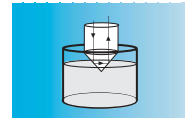


Level monitoring sensors



- Level monitoring sensors with infrared light
- Large operating range
- Highly chemical resistant



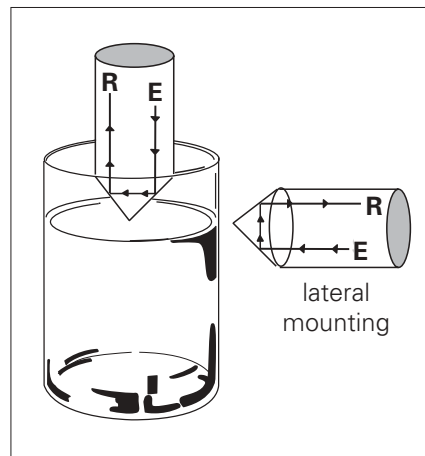
Optical level monitoring

Function

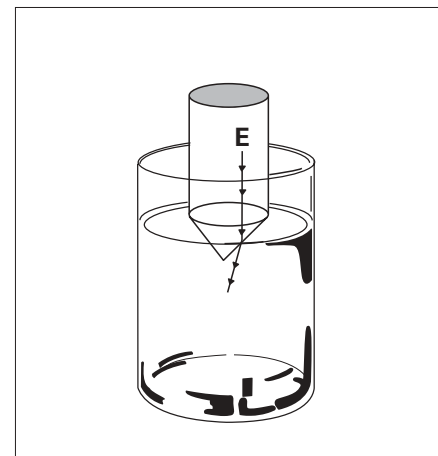
Levels can be measured simply and accurately using infrared light, without the need for any electrical or thermal connection between the target medium and sensor. The operating principle is illustrated in the drawing. The ratio of reflective indices changes, depending on whether the tip of the sensor is surrounded by liquid or air. If the sensor

tip is immersed in liquid, the light rays will be deflected into the liquid and the electronics of the receiver changes its switching status. The operating principle remains the same, irrespective of whether the liquid medium can conduct electricity or not. The medium can also be clear or cloudy.

Sensing level not reached



Sensing level reached



Housing

The housing material of the FFAK series is polysulphone (PSU), a special plastic chemically resistant to acids, lyes or oils. The FFAM series housing consists of stainless steel, which is also resistant

to many liquids. Its compact size allows it to be installed even where space is at a premium. The sensor can be installed vertically or horizontally.

Application

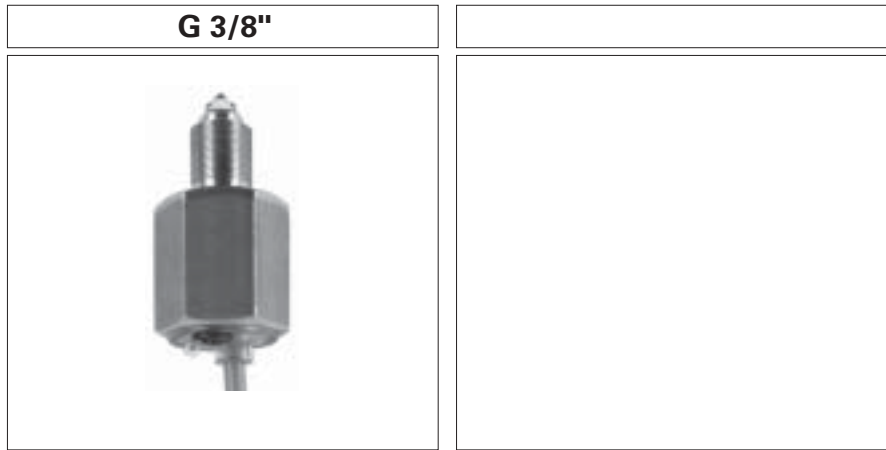
The chemical resistance of Polysulphone (PSU) or stainless steel (with glass tip) to various liquids, lends itself to many applications. Under normal conditions the sensor can be used with the following media:

- alcohol
- ether
- battery acid
- water
- hydrochloric acid
- vinegar
- mineral oils
- diluted lyes
- lactic acid

This list shows only the most significant media; the suitability for applications with other media should be checked with a chemical compatibility test.

