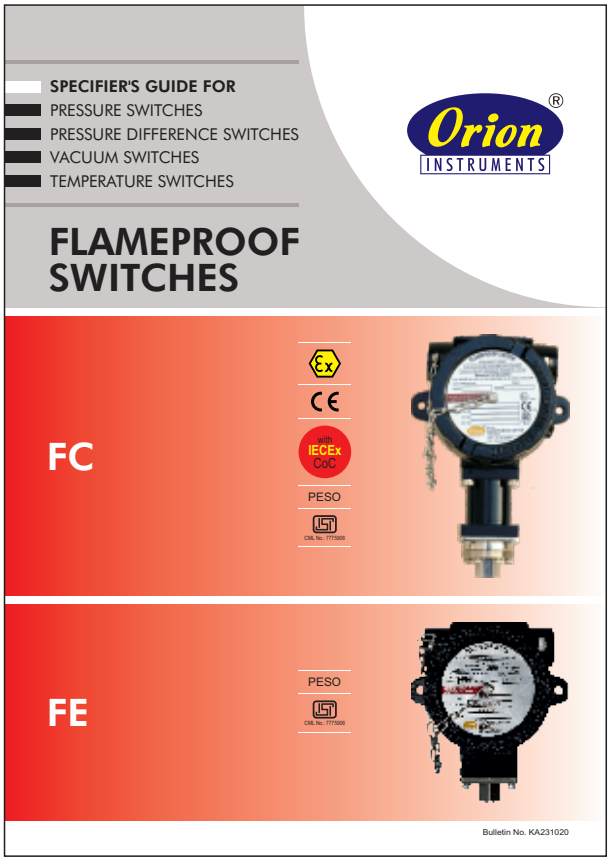
Orion®
INSTRUMENTS

APPLICATION HANDBOOK

For

Pressure Switches
ΔP Switches
Vacuum switches

Bulletin No. KA250707



Hazardous Area Pressure Switches

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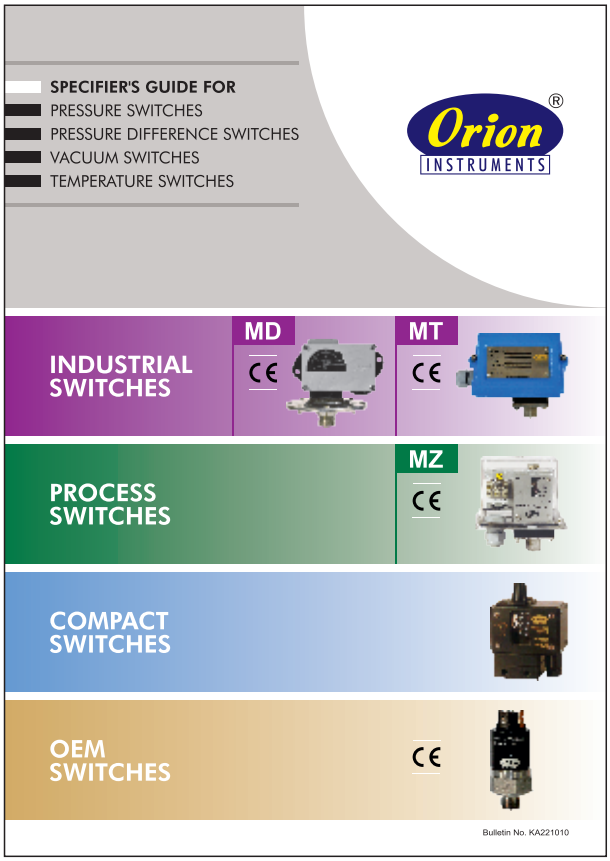

Non hazardous Area Pressure Switches

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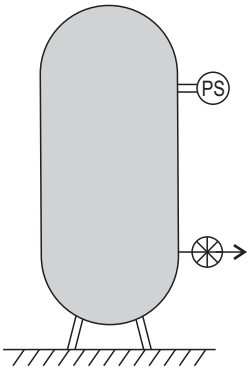
Application Handbook

