Auto Electrician

Business Name:	ABN:	
Business Address:		
Contact Person:	Phone:	Email:

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

Full Name:		
Signature:	Title:	Date:

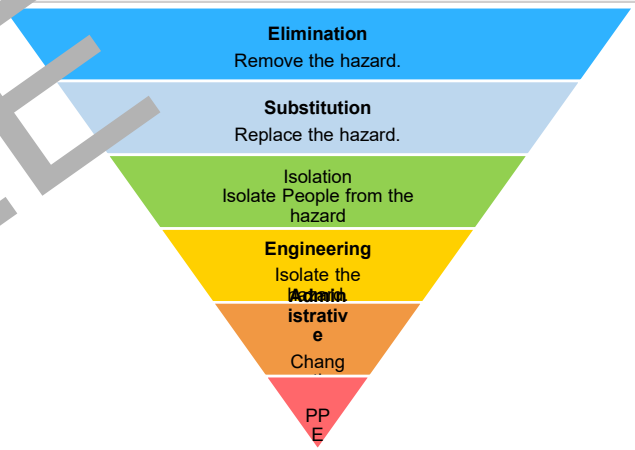
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work *(2023) and ISO 45001:2018 clauses 6–8.*

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. WHS Governance, Roles and Consultation	• Absence of a documented WHS management system aligned with WHS Act 2011 and Regulations • Unclear WHS responsibilities between PCBU, management, supervisors and auto electricians • Inadequate worker consultation mechanisms and failure to involve health and safety representatives (HSRs) • Lack of WHS objectives, KPIs and review processes specific to mobile auto electrical work • Poor change management for new equipment, tooling, mobile battery systems and in-vehicle technology • Inadequate incident and near-miss reporting culture, leading to recurrence of systemic issues	4A	• Establish and maintain a WHS management system consistent with WHS Act 2011, WHS Regulations and relevant Codes of Practice, clearly referencing auto electrical activities and mobile work on light and heavy vehicles • Define and document WHS roles, responsibilities and accountabilities for officers, managers, supervisors, and auto electricians, including in-field service work and after-hours call-outs • Implement formal consultation arrangements (toolbox talks, safety committees, HSRs) ensuring auto electricians are consulted on changes to vehicles, mobile battery systems, sound systems and central locking technology • Develop a documented WHS policy signed by senior management that commits to eliminating or minimising risks associated with automotive electrical work and vehicle modifications • Implement a management-of-change procedure for introduction of new diagnostic tools, mobile battery systems, high-current equipment, vehicle locking and sound systems, ensuring risk assessments are completed before deployment • Establish a system for reporting, investigating and analysing incidents, near misses and hazards, including vehicle-related electrical faults and connector failures, and use findings to update procedures and training • Conduct periodic WHS management reviews to assess performance against KPIs, audit outcomes and legislative changes, and to track improvements in system and management controls • Ensure officers meet due diligence obligations by receiving WHS briefings on electrical and automotive industry-specific risks, including evolving vehicle technology and lithium-based mobile battery systems	3H
2. Competency, Licensing, Training and Supervision	• Auto electricians performing tasks beyond their competency or licence scope (e.g. high-voltage systems, security systems) without adequate supervision • Inadequate training in automotive electrical connector handling, crimping, insulation, and corrosion prevention • Insufficient skills in diagnosing and repairing central locking systems, immobilisers and vehicle security electronics • Lack of training in installation, operation and maintenance of mobile battery systems in work vehicles, including high current and energy storage hazards • Inadequate instruction on checking functionality of automotive locks and	4A	• Develop a competency framework for auto electricians that specifies required qualifications, licences and experience for different work categories (e.g. light vehicle, heavy vehicle, security systems, mobile battery systems) • Maintain a competency and training register that records licences, qualifications, manufacturer-specific training and currency for all technicians and supervisors • Provide structured induction and ongoing training covering automotive electrical connectors, correct selection and crimping tools, testing methods, environmental sealing and standards for connector handling • Deliver targeted training on central locking and vehicle security systems, including failure modes, diagnostics, reprogramming procedures and legal obligations around security devices • Implement specific training for installation, operation and maintenance of mobile battery systems in work vehicles, including isolation procedures, thermal runaway awareness, cable routing, short-circuit protection and emergency response • Provide training on correct verification of vehicle lock functionality, including mechanical lock checks, electronic actuation tests, safety interlocks and confirming child-lock and emergency release operation • Ensure technicians are trained in installation of modern vehicle sound systems without compromising vehicle safety systems (e.g. airbags, CAN-bus networks, battery management, immobilisers)	2M

