

QUICKTRONIC® POWERSENSE® T5HO UNV Dimming Systems



**Fluorescent Controllable
Lighting Systems**

High Efficiency Series

Lamp / Ballast Guide

54W T5HO - PENTRON® lamps*
1-lamp QHE1x54T5HO/UNV DIM TC
2-lamp QHE2x54T5HO/UNV DIM TCL

Also operates:

FT55DL, FPC55 and L58T8

* Not to be used with Energy Saving
T5HO lamps

Key System Features

- Industry's first ballast that combines dimming inputs from 0-10V and/or two-wire AC dimming providing maximum flexibility
- POWERSENSE compatibility with low voltage and power line fluorescent dimmers
- High Efficiency**
- Lamp Detection Technology
- Universal voltage (120-277V)
- 100-1% Dimming Range
- PROStart® programmed rapid start
- Anti-flash circuitry – turns on in dimmed mode
- Operates at >42kHz
- QUICKSENSE ballast technology (end-of-lamp-life sensing)
- QUICK 60+ ballast and lamp warranty
- RoHS compliant
- Lead-free solder and manufacturing process



Application Information

SYLVANIA QUICKTRONIC POWERSENSE ballasts

are ideally suited for:

- Occupancy sensors
- Daylight harvesting
- Energy management
- Load shedding
- Commercial
- Retail
- Hospitality
- Institutional
- Schools
- New construction
- Retrofit

SYLVANIA QUICKTRONIC High Efficiency POWERSENSE T5HO electronic ballasts offer several advantages:

- Wide Dimming Range:** operate linear fluorescent PENTRON HO, PENTRON HO Circline, and DULUX LT5 lamps over a 100-1% dimming range and provide true versatility in controls selection.
- Industry's Most Adaptable Dimming Ballast:** ballasts feature micro-controller technology for compatibility with:
 - low voltage controls
 - power line fluorescent dimmers
 - any line voltage from 120V to 277V
- Unmatched Performance:** patented lamp detection technology that virtually eliminates variations in brightness from lamp-to-lamp and provides uniform lighting throughout the dimming range. This technology also eases installation and troubleshooting by recognizing failed lamps, faulty wiring or loose connections, and shutting down.



When the problem is corrected, the system restarts automatically.

RoHS Compliant: QUICKTRONIC POWERSENSE T5HO ballasts are RoHS compliant and feature lead-free solder and manufacturing process

QUICK60+® Warranty: Setting the standard for quality, QUICKTRONIC POWERSENSE T5HO ballasts are covered by a QUICK60+® warranty, the first comprehensive system warranty in the industry

System Information

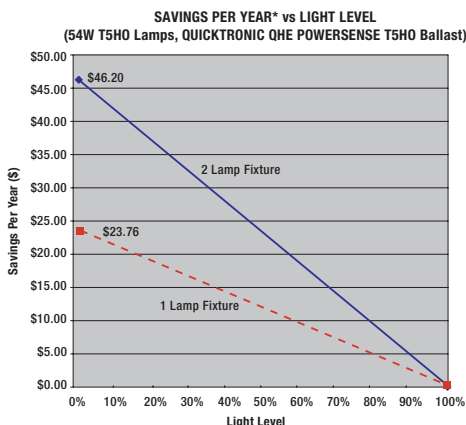
QUICKTRONIC POWERSENSE ballasts operate from standard low voltage (0-10VDC) controllers or compatible 2-wire power line fluorescent dimmers, making them ideal for individual office lighting or automated building applications, both in new construction and retrofit projects.

For the individual office or conference room, installation can be streamlined by using a 2-wire power line fluorescent dimmer; eliminating the need for additional control wires.

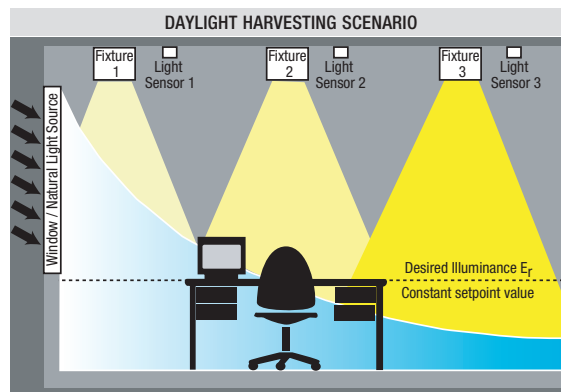
For more advanced systems, such as daylight harvesting or building automation applications, standard low voltage devices

(0-10VDC, Class 1 or 2) are used to control the lighting system. In this daylight harvesting example, each lighting fixture (or fixture row) is controlled by its own photosensor; regulating the light output to compensate for changes in natural daylight. Depending upon the specific application, energy savings of up to 60% compared to fixed output electronic systems can be realized.

