



OPTILEVEL



The technique with floats
- was it not
yesterday?



The technique with floats

The magnetostriction is also called technique with floats, as it is a system based on moving floats. The position of one or several floats is detected by using a magnetic field. The floats incorporate a permanent magnet which induces a magnetic field, that determines the position of the floats electronically. This technology is now well antiquated, as this system has weak points. The system does not measure the level of the liquid but the position of the float. Naturally, the float is supposed to be floating just on the surface of the fluid and, therefore, at the position of the level - but who is ensuring this? Well, the nice thing is that you will always get a level reading, the bad thing, you will never be sure whether the floats's position is where it should be.

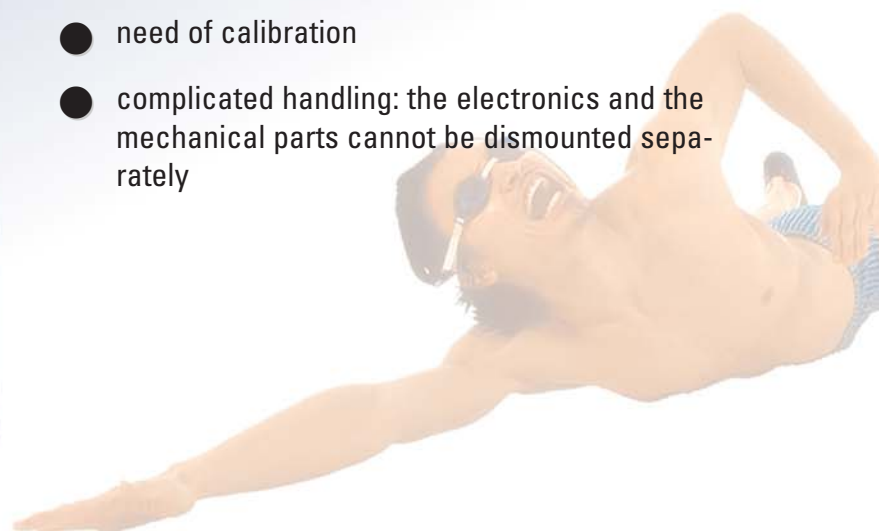
Different products have varying densities. In order to get correct readings, different floats are needed.

Another handicap: immersion pumps create immense problems to measurement systems based on magnetic fields. While capacitive systems do not care about electromagnetic surroundings, magnetostrictive float technology may be sensitively affected and, therefore, rise pipes and still pipes in order to absorb the turbulences and waves are requested.

This means unneeded supplementary costs. One disadvantage will not be compensated even with more invested money: Due to dirtiness at the surface of the floats such as small metal particles, floats become heavier and, therefore, inaccurate.

DISADVANTAGES OF MAGNETOSTRICTION AT A GLANCE:

- mechanical measurement with high bug sensibility
- high costs - for each liquid you need a specific float
- sensible to maintain because of mechanically driven components
- expensive installation
- need of calibration
- complicated handling: the electronics and the mechanical parts cannot be dismantled separately



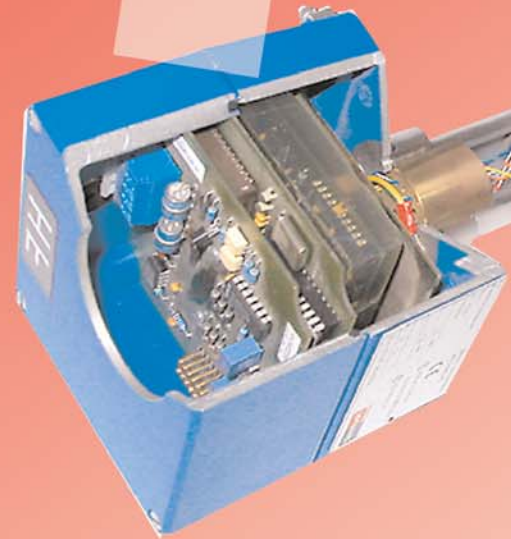
OPTILEVEL - optimal!

Hectronic

Today, the level measurement with the capacitive measuring technique is "State of the art". Without any questions.

