

Control Systems

DSI - Digital Signal Interface

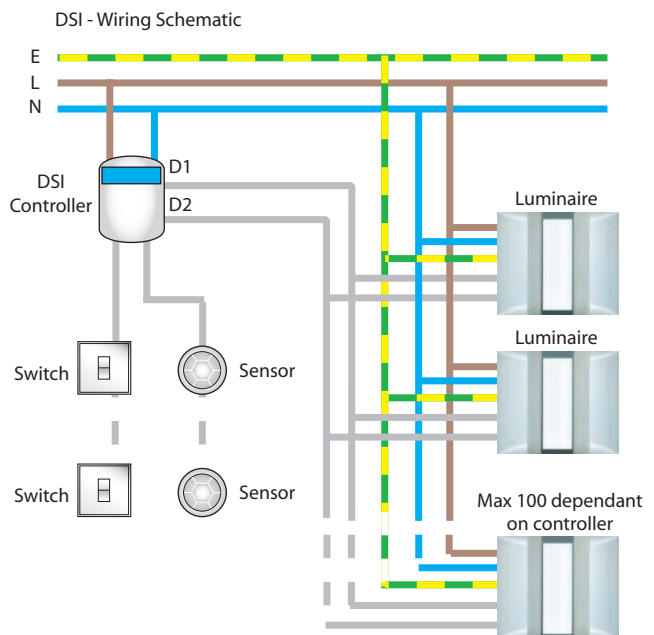
DSI allows the control of several ballasts over the same digital control bus. Being digital, control signals can be routed over long cable lengths and also permit computer control of the system. Unlike DALI, DSI devices are not addressable, requiring control groups to be hardwired with each group having its own pair of control lines.

Advantages:

- Polarity free control lines
- Can be computer controlled
- Suitable for BMS integration
- Interference free
- Requires standard 5-core mains cable

Notes:

- DSI is only available from Tridonic ATCO
- Control lines can be run alongside power for up to 250m
- 100 devices per loop can be possible



Analogue 1-10v

Suitable for smaller installations where luminaire control via a single potentiometer and one or more wall switches (for on/off operation) is acceptable. Control lines must be kept separate from mains cabling for runs greater than 3 metres to avoid mains voltage induction interference. Analogue 1-10v can also be used in conjunction with several proprietary control systems from manufacturers such as Mode, expanding its capabilities to include daylight linking or colour change.

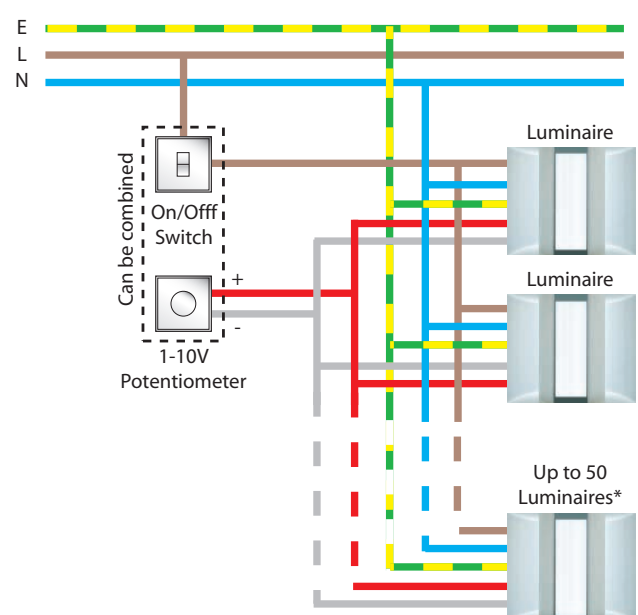
Advantages:

- Tried & tested
- Control units widely available

Notes:

- Control bus is polarity dependant
- When using 0-10v control systems, compatibility with 1-10v control gear should be checked
- Luminaire switching is via mains only
- Control only possible from one location
- Minimum dim varies between manufacturers
- Switch capacity dependant on load. Contactors may be needed for greater loads.

Analogue 1-10v - Wiring Schematic



* per potentiometer. Switch capacity may be less

SwitchDIM®

SwitchDIM is best suited to use in smaller areas where a maximum of 25 high frequency ballasts (usually one per luminaire) can be connected to one circuit*. Any number of momentary action switches can be connected making this system ideal when control is required from several points in a room.