All QUICKTRONIC POWERSENSE ballasts include a line voltage protection circuit, which protects the ballast in the event that line voltage is inadvertently applied to the low voltage control inputs.



*Based on 4000 hrs/yr, \$0.11/kWh, and 120V operation
*Savings per Year (@Light Level) = Cost of operation (100% Light Level) – Cost of operation (@Light Level)



SPECIFICATION DATA

| | | |
|-----------|-------------|------|
| Catalog # | Date | Type |
| Project | Prepared by | |
| Comments | | |

QUICKTRONIC® POWERSENSE® Controls Information



| Controls Manufacturer | Fluorescent Powerline Controllers | 0-10 VDC Controllers | Photo Cells | Occupancy Sensors | Building Management Systems |
|---|-----------------------------------|----------------------|-------------|-------------------|-----------------------------|
| SYLVANIA www.sylvania.com/controls | X | X | X | X | X |
| Acuity Brand Controls www.acuitybrandcontrols.com | X | X | X | X | X |
| Blue Ridge Technologies www.brtint.com | X | X | X | X | X |
| Cooper Greengate http://greengate.coopercontrol.com | | X | X | X | X |
| Hunt Dimming www.huntdimming.com | X | X | | | X |
| Lehigh Electric Products www.lehighdim.com | X | X | | | X |
| Leviton www.leviton.com | X | X | X | X | |
| Sensor Switch www.sensorswitch.com | | | X | X | |
| Siemens Building Technology http://sbt.siemens.com | | | | | X |
| Starfield Controls www.starfieldcorp.com | | X | X | X | X |
| Watt Stopper www.wattstopper.com | X | X | X | X | X |

Please contact controls manufacturer to order/specify controls. For the latest controls list go to www.sylvania.com
Also, for more information, refer to the LCA (Lighting Controls Association) site: <http://lightingcontrolsassociation.org>

Dimensions:

1 lamp enclosure

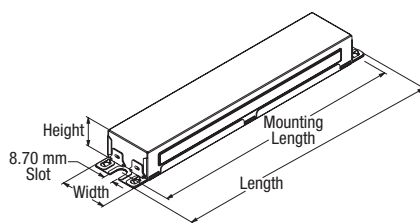
Overall: 9.5" L x 1.68" W x 1.0" H (241 x 43 x 25 mm)

Mounting: 8.90" (226 mm)

Weight: 1.1 lbs each (500 g)

Wiring:

Leads Only



Dimensions:

2 lamp enclosure

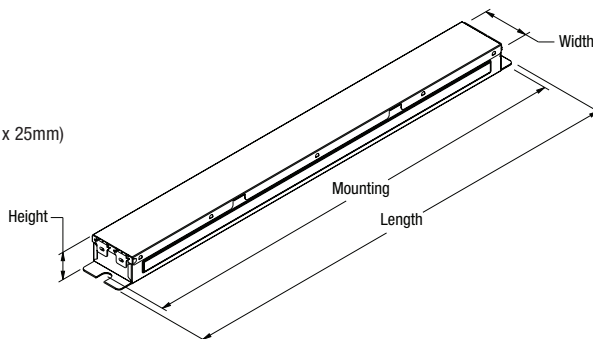
Overall: 16.7" L x 1.68" W x 1.0" H (425mm x 43mm x 25mm)

Mounting: 16.2" (411 mm)

Weight: 2.1 lbs each (950 g)

Wiring:

Leads Only



Control Specifications/model numbers may change.
Please consult manufacturers listed for their latest control models and to order their controls.

T5HO POWERSENSE

High Efficiency

Controls Guide



Contact the companies listed for their 2-wire Fluorescent/Powerline controls and/or 0-10V controls information.

T5HO POWERSENSE Dimming Ballast
51468 QHE 1x54T5HO/UNV DIM-TC
51467 QHE 2x54T5HO/UNV DIM-TCL

WARNING:

Install and wire these ballast and controls in accordance with the National Electrical Code (NEC), all applicable Federal, State and local electrical codes, as well as the specific instructions provided with the compatible control that you purchased. Installation should be performed by qualified personnel only.

These instructions are guidelines only. Installation may vary for different controls/fixtures/applications. Be sure to follow the control instructions and all applicable codes and standards when installing dimming systems.

