

69 GDS Helpsheet



*World Leaders in Computer Controlled Testing
Systems for Geotechnical Engineers and Geologists*

Hardware

2Hz MINIDYN

Setting Pressure Datum

1. Introduction

If the datum of pressure measurement for controllers is set at a different time to that of the pore pressure transducer it is possible to have a difference of 9 kPa between the back pressure controller and the pore pressure transducer when measuring the same pressure. Consider the diagram below. If the zero offset for the pore pressure controller is applied when there is water in the cell the actual pressure at the pore pressure transducer will be 5 kPa (this is the head of water) but because we have just applied a zero offset this will be read as zero kPa. Now if the controller soft zero is set when the controller is open to atmosphere the zero pressure datum for the controller will be the outlet of the controller. Now when the controller is connected to the cell and the valve is opened the controller will now measure the complete head shown (5 + 4 kPa) but the pore pressure transducer will read zero because we have just zeroed it in this condition. Therefore the two transducers will have a nine kPa difference due to their different datum of pressure measurement.

To overcome this you need to zero both devices at the same time and using the same datum. You can do this by filling your cell with water without a test specimen being in place. Ensure that the back pressure controller and the cell pressure controller are both connected to the cell with the valves open, Open the cell to atmosphere by releasing the air bleed valve on the top of the cell. You can now apply the soft zero offset to the cell pressure controller and the back pressure controller. Next you can use the system functions menu of the system software to apply a soft zero to the pore pressure transducer. The back pressure controller and the pore pressure controller will now have the same offset and should read the same pressure at all pressures.

