



Signa Electronic Sign Ballasts

The Unmistakable Sign of Leadership in Electronic Technology

Signa's newest electronic sign ballasts feature parallel lamp operation and offer the convenience of universal input voltage (108–305 volts) as a standard feature. This technology incorporates the intelligence to sense the input voltage and regulate the input current to the ballast so that the output control to the lamps remains constant across the entire range (108–305 volts). Universal voltage is installer-friendly and eliminates the costly problem of miswiring ballasts and signs with incorrect voltage. This also reduces the inventory requirements for sign manufacturers, distributors and end users—and ensures you have the right voltage ballasts for sign applications every time.

With parallel lamp operation, when one lamp fails, the other lamps remain ignited so that signs are still illuminated. Because our electronic sign ballasts feature a traditional can and mounting footprint, there is no need to modify existing sign layouts. The ballasts' instant start technology reduces the number of lamp leads and simplifies wiring. Industry-standard wiring configurations with red and blue leads eliminate installation confusion. Multiple lamp use allows sign manufacturers to better illuminate signs by using different combinations of lamps on each circuit.

All Signa ballasts are manufactured in UL Outdoor "Type-2" cans and are rated "HL" for hazardous locations. Type-2 cans do not require the use of a separate metal ballast enclosure. The Signa family of electronic ballasts includes 2-, 4- and 6-lamp instant start models for T12HO lamps up to 8 feet in length and T8HO lamps up to 6 feet in length. Also available is a ballast for up to four 10-foot T12HO or 8-foot T8HO lamps.



Features and Benefits

Universal input voltage

- Installer-friendly
- Reduces inventory costs
- Ideal for international projects

Parallel lamp operation

- When one lamp fails, other lamps remain lit keeping the sign illuminated
- Provides for ballast application flexibility

Simplified wiring

- Industry-standard red and blue leads simplify wire management
- Fewer connections for quicker installation
- Less wires allow for easier raceway routing

Multiple lamp use

- Operate multiple lamps in series on one circuit
- Improved sign lighting flexibility

Four units cover all applications from 2 to 48 feet in total length

- Three models operate T12HO lamps up to eight-feet
- One 4-lamp model specifically designed for 9-10 foot amps
- Cold temperature starting down to -20° F
- Instant start operation
- Maximizes energy savings—up to an additional 25% energy savings over standard magnetic sign ballasts

UL "Type-2" cans for improved durability and resistance to rust

- UL "HL" rated for hazardous locations
- Lightweight for easy installation
- cULus listed

Universal Lighting Technologies, Inc. • 26 Century Blvd., Suite 500 • Nashville, TN 37214-3683 • (615) 316-5100
www.signasign.com





Electronic Sign Ballasts

Catalog Number	Number of Lamps	Total Lamp Footage	Start Temp (°F)	Input Voltage	Max. Input Watts	Max. Line Current (A)	Wiring Diagram
Ballasts for T12HO lamps up to 8 feet in length or T8HO lamps up to 6 feet in length							
ESB216-12	1 or 2	2'min. - 16' max.	-20°	120	134	1.12	1, 4*
				277	130	0.47	
ESB432-14	1, 2, 3 or 4	4'min. - 32' max.	-20°	120	280	2.34	2, 4*
				277	274	0.99	
ESB848-46	4, 5 or 6	8'min. - 48' max.	-20°	120	408	3.41	3, 4*
				277	395	1.47	
Ballasts for T12HO lamps up to 10 feet in length or T8HO lamps up to 8 feet in length							
ESB1040-14	1, 2, 3 or 4	10'min. - 40' max.	-20°	120	341	2.85	2, 4*
				277	331	1.25	

Dimensions

Catalog Number	Case Length	Overall Length	Mounting Length	Height	Width	Weight (lbs)
ESB216-12	10.58	11.75	11.14	1.78	3.13	4.2
ESB432-14	13.19	14.31	13.75	2.67	3.19	7.4
ESB848-46	15.56	16.68	16.12	2.67	3.19	9.7
ESB1040-14	15.56	16.68	16.12	2.67	3.19	10

*Multiple lamp use varies by model, consult with www.signasign.com for complete specification information

Lead Lengths (inches)

Black	White	Reds	Blues
24	24	120	120



It's Easy To Reach Us...

