

Driving greater efficiency with an easy, stand-alone, dimming control

Maximize eHID and LED energy-savings with the Dynadimmer™ 0-10V luminaire-based dimming control lighting system for outdoor applications

Dynadimmer 0-10V is a lamp control device that enables high energy savings with low installation efforts. The small, stand-alone, luminaire-based device can drive a 1-10V electronic ballast to facilitate ondemand light levels and does not require an additional switching wire.

The Dynadimmer 0-10V dimming schedule is flexible up to five dimming levels and five time periods. Easy-to-operate software and programming equipment enable end users to re-program dim times and levels when and as they wish. Offering energy-efficiency and flexibility, the Dynadimmer 0-10V control is ideal for residential, roadway, parking, and industrial applications.

The Dynadimmer 0-10V solution offers:

- · Energy savings through dimming
- Reduced light nuisance
- · Very small size, fits inside almost any luminaire
- · Software provides a forecast of energy savings
- Easy-to-use software



Applications

Each Dynadimmer 0-10V can control a driver-lamp combination in a stand-alone manner. It is designed for use in residential, street and road lighting applications, including parking lots, roadway, residential and industrial complexes. The design of the Dynadimmer 0-10V is optimized for mounting in a luminaire.

Dynadimmer 0-10V is designed to interact with Philips Advance 1-10V drivers and is compatible with dimmable drivers with a standard 1-10V interface. Compatible with eHID and LED solutions, it features a galvanic separation between the 1-10V output and mains input.

The Dynadimmer family consists of:

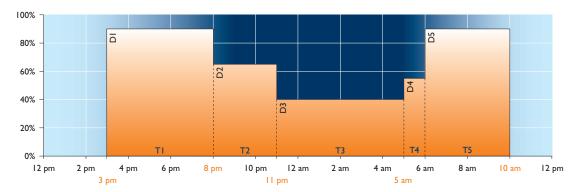
- LLC7230 Dynadimmer 0-10V
- KIT7210 Dynadimmer Programming Kit (Optional)
- LCC 7210 Dynadimmer USB PC Cable

General Operation

A dimming schedule is easily created within the Dynadimmer software. This easy-to-use software enables the user to obtain not only a quick dimming shape configuration, but also a forecast of energy savings. The dimming schedule may be fine-tuned and, by means of the Programmer or the USB PC cable, programmed into each individual Dynadimmer 0-10V.

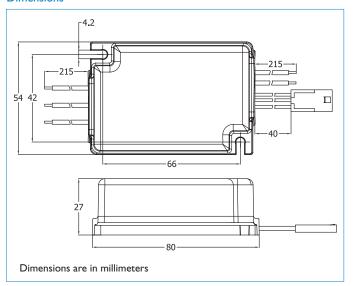
The Dynadimmer 0-10V has no internal clock and uses a midnight point calculation to determine the absolute time. The midnight point is calculated as the middle point between switch on and switch off.

Depending on the selected location, a time is allocated to this midnight point. The Dynadimmer 0-10V needs two nights to check the consistency of the duration of both nights. The dimming schedule will start to operate on the third night after installation.



Example dimming schedule using Dynadimmer

Dimensions



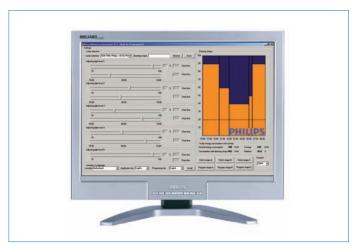
Mounting information

The Dynadimmer 0-10V is designed to be built into a luminaire, a box, an enclosure or the like and is not intended to be mounted outside a luminaire, etc. without special precautions. (The control driver compartment in the base of a road lighting pole is considered to be an enclosure.)

The Dynadimmer 0-10V can therefore be mounted in any position if the enclosure is IP43 or higher. Wiring has to be in accordance with UL standards.

Dynadimmer software

A dimming schedule is created in the Dynadimmer software. Dynadimmer software can be downloaded free-of-charge from the Philips website at http://www.philips.com/dynadimmerus.There are several variables that allow the configuration of a dimming schedule. Light levels D1 to D5 can be chosen within the range that the selected driver allows.The time frames T1 to T5 can be chosen freely to accommodate any requirement.



