Poddymeter

6000/WFv-Q Hydronic Manometer Instructions

Introduction

The 6000WF is a hand held instrument for the measurement of water differential pressures with a digital display in KPa. The unit is built around a rugged transducer arrangement which can withstand 10 BAR line & one side overpressure without damage. The wetted parts of the transducing element are 306 stainless steel, housed in an acetal block with an equalising/purging valve and isolating connectors. The gauge is supplied with colour coded lengths of nylon connecting tubing terminating in quick release couplings, and a pair of binder adaptors for connection to balancing valves. The instrument is designed to be used in the carry case, where the hanging strap has a 'break' to allow for hands free operation.

Operation

1) **Close isolating valves open equalising/flush valve and turn the instrument on at the side switch.**
2) **Allow the reading to settle and set the zero using the side knurled adjuster.**
3) **Connect the flexible limbs (using adaptors if necessary) to the appropriate positive & negative ports on the differential pressure source.**
4) **Open the isolating valves and allow the air to be purged from the flexible limbs, if the red overpressure warning light illuminates, the static line pressure is too high for the instrument – Disconnect immediately**
5) **Close the equalising/flushing valve, and the instrument will be reading the correct differential pressure. During readings ensure no air has entered the flexible limbs as this will create a static pressure imbalance error.**
6) **To zero the instrument whilst connected, close at least one of the isolating valves, open the equalising/flushing valve and check/reset zero. Zero checking should be undertaken with no fluid flowing through the limbs, as there will be a small offset differential pressure from the flow in the tubes.**
7) **Providing the warning light is not illuminated, no damage can be done by leaving the pressure source on one side only. When finished disconnect the limbs, and ideally relieve any pressure remaining.**
8) **Store the instrument in the case provided and in a frost free environment.**

Adjustments

The 6000/WF has internally adjustable damping. This is provided via 4 settable switches on the left hand side of the display. The factory default setting is in the middle position with 2 switches 'off' (set to the edge of the PCB), to increase damping move more switches to this position, to decrease, set the switches back towards the display.

Calibration

The instrument is supplied with a calibration certificate against a UKAS certified master gauge. We would recommend the instrument is returned every 12 months for calibration & recertifying.

Flow calculation using KVs valve factor (obtainable from valve manufacturers charts & tables)

To calculate flow from KPa D.P. reading, the following formula may be used:

$$\text{Flow (L/Sec)} = [KVs \times \sqrt{\text{D.P. (KPa)}}] \div 36$$

Conversely

$$\text{D.P. (KPa)} = (36 \times \text{Flow (L/Sec)} \div KVs)^2$$

Instructions for measurement of differentials with line temperatures over 50 Deg

Introduction

The transducers in the series 6000WFv-Q are fully temperature compensated for the temperature range 0 – 50 Deg C. No harm will occur within the range -20 to +120 Deg C, but accuracy will be impaired.
It is perfectly possible however, to measure the D.P. of water flow systems with pipeline temperatures over 50 deg C (& under 10 BAR G), without the temperature getting to the transducer block by using the following procedure:

1) **Preflush the flexible tubes and transducer block with cold water (a tap adaptor is available as an accessory). If flushing from a cold tap source, connect to the tap adaptor, open all valves, and connect one of the binder adaptors to the other flexible limb to allow flow through the tubes and block. Disconnect without allowing air to enter the tubes.**
2) **Close isolating valves open equalising/flush valve and turn the instrument on at the side switch. Allow the reading to settle and set the zero using the side knurled adjuster**
3) **Connect the flexible limbs (using adaptors if necessary) to the appropriate positive & negative ports on the differential pressure source.**
4) **Ensure the equalising valve is closed, open the isolating valves, if the red overpressure warning light illuminates, the static line pressure is too high for the instrument – Disconnect immediately .**
5) **The instrument will be reading the correct differential pressure. During readings ensure no air has entered the flexible limbs as this will create a static pressure imbalance error.**
6) **To zero the instrument whilst connected, close at least one of the isolating valves, open the equalising/flushing valve and check/reset zero. Zero checking should be undertaken with no fluid flowing through the limbs, as there will be a small offset differential pressure from the flow in the tubes. All zeroing operations should be carried out with no flow in the limbs.**
7) **During connection & measurement, ensure that no flow goes through the flexible tubes to avoid heat transfer. Disconnect with valves shut. If flow does go through the limbs, no damage should be incurred, but accuracy will be impaired until the temperature is below 50 Deg C.**

If used on systems with dirty or contaminated water, at the end of use, flush tubes and manifold with clean cold water. (A tap adaptor is available as an accessory)

After using your instrument it is best practice to disconnect the tubes, open the equalising valve and drain out the water in the manifold. Also ensure no water is draining out of the tubes which could leave the instrument damp when in storage.

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