Phone: 1.615.316.5100

Fax: 1.800.206.0035

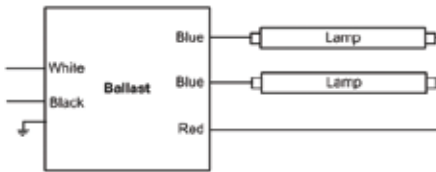
Website: www.unvlt.com
www.signasign.com

Email: webmaster@unvlt.com

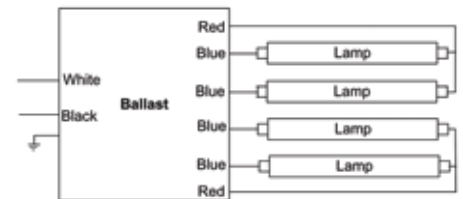
Universal Lighting Technologies, Inc.
26 Century Blvd., Suite 500
Nashville, TN 37214-3683

For Technical Engineering Services (TES), application support and warranty information, call 1.800.BALLAST. All specification information is subject to change without notification.

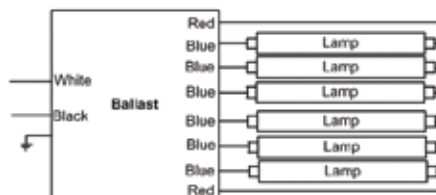
Wiring Diagrams



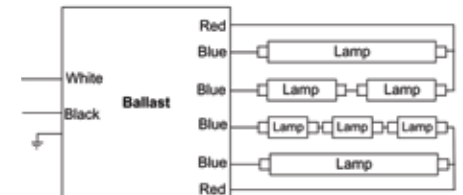
(1) 2-lamp wiring



(2) 4-lamp wiring



(3) 6-lamp wiring



(4) Multiple lamp use*

ESB216-12

APPLICATION and PERFORMANCE SPECIFICATION

Electronic ballast for (2/1) T12HO lamps up to 8ft long or any combination thereof from 2-16 ft.
 Electronic ballast for (2/1) T8HO lamps up to 6ft long or any combination thereof from 4-12 ft.
 Electronic ballast for use with (6-1) T12HO/T8HO lamps or any combination of lamps in circuit as long as total length on each circuit does not exceed 7 ft.

- Line Voltage: 120 to 277 vac, $\pm 10\%$, 50/60Hz
- Parallel Lamp Operation
- Instant Start Operation
- Active Power Factor Correction

*60 Hz data

Lamp		Lamp Footage		Volts	Max Input Power (Watts)	Nominal Line Current (Amps)	Power Factor	THD	Crest Factor
Type	#	Min	Max						
T12HO	2,1	2	16	120	134	1.12	>.90	<10%	<1.7
T12HO	2,1	2	16	277	130	0.47	>.90	<10%	<1.7
T8HO	2,1	4	12	120	125	1.04	>.90	<10%	<1.7
T8HO	2,1	4	12	277	121	0.44	>.90	<10%	<1.7

Application and Performance Specification Information Subject to Change without Notification.

Power factor >.80 and THD <25% for 2ft application, THD <15% for 3-4ft applications

Performance:

- Meets FCC Part 18 (Class A) for EMI and RFI non-consumer limits

Safety:

- No PCB's
- cUL_{US} Listed (Class P, Type HL, Type 2 Outdoor)
- CSA Listed

Application:

- Minimum Starting Temperature: -20° F, -29° C
- Maximum Case Temperature: 176° F, 80° C
- Sound Rated: A

