Title	**Maintain flow measurement devices used in industry**		
Level	**3**	**Credits**	**10**

Purpose	People credited with this unit standard are able to: – calibrate or configure flow measurement transmitters and devices; and – service flow measurement transmitters and devices.

Classification	Industrial Measurement and Control > Industrial Measurement and Control - Maintenance

Available grade	Achieved

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 Definitions
DP – Differential Pressure.
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.
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 2636*, Demonstrate knowledge of flow measurement systems used in industry;* and Unit 28078*, Demonstrate knowledge of industrial measurement processes, standards, and calibration*.

Outcomes and performance criteria

Outcome 1

Calibrate or configure flow measurement transmitters and devices.

Range DP transmitter used for orifice plate, venturi, averaging pitot tube or flow nozzle; evidence of one required.
Electromagnetic, vortex, turbine, positive displacement, mass flow meter, weir, flume;
evidence of one is required.

Performance criteria

1.1 Explain and follow safe work procedures.

Range may include but is not limited to – process isolation, loop isolation.

1.2 Select test equipment according to manufacturer's specifications.

1.3 Identify type and cause of typical errors.

Range may include but is not limited to – zero span, linearity, impulse line fill.

1.4 Calibrate or configure devices to parameters specified by the data sheet.

1.5 Document test results in accordance with industry requirements.

Outcome 2

Service flow measurement transmitters and devices.

Range electromagnetic, vortex, turbine, positive displacement, mass flow meter, weir, flume;
evidence of one required.
DP transmitter used for orifice plate, venturi, averaging pitot tube or flow nozzle; evidence of one required.

Performance criteria

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

2.2 Explain and follow safe work procedures.

Range may include but not limited to – isolation, process material, pressure.

2.3 Service and test transmitters and devices to ensure correct and continued operation.

Range may include but not limited to – tools, materials, parts, techniques, specifications.

2.4 Produce reports and documentation in accordance with industry practice.

Planned review date	31 December 2021

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	N/A
Rollover and Revision	7	28 June 2018	N/A

Consent and Moderation Requirements (CMR) reference	0003

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.