dimensions	**75 x 75 x 10mm**
	105 x 105 x 10mm
	150 x 150 x 12mm

through-beam	ring size	**10.6mm**
		15.6mm
		20.6mm
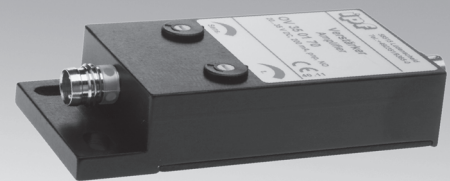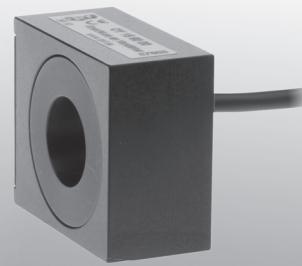
✓ **detects metallic and non-metallic objects**

✓ **no lateral diffusion**

✓ **robust metal housing**

✓ **easy mounting and high degree of protection**

✓ **switching state display by LED**

✓ **sensitivity adjustment via integrated potentiometer**

✓ **adjustable pulse stretching**

✓ **high switching frequency due to short response times**

✓ **connection with M8-connector**

amplifier with dynamic or static output function

| |→| | DC ═ | PNP | M8 | ▢ |
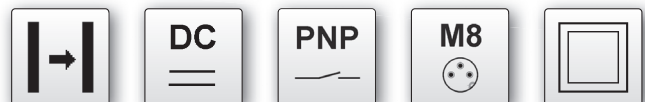
description

Optoelectronic ring light barriers have been designed to monitor the material flow of small parts such as screws or springs. Plastic parts or liquids (drops) can be reliably recognized as well. Material can also be detected when it is supplied through a transparent supply hose.

A light curtain is formed within the ring by several photoelectric sensors. The corresponding amplifier converts the interruption of one light beam into a switch signal. This guarantees the detection of very small objects above 1mm in diameter (for OY106000). The amplifier is available in both a dynamic and static version.

Using the dynamic amplifier parts can be detected, moving quickly through the ring (e.g. free falling objects). An advantage of the dynamic functional principle is the automatic adjustment in case of variable environmental conditions like soiling or scratching of the supply hose. Typical applications are counting tasks or in the feeding technology for automatic assembly machines.

The connection of a ring light barrier to a static amplifier allows slow or static conditions to be recognized in addition to fast movement sequences. The output stays in the connected mode, as long as material can be found in the active zone that needs to be detected. This version is used to control e.g. the presence of liquids in a transparent plastic hose.

It is possible to adjust the response sensitivity using the integrated potentiometer. The soiling of a transparent supply hose may be compensated this way.

A second potentiometer enables adjustment of the output pulse. Independently of the speed of the part to be detected the device can be adapted to the requirements of the connected control system.

application examples

▶ detection of e.g. screws, springs in transparent feedings
▶ detection of liquids, drops, air bubbles
▶ thread breakage monitoring

integrated light barriers

1400   ring-shaped

article-no.	OY106000	OY156000	OY206000
operating range	10.6mm	15.6mm	20.6mm

TECHNICAL DATA

ring size	10.6mm	15.6mm	20.6mm
resolution	Ø 1mm in the center	Ø 2mm in the center	Ø 3mm in the center
operating voltage	connection to amplifier	connection to amplifier	connection to amplifier
transmitting element (pulsed)	infrared, 880nm	infrared, 880nm	infrared, 880nm
housing material	aluminum	aluminum	aluminum
dimensions	35x30x20mm	40x35x20mm	40x35x20mm
operating temperature	0 ... +50°C	0 ... +50°C	0 ... +50°C
degree of protection (EN 60529)	IP63	IP63	IP63
connection	cable connector, 500mm, PUR	cable connector, 500mm, PUR	cable connector, 500mm, PUR

article-no.	OV350170	OV350175
version	**dynamic**	**static**

TECHNICAL DATA

version	dynamic	static
output	pnp, no	pnp, no
operating voltage	20 ... 35V DC	12 ... 30V DC
current consumption (w/o load)	< 60mA	< 60mA
output current (max. load)	200mA	200mA
voltage drop (max. load)	2.0V DC	2.0V DC
response/decay time	0.1ms	0.1ms
pulse stretching	1 ... 150ms	10 ... 300ms
display	yellow LED	yellow LED
sensitivity	potentiometer	potentiometer
short-circuit protection	+	-
reverse polarity protection	+	+
housing material	aluminum	aluminum
dimensions	35x15x70mm	35x15x70mm
operating temperature	0 ... +50°C	0 ... +50°C
degree of protection (EN 60529)	IP65	IP65
connection	M8-connector, 3-pin	M8-connector, 3-pin
connection accessories	e.g. **VK200075**	e.g. **VK200075**

connection

connector device
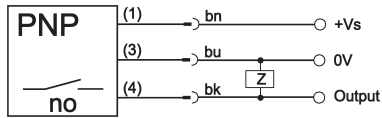
wire colors: bn = brown (1), bu = blue (3), bk = black (4)

This data sheet contains the standard versions only. Kindly request the availability of other output- and connection versions.

We will be pleased to supply the matching cable socket for your devices with connector. Please refer to the list in catalog chapter "accessories" under "cable sockets **ipf**-SENSORFLEX®" or search our website for "VK".

Warning: Never use these devices in applications where the safety of a person depends on their functionality.