

Technical Note 210

Installation guidelines for extended range lantern supply conductors

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1 Introduction

This Technical Note provides installation guidelines on how lanterns with long supply conductors should be run and connected to the mast arm junction box.

Extended range lanterns can be installed with long supply conductors that allow termination into the traffic signal mast arm junction box rather than at the upper mounting assembly.

This Technical Note does not cover the requirements for safety and risk management and shall be read in conjunction with the *Electrical Safety Act 2002 (Qld)*, the *Electrical Safety Regulation 2013 (Qld)*, the *Queensland Manual of Uniform Traffic Control Devices (Queensland MUTCD) Part 3* and *MRTS201 General Equipment Requirements* as appropriate.

Traffic signal lanterns shall comply with *MRTS253 Traffic Signal Lanterns*. All electrical work to comply with *AS/NZS 3000 Wiring Rules*.

Ensure all relevant safe work procedures are followed when conducting the install.

2 Definitions

Table 2 – Definitions

Term	Definition
UMA	Upper Mounting Assembly
Tail	Supply conductors for the lantern enclosed in a black flexible conduit

3 Referenced documents

Table 3 – Referenced documents

Reference	Title
AS/NZS 3000	<i>Wiring Rules</i>
MRTS201	<i>General Equipment Requirements</i>
MRTS253	<i>Traffic Signal Lanterns</i>
Queensland MUTCD	<i>Queensland Manual of Uniform Traffic Control Devices Part 3</i>
	<i>Electrical Safety Act 2002 (Qld)</i>
	<i>Electrical Safety Regulation 2013 (Qld)</i>

4 Installation procedure

4.1 Labelling the tails

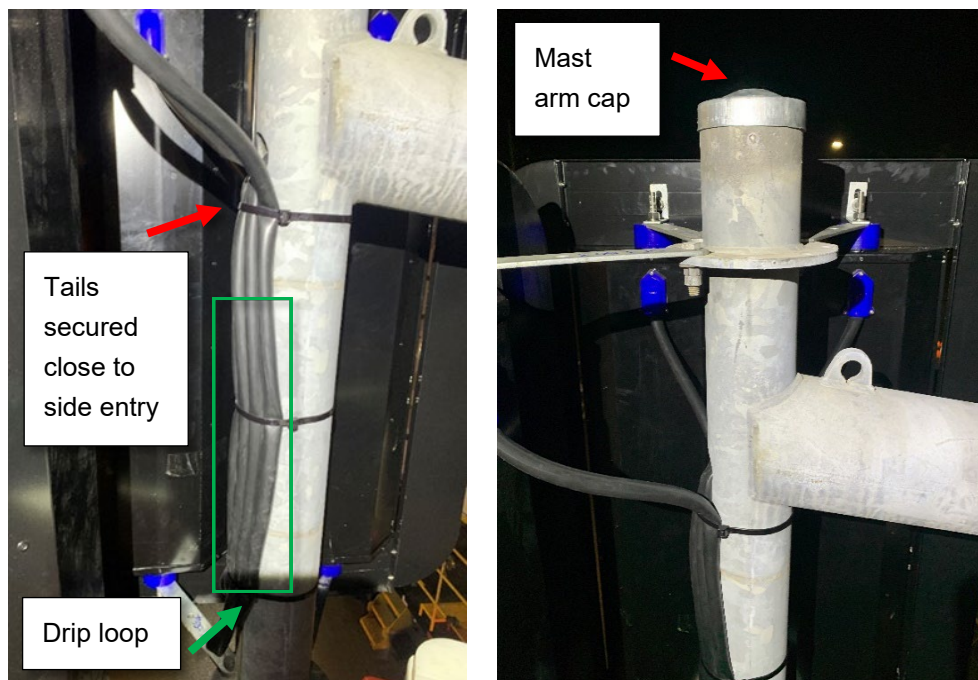
Prior to routing tails into the mast arm pole, label the tails so that the respective lantern can be identified clearly and easily when the cables have been routed.

4.2 Routing the tails to the junction box

The tails can be routed either a) through the side opening or b) through the top UMA opening. If the mast arm does not have a side opening (as demonstrated in Figure 4.2), route the tails through the top opening where the UMA would traditionally sit. Do not create an opening on the side of the mast arm. Route the tails to the junction box as follows:

1. Create a drip loop for the tails entering the pole to prevent water ingress. Figure 4.2 illustrates a typical drip loop arrangement for lantern tails.
2. Fix the tail close to the mast arm entry hole (Figure 4.2) to minimise slack and abrasion when routing. Ensure fixings are suitably rated for outdoor use.
3. If desired, cover the top of the mast arm outreach where a UMA would traditionally sit as demonstrated in Figure 4.2. If the tails are routed through the UMA opening, use a UMA which would serve as a cover only. If the tails are routed through the side opening, use a mast arm cap.
4. Carefully route tails through the mast arm to the traffic signal junction box, taking care to minimise abrasion of the tails on the entry hole.

Figure 4.2 – Installation example illustrating the drip loop, secured tails, and mast arm cap.



4.3 Terminating in the junction box

Once the tails have been routed to near the junction box, the final step will involve terminating the supply conductors inside the junction box.

1. Form a drip loop within the pole, prior to routing inside the junction box.
2. Take note of the labels on the tails, trim the tails to length, and re-label for future reference.
3. Terminate conductors into terminals as per design drawing.

