

Instrumentation Technician interview questions

careertips.com.au: common questions and what they're really testing

What to expect

Instrumentation technician interviews are practical and safety-focused. Employers want to hear how you calibrate, fault-find and document your work, and they will often ask you to talk through a real loop or a real fault you have dealt with.

- **Technical calibration:** Questions about how you calibrate pressure, temperature, flow and level instruments, what test equipment you use, and how you handle drift or out-of-tolerance results.
- **Fault-finding and diagnostics:** Questions that test how you trace a fault from field instrument through to PLC or SCADA, and how you separate a process problem from an instrument problem.
- **Safety and compliance:** Questions about hazardous area work, permits, isolation, and working to Australian standards such as AS/NZS 60079 and AS/NZS 3000.
- **Scenario and judgement:** Questions that put you under pressure, such as a valve hunting during production or a supervisor pushing to return a loop to service before you are satisfied.
- **Behavioural:** Tell me about a time questions that probe how you work with operators, electricians and planners, and how you handle a fault others have missed.
- **Commissioning and documentation:** Questions about loop checks, as-found and as-left records, handover, and how you keep calibration history usable for the next person.

A typical process starts with a phone screen with a recruiter or maintenance manager, covering your qualifications, licences and availability. The main interview is usually on site with an instrumentation supervisor and sometimes an electrician or maintenance planner. It often includes a practical task such as calibrating a transmitter, interpreting a P&ID; or walking through a fault scenario, followed by a safety discussion. Some employers finish with a site walk-through and a chat with the team.

1. Walk me through how you calibrate a pressure transmitter from isolation to documentation.

Why they ask

This is the core technical skill of the role. The interviewer wants to see a safe, methodical process and hear that you know your test equipment and your documentation.

How to structure your answer

Process walk-through. Start with permits and isolation, then the test setup, the calibration steps, the decision points, and finally the records you leave behind.

Example answer

"I start by getting the permit and confirming the process is isolated, then I check the transmitter against a known reference. On a pressure transmitter I would connect the Fluke 754, apply test pressures across the range and compare the readings. If it is out, I adjust the zero and span, or trim it digitally through the HART communicator if the sensor is stable. I record the as-found and as-left values, tag the instrument and close the permit. If the drift is outside limits I raise a replacement rather than keep trimming. The paperwork matters because the next person needs to see what was done."

2. Tell me about a time you diagnosed a fault that others had missed.

Why they ask

This role involves tracing faults across field instruments, wiring and control systems. The interviewer wants evidence that you can think beyond the obvious replacement.

How to structure your answer

STAR. Set the situation briefly, explain your specific task, describe the diagnostic steps you took, and give the result in plain terms without inventing numbers.

Example answer

"We had a flow reading on a cooling water line that kept spiking at night. The operators had swapped the transmitter once and it came back. I was asked to find the real cause. I pulled the trend history and saw the spikes lined up with a pump start. I checked the loop wiring and found a shield drain connected at both ends, which introduced noise. I corrected the earthing and tested the loop. The spikes stopped and we avoided another unnecessary transmitter replacement."

3. A control valve is hunting and the operator wants it fixed now. What do you do?

Why they ask

This tests how you make decisions under production pressure and whether you can separate a loop problem from a valve problem without cutting corners.

How to structure your answer

Judgement under pressure. Secure the process first, gather quick evidence, choose a safe temporary measure if needed, then plan the proper fix and keep people informed.

Example answer

"First I make sure the process is safe and the operator has a fallback. Then I check the obvious things: air supply, positioner, linkage and signal. If the valve is hunting I might put the controller in manual and see if the valve settles, which tells me whether the problem is in the loop or the valve itself. I would not just force the valve open without understanding why it is hunting. If I need to take it out of service I agree a time with the operator and document the temporary arrangement."

4. How do you approach work in a hazardous area?

Why they ask

Many instrumentation roles sit in refineries, gas plants and dust or vapour hazardous zones. The interviewer needs to know you treat EEHA as a separate discipline, not a normal electrical task.

How to structure your answer

Technical and safety walk-through. Cover area classification, correct tools and test equipment, enclosure and gland checks, certification matching, and permit rules.

Example answer

"I treat hazardous area work as a separate discipline. I check the area classification, use the correct Ex-rated tools and test equipment, and confirm the gland and enclosure are suitable for the zone. I do not open a flameproof enclosure while the circuit is live unless the permit allows it, and I follow the EEHA requirements. I also check that the instrument's certification matches the area before I install a replacement."

5. Describe your experience with PLC and SCADA fault-finding.

Why they ask

Instrumentation technicians are expected to work across the field and the control layer. This question checks how far your diagnostic reach goes and how you use software tools.

How to structure your answer

Technical walk-through. Start at the field instrument, move to the signal path, then the PLC and SCADA, and finish with how you communicate with the operators and electricians.

Example answer

"I start at the field instrument and work back. I confirm the transmitter is reading correctly with a calibrator, then check the signal at the marshalling panel. If the signal is good there but not in the

PLC, I look at the card and wiring. On the software side I use Studio 5000 or TIA Portal to check the input scaling and the logic, and I look at SCADA trends to see what the process was doing when the fault occurred. I keep the electrician and the operator informed so nobody is working blind."

6. You disagree with a production supervisor about returning a loop to service. How do you handle it?

Why they ask

This is a client-facing and safety question. The interviewer wants to see that you can hold a position without becoming difficult, and that you use evidence rather than opinion.

How to structure your answer

Behavioural and judgement. State your approach, give a brief example of how you have handled a similar disagreement, and show that you escalate appropriately when needed.

Example answer

"I keep it factual. If I think a loop is not ready, I explain what the test showed and what the risk is. I do not argue about opinion, I show the calibration result or the trend. If the supervisor still wants it back in service, I ask them to confirm in the permit or the log that they accept the risk, and I notify my maintenance coordinator. Usually once they see the data they agree to a short delay, because a bad measurement costs more than the delay."