

# ELECTRONIC LOW VOLTAGE TRANSFORMERS

# HATCH

Precision Power. Perfect Light.



BALLASTS, DRIVERS, TRANSFORMERS & LAMPS FOR ALL LIGHTING APPLICATIONS

# Electronic Transformers

Electronic transformers were among the first products ever offered by Hatch to the lighting industry. They have since proven to be the most reliable transformers available in the marketplace. Hatch low voltage transformers have been engineered and perfected over three decades to provide industry leading performance and flexibility for all your low voltage lighting needs.



## HATCH

### All Hatch Electronic Transformers Feature:

- Industry Leading Reliability
- Moisture Resistance
- No Emission of Audible Noise
- Low Harmonic Distortion
- High Power Factor
- Lightweight, Compact Designs and Configurations
- Small Case Sizes
- Fully Dimmable
- Interoperability With Most 120V Commercially Available Dimmers (Note: three-wire dimmers labeled for electronic transformers are recommended for optimum performance)

[www.hatchlighting.com](http://www.hatchlighting.com)

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To view complete online Electronic Transformer specifications, scan this barcode with your Smartphone.

Don't have a scanning App? Search the Apple App Store, Android Market or BlackBerry App World for a barcode scanning application



# HATCH

## Technological Innovations In Electronic Transformers



### The Electronic Advantage

Electronic low voltage transformers are very small and light compared to magnetic low voltage transformers. In most cases, they are small enough that fixture manufacturers can often incorporate them within their lighting fixtures rather than having to mount them remotely. Even when not incorporated within the lighting fixture, an electronic low voltage transformer is very easy to install in a small hidden location. Electronic transformers also incorporate a number of advanced technologies like soft start and short circuit protection which prolong lamp life, protect lamps during power surges and safely shuts down lamps at the end of life.

### Soft Start Circuitry

First implemented in 1992, all Hatch Transformers use soft-start circuitry to maximize lamp life. The soft-start circuit ramps up the lamp filament voltage slowly when the lamp is cold, thus prolonging the life of the lamp.

### Electronic Short-Circuit Protection (ESP)

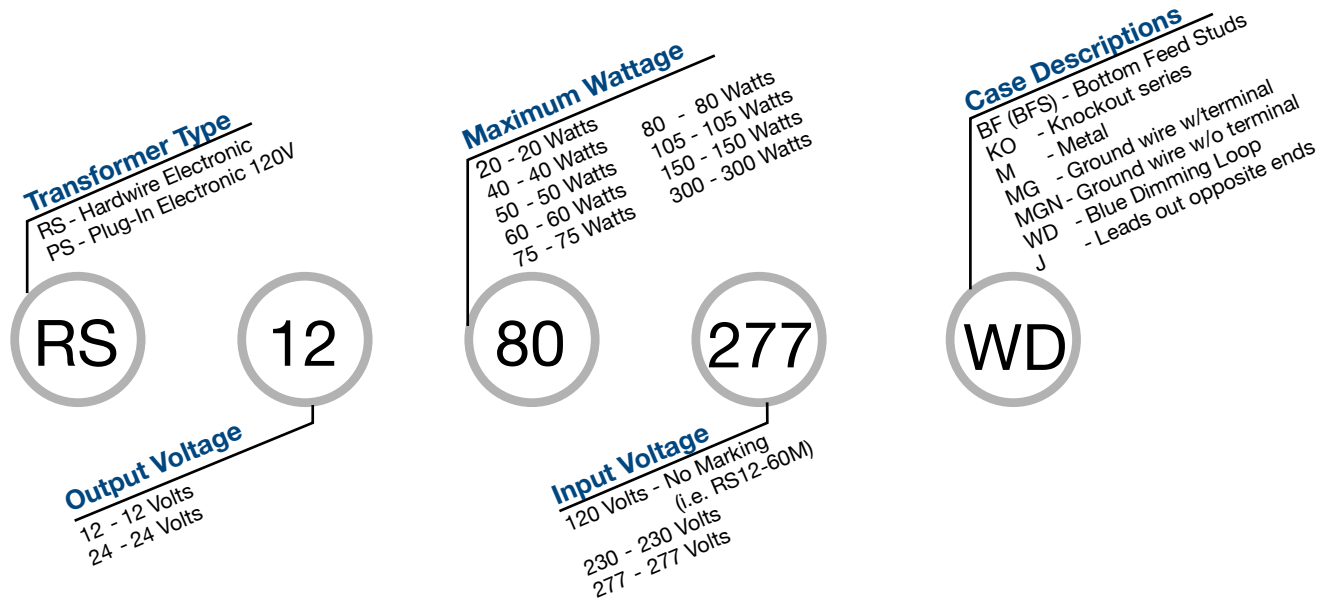
First implemented in 1991, all Hatch low voltage transformers utilize ESP, electronic short circuit and over load protection. The ESP sensing circuit will instantly shut down the output before any of the components are stressed if a short circuit or overload is detected. The transformer will automatically rest as soon as the fault is corrected.

