Commissioning of DALI Controlgear in Accordance with EN62386 series

Introduction

DALI (or Digital Addressable Lighting Interface) is an addressable protocol which allows up to 64 DALI devices such as ballasts, LED controlgear, transformers or emergency invertors to be connected to a dedicated sub network. Each device can be programmed with a unique address and programmed into 16 sub-groups and in turn store 16 scenes. All programmable features are unique to the device.

Commissioning of the DALI Device

The installer or systems integrator will undertake commissioning of the DALI devices. There are two methods for addressing the DALI components. Firstly a random address function which uses the unique manufacturing code of the microprocessor or secondly a physical addressing mode using the error feedback signal. The latter may be used on small installations where the luminaires are accessible.

Once addressed the DALI device can be programmed into a Group or series of Groups. Scenes are then stored in the device (unique to each device). On larger projects DALI commissioning may be the responsibility of a lighting management company. DALI devices are sold as programmable components. The cost of programming these devices is a chargeable feature of the total lighting management system. Specific software is normally required to perform this programming.

Compatibility between Manufacturers

DALI is a device protocol. All devices complying with the DALI standard should be interoperable, that is compatible with each other. DALI is not a lighting management system and therefore each manufacturers lighting control system will perform in accordance with its operating protocol. It is possible to engineer the DALI software to incorporate programmable input devices, such as daylight sensors etc. All DALI devices must fully comply with the DALI standard: EN 62386 series. The DALI component supplier is obliged to provide clear instruction for set up and operation.

DALI and Emergency

Within the DALI standard there are a number of device types listed including Device type 1 Units for emergency lighting. Special care must be taken when combining emergency lighting with the lighting controls system. DALI invertors have been developed for maintained and non-maintained applications and through software will be able to undertake both functional and duration testing with feedback on lamp/battery and charger status. A DALI invertor will have a unique address and must be considered during the design of both the lighting and emergency systems, where combined. Do not use the same address for the ballast and invertor in a maintained installation. When DALI is used in a central battery or generator driven emergency installation special care must be taken to ensure the control system defaults the ballasts to a pre-programmed emergency level. Remember that should the DALI signal be lost the ballast will default to a pre-defined level (usually 100%). This is a programmable function within the DALI standard and care must be taken when altering factory settings.

Post installation issues

The ballast/transformer/emergency invertor is normally sold as a non-addressed device. Addressing and programming information is unique to each installation and it is therefore the responsibility of the person or company who commissioned the installation to supply this information or to re-commission the installation. If a DALI device fails to operate this does not necessarily mean that the device is faulty.

Care should be taken when commissioning the DALI components to avoid conflicts in the operation of the system.

Summary

DALI is now a well-established lighting control protocol, however:
- Each installation must be judged on its own merits and we strongly support the need for a greater partnership between the component/luminaire manufacturer and the lighting management company.
- Liability must be limited strictly to the replacement of faulty devices and cannot cover the installation.
- Device manufacturers are in essence hardware providers.
- The commissioning companies and lighting management companies should provide the relevant software support.

For more information see www.DALI-AG.org