

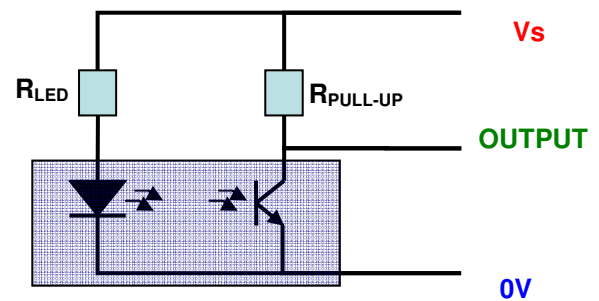
# Optical Liquid Level Sensors D500A3SH



This liquid presence sensor has been developed to address the needs of high volume OEM applications. The sensor contains an infra-red emitter and detector accurately positioned to ensure good optical coupling between the two when the sensor is in air. When the sensor's cone is immersed in liquid, the infra-red light escapes from the cone causing a change in the amount of light at the detector. This configuration allows the customer to tailor the sensor electronics (supply, protection etc.) to their unique application.



Housing	D500 M10 Thread
Repeatability	± 1 mm
Hysteresis	1 mm depending on liquid
Response Time: Rising Liquid	50 µS
Response Time: Falling Liquid	< 1 second
Supply Voltage (Vs)	Any (see below)
Supply Current	10 mA
Operating Temperature Range	-20°C to +80°C
Housing Material	Polysulphone UDEL 1700
Environmental	IP 67 Rated
Pressure Range	20 bar



Pre-selected R <sub>LED</sub> and R <sub>PULL-UP</sub> Value for different Supply Voltages				
V <sub>s</sub>	R <sub>LED</sub>	R <sub>PULL-UP</sub>	V <sub>OUTPUT</sub> in Air	V <sub>OUTPUT</sub> in Water
3.3V	200R	2K	< 0.75V	> 2.5V
5V	360R	2K	< 1V	> 4.25V
8V	680R	2.5K	< 1.5V	> 7.25V
12V	1K	3K	< 3V	> 11.25V
15V	1.3K	3.5K	< 3.25V	> 14.25V
24V	2.2K	4K	< 10.5V	> 22.5V

Typical installation: Customer has to select suitable resistors for their chosen supply voltage. Forward voltage of LED is 1.3V and LED current should be 10mA (depending on application liquid). Therefore, for a supply of Vs:

$$R_{LED} = \frac{(V_s - 1.3)V}{10mA} = \frac{12 - 1.3}{0.01} = 1070\Omega \approx 1.1k\Omega$$



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