## Certifications



### Understanding Hatch Transformer Part Numbers

Example Part Number: **RS12-80-277WD**



## Legacy Series Transformers

### Legacy Series Electronic Transformers

Since 1985 Hatch has developed several electronic transformers that have become the industry standard in several lighting fixtures that are still sold and produced today. While many of these transformers are no longer part of our current product catalog, we continue to sell and support several of our Legacy Series models. Hatch Legacy Series transformer models beginning with VS, VE, VJ, TS and RS 108 are available as replacement parts or in large quantities by special order.

#### VS – Plastic Case Hardwire Transformer 120V

VS12-60WNW      VS12-75WD  
 VS12-60WD      VS12-105J  
 VS24-60W        VS12-150JNW  
 VS12-60SGK     VS24-150J  
 VS12-75W

#### VE – Plastic Case Hardwire Transformer 230V

VE12-60W  
 VE12-75W

#### VJ – Plastic Case Hardwire Transformer 277V

VJ12-75W

#### TS – Touch Dimming Transformers

TS12-60S

#### RS108 Watt – Specialty Metal Case Hardwire Transformer

RS12-108  
 RS12-108BF  
 RS24-108  
 RS12-108-277  
 RS12-108-277BF

**F**ull electronic specifications for all Legacy Series Transformers can be found on our website.

## Hardwire Transformers

### 20, 40, 50, 60 & 80 Watt Models



### 20 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Style	Wire Diagram	Safety Listing
20	5	RS12-20	120	11.5	0.17	1.8	A	I	UL/C-UL Recognized, Class 2
		RS12-20BF					C		
		RS12-20-277*	277		A				
		RS12-20-277BF*			E				

**NOTE:** Must use a minimum of 10 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*277V Dimming is not recommended

### 40 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Style	Wire Diagram	Safety Listing
40	5	RS12-40	120	11.5	0.34	3.5	A	I	UL/C-UL Recognized, Class 2
		RS12-40BF					C		
		RS12-40-277*	277		A				
		RS12-40-277BF*			E				

**NOTE:** Must use a minimum of 10 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*277V Dimming is not recommended

Case Styles and Dimensions can be found on Pgs. 14-18 | Wire Diagrams can be found on Pgs. 19-20

## Hardwire Transformers

### 50 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Style	Wire Diagram	Safety Listing
50	5	RS12-50	120	11.5	0.42	4.4	A	I	UL/C-UL Recognized, Class 2
		RS12-50BF					C		
		RS12-50-277*	277		0.18		A		
		RS12-50-277BF*					E		

**NOTE:** Must use a minimum of 10 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*277V Dimming is not recommended

### 60 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Style	Wire Diagram	Safety Listing
60	5	RS12-60M	120	11.5	0.5	5.3	A	I	UL/C-UL Recognized, Class 2
		RS12-60MWD						II	
		RS12-60-BF					C	I	

**NOTE:** Must use a minimum of 10 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

### 80 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Style	Wire Diagram	Safety Listing
80	5	RS12-80M	120	11.5	0.67	7.0	A	I	UL/C-UL Recognized
		RS12-80MG					A	IV	
		RS12-80MGN					A	IV	
		RS12-80WD					A	III	
		RS12-80BFS					C	I	
		RS24-80	23.5	3.4	A	I			
		RS12-80-230	230	7.0	A	I			
		RS12-80-277*	277	11.5	0.29	7.0	A	I	
		RS12-80-277WD*					B	III	
		RS12-80-277BF*					E	I	

**NOTE:** Must use a minimum of 10 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*277V Dimming is not recommended

Case Styles and Dimensions can be found on Pgs. 14-18 | Wire Diagrams can be found on Pgs. 19-20

## Hardwire Transformers

### 105 Watt Models



### 105 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Style	Wire Diagram	Safety Listing
105	5	RS12-105	120	11.5	0.88	9.13	D	I	UL/C-UL Recognized
		RS12-105BF					E		
		RS12-105-277*	277		D				
		RS12-105-277BF*			E				

**NOTE:** Must use a minimum of 10 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*277V Dimming is not recommended



Case Styles and Dimensions can be found on Pgs. 14-18 | Wire Diagrams can be found on Pgs. 19-20

### 150 Watt Models



### 150 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Style	Wire Diagram	Safety Listing
150	10	RS12-150	120	11.5	1.25	13.05	F	II	UL/C-UL Recognized
		RS12-150BF					G		
		RS24-150		23.5		6.39	F		
		RS12-150-277*	277	11.5	0.55	13.05	F		
		RS12-150-277BF*					G		

**NOTE:** Must use a minimum of 50 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*277V Dimming is not recommended

### 300 Watt Models



### 300 WATT Rectangular

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Style	Wire Diagram	Safety Listing
300	50	RS12-300	120	11.5	2.5	26.1	H	I	UL/C-UL Recognized
		RS12-300BF					J		
		RS12-300-277*	277				K		

### 300 WATT Round

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Style	Wire Diagram	Safety Listing
300	50	RS12-300RL	120	11.5	2.5	26.1	I	VI	UL/C-UL Recognized

