System Strategy

Design or System Modifications

Any modifications to the topology, system components or functionality shall be submitted to the electrical consultant or client representative for approval.

Bus Protocol

The lighting control system shall use distributed intelligence where individual units update their status and provide transmission error checking.

The protocol shall use full duplex communication and utilise checksum algorithms to ensure incorrect data is ignored. The protocol shall be available to third party companies to develop interfaces to the installed system.

The system shall be capable of providing constant feedback on the operational status of inputs and outputs and be capable of interrogating the status of specific devices. Units shall use non-volatile memory to retain programmed parameters when not powered.

Network Topology

The network topology of the lighting control system shall be flexible and allow devices to be connected in a star, daisy chain (in series) or combination of star and daisy chain configuration. An individual network shall support up to 255 unit addresses and many thousands of group address/application address combinations. The topology shall allow up to 255 networks to be connected utilising a C-Bus, USB or Ethernet backbone, or combination of backbone types.

Cabling

Cabling between lighting control system components shall be pink Cat-5 unshielded twisted pair (UTP) with a mains rated outer sheath. The cable colour shall be pink so as to differentiate from cables used for other purposes.

Lighting control system cabling shall be segregated from mains cabling in accordance with AS3000 and the system's manufacturer requirements.

Cable shall be continuous, joined only by RJ45 connectors/sockets/surface mount blocks or terminated in screw block terminals using bootlace ferrules (crimps).

RJ45 plugs shall be used to connect cable to system components which provide RJ45 connection sockets. The RJ45 plugs must be suitable for the cable they are attached to in terms of wire type (solid or stranded).

When landscape (horizontally) mounted DIN Rail enclosures are used, lighting control system cabling shall be neatly arranged and fed to the left side of the DIN enclosure; mains wires shall be neatly arranged and fed to right side. Segregation must be maintained in accordance with relevant standards.

Programmability

Individual components of the lighting control system shall be configurable across the network using PC software with a Windows® operating system. Each unit which communicates on the network shall be given a unit address unique to the specific network, and have a serial number which may be retrieved by the configuration software.

High Level Integration Options

The lighting control system shall be capable of integrating with third party systems including DALI, DSI, HVAC, audiovisual and building management systems via various mediums and protocols including Ethernet, RS-232, NEC IR, OPC, BACnet.

The lighting control system shall be capable of being controlled via a hand held remote control, and by a networked PC.

The manufacturer shall liaise with the relevant third party companies and submit for approval shop drawings and demonstration systems to confirm compatibility and functional requirements.