



# Switching Made Easy

## Switching from magnetic to electronic T12 is easy with Philips Advance electronic T12 ballasts

The Department of Energy (DOE) Ballast Ruling that became effective in 2005, prevents the manufacture of magnetic replacement ballasts sold through electrical distribution after July 1, 2010. Philips Advance offers a full line of electronic options that exceed the DOE performance requirements for T12 ballasts.

Reliable and energy-efficient, they offer proven performance and up to 30%\* energy savings relative to standard magnetic ballasts. Save \$4 or more per year in a typical 2-lamp application!\*\*

Whether your application calls for rapid start, slimline, or high output lamps, Philips Advance offers a broad range of electronic ballasts for the maintenance and repair of existing T12 fixtures.

By designing our T12 electronic ballasts with the same mounting and wiring configurations as your current T12 magnetic models\*\*\*, Philips Advance makes converting to an electronic fixture effortless.

\* Based on input watts of Philips Advance REL-1S40-SC (35 watts) and R-140-TP (50 watts) both operating a 40W lamp.

\*\* Based on 10 watts saved at \$.10/kwh operated 4,000 hrs/yr.

\*\*\* T12 Slimline models require slightly different wiring.

† Not affected by the DOE ballast legislation.

### IntelliVolt™ versions now available

- 2-lamp operation of 4' 34/40W T12 lamps
- 1/2-lamp operation of 8' 60/75W T12 slimline lamps
- 2-lamp operation of 8' 95/110W T12/HO lamps†

### Improved efficiency over magnetic counterparts

- Potential savings of up to 30% over magnetic ballasts\*

### Lighter weight with the same mounting and wiring configuration\*\*\*

- Simplified Installation

### Quieter operation

- No more annoying hum from magnetic ballast

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No. of Lamps	Input Volts	Lamp Starting Method	Ballast Family	Catalog Number	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Line Current (Amps)	Min. Starting Temp. (°F /°C)	Dim.	Wiring Diag.
<b>F34T12, F34T12/U (34W)</b>											
1	120	RS	AmbiStar	RELB-1S40-SC	35	0.92	20	0.29	50	B	20
	277		Standard	VEL-1S40-SC	31	0.88		0.12			
2	120-277	RS	Centium	ICN-2S40-N	62 - 61	0.85	10	0.55 - 0.23	60	D	21A
	120	RS	AmbiStar	RELB-2S40-SC	62	0.85	20	0.53	50	B	21
<b>F40T12, F40T12/U (40W)</b>											
1	120	RS	AmbiStar	RELB-1S40-SC	38	0.88	20	0.31	50	B	20
	277		Standard	VEL-1S40-SC	35	0.85		0.13			
2	120-277	RS	Centium	ICN-2S40-N	72 - 70	0.85	10	0.62 - 0.26	50	D	21A
	120	RS	AmbiStar	RELB-2S40-SC	72	0.85	20	0.62		B	21
<b>F96T12/ES (60W)</b>											
1	120-277	IS	Centium	ICN-2P60-SC	70-68	1.04	10	0.53-0.24	60/16	B	64-A
2	120-277				105-103	0.89	10	0.88-0.38			
<b>F96T12 (75W)</b>											
1	120-277	IS	Centium	ICN-2P60-SC	84-82	1.04	10	0.55-0.25	0/-18	B	64-A
2	120-277				137-135	0.90		1.17-0.50			
<b>F96T12/HO (95W)</b>											
1	120	RS	Centium	ICN-2S110-SC	78-77	0.91	10	1.10	60/16	B	39A
	277							0.48			
2	120				154-151	0.89		1.74			21A
	277							0.76			
<b>F96T12/HO (110W)</b>											
1	120	RS	Centium	ICN-2S110-SC	100-92	0.91	10	1.10	-20 / -29	B	39A
	277							0.48			
2	120				190-194	0.89		1.74			21A
	277							0.76			

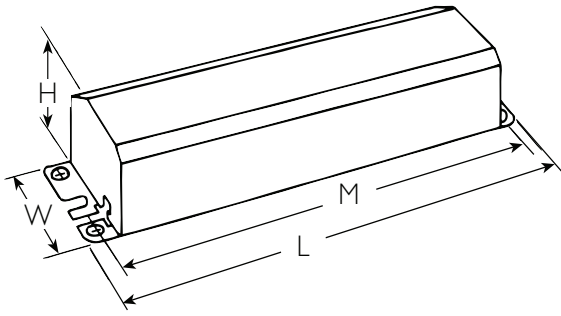


Fig. A  
9.5"(L) x 2.3"(W) x 1.5"(H) x 8.9"(M)

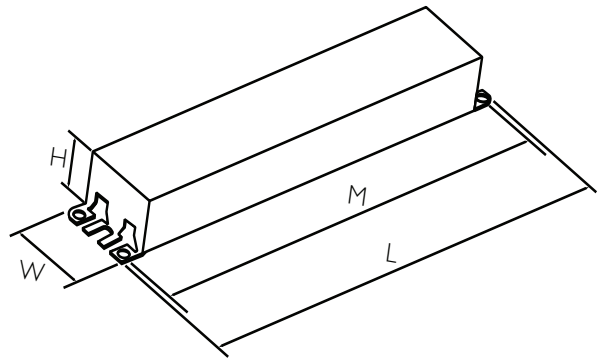


Fig. B  
9.5"(L) x 1.7"(W) x 1.18"(H) x 8.9"(M)