Advantages:

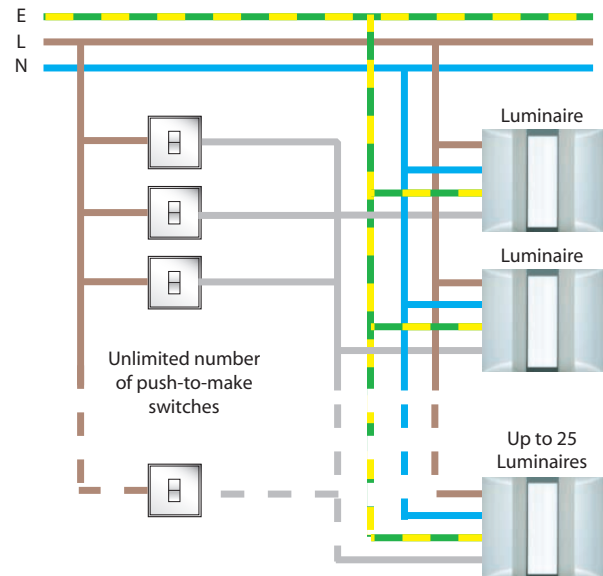
- Minimum additional componentry
- Requires standard 4-core mains cable
- Maximum cable length is unlimited

Notes:

- Wall switches must not be fitted with an indicator
- Maximum of 25 HF ballasts per circuit
- All luminaires can be synchronised by depressing a switch for 10 seconds

* dependant on switch rating

SwitchDIM® - Wiring Schematic



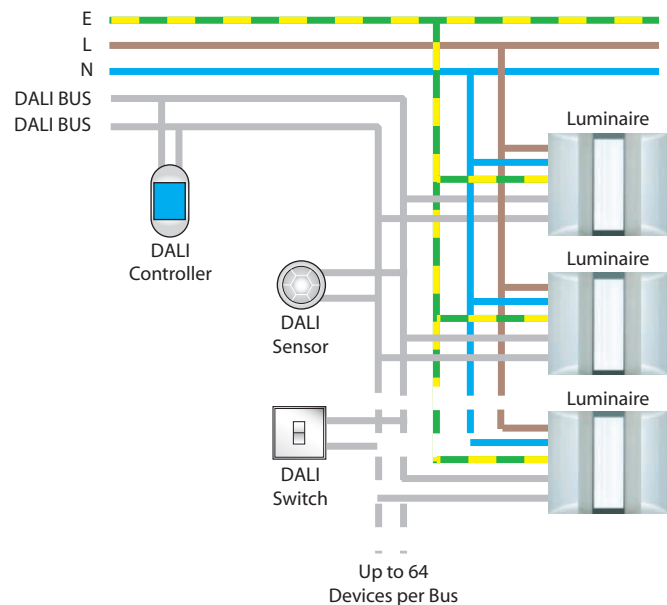
DALI - Digital Addressable Lighting Interface

The flexibility of DALI makes its deployment suitable for most applications from single rooms to whole buildings. Where as a DSI control system relies on hardwiring of luminaires to define control groups, DALI achieves this via software. Each device, whether luminaire, sensor or switch is assigned its own unique address during commissioning of the system allowing its control, either individually or as part of a group. Communication on a DALI bus is two-way, allowing devices to synchronise and report information such as lamp and gear failures to compatible control software.

Notes:

- 64 devices, 16 groups, 16 scenes per circuit
- Devices wired in parallel, star configurations are possible. Ring wiring is not permitted.
- Ballast stores: individual addresses, group assignments, light scene values, fading times, emergency lighting level (system failure level), power on level
- Each circuit bus requires a power supply. These are able to handle 250mA of connected devices (max 2mA per device)
- 300m max lead length (between 2 communicating devices)

DALI - Wiring Schematic



Advantages:

- Luminaires are individually controllable
- Polarity free bus wires
- Requires standard 5-core mains cable
- Status reporting
- Open wiring topology - no need to wire by groups
- Compatibility between DALI device manufacturers
- Integration with BMS systems possible via gateway interface