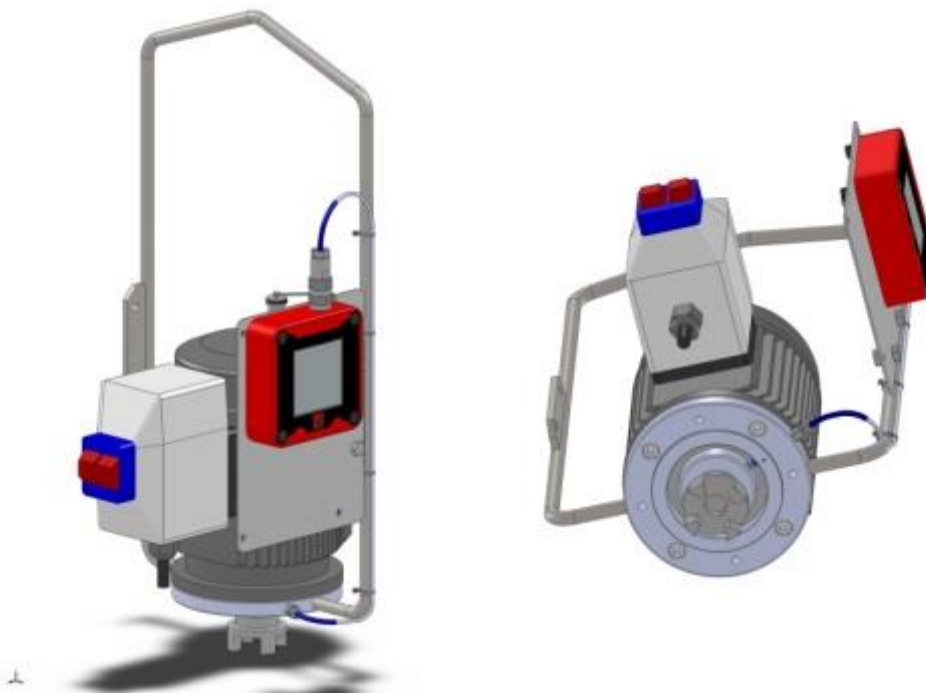


Contact-free indirect measurement

The non-contact mode of measurement is very interesting for hygienic applications in the food-, pharmaceutical- and cosmetics industry, as well as for industrial applications with thick, adhesive and solid containing liquids. Experience has shown that conventional volumetric flow meters quickly come to their limit, while other measuring procedures are often very complex and/or are not suitable for mobile use.

The non-contact mode of measurement with impulse sensor is a reliable and economic option. Here is the measurement effected – hygienically and free from wear – without direct contact with the liquid being pumped.

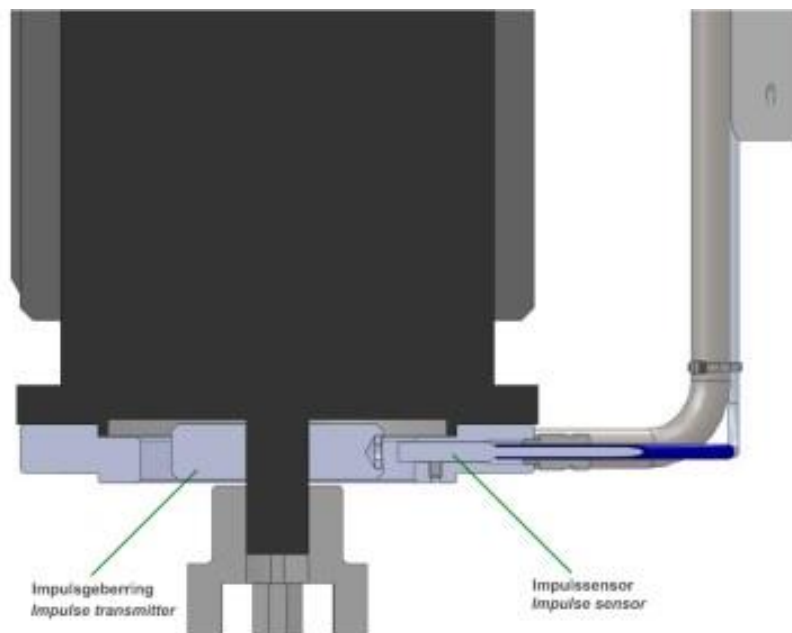


Principle

According to the rotating positive displacement principle the characteristic curve of an eccentric screw type pump is nearly linear. It is therefore possible to determine the pumped liquid amount by means of the number of shaft rotations. With a variance of +/- 1 impulse per measuring process the reproduction accuracy is very high, as long as the system factors e.g. viscosity, pressure, hose diameter, temperature and flow are steady. According to the demand of precision and abrasiveness of the medium the calibration factor must be temporarily adjusted to the wear of the pump hydraulic system. When using a motor with integrated frequency converter the flow capacity of the pump can be individually adjusted to the respective application conditions.

Function

An impulse transmitter transfers magnetic impulses of the rotating motor shaft contact-free to the impulse sensor. The measured impulses are evaluated in the Lutz operating unit BE10 and are read out by means of the determined calibration factor as transferred flow quantity via the display. By adding the relay module RM10 and respective connecting cables the system also can be used as filling station with volume pre-selection (batch function) – as known from the modular Lutz flow meters. Optionally the reed-impulses also can be evaluated via evaluation units provided by the customer and an external control.



Construction

Hygienic aspects and specific demands were considered on construction by which the system partially considerably differs from competitive solutions:

- Compact and easy to handle unit for a maximum mobility
- All current- & data-carrying elements at the motor-/lifting device unit
- Pump tube detachable from motor-/lifting device by means of quick-action coupling
- Pump tube without electronic components enables a thorough cleaning and disinfection also by water jet or in cleaning machines
- Easy handling and control via the Lutz operating unit with touchscreen display and menu navigation in plain text
- Can be combined with relay module RM10 and other modules of the Lutz flow meter programme
- Lutz eccentric screw pumps B70V-D which are currently used can be economically retrofitted