



Why the Hydramation vibrational viscometer is the best solution for measuring on-line process viscosity

- 1** Simple Installation **No special preparation needed prior to installation.** Bolt in, connect the power supply and the instrument is ready for use. This is true for all Hydramation transducers, even the very high temperature versions — these are air-cooled and require no special cooling pipework.
- 2** Robust and maintenance free The Hydramation sensor is a solid piece of stainless steel with no moving parts, seals or bearings that can wear out or fail in service. As a result, it requires practically no maintenance. It is **robust enough** to provide **continuous use in the most demanding of process fluids.**
- 3** High immunity to plant vibration and noise The resonator design used in the Hydramation vibrational transducer is actually a natural filter. Coupled with the instrument's high operational frequency, this gives a **high natural rejection of plant noise** without requiring any electronic filtering. The output is frequency modulated, which enables trouble-free transmission over long distances.
- 4** Independent of flow conditions For non-Newtonian fluids, viscosity is very dependent on shear rate, particularly at low shear. Flow rate can have a substantial effect on shear if the viscometer shear rate is low, but if the shear rate is very high, as it is with Hydramation viscometers, **the effect of change in flow is negligible.** Conventional viscometers such as rotational types usually run at much lower shear rates than vibrational devices and consequently exhibit significantly greater variation in viscosity with flow rate.
- 5** Independent of measured volume The shear rate of conventional viscometers is defined by the space between the moving body (*e.g.* a rotating spindle) and a nearby surface. Hydramation viscometers are “surface loaded”, which means that the true viscosity reading is measured near the sensor surface without regard to the proximity of vessel walls. The transducer is therefore easily calibrated off-line **for use in any tank or line of any size** by simple insertion.
- 6** Immunity to gas bubbles and debris The presence of gas bubbles or debris in the fluid can have disastrous effects on readings from some vibrational sensors. This results from their mode of vibration: if the sensor radiates sound into the fluid, anything in the sound path, including bubbles, solid matter or reflective surfaces, will act as a damper. However, all Hydramation sensors vibrate in pure shear with no sound transmission. As a result, **all Hydramation transducers can be used in any environment whether or not bubbles, debris or reflective surfaces are present.**