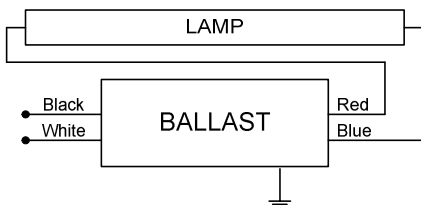
Physical Parameters:

- Length: 11.75"
- Width: 3.24"
- Height: 1.78"
- Weight: 4.2 lbs
- Carton Quantity: 1 piece
- Lead length: Black, White 24" ($\pm 1"$)
Red, Blue 120" ($\pm 1"$)

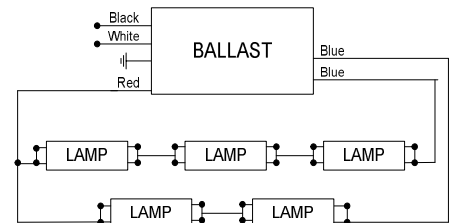
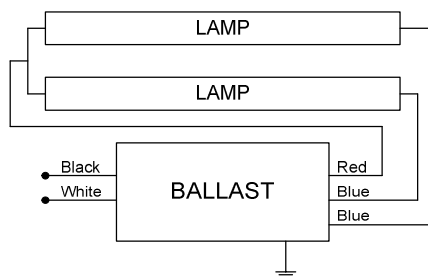
Warranty:

Universal Lighting Technologies warrants to the purchaser that each electronic ballast will be free from defects in material or workmanship for a period of 4 years from date of manufacture when properly installed and under normal conditions of use. Call **1-800-BALLASTx800** for technical assistance.

Manufactured in North America



For 1-lamp application, cap blue lead



Multiple Lamp Application

ESB432-14

APPLICATION and PERFORMANCE SPECIFICATION

Electronic ballast for 4, 3, 2 and 1 T12HO lamps up to 8ft long or any combination thereof from 4-32 ft.
 Electronic ballast for 4, 3, 2 and 1 T8HO lamps up to 6ft long or any combination thereof from 4-24 ft.
 For use with T12HO/T8HO lamps in any combination as long as total length on each circuit does not exceed 7 ft.

- Line Voltage: 120 - 277 vac, $\pm 10\%$, 50/60Hz
- Instant Start
- Parallel Lamp Operation
- Active Power Factor Correction

*60 Hz data

Lamp		Lamp Footage		Volts	Max Input Power (Watts)	Nominal Line Current (Amps)	Power Factor	Harmonic Total	Crest Factor
Type	#	Min	Max						
T12HO	4,3,2,1	4	32	120	280	2.34	>.90	<10%	<1.7
T12HO	4,3,2,1	4	32	277	274	0.99	>.90	<10%	<1.7
T8HO	4,3,2,1	4	24	120	257	2.14	>.90	<10%	<1.7
T8HO	4,3,2,1	4	24	277	250	0.90	>.90	<10%	<1.7

Application and Performance Specification Information Subject to Change without Notification.
 Power factor >.85 for 4-5ft applications, THD <20% for 4-12ft applications

Performance:

- Meets ANSI Standard C82.11-1993
- Meets FCC Part 18 (Class A) for EMI and RFI Non-Consumer Limits

Safety:

- No PCB's
- cUL_{US} Listed (Class P, Type HL, Type 2 Outdoor)
- CSA Listed

Application:

- Minimum Starting Temperature: -20° F, -29° C
- Maximum Case Temperature: 176° F, 80° C
- Sound Rated: A

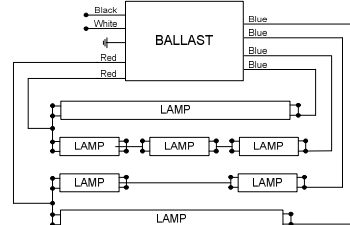
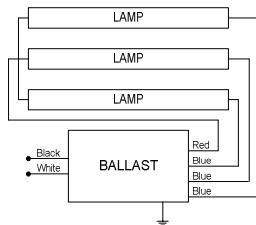
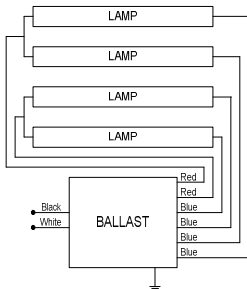
Physical Parameters:

- Length: 14.31"
- Width: 3.24"
- Height: 2.67"
- Weight: 7.4 lbs
- Carton Quantity: 1 piece
- Lead length: Black, White 24" ($\pm 1"$)
Red, Blue 120" ($\pm 1"$)

Warranty:

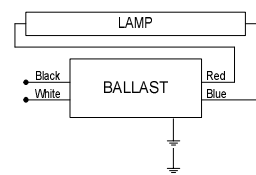
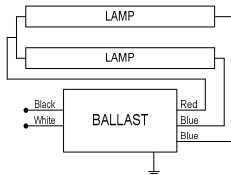
Universal Lighting Technologies warrants to the purchaser that each electronic ballast will be free from defects in material or workmanship for a period of 4 years from date of manufacture when properly installed and under normal conditions of use. Call **1-800-BALLASTx800** for technical assistance.

Manufactured in North America



Multiple Lamp Application

For 3-lamp, 2-lamp and 1-lamp application individually cap red and blue leads



ESB848-46

APPLICATION and PERFORMANCE SPECIFICATION

Electronic ballast for (6/5/4) T12HO lamps up to 8ft long or any combination thereof from 8-48 ft.

Electronic ballast for (6/5/4) T8HO lamps up to 6ft long or any combination thereof from 16-36 ft.

Electronic ballast for T12HO/T8HO lamps in any combination as long as total length on each circuit does not exceed 7 ft. Not to be used with less than 4 circuits.

- Line Voltage: 120 to 277 vac, $\pm 10\%$, 50/60Hz
- Instant Start operation
- Parallel Lamp Operation
- Active Power Factor Correction

*60 Hz data

Lamp		Lamp Footage		Volts	Max Input Power (Watts)	Nominal Line Current (Amps)	Power Factor	THD	Crest Factor
Type	#	Min	Max						
T12HO	6,5,4	8	48	120	420	3.50	>.99	<10%	<1.7
T12HO	6,5,4	8	48	277	415	1.50	>.97	<10%	<1.7
T8HO	6,5,4	16	36	120	380	3.17	>.99	<10%	<1.7
T8HO	6,5,4	16	36	277	380	1.37	>.96	<10%	<1.7

Application and Performance Specification Information Subject to Change without Notification.

Performance:

- Meets ANSI standard C82.11-1993
- Meets FCC Part 18 (Class A) for EMI and RFI non-consumer limits

Application:

- Minimum Starting Temperature: -20° F, -29° C
- Maximum Case Temperature: 176° F, 80° C
- Sound Rated: A

Safety:

- No PCB's
- cUL_{US} Listed (Class P, Type HL, Type 2 Outdoor)
- CSA Listed

Physical Parameters:

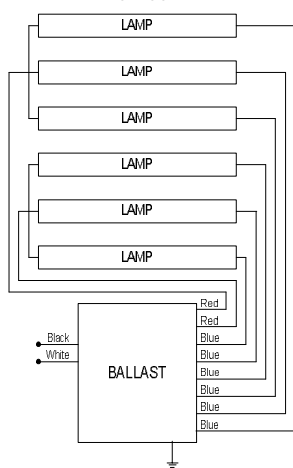
- Length: 16.68"
- Width: 3.24"
- Height: 2.67"
- Weight: 9.7 lbs
- Carton Quantity: 1 piece
- Lead length: White, Black 24" ($\pm 1"$)
Red, Blue 120" ($\pm 1"$)

Warranty:

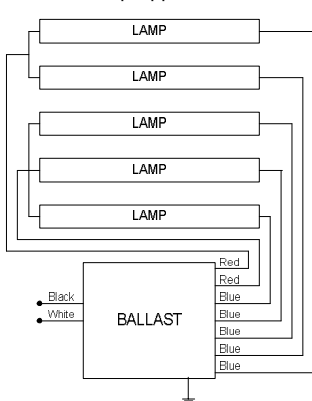
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Manufactured in North America

