

Electrical Specification Change January 2021

Relevant Specification	New Version	Section	Description of changes
UON-ESS-102 Distribution Board Specification	Version 1.3	2.1	Definitions for the UoN electrical reticulation.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.1	The board shall be equipped with a suitably rated fault current limiting circuit breaker and, unless otherwise agreed in writing, shall have a minimum 40% spare final sub-circuit capacity once installed.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.11	All control wiring shall be terminated using insulated crimp pins.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.11	Minimum size: 2.5mm ² cable for lighting and power circuits.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.11	All control, metering and protection wiring shall be identified at each end by full circle, clear-plastic ferrules, having slip-in numbers and letters (e.g. Grafoplast or equivalent). Clip-on ferrules shall not be used. Wire numbering shall be reflected on associated drawings.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.13	Any description of power circuits, lighting or other equipment on a legend shall include the room numbers where the equipment is located.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.13	Legends shall be installed upon completion of the board, permanent printed legends shall be in place within a week of completion. Markup temporary legends shall be in place if the permanent legends are not yet available.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.14	The external final coat shall be gloss Orange No. X15 to AS 2700.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.2	All distribution boards shall include an A4 size bound document/booklet that contains all information relevant to that board and as detailed in section 7 of UON-ESS-102 Distribution Board Specification. The document shall be contained in a holder mounted on the inner side of the distribution board outer door. The document holder shall be separate from the legend holder.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.2	All distribution board doors shall have an outer door attached to the distribution board that restricts access to circuit protective devices.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.2	The outer door shall be capable of being opened to an angle of 110 degrees to escutcheon plain.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.5	Each final sub-circuit shall have its own earth leakage protection, multiple circuits shall not be covered by a single earth leakage protection device.
UON-ESS-102 Distribution Board Specification	Version 1.3	4.8	Manual emergency lighting test switches are required in all distribution boards regardless of the installation of monitored or automated emergency lighting systems.
UON-ESS-102 Distribution Board Specification	Version 1.3	5	When replacing an existing distribution board the tradesman shall, prior to placing the board back in service, leave a legend in the board. This can be a temporary, hand written legend while waiting for the printed version. The tradesman shall also leave a notice in the board listing all known items to be corrected. This list should include circuits that are tripping on Earth Leakage due to fault or crossed neutrals. The above mentioned legend and list shall be in place prior to the board going back into service.
UON-ESS-102 Distribution Board Specification	Version 1.3	7	Handover documentation shall be supplied within 4 weeks of project completion.
UON-ESS-102 Distribution Board Specification	Version 1.3	7	Line item added to documentation requirements. - Manuals for each different piece of equipment mounted within the board.
UON-ESS-112 Main Switchboard Specification	Version 1.3	2.1	Definitions for the UoN electrical reticulation.
UON-ESS-112 Main Switchboard Specification	Version 1.3	4.2	All Main Switchboards shall include an A4 size bound document/booklet that contains all information relevant to that board and as detailed in section 7 of UON-ESS-112 Main Switchboard Specification. The document/booklet shall be contained in a metallic holder, painted X15 orange, on the outer skin of the Main Switchboard.
UON-ESS-112 Main Switchboard Specification	Version 1.3	4.8	All feeds origination at a Main Switchboard will be metered.
UON-ESS-112 Main Switchboard Specification	Version 1.3	4.9	All hardware, software and configuration required to integrate the surge diverter alarms into the existing BMS shall be included in the Main Switchboard installation.
UON-ESS-112 Main Switchboard Specification	Version 1.3	4.13	The external final coat shall be Gloss Orange No. X15 to AS 2700. Internal pans and escutcheons shall be Gloss White.
UON-ESS-112 Main Switchboard Specification	Version 1.3	4.1	The board shall be equipped with a suitably rated fault current limiting circuit breaker and shall have a minimum 40% spare capacity once installed.
UON-ESS-101 General Electrical Specification	Version 1.4	11	Maximum 12 double socket outlets per circuit with a minimum 30% spare capacity
UON-ESS-101 General Electrical Specification	Version 1.4	11	No more than two outlets per circuit on kitchen benches
UON-ESS-101 General Electrical Specification	Version 1.4	11	Where multiple cables enter an enclosure through a single compression gland, the gland shall to be sealed to maintain IP rating. Tightening of the gland to compress on the cables is not a sufficient seal.
UON-ESS-101 General Electrical Specification	Version 1.4	11	Phases are to be either Red, White or Blue. Neutral conductors are to be Black.
