

Light is OSRAM

Color Tuning: DALI Type 8 vs. 0-10V

What is DALI Type 8 Control?

Digital **A**ddressable **L**ighting **I**nterface (DALI) is an advanced, two-way communication system used to standardize digital commands that are recognized by all components in the lighting system. DALI protocol is maintained by the Digital Illumination Interface Alliance (DiiA), and it is constantly expanding and evolving to meet the needs of the lighting market. With the recent addition of DALI Type 8 (DT8) protocol, tunable white control has never been simpler.

DT8 allows the user to change the color temperature and brightness of a luminaire, without complicated wiring and expensive components. DT8 uses a single DALI short address to control two or more outputs. This reduces the number of address used in the system, which results in cost savings, space savings, and reduced complexity.

Benefits of DT8 over 0-10V

Limitations of 0-10V tunable white:

- Requires multiple control channels
 - Brightness and Color control separate/isolated - more wiring and higher cost
- Dimming curve not customizable
 - Because the 0-10V standard loosely defines dimming curve, it can differ from driver to driver resulting in inconsistent light output from fixture to fixture
- Control voltage is inconsistent, therefore fixture light output is inconsistent
 - Many factors affect the 0-10V control voltage: length of wire, size of wire gauge, number of drivers connected to a given dimmer, etc.

How DT8 addresses these limitations:

- Providing a digital dimming interface that sends specific encoded commands to the fixtures
 - Since DALI is standardized, the commands sent from the DALI Controller are “absolute” and do not vary depending on make/model, number of components, etc.
- Simple wiring
 - Only one controller is needed
 - Single control bus (2-wire)
- Customizable dimming curve
 - Linear or Logarithmic
- Settings can be stored as “scenes” and customized on the fly
- For drivers that have “Active DALI” or DEXAL™ capabilities, the driver can provide power to the controller
 - Additional power packs or AC connections are no longer needed

- Future ready
 - DiiA is continually updating and improving DALI capability without requiring hardware changes
 - Bi-directional communication has enabled smart fixtures – controllers can query fixture statuses and gathering fixture level data (diagnostics, power consumption, lamp failure, operating time, etc.)

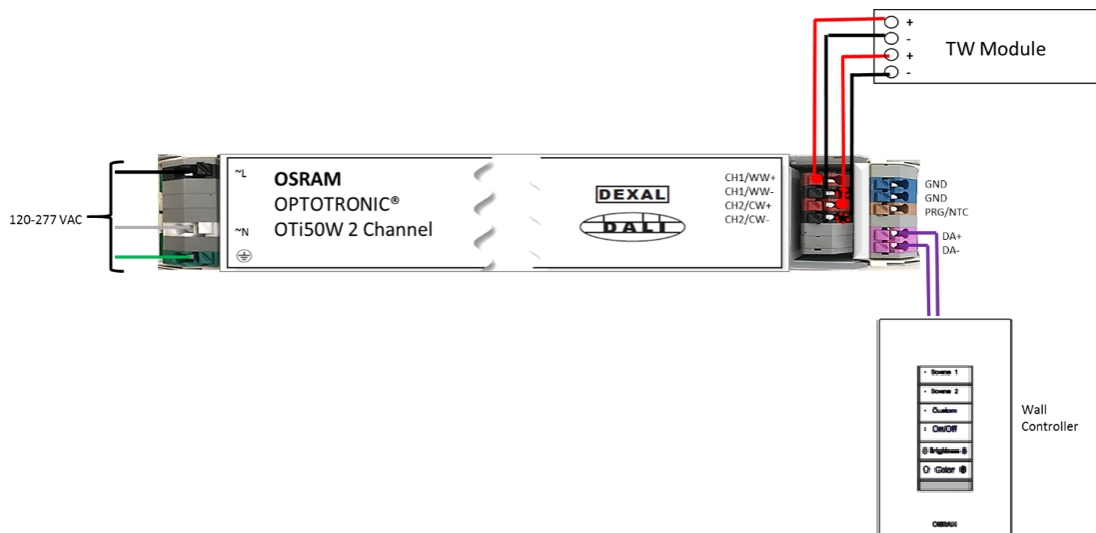
OSRAM Tunable White Stand Alone Solution

The OSRAM tunable white stand alone system is a digitally controlled lighting solution designed for human centric lighting applications in educational, commercial office, and healthcare settings.

The 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 (requires two DALI addresses) 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 wallstation.

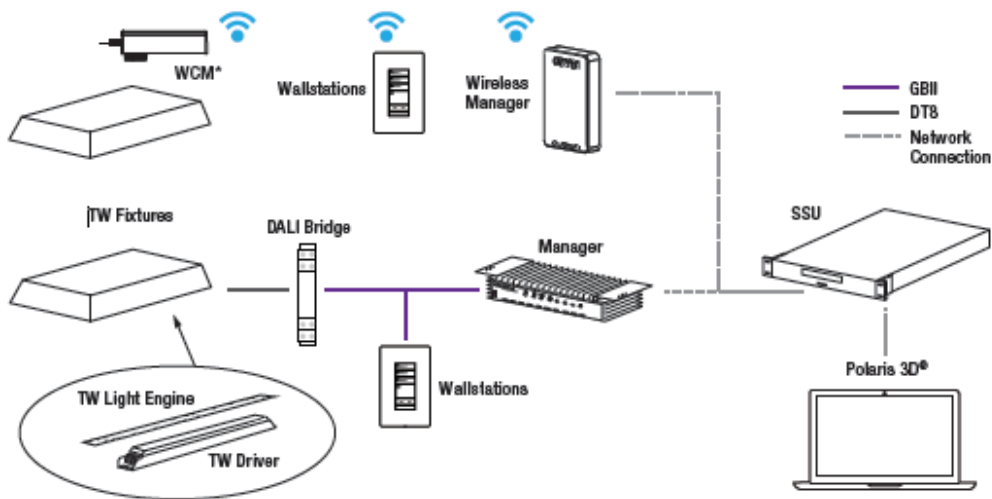
Wiring diagram for the OSRAM Tunable White System:



Tunable White Technology with ENCELIUM® EXTEND

The addition of Tunable White Technology to any ENCELIUM EXTEND LMS project is effortless for all stakeholders. From the lighting system design, to OEM fixture integration and assembly, to field installation, and facility management oversight and control, OSRAM Tunable White Technology has been developed for integration with the ENCELIUM EXTEND LMS in a way that simplifies the complex while remaining highly flexible.

The ENCELIUM EXTEND System enables you to optimize illumination and maximize energy savings by combining smart lighting controls and plug load power management strategies.



*WALC, CLM and SensiLUM are not supported.

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