

DALIcontrol Application Note

3rd Party Interface – Ethernet

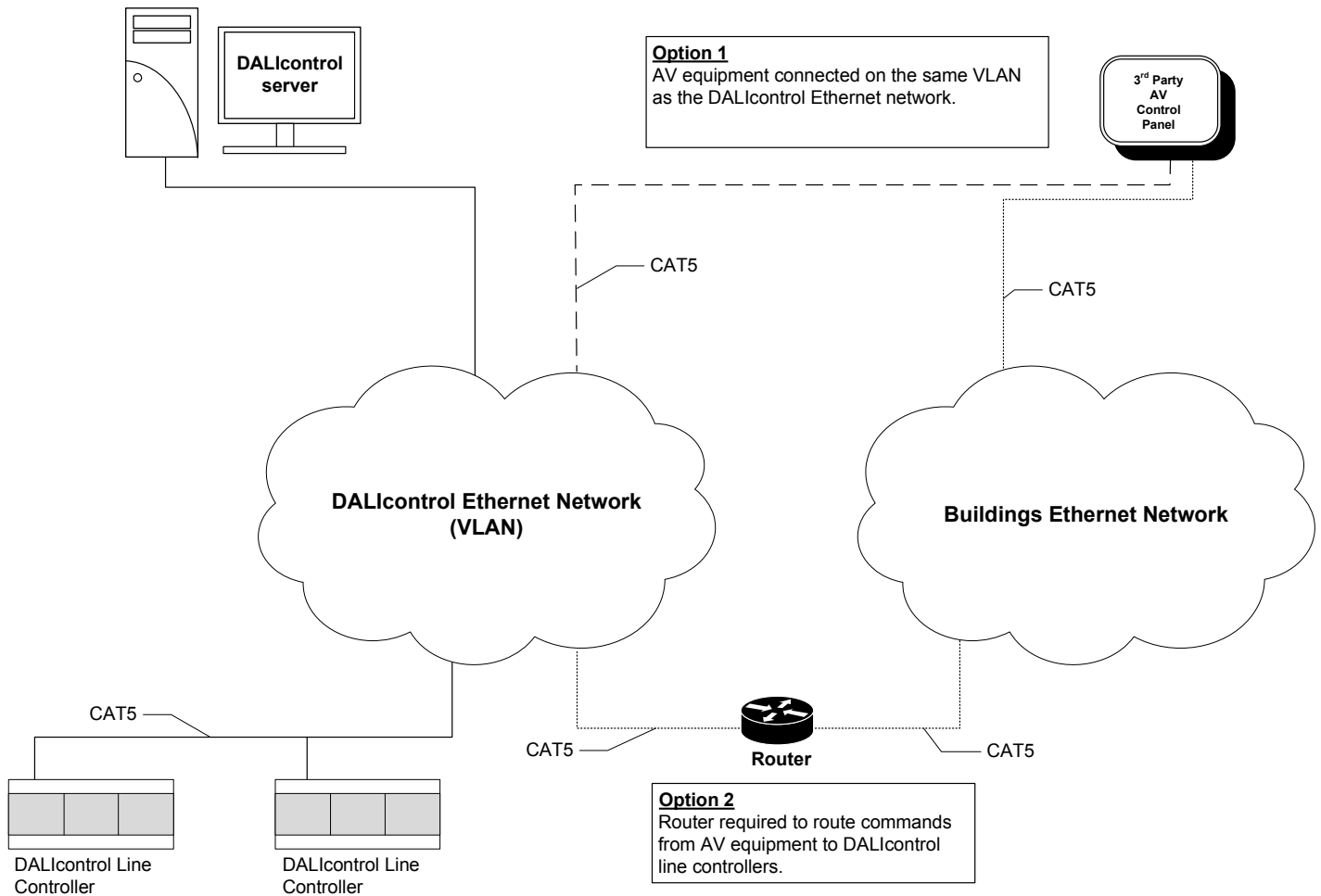
Overview

With the advancement and emergence of new technologies in the workplace, the importance and ease of controlling various systems from a single platform is becoming a critical component of office control system design. The ability to integrate lighting control with 3rd party systems allows control from a single platform as well as ease of use from a user perspective.

The DALIcontrol software and hardware is designed and manufactured as an open system from the ground up and establishes a lighting control system that not only speaks the DALI protocol but utilises an IP network. As IP networks are available in commercial buildings, the ability for DALIcontrol products to reside upon this IP network and utilises the existing infrastructure as its primary backbone both simplifies and reduces system cost.

The following describes how external systems are able to control a DALIcontrol installation using Ethernet command strings.

Example Layout



Control Strategy – 3rd Party Interface - Ethernet

- UDP (DALIcontrol VLAN broadcast) and TCP/IP

DCBM line controllers within each building can be connected and communicate with each other over Ethernet. Line controllers can be located within a virtual local area network (VLAN) which provides a segmentation of services. This allows for broadcast filtering, security, address summarization and traffic flow management preventing accidental access and control of the buildings lighting control system.

