



HIGH PERFORMANCE LIGHT BARRIERS

The experts



IPF ELECTRONIC

High-End in High-Tech.

CLEAR VIEW DESPITE DIRT, DUST, MOISTURE AND MORE

When high demands have to be met and special challenges are to overcome, special and also extremely reliable solutions are required - such as our high-performance light barriers. High-performance light barriers belong to the group of optical sensors and are through-beam systems, which consist of a three-part solution of transmitter, receiver and amplifier.

This constellation in combination with infrared light, which penetrates almost everything, gives our high-performance light barriers unique properties. Therefore, they certainly occupy a special position in the field of optical sensors.

The different transmitter/receiver systems in combination with different amplifiers are particularly suitable for use in environments with extremely harsh conditions, which are often associated with high levels of dirt and dust. But these light barriers can do much more!

RELIABLE SOLUTIONS, NOT ONLY WITH MUCH DIRT AND DUST

MUCH RESERVE FOR POLLUTION COMPENSATION

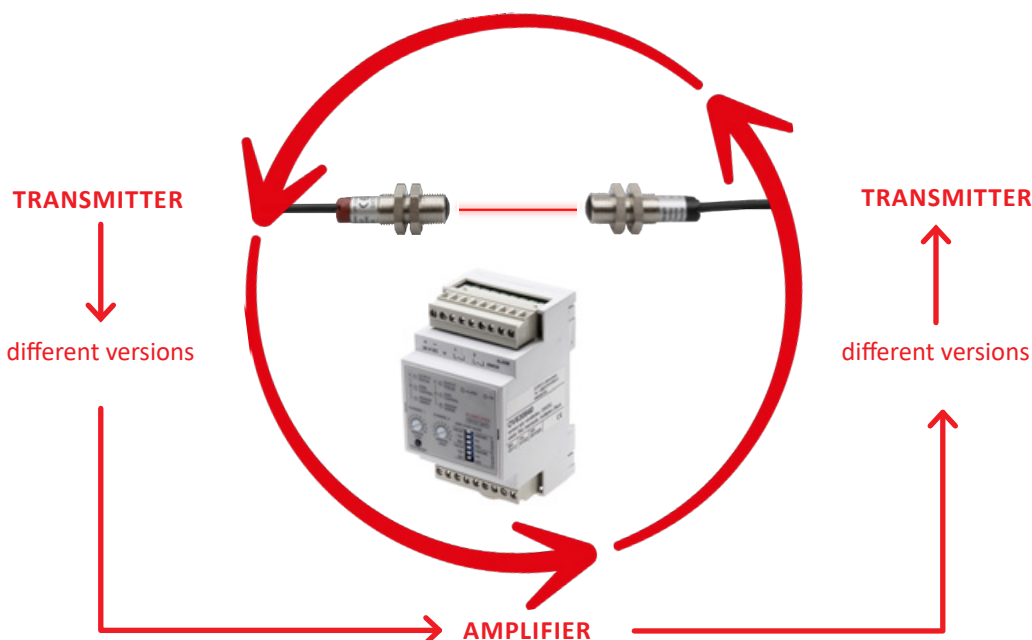
Although our systems can achieve impressive total ranges of up to 70 meters, depending on the combination of the device selection (transmitter, receiver, amplifier), they are usually used with similar working distances as known from classic light barriers. The reason: The power reserves available due to the high range (transmission power) of the high performance light barriers are used on shorter distances primarily for highly efficient pollution compensation.