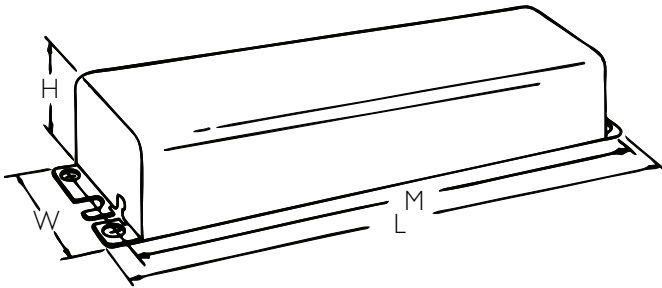


Fig. C  
11.75"(L) x 2.87"(W) x 1.78"(H) x 11.14"(M)

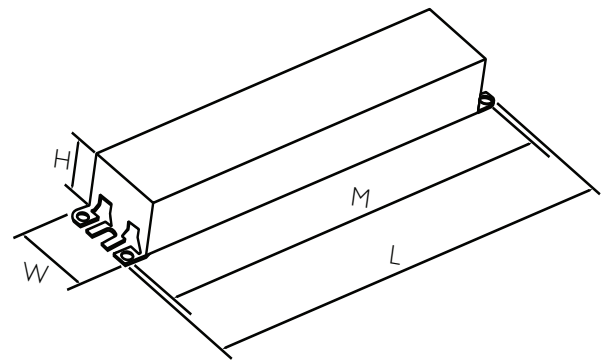
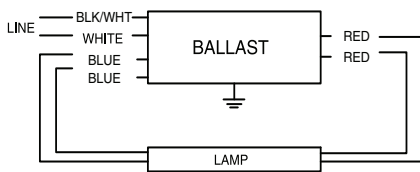
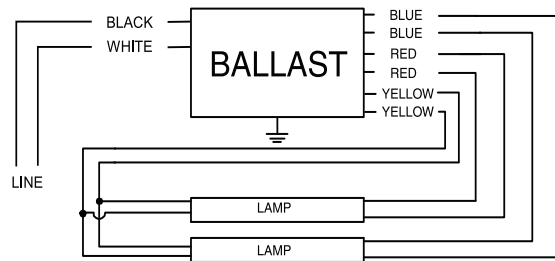


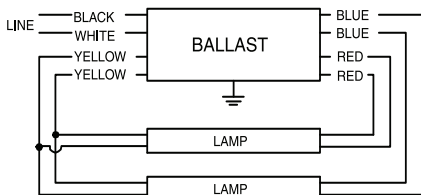
Fig. D  
9.5"(L) x 1.3"(W) x 1.0"(H) x 8.9"(M)



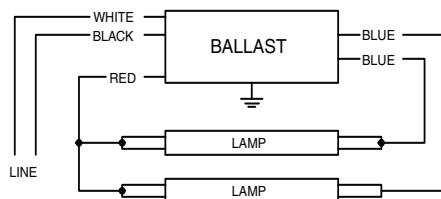
Diag. 20



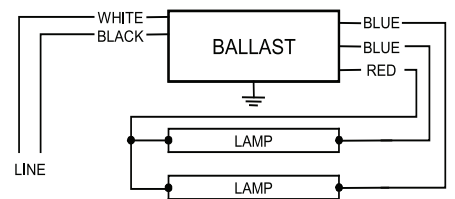
Diag. 21A



Diag. 21



Diag. 64



Diag. 64A

# Ballast Specification for Standard Electronic Fluorescent

## Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads color-coded per ANSI C82.11.

## Section II - Performance Requirements

- 2.1 Ballast shall be \_\_\_\_\_ (Instant or Rapid) Start.
- 2.2 Ballast shall provide Independent Lamp Operation (ILO) for Instant Start ballasts allowing remaining lamp(s) to maintain full light output when one or more lamps fail.
- 2.3 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.4 Ballast shall operate from 60 Hz input source of 120V, 277V or 347V as applicable with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast. IntelliVolt models shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.5 Ballast shall be high frequency electronic type and operate lamps at a frequency between 20 kHz and 30 kHz or above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.6 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.7 Ballast shall have a minimum ballast factor for primary lamp application as follows: 0.75 for Low Watt, 0.85 for Normal Light Output, and 1.20 for High Light.
- 2.8 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.9 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models and THD of less than 10% for Centium models when operated at normal line voltage with primary lamp.
- 2.10 Ballast shall have a Class A sound rating for all 4-foot lamp and smaller.
- 2.11 Ballast shall have a minimum starting temperature of \_\_\_\_\_ [10°C (50°F) for standard T12 and Slimline T12 lamps, -29°C (-20°F) for T12/HO lamps] for primary lamp application. Ballast shall have a minimum starting temperature of 60°F (16°C) energy-saving T12 lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

## Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type I Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.4 Ballast shall comply with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).

## Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a \_\_\_\_\_ warranty from date of manufacture against defects in material or workmanship for operation at a maximum case temperature of \_\_\_\_\_ (Go to our web site for up-to-date warranty information: [www.philips.com/advancewarranty](http://www.philips.com/advancewarranty)).
- 4.3 Manufacturer shall have a twenty-year history of producing electronic ballasts for the North American market.
- 4.4 Ballast shall be Philips Advance part # \_\_\_\_\_ or approved equal.



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