

WARNING – ONLY TRAINED AND COMPETENT PERSONNEL SHOULD ATTEMPT TO UNDERTAKE THIS INSTALLATION.

Installation should only be carried out by persons who are adequately trained, have a full understanding of the needs of the county or region where the controller is to be used and are experienced in the tasks to be undertaken.

This note is intended to act as a reminder only. Full details of the installation procedure may be found in the Handbook Supplement for Monitoring Helios CLS (NLM) Signals 667/HB/32921/007. Installation engineers must first consult that handbook supplement and ensure that they are fully familiar with its content before undertaking installation. Note: it is recommended that individual neutral returns are used for each green signal. Refer to Traffic Signal Junction Cabling Design Certification 667/DS/20664/000 for more info.

OVERVIEW: The ST800 Helios CLS NLM Retrofit is a kit designed to upgrade an existing ST800 Site to incorporate lamp monitored Helios CLS LED Traffic Signals. This Retrofit Kit is available in both HELIOS and PEEK ELITE bodies.

EQUIPMENT

- 667/1/27000/800 ST800 Retrofit kit
- 667/1/31500/ETC CLS NLM Door Kit(s)
- 667/1/27002/002 UK Lamp Switch Kit(s)
- 667/1/27002/102 Non-UK Lamp Switch Kit(s)
- 667/1/33540/ETC Peek Elite Retrofit CLS NLM Door Kit(s)

TOOLS REQUIRED

- 'T' Key
- Side Cutters
- Handset
- Faston Crimp Tool
- Cabinet Access key
- Firmware PROM Extractor Tool
- M4 Nut Spinner
- Pozi-drive size 3
- 2.5 A/F Small Allen Key (PEEK only)

UPGRADE PROCEDURE

Before starting, consider using IC4 View Differences to extract any changes to the controller's configuration data before changing the Firmware or Configuration PROM.

1. Switch Off the mains power at the Master Switch. Lock this switch in the OFF position and confirm the supply is isolated.
2. Upgrade the traffic signals, taking care to ensure that the door seals are fully compressed before locking hinges.

After upgrading the signals, if any changes are made to the earth connections, 'Minor Works' electrical testing as required in 667/HE/20664/000 must be completed.

3. Replace the LSC and fit /3xx variant LSC labelled "LED Lamp Switch".
4. Fit the Mains Filter to the back of the controller rack using the instructions overleaf.
5. Upgrade the Firmware PROM. On an ST800 Controller the firmware needs to be 667/TZ/12800/000 "PB800" issue 25 or later.
6. If necessary, change configuration PROM. Confirm that the configuration has been generated by a competent person in accordance with the required procedures in place for the county and region.

NOTE: A site can usually be upgraded to LV CLS without changing the configuration PROM; it depends on the signals types and monitoring required.

7. Switch the signals to OFF using the Signals On/Off switch on the manual panel and Power on.
8. If the KLV value is zero, select the one KLV value that is most applicable:
 - If new Helios CLS signals are fitted:
 - Use KLV=3 if far-side peds remain incandescent.
 - Use KLV=4 if far-side peds are also upgraded.
 - If LMF units are removed from Helios CLS signals:
 - Use KLV=5 if far-side peds keep their LMF units.
 - Use KLV=6 if far-side peds are also upgraded.
9. Review and if necessary correct the KLT settings for ALL the sensors (see KLT table below/right).

10. Enter KLR=1 to reset the lamp monitor.
 11. Illuminate the signals:
 - Enter RFL=1
 - Power off
 - Signals On/Off switch to ON
 - Power on

This will clear the FLF 2:10 fault and illuminate the traffic signals.
 12. Measure the actual bright lamp supply. If this differs from the value displayed by the handset command KEV, enter the correct value, e.g. KEV=239 to calibrate the controller's reading.
 13. Check the dim lamp supply voltage;
 - Measure the actual dim voltage and check that it is no higher than 160V. If dim voltage is higher, move the input to the next higher tap, e.g. from the 230V input tap to the 240V input tap.
 - If the dim voltage is still higher than 160V, then the 140V tap can be used to reduce the dimming voltage further.
 - Use of the 120V tap is not supported with 'Helios CLS (NLM)' signals.
 14. If any changes are made to the transformer connections; enter KLR=1 to reset the lamp monitor.
 15. Check lamp monitoring learning;
 - This is detailed in Handset Handbook (/HH/) for the Controller.
 - Check using the KEL handset command that the number of watts learnt equates to the correct number of signals fitted; 'Helios CLS (NLM)' consume between 10W and 15W.
- NOTE:** The KES and KEL handset commands will show 0mA and 0W respectively for 'Red,Wt' if Helios CLS are fitted; monitoring is disabled while the Waits are illuminated.
16. Upgrade Complete
 - Follow usual commissioning procedures for completion of site installation.

KLV : <Lamp Supply Voltage Type: 0 to 4>
The configured Lamp Supply Voltage Type.

