



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **PMAOPS101C Read dials and indicators**

**Revision Number: 1**

## PMAOPS101C Read dials and indicators

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This competency covers making (or taking) readings/measurements in a variety of sites and locations, using common types of plant instrumentation. It also covers recording measurement results in a prescribed format, according to procedures and with the appropriate level of detail included in all reports.
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### Application of the Unit

<b>Application of the unit</b>	In a typical scenario an operator patrols the plant taking a range of readings to complete logs and check on the operation of the plant. The operator needs to interpret the display on the instrument and record the appropriate reading. As part of this process, they check that the instrument is within calibration (where appropriate) and make a judgement as to whether the reading is 'reasonable' or whether some action needs to be taken.
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### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

<b>Prerequisite units</b>	
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### Employability Skills Information

<b>Employability skills</b>	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 performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and 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. Contribute to controlling hazards in work area.	1.1. Identify hazards in work area 1.2. Take appropriate action to control risks according to procedures.
2. Identify appropriate measuring device readings.	2.1. Explain the need for calibration and where appropriate, confirm the calibration of the measuring device 2.2. Select appropriate units on the measuring device 2.3. Select appropriate scale(s) on the measuring device.
3. Perform measurements.	3.1. Identify the range of results that could be obtained 3.2. Identify and take account of relevant external factors 3.3. Perform measurements using appropriate techniques 3.4. Identify measurements outside the range of expected results 3.5. Take action on measurements outside expected range according to procedures.
4. Record results	4.1. Record readings accurately in the appropriate format 4.2. Record the results to the appropriate level of detail.

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

- efficient and effective operation of plant/equipment
- hazard analysis
- completing plant records
- communication
- problem solving.

#### Required knowledge

- basic units of measurement
- measuring devices, including gauges, dip-sticks, thermometers and the like
- graphs and scales
- workplace Standard Operating Procedures (SOPs) related to this competency
- typical problems with measuring equipment applicable to this competency
- procedures for reporting or dealing with typical equipment problems and threats to safety.

## 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 the Training Package.

#### Overview of assessment

Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays.

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

Competence must be demonstrated in the ability to recognise situations requiring action and then in implementing appropriate corrective action. While it is not expected that the operator will understand the full implications of readings outside the normal range, there should be awareness of the safety implications and the appropriate priority for response for such readings.

Consistent performance should be demonstrated. In particular look to see that:

- readings which are out of range or unusual/unexpected signs of problems or potential problems with the equipment/processes are recognised
- appropriate action is taken in a timely manner
- hazards are recognised and appropriate action is taken to control risks arising from such hazards.

These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus, with a walk-through forming part of the response. The assessment activities should include responding to a range of problems.

<b>EVIDENCE GUIDE</b>	
<b>Context of and specific resources for assessment</b>	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
<b>Method of assessment</b>	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.  It may be appropriate to assess this unit concurrently with units related to HSE.
<b>Guidance information for assessment</b>	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

## Range Statement

<b>RANGE STATEMENT</b>	
<p>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, if used 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.</p>	
<b>Codes of practice/ standards</b>	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
<b>Context</b>	<p>This unit applies to reading process instrumentation in any plant or related situation.</p> <p>Readings may need to be made at heights, in wet or restricted conditions, or close to hot or moving equipment.</p>
<b>Dials and indicators</b>	<p>Typical dials and indicators include (select relevant items):</p> <ul style="list-style-type: none"> <li>• analogue dials, such as: <ul style="list-style-type: none"> <li>• pressure gauge</li> <li>• rev counter</li> <li>• temperature dial</li> </ul> </li> <li>• digital readouts, such as: <ul style="list-style-type: none"> <li>• pH meter</li> <li>• temperature probe</li> <li>• ammeter</li> <li>• flow meter</li> <li>• weigh scales.</li> </ul> </li> </ul>
<b>Calibration checks</b>	<p>Calibration checks could include:</p> <ul style="list-style-type: none"> <li>• checking the date that the next calibration is required, eg weigh scale, pressure gauge</li> <li>• using a calibration button on the instrument, eg zero button on an ammeter, calibration button on an electronic meter.</li> </ul>
<b>Appropriate action</b>	<p>Appropriate action includes:</p> <ul style="list-style-type: none"> <li>• determining problems needing action</li> <li>• determining possible fault causes</li> <li>• rectifying problem using appropriate solution within area of responsibility</li> <li>• following through items initiated until final resolution has occurred</li> <li>• reporting problems outside area of responsibility to designated person.</li> </ul>

**RANGE STATEMENT****Health, safety  
and  
environment  
(HSE)**

All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

**Unit Sector(s)**

<b>Unit sector</b>	Operational/technical
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**Competency field**

<b>Competency field</b>	
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**Co-requisite units**

<b>Co-requisite units</b>		
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