

PSIControl Oil

The Control System for Pipelines



The SCADA system *PSIControl Oil* was especially developed for the controlling and monitoring of pipelines.

Special attention was paid to guarantee that the strict requirements of transporting liquids were met. Those liquids may be crude oil, petrochemical products, liquid gas, water etc. All requirements for the operation of gas pipelines are met as well.

Areas of Application

PSIControl is the perfect SCADA system for operating medium to very large pipelines as well as complex pipeline systems.

PSIControl can be used as a supervisory system for PLCs of all renown automation manufacturers. This enables PLCs of different manufacturers to be controlled by one system.

Architecture

PSIControl is a highly available system. The system architecture is based on a pair of redundant servers and the number of workstations can be user-defined.

As a multiple platform system, *PSIControl* can be operated either under the UNIX or Windows operating system. For pipelines that require a high degree of availability, we recommend using UNIX servers.

Functionality

In addition to the standard functions of a state-of-the-art control system, PSIControl offers the following special features:

Event driven archive

To take into account the extremely quick processes in pipelines transporting liquids, the measurement values are not archived cyclically as means, but spontaneously without any loss of accuracy.

Highly precise archiving of measurement values

This makes it possible to represent archived values with a resolution of 1 second. PSI developed a method of compression that allows for all data, collected over a longer period of time to be accessed directly online.

Analyses historical operating states

„Post Mortem“ analysis also uses this archive. The state of the system can be visualised at any point of time in the past by using any process display or trend. The display can be advanced in selectable time increments. This allows for the reconstruction of past operating states. Thus, for example, the operating engineer is able to analyse in detail the events leading up to an accident.

Programming interface for the user

The system user has an easy to learn programming language at his disposal. This allows him to develop his own programmes which can be started cyclically (e.g. every 5 sec., every minute or once a day) or by the occurrence of particular events (alarms, messages from the field, etc).

These programmes have direct access to all system information and can carry out calculations. As with values gathered from the field, the results of these calculations flow into the processing of the SCADA system. This means they can be visualised, monitor boundary limit violation or be used in reports.

The results of such a program can be also be set point values or command

outputs. Thus complete sequences like start-up and shutdown of a pipeline can be programmed.

Automatic start-up and shutdown

Higher Functions

Advanced applications such as

- Leak detection and localisation,
- Batch tracking,
- Tank farm management,
- Pump optimisation,
- Calculation of pipeline integrity considering alternating pressure and
- Training system

are explained in separate documents in more detail.

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