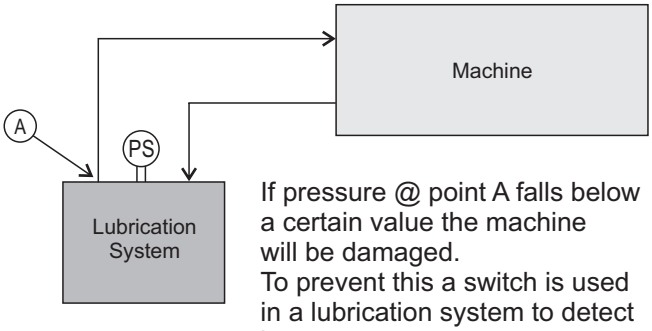
To detect high pressure in a closed tank



High pressure in closed tank

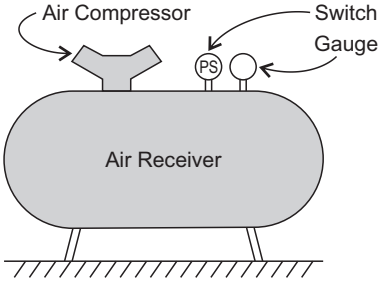
Low pressure in closed tank

To detect low pressure in lubrication tank



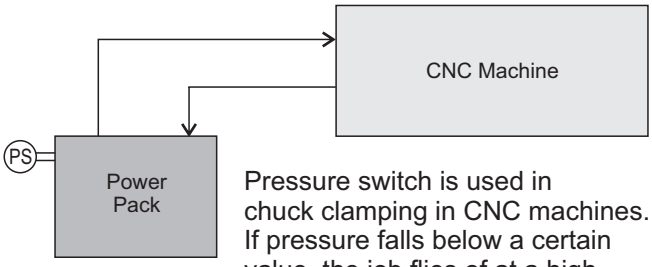
If pressure @ point A falls below a certain value the machine will be damaged.
To prevent this a switch is used in a lubrication system to detect low pressure.

To switch on and off compressors, when pressure in receiver goes low / high



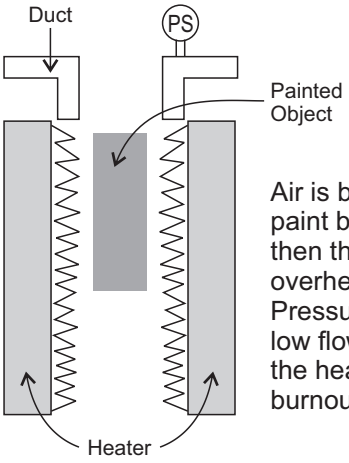
Pressure switch is used to maintain high & low limits in air receiver, thereby conserving energy.

Chuck clamping in CNC machine tools



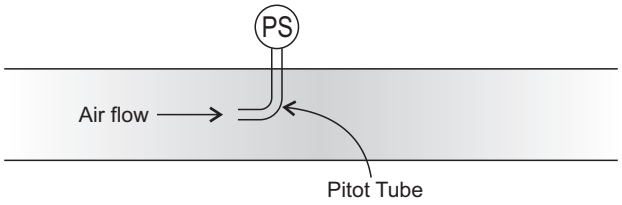
Pressure switch is used in chuck clamping in CNC machines. If pressure falls below a certain value, the job flies of at a high speed and may harm operator. Pressure switch detects minimum pressure and prevents accident.

Prevent burnoff of heaters in a paint drying system



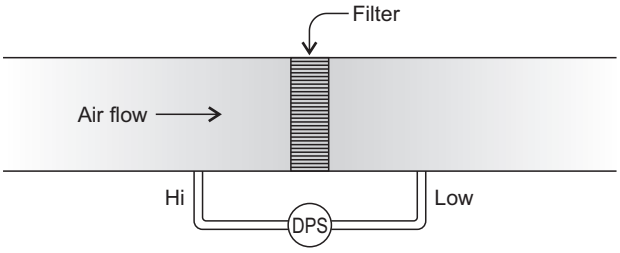
Air is blown on heaters in a paint booth. If the air flow stops, then the heaters will overheat and burn.
Pressure switch detects low flow of air and switches off the heaters, thereby preventing burnout and subsequent loss.