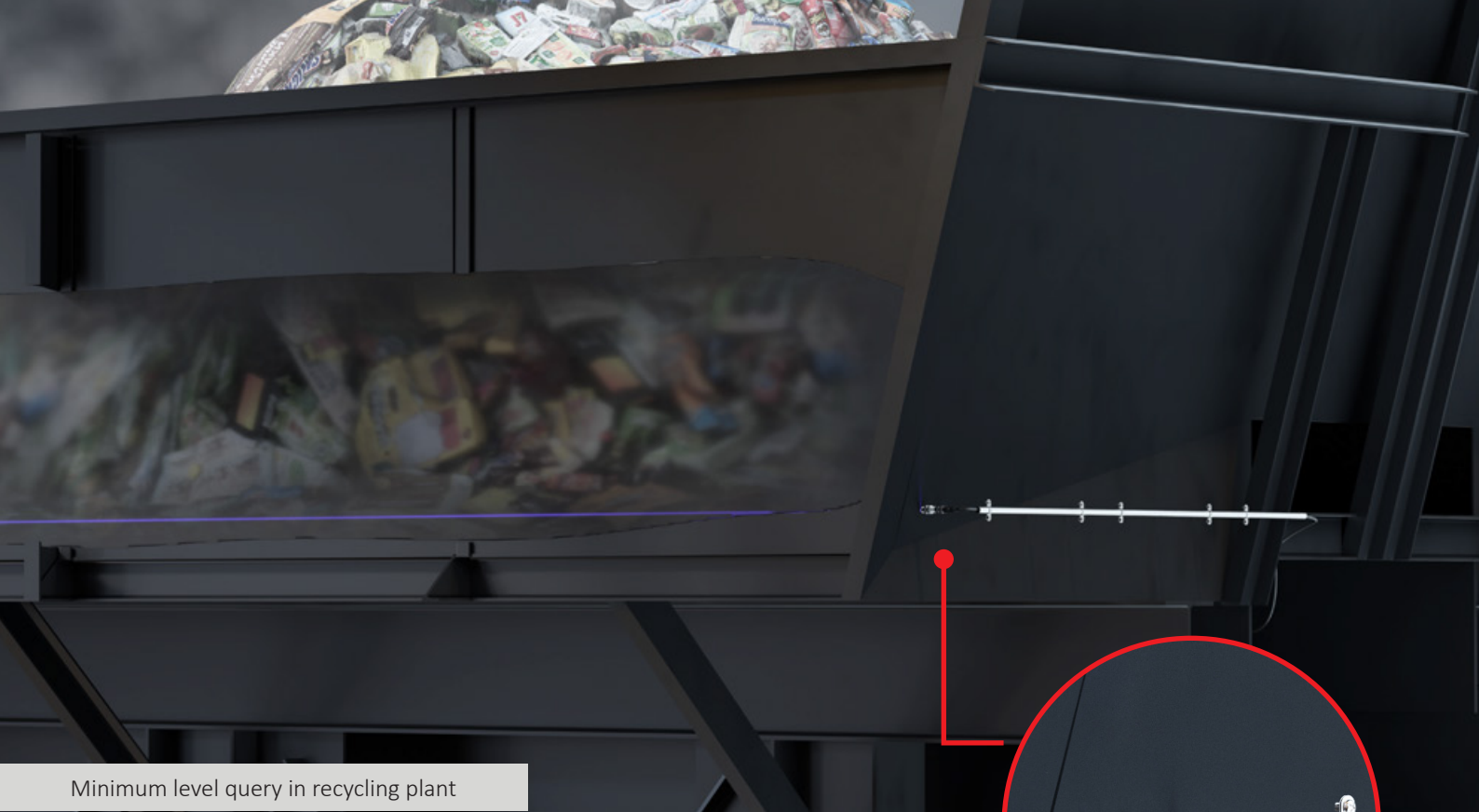
High penetration with infrared light

High-performance light barriers work with infrared light, which has very good penetration properties due to its wavelength of around 880nm. Infrared light is in the non-visible range. Nevertheless, the systems can be easily aligned to each other even at greater distances due to the relatively large opening angle (beam angle) of the transmitter and receiver. Most amplifiers also integrate an alignment function for this purpose. In general, the better the transmitter and receiver are aligned to each other, the greater the contamination compensation of the entire system, depending on the power. However: The larger the angle of radiation of the transmitter (6°, 12° or 25°), the smaller the range of the light barrier.