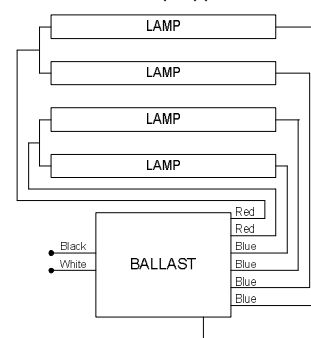
6 Lamp Application



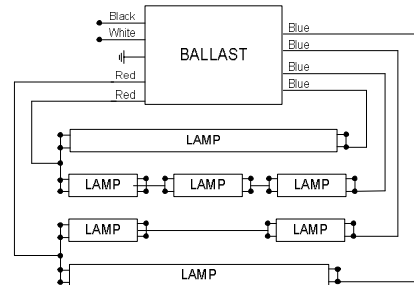
5 Lamp Application



4 Lamp Application



For 5-lamp and 4-lamp applications, individually cap blue leads



Multiple Lamp Application

ESB1040-14

APPLICATION and PERFORMANCE SPECIFICATION

Electronic ballast for 4, 3, 2 and 1 F120T12HO lamps

Electronic ballast for 4, 3, 2 and 1 Lamp F96T8HO lamps

Electronic ballast for T12HO/T8HO lamps in any combination as long as total length on each circuit does not exceed 9 ft

- Line Voltage: 120 - 277 vac, $\pm 10\%$, 50/60Hz
- Full Parallel Lamp Operation
- Instant Start Operation
- Active Power Factor Correction

*60 Hz data

Lamp		Lamp Footage		Volts	Max Input Power (Watts)	Nominal Line Current (Amps)	Power Factor	Harmonic Total	Crest Factor
Type	#	Min	Max						
F120T12HO	4,3,2,1	10	40	120	341	2.85	>.99	<10%	<1.7
F120T12HO	4,3,2,1	10	40	277	331	1.25	>.95	<10%	<1.7
F96T8HO	4,3,2,1	8	32	120	321	2.69	>.99	<10%	<1.7
F96T8HO	4,3,2,1	8	32	277	313	1.19	>.95	<10%	<1.7

Application and Performance Specification Information Subject to Change without Notification.

Performance:

- Meets FCC Part 18 (Class A) for EMI and RFI Non-Consumer Limits

Safety:

- No PCB's
- cUL_{US} Listed (Class P, Type HL, Type 2 Outdoor)
- CSA Listed

Application:

- Minimum Starting Temperature: -20° F, -29° C
- Maximum Case Temperature: 176° F, 80° C
- Sound Rated: A

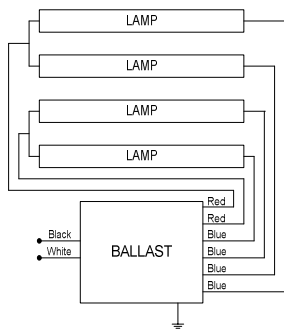
Physical Parameters:

- Length: 16.68"
- Width: 3.24"
- Height: 2.67"
- Weight: 10 lbs
- Carton Quantity: 1 piece
- Lead length: Black, White 24" ($\pm 1"$)
Red, Blue 120" ($\pm 1"$)

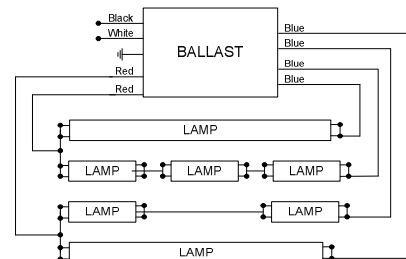
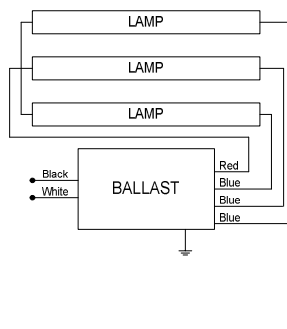
Warranty:

