QUICKTRONIC® POWERSENSE® T5HO UNV Dimming Systems

RoHS compliant

Fluorescent Controllable Lighting Systems

High Efficiency Series

POWERSENSE T5HO DIM

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 >42 kHz
- QUICKSENSE ballast technology (end-of-lamp-life sensing)
- QUICK 60+ ballast and lamp warranty
- RoHS compliant
- Lead-free solder and manufacturing process

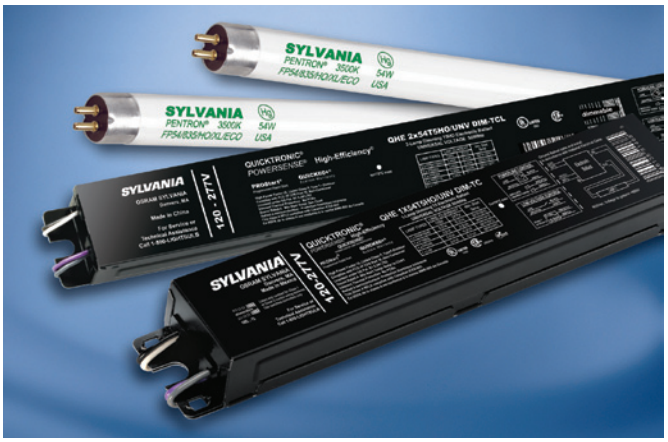
Application Information

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.

QUICK 60+® Warranty: Setting the standard for quality, QUICKTRONIC POWERSENSE T5HO ballasts are covered by a QUICK 60+® warranty, the first comprehensive system warranty in the industry.

System Information

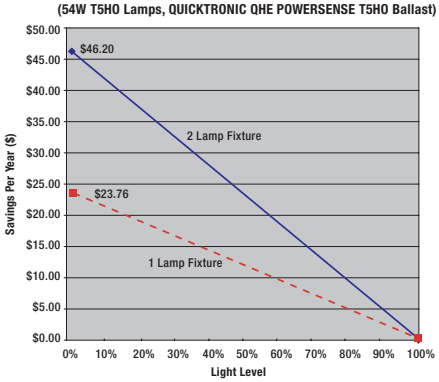
QUICKTRONIC POWERSENSE ballasts operate from standard low voltage (0-10VDC) controllers or compatible 2-wire power line fluorescent dimmers, making them ideal for individual office lighting or automated building applications, both in new construction and retrofit projects.

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 it's 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.

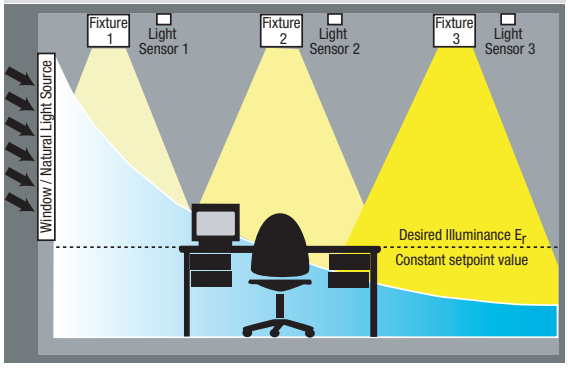
All QUICKTRONIC POWERSENSE ballasts include a line voltage protection circuit, which protects the ballast in the event that line voltage is inadvertently applied to the low voltage control inputs.

SAVINGS PER YEAR* vs LIGHT LEVEL
(54W T5HO Lamps, QUICKTRONIC QHE POWERSENSE T5HO Ballast)



*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)

DAYLIGHT HARVESTING SCENARIO



SEE THE WORLD IN A NEW LIGHT SYLVANIA

SPECIFICATION DATA

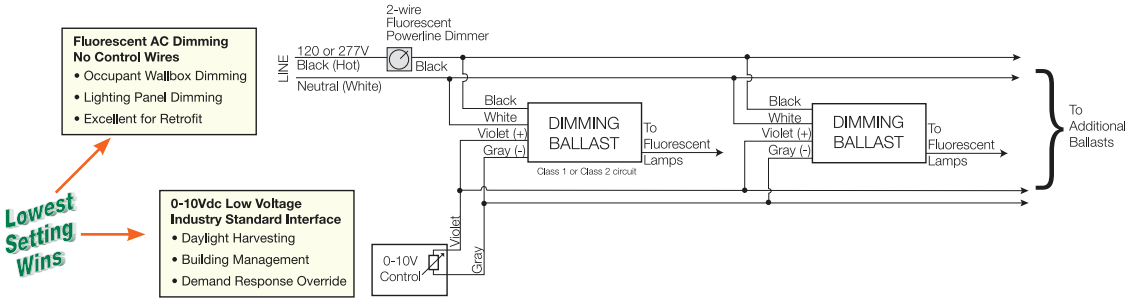
Catalog #	Date	Type
Project	Prepared by	
Comments		

