

Title	Demonstrate knowledge of electronic security systems and equipment		
Level	3	Credits	10

Purpose	<p>This unit standard is intended for the training and assessment of people working in or intending to work in the electronic security industry and covers knowledge of electronic security systems and their functions.</p> <p>People credited with this unit standard are able to demonstrate knowledge of the principles of:</p> <ul style="list-style-type: none"> – electronic security intruder alarm components; – electronic security access control components; – electronic security surveillance systems; – intercom systems.
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Classification	Electronic Engineering > Electronic Security
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Available grade	Achieved
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Prerequisites	Unit 30652, <i>Demonstrate knowledge of legislation, codes of practice, and Standards as applied to electronic security</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 This unit standard has been developed for learning and assessment off-job.
- 2 Persons working or intending to work in private security need either a Company Licence, an Individual Licence (for Sole Traders) or a Certificate of Approval (for employees of companies). These licences are issued by the Private Security Personnel Licensing Authority available through:
www.justice.govt.nz/tribunals/licences-certificates/pspla/.
- 3 Definitions
Artificial light – infra red, LED, fluorescent, high and low pressure sodium.
CCTV – closed circuit television.
DOTL – door open too long.
DVR – digital video recorder.
Electronic security systems and equipment – includes but is not limited to – intruder, access control, surveillance, intercom systems.
IP – internet protocol.
LED – Light emitting diode.
Lighting – illumination across the visible and invisible spectrum.

NVR – network video recorder.

PTZ – pan tilt zoom.

REX – request to exit.

Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000:2007, *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.

Surveillance systems – may include but are not limited to – camera fixed lens, auto iris lens, video monitor, video intercom, lighting.

- 4 References – Specific to Electronic Security Industry
Code of Practice for Electro-Mechanical Controlled Locking Devices on Egress Doors (2018);
FPANZ Code of Practice for the Integration of Building Fire Safety Systems with Other Services (2022);
Industry Code of Practice for Access Controlled Doors and Compliance: Schedule Reference Guide (2021);
New Zealand Security Association (Inc), Code of Practice - Security Systems: Electronic and Physical (2022);
Codes of Practice available from: [Guidelines, Codes of Practice and Standards | NZ Security Association](#).

AS/NZS 2201.1:2007, *Intruder alarm systems – Client's premises – Design, installation, commissioning and maintenance*;

AS/NZS 2201.5:2008, *Intruder alarm systems – Alarm transmission systems*;

AS/NZS 62767.1.1:2020 – Video Surveillance Systems for use in Security Applications – Part 1-1: System Requirements – General;

AS/NZS IEC 60839.11.1:2019 – Alarm and Electronic Security Systems, Part 11.1: Electrical;

AS/NZS IEC 60839.11.2:2019 – Alarm and Electronic Security Systems, Part 11.2: Electrical Access Control Systems – Application Guidelines;

AS/NZS IEC 60839.11.31:2020 – Alarm and Electronic Security Systems, Part 11.3: Electronic Access Control Systems – Core interoperability Protocol;

AS/NZS IEC 62676.2.2:2020 – Video Surveillance Systems for use in Security Applications – Part 2-2: Video Transmission Protocols – IP Interoperability Implementation based on HTTP and REST Services;

NZS-4512-2021- Fire Detection and Alarm Systems in Buildings;

NZS-4514-2021- Interconnected Smoke Alarms for Houses;

and all subsequent amendments and replacements.

References – General to Electronic Security Industry

Building Act 2004;

Electricity (Safety) Regulations 2010;

Health and Safety at Work Act 1015;

Private Security Personnel and Private Investigators Act 2010;

Privacy Act 2020;

AS/NZS 3000:2007 *Electrical installations (known as the Australian/New Zealand Wiring Rules)*;

AS/NZS ISO 31000:2009 – Risk Management Principles and Guidelines;

AS/NZS 3016:2002 – Electrical Installations – Electrical Security Fences;

Telecommunications Act 2001;

Local territorial authority requirements;

and all subsequent amendments and replacements.

Standards available from [Standards New Zealand](#).