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	failure modes of mechanical and electronic locking systems • Poor understanding of manufacturer specifications and wiring diagrams for modern vehicle sound systems and CAN-bus integrated components • Insufficient induction for new starters and contractors into company WHS procedures and safe systems for field service work • No verification or refresher training program, leading to skill fade and outdated knowledge regarding new vehicle technologies		• Introduce a supervision system for apprentices and less-experienced auto electricians, including documented supervision ratios and competency sign-off before working independently on higher-risk systems • Establish a refresher training schedule based on risk and technological change, ensuring regular updates on new vehicle platforms, EV/HEV systems, and battery management technologies • Verify competence through practical assessments, work quality inspections and periodic ride-alongs or field audits by supervisors	
3. Electrical Safety and Isolation Systems	• Inadequate procedures for isolating vehicle electrical systems before work, leading to arcing, short-circuit or energised components • No standardised lockout/tagout system for work on starter circuits, central locking, immobilisers, high-current sound system wiring and mobile battery systems • Poor practices in handling live circuits during testing of loads, central locking modules, actuators and sound system components • Use of inappropriate or poorly maintained test equipment and leads, increasing risk of shock, short circuit or damage to vehicle control modules • Lack of engineered protection (fuses, circuit breakers) in added circuits for mobile batteries and high-power sound systems • Improper cable routing and bundling leading to chafing, overheating or interference with airbag and safety restraint systems • No documented standards for connector quality, insulation rating, and environmental protection (IP rating) in harsh automotive environments	4A	• Develop and implement a standard electrical isolation procedure for all vehicles, including battery disconnection, verification of zero energy and staged re-energisation for testing • Implement a lockout/tagout (LOTO) system applicable to vehicle electrical work, including lockable battery isolators or removal of critical fuses with documented tags during high-risk tasks • Create procedure templates for controlled energisation during diagnostics of central locking, immobilisers and sound systems, specifying safe testing methods and maximum allowable current draw • Specify requirements for insulated tools, test leads, and automotive-rated multimeters with regular inspection, calibration and tagging • Mandate engineered circuit protection (correctly rated fuses, circuit breakers) for all new wiring, particularly for mobile battery systems and high-power amplifiers, with documented design calculations or manufacturer guidance • Develop design standards for cable routing, segregation from fuel and brake lines, protection from sharp edges, and clearance from airbags and seatbelt pretensioner systems • Specify required standards for automotive connectors (e.g. sealed connectors in wet areas, correct current rating, strain relief) and implement a purchasing standard so that only approved components are used • Implement a formal design review and sign-off process for bespoke installations (e.g. large mobile battery packs in service vehicles, custom sound systems) involving a competent senior technician • Provide written guidance on handling residual charges in capacitors and battery management systems where applicable • Include regular internal audits of vehicle wiring and connector quality as part of maintenance and quality assurance programs	2M

