

ENERGY MONITORING

One of the biggest primary costs in any process is the use of utilities, and following the global trend to conserve energy it is becoming more and more vital to monitor utility use. Following that idea, we have recently installed an energy monitoring system at one of our customers. We have received favourable feedback on the installation, with the system allowing the customer to generate steam flow load profiles and adjust his boiler use to optimise his steam production .

Utilities that should be monitored to calculate energy use are steam, compressed air, water and electricity. The products below are some of those we commonly use for this application.



Paperless recorder: The Memograph M from [Endress and Hauser](#) can store, visualize, analyze and communicate process values and can be used for basic control and batching. It keeps data even in the event of power failure and, as a software option, has energy monitoring software that automatically calculates the energy embedded in utilities such as steam, compressed air and electrical power use. It can also be used to calculate efficiencies of boilers and heat exchangers.

The real benefit that this unit brings is, that with its software options and recording capability, the desired parameters can be directly read off the unit, making it easy to identify trends.

Vortex Flowmeters: These are generally used for steam measurement, though they are also used for compressed air, carbon dioxide, liquefied gases, nitrogen and boiler feed water among other applications. They can come with integrated temperature measurement.

They [operate](#) by measuring the vortices created when a fluid flows around an object. They are generally used in conjunction with a flow computer or Memograph M so that the mass of steam can be determined if pressure and/or temperature is also measured. If the mass of steam is known, the energy of the steam can also be calculated.



Cerabar Pressure units: These units are for overpressure, gauge and absolute pressure, and the Cerabar S can be used for level volume or mass measurement in liquids. The available range of measurement is 5mbar to 700bar depending on the model.

There are also different sensor types and seals, depending on the properties of the process being monitored, such as whether it is acidic, corrosive or abrasive. The units have the options of analog, HART, PROFIBUS PA or FOUNDATION Fieldbus signal outputs.



Adderley (Pvt) Ltd.

Process Control Equipment and Automation Solutions

33 Bayswater Road
Highlands
Harare
Zimbabwe
Website: www.adderleyafrica.com

Phone: +263 4 495595/480372
Cell: +263 712 800905
Fax: +263 4 495595
E-mail: adderley@iwayafrica.co.zw