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Thank you for using our products. INSTALLATION INSTRUCTIONS SERIES RS STROBE APPLIANCES

Use this product according to this instruction manual. Please keep this instruction manual for future reference. GENERAL:

RS (Universal Mounting) and RSP Strobe Appliances are UL Listed under Standard 1971 (Signaling Devices for the Hearing Impaired) for indoor fire protection service. The 1575 candela strobes are listed at 15 candela under UL Standard 1971 and meet 75 candela intensity on axis with low current draw. Series RS Strobes are listed for *indoor use only*. 15cd, 30cd and 75cd models are Listed for ceiling or wall mount and 15cd* models are Listed for wall mount with the backboxes specified in these instructions (See Mounting Options). The strobes use a Xenon flashtube with solid state circuitry enclosed in a rugged Lexan® lens to provide maximum visibility and reliability for effective visible signaling. All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

NOTE: All CAUTIONS and WARNINGS are identified by the symbol . All warnings are printed in bold capital letters.

WARNING: READ THESE INSTRUCTIONS CAREFULLY. FAILURE TO COMPLY WITH ANY OF THE FOLLOWING INSTRUCTIONS, CAUTIONS AND WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

SPECIFICATIONS:

	Table 1: Ratings Per UL 1971									
Model	Nominal	Rated Input	Strobe	Mounting						
	Voltage	Voltage	Candela	Options						
	(VDC)	(VDC)	(CD)							
RS-2415	24	20.0-31.0	15	A,B,C,D						
RS-241575	24	20.0-31.0	15*	A,B,C,D						
RS-2430	24	20.0-31.0	30	A,B,C,D						
RS-2475	24	20.0-31.0	75	A,B,C,D						
RS-1215	12	10.5-15.6	15	A,B,C,D						
RS-121575	12	10.5-15.6	15*	A,B,C,D						
RS-1230	12	10.5-15.6	30	A,B,C,D						
RSP-2415	24	20.0-31.0	15	E,F						
RSP-241575	24	20.0-31.0	15*	E,F						
RSP-2430	24	20.0-31.0	30	E,F						
RSP-2475	24	20.0-31.0	75	E,F						
RSP-1215	12	10.5-15.6	15	E,F						
RSP-121575	12	10.5-15.6	15*	E,F						
RSP-1230	12	10.5-15.6	30	E,F						

Table 1A.						
Audibles/Speakers for RSP Strobe/Plate						
Product	Series					
Multitone Appliances	MT, MT4, AH					
Motor Bells	MB-G6/G10					
Speakers	ET-1010/1070/1080, E70/90, ET70/90					
Chimes	CH-DF1/DF2, CH70					

RSP-241575 and RSP-121575 are used only with MT4, MB-G6/G10 and $\rm ET\text{-}1010$

The UL Listed "Rated Input Voltage" is 20.0-31.0VDC or 10.5-15.6VDC using either filtered (DC) or unfiltered full-wave-rectified (FWR) voltage. Check the minimum and maximum output of the power supply and standby battery and subtract the voltage drop from the circuit wiring resistance to determine the applied voltage to the strobes.

WARNING: ALTHOUGH UL TESTING HAS VERIFIED THAT THESE STROBES FUNCTION EVEN AT 80% OF THEIR MINIMUM RATING AND 110% OF THEIR MAXIMUM RATING, WHEELOCK STRONGLY RECOMMENDS THAT THE VOLTAGE APPLIED TO THESE PRODUCTS BE WITHIN THEIR RATED INPUT VOLTAGE RANGE. THE APPLICATION OF IMPROPER VOLTAGE MAY RESULT IN DEGRADED OPERATION OR DAMAGE TO THESE PRODUCTS, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

	Table 2: Strobe Current Requirements (AMPS) 24VDC Models											
Voltage Rated Average Current					Rated Peak Current				Rated Inrush Current			
	15cd	30cd	15cd*	75cd	15cd	30cd	15cd*	75cd	15cd	30cd	15cd*	75cd
20.0VDC	0.80	.135	.115	.245	.160	.288	.250	.510	.210	.280	.225	.660
24.0VDC	0.80	.135	.115	.225	.190	.296	.260	.450	.250	.280	.270	.660
31.0VDC	0.80	.135	.115	.195	.210	.296	.260	.370	.320	.300	.360	.880
20.0VFWR	0.80	.135	.125	.258	.210	.390	.350	.714	.320	.390	.315	.930
24.0VFWR	0.81	.135	.125	.233	.216	.390	.365	.640	.380	.390	.380	.930
31.0VFWR	0.91	.135	.125	.196	.240	.390	.365	.520	.450	.420	.500	1.25

^{*15}cd models are UL Listed at 15cd and meet 75cd on axis.

