Australian Government

MEM30025 Analyse a simple electrical system circuit

Release: 1

MEM30025 Analyse a simple electrical system circuit

Modification History

Release 1. Supersedes and is equivalent to MEM30025A Analyse a simple electrical system circuit.

Application

This unit of competency defines the skills and knowledge required to analyse a simple circuit by identifying the function and operation of the circuit and circuit components contained within approved manufactured products. It covers analysis of simple existing circuits against specifications only and does not extend to determining modifications to circuits.

This unit does not cover the skills involved in direct measuring of values requiring connection or disconnection of circuits and components covered by licensing requirements. Where such values are required, they are to be obtained through the assistance of appropriately licensed personnel or through undertaking the specified training for the appropriate licence.

The unit applies to engineering or related activities and is suitable for people giving technical support in manufacturing or engineering operations and those pursuing technical qualifications and careers at paraprofessional or technician level. All work is carried out under supervision.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

MEM12024 Perform computations

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

Competency Field

Engineering technician

Elements and Performance Criteria

Elements	**Performance Criteria**
Elements describe the essential *outcomes.*	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Establish function and purpose of selected circuit	1.1. Follow standard operating procedures (SOPs) and comply with work health and safety (WHS) requirements at all times 1.2. Obtain and interpret all relevant drawings, specifications, manuals

Elements	Performance Criteria
Elements describe the essential *outcomes.*	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
	and documentation 1.3. Observe circuit and component installation where required to establish function and purpose 1.4. Consult with appropriate personnel to establish job requirements
2. Extract a simple circuit diagram from existing drawings and documentation	2.1. Identify appropriate components and assemblies 2.2. Identify components and/or materials from supplier/manufacturer catalogues 2.3. Obtain a simple circuit diagram 2.4. Use drawing conventions and symbols in the diagram
3. Analyse the circuit for electrical characteristics	3.1. Compare functions of the circuit and components against design characteristics and operational specifications

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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.	

Components and assemblies include one or more of the following resistors or capacitors:	• resistors:
	  • fixed (composition and wire wound)
	  • variable (rheostats, potentiometers and trimmers)
	  • non-linear (thermistors)
	• capacitors:
	  • fixed (ceramic, plastic or electrolytic)
	  • variable
	  • magnetic
	  • transformers (air-forced (AF), radio frequency (RF) and

	power) • chokes • relays • contactors • rectifiers • smoothing filters • voltage regulators • feedback.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM30025A Analyse a simple electrical system circuit.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2