Refrigeration and air-conditioning restricted electrical licence

Installation, maintenance and repair of refrigeration and air-conditioning (R&AC) equipment forms an important part of the electrical industry in Western Australia.

Qualified R&AC mechanics are often required to work on electrical components within R&AC equipment. To carry out electrical work within Western Australia, a person must be authorised by a licence or permit.

Electrical work is defined in the Electricity (Licensing) Regulations 1991 as work on electrical machines, instruments, appliances, equipment or installations where electricity is supplied, or intended to be supplied, above 50 volts AC or 120 volts ripple free DC.

Regulation 20 of the Electricity (Licensing) Regulations 1991 requires electrical workers to hold an electrical licence endorsed according to the qualifications of the person issued the licence.

Qualified R&AC personnel must hold a restricted electrical licence (REL) where electrical work on refrigeration or air-conditioning electrical machines, instruments, appliances, equipment or installations is carried out.

Due to the safety risk posed by unlicensed electrical work it is important that all electrical work on R&AC equipment is carried out by licensed REL holders and that those workers understand, and work within, the scope and limits of their REL.

Understanding the scope and limits assists R&AC REL holders in ensuring they do not carry out unlicensed electrical work and breach the regulations.

The maximum scope of work[1] a R&AC REL may contain:

1. Disconnect/reconnect R&AC equipment.
2. Fault find R&AC power and control circuits[1].
3. Modify, replace or repair within the R&AC ‘package’.
4. Modify R&AC control circuits in switchboards/panels.
5. Assemble factory supplied cable between R&AC split system components (up to 4kW).

R&AC REL holders are not authorised to install or alter installation fixed wiring.

Notes:

1. A person’s R&AC REL scope is based on the qualifications provided on applying for their licence. Individuals may not hold all 5 items listed in the maximum scope of work. To confirm the scope of work an R&AC REL holder can complete, refer to the back of their physical REL.
2. Scope 2 wording changed to ‘Fault find R&AC power and control circuits’ from ‘Locate and rectify electrical faults in control and power circuits associated with the R&AC package’, but the scope remains the same.
3. Fixed wiring is the system of wiring in which cables are fixed or supported in position in accordance with the appropriate requirement of the Australian/New Zealand wiring rules.
4. An R&AC dedicated switchboard does not contain any circuits other then those for the R&AC package.
5. Refer to Figure 2 for examples of R&AC components.
6. Electrical control equipment includes parts used to control a refrigeration or air-conditioning circuit but excludes electrical circuit protection or safety devices. For example, RCDs are not R&AC electrical control equipment.

The table below is a guide to the type of work a person with the maximum R&AC REL scope[1] can complete (within scope) and cannot complete (outside scope).

Description of work	Within scope	Outside scope
1. Carry out electrical fault finding and repair within a split system air-conditioner.	●	
2. Disconnect/reconnect a split system air-conditioner, or internal electrical components within it, on a like-for-like basis.	●	
3. Install interconnect wiring, not factory supplied, for a split system air-conditioner.		●
4. Install factory supplied interconnect wiring for a split system air-conditioner up to 4kW.	●	
5. Install, replace, or work within the electrical isolator for an air-conditioner.		●
6. Install electrical wiring between an air-conditioner and its isolator.		●
7. Install air-conditioner circuit wiring between the switchboard and air-conditioner isolator.		●
8. Fault find the air-conditioner electrical circuit between the switchboard and the air-conditioner isolator.		●
9. Replace electrical components, associated with the air-conditioner's electrical circuit, within the installation switchboard.		●
10. Fault find electrical circuits within refrigeration equipment.	●	
11. Disconnect/reconnect refrigeration equipment, or internal electrical components within it, on a like-for-like basis.	●	
12. Install interconnect wiring for refrigeration equipment.		●
13. Install, replace, or work within the electrical isolator for refrigeration equipment.		●
14. Install electrical circuit wiring between the refrigeration equipment and its isolator.		●
15. Install refrigeration equipment circuit wiring between the installation switchboard and refrigeration equipment's electrical isolator.		●
16. Fault find the refrigeration equipment electrical circuit between the installation switchboard and the refrigeration equipment's electrical isolator.		●
17. Replace electrical components, associated with the refrigeration equipment's circuit, within the installation switchboard.		●
18. Fault find electrical circuits within an evaporative cooler.	●	

