



Australian Government

MEA260 Use electrical test equipment

Release: 2

MEA260 Use electrical test equipment

Modification History

Release 2 - Phase angle measurement (in Range of Conditions) now dependent on enterprise need

Release 1 - New unit of competency

Application

This unit of competency requires application of skills in the use of electrical test equipment to measure voltage, current, frequency and phase angle, and to test continuity, resistance, insulation and bonding.

Applications include aircraft and components both in the hangar and workshop during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

The unit is part of all Avionic Certificate IV training pathways. It is also part of the Mechanical Aircraft Maintenance Engineer licensing pathway.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation safety Authority (CASA).

Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen maintenance certification licence under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Companion Volume Implementation Guide.

Pre-requisite Unit

MEA101	Interpret work health and safety practices in aviation maintenance
MEA103	Plan and organise aviation maintenance work activity
MEA105	Apply quality standards applicable to aviation maintenance processes
MEA107	Interpret and use aviation maintenance industry manuals and specifications
MEA108	Complete aviation maintenance industry documentation
MEA109	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|-----------------------------------|---|
| 1. Select required test equipment | 1.1 System/component test requirements are identified |
| | 1.2 Appropriate test equipment is selected |
| 2. Prepare test equipment for use | 2.1 Test equipment is checked for serviceability and applicable leads are fitted where required |
| | 2.2 Applicable function and range of measurement is selected as required |
| 3. Test system or component | 3.1 Test points and polarity are determined |
| | 3.2 Required parameters are measured with the test equipment while observing all relevant work health and safety (WHS) requirements |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

System/component test requirements include:

- Measurement of or testing:
 - volts, amps and power
 - frequency
 - phase angle (where applicable to the enterprise)

- Procedures and requirements include:**
- continuity, resistance and insulation
 - bonding
 - Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

Release 2 - phase angle measurement (in Range of Conditions and Assessment Requirements) now dependent on enterprise need. No change in outcome

Release 1 – equivalent to MEA260B Use electrical test equipment

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>

Assessment Requirements for MEA260 Use electrical test equipment

Modification History

Release 2 - Phase angle measurement (in Assessment Conditions) now dependent on enterprise need

Release 1 - New unit of competency

Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying relevant WHS practices
- using selectors and scale adjustment of each item of test equipment to ensure accurate measurement of applicable parameter
- connecting test equipment to components or circuits
- determining polarity and applicable connection points for measurement or testing.

The underlying skills inherent in this unit should be transferable into all areas which require the use of electrical test equipment. It is essential that the general aspects of electrical test equipment selection, preparation for use and safe application to a representative range of measurement and testing tasks are clearly understood.

Evidence is required of knowledge about the selection and use of the range of test equipment used for the measurement and testing tasks listed in the Range of Conditions, and of the methods used to identify applicable polarity and connection to components and circuits for required measurement or testing.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- the range of electrical test equipment used to measure or test:
 - volts, amps and power
 - frequency
 - phase angle
 - continuity, resistance and insulation
 - bonding
- test equipment construction and calibration, and testing for serviceability.

Assessment Conditions

- Competency should be assessed in the work environment, or simulated work environment, using electrical test equipment specified in maintenance documentation. It is also expected that applicable test equipment can be selected on the basis of general trade knowledge where specific test equipment is not specified.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under routine supervision in the selection of appropriate items of test equipment and their use to perform the measurements and test each of:
 - volts, amps and power
 - frequency
 - phase angle (may be omitted if not relevant to the enterprise)
 - continuity, resistance and insulation
 - bonding.
- This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide (for details refer to the Companion Volume Assessment Guidelines).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).
- Where the unit is to be used for CASA licensing purposes the Assessor must also meet the criteria specified in the CASR Part 147 Manual of Standards.
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