

Application Spotlight

Chemical Liquid Level Monitoring on a Sight Glass

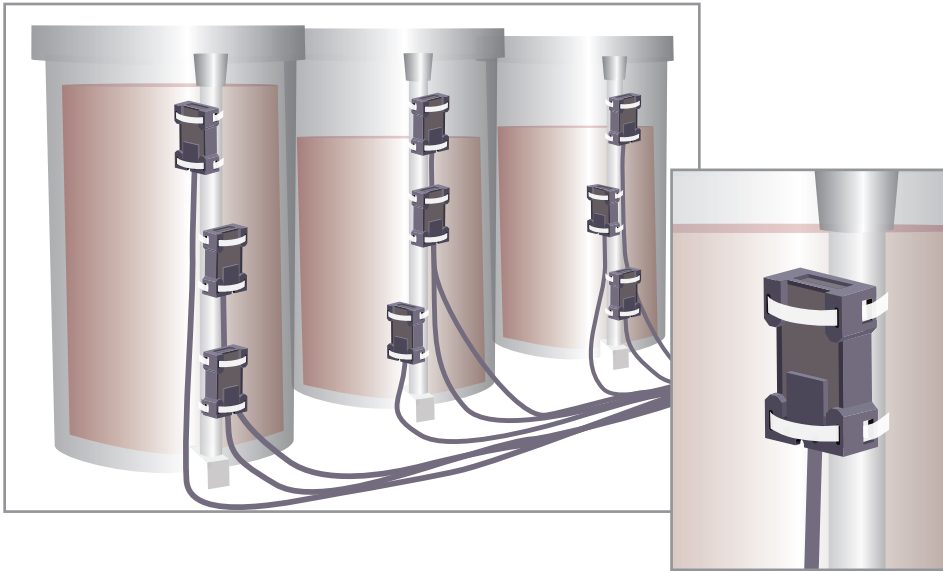
The semiconductor industry uses many difficult to handle chemicals in the IC manufacturing process. These chemicals include highly concentrated acids, strong bases and deionized water that are particularly difficult for most capacitive and optical sensors to sense reliably due to either high or very low conductivity, residual material or entrained bubbles. Residues left from chemicals may cause false triggering (liquids showing as present when they really are not).

False triggering with these difficult materials cause equipment shutdowns and require maintenance intervention to recover. In an industry where tool availability is critical, these false triggers bring an immediate response from the end user customers and their production teams. All equipment manufacturers are graded on tool availability by the semiconductor manufacturing customers (IDM's) and false sensor triggering leading to tool shutdown is taken very seriously.

Semiconductor equipment manufacturers have found that the perfect solution in detecting these difficult chemicals is Balluff's proprietary and unique SmartLEVEL capacitive sensors. SmartLEVEL also responds correctly to residues of high conductivity liquids like acids that may remain on the surface of tubing and vessels after the bulk materials have been removed.

Benefits of using SmartLEVEL Capacitive Sensors:

- SmartLEVEL eliminates false readings due to foaming, filming or material buildup
- Tool downtime and maintenance costs are reduced, improving tool availability
- Easy to install and set up with bracketing designed for replacement of other sensors
- Non-contact operation through the container wall up to 10 mm thick
- Red LED indicates "On" condition for visible readout in transparent enclosures



Sight Glass Level Monitoring

In the application above, the SmartLEVEL sensor is attached to the tank's sight tube with the included mounting hardware. Semiconductor wet processing tools use three sets of tanks for each chemical used; 1) bulk tank 2) day tank 3) waste tank. These tanks are stored inside the tool and have local level monitoring on the sight glasses and are positioned on the sides of the chemical tanks. Each tank has three levels monitored; 1) low level 2) high level 3) overfill leading to the three sensors on each sight glass.

Ordercode	Part Number	Description	
BCS008H	BCS R08RR01-PSMFAC-EP02	PNP, NO, SmartLEVEL sensor, 2m PUR cable	1
BCS008H	BCS R08RR01-POMFAC-EP02	PNP, NC, SmartLEVEL sensor, 2m PUR cable	1



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