

Task 2 – Manufacture and test

You must:

- a) produce risk assessments for the production of the PCB and the construction of the soldered prototype
- b) produce the PCB for the design
- c) build a soldered prototype working circuitry from your design
- d) test the operation of the circuitry.

Conditions of assessment:

- the time allocated for this task is **13 hours**
- you must carry out the task on your own, under **controlled conditions**.

Controlled conditions:

- you must only work on the tasks in the allocated times
- assessment evidence must be handed in at the end of each session for secure storage which cannot be accessed
- you must not share or discuss your work with other candidates
- you are not permitted to bring any materials into the assessment session.

What must be produced for marking:

- risk assessments
- test records for the results of testing the circuitry
- PCB
- prototype.

Additional evidence for this task:

- assessor observation of:
 - the production of the PCB
 - building of the soldered prototype
 - testing of the circuitry.

To support the comments made within the Practical Observation the assessor must capture the following photographs and videos that must be submitted as supporting evidence for each candidate.

Photographic evidence which shows:

- unassembled PCB clearly showing the track layout
- back of the assembled PCB showing all soldered joints
- front of the assembled PCB showing positioning and fitting of components.

Video evidence which shows:

- functionality of the prototype.

Resources:

- copies of completed documentation from task 1
- PCB production facilities
- basic electronic components including; capacitors, resistors, sensor components, integrated and discrete components, wiring and terminal pins
- DC power supply unit
- diagnostic equipment, including multimeters, logic probes etc
- tools for the electronic assembly, for example: soldering iron, side cutters, snip nose pliers, wire strippers, stripboard cutter (if used), PCB/stripboard holder, solder extraction units (portable or fixed)
- if required, programmable system software and hardware upload facilities.

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