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4. Workshop Layout, Housekeeping and Traffic Management	• Poor separation of pedestrian walkways from vehicle movements in and around the workshop • Inadequate parking, marshalling and movement controls for customer vehicles and work utes • Uncontrolled use of workshop bays for complex electrical work requiring extended access to doors, locks, batteries and dashboards • Trailing leads, diagnostic cables and test equipment creating trip hazards around vehicles • Insufficient controls to separate welding, grinding and hot work areas from sensitive electrical/electronic components and mobile battery systems • Inadequate storage systems for connectors, looms and small electrical parts leading to clutter and poor traceability • Poor lighting at workstations, especial when working on lock m sms inside doors or unde ashboards	3H	[redacted]	1L
5. Vehicle Reception, Identification and Handover Management	• Incorrect identifi on of vehi model, electrical a of sec y system leading to use of unsuitable procedures • Failure to clarify custom ted faults with central locking, immobilisers or sound systems, resulting in misdiagnosis and unnecessary system interference • Inadequate documentation of existing vehicle damage, modifications or aftermarket installations, increasing dispute and safety risk • Keys and remotes not controlled, leading to unauthorised vehicle movement or unplanned lock activation during work • Lack of process to confirm that locks and central locking systems are	3H	[redacted]	1L

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	functioning safely before returning vehicle to customer • Failure to explain limitations or residual risks of modified electrical systems to the customer, including mobile battery installations and high-powered sound systems		[redacted]	
6. Mobile and Field Service Work Management	• Technicians working roadside or at customer premises without adequate traffic and environment risk assessment • Inadequate journey management and fatigue controls for mobile auto electricians covering large geographic areas • Lack of communication and lone worker systems for technicians attending breakdowns or remote locations • Insufficient portable tools and equipment designed for mobile electri work, leading to improvised or unsafe setups • Poor assessment of ability of on-site environments f work on locks, central locking, so d systems and mobile batteries • Failure to manage weather, lightin and ground conditions when perfo ing electrical work in outdoor ained spaces	4A	[redacted]	2M
7. Manual Handling, Ergonomics and Access to Vehicle Components	• Poorly designed work methods for accessing door internals, locks, looms and under-dash components leading to awkward postures and musculoskeletal disorders • Handling and lifting of mobile batteries, sound system components, subwoofers and large wiring looms without appropriate aids • Repeated forceful tasks when crimping connectors, routing cables and operating	3H	[redacted]	2M

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	hand tools without consideration of ergonomics • Inadequate planning for removal and refit of seats, trims and panels, resulting in sudden movements, overreach or crush points • Lack of standardised use of stands, creepers or platforms for roof-mounted or under-vehicle electrical work		[redacted]	
8. Automotive Electrical Connector and Wiring Management	• Incorrect selection or use of automotive electrical connectors leading to overheating, intermittent faults or failures in critical systems such as locks and immobilisers • Poorly executed crimping, soldering or insulation increasing fire risk and system unreliability • Inadequate environmental sealing of connectors in engine bays, doors and underbody areas, allowing water ingres and corrosion • Uncontrolled mod cation of OEM wiring harnesses, mpromisin fety systems and future • Lack of standardisation in colour coding, labelling and documentati of added circuits for sound and mobile battery installations • No systematic inspection regime for connectors associated with mobile battery systems subject to vibration and high current loads		[redacted]	2M
9. Central Locking, Immobiliser and Vehicle Security System Management	• Failure of central locking systems due to incorrect diagnosis, poor wiring practices or incompatible components, potentially trapping occupants or preventing access in emergencies • Unintended disabling of safety-related lock features (e.g. child locks,	4A	[redacted]	2M