The amplifier makes the difference

Amplifiers are the central components of high performance light barrier, whereby there is the choice between single-channel and multi-channel amplifiers (multiplex amplifiers). While a light barrier can be connected to a single-channel amplifier, multiplex amplifiers allow the connection of two, four or eight light barriers with little wiring effort. Although multiplex amplifiers are slower in signal processing compared to single-channel amplifiers and have a lower power output, this results in a smaller range of the overall system. Nevertheless, they have a decisive advantage, because the light barriers connected to multiplex amplifiers do not influence each other during operation. Therefore, light curtains can also be realized via a special amplifier function. All light barriers are then related to one signal output, which always generates an output signal if one of the light barriers in the light curtain is interrupted. Alternatively, the light barriers connected to the amplifier can also be evaluated via separate signal outputs.





Minimum level query in recycling plant

HIGH FLEXIBILITY OF USE

The extremely wide range of applications for high-performance light barriers results from the various basic functions provided by both single-channel and multiplex amplifiers: manual or automatic power control, measuring mode, operation as light curtains as well as service functions such as teach-in, alignment control and fault diagnosis.

MANUAL OPERATING MODE

With the manual operating mode, a fixed and therefore constant power is set for the transmitter of the light barrier. This operating mode is suitable, for example, for level monitoring where residual buildup on the sensors is to be reliably faded out or in order not to trigger a switching function during refilling by the material flow.

YOUR ADVANTAGES:

I Individual, manual presetting of a constant power for the transmitter, so that the entire system can be optimally adjusted to the respective application.

AUTOMATIC OPERATING MODE

In the automatic mode, the amplifier readjusts the initially set transmission power according to the situation- completely independently. For this purpose, the amplifier keeps the light barrier at a minimum transmission power level, which is continuously monitored. If the signal strength on the receiver side decreases, e.g. due to increasing contamination of the light barrier optics, the transmitting power is automatically adjusted (compensation of signal drift by increasing the transmitting signal) until the received signal reaches the previous output value again. Even before the entire system reaches its control limits, a signal output is set as an indication to clean the light barrier optics.

Possible applications for this operating mode are e.g. in car washes, sawmills, cement plants or generally in outdoor applications for the control of gates and barriers.

YOUR ADVANTAGES:

- / Automatic tracking of the preset transmission power in case of increasing contamination of the light barrier optics for always reliable operation.
- / Early warning for cleaning the optics before reaching the control limits.
- / High compensation of soiling or other disturbing influences, which can be weather-related, such as fog, snow, heavy rain, etc.

Vehicle detection at access roads or in car washes



MEASURING OPERATING MODE

Some amplifiers have an analog output for the transmission of measured values to a system control (PLC) for evaluation. This output thus offers the possibility to quasi evaluate the damping behavior of materials, e.g. to control the turbidity of liquids in transparent pipes, or to query the current degree of contamination of the transmitter/receiver system. It is also conceivable, however, to analyze multiple layers of material via the measuring mode or to "look" into closed housings (query part in part).

YOUR ADVANTAGES:

- / Use of the light barrier as measuring system in various applications.
- / Detection or presence control also of objects, which are encased by other components.



Turbidity monitoring at a cathodic dip coating system





Height queries in the wood industry

LIGHT CURTAIN OPERATING MODE

The multiplex amplifiers for the connection of 4 or 8 transmitter/receiver systems allow the activation of a light curtain function. If this function is selected, a single switching output is activated when any light beam is interrupted.

For a flexible light curtain height, several amplifiers can be coupled together to integrate additional light barriers into the curtain. Such light curtains are used in sawmills, for example, to reliably detect the beginning of raw logs on conveyors, e.g. before band saws.

YOUR ADVANTAGES:

- / Realization of application-specific light curtains with flexible light curtain height.
- / Individual light barriers do not influence each other during operation.



