Model Number

PLVScanP112-2220-20-3225

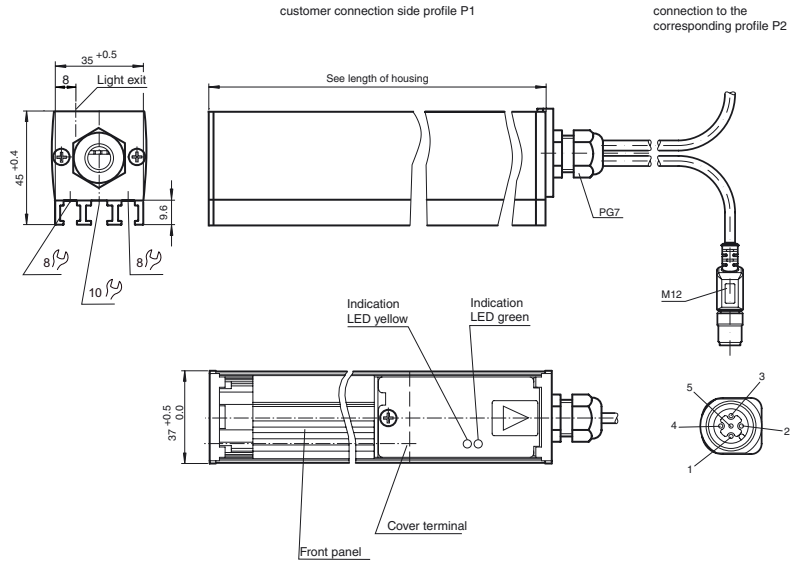
Light grid

with 0.25 m fixed cable and M12 connector, 5-pin

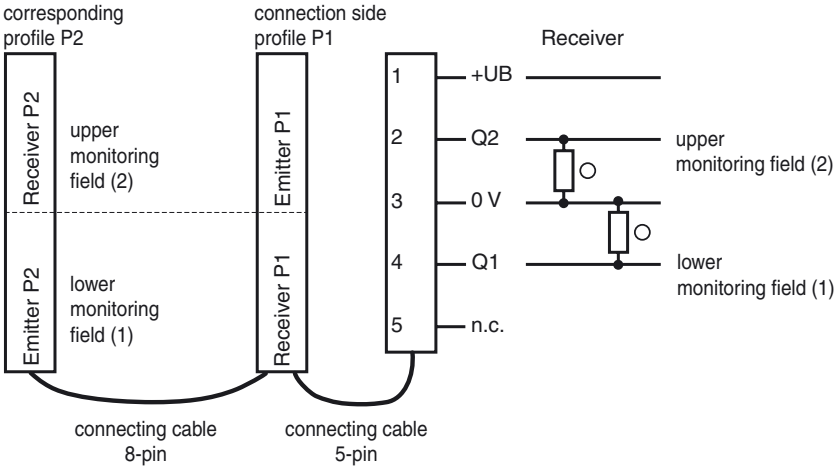
Features

- Light grid for profile monitoring
- Beam spacing 20 mm
- Programmable via Windows software

Dimensions



Electrical connection



○ = Light on
● = Dark on

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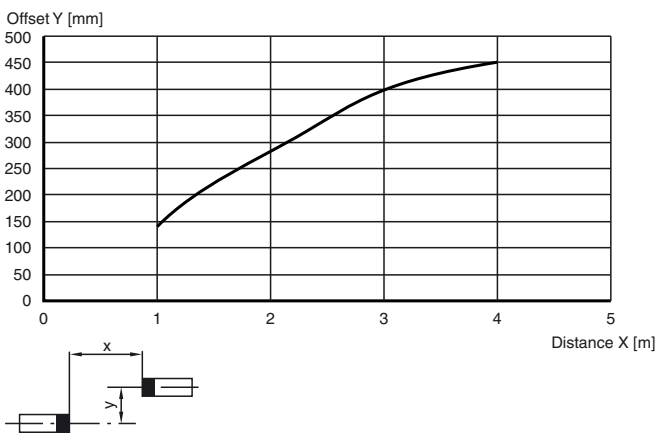
Technical data