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	emergency releases) during repairs or modifications • Bypassing or compromising OEM immobilisers or alarm systems without risk assessment, increasing vehicle theft risk and liability • Lack of documented testing protocols for verifying lock and unlock functions on all doors, tailgates and fuel flaps • Insufficient understanding of interactions between locking systems and other safety systems (e.g. automatic locking while driving, crash unlock features) • Inadequate handling and programming of keys, remotes and transponders, including data security risks		[redacted]	
10. Vehicle Sound System and In-Vehicle Technology Integration	• Installation of high-powered amplifier subwoofers and accessories placing excessive load on vehicle electrical systems, causing overheating or fire • Interference with OEM wiring harnesses and data networks (e.g. CAN-bus) when integrating sound systems or infotainment units, leading to malfunction of safety systems • Poor mounting of sound system components becoming projectiles during sudden braking or collisions • Inadequate consideration of battery and alternator capacity when adding audio equipment, potentially causing breakdowns or loss of critical electrical functions • Uncontrolled use of customer-supplied equipment not meeting Australian electrical or automotive standards	3H	[redacted]	2M

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11. Mobile Battery Systems in Work Vehicles	• Improper design and installation of auxiliary or mobile battery systems in work vehicles, leading to short circuits, fires or explosion • Insufficient isolation between auxiliary batteries, main vehicle battery and sensitive electronics • Overcharging, deep discharging or thermal runaway of batteries due to inadequate battery management systems • Inadequate ventilation and protection for batteries installed inside canopies, cabins or enclosed spaces • Poorly secured batteries and inverters becoming loose during vehicle movement or collisions • Lack of clear operational procedures for use of on-board power by technician in the field	4A	[redacted]	2M
12. Hazardous Substances, Fire and Emergency Preparedness	• Use and storage of flammable liquids, cleaners, contact sprays and solvents near ignition sources and vehicle electrical systems • Formation of explosive gas mixtures during battery charging or failure events • Insufficient fire detection and firefighting equipment appropriate to electrical fires and battery incidents • Lack of emergency response procedures for electrical fires, battery thermal runaway, and vehicles with modified electrical systems	3H	[redacted]	1L

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	• Inadequate first aid arrangements for burns, electric shock and chemical exposure from battery acid or cleaners		[redacted]	
13. Contractor, Supplier and Customer Management	• Contracted technicians or electricians performing work on-site without alignment to the PCBU's WHS systems • Suppliers providing substandard connectors, wiring, sound systems or mobile battery components without verification • Customers pressuring for shortcuts, non-compliant installations or disablin of safety and security systems • Lack of integration between dealershi body shop and auto elec contracto systems when multipl PCBUs share the workplace	3H	[redacted]	2M
14. Documentation, Records and Continuous Improvement	• Incomplete or inaccurate record wiring changes, connect used and locations of added components • Loss of test results and diagnostic data, leading to repeated work and potential re-introduction of hazards • Failure to track patterns in incidents, near misses and warranty claims related to electrical, lock and battery issues • Procedures and work instructions not kept current with changing vehicle technology and legislation	3H	[redacted]	1L

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			[redacted]	

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES FOR ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011
Legislation QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws
Codes of Practice QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice
Legislation ACT: https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations
Codes of Practice ACT: https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice

New South Wales
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislation
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/list-of-codes-of-practice

Northern Territory
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws
Codes of Practice NT: https://worksafe.nt.gov.au/forms-and-resources/codes-of-practice

South Australia
Work Health and Safety Act 2012 (SA)
Work Health and Safety Regulations 2012 (SA)
Legislation for SA: https://www.safework.sa.gov.au/resources/legislation
Codes of Practice for SA: https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs

Tasmania
Work Health and Safety Act 2012
Work Health and Safety (Transitional and Consequential Provisions) Act 2012
Work Health and Safety Regulations 2012
Work Health and Safety (Transitional) Regulations 2012
Legislation for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations
Codes of Practice for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.

Victoria
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017
Legislation VIC: https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations
Codes of Practice VIC: https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice

Western Australia
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Legislation Western Australia: https://www.commerce.wa.gov.au/worksafe/legislation
Codes of Practice WA: https://www.commerce.wa.gov.au/worksafe/codes-practice

Safe Work Australia Links
Law and Regulation (All States): https://www.safeworkaustralia.gov.au/law-and-regulation
Model Codes of Practice: https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work