Dynadimmer Software

Dynadimmer USB PC Cable

The USB programming cable is used to directly link and program Dynadimmer 0-10V from the PC. When using this cable, no programmer tool is needed. Dynadimmer software has a special button to activate the USB feature. In addition to programming and uploading the existing dimming schedule, an option is available for multi-programming. With multi-programming, connecting the Dynadimmer is sufficient to program it and there is no need to press any button on the computer. This is specially designed for factories to program large quantities of luminaires in a very short time.



Dynadimmer USB PC Cable

Dynadimmer Software Programming

Programming via Computer

The dimming shape can be easily be downloaded into the Dynadimmer 0-10V via the USB port on your personal computer using a custom Philips USB cable.

Dynadimmer Programming Kit (Optional)

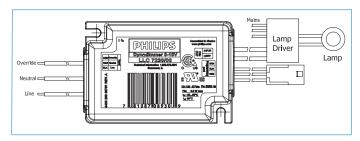
The dimming shape can also be easily be downloaded into the optional Dynadimmer programmer. The Dynadimmer programmer then enables the user to program the individual Dynadimmers either on or off-site. The Dynadimmer programmer is powered by 4 AA or LR6 batteries.



Dynadimmer Programmer (optional)

Wiring the Dynadimmer 0-10V

It is imperative that users wire Dynadimmer in accordance with the UL requirements laid down in the regulations relating to luminaires.



Dynadimmer 0-10V Wiring Diagram



Warning

Completely turn off the external power supply when installing or placing wiring. Not doing so could cause electric shock or personal injury.



Warning

Disconnect mains power supply before connecting the Dynadimmer programmer to the Dynadimmer 0-10V.

Technical data

Storage conditions

Temperature $\min -40^{\circ} \text{ C } / \max +80^{\circ} \text{ C}$ Relative humidity $\min 5\% / \max 95\% \text{ RH}$

Operating conditions

Ambient temperature \min -30° C / \max +60° C

Case temperature 80° C

Relative humidity min 10% / max 90% RH

(no condensation)

Mains connection

 $\begin{array}{lll} \mbox{Operational voltage} & \mbox{120-277V} \pm 10\% \\ \mbox{Frequency} & \mbox{50/60 Hz} \pm 5\% \\ \mbox{Maximum load} & \mbox{Not applicable} \\ \end{array}$

Mains / I-10v connections

Connector type WAGO 250 Cage Clamp

Drivers per Dynadimmer I-10v 2 max.
Wire range 18 gauge
Wire strip length 203 mm

Power consumption 0.5W at 220VAC/60Hz

Programming connector

Connector type Micro MATE-N-LOK connector
Factory setting After power-up, the control
voltage will rise slowly to +5VDC

Dim interface

Control voltage I-10V

Max. current 0.3mA sinking

Dim curve Defined by selected driver
Protection Protected against accidental
connection with mains voltage

Output impedance 2700 ohm

Ordering Data

Туре	Min. Order Qty.	Ordering number
LLC7230 Dynadimmer 0-10V	20	9137 012 17402
KIT7210 Programming Kit	1	9137 003 34703
LCC7210 USB PC Cable	I	9137 003 34603

Housing

Protection class Tested to IP66

Dimensions (H \times W \times L) 25 mm \times 54 mm \times 80 mm

Weight 0.085 Kg

Material PC-GE LEXAN 223R-111

Color Black

Glow wire test $\geq 850^{\circ}$ C at 1 mm material thickness Flammability UL94-V2 at 0.75 mm material thickness

UL94-V0 at 6 mm material thickness

Fixation M8 x 16 bold (class 8.8) or

2 x M4 screw with cylinder head

The LLC7230 is designed to be built into a luminaire, a box, an enclosure, or the like and is not intended to be mounted outside a luminaire, etc. without special precautions.

The LLC7230 housing provides insulation for Class 2.

Safety

I-10V interface The interface is double (0-10V)

isolated from the mains supply (4kV routine test for transformer)

Programming interface The interface is double (0-10V)

isolated from the mains supply (4kV routine test for transformer)



Warning

Mains has to be disconnected before connecting the programmer.



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