POWERSENSE
High Efficiency

QUICKTRONIC® POWERSENSE® Dimming UNV – Dimming Control Wiring Examples

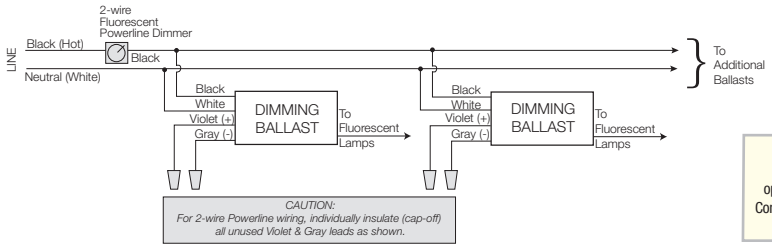
Industry's 1st Ballast That Allows POWERLINE Fluorescent Control *AND* 0-10Vdc Control Input Simultaneously

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.

Examples: Leviton IPX series operate as single pole or 3-way models. Available in 120V and 277V models. Leviton 6668-1W (white) 120V single pole fluorescent dimmer.

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

0-10V DC Control with POWERSENSE Ballasts

Examples: Lithonia model ISD BC or Leviton IP 710 Series (These 0-10V dc, 120/277V models can be wired for single pole application (shown); these models can also be wired for 3-way applications.)

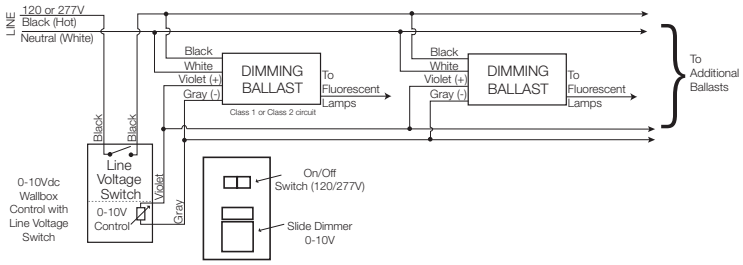
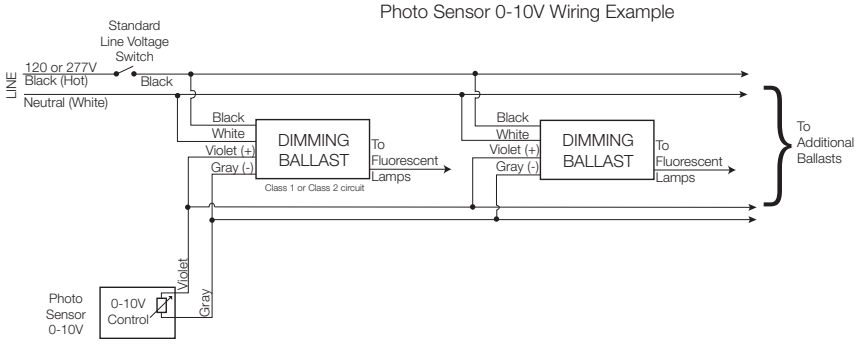


Photo Sensor 0-10V Wiring Example

0-10V DC Control with POWERSENSE Ballasts

Photo Sensor 0-10V Wiring Example



the system solution®

SPECIFICATION DATA

Catalog #	Date	Type
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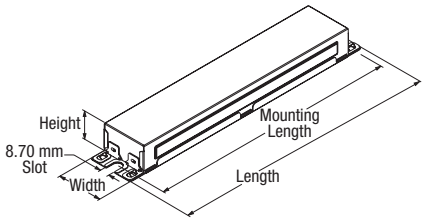
QUICKTRONIC® POWERSENSE® Controls Information

Controls Manufacturer	Fluorescent Powerline Controllers	0-10 VDC Controllers	Photo Cells	Occupancy Sensors	Building Management Systems
Acuity Brand Controls www.acuitybrandscontrols.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 manfacturer 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