SERVICE FUNCTIONS

TEACH-IN

The teach function is used to parameterize the switch-off point of the switching output. For this purpose, the object to be detected is placed between the sensors and the teach function is activated by pressing a button. The optimum setting of the switching threshold is determined automatically. The switching output now always reliably delivers a signal when a corresponding object passes the light beam.

YOUR ADVANTAGE:

/ Simple commissioning of the light barrier through automatic parameterization at the push of a button.

ALIGNMENT CONTROL

With this function, a flashing LED indicates how well transmitter and receiver are aligned with each other. If the alignment is optimal, the LED flashes up to 10 times.

YOUR ADVANTAGE:

/ Simple alignment of transmitter and receiver by means of an LED signal.

ERROR DIAGNOSIS

If a system error occurs during operation, it is indicated by LEDs on the amplifier and some devices have a separate switching output. In addition, a diagnostic button can be used to limit the source of the error and thus determine whether it is a line problem or a failure of the transmitter or receiver.

YOUR ADVANTAGE:

/ High availability of the system through targeted system error messages.

/ Fast limitation of the error source by means of the diagnosis button.

Double layer inspection of paper webs





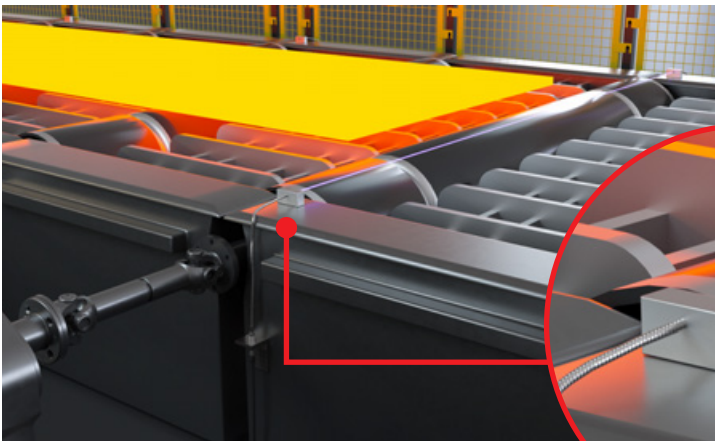
SOLO FILLING

Level detection despite adhesion of residual material.



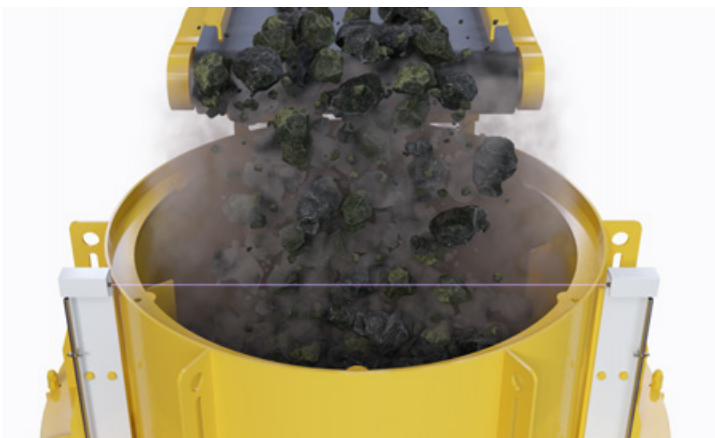
HALL DOOR

Vehicle detection independent of weather conditions.



POSITION DETECTION

Material positioning despite heat radiation, vibration and contamination by scale.



LEVEL DETECTION

Level detection despite heavy dust formation and vibration.

