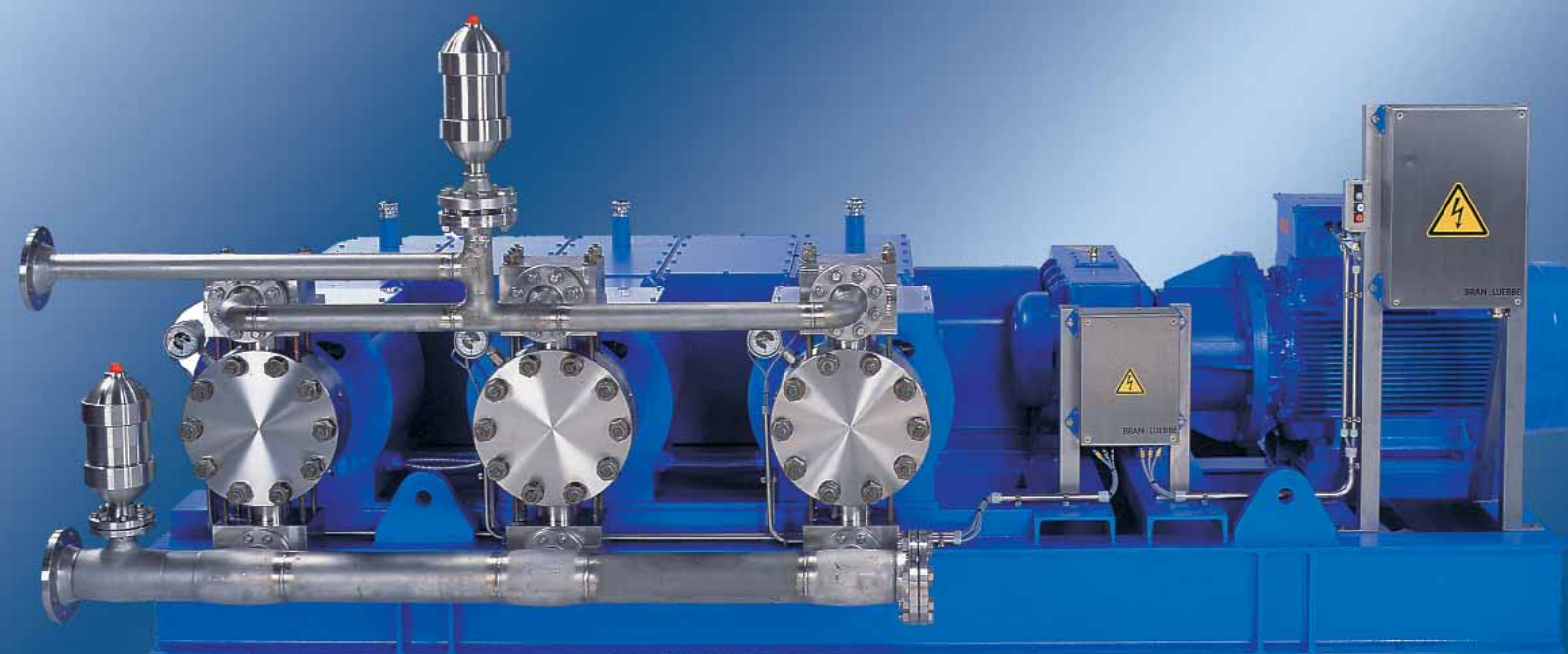
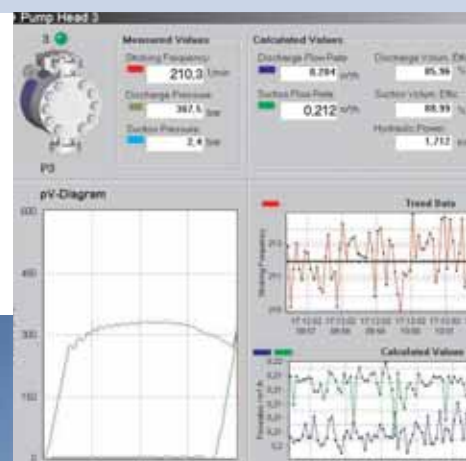


NOVALINK-CSM is an on-line diagnostics system which continuously monitors the performance of a metering pump

NOVALINK-CSM

Continuous Status Monitoring



motralec

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX
 Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48
 Demande de prix / e-mail : service-commercial@motralec.com
www.motralec.com

NOVALINK-CSM - for on-line diagnostics

The basis of the system is the so-called pV-diagramm which is generated during one complete revolution of the pump crank shaft from the pressure within the hydraulic chamber of the pump and the plunger position in a pumphead (Figure 1).

Key performance parameters can be assessed from this diagram, for example:

- Defects in the suction or discharge valve
- Defects in the replenishing valve or venting valve
- Activation of the internal relief valve
- Excessive pressure pulsation in the suction or discharge pipeline
- Air in the hydraulic chamber or product chamber
- Cavitation, etc.

In addition, volumetric efficiencies or the hydraulic power of the pump-head can be determined.

