

## 40234 Install and commission measuring instruments in industrial systems

<b>Kaupae   Level</b>	4
<b>Whiwhinga   Credit</b>	10
<b>Whāinga   Purpose</b>	<p>This skill standard recognises the skills to install and commission measuring instruments in an industrial control or process control system.</p> <p>This skill standard may contribute to the New Zealand Certificate in Industrial Measurement and Control (Practice) (Level 4) [Ref: 2251].</p>

### Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako   Learning outcomes	Paearu aromatawai   Assessment criteria
1. Manage risks to work safely when installing and commissioning measuring instruments.	a. Risks in installation and commissioning are identified and control measures are followed.
2. Install measuring instruments in an industrial control or process monitoring system.	a. Measuring instruments are installed to meet relevant industry standards.
	b. Measuring instruments are connected according to relevant documentation and industry regulations.
	c. Measuring instruments are verified using appropriate reference measurement standards.
	d. Test results are recorded in accordance with industry requirements.
3. Commission measuring instruments in an industrial control or process monitoring system.	a. Measuring instruments are commissioned and correct operation of the related control loop is verified.
	b. Results of acceptance testing are documented in accordance with industry requirements.

### Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

Assessment evidence will include a minimum of three different process variables relevant to different instruments.

Identification of risks may be assessed orally, and should include consideration of people, plant, equipment, product quality and the environment.

To achieve this standard the candidate must be capable of consistently:

- performing the skill to the required industry standard
- repeating the skill on demand
- performing the skill without supervision
- applying the skill to other work.

*Industry requirements* refer to 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.

### **Ngā momo whiwhinga | Grades available**

Achieved

### **Ihirangi waitohu | Indicative content**

- Safe working practices in relation to relevant legislative requirements.
- Risk identification and management working on live systems.
- Inherent costs of failure.
- Mechanical and electrical connections in accordance with manufacturer's recommendations, drawings, electricity regulations, and industry practice to enable testing.
- Mounting and connecting components.
- Reconfiguration and checking of calibration of measurement devices.
- Procedures to service and test measurement devices and systems.
- Installation of a transmitter.
- Installation of a measuring element and associated transmitter.
- Selection and use of test instrumentation
- Commissioning of instrumentation loops.
- Stakeholder engagement.
- Industry or organisational reports and documentation.
- Accuracy of activities.
- Safety Instrumented Systems.
- Hazardous areas and activities.

### **Rauemi | Resources**

- Programme guidance available from [qualifications@waihangaarau.nz](mailto:qualifications@waihangaarau.nz).
- Electricity Act 1992
- Electricity (Safety) Regulations 2010
- ISO 2186:2007 – Fluid flow in closed conduits – Connections for pressure signal transmissions between primary and secondary elements, available at [ISO 2186:2007 :: Standards New Zealand](#)
- ISO 5167-2:2022 – Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full – Part 2: Orifice plates, available at [ISO 5167-2:2022 :: Standards New Zealand](#).
- All vocabulary will align to the IEC 60050 International Electrotechnical Vocabulary (IEV) available at [IEC 60050 - International Electrotechnical Vocabulary](#)
- Manufacturer's instructions

**Pārongo Whakaū Kouna | Quality assurance information**

<b>Waihnaga Ara Rau Construction and Infrastructure Workforce Development Council</b>	Waihanga Ara Rau Construction and Infrastructure Workforce Development Council
<b>Whakaritenga Rārangi Paetae Aromatawai   DASS classification</b>	Engineering and Technology > Industrial Measurement and Control > Industrial Measurement and Control - Installation
<b>Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga   CMR</b>	0003

<b>Hātepe   Process</b>	<b>Putanga   Version</b>	<b>Rā whakaputa   Review Date</b>	<b>Rā whakamutunga mō te aromatawai   Last date for assessment</b>
<b>Rēhitatanga   Registration</b>	1	30 January 2025	N/A
<b>Kōrero whakakapinga   Replacement information</b>	This skill standard replaced unit standard 9180.		
<b>Rā arotake   Planned review date</b>	31 December 2029		

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council [qualifications@waihangaararau.nz](mailto:qualifications@waihangaararau.nz) to suggest changes to the content of this skill standard.