**NOTE:** Must use a minimum of 75 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

**NOTE FOR ROUND RL MODEL:** Heat sinking is highly recommended in order to maintain temperature requirements.

\*277V Dimming is not recommended

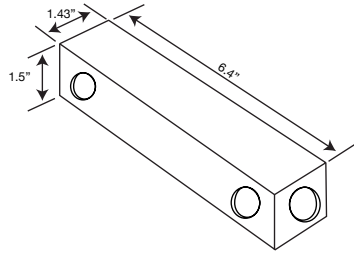
Case Styles and Dimensions can be found on Pgs. 14-18 | Wire Diagrams can be found on Pgs. 19-20

## Knockout Transformers

### About Hatch Knockout Transformers:

Hatch Knockout Transformers have been designed around our robust and reliable RS-Series transformers and are fully encased in custom steel enclosures. All knockout transformers come in both black and white steel cases with several knockout holes to facilitate custom wiring and mounting configurations. Models are available in 60, 150, 180, 300 & 360 Watts.

### KO 60 WATT

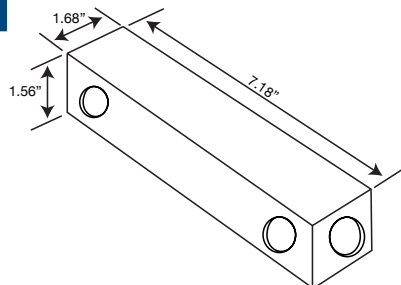


Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Color	Case Style	Wire Diagram	Safety Listing
60	5	RS12-60KO*	120	11.5	0.5	5	Black or White	L	II	ETL Listed, Class 2
		RS24-60KO*		23.5		2.5	Black or White			

**NOTE:** Must use a minimum of 10 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*White cases are designated by adding a "W" at the end of the part number (i.e. RS12-60KOW).

### KO 150 WATT



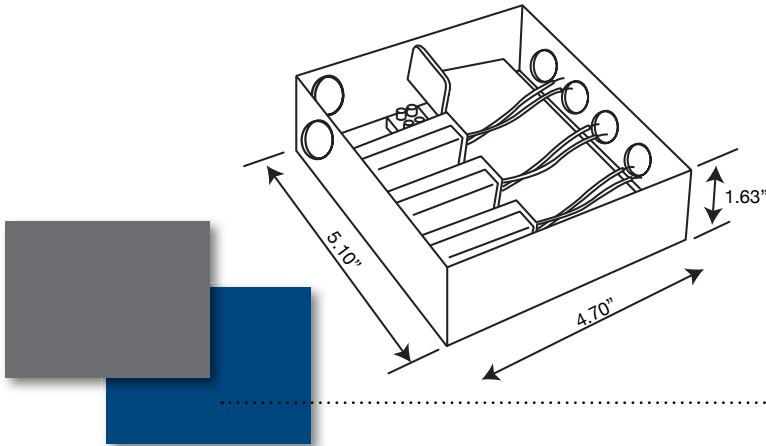
Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Color	Case Style	Wire Diagram	Safety Listing
150	10	RS12-150KO*	120	11.5	1.25	13.05	Black or White	M	II	ETL Listed
		RS24-150KO*		23.5		6.39	Black or White			

**NOTE:** Must use a minimum of 50 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*White cases are designated by adding a "W" at the end of the part number (i.e. RS12-60KOW).

Case Styles and Dimensions can be found on Pgs. 14-18 | Wire Diagrams can be found on Pgs. 19-20

## Knockout Transformers



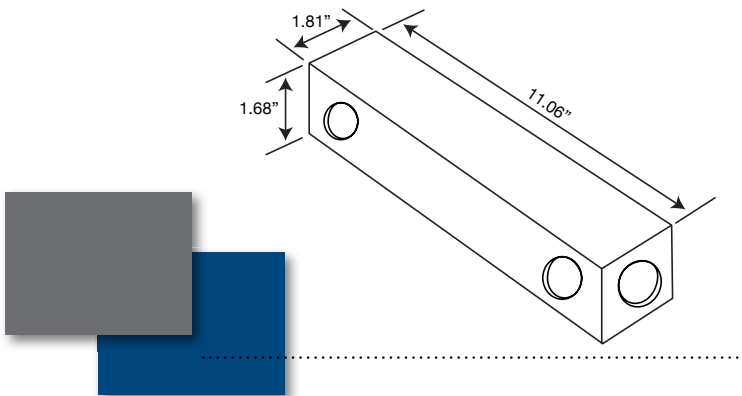
\*NOTE: KO Models are multiple RS12-60M transformers in a single case.

### KO 180 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Color	Case Style	Wire Diagram	Safety Listing
60 X 3	5 X 3	RS12-180KO*	120	11.5	0.5	5	Black or White	N	V	ETL Listed, Class 2
		RS24-180KO*		23.5		2.5	Black or White			

**NOTE:** Must use a minimum of 10 X 3 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*White cases are designated by adding a "W" at the end of the part number (i.e. RS12-60KOW).



