

## Pump Control & Monitoring

A standard range of starter panels from TT Controls which offer automatic control based on pressure or level switches. Either for single pumps or dual pump operation.



Also available is a range of remote monitoring equipment which give alarm, call telephones or send a text message on failure of the pump or the electricity supply.



Variable speed drives are also offered. By reducing the speed of a pump by 10% an energy saving of over 30% will be made.

This is often achieved because the process and/or pipeline designer adds a margin over the flow rate and head that is actually required by the system.

There is a valid argument that every industrial pump should be supplied with a variable speed drive. The costs of the drive can generally be repaid quickly by energy savings.

Power Control Monitors  
for Dry Run Protection  
Bearing and Vibration Monitors  
Pressure Switches  
Pressure Gauges  
Flow Monitors & Switches  
Control Panels  
Variable Speed Drives



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Professional Pump Protection  
Monitoring and Control

## Pump Protection

Why do pumps fail? The most common reasons are:

- Dry run, because tank empties or suction valve is closed
- Running against a closed valve until vapourisation occurs with consequential dry running.
- Performance outside the safe performance envelope of the pump possibly resulting in cavitation, poor seal lubrication, shaft deflection and/or vibration damage.
- Bearing failure, which can result in collapse and damage to seals, shafts, sleeves, impellers and wear rings



The first three reasons can be avoided by fitting the control panel with a simple inexpensive power control monitor.

Pumpgear offers both analogue and digital monitors which can be set to shut down the pump at the safe minimum and maximum flow points.

A delay timer prevents any nuisance trips caused by transient conditions or at start up.

Dry run conditions can also be avoided using IFM Flow Monitors. Typically the control monitor and display unit can be set for flow velocity between 0.03 and 3 metres/second and mounted on the suction pipework. The switch point can be easily set by pressing a button. If the flow decreases below this set point a signal is provided which is used to shut down the pump. This works for thick and thin liquids and is suitable for operation up to 120 degrees C.



## Bearing Monitoring

Pump bearing failure can be catastrophic and result in very costly repairs. Bearing monitors can prevent this from happening by detecting the early stages of wear and warning of future failure.

Until recently, it has been normal practice to use portable equipment to perform time consuming monitoring. But now permanent, low cost monitoring is now available from IFM. The simplest method is to install a VK compact vibration monitor directly on the pump or motor.

This constantly measures the r.m.s. vibration velocity. When the adjustable limit value is exceeded the unit sets to alarm via a switching contact. Two radial setting rings give easy set up of switch point and response delay. A 4-20 mA signal provides input to controller.



IFM effector octavis VE1001 is a compact vibration diagnostic unit which is easy to set up using PC software.

The unit is sited in a radial direction to the axis of rotation, typically on the motor behind the terminal box or pump bearing housing, and is fixed with a screw mounting.



The detector continuously measures the vibration of 2 to 5 different bearings and gives early warning and main alarm via the switching outputs. Meanwhile the progressive wear is visible on the integrated LED bar graph.

Further systems are available

which can monitor up to four separate machines. This reduces costs considerably as only one diagnostic unit is used.

## Performance Monitoring & Control

Pumpgear provide a range of quality equipment to monitor and control your pumps.



Analogue Gauges, from low cost small diameter to premium stainless Steel analogue gauges, manufactured by SM Gauge Co.

Digital Gauges by Keller, suitable from -1 to 30 or 0 to 300 bar. Available Atex approved, intrinsically safe if required.

IFM Pressure sensors with switching capability.



The range includes a combined digital/analogue gauge that can be used as a pressure switch. LEDs clearly show the set points.

Industrial pumps are expensive. Many are bespoke and designed for a specific purpose so they generally cannot be mass produced. Parts can be on a long lead time and again very costly. So it makes sense to ensure your pump gives a long and reliable service life and to protect your investment.

Epump Ltd. have over 30 years experience in pumping equipment applications and troubleshooting. Technical details, pricing information and much more can be seen on our web site.