

James Walker	<h1 style="text-align: center;">Pressure Transducer Calibration Process</h1>	<b>Date:</b> Oct 03, 2023	<b>Rev:</b> 5	<b>Page:</b> Page 1 of 3	<b>Document No:</b> QPD117 <b>Approved by:</b> Test Room Manager
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**REASON FOR UPDATE:** Clarification of wording regarding the external gauges  
Changing role of responsible party to a current role that exists  
Redefined display accuracy

**ASSOCIATED DOCUMENTS:** F-Form Ref: [F202](#)

## 1. PURPOSE

1.1 To provide a procedure for the calibration of a pressure transducer.

## 2. SCOPE

2.1 This document applies to all those involved with the calibration of a pressure transducer probe that is wired in to a computer via an amplifier or digital display.

## 3. RESPONSIBILITY

3.1 The Test Room Manager is responsible for updating and communicating the details within this procedure.

## 4. PROCEDURE

- A. **Transfer Standard:** Calibrated using equipment that is traceable to national/international standard.
- B. **Computer Accuracy:** The reading is accurate to 0.1 (bar or psi) for each recorded value.
- C. **Display Accuracy:** The reading is accurate to 1% of the full scale deflection for each recorded value.
- D. **Pressure Calibration Process:**
  1. Make sure the computer program is in calibration mode.
  2. Make sure there is no damage etc. to any part of the system.
  3. Calibrate using equipment that is traceable to national/international standard.
  4. Take an initial reading when the pressure is set to zero by releasing the pressure in the rig and allowing a reading to be taken by the computer and the external calibration system.
  5. Record the external calibration system value on the form.
  6. Record the actual pressure reading on the screen on the form.
  7. Input the actual pressure from the external calibration system in to the correct box on the screen (box above P1).
  8. Press the Set button (beside P1) to capture the current voltage value.
  9. Record the actual pressure reading on the screen on the form.
  10. If there is an external (analogue or digital) display reading then record on the form

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11. Then set the pressure at a maximum value (using the rig or an external pressure supply) and again allow a reading to be taken by both the computer and the external calibration system.
12. Record the external calibration system value on the form.
13. Record the actual pressure reading on the screen on the form.
14. Input the actual pressure from the external calibration system in to the correct box on the screen (box above P2).
15. Press the Set button (beside P2) to capture the current voltage value.
16. Record the actual pressure reading on the screen on the form.
17. If there is an external display (digital or analogue) reading then record on the form.
18. The pressure then needs to be checked at two equal intervals between the minimum and maximum values that have previously been applied.
19. After applying pressure at the first interval allow a reading to be taken by the computer and the external calibration system.
20. Record the external calibration system value on the form.
21. Record the actual pressure reading on the screen on the form.
22. If there is an external display (digital or analogue) reading then record on the form.
23. Set the pressure at the second interval and allow a reading to be taken by the computer and the external calibration system.
24. Record the external calibration system value on the form.
25. Record the actual pressure reading on the screen on the form.
26. If there is an external display (digital or analogue) reading then record on the form.
27. If either actual value is incorrect by more than 1% of the full scale reading then redo the above until in range values are obtained.
28. Document these items on calibration sheet number F202
  - I. Test rig
  - II. Pressure Transducer number TT-XX
  - III. Display / Amplifier number
  - IV. Computer Input number
  - V. External calibration company
  - VI. External calibration system reference number
  - VII. Above values
  - VIII. Calibration Interval
  - IX. Next calibration due
  - X. Accept / Reject decision box
  - XI. Calibration date
  - XII. Calibrators name and signature
29. Check the current pressure transducer number is clear ( Same number on display / amplifier )

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30. Place a new calibration sticker on the display / amplifier and pressure transducer.
31. If there is an external display (digital or analogue) add an offset label to the display if required.
32. Update the calibration record and store the written calibration sheet.
33. In instances where a display cannot be calibrated, correction tables will be worked out and provided/visible for the user.

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