### KO 300 WATT

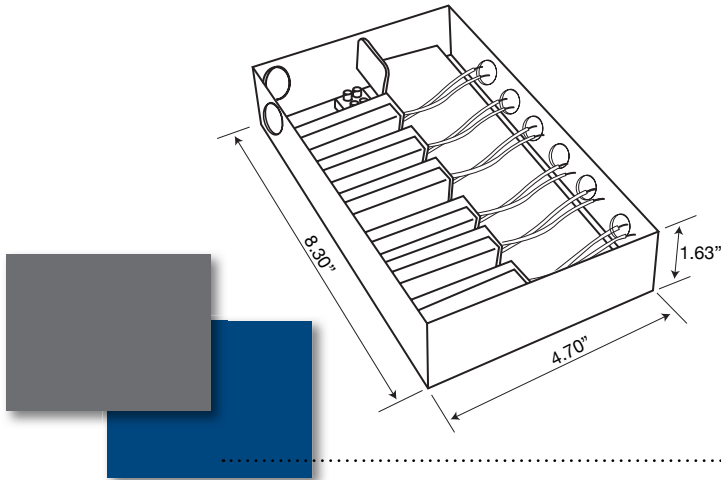
Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Color	Case Style	Wire Diagram	Safety Listing
300	50	RS12-300KO*	120	11.5	2.5	26.1	Black or White	O	II	ETL Listed
		RS24-300KO*		23.5		12.8	Black or White			

**NOTE:** Must use a minimum of 75 watts when using dimmers.

\*White cases are designated by adding a "W" at the end of the part number (i.e. RS12-60KOW).

Case Styles and Dimensions can be found on Pgs. 14-18 | Wire Diagrams can be found on Pgs. 19-20

## Knockout Transformers



\*NOTE: KO Models are multiple RS12-60M transformers in a single case.

### KO 360 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Color	Case Style	Wire Diagram	Safety Listing
60 X 6	5 X 6	RS12-360KO*	120	11.5	2.5	26.1	Black or White	P	VII	ETL Listed, Class 2
		RS24-360KO*		23.5		12.8	Black or White			

**NOTE:** Must use a minimum of 10 X 3 watts when using dimmers. It is also important to confirm dimming controls compatibility with the manufacturer and your Hatch representative.

\*White cases are designated by adding a "W" at the end of the part number (i.e. RS12-60KOW).



Case Styles and Dimensions can be found on Pgs. 14-18 | Wire Diagrams can be found on Pgs. 19-20



### 20, 60 & 75 Watt Models

White



Black



### 20 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Color	Case Style	Safety Listing
20	10	PS12-20LB	120	11.5	0.16	1.7	Black	Q	UL/C-UL Listed Class 2
		PS12-20LW					White	Q	

**NOTE:** It is imperative to confirm dimming control compatibility with the manufacturer and your Hatch representative.

### 60 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Color	Case Style	Safety Listing
60	20	PS12-60LB	120	11.5	0.52	5.2	Black	R	UL/C-UL Listed Class 2
		PS12-60LW					White	R	

**NOTE:** It is imperative to confirm dimming control compatibility with the manufacturer and your Hatch representative.

### 75 WATT

Max Watts	Min Watts	Hatch Part Number	Input Volts	Output Volts	Input Amps	Output Amps	Case Color	Case Style	Safety Listing
75	20	PS12-75LB	120	11.5	0.63	6.3	Black	R	UL/C-UL Listed

**NOTE:** It is imperative to confirm dimming control compatibility with the manufacturer and your Hatch representative.

Case Styles and Dimensions can be found on Pgs. 14-18 | Wire Diagrams can be found on Pgs. 19-20

## Electrical/Mechanical Specifications

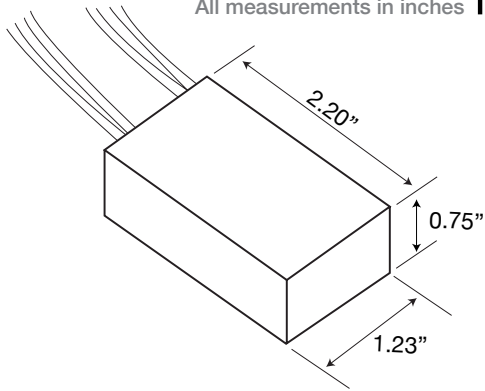
Model Series	Maximum Case Temperature	Sound Rating	Environmental Protection	Weight	Power Factor	Operating Frequency	Total Harmonic Distortion	Input Leads	Output Leads
RS 20/40/50 60/75/80 Watts	90°C	A+	Epoxy Sealed for moisture resistance and shock/vibration resistance	2.4 oz	>0.95	25KHz	≤ 20%	6", 18AWG stranded, 105°C stripped 3/8" tinned	6", 18AWG stranded, 105°C stripped 3/8" tinned
RS 80 Watt 277	2.4 oz								
RS 105/108 Watts	80°C			4 oz				6", 18AWG stranded, 105°C stripped 3/8" tinned	6", 18AWG stranded, 105°C stripped 3/8" tinned
RS 150 Watt				6.4 oz					
RS 300 Watt Rectangular				12.8 oz					
RS 300 Watt Round				15.3 oz					
RS 60 Watt KO	90°	A+	Epoxy Sealed for moisture resistance and shock/vibration resistance	9.8 oz	>0.95	25KHz	≤ 20%	2 input connector, accepting 14-22 AWG wire types	3 output connector, accepting 14-22 AWG wire types NOTE: 1 connector for ground
RS 150 Watt KO	80°C			14.7 oz					
RS 180 Watt KO				18.4 oz					
RS 300 Watt KO				29 oz					
RS 360 Watt KO				30.8 oz					
PS 60/75 Watt	80°C	A+	Epoxy Sealed for moisture resistance and shock/vibration resistance	4 oz	>0.95	25KHz	≤ 20%	Standard 120Vac Plug	10', SPT-2 cord
PS 105/150 Watt				9.5 oz					