DESIGN

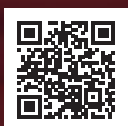
CUBOID



CYLINDER, ROUND



CYLINDER, THREADED



CONNECTION AMPLIFIERS

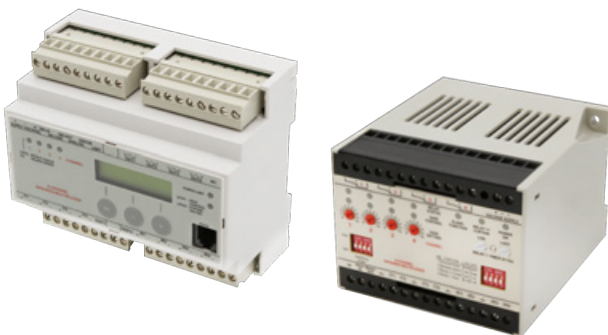
ONE-CHANNEL AMPLIFIER



TWO-CHANNEL MULTIPLEX AMPLIFIER



FOURFOLD MULTIPLEX AMPLIFIER



EIGHTFOLD MULTIPLEX AMPLIFIER



ACCESSORIES

INSTALLATION HOUSINGS



FIBER OPTICS



OPTICS



MOUNTING BRACKETS



FURTHER INFORMATION ON OUR LATEST PRODUCTS YOU WILL FIND AT

IPF ELECTRONIC

www.ipf-electronic.com

Combinations for OS106001

Limit selection further

Amplifier	Sender	Receiver	Range	1	2
OV630840	OS106001	OE126303	8m	1	2
OV634915	OS106001	OE126303	8m	1	2
OV580510	OS106001	OE126303	7m	1	2
OV580530	OS106001	OE126303	7m	1	2
OV580910	OS106001	OE126303	7m	1	2

min - 8

DESIGN TRANSMITTER

DESIGN RECEIVER

ELECTRICAL CONNECTION TRANSMITTER

ELECTRICAL CONNECTION RECEIVER

NUMBER OF CHANNELS

OPERATING VOLTAGE

RANGE

7

IPF ELECTRONIC

22 products in high-performance light barriers

Sort by article no. Products per page 20

min - 8

OE126303 high performance light barrier through-beam sensor receivers, M12x1 25long, Short design, Anschluss an Verstärker, Cube... 91,10 €

104 possible combinations

OS106001 high performance light barrier through-beam sensor transmitter, Ø10mm 45long, Normal power (40mW), 12", Anschluss an... 38,20 €

13 possible combinations

OS106003 high performance light barrier through-beam sensor transmitter, Ø10mm 45long, Normal power (40mW), 12", Anschluss an... 47,50 €

13 possible combinations

PRODUCT SELECTOR FOR HIGH PERFORMANCE LIGHT BARRIERS THE RIGHT SOLUTION WITH JUST A FEW CLICKS

Our high-performance light barriers achieve ranges between 7 and 70 meters. But did you know that up to 5440 device combinations are possible within this range spectrum, depending on the selection of transmitter, receiver and amplifier?

Nevertheless, with our product selector for high-performance light barriers at www.ipf-electronic.com you will find exactly the right solution in no time at all.

Simply enter the desired range of the light barrier and you will receive all available device combinations. With a few more clicks, you can refine the selection and finally choose the suitable devices. Done.



High-End in High-Tech.



EFFICIENT ADVICE ON ALL MATTERS

PERSONAL SERVICE AND PROBLEM-SOLVING ON SITE

Every call is important! When you contact our technical hotline, you speak to experienced employees who will answer your questions competently and conscientiously. Our goal is to provide you with comprehensive and individual advice around the clock. Our expert team of in-house trained personnel are here to support you.

You can also contact your personal applications consultant in our Sales department. At ipf electronic, we work together very closely so that we are able to react quickly, competently and reliably to your specific query.

In almost all industrial applications, problems are becoming ever more complex and varied. Solutions to these problems often require external expertise. You will find this expertise together with a high level of specialist and problem-solving competence at ipf electronic. We are happy to discuss tasks which may seem small with you. For us, this is a matter of course!

ipf electronic is a renowned supplier of industrial sensor technology and a reliable partner. No customer query is ignored and no on-site customer appointment is missed. Our extremely broad range of products will convince you.

Diversity, expertise, consultation and flexibility:
This is ipf electronic's recipe for success.



ipf electronic gmbh
info@ipf-electronic.com • www.ipf-electronic.com

Subject to alteration! Version: April 2021