UON-ESS-101 General Electrical Specification	Version 1.4	20	Any modifications to the UoN electrical system shall include an update of associated electrical drawing to UoN drafting standards.
UON-ESS-106 Generators and Emergency Power Supplies	Version 1.3	5	The engine exhaust shall either be ducted through the skillion roof (maintaining roof seal) or a 90 degree bend installed to duct the exhaust away from the generator enclosure. Exhaust shall not be directed towards buildings or other populated area.
UON-ESS-106 Generators and Emergency Power Supplies	Version 1.3	5	All generator installation shall include a separate termination box, outside the generator enclosure, for the connection of a load bank. The installation should also include a MTS (Manual Transfer Switch) to allow an operator to switch generator power between the load bank and installation load. The installation load and the load bank shall not receive power simultaneously. The installation shall utilise a Socomec MTS.
UON-ESS-106 Generators and Emergency Power Supplies	Version 1.3	6	The generator shall also be a minimum of Six meters from a door or window.
UON-ESS-106 Generators and Emergency Power Supplies	Version 1.3	4	Any permanently installed generator shall have status inputs into the UON site BMS and Cardex systems. Ready, Run and Fault states are to be provided to the Cardex systems in the form of digital inputs. The fault alarm shall include low fuel level. All generator installations shall include a generator status page on the UoN BMS system. The generator status page shall also be included the following information. - Run Status - Fault status - Oil pressure - Fuel level - Generator temp - Output Voltage - Output current - Load in kVA - Frequency output - Battery status - Run hours
UON-ESS-106 Generators and Emergency Power Supplies	Version 1.3		All value are to be trended.
UON-ESS-105 Electrical Preferred Equipment List	Version 1.4		Meter description "Private meter" changed to "MSB, MSSB and DB meters"
UON-ESS-105 Electrical Preferred Equipment List	Version 1.4		NHP Circuit breakers added.
UON-ESS-109 Supply and Installation of Solar Array	Version 1.1	10	All solar installations shall include a Data Manager.
UON-ESS-109 Supply and Installation of Solar Array	Version 1.1	2	Figure 1 updated
UON-ESS-109 Supply and Installation of Solar Array	Version 1.1	5	A motorised Circuit Breaker cannot be used in place of a contactor for the purposes of disconnecting from the network.
UON-ESS-113 High Voltage Substation specification	Version 2.2	10	"Battery Charger Voltage" added to list of data required on SCADA page
UON-ESS-113 High Voltage Substation specification	Version 2.2	13	Earthing drawings shall be provided showing all conductors and electrodes. All conductor and electrodes to be numbered, numbers to be reflected on drawings. Electrode pit shall have an engraved stainless steel mechanically attached label with electrode number. The conductor shall have a engraved S/S label attached with a stainless steel tie/band at the point it attaches to the electrode and earth bar.
UON-ESS-113 High Voltage Substation specification	Version 2.2	11	Added to alarm list . - PFC Fault - Power Factor out of Spec (Below .95)
UON-ESS-113 High Voltage Substation specification	Version 2.2	5	UoN bushfire clearances must be adhered to when choosing the substation location.
UON-ESS-104 Exit and Emergency Lighting	Version 1.3	5	All toilets shall have Emergency lighting.
UON-ESS-104 Exit and Emergency Lighting	Version 1.3	4	All Emergency Escape Lighting and Illuminated Exit Signage circuits/installations shall be fitted with a manual test switch regardless of any automated Emergency Lighting Monitoring/Control system (Such as Nexux) that may be used on that circuit/installation.
UON-ESS-111 Interior Lighting and Control	Version 1.3	8	Standard in line switches are only to be used to turn lights or lighting installations off. They may be used in conjunction with other motion detection, however shall not be used as the only means of controlling a light or lighting installation. Some method of detection or automation must be used on all installations to ensure that the light or lighting installation are not left energised when not required.
UON-ESS-103 External Lighting Specification	Version 1.2	3.4	The table below can be used as a guide to estimate ground compaction. If this table is to be used rather than completing a compaction test, 30% shall be added to the manufacturers recommended depth. The estimate of ground compaction must be approved by the UoN. Rag bolts are not required to extend into the extra depth, reo shall be extended by 30%. The above only applies to established soils. If new fill has been used in an area, the depths need to be achieved in the underlying establish ground, in other words, the fill does not contribute to the overall depth.