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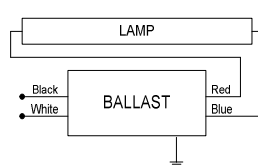
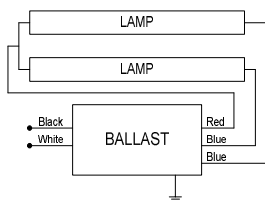
Manufactured in North America



For 3-lamp, 2-lamp and 1-lamp application individually cap red and blue leads



Multiple Lamp Application





Limited Warranty

Universal Lighting Technologies, Inc., 26 Century Blvd. Suite 500, Nashville, TN 37214-3683, 1-800 BALLAST, (hereinafter called "Universal") warrants to the purchaser that its ballasts and neon transformers, (hereinafter called "Lighting Products"), will be free from defects in material and workmanship for the specified warranty periods beginning from the date of manufacture.

Standard Universal® Electromagnetic, Fluorescent & H.I.D. Ballasts	24 months
ESB Signa™ Electronic Sign Ballasts	48 months
Universal® or Signa™ Standard Fluorescent Sign Ballasts	24 months
Signa™ MSB-3 Series Fluorescent Sign Ballasts	36 months

*Reference max case temperatures on product spec sheets

If it appears within the specified warranty period that any Universal Lighting Product does not meet the warranty specified above, Universal, at its option, will either repair or replace the Lighting Product at Universal's expense. Universal extends this limited warranty to the original or first end-user purchaser only. This warranty is conditional based upon proper storage, installation, use and maintenance.

This warranty is not applicable to, and Universal makes no warranty whatsoever with respect to, any Lighting Product not installed and operated in accordance with the National Electric Code (NEC), the Standards for Safety of Underwriters Laboratories, Inc. (UL), Standards for the American National Standards Institute (ANSI) or, in Canada, the Canadian Standards Association (CSA). Nor is this warranty applicable to any Lighting Product which has not been installed and operated in accordance with Universal's specifications and connection diagrams or Lighting Products which have been subjected to abnormal operating conditions. This includes, but is not limited to, excessive temperatures as specified in Universal's published literature. The conditions for any tests (to be) performed on Lighting Products which are claimed to have not performed in accordance with the terms of the warranty shall be mutually agreed upon in writing and Universal may be represented at any such tests.

NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY BEYOND THE AFOREMENTIONED WARRANTY PERIOD. The foregoing warranty is exclusive of all other statutory, written or oral warranties and no other warranties of any kind, statutory or otherwise, are given or herein expressed. Warranty claims are to be made in accordance with Universal's published Warranty Service Program which is available upon request. This warranty sets forth Universal's obligations and responsibilities regarding its Lighting Products and is the exclusive remedy available to the claimant.

LIMITATIONS OF LIABILITY, Under no circumstances, whether as a result of breach of contract, breach of warranty, tort, strict liability or otherwise, will Universal be liable for consequential, incidental, special or exemplary damages, including, but not limited to, loss of profits, loss of use or damage to any property or equipment, cost of capital, cost of substitute product, facilities or services, down time costs or claims of claimant's customers. Universal's liability for all claims of any kind or for any loss or damages arising out of, resulting from or concerning any aspect of this warranty or from the Lighting Products or services furnished hereunder, shall not exceed the price of the specific Lighting Product which gives right to the claim, except in accordance with Universal's Technical Engineering Service (TES) Program.

STATE LAW RIGHT, Some states do not allow the exclusion or limitation of consequential or incidental damages or the duration of time for an implied warranty. Therefore, the limitations or exclusions of consequential or incidental damage and implied warranties may not apply to certain claimants. This warranty provides the claimant with specific legal rights and claimants may have other rights that vary from state to state.

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