

## Accurate Controls Ltd.

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## Calibration of Accurate Controls Instruments

1. Remove the bulb from the pocket on the tank of the transformer
  - a. If there are more than 1 WTIs on the transformer and you are unsure which bulb relates to which WTI, a quick check can be made with a cup of hot water.
  - b. If it was installed by Accurate Controls, check the exit of the capillary from the instrument for a cable tie – there may well be a corresponding one on the capillary just before it enters the bulb.
2. Protect bulb with pipe insulation or similar – the bulb wall thickness is generally less than 1mm so any impacts to the bulb will affect the volume of the bulb and invalidate the calibration. Whilst we do not expect the bulb to break, this would weaken the bulb and could lead to a loss of pressure. This would necessitate the replacement of the instrument and would not be covered by any warranty.
3. Unclip the capillary to allow the bulb to be lowered to ground level or the location of the dry block calibrators.
4. On site calibration is carried out with the A910 Dry Block Calibrator – this is the Accurate Controls variant of the Ametek Jofra CTC 650b/652a (Version 652a is the new 2020 version – significant upgrades). Please use the snugest brass sleeve in the calibrator – any air gap can be filled with a thermal heatsink compound.
  - a. This is essential as we must have a reference temperature value to set the WTI/OTI against.
5. Calibration is carried out between two reference temperatures – a low and a high. We normally select 40°C and 130°C.
  - a. This is significantly quicker if carried out with 2 No. Dry Block Calibrators as you won't need to heat or cool the Calibrator.
  - b. Insert the bulb into the brass sleeve in the Dry Block Calibrator when it has signaled that it is stable at the selected temperature
  - c. Wait 5 mins
  - d. Tap the side of the WTI with your hand to remove any static friction
  - e. Record the indicated temperature against the reference temperature and note any difference
  - f. Remove the bulb from the Dry Block Calibrator and insert into the other (or raise the temperature if you only have one.
  - g. Wait 5 mins
  - h. Tap the side of the WTI with your hand to remove any static friction
  - i. Record the indicated temperature against the reference temperature and note any difference
  - j. If the indicated values are within +/- 2°C of the reference values, then the results are satisfactory, and the test can be concluded for Temperature Indication.
  - k. If the values are outside of this range, then the instrument will require adjustment.
    - i. Please refer to the "Adjustment Procedure for Accurate Controls Instruments" for more information
6. For CT Injects etc. please refer to the Document "Thermal Gradient Testing"

