Photoelectrics Level Sensors Type VP, Unmodulated





- Sensor for liquid level detection
- Built-in amplifier, Ga-As diode
- Output: Transistor NPN/PNP or SCR, NO or NC
- High chemical resistance to most acids and bases
- VP01/03: Output OFF when sensor in liquid
- VP02/04: Output ON when sensor in liquid
- No electrical or thermal connection between liquid and electrical circuit
- DC types: LED-indication for output ON
- Power supply: DC types: 10 to 40 VDC AC types: 110 or 230 VAC



Product Description

Optical level sensor with unmodulated, infrared light for the detection of liquids. Fitted with built-in amplifier. Transmitter and receiver are completely self-contained in solid plastic housing designed for mounting into container wall. VP01/02 are available in a Polysulphone housing resistant to most acids and bases. VP03/04 are available in a Polyamide 12 housing resistant to various solvents.

Ordering Key

VP 0 3 E P

Type————		
Housing —	_	
Output status —		
Output type —		
PNP output —		
FNF output		

Type Selection - DC Types

Housing material	Ordering no.	Ordering no.	Ordering no.	Ordering no.
	Transistor NPN	Transistor NPN	Transistor PNP	Transistor PNP
	Make switching	Break switching	Make switching	Break switching
Polysulphone Polyamide 12	VP 02 E	VP 01 E	VP 02 EP	VP 01 EP
	VP 04 E	VP 03 E	VP 04 EP	VP 03 EP

Type Selection - AC Types

Housing material	Ordering no.	Ordering no.	Ordering no.	Ordering no.
	Make switching	Break switching	Make switching	Break switching
	110 VAC	110 VAC	230 VAC	230 VAC
Polysulphone	VP 02-110TB	VP 01-110TB	VP 02-230TB	VP 01-230TB

Specifications

	Transistor NPN/PNP	SCR output AC types
Rated operational voltage	10 - 40 VDC	110 VAC: 100 - 121 VAC, 45 - 60 Hz 230 VAC: 195 - 265 VAC, 45 - 60 Hz
Rated operational current Continuous	200 mA	10 - 100 mA
Voltage drop	≤ 1.0 VDC	≤ 9.0 VAC
No-load supply current	≤ 12 mA	≤ 7 mA
Sensing accuracy Liquid level difference	Horizontal mounting: ± 5 mm Vertical mounting: ± 2.5 mm	Horizontal mounting: ± 5 mm Vertical mounting: ± 2.5 mm
Ambient light	0 - 100 lux	0 - 100 lux
Frequency of operating cycles (f)	30 Hz	5 Hz



Specifications (cont.)

	Transistor NPN/PNP	SCR output AC types
Environment Degree of protection Operating temperature Storage temperature	IP 67 -20° to +80°C (-4° to +176°F) -40° to +100°C (-40° to + 212°F)	IP 67 -20° to +80°C (-4° to +176°F) -40° to +100°C (-40° to + 212°F)
Indication for output status	LED, yellow	
Housing and tip material VP01/02 VP03/04	Polysulphone Polyamide 12	Polysulphone
Weight	90 g	90 g
Connection	Cable (PVC), 2 m Ø4,1 mm, 3 x 0,25 mm2	Cable (PVC), 2 m Ø5,2 mm, 2 x 0,5 mm2
Pressure	10 bar at + 60°C	10 bar at + 60°C
Pipe thread	3/8" PT	3/8" PT
CE-marking	Yes	Yes

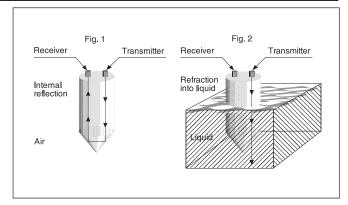
Mode of Operation

The sensor contains IR transmitter, receiver and amplifier with transistor or SCR output. The light source is a Ga-As diode emitting infrared light.

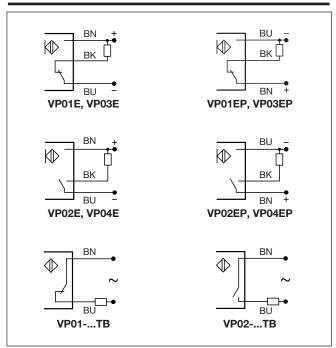
The conical tip of the sensor forms an angle of 90°C. This angle acts as a prism, i.e. the beam, emitted from the Ga-As diode placed in one side of the sensor head, is reflected internally to the phototransistor placed in the other side of the sensor

head, provided that the tip of the sensor is situated in free air. If the sensor tip is immersed in a liquid, always having a refractive index different from air, the beam will not be refracted by the prism and the photo transistor will not receive any signal.

The sensor types can operate in oil, waste water, aqueous solutions such as beer, wine, alcohol etc. without any kind of accessory.



Wiring Diagrams



Dimensions