Although each line controller has the capability of communication via TCP/IP on port 1001 (Example Layout Option 2), each controller can only have 4 sockets opened at any one time. Due to this restriction, UDP is the preferred option with 3rd party interface (Example Layout Option 1). Port 1235 will be used with UDP commands.

The next section provides a brief description on the string structure for both DALI and Group type commands that can be set up on 3rd party interfaces to interact and control DALI fittings through the DALIcontrol Line Controller with both TCP/IP and UDP options.

DALI Type Command (014)

The DALI Type Command (014) issues a DALI light level command to control a DALI device, group or line. The light level command can be a DALI direct (Arc Level) command or a DALI indirect command.

There will not be any return string after a DALI type command has been issued.

Command
Structure

\$aaabbbcccddeefghhh00*

Digits	Description
aaa	Controller ID
000 - 254	Controller ID as programmed by DCBM Manager
bbb	Command
014	DALI Type Command
ccc	Data Length
010	Data Length of 10
dd	Line ID
00	Line A and Line B
01	Line A only
02	Line B only
eee	Address
000 – 063	Address of Ballast
000 – 015	Address of Group
f	Address Type
0	Broadcast
1	Group
2	Ballast

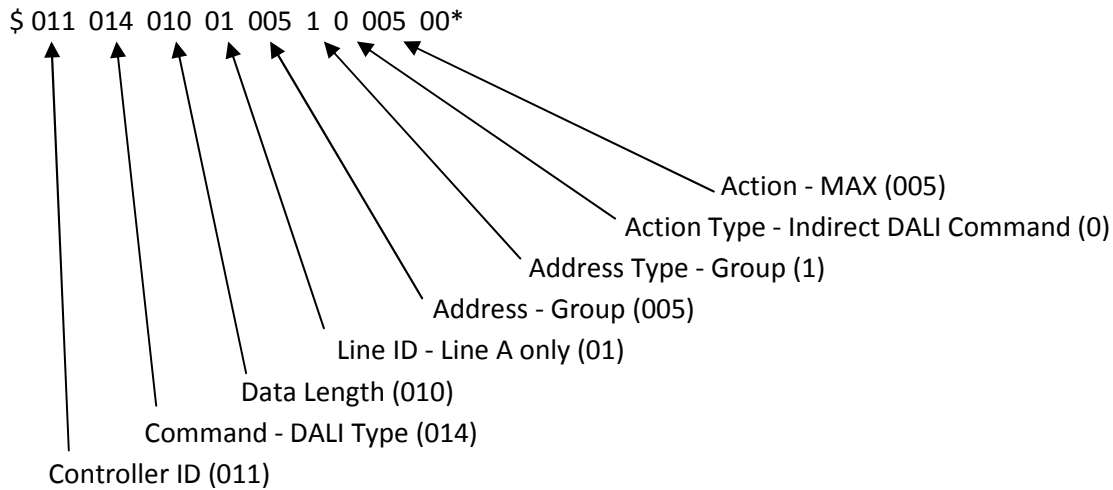
g	Action Type	
0	Indirect (DALI command)	
1	Direct (Arc Level)	

fff	Action	
000	OFF	Indirect (DALI Command)
001	UP	
002	DOWN	
003	STEP UP	
004	STEP DOWN	
005	MAX	
006	MIN	
016 - 031	SCENE 00-SCENE 15	
000 - 255	ARC LEVEL	Direct (ARC Level)

DALI Type Commands Example:

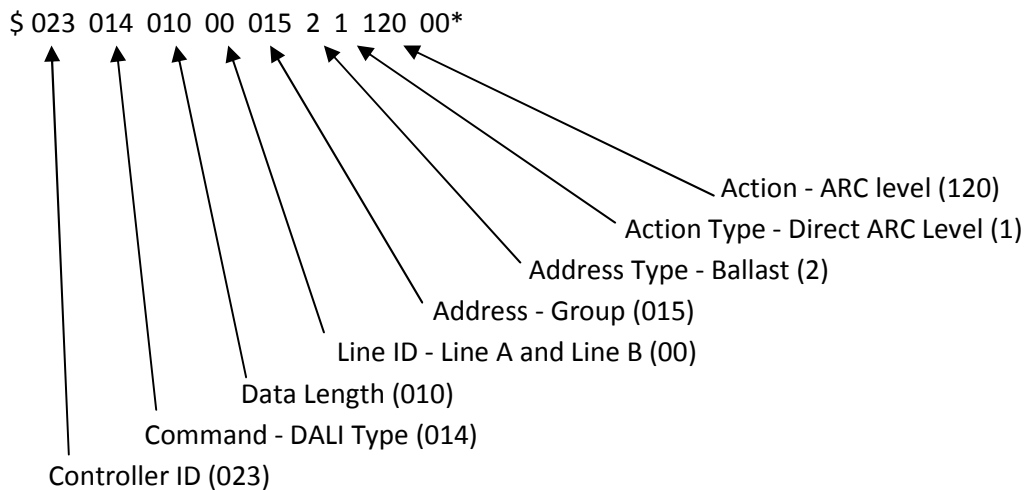
- **Example 1**

Set DALI Group 5 on Line A to MAX on controller 011.



