5.2.3 Control processes and systems

In the case of simple control systems these are generally configured as some form of automated switching in the power supply to a luminaire or group of luminaires. However, more complex systems are generally configured as a network of devices including luminaires, sensors and control inputs. In most systems the devices are physically connected using some form of cabled network but, in principle, devices can be controlled using wireless or infrared communication.

There are several systems in common use for lighting systems and care needs to be taken to specify the correct type for each component in the system. Two of the most common systems available are DALI and DMX 512.

The basic specification for DALI systems is contained in BS EN 60929: 2006: *AC-supplied electronic ballasts for tubular fluorescent lamps — Performance requirements.* The DALI system is largely used for lighting systems in buildings but has been extended so that it can be used more widely. It controls luminaires via the ballast used to control the lamps. The system is designed to run up to 64 luminaires on one circuit but there are devices that can control a series of different DALI clusters thus making it possible to control all the lights in a large building.

DMX 512 was designed to control lights and other equipment in the entertainment industry. The system provides 512 channels of control to a series of devices. In a typical spotlight that has its aiming controlled, three channels may be used, one to dim the luminaire and one for each axis of rotation. The system has traditionally been used in theatres but is increasingly being used in architectural feature lighting where the lighting equipment is more complex. The basic operating properties of the system are described in ANSI E1.11: USITT DMX512-A: *Asynchronous serial digital data transmission standard for controlling lighting equipment and accessories.*