**NOTE:** All BF models have a stud length of 0.3-0.31", a thread of 8/32" and a thread pitch of 2"



## Hardwire Transformer Case Styles

All measurements in inches

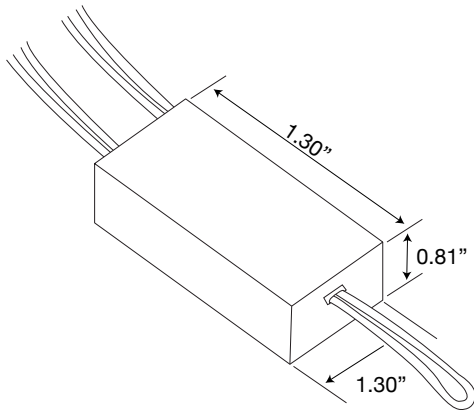


**RS 20 through 80 Watt**

CASE STYLE

**A**

\* Side Lead

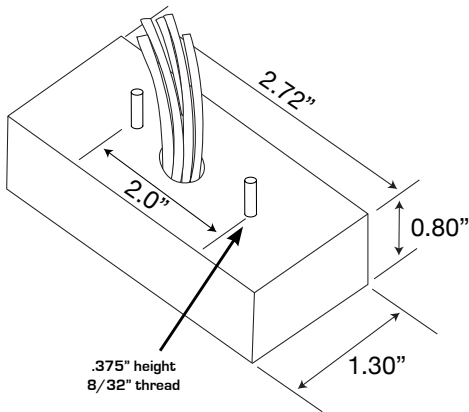


**RS with Dimming Loop**

CASE STYLE

**B**

\* Side Lead

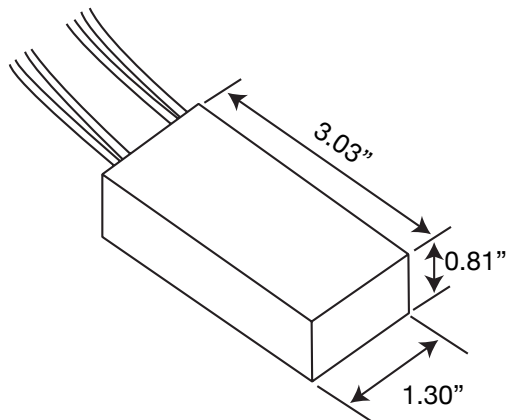


**RS 20 through 80 Bottom Feed**

CASE STYLE

**C**

\* With studs



**RS 105 Watt**

CASE STYLE

**D**

\* Side Lead



## Hardwire Transformer Case Styles

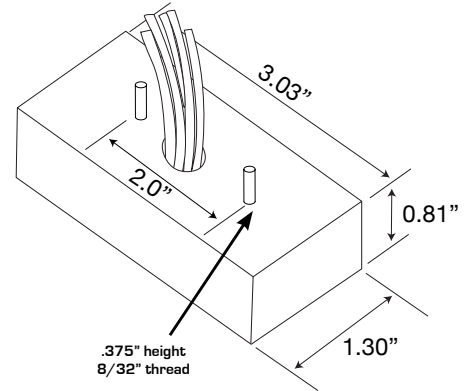
All measurements in inches

**RS 105 Bottom Feed**

CASE STYLE

**E**

\* With studs

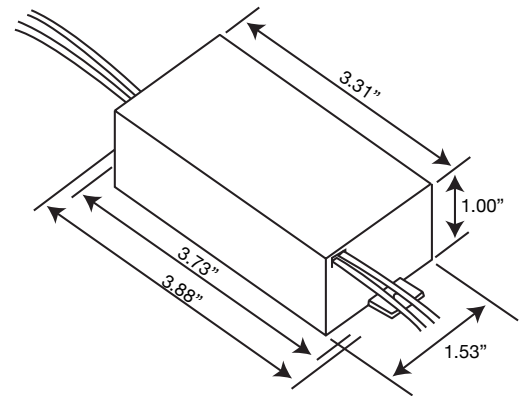


**RS 150 Watt**

CASE STYLE

**F**

\* Side Lead

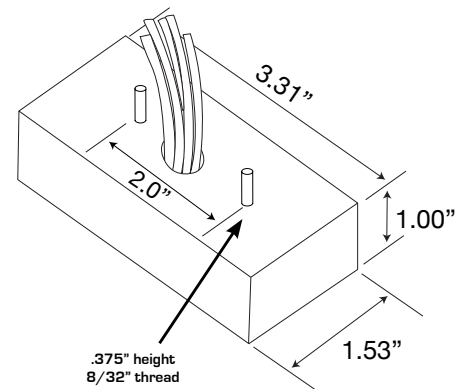


**RS 150 Bottom Feed**

CASE STYLE

**G**

\* With studs

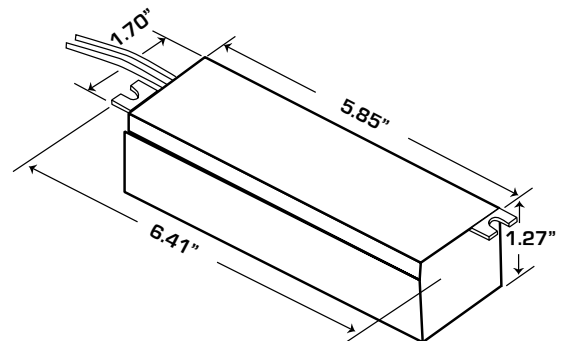


**RS 300 Watt**

CASE STYLE

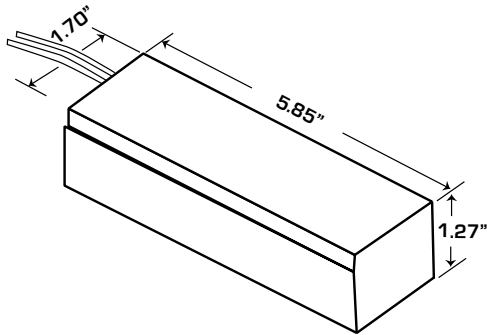
**H**

\* Side Lead w/ Feet



