

ELLINGSEN SENSOR TECHNOLOGY



LINKING THE PROCESS WITH THE CONTROL ROOM

Today's advanced devices for monitoring and diagnosis of individual valves and valve clusters, are necessary in most modern production facilities.

Haakon Ellingsen AS can deliver and help our customers selecting the right monitoring system for valves. From fully advanced automated partial stroking testing, to smart valve and actuator diagnostic systems. Other products like rupture discs and level gauges, can also be monitored from centralized control system by modern technology.

CENTRAL VALVE CONTROL

Centralized master station for valve cluster control

If requested we can deliver a highly reliable master station, able to manage up to 300 actuators with up to 18 field loops, providing ultra fast communication speed. Three levels of system redundancy and military encrypted communications guarantee the highest data safety.

Features;

- DCS/PLC protocol: MODBUS RTU or TCP/IP
- Field protocol: LONWORKS®, MODBUS ®
- 19" 3HE rack for cabinet mounting
- Up to 300 actuators installed/18 loops
- Fast communication to the field



LIMIT SWITCH BOXES

Haakon Ellingsen AS offers a wide range of limit switch boxes, proximity sensors and control accessories for valve automation feedback. We provide high quality products and services that guarantee a link between the control room and automated process valves.

Standardized limit switch boxes

From cost effective, when price is a concern, to corrosion resistant and explosion proof applications, when harsh environments applies. Our products provide the protection and automation that each application demands.

Our standard AISI 316 limit switch boxes comes with build in options for lid choices, according to customer demands. All boxes are designed for weather proof applications. They can also match the Ex ia IIC T6 standards with the integral intrinsically safe certification, covering both enclosure and electrical components inside. The switches can be delivered either as pure mechanical, magnetic or inductive proximity switches.

If requested we can also build in an extra proximity switch, used for the easiest partial stroke testing.



High end limit switch boxes with inbuilt valve monitoring system

For the high end market, we can offer integrated valve monitoring solutions for high or low-pressure applications. With on-line diagnostic monitoring we can test all components in the "Safety Instrumented function", including multiple solenoid valves.

With this type of limit switch box you will remotely trend all valve data, and be able to record and do preventive maintenance for your valve application.

Features;

- Hydraulic or pneumatic PST (Partial Stroke Test) device
- Asset Management software as a standard
- For Low and High Pressure applications (10 bar pneumatic; up to 400 barg hydraulic)
- HART7 and Modbus interfaces
- Bluetooth, RS232 and RS485 interface
- On board push button for local setting and commands
- 3 x digital inputs and 6 digital outputs
- Oled graphic display able to operate down to -40 °C



RUPTURE DISK SENSORS



How to detect burst of rupture discs? Or even better, be alerted if the disc has been compromised and could be replaced before activation.

The most common solution detecting burst of a rupture disc, would be a pressure transmitter detecting pressure changes in the pipeline.

Burst alert sensor

A better solution would be to install a burst alert sensor in connection with the burst disc, acting as a “normally closed” electrical circuit. A polymer membrane is used to support an electrical conducting circuit. In the event of disk rupture, the flow of fluid will create tension in the polymer membrane which leads to the break of a tantalum electrical conductor. This changes the electrical status of the sensor to “normally open” which signals that a burst has occurred.

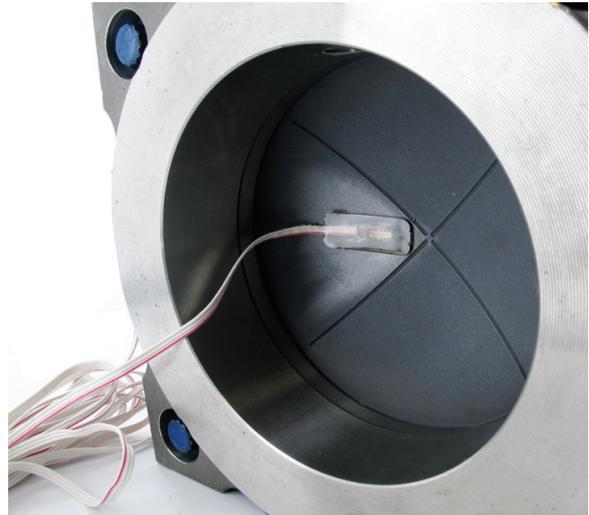
These burst alert sensors uses a film of polymer material to support the electrical conductor, and provide electrical insulation. Either polyimide or PTFE is used for this purpose. All burst alert sensors use a flattened tantalum wire as the electrical conductor. This offers optimum corrosion resistance.



