

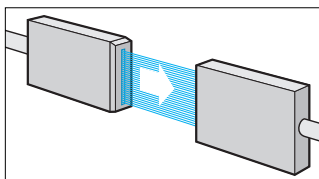
Fiber optic sensors analog type

Design

Photo electric sensors with an analog output signal are ideal for control system applications. The output signal, current and voltage, is directly proportional to the received signal strength. The amplifier may be used with all A type fiber optic cables. The device is specially suited for use with a range of specific flare type through beam fiber optics, (diameter converters). The out-

put signal is linear as a function of the surface area of the light curtain blocked by the object. The height, shape or orientation of an object can be determined. The resolution depends on the flare size. Smaller flare sizes result in higher resolutions, as the output signal strength is a function of the total flare size.

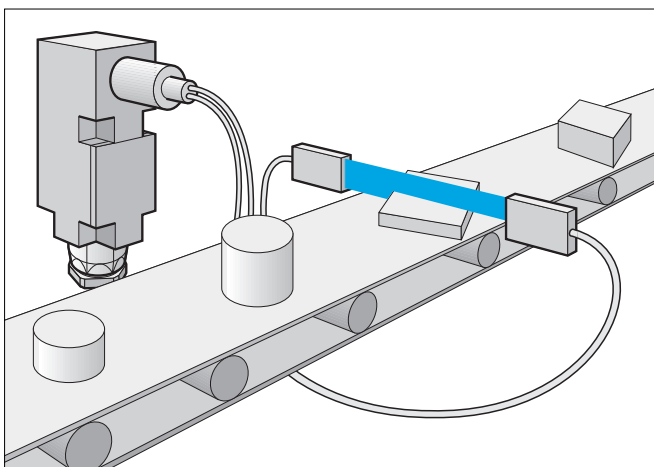
Flare type fiber optic unit



Flare type fiber optics consist of an emitter and receiver. The fibers are bundled and flared to a line. If an object passes through the "light curtain", the received signal strength is proportional to the surface area of the light curtain

that has been blocked. The measurement is independent of color, form or surface properties of the target. The same object may not give exactly the same output at different positions within the beam area. This is the result of the asymmetrical arrangement of the fibers which leads to a non linear, but repeatable, component to the output signal.

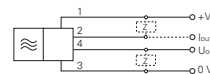
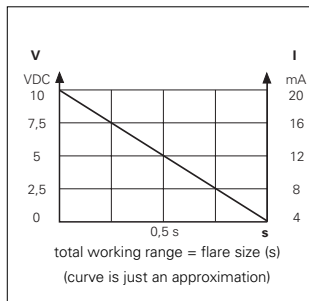
Application



The almost linear characteristics of the emitter can be used for precise non contact measurement of object height.

Typical applications are:

- Sorting various objects
- Monitoring diameter and height
- Double sheet control



technical data

range for max. output signal	100 mm
slope	adjustable
zero point	adjustable
light source / wave length	pulsed infrared LED / 880 nm
voltage supply range Vs	12 - 30 VDC
max. supply current average value / peak value	33 mA / 43 mA
output current	4 - 20 mA
output voltage	0 - 10 V
load resistance for current output	≤ 400 Ω
load resistance for voltage output	≤ 10 mA
temperature drift	≤ 0,15% / °C of the output value
response time	≤ 1 ms
short circuit protection	-
reverse polarity protection	yes
temperature range	0...+65 °C
housing material	PBTP
protection class	IP 65

Option

output current 0 - 20 mA

Fiber optic sensor

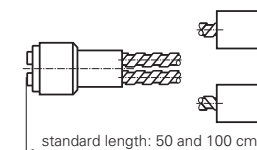
FWDK 40U9002



- Analog current and voltage output
- Slope and zero point adjustable
- Range 100 mm
- Temperature compensated

Fiber optic cable

Flare type fiber FSF / FSE



The fiber optic cables are available in plastic and metal sheaths and come in standard lengths of 50 and 100 cm. Other lengths are available on request.

flare size s	dimensions mm							part number
	A	B	C	D	E	F	G	
8 mm	10	10	-	-	-	-	25	FSF 050A3020 FSF 100A3020
8 mm	10	10	-	-	-	-	25	FSE 050A3020 FSE 100A3020
20 mm	10	25	9	6.5	12	3.2	40	FSF 050A3021 FSF 100A3021
35 mm	12	40	12	7.5	25	4.2	50	FSF 050A3022 FSF 100A3022
metal sheath (FSF...)								length 50 cm length 100 cm
plastic sheath (FSE...)								length 50 cm length 100 cm

FWDK 40I9001

