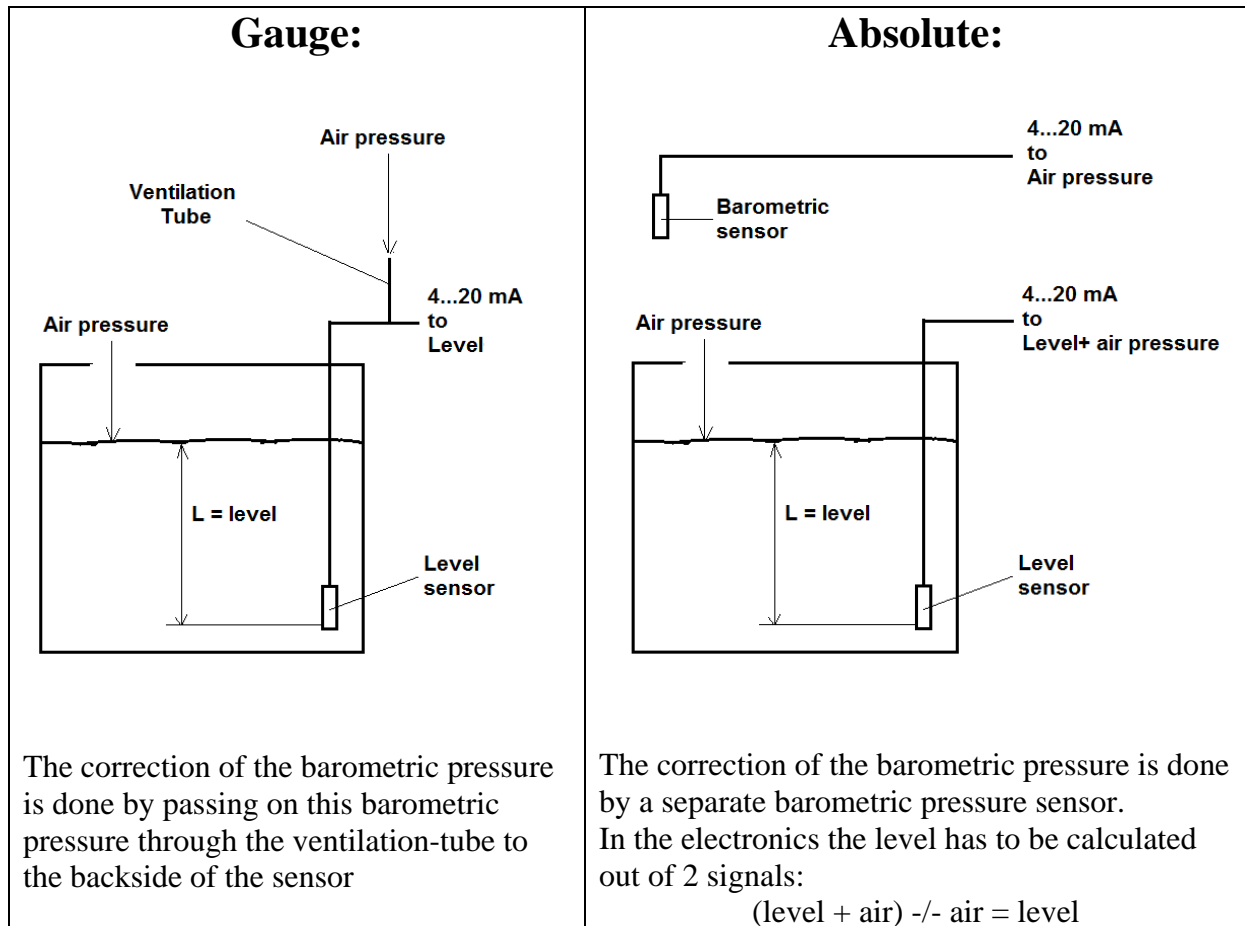


## Instruction Reading out and checking Level-pressure sensors.

### 2 ways of Level-Measurement:



### Gauge:

The output of the levelsensor is linear to the measured height in mbar.

The only calculation that have to be done is to convert the units from mbar to the height of the medium in the tank:

**From mbar to mwc** (meters water column):

1 bar = 1000 mbar =  $1000 / (10 * 9,81) = 10,2$  m water column  
(gravitational acceleration =  $9.81 \text{ m/sec}^2$ )

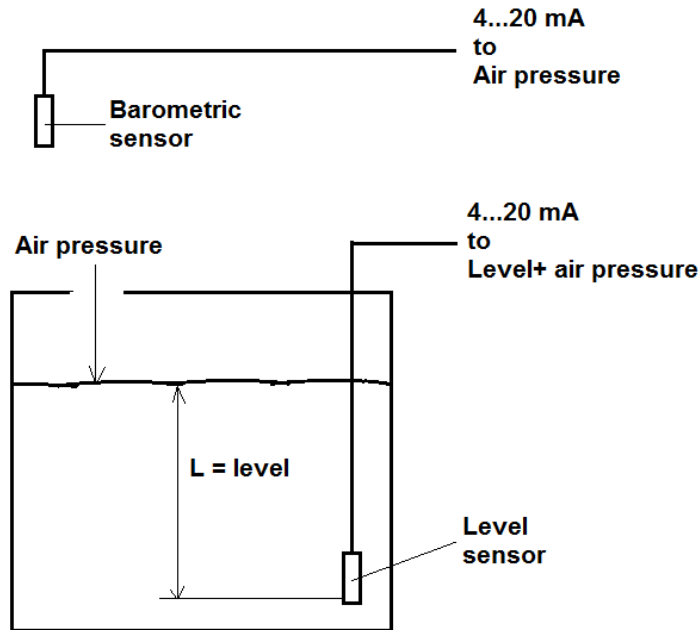
**From mwc to m dieselfuel:**

1 m water c =  $1 / \text{density of the medium} = 1 / 0,85 = 1,176$  m dieselfuel column

## Absolute:

Levelsensor, range 900 – 1600 mbar absolute, output 4...20 mA  
 Barometric sensor, range 900 – 1100 mbar absolute, output 4...20 mA

The level sensor measures the filling height + the barometric pressure.



Example:

Reading out Level sensor in dieselfuel = 12,65 mA  
 Reading out barometric sensor in outside air : 13.36 mA  
 Density dieselfuel = 85 tons/m<sup>3</sup>, G-force = 9,81 m/sec<sup>2</sup>

Levelsensor :

Output 12.65 mA :  $(12.65 - 4) / 16 * (1600 - 900) = 378,44 \text{ mbar.}$

Barometer :

Output 13.36 mA :  $(13.36 - 4) / 16 * (1100 - 900) = 117,00 \text{ mbar.}$

----- -/-  
 Level height                      261,44 mbar.

From mbar to mwc (meters water column):

1 bar = 1000 mbar =  $1000 / (10 * 9,81) = 10,2 \text{ m water column}$

From mwc to m dieselfuel:

1 m water c =  $1 / 0,85 = 1,176 \text{ m dieselfuel column}$

$261,44 \text{ mbar} = 261,44 / (10 * 9,81) = 2,6650 \text{ m w c.} = 266,50 \text{ cm.w.c.}$

$266,50 / 0,85 = 313,53 \text{ cm dieselfuel c.}$