

Light is OSRAM

Difference between DALI Type 6 and DALI Type 8

What is DALI?

Digital **A**ddressable **L**ighting **I**nterface is a two-way communication system used to standardize digital commands that are recognized by all components in the lighting system. DALI is an “open protocol”, meaning it is a common platform that can be adopted by all lighting equipment manufacturers. In DALI, each device is assigned an individually controllable DALI address, and it allows for devices to be grouped and controlled together.

In a DALI system, a two-wire, unpolarized bus is used for power and two-way data communication. DALI power is 16V, when there is no active communication, but the voltage level can differ depending on the data transmission. Two-way communication allows for DALI devices to send three types of commands:

- Control → Example: Turn off lights, recall a scene, start a fade to a defined light output level, etc.
- Configure → Example: Change a parameter (such as light level or fade time) in a stored scene
- Query → Example: Ask what the current light output level is or ask if there is a lamp failure

DALI Protocol is constantly evolving. In 2014, DALI was restructured, and DALI-2 was released with many ease of use improvements, new commands, and compatibility with control devices. With these dynamic changes to the protocol, lighting systems have become more controllable and customizable.

Control Devices	
Types	Purpose
Application Controllers	<ul style="list-style-type: none"> — Acts as the "central control station" or "brain" of the system — Sends commands to the control gear
Input Devices	<ul style="list-style-type: none"> — Provides real-time information to the system — Example: sensors, push-buttons, sliders, etc.

Further additions will be made to DALI-2 which will include color tuning and intensity. These additions will be used to enable tunable white fixtures where color and brightness can be controlled within a single fixture.

Difference between DALI Type 6 and DALI Type 8

Single-Channel DALI Type 6 commands use a single address to control a single channel.

→ Example: Color temperature is controlled on one channel, and brightness is controlled on another

Multi-Channel DALI Type 6 commands use X number of addresses to control X number of channels.

DALI Type 8 commands use one address to control two channels.

→ Example: Both color temperature and brightness can be controlled by a single channel

When using DALI Type 6, broadcast control is only possible if separately energized lines are installed for each desired color. DALI Type 8's single address multipath channels can control two or more outputs. Data is transmitted serially to the luminaire from the DALI master device.

Benefits of DALI Type 8 over DALI Type 6

There are many benefits to using DALI Type 8 over DALI Type 6, and the applications are broad and diverse. DALI Type 8 allows for savings on cost and complexity of the system. One DALI Type 8 driver can perform all the same functions as two single-channel DALI Type 6 drivers. Also, one DALI Type 8 driver can perform all the same functions as one dual-channel DALI Type 6 driver, while only using one DALI address.

DALI Type 8 can help to reduce:

- The number of drivers used in an application
- The amount of wiring needed at installation
- The number of DALI addresses used

OSRAM Tunable White Solution

The OSRAM Tunable White System is a digitally, controlled lighting solution designed for human centric lighting applications in educational, commercial office, and healthcare settings.

The OPTOTRONIC Tunable White Driver from OSRAM leverages DALI Type 8 commands to control brightness and color using a single control channel. The driver also can support DALI Type 6 when configured in 2-channel mode. Typically 2-channel mode is used for direct/indirect lighting applications. The mode of operation and settings can be programmed into the driver using the OT Programmer Software.

The driver can be paired with the OSRAM PrevaLED® Tunable White LED Light Engine, or with a TW light engine of the OEMs choice. In both cases, two different color temperature LEDs are blended for an intended color temperature output. Precise control of color and brightness can be adjusted by the user directly on the wall station.

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