All measurements in inches

## Hardwire Transformer Case Styles

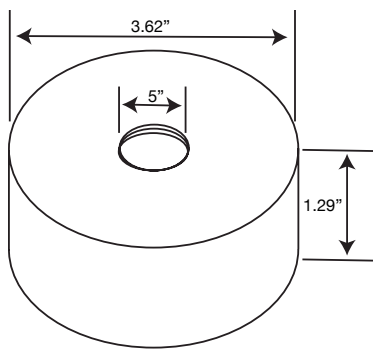


CASE STYLE

**RS 300 Watt**

I

\* Side Lead w/o Feet

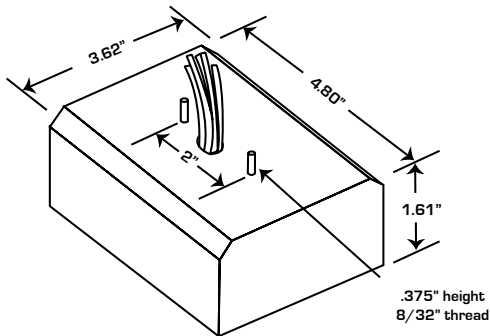


CASE STYLE

**RS 300 Watt RL**

J

\* Round case w/center mounting hole



CASE STYLE

**RS 300 Bottom Feed**

K

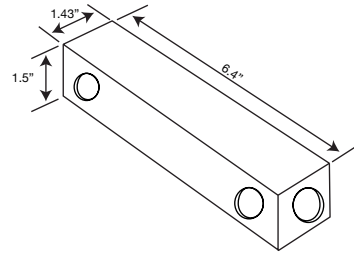
\* With studs



## Knockout Case Styles All measurements in inches

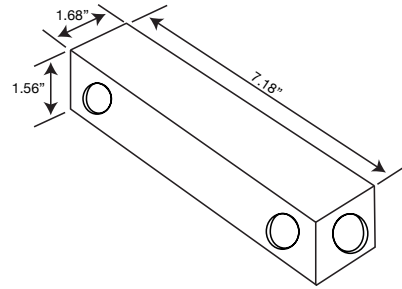
**RS-KO 60 Watt** CASE STYLE  
**L**

- \* Three 3/4" knockouts on each end of the case. Total of six knockouts.



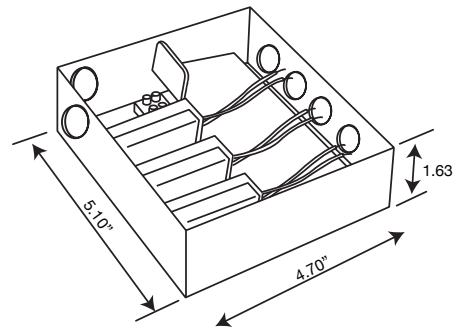
**RS-KO 150 Watt** CASE STYLE  
**M**

- \* Three 3/4" knockouts on each end of the case. Total of six knockouts.



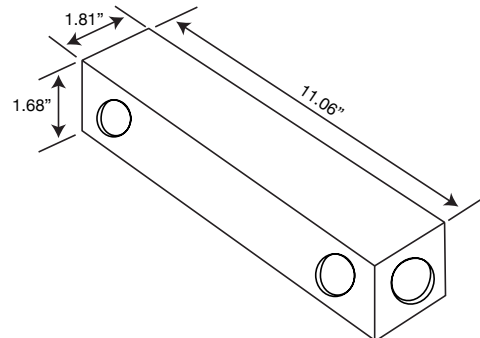
**RS-KO 180 Watt** CASE STYLE  
**N**

- \* RS-180KO Models contain three RS12-60M transformers in a single case
- \* Four 3/4" knockouts on one 5.10" side of the case and two 3/4" knockouts on back left corner. Total of six knockouts.