Value	Description
KLV:0	200-240V (original lamp types)
KLV:1	100-120V (original lamp types)
KLV:2	48V (ST900ELV & ST750ELV only)
KLV=3	230V Siemens/Dialight CLS Traffic / Incandscnt Ped
KLV=4	230V Siemens/Dialight CLS Traffic and Ped
KLV=5	230V Siemens/Futurit CLS Traffic / Incandscnt Ped
KLV=6	230V Siemens/Futurit CLS Traffic and Ped

KLT <Sensor 1 to 48> : <Load type 0 to 255>
Load Type for each lamp monitor sensor.

KLT Signal Types	
0	Monitoring Disabled
1	Siemens/Dialight Helios CLS (NLM) (typically in signals supplied without LMF units)
10	Siemens/Futurit Helios CLS with LMF removed (typically in signals originally supplied with LMF units)
255	Original Lamp Types – Includes incandescent lamps, 'Helios LED', 'Helios CLS+LMF' and fluorescent tubes.
★	

★ On-Board sensors are limited to approximately 240W

MAINS FILTER INSTALLATION

Important Note! Dangerous voltages may be present at the rear of the controller rack. Ensure that the mains supply to the controller is isolated at the Master Switch before commencing the fitting process.

1. Ensure the mains supply to the controller is isolated at the master switch.
2. Remove the MDU from the rack.
3. Disconnect the blue and pink power cables from the rear of the MDU (top right connector bank) z28, z24, d30, d26 (See Figure 1).

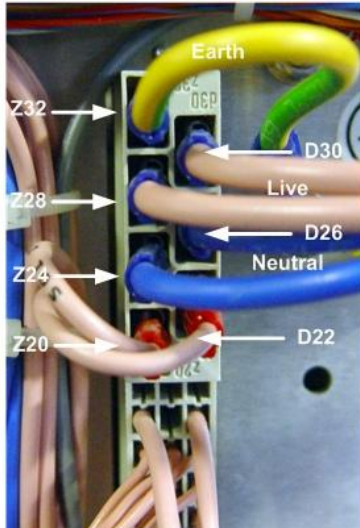


Figure 1 – MDU Connections

4. Referring to Figure 2, if present, cut the top cable tie securing the power cables.
5. Remove the existing faston receptacles from the pink and blue cables. Trim the cables back by approximately 8cm (3").
6. Terminate the blue pair with a single yellow faston receptacle (fully insulated). Terminate the pink pair with a single yellow faston receptacle (fully insulated). Note two cables per faston receptacle.

IMPORTANT: Take great care when crimping these cables to ensure a secure connection with no bare conductors or loose strands of wire.

7. Attach the pink power cables (now paired) to the bottom of the filter, to the terminal marked "P LINE".
8. Attach the blue power cables (now paired) to the bottom of the filter, to the terminal marked "N LINE".
9. Attach the flying earth cable on the bracket to the earth stud on the back of the rack.
10. Connect the pre fitted blue and pink cables coming from the filter to the connector PL1 on the back of the rack; pink to d30 and z28; blue to d26 and z24 (see Figure 1).

Note:

If the controller is wired 32 phases and fitted with a DIN rail mounted terminal block in place of the 'Hedgehog' it will be necessary to reposition the terminal block using an ST800 32 Phase Retrofit DIN Rail Mounting Panel 667/1/33908/000.

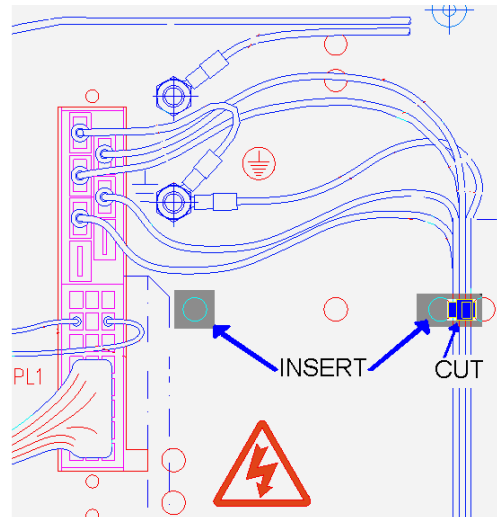


Figure 2 – Cabling

11. Fit the filter assembly to the rack assembly using the pre-existing holes indentified by "INSERT" in Figure 2, using the washers and nuts provided to secure the bracket from the inside of the rack.
12. Ensure all cables are neatly routed and not trapped, use cable ties and the cable standoffs on the bracket.
13. 'Minor Works' electrical testing as required in 667/HE/20664/000 must be completed.



Figure 3 – Completed Filter Installation

SUPPLY DETAILS

Siemens Plc
Mobility Division – Traffic Solutions
Sopers Lane, Poole, Dorset, UK
BH17 7ER

Tel: +44 (0) 1202 782255 (Support Desk)
Website: <http://www.siemens.co.uk/traffic>