Please contact controls manufacturer listed in the OSRAM SYLVANIA Inc. controls cross reference for compatible controls and instruction wiring

NOTES: 1. Dimming ballasts source <0.5mA (0-10VDC control input).
2. Powerline controls must be rated for the type (e.g. Fluorescent Phase-control) and size (e.g. 600W, 1000W, 1500W & 2000W etc.) of the connected load. Do NOT use incandescent powerline controls; incandescent dimmers are not rated for fluorescent loads and are NOT compatible with POWERSENSE ballasts.

OSRAM SYLVANIA
National Customer
Service and Sales Center
1-800-LIGHTBULB
(1-800-544-4828)
www.sylvania.com

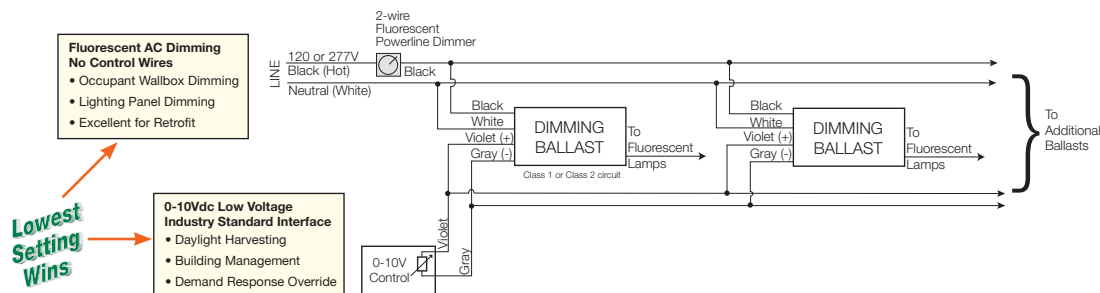
Specifications subject to change without notice.

SEE THE WORLD IN A NEW LIGHT



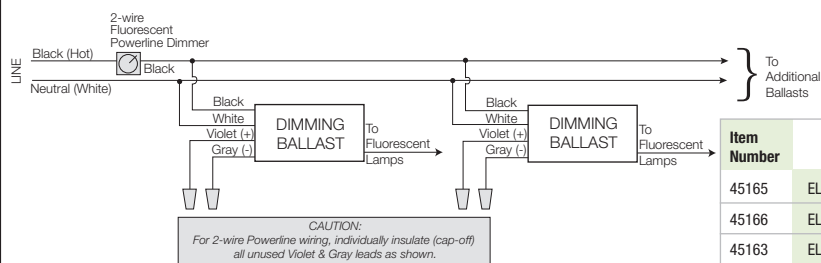
Industry's 1st Ballast That Allows POWERLINE Fluorescent Control **AND** 0-10Vdc Control Input Simultaneously

2-wire Powerline **AND** 0-10Vdc Control with POWERSENSE Ballasts



Wallbox Style 2-wire Powerline Control Wiring Example

2-wire Powerline Control with POWERSENSE Ballasts



Powerline Control Specs:
Specification-grade controls are available for 120V or 277V operation of controllable analog electronic fluorescent ballasts. Controls must be suitably rated for both the type (e.g. Fluorescent Phase-control) and size (e.g. 600W of the connected load).

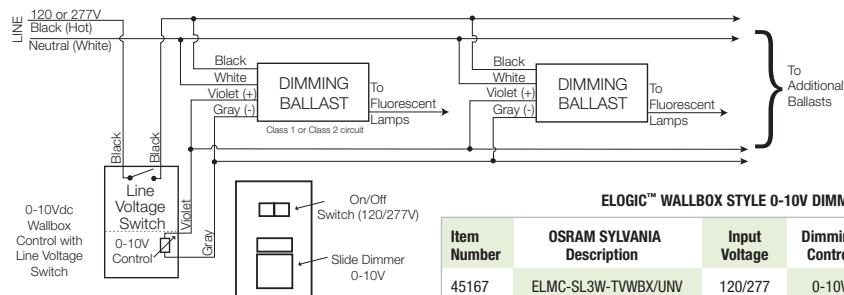
ELOGIC™ MANUAL CONTROL SLIDE FLUORESCENT PHASE CUT DIMMER

| Item Number | OSRAM SYLVANIA Description | Voltage Rating | Rating | Type | Wiring |
|-------------|----------------------------|----------------|--------|-----------------------|----------------------|
| 45165 | ELMC-SL3WHP-FLPCWBX120 | 120 VAC | 1000VA | Fluorescent Phase cut | Single Pole or 3-way |
| 45166 | ELMC-SL3WHP-FLPCWBX277 | 277 VAC | 1200VA | | |
| 45163 | ELMC-SL3WSP-FLPCWBX120 | 120 VAC | 600VA | | |
| 45164 | ELMC-SL3WSP-FLPCWBX277 | 277 VAC | 600VA | | |

*For additional information refer to ELOGIC™ Lighting Controls product information bulletins LMS068.

