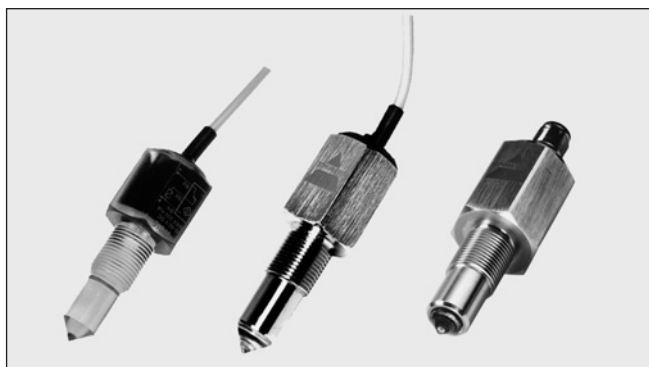


Photoelectrics Level Sensors Types VP, Modulated

CARLO GAVAZZI



- Sensor for liquid level detection
- Built-in amplifier, Ga-As diode
- Output: Transistor NPN/PNP, NO or NC switching
- High chemical resistance to most acids and bases
- VP01/03/23: Output OFF when sensor in liquid
- VP02/04/24: Output ON when sensor in liquid
- No electrical or thermal connection between liquid and electrical circuit
- LED-indication for output ON
- Power supply 10 to 40 VDC



Product Description

Optical level sensor with modulated, infrared light for the detection of liquids. Fitted with built-in amplifier. Transmitter and receiver are completely self-contained in solid plastic designed for mounting into container wall.

VP01/02 are available in a Polysulfone housing resistant to most acids and bases. VP03/04EM are available in a Polyamide 12 housing resistant to various solvents. VP23/24 are available in a stainless steel housing.

Ordering Key

VP 2 2 E P M -1

Type	VP
Housing	2
Output status	2
Output type	E
PNP output	P
Modulated	M
Connection	-1

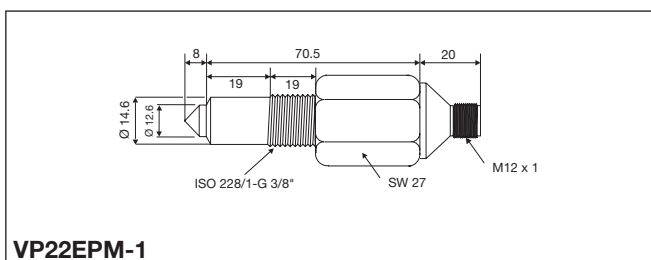
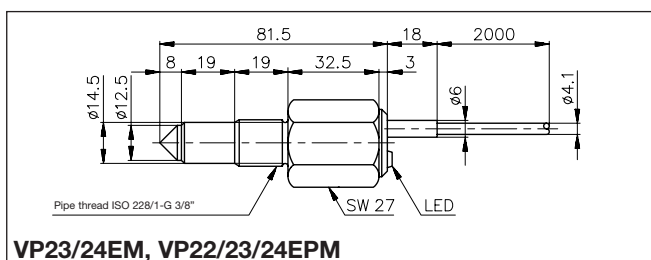
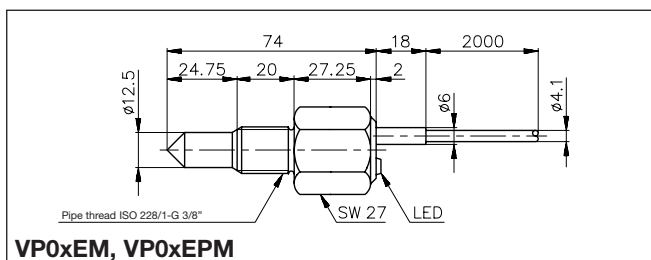
Type Selection

Housing material	Connection	Ordering no. Transistor NPN Make switching	Ordering no. Transistor NPN Break switching	Ordering no. Transistor PNP Make switching	Ordering no. Transistor PNP Break switching
Polysulphone	Cable	VP 02 EM	VP 01 EM	VP 02 EPM	VP 01 EPM
Polyamide 12	Cable	VP 04 EM	VP 03 EM	VP 04 EPM	VP 03 EPM
Nickel-plated brass	Cable			VP 22 EPM	
Nickel-plated brass	Plug			VP 22 EPM-1	
Stainless steel	Cable	VP 24 EM	VP 23 EM	VP 24 EPM	VP 23 EPM

