

DALIcontrol Application Note

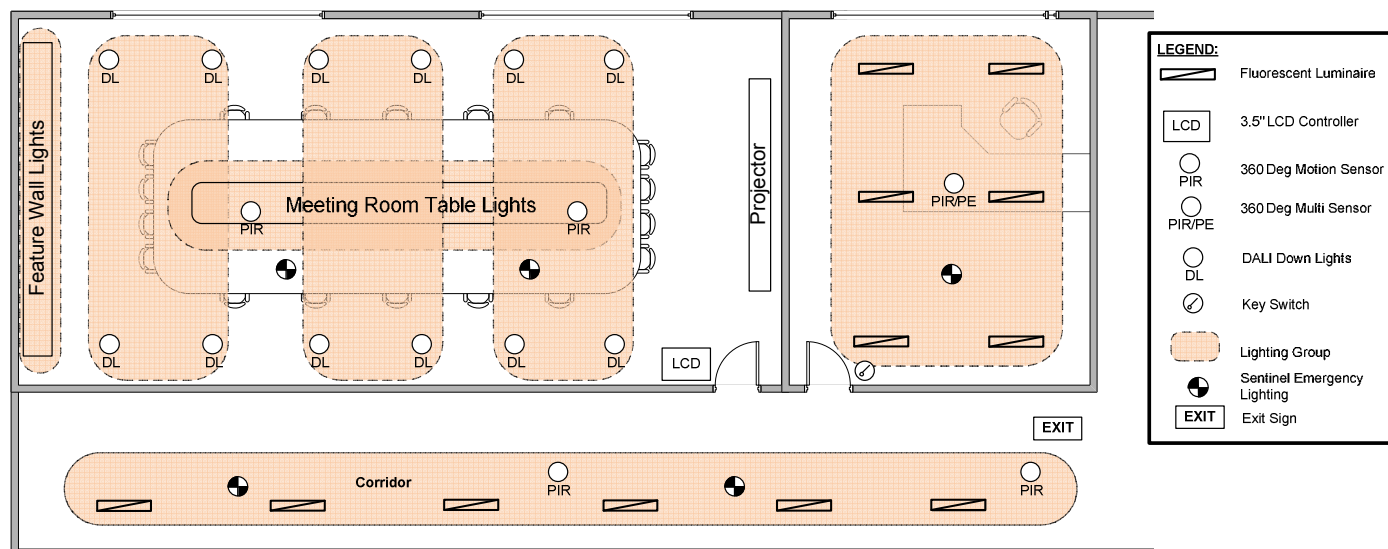
Meeting Rooms and Conventional Offices

Overview

Meeting rooms and offices are an essential part of the day to day business in any commercial office today. The lighting requirements for these areas are quite different to an open plan office environment, as they require flexibility based on tenancy, light requirements and system architecture to optimise the performance and comfort of occupants. Today's lighting control technology can achieve all of the above while provide ease of use and overall energy efficiency within the building. These technologies can also cater for interaction with Audio and Visual systems.

Devices commonly seen in today's offices include dimmable lighting and emergency lighting. For meeting rooms it also requires interaction with AV equipment. A well planned and designed control system can integrate all of the above requirements into a centralised point of control at the same time allowing for flexibility of layout changes in the future.

Example Area Layout & Features



Features:

- DALI Fluorescent Luminaire
- DALI Down Lights
- 360deg Motion Sensor
- 360deg Multi Sensor
- 6.4" Colour Touch Screen
- DALI Emergency Exit Signs
- DALI Emergency Sentinel Lighting
- DALI Feature Wall Lights

Control Strategy – Meeting Rooms and Conventional Offices

- **Zone Control**

A 6.4" colour touch screen ideally located near the entrance to the Meeting room allows dimming control of individual lighting groups and lighting scene triggers during projector screen presentations.

- **Business and After Hours**

To optimise the energy efficiency of offices and meeting rooms, multi sensors can be fitted in the office to assist with daylight harvesting, while motion sensors can be fitted in the meeting room, offices and corridors to provide occupancy control. These devices provide different functionalities for business and after-hours operation (Refer Device Functionality Table for details). The DALIcontrol line controller determines the time of day with its onboard real time clock and applies the appropriate input profile.

- **Occupancy Control and Daylight Harvesting**

During business-hours, the lights in the corridors and within the office can be switched ON by motion sensors with the arrival of the first person. During business-hours, light level sensors can be programmed to adjust the output of artificial lighting in offices that have windows. After these hours, light level sensors can be disabled and motion sensors can identify when an office is unoccupied and commence an override sequence to switch OFF all lighting.