Wallbox Style 0-10V Control with Power Switch Wiring Example

0-10V DC Control with POWERSENSE Ballasts



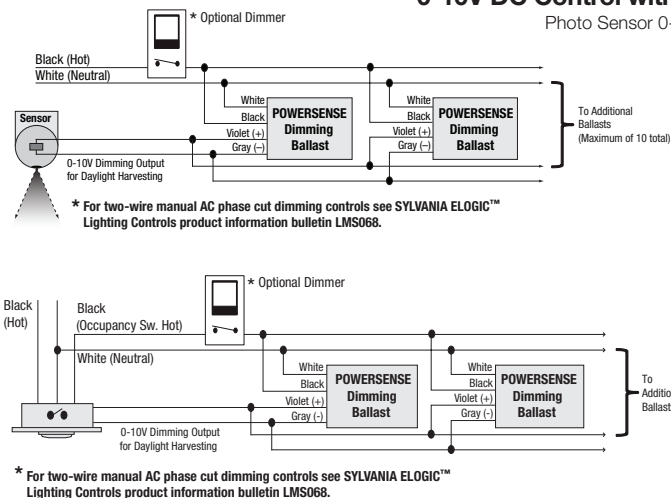
ELOGIC™ WALLBOX STYLE 0-10V DIMMER WITH POWER SWITCH

| Item Number | OSRAM SYLVANIA Description | Input Voltage | Dimming Control | Maximum Power Rating | Wiring | Color |
|-------------|----------------------------|---------------|-----------------|------------------------------|----------------------|-------|
| 45167 | ELMC-SL3W-TWVBX/UNV | 120/277 | 0-10V | 1200VA @120V 1500VA @277V | Single Pole or 3-way | White |

Daylight Harvesting and Occupancy Control Wiring Example

0-10V DC Control with POWERSENSE Ballasts

Photo Sensor 0-10V Wiring Example



ELOGIC™ DAYLIGHT HARVESTING AND OCCUPANCY CONTROLS ORDERING INFORMATION

| Item Number | OSRAM SYLVANIA Description | Function | Occupancy Sensing Method | Control Method | Sensor Power | Mounting Method |
|-------------|----------------------------|---|----------------------------------|---------------------|------------------------|-----------------|
| 45030 | ELSC-DLH-TVLAMP/BUS | Daylight Harvesting | N/A | 0-10V | From Ballast | To Lamp |
| 45032 | ELSC-DLOCIRM-TV1RCEIL/UNV | Daylight Harvesting + Occupancy Sensing | Passive Infrared + Microphonics™ | 0-10V + | Line voltage 120/277AC | Ceiling |
| 45033 | ELSC-DLOCIR-TV1RCEIL/UNV | | Passive Infrared | | | |
| 45034 | ELSC-DLOCIRM-TV1RREC/UNV | | Passive Infrared + Microphonics™ | Power ON/OFF switch | No power pack required | Recessed |
| 45035 | ELSC-DLOCIR-TV1RREC/UNV | | Passive Infrared | | | |

*For additional information refer to ELOGIC™ Lighting Controls product information bulletins ECS101 and ECS106.

POWERSENSE
T5HO DIM

SPECIFICATION DATA

Catalog #

Date

Type

Project

Prepared by

Comments

High Efficiency, T5HO Controllable Lighting Systems, Universal Voltage (120-277V)