5 Range

- a Candidates must refer to current legislation and Standards during assessment.
- b All activities and evidence presented for all outcomes and performance criteria in this unit standard must be in accordance with:
 - i legislation;
 - ii policies and procedures;
 - iii ethical codes;
 - iv Standards;
 - v safe and sound practice;
 - vi applicable site, enterprise, and industry practice; and,
 - vii where appropriate, manufacturer instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the principles of electronic security intruder alarm components.

Performance criteria

- 1.1 Describe the general operating principles and features of components.

Range may include but is not limited to – internal audible device, external audible device, communications devices, passive infra-red (PIR) detector, microwave detector, point-to-point beam, dual and quad technology detector, reed switches, seismic sensors, glass break detectors, keypad, input expander, output expander, local bus network, power supply, battery, tamper switch, duress switch; evidence for 10 components is required.

- 1.2 Describe environmental influences that may interfere with component performance and explain techniques to compensate for negative effects.

Range influences – for each of the 10 components chosen above.

- 1.3 Explain intruder alarm system terminologies.

Range may include but is not limited to – end-of-line resistor, dual end of line resistors, system configuration, system software, upload, download, entry delay, exit delay, zone/input, output, area / partition, tamper, isolate, event flag, duress; evidence for 10 terms is required.

Outcome 2

Demonstrate knowledge of the principles of electronic security access control components.

Performance criteria

2.1 Describe the general operating principles and features of components.

Range may include but is not limited to – electric strikes, electric mortise locks, electromagnetic locks, v-lock, hook lock, drop bolt, cable transfers, egress switches, emergency door release device, point-to-point beam, vehicle detection sensor, credential reader (key, card, tag, biometric, or mobile), radio transmitters, automatic door closer, turnstiles, vehicle barriers; ; evidence for 10 components is required.

2.2 Describe environmental influences that may interfere with component performance and explain techniques to compensate for negative effects.

Range influences – for each of the 10 components chosen above.

2.3 Explain electronic security access control terminologies.

Range may include but is not limited to the following – REX, access group, time zone, DOTL, forced door, PTE, egress, door open time, time in attendance report, evacuation report, shunt, door group, fire release, emergency door release, anti-pass back; evidence for 10 terms is required.

Outcome 3

Demonstrate knowledge of the principles of electronic security surveillance systems.

Performance criteria

3.1 Describe the general operating principles, features, and purpose of components.

Range may include but is not limited to the following –fixed lenses, variable focus lenses, housings, brackets, video monitors, power supply, IP camera, network switch, system software, NVR, encoder, decoder, full body, dome, bullet, turret, thermal, multi-lens, panoramic, and PTZ cameras; evidence for 10 components is required.

3.2 Explain light in terms of units of measurement, and colour rendering in terms of wavelength.

3.3 Describe the importance of illumination in terms of effective CCTV operation in natural and artificial lighting situations.

Range shadows, direct sunlight, glare, rapid fluctuation, scene contrast, colour rendering, frequency.

- 3.4 Describe environmental influences other than illumination levels that may interfere with component performance and explain techniques to compensate for negative effects.

Range influences – a minimum of five examples is required.

- 3.5 Describe the relationship of lens selection to natural and artificial lighting levels and scene definition.

Range detect, observe, recognise, identify.

- 3.6 Explain CCTV system terminology.

Range includes but is not limited to – frames per second, , motion detection, privacy masking, resolution, compression algorithms on screen display (OSD), archive, video management software (VMS), analytics;

Outcome 4

Describe the principles of intercom systems.

Performance criteria

- 4.1 Describe the features and purpose of components.

Range includes but is not limited to –analogue intercoms, power supplies, microphone, speakers, door release, IP intercoms, session initiated protocol (SIP), master station, substations, door station, smart-phone applications;

- 4.2 Describe environmental influences that may interfere with component performance and explain techniques to compensate for negative effects.

Range influences – for each of the 10 components chosen above.

Replacement information	This unit standard replaced unit standard 5883.
Planned review date	31 December 2029

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 November 2010	31 December 2022
Revision	2	17 June 2011	31 December 2022
Review	3	14 December 2017	31 December 2026
Rollover and Revision	4	27 October 2022	31 December 2026
Review	5	26 September 2024	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 Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@waihangaararau.nz if you wish to suggest changes to the content of this unit standard.