HECTRONIC has perfected this technology, which works very precisely and reliably nowadays, with its system called OPTILEVEL. The initial idea was to have one capacitive segment that measures the change of dielectricity. This was (for today's perspective) very naive and it is not surprising that results were poor. Today's probes are designed up of a number of segments, in other words, several capacitors. A number of them are immersed in the fuel (wet) others not (dry), whereby one of them does not correspond neither to the wet nor to the dry values and exactly on this one the precise level gets calculated. The 'intelligent' sensor is capable of analysing the reading of the segments. This allows to self-calibrate the system. The unique capacitive measurement system allows to measure the dielectricity at 10 different locations in the tank. Powerful analysis of that data allows to indicate irregularities in the liquid. Either you get the quality in your tank that you are ordering or the system will recognize the difference.

The quality of the fuel becomes more interesting as it gets more expensive. Multi-segment capacitive systems like OPTILEVEL have the ability of measuring the dielectricity at various positions or even continuously over the whole diameter of the tank. This allows to detect any impurities of a fuel.



ADVANTAGES OF CAPACITIVE MEASUREMENT AT A GLANCE:

- incorruptible measurement and precise measurement values
- low expenditures - the system recognises each liquid and measures optionally even density/quality
- nearly an unlimited lifetime
- easy installation
- self-calibration
- easy handling: possibility of singular dismounting of the electronic part

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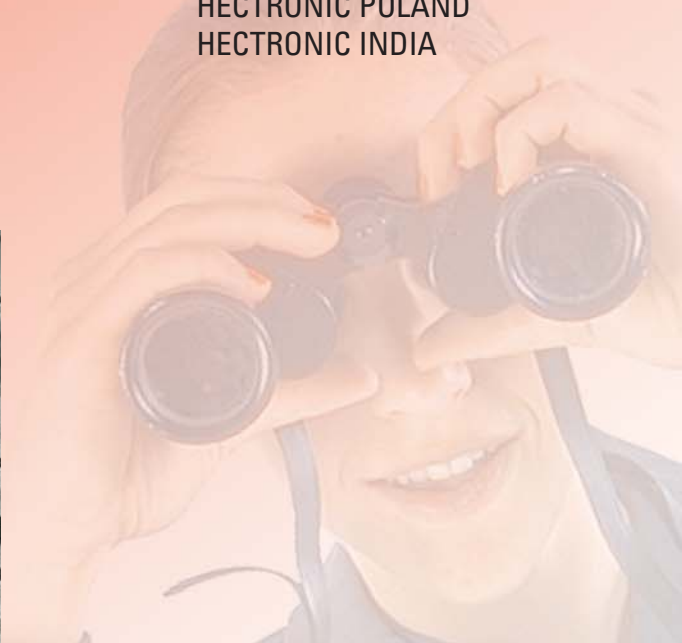
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What OPTILEVEL does better:

Task	OPTILEVEL HLS 3010	Magnetostrictive float probe
Capability to measure water and temperature	Yes	Yes
Capability to measure AdBlue	Yes	Not known - long term precision is critical
Moving parts	No	Yes, normally two floats
Installation kit	Not necessary	Rise pipe is needed
Installation time	Very short	Depends on the size
Installation in tanks with immersion pumps	Yes, no problem	critical
Manual adaptation to liquid features (e.g. density)	Not necessary	Liquid has be known to install the right float
Requirements, if the liquid changes	None	Float has to be exchanged
(Optional) Single parts influencing the accuracy	For the petrol market the construction of each probe is equal	Depends on the dimension of the float and on the quality of the analogue circuit
Option for density measurement available	Yes, optionally available in the same probe	No, you need a supplementary probe
Quality check through dielectricity measuring	Yes, at 10 different positions - differences of the liquid quality are recognized	No
Capability to recognize "aqueous" diesel	Yes, if the dielectricity is analysed	No
Sensible on dirtiness	No, no moving parts	Yes, floats could stick together and change their weight
Sensible on magnetic particles in the tank	No	Yes
Sensible on transportation	No, very robust	Sensible because of their multipart and capillary construction
After Sales-Service	Not necessary	Not known
Single dismounting of the electronic and mechanical parts	Yes	No
Warranty	2 years	Not known