| Item Number | OSRAM SYLVANIA Description | Input Current (AMPS) | Lamp ¹ Type | Rated ¹ Lumens (lm) | No. of Lamps | Ballast ¹ Factor (BF) | System ¹ Lumens | Mean ¹ Lumens | Input ¹ Power (W) 120V 277V | System ² Efficacy (lm/W) | BEF ² |
|-------------|------------------------------------|----------------------|------------------------|--------------------------------|--------------|----------------------------------|----------------------------|--------------------------|--|-------------------------------------|------------------|
| 51468 | QHE1x54T5HO/UNV DIM-TC 10-pack | 0.51/0.21 | FP54T5HO | 5000 | 1 | 1.00 0.01 | 5000 50 | 4650 45 | 62 60 8 8 | 83 | 1.67 |
| | | 0.51/0.21 | FT55DL | 4800 | 1 | 1.00 0.01 | 4800 45 | 4465 40 | 62 60 8 8 | 80 | 1.67 |
| | | 0.51/0.21 | L58 | 5200 | 1 | 1.00 0.01 | 5200 50 | 4835 45 | 62 60 8 8 | 87 | 1.67 |
| | | 0.51/0.21 | FPC55 | 4000 | 1 | 1.00 0.01 | 4000 40 | 3725 35 | 62 60 8 8 | 67 | 1.67 |
| 51467 | QHE2x54T5HO/UNV DIM-TCL 10-pack | 1.00/0.42 | FP54T5HO | 5000 | 2 | 1.00 0.01 | 10,000 100 | 9300 95 | 120 116 15 15 | 86 | 0.86 |
| | | 1.00/0.42 | FT55DL | 4800 | 2 | 1.00 0.01 | 9600 95 | 8930 90 | 120 116 15 15 | 83 | 0.86 |
| | | 1.00/0.42 | L58 | 5200 | 2 | 1.00 0.01 | 10,400 105 | 9670 95 | 120 116 15 15 | 90 | 0.86 |
| | | 1.00/0.42 | FPC55 | 4000 | 2 | 1.00 0.01 | 8000 80 | 7440 75 | 120 116 15 15 | 69 | 0.86 |

1: At 35°C lamp ambient temperature.

2: Ballast Efficiency Factor (BEF) shown = (Ballast Factor x 100) divided by Input Power (Note: calculation based on lowest wattage value).

3: System Efficacy calculation based on lowest input power value.

Installation Notes

Output Wiring: Lamp wiring for dimming ballasts can differ significantly from non-dimming ballasts and from other manufacturers dimming ballasts. Take care to connect lamp lead wires as shown on the applicable ballast diagram.

Lamp Seasoning: For optimal performance, fluorescent lamps may require seasoning for up to 12 hours prior to low temperature starting & low level dimming. Refer to NEMA LSD 23-2002 Lighting Systems Division: Recommended Practice — Lamp Seasoning for Fluorescent Dimming Systems

1 lamp

2 lamp

Input & Control Wiring Options:

LOW-VOLTAGE CONTROL

POWERLINE CONTROL

Item Number

51467 QHE 2 x 54T5HO / UNV DIM-TCL

System Type - DIMMING/Case Size

QUICKTRONIC High Efficiency

Line Voltage (120-277V)

Number of Lamps (2)

Primary Lamp Wattage

T5HO POWERSENSE®

High Efficiency

Performance Guide

Data shown based upon SYLVANIA PENTRON® lamp(s). QUICKTRONIC® POWERSENSE ballasts are also compatible with other lamp manufacturers equivalent lamp types that meet ANSI specifications. Not to be used with Energy Saving T5HO lamps.

Specifications

Data based on FP28

Starting Method: Programmed Rapid Start

Circuit Type: Series

Lamp Frequency: >40kHz

Lamp CCF: Less than 1.7

Starting Temp: 50°F/10°C minimum⁴

Input Voltage: 120-277V, ±10%

Input Frequency: 50/60 Hz

THD: <10% @ Full Output

Power Factor: >98% @ Full Output

UL Listed Class P, Type 1 Outdoor

CSA or C/UL Certified

70°C Max Case Temperature

FCC 47CFR Part 18 Non-Consumer

Class A Sound Rating

RoHS Compliant⁴

ANSI C62.41 Cat. A Transient Protection

Remote Mounting (Max. wire length from ballast case to lampholder): up to 4ft

4 Complies with European Union Restriction of Hazardous Substances Directive. (Directive 2002/95/EC)

5 FT55DL starting Temperature 60°F/16°C

Control Information

QUICKTRONIC POWERSENSE ballasts are compatible with a wide range of low voltage (0-10VDC) and power line fluorescent controllers available from various manufacturers.

Low Voltage Control Specs: Ballast will source up to 0.5mA for 0-10VDC control purposes. May be wired as a Class 1 or Class 2 circuit-consult Local and National Electrical Codes.

Power Line Control Specs: Specification-grade fluorescent controls are available for 120V or 277V operation of controllably analog electronic fluorescent ballasts. Controls must be suitably rated for both the type (e.g. Fluorescent Phase-control) and size (e.g. 600W) of the connected load.

System Life / Warranty

QUICKTRONIC products are covered by the QUICK 60+® warranty, a comprehensive lamp and ballast system warranty. For additional details, refer to the QUICK 60+ warranty bulletin.

OSRAM SYLVANIA National Customer Service and Sales Center

1-800-LIGHTBULB (1-800-544-4828)

www.sylvania.com

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