

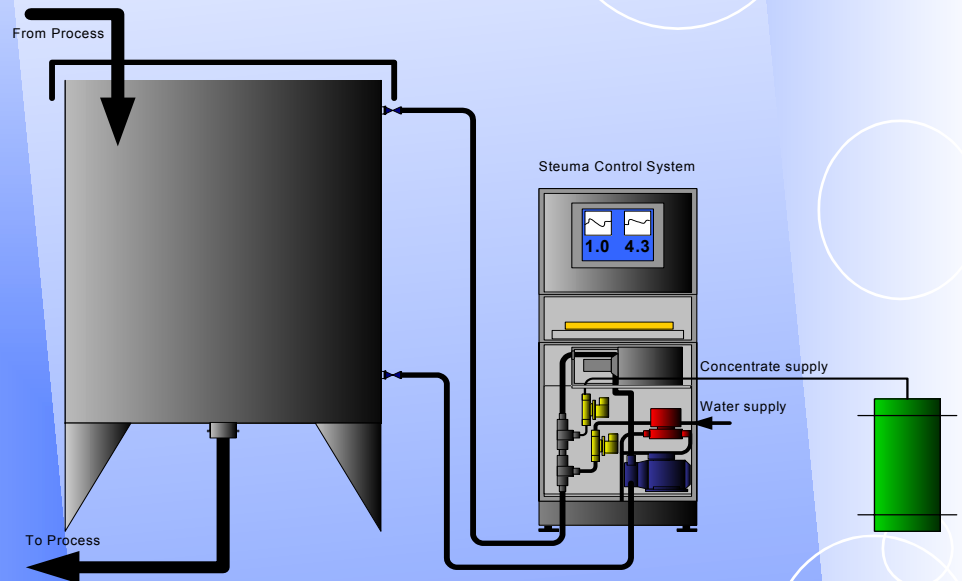
Procan-QCS

Quality Control System for process liquids

The Steuma Analysis- and control system for concentrations of process liquids is especially developed for those applications where it is of main importance that the concentration of a process liquid remains constant, to assure the quality of a production process.

The system measures continuously the concentration of the liquid in e.g. a tank. It depends on the measured deviation to the default value, whether automatically concentrate or dilution liquid (e.g. water) will be added until the nominal value is reached.

The heart of the system consists out of the Steuma process refractometer ProcanND. This analyser has a unique feature: a continuous ultra sonic cleaning system prevents any product coating on the measuring prism. So, no drift of the measuring value. For an analysis –and control system a prerequisite!
The measured values are processed by the ProcanMaster; this is an IPC/PLC based process control system and it consists out of system software and the required hardware.



The whole system is housed in a stand-alone enclosure with control panel.

Operating Principle

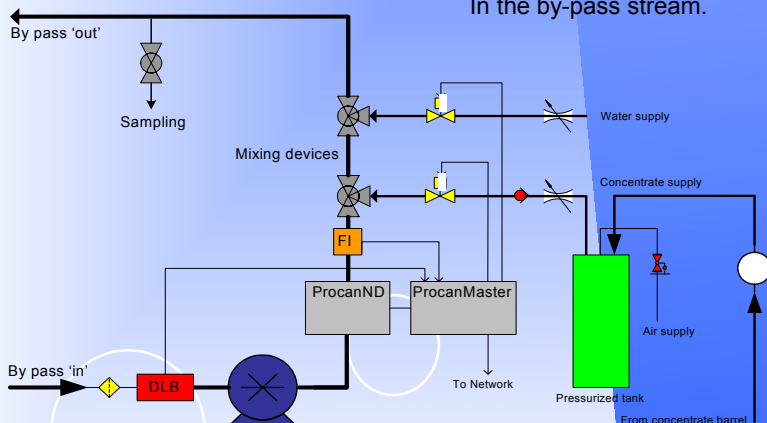
A By-pass flow is created from the process (e.g. a process tank). A dry-running protection (DLB) system protects the by-pass pump. The liquid flows to the analyser along the measuring prism. The prism is kept clean by the ultra sonic cleaning system. A flow fail indicator warns whenever there is no flow through the by-pass. Mixing devices are integrated in the by-pass stream.