General specifications		
Effective detection range		1.5 ... 4 m , preset to 4 m
Threshold detection range		6 m
Sensing range		0 ... 4000 mm
Light source		IRED
Light type		modulated infrared light
Field height		2220 mm
Beam spacing		20 mm
Number of beams		112
Angle of divergence		Emitter: ± 13 ° , Receiver: ± 8 °
Ambient light limit		50000 Lux
Indicators/operating means		
Operating display		LED green
Function display		Emitter: LED yellow, light with free light beam, off when falling short of the function reserve , Receiver: LED yellow: flashes when the beam field is interrupted, otherwise off
Controls		Potentiometer for adjustment of the transmitting power (in the terminal compartment)
Electrical specifications		
Operating voltage	U_B	15 ... 30 V DC
Ripple		10 %
Power consumption	P_0	max. 15 W
Output		
Switching type		light on
Signal output		2 PNP, short-circuit protected (monitoring field)
Switching voltage		30 V DC
Switching current		200 mA
Switching frequency	f	15 Hz
Response time		32 ms
Ambient conditions		
Ambient temperature		-10 ... 60 °C (14 ... 140 °F) In North America: -10 ... 40 °C (14 ... 104 °F)
Storage temperature		-25 ... 70 °C (-13 ... 158 °F)
Mechanical specifications		
Housing length L		2460 mm
Protection degree		IP50
Connection		Connecting cable 250 mm with M12 connector, 5 pin
Material		
Housing		silver-anodized aluminum
Optical face		PMMA
Mass		3300 g (device)
Compliance with standards and directives		
Standard conformity		
Product standard		EN 60947-5-2:2007 IEC 60947-5-2:2007
Approvals and certificates		
CE conformity		yes
UL approval		cULus
CCC approval		Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

Curves/Diagrams

Characteristic response curve



Additional accessories can be found in the Internet.

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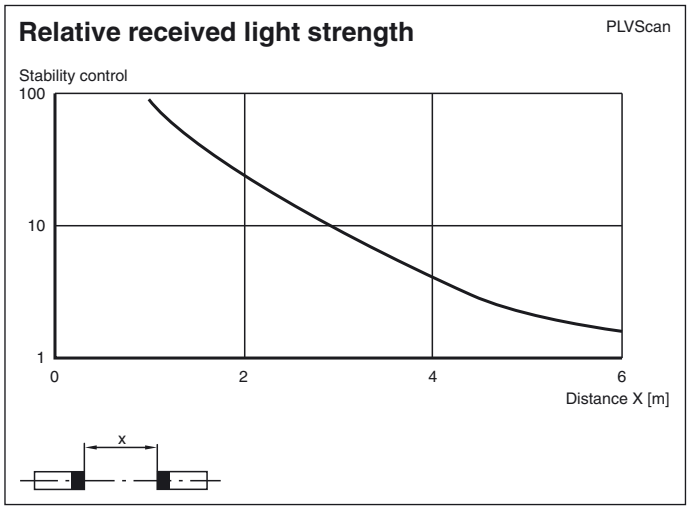

Arrangement and function

Principle of operation

Light grids consist of a profile (P1) on the customer connection side and a corresponding profile (P2) - the monitored area is located inbetween. The switching command is triggered when a body / object enters or is present in the monitoring field.

The light grid PLVScan ensures an overall monitoring of the evaluation range with a max. of 112 light beams (infrared transmitter and receiver). The integrated signal processing saves an additional mounting of a separate controlgear. Due to the modular design of the system, different distances of the light beams can be implemented. This makes it possible to use the light grids of the PLVScan series optimally and adapt them specifically to a given application.
The system is equipped with two switch outputs. The system programming is accomplished via a RS 232 interface. For this purpose, the software WINPLV is required, which can be ordered separately.

Safety Instructions

The device must only be operated with an extra-low safety voltage with safe electrical separation. Only your supplier is authorised to make repairs or changes to the device!
The system must be regularly maintained and monitored. The programming cable can only be plugged in when the light grids are turned on and working correctly.
A clean, soft cloth can be used for cleaning. Aggressive, abrasive and scratching cleaners that could scour or damage the surface must be avoided. The device must not be exposed to strong jolts or vibrations.

