



Australian Government

Department of Education, Employment and Workplace Relations

AUMATR4002 Use sensors to acquire motor vehicle data for development purposes

Release: 1

AUMATR4002 Use sensors to acquire motor vehicle data for development purposes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to install, adjust and maintain sensors and signal transmitters used in automotive development to gather data for research purposes. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.
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Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains Employability Skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify appropriate sensors, transmitters and final control elements	1.1. Applicable <i>organisational requirements</i> relevant to the use of <i>sensors, signal transmitters and final control elements</i> are verified and complied with throughout the work activity 1.2. <i>Instructions</i> and plans are read and interpreted to identify processes and materials to complete work tasks 1.3. Specification requirements from data sheets, circuit diagrams and/or engineering drawings are determined 1.4. Sensors, transmitters and final control elements are selected 1.5. Installation is planned
2. Install instrumentation sensors, transmitters and final control elements	2.1. Equipment is prepared for installation 2.2. Equipment is installed 2.3. Test is setup for correct <i>calibration</i> , operation and data feed
3. Maintain, diagnose sensors, transmitters and final control elements	3.1. Preventative maintenance schedules are implemented 3.2. Periodic tests to ensure continued integrity of data are undertaken 3.3. View sample data periodically for obvious irregularities or unexplained aberrations 3.4. Irregularities and aberrations are documented and reported with explanations where possible
4. Complete fault documentation and plan corrective action	4.1. Operation of sensors, transmitters and final control elements are monitored and assessed against predetermined specification or manufacturers' technical data 4.2. Fault conditions are identified, localised and monitored 4.3. Faults are documented and reported
5. Restore equipment and finalise housekeeping	5.1. Equipment is recovered, checked for serviceability and calibration 5.2. Serviceable equipment is returned to store for future use 5.3. Unserviceable equipment is sent for repair or disposal in accordance with organisation policy 5.4. Documentation is finalised and test is reported

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- speak clearly and directly in order to communicate with others the data required for development purposes
- apply teamwork to a range of situations to achieve mutual goals and outcomes
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ...
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental legislation, regulations, standards and codes of practice and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- organisational supply/replenishment systems and processes for materials, equipment and tools
- types of sensors, signal transmitters and final control elements and procedures for their safe use, operation and maintenance
- evaluation techniques
- established communication channels and protocols
- problem identification and resolution
- procedures for the recording, reporting and maintenance of organisation records and information.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislation, regulations, standards, codes of practice and established safe practices and organisation policies and procedures for use of sensors, signal transmitters and final control units
- maintaining a working knowledge of current organisation inventory procedures
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
 - selecting the appropriate equipment
 - checking the currency of calibration
 - measuring in accordance with recognised procedures
 - achieving work quality goals
 - completing work area housekeeping requirements including the documentation of project activity and process outcomes
- modify activities to cater for variations in organisation context and environment.

Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its

EVIDENCE GUIDE

	correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
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Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Organisation requirements may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

Sensors, signal transmitters and final control elements may include:

- manometers
- dead weight testers
- vacuum systems
- power supplies
- control valve test beds
- pneumatic
- analogue
- digital
- test and calibration equipment
- utilised for maintenance
- calibration and testing of process signal converters
- final control elements.

Instructions may include:

- workplace procedures relating to the use and operation of tools and equipment
- departmental requirements
- organisation instructions, including job sheets, plans, specifications, drawings and designs
- workplace procedures relating to reporting and communications
- manufacturers' instructions for the use of equipment and

RANGE STATEMENT

	materials.
Calibration may include:	refers to the tolerance accuracy of measurement. This is the degree of accuracy that the measuring equipment can achieve and when it was last checked against a recognised standard of accuracy. Users may maintain an internal standard of measure against which they periodically check the measuring equipment. In any event there are National and International standards which are maintained by independent agencies against which measuring equipment may be tested to ensure that it is within internationally agreed tolerances and so certified.

Unit Sector(s)

Unit sector	Technical - Electrical and Electronic
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Competency field

Competency field	Manufacturing - Common
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Co-requisite units

Not applicable.