Liquid level monitoring sensors

Liquid level monitoring sensors / metal housing

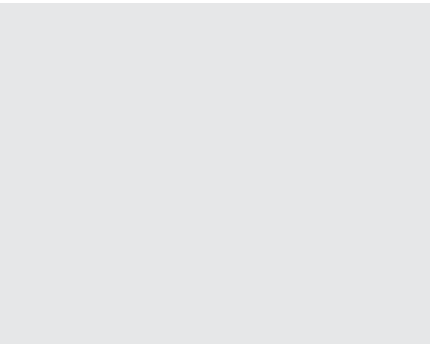
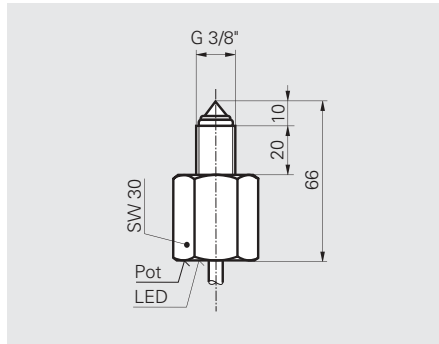


Type	switched when dipped	pulsed light	
PNP		FFAM 17PTD1002/L	

technical data		
voltage supply range Vs	10 - 30 VDC	
supply current average value / peak value	14 mA / 15 mA	
max. switching current *)	200 mA	
voltage drop	≤ 2 VDC	
light source / wave length	pulsed infrared LED / 880 nm	
output indicator	yellow LED	
sensitivity adjustment	Pot	
nominal pressure (tip)	40 bar	
short circuit protection *)	no	
reverse polarity protection	yes / +Vs	
temperature range	0...+65 °C	
housing material **)	stainless steel DIN 1.4305 / AISI 303	
tip material	glass (borosilikat)	
max. torque	18 Nm	
protection class	IP 67	

Type with thread M16x1	PNP	FFAM 16PTD1002/L	

*) a short circuit might damage the device
 **) other housing materials on request

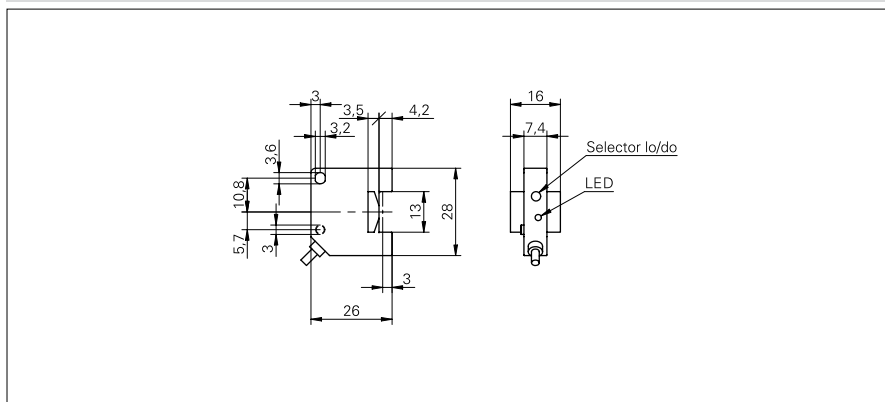




Liquid level and leakage sensors

FFDK 16P50Y0

dimension drawing



general data

type	Liquid level sensor
light source	pulsed infrared diode
light indicator	LED red
wave length	950 nm
max. outer diameter of the pipe / tube	8 ... 13 mm
max. thickness of the pipe / tube	1 mm

electrical data

response time / release time	< 2 ms
voltage supply range +Vs	9 ... 30,8 VDC
current consumption max.	25 mA
voltage drop Vd	< 1 VDC
output function	light / dark operate switchable
output circuit	PNP
output current	< 100 mA
short circuit protection	yes
reverse polarity protection	yes

mechanical data

width / diameter	16 mm
height / length	28 mm
depth	26 mm
type	rectangular
housing material	PC
connection types	cable

ambient conditions

operating temperature	-10 ... +55 °C
protection class	IP 50

photo



connection diagram

