

# Hydrostatic filling level measurement made easy



The majority of hydrostatic filling level measuring devices on the market consist of pressure transmitters with “flange-mounted” filling level functionality, offering minimal convenience in terms of parametrisation, tank shape input and display of the measured data. By contrast, LABOM’s PASCAL C14 Level is a true filling level measuring device and is also extremely easy to use.

The North German specialist for pressure and temperature measuring devices develops solutions in close collaboration with its customers, which are designed to meet the specific requirements of the respective production processes. It has been shown that companies specifically request measuring devices, which are simple and intuitive to operate. Ideally the device is connected, parametrised in a few simple steps and is then immediately ready to use.

Labom has applied itself here and developed a solution, which is consequently designed for hydrostatic level measurement. The development focused on simple and intuitive user guidance for parametrisation and optional display of measured data.

## Revolutionary parametrisation concept

The pressure of the liquid column is used to hydrostatically measure the filling level. The pressure is converted to fill height by means of the density. The fill volume and weight can be determined from this if the tank shape is entered.

These interrelationships perfectly and intuitively represent a fundamentally newly developed parametrisation concept. One key to this is decoupling pressure and filling level measurement. The user is no longer forced to think in terms of “pressure” and manually make corresponding conversions. The device does this for him. The tank shape, for example, is saved in fill height/fill volume pairs and is therefore independent of the density of the filled media. When the media is changed, the user simply has to change the density. The device does all other calculations for him.

Furthermore, the user can also select the reference point for the filling level measurement, so-called “Level Zero”, regardless of the location where the pressure measurement is taken. The pressure measurement, for instance, can therefore be taken at the side of the tank, while the reference point for the filling level measurement can be the base of the tank. The installation position of the measurement therefore no longer needs to be considered for ongoing parametrisation. Tank shape tables, for example, issued by the manufacturer of the tank can be applied without the need for conversion.

The user can also freely choose which filling level value (fill height, volume or weight) should be provided at the current output of the transmitter.

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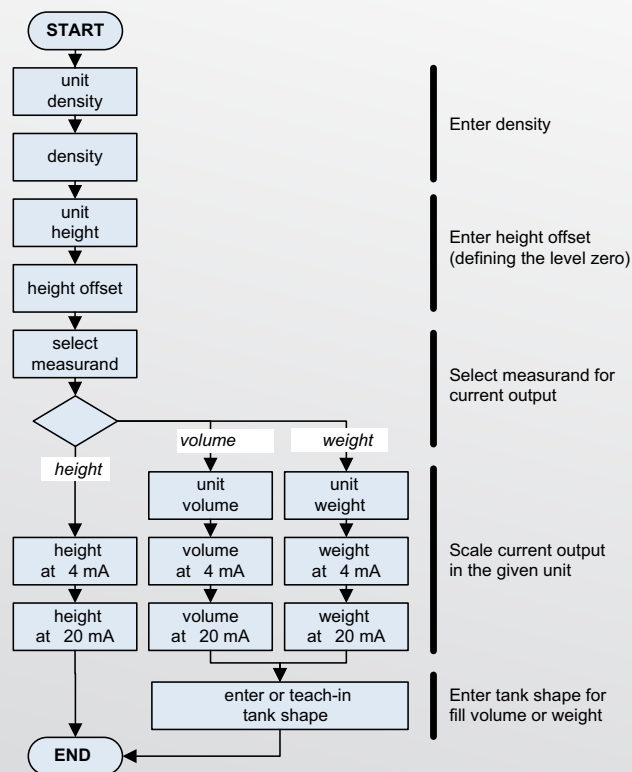
## Intuitive operating software with flexible output of measured data

Operating software was developed, perfectly tailored to filling level measurements, based on the new parametrisation concept and the hardware of the proven PASCAL Ci4 pressure transmitter.

All level parameters can be entered or taught at the tank. The parameters are entered using the units selected by the user. All the common units for height, volume, weight and density are stored for this.

The tank shape table can also be entered or taught. This can be done by filling or emptying the tank. Teaching and entering can also be combined. Support points can be very easily added or deleted. The device itself correctly sorts the support points.

The device can simultaneously calculate and also simultaneously display fill height, volume and weight, and display it in the selected unit or as a percentage, as required. Further data, such as a measuring point number, can also be displayed.



Various display layouts enable the display to be adapted to the user's need for information. A vertical bar chart provides ease of orientation at a glance.

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## Guided parametrisation by means of the filling level wizard

A hydrostatic filling level measurement requires more parameters than a pressure measurement. Different tasks are also required, depending on the filling level variable selected. The fill height, for example, can be measured without the tank shape being saved, however it is needed for the volume and weight.

The operating software therefore includes what is known as a “filling level wizard”, which asks for all the necessary parameters in a guided dialogue sequence. Depending on the previous entries, all the dialogue boxes actually needed are now displayed.

## Measurement for various applications

The Pascal Ci4 Level measures both open and pressurised tanks. The measuring device, like the other devices in the Ci4 series, has SIL2 certification, as well as ATEX and IECEx approvals, and can therefore also be used in safety-critical processes. It delivers a 4..20 mA output signal with 0.1% accuracy. The device features a sturdy stainless steel case, which is optionally also available in high-grade stainless steel. Depending on the design, it achieves a degree of protection of IP65/ IP67 or IP69K and can therefore be used in all environments.



The Pascal C14 Level can be combined with all the manufacturer’s diaphragm seals using the LABOM modular system. Therefore all special materials, such as Hastelloy or tantalum, as well as a vacuum-tight PTFE coating, are available for wetted surfaces. It can therefore easily be used with aggressive or viscous media. Dead zone-free or hygienic diaphragm seals make the device suitable for use in the food and pharmaceutical sector. The differential pressure versions for pressurised tanks can be supplied with a capillary connection or diaphragm seal mounted on the plus side.

The display and control unit can be installed up to 10 metres away from the pressure measurement. Convenient operation is possible in spite of this, particularly when installing the measuring device under a tank. The back-lit, continuously rotatable dot-matrix display is also very easy to read even in poor light conditions.

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## Benefits of the PASCAL Ci4 Level

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The new operating concept with the intelligent filling level wizard for simple, guided parametrisation of the device allows for fast and problem-free commissioning without the need for a manual. Unlike other devices on the market, the PASCAL C14 Level uses real filling level software, which makes manual conversion or restrictions in the choice of the displayable values a thing of the past. The display of the measured data can be flexibly adapted to the user's specific needs.

The device offers a high degree of variability for the most diverse applicational scenarios and is also available at short notice in customised designs.

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