Specifications

Rated operational voltage	10 - 40 VDC	Tip material	
Rated operational current Continuous	200 mA	VP01/02/22	Polysulphone
Voltage drop	≤ 1.0 VDC	VP03/04/23/24	Polyamide 12
No-load supply current	≤ 7 mA	Weight	
Sensing accuracy Liquid level difference	Horizontal mounting: ± 5 mm Vertical mounting: ± 2.5 mm	VP0x	90 g
Ambient light	0 - 50.000 lux	VP2x	190 g
Frequency of operating cycles (f)	30 Hz	Connection	
Environment		Cable	PVC, 2 m Ø4,1 mm, 3 x 0,25 mm ²
Degree of protection	IP 67	Plug (-1)	M12 x 1
Operating temperature	-20° to +80°C (-4° to +176°F)	Cable for plug (-1)	CON.1-... series
Storage temperature	-40° to +100°C (-40° to +100°F)	Pressure	
Indication for output status	LED, yellow	VP0x	10 bar at + 60°C
Housing material		VP2x	10 bar at + 80°C
VP01/02	Polysulphone	Pipe thread	3/8" PT
VP03/04	Polyamide 12		
VP23/24	Stainless steel (AISI 304)		
VP22	Nickel-plated brass		

Dimensions



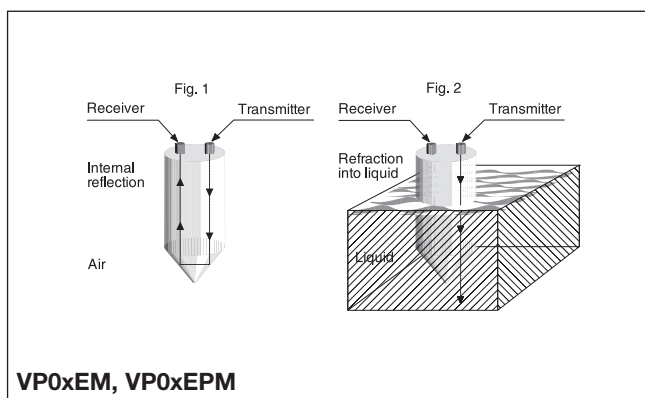
Mode of Operation

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

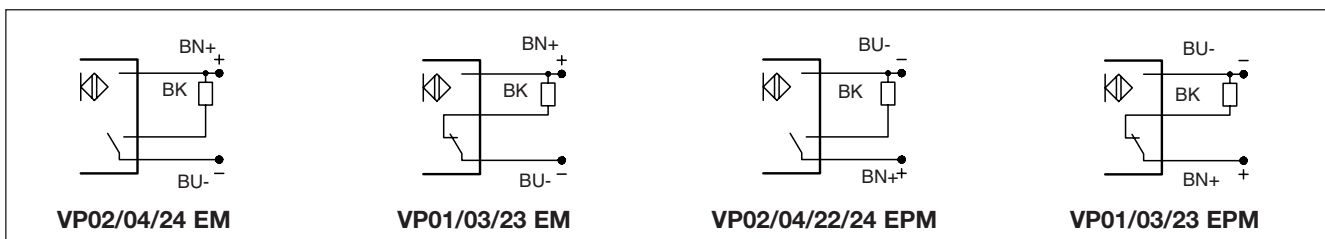
The conical tip of the sensor forms an angle of 90°C. This angle acts as a prism, i.e. the beam, emitted from the Ga-As diode placed in one side of the sensor head, is reflected internally to the phototransistor placed in the other side of the sensor head, provided

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.

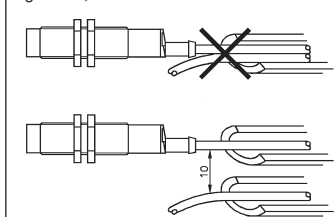


Wiring Diagrams

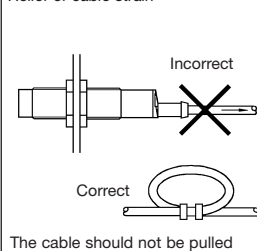


Installation Hints

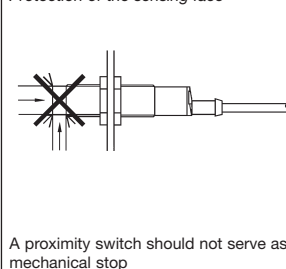
To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables



Relief of cable strain



Protection of the sensing face



Switch mounted on mobile carrier