- Switching lighting ON via motion sensors during office hours will enable the light level sensor. Light level sensor will continue to operate until after-hours is scheduled or when the lighting group is manually set to OFF from the key switch within the area.
- If an area is left unoccupied and no movement is detected for a set period of time during after hours, lighting will be automatically set to a warning level (minimum level) before switching OFF after a preset period (Refer Device Functionality Table for details).

Meeting room table lights can be switched ON by motion sensors with the arrival of the first person. Individual lighting groups can then be controlled from a 6.4" colour touch screen. All lighting can then be maintained while the room is occupied. These lights can be manually set to OFF from the 6.4" colour touch screen when occupants leave the room. If the area is left unoccupied (no movement is detected) for a set period of time, all lighting within the meeting room can be automatically set to a warning level (minimum level) before switching OFF after a preset period (Refer Device Functionality Table for details).

The use of the DALIcontrol 30mech light level sensor or motion sensor allows the sensor to be installed into the light fitting resulting in savings on installation time and enhancing the architectural aesthetics.

- **Sequences**

To ensure a person is never plunged into immediate darkness, Sequences are used to gradually reduce the amount of light before lighting is completely switched OFF. Lights are restored by a triggering of motion sensors or touch screen.

Control Strategy – Meeting Rooms and Conventional Offices

- **Corridor Linking**

Corridor linking is also configured into the line controller to keep corridor lighting on when the meeting room or office alongside it is occupied anytime of the day. Once the meeting room and office are unoccupied, the corridor lighting automatically switches OFF according to the associated sequence (Refer Device Functionality Table for details).

- **Security Input (optional)**

Corridor lights can be connected to the security system. When the security system is disarmed, the corridor lights switches ON and are to be sequenced OFF when the security system is armed (delay 1 minute set to MINIMUM, delay further 1 minute set to OFF).

- **Dimming of General Lighting**

Having the ability to dim lights provides greater energy efficiency and a more suitable working environment as DALI light fittings have a logarithmic dimming curve that suits the human eye. To further conserve energy and increase the lifespan of lamps, DALI ballasts can be set to a maximum dim level of 85% without much compensation to the ambient lux. The use of DALIcontrol 30mech rotary knob or up/down button can provide the user with a more intuitive dimming control.

- **Emergency Lighting**

All emergency and exit lights in a building are required to comply with the DALI Emergency Lighting Standard and are required to be incorporated into the DALIcontrol system. This alleviates the need to install an additional system to monitor and maintain the emergency lighting. DALIcontrol software can be used to report on the status of all fittings including emergency lights.

Device Functionality Table

Devices	Business Hours Operation	After Hours Operation
Multi Sensors (Office)	- MAX if unoccupied	- MAX if unoccupied with override sequence (delay 20min >> MIN >> delay 5min >> OFF)
Motion Sensors (Meeting Room)	- MAX if unoccupied with override sequence (delay 20min >> MIN >> delay 5 min >> OFF)	- MAX if unoccupied with override sequence (delay 20min >> MIN >> delay 5min >> OFF)
Motion Sensors (Corridor)	- MAX if unoccupied with override sequence (delay 15min >> MIN) - Corridor linking when adjacent meeting room or office is occupied (MAX >> delay 15min >> OFF)	- MAX if unoccupied with override sequence (delay 15min >> MIN >> delay 5min >> OFF) - Corridor linking when adjacent meeting room or office is occupied (MAX >> delay 15min >> OFF)
Light Level Sensor	-When light group near window is ON, enable daylight harvesting.	-Disabled
6.4" Colour Touch Screen	-ON and OFF lighting groups above workstations.	-ON and OFF lighting groups above workstations. -Allow time extension to A/C (ON >> delay 30min >> OFF)
Key Switches (Office)	-Toggle function (ON/OFF)	-Toggle function (ON/OFF)