Note: All VFWR voltage ratings are measured with a DC volt meter. Multiply VFWR voltage by 1.11 to convert to VRMS. Copyright 1995-1997 Wheelock, Inc. All rights reserved.

	Table 2A: Strobe Current Requirements (AMPS) for 12VDC Models											
Voltage	Rate	ed Average Cur	rent	R	ated Peak Curre	ent	Rated Inrush Current					
	15cd	30cd	15cd*	15cd 30cd 15cd*			15cd	30cd	15cd*			
10.5VDC	.160	.235	.220	.340	.560	.470	.300	.500	.440			
12.0VDC	.160	.235	.220	.340	.560	.470	.300	.500	.440			
15.6VDC	.160	.235	.220	.340	.560	.470	.390	.650	.470			
10.5VFWR	.175	.240	.230	.475	.730	.660	.420	.700	.620			
12.0VFWR	.175	.240	.230	.475	.730	.660	.420	.700	.620			
15.6VFWR	.175	.250	.240	.475	.730	.660	.545	.910	.660			

Note: All VFWR voltage ratings are measured with a DC volt meter. Multiply VFWR voltage by 1.11 to convert to VRMS.

WARNING: MAKE SURE THAT THE TOTAL AVERAGE CURRENT, TOTAL PEAK CURRENT AND TOTAL INRUSH CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES AND APPLIANCE CIRCUITS DO NOT EXCEED THE POWER SOURCES' RATED CAPACITY OR THE CURRENT RATINGS OF ANY FUSES ON THE CIRCUITS TO WHICH THESE APPLIANCES ARE WIRED. OVERLOADING POWER SOURCES OR EXCEEDING FUSE RATINGS COULD RESULT IN LOSS OF POWER AND FAILURE TO ALERT OCCUPANTS DURING AN EMERGENCY, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

When calculating the total average, peak and inrush currents: Use Table 2 and 2A to determine the highest value of "Rated Average Current" for an individual strobe (across the expected operating voltage range of the strobe) to determine the highest value of "Rated Inrush Current" or "Rated Peak Current" (whichever is higher) of an individual strobe (across the expected voltage range of the strobe) then multiply these values by the total number of strobes; be sure to add the currents for any other appliances, including audible signaling appliances, powered by the same source and include any required safety factors.

If the inrush current or peak current exceeds the power supplies' inrush capacity, the output voltage provided by the power supplies may drop below the listed voltage range of the appliances connected to the supply and the voltage may not recover in some types of power supplies. For example, an auxiliary power supply that lacks filtering at its output stage (either via lack of capacitance and/or lack of battery backup across the output) may exhibit this characteristic.

CAUTION: Strobes are not designed to be used on coded systems in which the applied voltage is cycled on and off.

LIGHT DISTRIBUTION:

	Table 3: Horizontal Plane										
Horizontal	15cd		15cd*	30	od	75	cd				
Angle (in deg.)	UL Min.	Typ. 15cd	Typ. 15cd*	UL Min.	Typ. 30cd	UL Min.	75cd				
0	15.0	21	100	30.0	42	75.0	90				
5	13.5	20	75	27.0	40	67.5	92				
10	13.5	20	38	27.0	40	67.5	89				
15	13.5	20	28	27.0	40	67.5	86				
20	13.5	20	22	27.0	40	67.5	86				
25	13.5	20	19	27.0	40	67.5	83				
30	11.3	19	19	22.5	38	56.3	77				
35	11.3	17	17	22.5	34	56.3	70				
40	11.3	17	17	22.5	34	56.3	65				
45	11.3	15	16	22.5	30	56.3	62				
50	8.3	10	15	16.5	20	41.3	42				
55	6.8	8	15	13.5	16	33.8	35				
60	6.0	8	15	12.0	16	30.0	33				
65	5.3	8	15	10.5	16	26.3	31				
70	5.3	8	15	10.5	16	26.3	31				
75	4.5	8	15	9.0	16	22.5	31				
80	4.5	7	15	9.0	14	22.5	30				
85	3.8	7	15	7.5	14	18.8	27				
90	3.8	6	14	7.5	13	18.8	26				

^{* 15}cd models are UL Listed at 15cd and meet 75cd on axis.