Description of work	Within scope	Outside scope
19. Disconnect/reconnect an evaporative cooler, or internal electrical components within it, on a like-for-like basis.	●	
20. Install, replace, or work within, the electrical isolator for an evaporative cooler.		●
21. Install electrical wiring between the evaporative cooler and its electrical isolator.		●
22. Install evaporative cooler circuit wiring between the installation switchboard and the evaporative cooler isolator.		●
23. Fault find an evaporative cooler electrical circuit between the installation switchboard and the evaporative cooler isolator.		●
24. Replacement of electrical components, associated with the evaporative cooler's electrical circuit, within the installation switchboard.		●
25. Carry out electrical fault finding and repair within a heat pump hot water system.	●	
26. Disconnect/reconnect a heat pump hot water system, or internal electrical components within it, on a like-for-like basis.	●	
27. Install, replace, or work within the electrical isolator for a heat pump hot water system.		●
28. Install electrical wiring between a heat pump hot water system and its isolator.		●
29. Install heat pump hot water system circuit wiring between the switchboard and heat pump hot water system isolator.		●
30. Replace electrical components, associated with a heat pump hot water system's electrical circuit, within the installation switchboard.		●
31. Fault find refrigeration or air-conditioning power or control circuits in electrical switchboards non-dedicated to the refrigeration or air-conditioning package.		●
32. Modify, replace or repair power circuits in electrical switchboards non-dedicated to the refrigeration or air-conditioning package.		●
33. Fault find refrigeration or air-conditioning power and control circuits in mechanical services switchboard dedicated to the refrigeration or air-conditioning package[4].	●	
34. Modify electrical control circuits within a mechanical services switchboard dedicated to the refrigeration or air conditioning package[4].	●	
35. Modify electrical power circuits within a mechanical services switchboard dedicated to the refrigeration or air-conditioning package[4].		●
36. Disconnect/reconnect electrical components, with control and power circuits connected, within a mechanical services switchboard dedicated to the refrigeration or air-conditioning package[4].	●	
37. Replace, like for like, electrical control equipment[6] within a mechanical services switchboard dedicated to the refrigeration or air conditioning package[4].	●	

Description of work	Within scope	Outside scope
38. Carry out any electrical work, including fault finding, within a mechanical services switchboard not dedicated to the refrigeration or air-conditioning package.		●
39. Fault find electrical switchboard contained within the refrigeration or air-conditioning package.	●	
40. Modify, replace or repair switchboard components contained within the refrigeration or air-conditioning package.	●	
41. Install fixed wiring[3] relating to the refrigeration or air-conditioning package.		●
42. Fault find, modify, repair or replace an electrical power circuit except for within a refrigeration or air-conditioning package or a mechanical services switchboard dedicated to the refrigeration or air-conditioning package[4].		●
43. Fault find power and control circuits within the refrigeration and air-conditioning package.	●	
44. Modify, replace or repair, within the refrigeration or air-conditioning package.	●	
45. Install Variable Speed Drive (VSD) and wiring to existing refrigeration or air-conditioning package.		●
46. Fault find VSD and wiring connected to refrigeration or air-conditioning package.		●
47. Modify, replace or repair VSD and wiring connected to a refrigeration or air-conditioning package.		●
48. Fault find VSD and wiring contained within refrigeration or air-conditioning package.	●	
49. Modify, replace or repair VSD and wiring contained within refrigeration or air-conditioning package.	●	
50. Fault find, modify, replace or repair a lighting circuit, lighting equipment, power circuits supplying socket outlets (power points) or power points associated with refrigeration or air-conditioning package.		●
51. Installation of fixed wiring[3] between components of the refrigeration or air-conditioning package.		●
52. Fault find fixed wiring[3] between a refrigeration or air-conditioning component[5] and refrigeration or air-conditioning package.	●	
53. Modify, replace or repair fixed wiring[3] between a refrigeration or air-conditioning component[5] and refrigeration or air-conditioning package.		●
54. Fault find a motor that is integral to the refrigeration or air-conditioning package.	●	
55. Modify, replace or repair a motor that is integral to the refrigeration or air-conditioning package.	●	
56. Fault find, modify, replace, or repair the supply source on a solar hybrid refrigeration or air-conditioning package.		●

Description of work	Within scope	Outside scope
57. Fault find the electrical source of supply connected to any refrigeration or air-conditioning package.		●
58. Fault find a ventilation system or motor that is not an integral part of a refrigeration or air-conditioning package.		●
59. Modify, replace or repair a ventilation system or motor that is not an integral part of a refrigeration or air-conditioning package.		●
60. Disconnect/reconnect or install a ventilation system or motor that is not integral to a refrigeration or air-conditioning package.		●