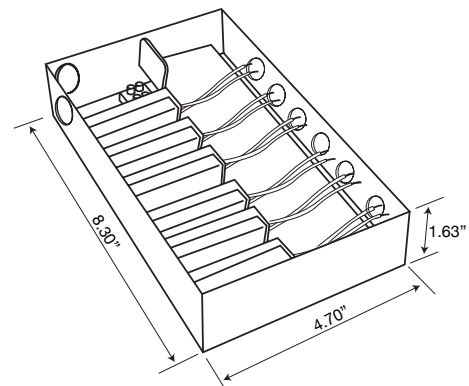
**RS-KO 300 Watt** CASE STYLE  
**O**

- \* Three 3/4" knockouts on each end of the case. Total of six knockouts.

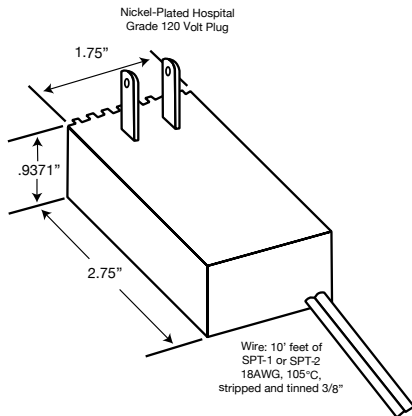


**RS-KO 360 Watt** CASE STYLE  
**P**

- \* RS-360KO Models contain six RS12-60M transformers in a single case
- \* Six 3/4" knockouts on one 8.30" side of the case and two 3/4" knockouts on back left corner. Total of eight knockouts.



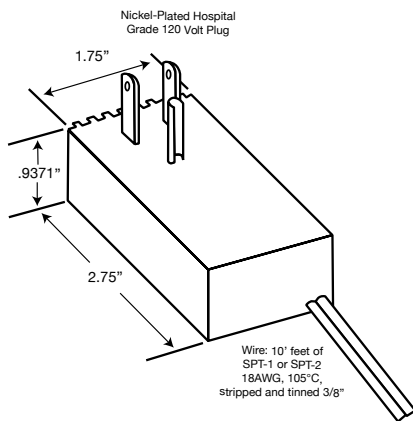
## All measurements in inches Plug-In Transformer Case Styles