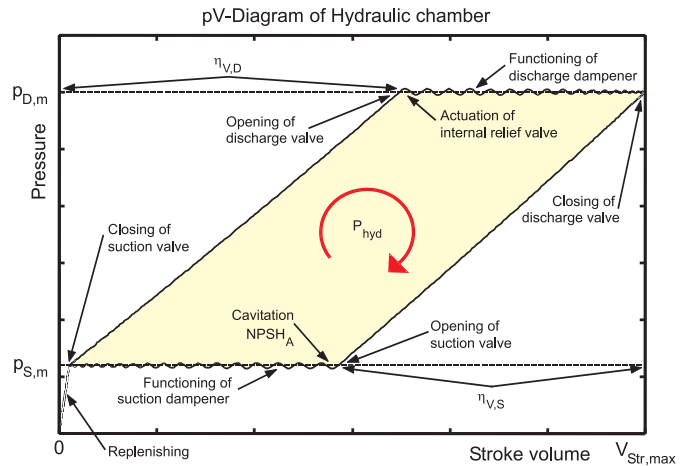


Figure 1: Theoretical pV diagram

NOVALINK-CSM - Advantages

- **Continuous monitoring** of pump performance, even over a long distance
- **Permanent documentation** of pump status
- **Rapid localization of failures** in the pump head, so minimizing the time needed for repairs
- **Improved predictability of pump failures**, enabling optimized maintenance work
- **Increased availability** for the pump, so avoiding down-time and savings in standby pumps
- **Rapid and skilled service** by Bran+Luebbe, via phone or email.

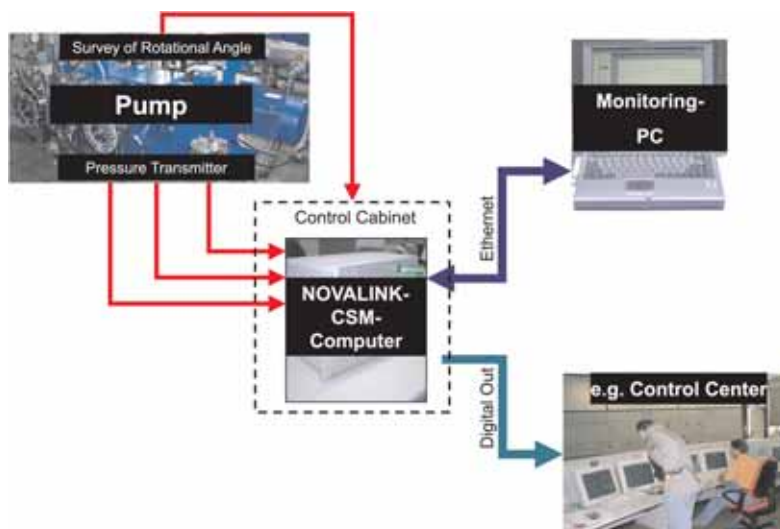


Abb. 2.: Configuration of the On-line System

Configuration (Fig. 2)

The **NOVALINK-CSM** comprises a pressure transmitter in each pump-head which measures the pressure in the hydraulic chamber, a device to survey the rotation angle in the pump drive, the **NOVALINK-CSM** computer and a monitoring PC which runs the evaluation software. The pump status can also be transmitted to a process control system or control room in the form of a "traffic signal", as described in the following section.

Operation

For each rotation of the pump crankshaft, **NOVALINK-CSM** generates in real-time the pV-diagrams for the pumpheads and calculates performance parameters such as actual efficiencies and average pressures.

Simultaneously, these parameters which are related to the true operating conditions are used to simulate "ideal pV-diagrams and performance parameters". These serve as references for the measured data. The system then

checks whether the measured data lie within predefined tolerances and generates an instant status overview - Green for "OK", Amber for "Warning", and Red for "Serious Problem" - which are indicated in the form of a "traffic signal".

Monitoring software

The data generated by the **NOVALINK-CSM** computer are transmitted by Ethernet to the monitoring PC. The evaluation software displays the following information:

- Pump status and the status of each pump head, as "traffic signals" (Figure 3).



Figure 3: Pump status and status of each pumphead, as "traffic signals"

- The pV-diagrams of all pump-heads for comparison with each other (Figure 4).
- The pV-diagram and performance parameters of a specific pumphead with the option to switch on the on-line simulated pV-diagram and performance parameters to give an instant optical comparison with the measured data.

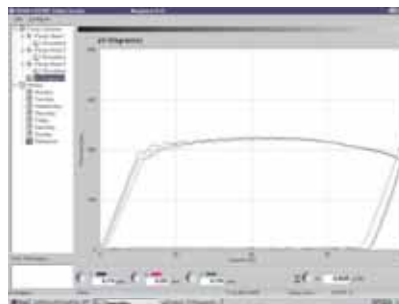


Figure 4: pV-diagrams of all pumpheads

Additional functions:

- Automatic archiving of pV-diagrams and performance parameters as a data set.
- Superimposing of current and archived pV-diagrams and performance parameters. Long-term changes can be identified and assessed e.g. when comparing with pump condition at commissioning.

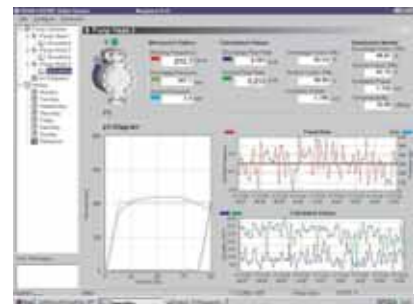


Figure 5: pV-diagram and performance parameters of one pumphead

Technical Data

Pump interface

- Survey of rotation angle: inductive proximity switch (NAMUR)
- Pumphead number: 1 to 4
- Pressure transmitted signals: (0)4...20 mA
- Reading frequency: up to 2 kHz

- Ex-proof configuration: with standard isolation and transmitter power supply (Ex i)
- The pressure transmitters can be exchanged during pump operation (with quick-disconnect coupling fitted)

Monitoring PC interface

- Data transmission via Ethernet (Token Ring network on request)

- Data set: max. 8 Kbytes/Pumphead
- Transfer rate/sec.: approx.: 1 to 5 data sets/sec

Controller interface

- 4 potential-free contacts ("pump status traffic signal" and monitoring on/off)

**Global Headquarters: SPX Process Equipment,
Delavan, WI USA**

Your local contact

motralec

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX

Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48

Demande de prix / e-mail : service-commercial@motralec.com

www.motralec.com
