SIEMENS ST900 HELIOS CLS NLM RETROFIT INSTALLATION NOTE

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 were 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 ground returns are used for each green signal. Refer to Traffic Signal Junction Cabling Design Certification 667/DS/20664/000 for more info.

OVERVIEW: The ST900 Helios CLS NLM Retrofit is a kit designed to upgrade an existing ST900 Site to incorporate lamp monitored Helios CLS LED Traffic Signals. This Retrofit Kit is available in both HELIOS and PEEK ELITE bodies.

EQUIPMENT

- 667/1/33900/900 ST900 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
- Cabinet Access key
- Handset
- Pozi-drive size 3
- Firmware PROM Extractor Tool
- M4 Nut Spinner
- 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. If necessary upgrade the Firmware PROM. On an ST900 Controller the firmware needs to be 667/TZ/12801/000 "PB801" issue 11 or later.
5. Ensure that the Phase Bus Processor firmware 667/TZ/12815/000 "PB815" is issue 4 or later. Use the handset command 'SIC' to determine which version of firmware is fitted and upgrade if necessary.
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 overleaf).
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

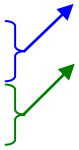
    This will clear the FLF 2:10 fault and illuminate the traffic signals.
12. Measure the actual bright lamp supply. If this differs from the value displayed by the handset command KEV, enter the correct value, e.g. KEV=239 to calibrate the controller's reading.
13. Check the dim lamp supply voltage;
    - 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 6>
The configured **L**amp Supply **V**oltage 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 / Incandscent Ped
KLV=4	230V Siemens/Dialight CLS Traffic **and** Ped
KLV=5	230V Siemens/Futurit CLS Traffic / Incandscent Ped
KLV=6	230V Siemens/Futurit CLS Traffic **and** Ped



KLT <Sensor 1 to 48> : <Load type 0 to 255>
Load **T**ype 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

SUPPLY DETAILS

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