These devices take care that the added concentrate or dilution liquid are well mixed with the process liquid. In the mixing device the concentrate will be injected with a constant pressure and flow. This will guarantee a repeatable dosing process. The control valves are controlled by the ProcanMaster. A PID-Controller is included in the ProcanMaster Software to enable adjustment of the control parameters for all different process conditions. The display shows all relevant information in trend and numbers. The whole process can be followed and controlled. All data are automatically stored to enable tracing of calamities.

More systems can be networked for central visualisation and control.

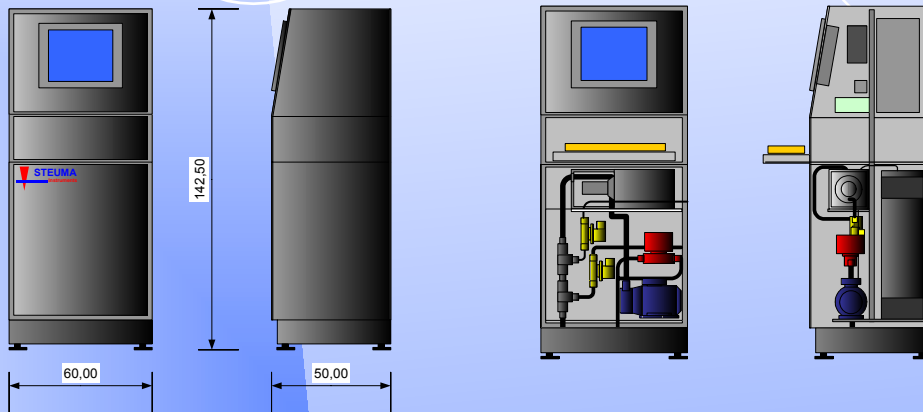
Applications:

- Siliconenbath plastic foil-extrusion
- PVA, CMC, CMS textile sizing.
- Hydraulic liquids, cutting oil production process
- DMAC / DMF Fibers
- Etc.....



Procan-QCS

Quality Control System for process liquids



Process Refractometer ProcanND

- Measures the concentration of the liquid with a accuracy of 0,05 Vol%.
- Stable measuring values due to the patented optics.
- No drift of the measuring values caused by coating of the measuring surface. A continuously operating ultra sonic cleaning system takes care for an ever clean surface.

Measuring range between	: nD 1,20000 ... nD 1,650000
Drift	: none
Accuracy	: < 0,1 % of the measuring range
Response time	: T90 < 2s
Temperatur compensation	: +/-10°C from default value
Process temperature	: 0 ... 65 °C. other temperatures on request

Control System ProcanMaster

The control system consists out of industrial hardware and software. To obtain maximum reliability a RealTime IPC/PLC computer with flash-prom and a TFT-display is used. The advanced software is based on LabView. This software enables calculation, visualization, control and data-storage. For this application a number of functions can be integrated as e.g. level control of tanks, flow measurement, pH- and conductivity measurement etc.

By-pass and Control

Fully equipped system with correction of the concentration in the By-pass flow powered by a centrifugal pump. The correction is controlled by opening and closing dosing valves. The duration of opening depends on the momentary deviation and the trend of the deviation. The flow to the mixing devices can be controlled by restrictors. A check valve takes care for any backflow of process liquid into the concentrate tank.

Software Features:

- Windows XP embedded, LabView 8.0
- Graphic display modes: digital values, trends, bar graphs etc.
- three password protected user levels
- patented 3-d product-calibration system
- Easy input of laboratory values
- More external measuring value can be adopted and displayed.
- Auto start options on operator level
- Pre activate status of alarms and control to enable monitoring during start up and test.
- Four outgoing alarm levels (lo-lolo-hi-hihi) for each individual measured value
- Automatic data-storage and review-function of each production run
- Statistical Process Control (SPC); providing progressive values of averages, standard deviations, the Cp and Cpk values, histograms and many more
- Parameter adjustments for PID-control with analogue- or digital output control.

other specifications

Connections:

Power Supply	: 230 / 400 VAC, ca. 1000 VA
Process connection	: SwageLock 12mm fittings
Pressed air	: 5 bar max, low flow, dry and clean quick fittings for 6mm tubing

Materials in contact with the procesliquid	: SS316, Teflon, Viton, saphir. other materials on request
--	--

Flow in By-pass	: 650 l/min H: M.C.L. 2m
-----------------	--------------------------

Size	: l x h x d : 600 x 1425 x 500 mm
Housing	: steel, powder coated
Weight	: ca. 120 kg