Commissioning

Preconditions

- The profiles P1 and P2 must be correctly mounted and aligned.
- The electrical connection must have been set up according to the connection diagram.
- The signal output responds to object detection or heavy accumulation of dirt and dust on the transparent outline covering.
- In the case of interruption of at least one light beam, the output remains active as long as the object or the soiling is detected.

ATTENTION!
Supply +UB / GND(0 V)
Connection is reverse-polarity protected. If the housing of the PLVScan is earthed and the operating voltage is reverse polarity protected, a short circuit current can flow through both housings to earth. If polarity is reversed and the light grid is earthed, components in the device may be destroyed as a result.

Error detection

- Measure the operating voltage
- Check wiring (check profile connecting cable!).
- Check profiles P1 and P2 for soiling effects, clean, if necessary.

Functional displays

A green LED for function display of Power ON and a yellow status LED with a diagnostic function are located on both ends of the profiles behind the terminal compartment cover.
In normal operation, the yellow LED in the transmitter P1 and P2 is continuously lit if there is sufficient functional reserve.
The yellow LED in the receiver P1 and P2 indicates the switching state of the light grid.

Diagnostic function of the yellow LED

Function	Diagnostic description
LED of the transmitter P1 and P2 is lit statically LED of the receiver P1 and P2 is not lit	Normal status with free protected area, system is active, all light lines are free and have sufficient function reserve.

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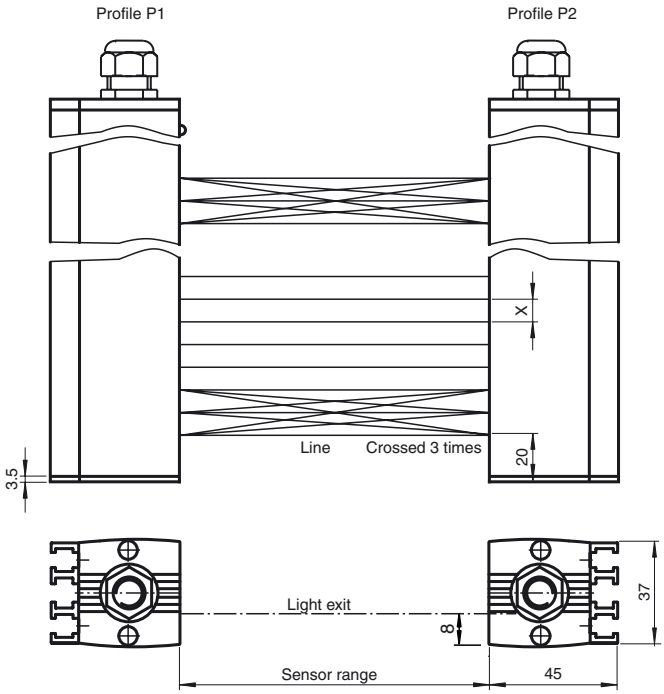
Function	Diagnostic description
LED of the transmitter P1 and P2 flashes slowly (approx. 0.5 Hz)	Insufficient function reserve because of poor alignment of the light grid.
LED of the receiver P1 and P2 flashes (approx. 1 Hz), Output protected area Q1 and Q2 active	At least one light line is covered.
LED of the receiver P1 and P2 flashes (approx. 2 Hz),	The system is in test mode and the programming connector is plugged in.
LED of the receiver P1 and P2 flashes quickly (approx. 7 Hz)	No valid values in EEPROM or the system is not programmed ⇒ program system.
LED of the receiver P1 and P2 is continuously lit	The system is in programming mode.

Resolution and beam spacing

The mechanical beam spacing (see illustration, dimension X) determines the smallest size of object that can still be detected. The resolution of the light grid can be increased by crossing light beams. The detection ranges can be adjusted on the transmission unit with a potentiometer.

The units are delivered with an uncrossed course of the beam.



Representation of the course of the beam as straight/crossed

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