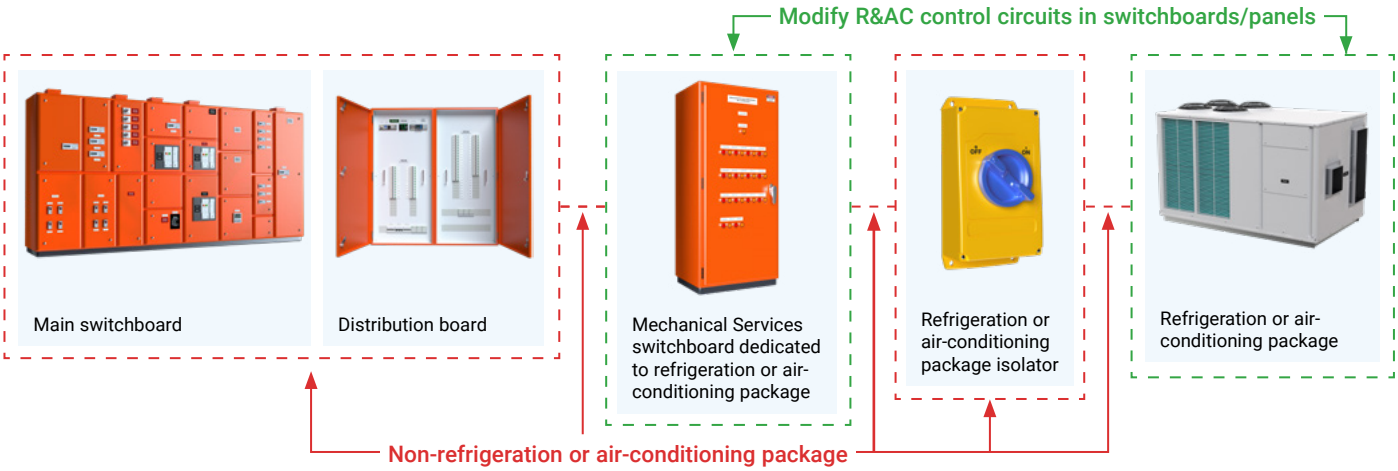


Figure 1 Example of Commercial/Industrial Refrigeration and Air-conditioning package.

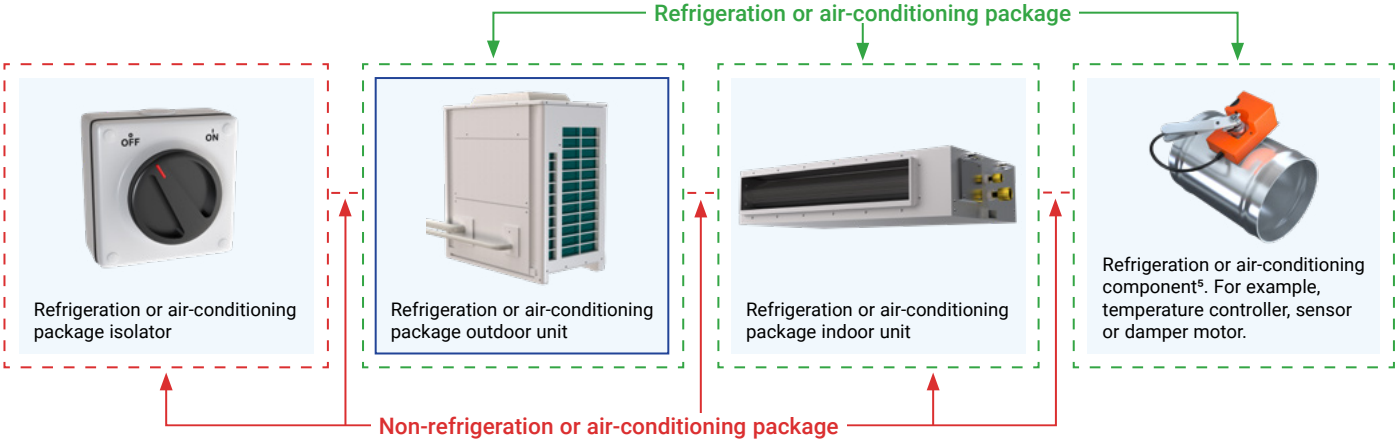


Figure 2 Example of Refrigeration and Air-conditioning package scope.

Department of Local Government, Industry Regulation and Safety

www.lgirs.wa.gov.au

Regional Offices:

Goldfields/Esperance	(08) 9021 9494
Great Southern	(08) 9842 8366
Kimberley	(08) 9191 8400
Mid West	(08) 9920 9800
North West	(08) 9185 0900
South West	(08) 9722 2888

Building and Energy Division

Level 1 Mason Bird Building
303 Sevenoaks Street
(entrance Grose Avenue)
Cannington Western Australia 6107

Locked Bag 14, Cloisters Square
Perth WA 6850

Call: 1300 489 099
Email: be.info@lgirs.wa.gov.au
www.lgirs.wa.gov.au/building-and-energy

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