Example 6.4” Colour Touch Screen Function and Labelling



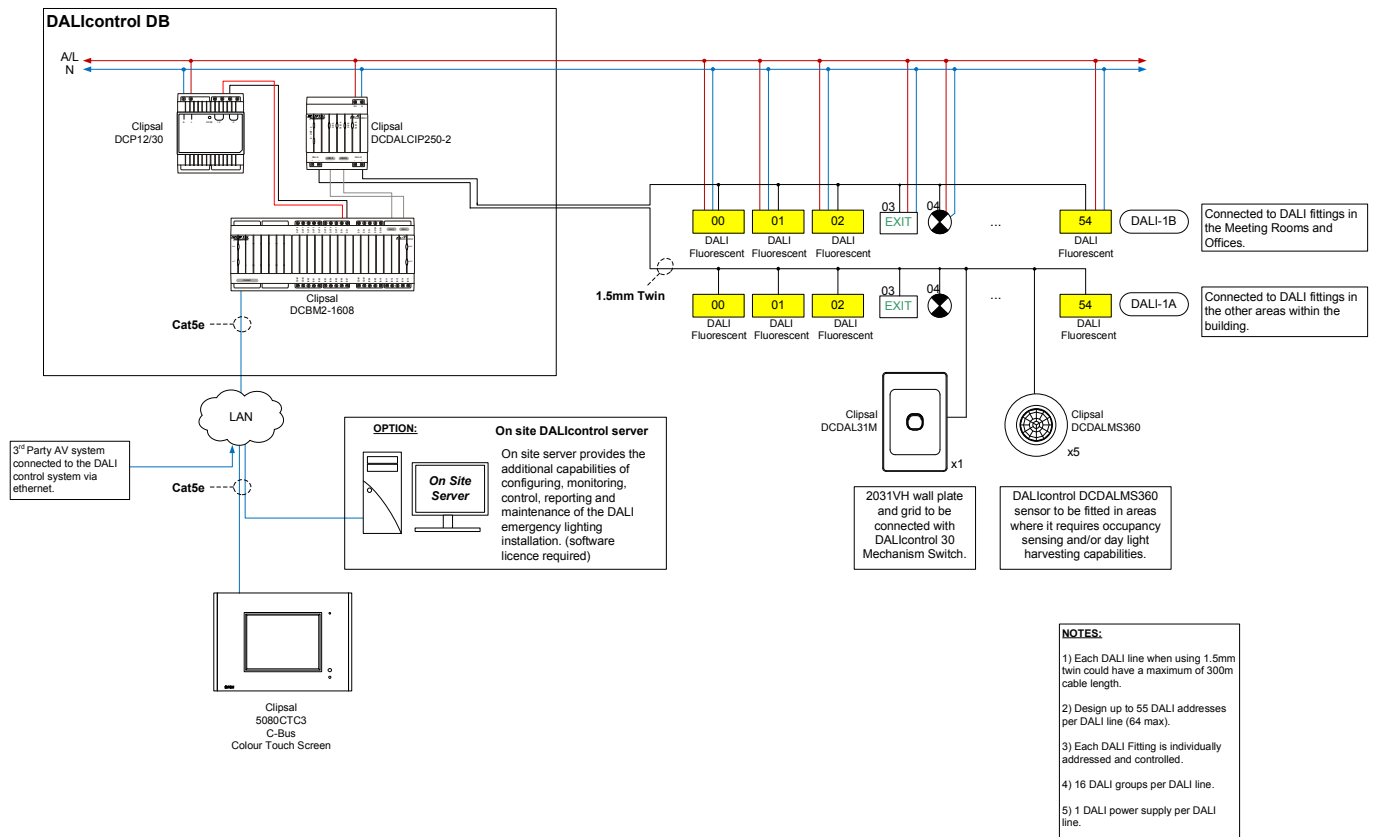
6.4” Colour Touch Screen

Page 1 Functions

- | | |
|--------------------------------|-------------------------|
| Button 1: Wall Lights ON | 7: Down Lights ON |
| Button 2: Wall Lights DIM UP | 8: Down Lights DIM UP |
| Button 3: Wall Lights DIM DOWN | 9: Down Lights DIM DOWN |
| Button 4: Wall Lights OFF | 10: Down Lights OFF |
| Button 5: Projector Scene ON | 11: All OFF |
| Button 6: Projector Scene OFF | |

*Note: Screen layouts, labelling and functionality are fully customisable to suit each project and client

Meeting Room and Conventional Office Single Line Diagram



*Note: DCBM2-1608 shown above allows for the control of 2 DALI lines with up to 128 DALI fittings. If only 1 DALI line (max 64 fittings) needs to be controlled, the DCBM1-1608 (Single line DALIcontrol line controller) can be used.

*Note: A UDP Interface can be used for third party integration with the DALIcontrol line controller.