			Table 3A: V	ertical Plane				
Vertical	15	cd	15cd*	30	ed	75cd		
Angle (in deg.)	UL Min.**	Typ. 15cd	Typ. 15cd*	UL Min.**	Typ. 30cd	UL Min.**	75cd	
0	15.0	21	100	30.0	42	75.0	90	
5	13.5	21	100	27.0	42	67.5	88	
10	13.5	21	100	27.0	42	67.5	87	
15	13.5	20	100	27.0	40	67.5	83	
20	13.5	19	100	27.0	38	67.5	79	
25	13.5	19	98	27.0	38	67.5	74	
30	13.5/11.3	18	96	27.0/22.5	36	67.5/56.3	70	
35	9.8/11.3	18	94	19.5/22.5	36	48.8/56.3	68	
40	6.9/11.3	16	92	13.8/22.5	32	34.3/56.3	66	
45	5.1/11.3	14	90	10.2/22.5	28	25.5/56.3	63	
50	4.0/8.3	12	84	8.1/16.5	24	20.0/41.3	59	
55	3.3/6.8	12	77	6.6/13.5	24	16.3/33.8	54	
60	2.7/6.0	9	70	5.4/12.0	18	13.5/30.0	52	
65	2.4/5.3	8	63	4.8/10.5	16	12.0/26.3	40	
70	2.3/5.3	8	56	4.5/10.5	16	11.3/26.3	31	
75	2.0/4.5	8	50	4.0/9.0	16	10.0/22.5	29	
80	1.8/4.5	8	30	3.6/9.0	16	9.0/22.5	29	
85	1.8/3.8	8	20	3.6/7.5	16	9.0/18.8	28	
90	1.8/3.8	8	8	3.6/7.5	16	9.0/18.8	24	

	Table 4: Typical Flashes Per Second Across Rated Voltage Range											
Nominal Input	Candela											
Voltage		Volts	20.0	22.0	24.0	26.0	28.0	31.0	10.5	12.0	15.6	
24VDC	15cd, 30cd	DC	1.0	1.1	1.3	1.4	1.5	1.7				
	15cd*	FWR	1.0	1.1	1.3	1.4	1.5	1.7				
24VDC	75cd	DC	1.1	1.2	1.3	1.3	1.4	1.5				
		FWR	1.0	1.1	1.2	1.3	1.3	1.4				
12VDC	15cd, 30cd	DC							0.9	1.0	1.6	
	15cd*	FWR							0.9	1.0	1.5	

Note: ADA guidelines presently specify a flash rate of 1 to 3 flashes per second.

* 15cd models are UL Listed at 15cd and meet 75cd on axis. ** Wall/Ceiling

WIRING INFORMATION:

Figure 1: Wiring Diagrams

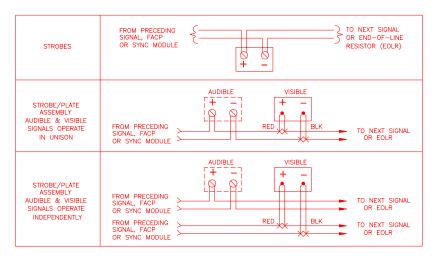


Figure 2.

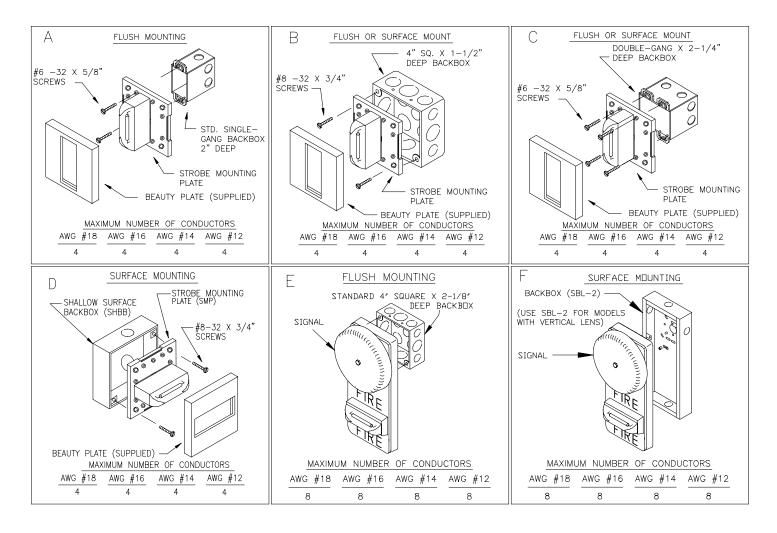
- 1. All Strobe Appliances have in-out wiring terminals that accepts two #12 to 18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8 inches and connect to screw terminals.
- 2. Break all in-out wire runs on supervised circuits to assure integrity of circuit supervision as shown in Figure 2. Strobe/Plate assembly has two red leads and two black leads for in-out wiring. The polarity shown in the wiring diagrams is for the operation of the appliances. The polarity is reversed by the FACP during supervision.