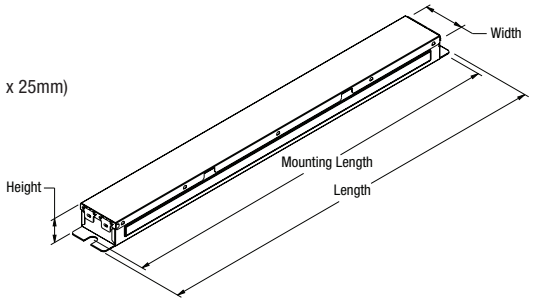
Dimensions:
TC enclosure
Overall: 9.5" L x 1.68" W x 1.0" H (241 x 43 x 25 mm)
Mounting: 8.90" (226 mm)
Weight: 1.1 lbs each (500 g)

Wiring:
Leads Only



Dimensions:
TCL 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.

POWERSENSE

High Efficiency

Controls Guide

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

T8 POWERSENSE Dimming Ballast*
50705 QHE 1x32T8/UNV DIM-TC
50707 QHE 2x32T8/UNV DIM-TC
50714 QHE 3x32T8/UNV DIM-TCL
50716 QHE 4x32T8/UNV DIM-TCL

T5 POWERSENSE Dimming Ballast
50725 QHE 1x28T5/UNV DIM-TC
50726 QHE 2x28T5/UNV DIM-TCL*

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

* QHE formerly QTP models

POWERSENSE CONTROLS

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

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SPECIFICATION DATA

Catalog #	Date	Type
Project	Prepared by	
Comments		

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

RoHS compliant

Item Number	OSRAM SYLVANIA Description	Input Current (AMPS)	Lamp Type	Rated[1] Lumens (lm)	No. of Lamps	Ballast Factor (BF)	System Lumens	Mean Lumens	Input[2] Power (W) 120V	Input[2] Power (W) 277V	System Efficacy (lm/W)	BEF[3]
51468 ✪	QHE1x54T5HO/UNV DIM-TC *10-pack*	0.51/0.21	FP54T5HO	5000	1	1.00 0.01	5000 50	4650 45	62 8	60 8	83	1.67
		0.51/0.21	FT55DL	4800	1	1.00 0.01	4800 45	4465 40	62 8	60 8	80	1.67
		0.51/0.21	L58	5200	1	1.00 0.01	5200 50	4835 45	62 8	60 8	87	1.67
		0.51/0.21	FPC55	4000	1	1.00 0.01	4000 40	3725 35	62 8	60 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 15	116 15	86	0.86
		1.00/0.42	FT55DL	4800	2	1.00 0.01	9600 95	8930 90	120 15	116 15	83	0.86
		1.00/0.42	L58	5200	2	1.00 0.01	10,400 105	9670 95	120 15	116 15	90	0.86
		1.00/0.42	FPC55	4000	2	1.00 0.01	8000 80	7440 75	120 15	116 15	69	0.86

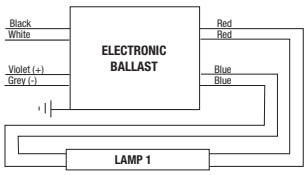
1 At 35°C lamp ambient temperature.
2 System Efficacy calculation based on lowest input power.
3 Ballast Efficiency Factor (BEF) shown = (Ballast Factor x 100) divided by Input Power (note: calculation based on lowest wattage value)
✪ Preliminary specifications. Please contact OSRAM SYLVANIA for additional information.

Installation Notes

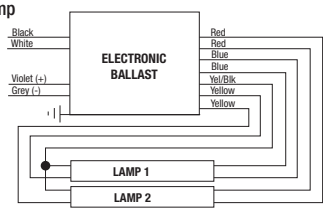
Output Wiring: Lamp wiring for dimming ballasts can differ significantly from non-dimming ballasts and from other manufacturers dimming ballasts. Take care to connect lamp lead wires as shown on the applicable ballast diagram.

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

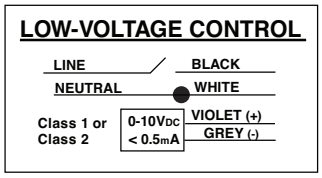
1 lamp

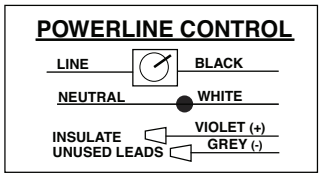


2 lamp



Input & Control Wiring Options:





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: >42 kHz
Lamp CCF: Less than 1.7
Starting Temp: 50°F/10°C minimum[5]
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 Compliant[4]
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 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.

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.

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Specifications subject to change without notice.

POWERSENSE T5HO DIM