*Note: DCDALMS360 DALIcontrol sensor shown above is a recessed mount unit. Alternatively, a DCDAL31MOD DALIcontrol sensor fitted in surface mount 30mech holders could be used for surface mount applications.

*Note: DCDALM31M DALIcontrol switch mechanism shown above could be added with 30mech rotary knob or up/down button to provide the user with a more intuitive dimming control.

Typical Equipment

Part Number	Description	Quantity
DCBM2-1608	DCBM DALI Line Controller, 16-Input, 8-Output, 2 DALI Lines, Din Rail Mount	1
DCP12/60	BM Power Supply, Din Rail Mount, 12V, 60W	1
DCDALCIP250-2	DALIcontrol Intelligent Dual Power Supply and Dual Serial Interface	1
DCDALMS360	DALIcontrol Digital Motion Detector, 360Deg	5
5080CTC3	6.4" Colour Touch Screen	1
EXITREC	Exit / Emergency Lighting, Wafer Recessed Edgelite Exit - Suits Single or Double sided applications.	1
EMG DALI	Exit / Emergency Lighting, Sentinel Emergency	5
(OPTIONAL)		
DCDAL31M	DALIcontrol 30 Mechanism Switch	1
2031VH	Clipsal 2000 Series, Flush Surrounds and 1 Gang Grids	1
DCDAL31MOD	DALIcontrol 30 Mechanism Sensor, 360Deg	5
DCDAL31MPE	DALIcontrol 30 Mechanism Light Level Sensor	1
DCDAL31SROKUD	DALIcontrol 30 Mechanism Rocker Up/Down Switch (Slave)	1
DCDAL31SPBUD	DALIcontrol 30 Mechanism Push Button Up/Down Switch (Slave)	1
DCDAL31SROT	DALIcontrol 30 Mechanism Rotary Knob (Slave)	1

Third Party Integration

- **PUSH Control by Schneider Electric and 3rd Party AV equipment** can communicate with DALIcontrol line controller using UDP. This connection will allow the third party AV equipment to control DALI fittings at a high level.
- **Building Management Systems (BMS)** can be integrated to the DALIcontrol system by;
 - low level contact closures to communicate a state change
 - or a high level interface using DALIcontrol OPC Server software
- **UDP** is a standard Ethernet protocol which can issue commands to the DALIcontrol line Controller (DCBMx-1608) and Tunnel Monitor Controller.
- **Infrared** integration can be achieved using 3rd party DALI IR controllers.

DCBM2-1608 Line Controller Input and Output Channel Schedule

DCBM2-1608	Channel Number	Description	Business Hour Profile	After Hour Profile
INPUT	1	Security (optional)	ON/OFF	ON/OFF
	2	Spare	-	-
	3	Spare	-	-
	4	Spare	-	-
	5	Spare	-	-
	6	Spare	-	-
	7	Spare	-	-
	8	Spare	-	-
	9	Spare	-	-
	10	Spare	-	-
	11	Spare	-	-
	12	Spare	-	-
	13	Spare	-	-
	14	Spare	-	-

	15	Spare	-	-
	16	Spare	-	-
OUTPUT	1	Spare	-	-
	2	Spare	-	-
	3	Spare	-	-
	4	Spare	-	-
	5	Spare	-	-
	6	Spare	-	-
	7	Spare	-	-
	8	Spare	-	-

Resource Links

For information including Product Datasheets, Installation Instructions and Downloads visit

<http://www.clipsal.com/dalicontrol>

It is recommended that a Clipsal DALIcontrol System Partner be engaged on projects involving integration for design, programming and commissioning.

Clipsal DALIcontrol System Partner have undertaken specialist training so they are equipped to provide the technical services and support to help you successfully implement a DALIcontrol lighting system.

In addition, Clipsal DALIcontrol System Partner will provide professional detailed documentation and specifications for projects including handover training to the client.

Engaging a Clipsal DALIcontrol System Partner provides key benefits to the contractor, consultant and the end user including the manufacturers support from project design through to completion. A Clipsal DALIcontrol System Partner will also be able to educate the Building manager on how to run reports on the fittings for an installation.

A major advantage of the DALIcontrol system is the ease of installation and commissioning. The five-pin 'soft-wiring' system reduced labour costs and the distributed architecture enabled sections to be tested and commissioned ready for the tenant as each area is installed.

For further information:

Clipsal DALIcontrol M3 Soft Wiring Solutions:

www.clipsal.com/cablemanagement

DALIcontrol:

www.clipsal.com/dalicontrol

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