliable measurements on different surfaces.

**Indicating / Operating means**



1	Ready	green/red
2	Teach	green/yellow
3	Result	green/red
4	Trigger	green/yellow
5	Diagnose	red
6	Power	green
7	Background	green
8	Object	yellow

**Electrical connection**



Pin	Signal
1	IN Trigger
2	+UB
3	Data+ RS-485
4	Data- RS-485
5	Teach
6	Background
7	GND
8	Object

**Technical data**

**General specifications**

Measurement range	X = 40 ... 310 mm ; Z = 60 ... 700 mm
Light source	laser diode
Light type	red laser + Integrated LED lightning red 650 nm
Laser nominal ratings	
Note	VISIBLE LASER RADIATION , DO NOT STARE INTO BEAM DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
Laser class	1
Wave length	Measurement laser: 660 nm
Pulse length	Measurement laser: 2 ms
Maximum optical power output	Measurement laser: 15 mW
Laser monitoring	The safety system switches off the laser when the laser current is too high
Object size	> 0.1 mm at min. read distance
Scan rate	10 s <sup>-1</sup>

**Functional safety related parameters**

MTTF <sub>d</sub>	20 a
Mission Time (T <sub>M</sub> )	10 a
Diagnostic Coverage (DC)	0 %

**Indicators/operating means**

Operation indicator	LED green
Diagnostics indicator	LED yellow / red
Function indicator	Trigger: LED yellow ; object in evaluation range : LED red / green
Control elements	2 push-buttons

**Electrical specifications**

Operating voltage	U <sub>B</sub>	24 V ± 20 % , PELV
No-load supply current	I <sub>0</sub>	max. 250 mA
Power consumption	P <sub>0</sub>	max. 6 W , Outputs without load

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**Interface**

Interface type	RS 485 interface
Physical	Switchable terminal resistor
Protocol	binary code
Transfer rate	38400 ... 230400 Bit/s

**Input**

Input voltage	24 V
Number/Type	External triggering + 1 Input
Switching threshold	low: < 2.5 V, high: > 8 V

**Output**

Number/Type	2 digital outputs
Switching type	PNP
Switching voltage	24 V
Switching current	150 mA each output

**Ambient conditions**

Operating temperature	-20 ... 45 °C (-4 ... 113 °F) , (noncondensing; prevent icing on the lens!)
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)

**Mechanical specifications**

Degree of protection	IP67
Connection	8-pin, M12 x 1 connector ( supply + RS485 + Inputs/Outputs ) ; can be rotated 90° ; Grounding : Grounding clip for PCV system
Material	
Housing	PC/ABS
Optical face	Plastic pane
Mass	approx. 125 g
Tightening torque, fastening screws	≤ 2 Nm

**General information**

Note	<b>Security Instructions:</b> - Read the operating instructions before attempting commissioning - Installation, connection and adjustments should only be undertaken by specialist personnel - Not a safety component in accordance with the EU Machinery Directive
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**Compliance with standards and directives**

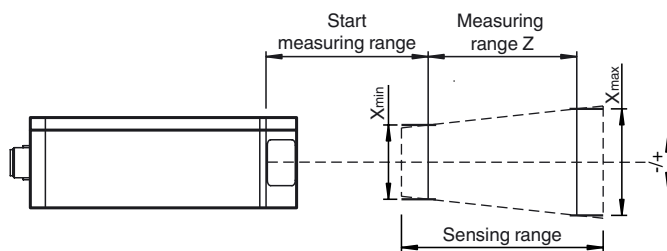
Standard conformity	
Noise immunity	EN 61000-6-2:2005
Emitted interference	EN 61000-6-4:2007/A1:2011
Degree of protection	EN 60529
Shock and impact resistance	EN 60068-2-27:2009
Laser class	IEC 60825-1:2007

**Approvals and certificates**

CCC approval	CCC approval / marking not required for products rated ≤36 V
Approvals	CE

**Notes**

Measuring range



**Accessories**

**V19-G-5M-PUR-ABG**

Female cordset, M12, 8-pin, shielded, PUR cable

**VLX-MB1**

Mounting bracket

**VLX-MB2**

Mounting bracket

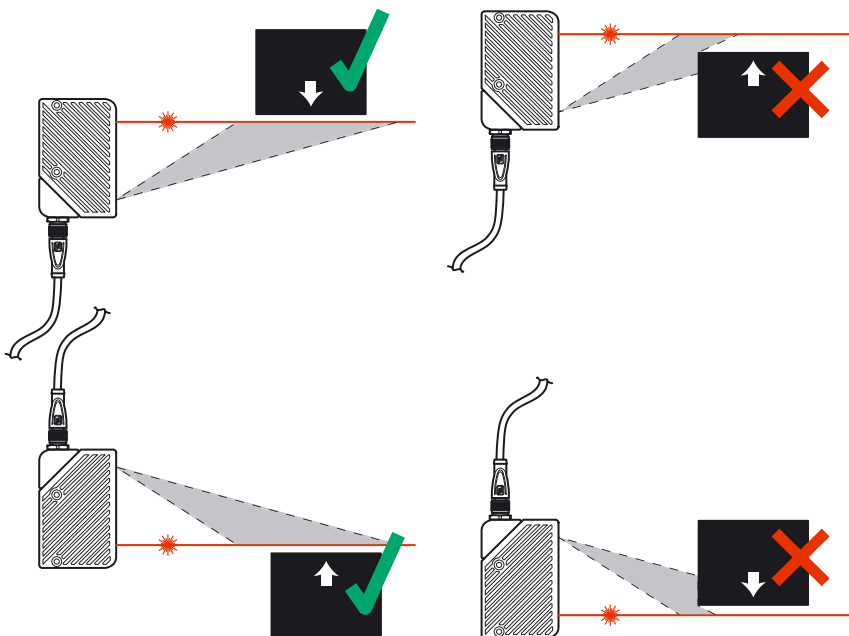
**PCV-USB-RS485-Converter Set**

USB to RS 485 interface converter

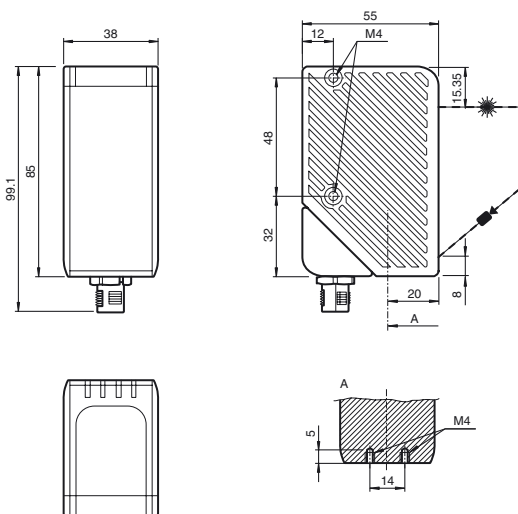
ries can be found at

**Notes**

Positioning of SmartRunner to the Object for Detection



**Dimensions**



**Laser notice laser class 1**

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- The warning accompanies the device and should be attached in immediate proximity to the device.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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