CASE STYLE

PS 20 Watt Plug-In

Q



CASE STYLE

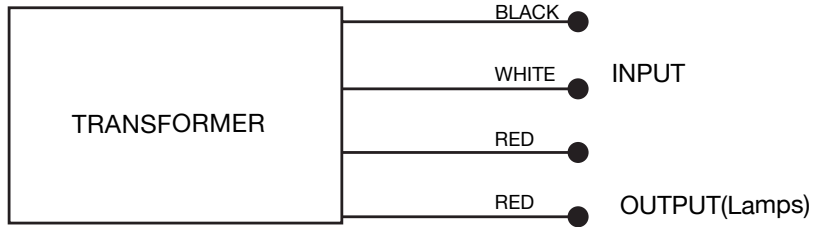
PS 60-75 Watt Plug-In

R

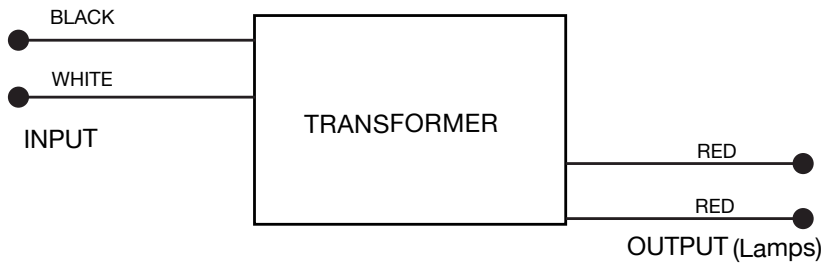


## Wire Diagrams

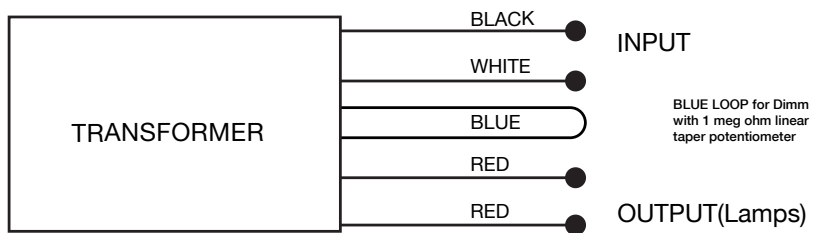
### I. Halogen Lamps



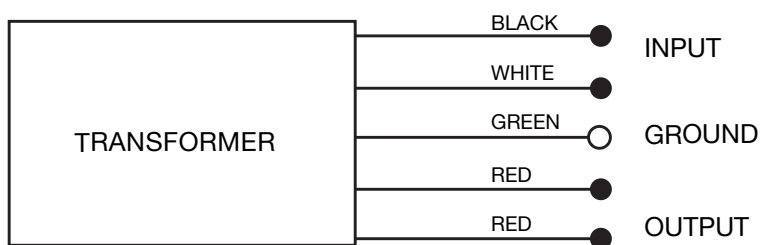
### II. Halogen Lamps



### III. Halogen Lamps

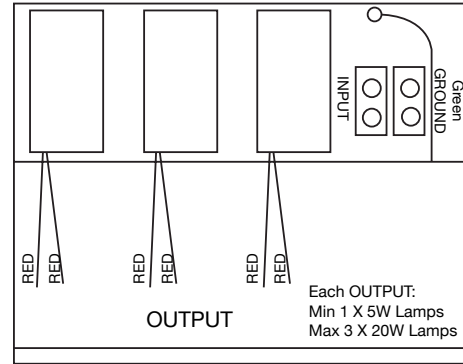


### IV. Halogen Lamps

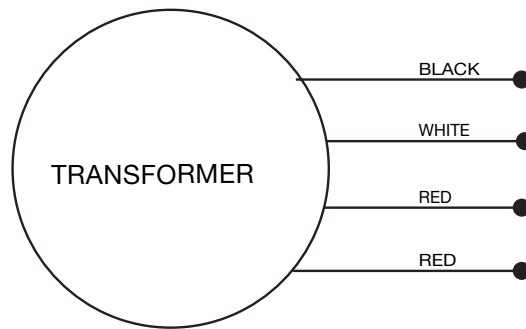


## Wire Diagrams

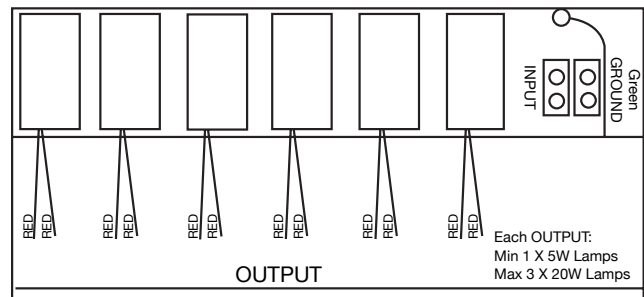
### V. Halogen Lamps



### VI. Halogen Lamps



### VII. Halogen Lamps



## Installation and Testing Guidelines for Electronic Low Voltage Transformers

### Wiring and installation of electronic low voltage transformers

Please make certain that the black and white input wires (primary side) of the low voltage transformer are connected to the power line (120 volts or 277 volts) using wire nuts. Also make sure that the two red output wires (secondary side) of the low voltage transformer are connected to the low voltage light source using wire terminal blocks of the appropriate size. Low voltage halogen or low voltage xenon lighting systems carry relatively large currents so all of the low voltage connections must be very tight to prevent arcing (a possible fire hazard) within those connections.

### Testing of electronic low voltage transformers

Hatch low voltage transformers are designed with short circuit protection and a no-load detection circuit design. This means that a proper load must be present to detect a voltage across the transformer. Without a load, a voltage meter will read zero volts. In addition, you must use a digital volt meter capable of reading 25KHz or higher waveforms. We suggest a Fluke Model 5220A or another equivalent meter.

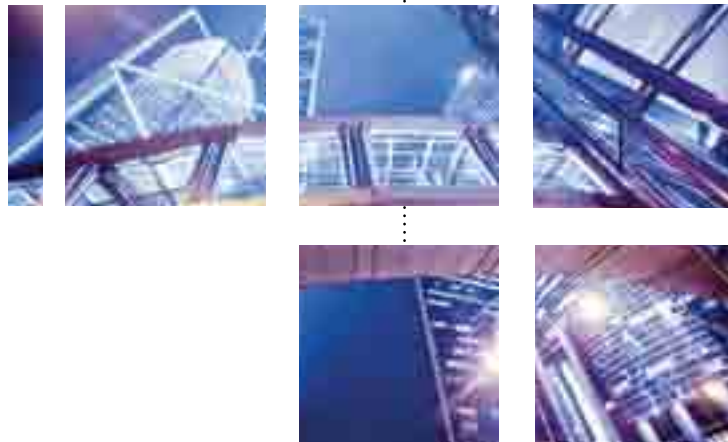
### Delayed start up with Soft-Start Circuitry

Hatch low voltage transformers are designed with soft start circuitry which slowly ramps up voltage to maximize lamp life. This results in the lamps starting at the lowest dimming setting and slowly ramping up to full intensity.

### Remote Mounting

Hatch low voltage transformers can be remote mounted at distances of up to ten feet.

**RS Mounting Options:** These models are available with straps or double sided tape. Please contact your representative for more information.



**S**ince 1985, Hatch has been the recognized market leader in the design and manufacture of premium power lighting products and solutions. Hatch offers a complete line of electronic and magnetic ballasts and transformers for virtually all lighting applications and is one of the largest independent, full-line power supply manufacturers in the world.

Current Hatch products include:

- Electronic LED Drivers
- Electronic HID Ballasts
- Linear Fluorescent Ballasts
- Compact Fluorescent Ballasts
- Electronic Low Voltage Transformers
- Remote Transformers
- Magnetic HID Ballasts
- Fluorescent Lamps
- Sign Ballasts



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