

<b>Title</b>	<b>Maintain temperature measurement devices used in industry</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	People credited with this unit standard are able to: <ul style="list-style-type: none"> <li>– reconfigure or calibrate temperature measurement devices;</li> <li>– service and test temperature measurement devices and systems.</li> </ul>
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<b>Classification</b>	Industrial Measurement and Control > Industrial Measurement and Control - Maintenance
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 This unit standard has been developed for learning and assessment in a workplace environment.
- 2 References  
 ANSI/ISA-51.1-1979 (R1993) *Process Instrumentation Terminology*;  
 Electricity Act 1992;  
 Electricity (Safety) Regulations 2010;  
 Health and Safety at Work Act 2015 and associated regulations;  
 ISSN 0114-0663, *New Zealand Electrical Codes of Practice*, available from Worksafe, <https://worksafe.govt.nz/>;  
 and all subsequent amendments and replacements.
- 3 References  
*Industry requirements* – includes all asset owner requirements; manufacturers' specifications; enterprise requirements which cover the documented workplace policies, procedures, specifications, and business requirements; and quality management requirements relevant to the workplace in which the assessment is carried out.  
*Maintain* – planned activity during normal operation, to conserve or keep an item or piece of equipment in a state of repair and to ensure that this is done in a sustainable way.  
*Service* – planned activity during normal operation that involves inspection, cleaning, testing, adjusting, or making minor repairs to a piece of equipment to ensure that it works properly.
- 4 Recommended skills and knowledge: Unit 2634, *Demonstrate knowledge of temperature measurement systems used in industry*; and Unit 28078, *Demonstrate knowledge of industrial measurement processes, standards, and calibration*.

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## Outcomes and performance criteria

### Outcome 1

Reconfigure or calibrate temperature measurement devices.

Range resistance temperature transmitter (RTD), thermocouple transmitter, loop equipment.

### Performance criteria

1.1 Identify types and causes of typical errors.

Range may include but is not limited to – earth faults, loop resistance, reference-probe error.

1.2 Explain and follow safe work procedures.

Range may include but is not limited to – isolation, temperature, thermowell.

1.3 Select test equipment according to the accuracy required of the device and the full loop to be calibrated.

Range may include but is not limited to – dedicated test equipment, simple resistance testing device, potentiometer, comparative type testing device, ice bath, dry-block, blackbody furnace.

1.4 Calibrate full temperature measuring loop, as specified by the data sheet.

1.5 Document test results in accordance with industry requirements.

### Outcome 2

Service and test temperature measurement devices and systems.

Range RTD transmitter, thermocouple transmitter, filled systems, radiation pyrometer, bimetallic thermostats, and associated equipment; evidence of two is required.

### Performance criteria

2.1 Locate, interpret, and apply technical information for maintaining equipment.

2.2 Explain and follow safe work procedures.

Range may include but is not limited to – isolation, temperature, thermowell.

2.3 Complete maintenance and repairs to ensure continued operation.

Range may include but is not limited to – tools, materials, parts, techniques (including tests), specifications.

2.4 Produce maintenance reports in accordance with industry requirements.

<b>Replacement information</b>	This unit standard was replaced by skill standard 40240.
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**This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.**

**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	31 October 1995	31 December 2013
Revision	2	30 October 1997	31 December 2013
Revision	3	3 April 2001	31 December 2013
Review	4	22 June 2001	31 December 2013
Review	5	19 May 2008	31 December 2019
Review	6	21 November 2013	31 December 2027
Rollover and Revision	7	28 June 2018	31 December 2027
Review	8	30 January 2025	31 December 2027

<b>Consent and Moderation Requirements (CMR) reference</b>	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.