Blower interlock for checking low airflow in a duct



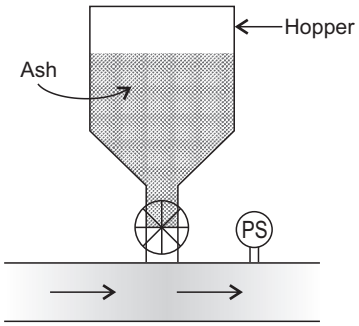
Minimum airflow is desired in ducts in many applications. Using pressure switch with a pitot tube, low flow can be detected to prevent further mishaps.

Differential pressure to detect clogged filter



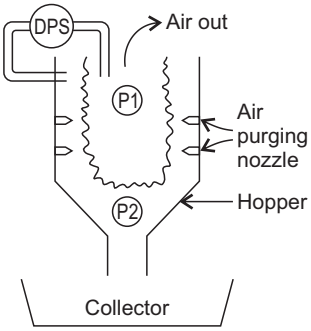
Clogged filters are not desirable in any system. A differential pressure switch continuously monitors Δp across a filter and gives an indication when filter is clogged.

Low pressure in a pneumatic conveying system



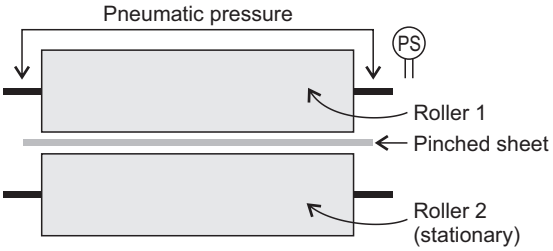
Ash is carried in pipelines by pneumatic conveying systems. Pressure switch detects pressure in pipeline and opening of hopper valve is interlocked to prevent clogging of pipeline.

Start and stop air purging to clean bags in a bag filtration system



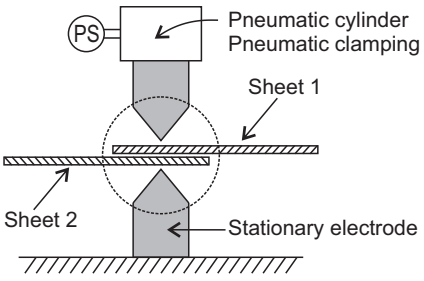
Filter bag gets clogged in a bag filtration system. Air is purged through nozzles to clear deposits on the bag. Pressure switch decides the start & stop action for air purging to ensure the filter bag is unclogged at defined intervals.

Maintain high pressure on rollers in a press



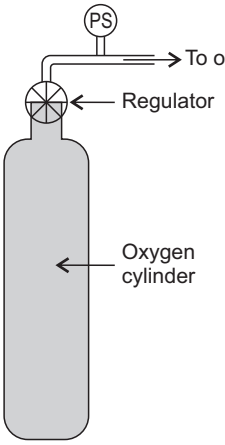
Pressure switch ensures sufficient pressure on a roller, to ensure uniform thickness of pinched sheet.

Low pressure alarm in a spot welding machine



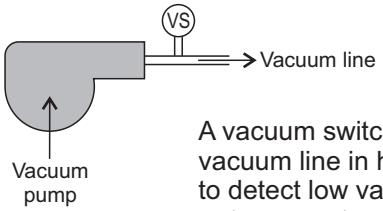
Pressure switch ensures proper clamping force between electrodes to give a strong spot weld.

Low pressure alarm in a medical system monitoring oxygen pressure



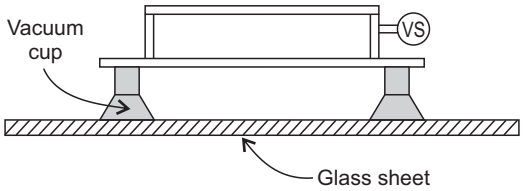
When the cylinder pressure drops below a certain level, the patient may not receive sufficient oxygen. A pressure switch senses line pressure continuously and gives an alarm if it falls below the desired value, thus saving precious lives.