- **Example 2**

Set DALI Group 12 on both Line A and B to Arc level 120 on controller 023.



Group Type Command (015)

The Group Type Command (015) issues command to a DALI control line controller. This includes a DALI direct (Arc Level) command, a DALI indirect command, sequence and list command.

After a successful message, it will return \$0000150000300000*.

Command
Structure

\$aaabbbccdddeeff00*

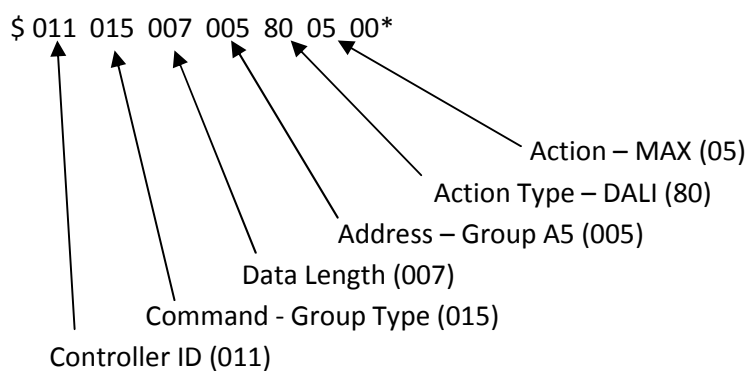
Digits	Description	
aaa	Controller ID	
000 - 254	Controller ID as programmed by DCBM Manager	
bbb	Command	
015	Group Type Command	
ccc	Data Length	
007	Data Length of 7	
ddd	Address	
001 - 064	Group A 01 - Group A 64	
065 - 128	Group B 01 - Group B 64	
ee	Action Type	
80	DALI	
81	Arc Level	
82	Sequence	
85	List	
ff	Action	
00	OFF	Indirect (DALI Command)
01	UP	
02	DOWN	
03	STEP UP	
04	STEP DOWN	
05	MAX	
06	MIN	

10 - 1F	SCENE 00-SCENE 15	
00 - FF	ARC Levels from 000 - 255	Direct (Arc Level)
00 - 1F	Sequence 01 - Sequence 32 @ Step 1	Controller (Sequence Command)
20 - 3F	Sequence 01 - Sequence 32 @ Step 2	
40 - 5F	Sequence 01 - Sequence 32 @ Step 3	
60 - 7F	Sequence 01 - Sequence 32 @ Step 4	
80 - 9F	Sequence 01 - Sequence 32 @ Step 5	
A0 - BF	Sequence 01 - Sequence 32 @ Step 6	
C0 - DF	Sequence 01 - Sequence 32 @ Step 7	
E0 - FF	Sequence 01 - Sequence 32 @ Step 8	
01 - 1A	List Start 01 - List Start 20	Controller (List Command)
80	List Stop	
81 - 9A	List Stop 01 - List Stop 20	

Group Type Commands Example:

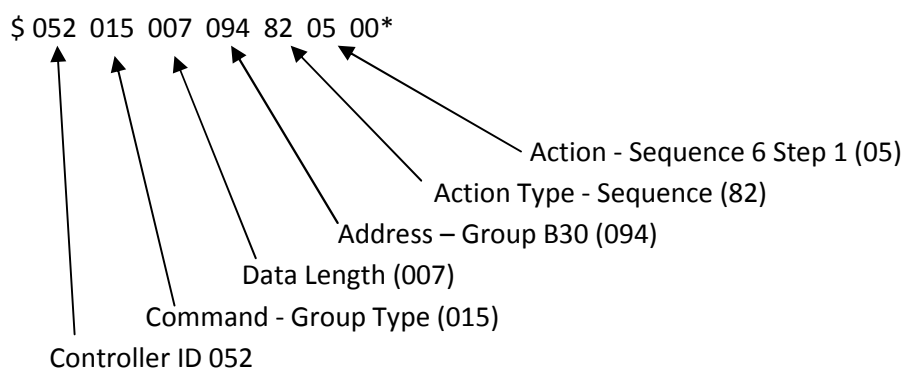
- **Example 1**

Set DALI Group 5 on Line A to MAX on controller 011.



- **Example 2**

Set DALI Group 30 on Line B to start Sequence 6 Step 1 on controller 052.



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 Partners 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, a 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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