Disk Integrity Sensor™

An even more sophisticated solution would be a so-called Disk Integrity Sensor™. This solution gives the user an advance warning that the system has been exposed to process conditions which have exceeded its design limits, ex. variation in backpressure and temperature.

The Disk Integrity Sensor™ consist of a sensor mounted to the rupture disc, and measures small changes in the strain of the disk dome. This information is then interpreted by proprietary software contained in the external monitor, and the user is notified when process conditions exceed the design limits of that particulare rupture disk device.



PRESSURE & TEMPERATURE TRANSMITTERS

Haakon Ellingsen AS can provide the latest measuring technology for pressure and temperature transmitters for the most demanding applications.

Electronic sensors forms the basis of almost all automation and control processes within all industries. From purely safety (functioning as a redundant) to actual control and change the process parameters. Types and construction can vary accordingly.

Haakon Ellingsen AS will offer our customers the best possible solution based on all the different sensor technologies, material selection or process demands. We provide the right solution for each and every application.



LEVEL MEASUREMENT

Haakon Ellingsen AS offers a wide range of level monitoring inside of vessels for a vast variety of applications.



Magnetic Float Switches

Magnetic float switches work according to the float principle by using magnetic transmission (permanent magnet/reed contact). A float with a built-in magnetic field is conducted along a non-magnetic guide tube. Due to the magnetic field of the permanent magnet, a reed contact located in the guide tube will be activated after the pre-defined height has been reached.

- Suitable for virtually all liquids
- Switching operation is without direct contact with the liquid, free of wear and tear and does not require any power supply
- Universal signal processing of volt-free contacts:
 - PLC
 - Control circuit to DIN NAMUR 60947-5-6
- Multiple switch points in one unit (up to 8)
- Explosion-proof designs
- Interface
- Application specific designs available
- Simple installation and commissioning, maintenance-free
- Detection of one or more distinct levels of a liquid



Bypass Magnetic Level Indicators

The bypass level indicator consists of a bypass chamber, connected to a vessel via at least two process connections. Through this type of arrangement, the level in the bypass chamber corresponds to the level in the vessel. The float with a built-in permanent magnetic system, which is mounted within the bypass chamber, transmits the liquid level, contact-free, to the magnetic display mounted on the outside of the bypass chamber. These instruments can be very versatile, for example mounting level sensor (reed relay) and magnetic switches in addition to the visual indication. It is possible to control start/stop of filling pumps and the filling grade by the level sensor.

- Simple, robust and solid design, long service life
- Bypass chamber and float from stainless steel or special materials
- Pressure- and gas-tight separation between measuring and display chamber
- Measuring and indicating the level of aggressive, combustible, toxic, hot and contaminated media
- Functioning of the magnetic display guaranteed even in the case of power failures
- By using a variety of corrosion-resistant materials, applicable for virtually all industrial applications
- Continuous measurement of levels, independent of physical and chemical changes of the media such as: Foaming, conductivity, dielectric constant, vapours, bubble formation, boiling effects
- Interface-layer level measurement from density 100 kg/m³
- Special versions: Food compliant, coatings, liquid gas, heating jacket



Magnetic Level Sensors

The magnetic float level transmitter serves as a reading recorder for the electrical, continuous remote indication of the filling level. The operation of the measuring devices is based on the float principle. The magnet located inside the float triggers the reed contacts which uninterruptedly pick up the measuring voltage given at a resistance measuring chain.

- Protocols: HART, Profi bus, Foundation Fieldbus[®]
- Signal transmission over large distances
- Simple installation and commissioning, one-time calibration only, no re-calibration necessary
- Display proportional to the height of the level or the contents of the vessel
- Set point relays continuously adjustable over full range
- High repeatability of set points
- Interface
- Application specific designs available
- Explosion-proof designs





ELLINGSEN GROUP

Ellingsen Group consists of the following companies; Haakon Ellingsen AS, Ellingsen Systems AS and Ellingsen Indutech AS.

Ellingsen Group supply products for valves, actuation, instrumentation, pumps and engineered system solutions, to oil & gas, marine and land based industrial market. We combine quality products with decades of experience to design, engineer and provide the most beneficial solutions.

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TO BE OUR CUSTOMERS
BEST CHOICE