Detect low vacuum in hospital systems



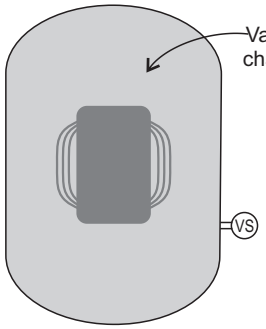
A vacuum switch is used in a vacuum line in hospital systems to detect low vacuum in a pipeline or to prevent excessive vacuum in operating theaters vacuum line.

Detect low vacuum in pick and place system



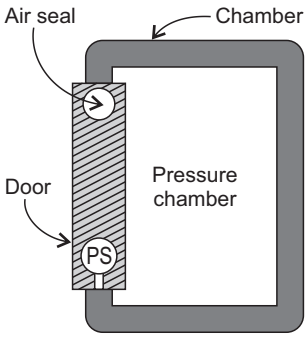
A vacuum switch is used to detect low vacuum in pick & place systems to prevent accidents and loss of material.
Vacuum switch gives an alarm if vacuum falls below desired level.

Detect high vacuum in a vacuum impregnation system of transformer coils



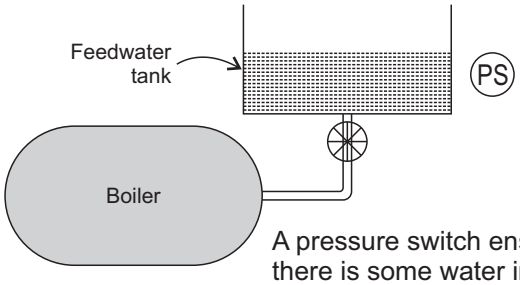
Transformer coils are impregnated under high vacuum to give optimum performance.
A vacuum switch on the vacuum chamber ensures sufficient vacuum before the impregnation process starts.

Ensure low vacuum in pharmaceutical machines



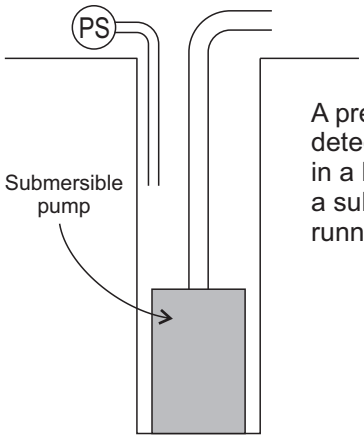
A pressure switch / vacuum switch ensures there is no pressure in the air seal before the door to the pressurised chamber is opened thus preventing an accident.

Detect no water (low level) in a boiler feedwater tank



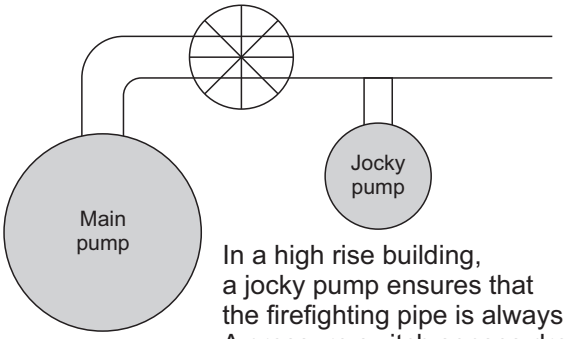
A pressure switch ensures there is some water in feedwater tank to prevent a boiler from running dry.

Detect low level in a borewell to prevent burnout of submersible pump



A pressure switch detects low level of water in a bore and prevents a submersible pump from running dry.

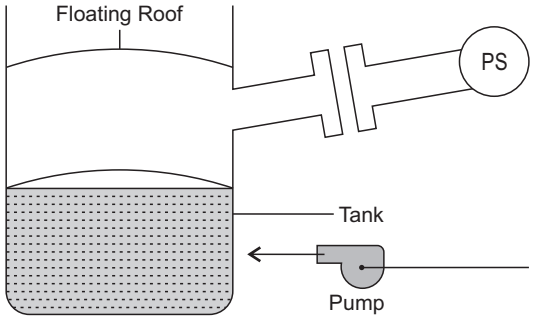
Jocky pump control in a firefighting system



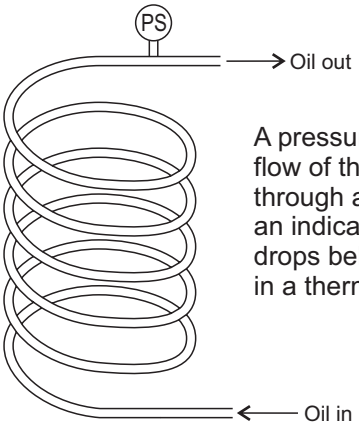
In a high rise building, a jocky pump ensures that the firefighting pipe is always full. A pressure switch senses drop in pressure due to leakages and turns on the jocky pump and shuts it down when the pipeline is full.

High level detection of a volatile liquid in a tank with internal floating roof

When a volatile liquid is pumped in to a storage tank, the volatile roof rises with level.
A pressure switch detects high level and stops further filling of tank by switching the pump off.

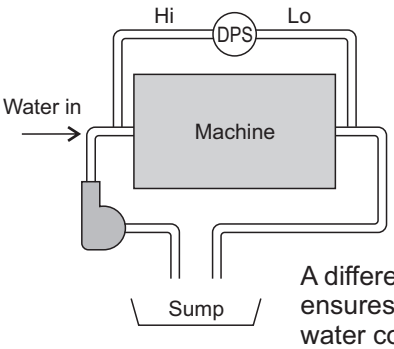


Detect no flow in a thermic fluid heater



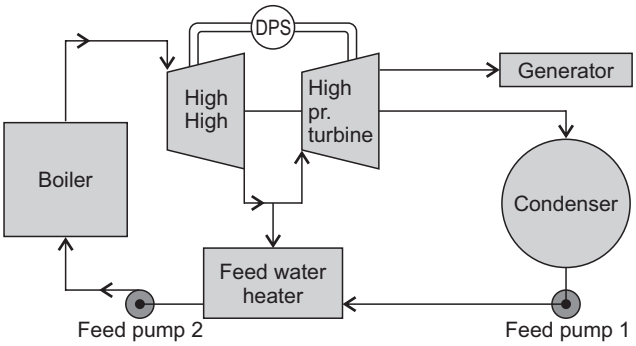
A pressure switch detects flow of thermic fluid through a coil and gives an indication if the flow drops below a certain value, in a thermic fluid heater.

Detect low flow in a water circulation system



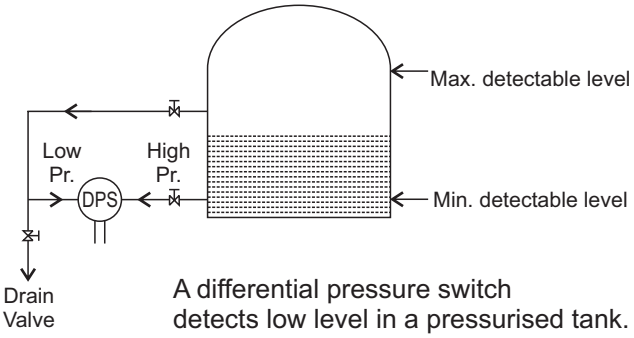
A differential pressure switch ensures flow of water in a water cooling system, thus preventing over heating of machine parts.

Alarm and trip in a turbine (high and high high pressure)



A dual switch combines high & high high signal into one switch. Thus alarm & trip function in a turbine can be achieved with one dual pressure switch.

Detect low level in a pressurised tank using differential pressure switch



A differential pressure switch detects low level in a pressurised tank.

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