MOUNTING OPTIONS:

WARNING: REMOVAL OF THE BLACK COVER AT THE BACK OF THE MOUNTING PLATE COULD RESULT IN ELECTRIC SHOCK.

CAUTION: The following figures show the maximum number of field wires (conductors) that can enter the backbox used with each mounting option. If these limits are exceeded, there may be insufficient space in the backbox to accommodate the field wires and stresses from the wires could damage the product.

Although the limits shown for each mounting option comply with the National Electrical Code (NEC), Wheelock recommends use of the largest backbox option shown and the use of approved stranded field wires, whenever possible, to provide additional wiring room for easy installation and minimum stress on the product from wiring.



Figures E and F are shown with optional 6" bell. See Table 1A for other possible appliance combinations.

APPLICATION NOTES:

CAUTION: Check that the installed product will have sufficient clearance and wiring room prior to installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4" conduit fittings are used.

- 1. RS models can be flush mounted to a standard single-gang backbox (Figure A), 4" backbox (Figure B) or double-gang backbox (Figure C). RS models can also be surface mounted to a 4" backbox (Figure B), double-gang backbox (Figure C) or the SHBB (Figure D). RSP models can be flush mounted to a 4" backbox (Figure E) or surface mounted to a SBL-2 backbox (Figure F).
- 2. RS models are equipped with a Strobe Mounting Plate (SMP).
- 3. Mount the Strobe Mounting Plate (SMP) first to the backbox (note the lettering "Top" vertical strobe as marked). Next slide the Beauty Plate over the Strobe Mounting Plate until the 2 side snaps of the Beauty Plate engage with the Strobe Mounting Plate. Wheelock recommends orienting the Beauty Plate so that the FCC compliance label is positioned at the top of the strobe.
- 4. The Beauty Plate can be removed from the strobe assembly once engaged. First, gently insert a screwdriver into one of the slots located on the side edges of the Beauty Plate. Second, gently pull away from the wall with the inserted screwdriver to disengage the snap. Third, repeat the first and second steps for the second slot. Finally, gently lift the Beauty Plate away from the Strobe Mounting Plate.
- 5. Mounting hardware for each mounting option is supplied.
- 6. Conduit entrances to the backbox should be selected to provide sufficient wiring clearance for the installed product.
- 7. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the signaling appliance.
- 8. Use care and proper techniques to position the field wires in the backbox so that they use minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or sheathing.
- 9. Do not pass additional wires (used for other than the signaling appliance) through the backbox. Such additional wires could result in insufficient wiring space for the signaling appliance.
- 10. All models are UL Listed for indoor use with a temperature range of +32°F to +120°F (0°C to +49°C) and maximum humidity of 85% RH.

WARNING: WHEN INSTALLING STROBES IN AN OPEN OFFICE OR OTHER AREAS CONTAINING PARTITIONS OR OTHER VIEWING OBSTRUCTIONS, SPECIAL ATTENTION SHOULD BE GIVEN TO THE LOCATION OF THE STROBES SO THAT THEIR OPERATING EFFECT CAN BE SEEN BY ALL INTENDED VIEWERS, WITH THE INTENSITY, NUMBER, AND TYPE OF STROBES BEING SUFFICIENT TO MAKE SURE THAT THE INTENDED VIEWER IS ALERTED BY PROPER ILLUMINATION, REGARDLESS OF THE VIEWER'S ORIENTATION. FAILURE TO DO SO COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

WARNING: A SMALL POSSIBILITY EXISTS THAT THE USE OF MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW, UNDER CERTAIN CIRCUMSTANCES, MIGHT INDUCE A PHOTO-SENSITIVE RESPONSE IN PERSONS WITH EPILEPSY. STROBE REFLECTIONS IN A GLASS OR MIRRORED SURFACE MIGHT ALSO INDUCE SUCH A RESPONSE. TO MINIMIZE THIS POSSIBLE HAZARD, WHEELOCK STRONGLY RECOMMENDS THAT THE STROBES INSTALLED SHOULD NOT PRESENT A COMPOSITE FLASH RATE IN THE FIELD OF VIEW WHICH EXCEEDS FIVE (5) Hz AT THE OPERATING VOLTAGE OF THE STROBES (SEE TABLE 4). WHEELOCK ALSO STRONGLY RECOMMENDS THAT THE INTENSITY AND COMPOSITE FLASH RATE OF INSTALLED STROBES COMPLY WITH LEVELS ESTABLISHED BY APPLICABLE LAWS, STANDARDS, REGULATIONS, CODES AND GUIDELINES.

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NOTE: NFPA 72/ANSI 117.1 conform to ADAAG Equivalent Facilitation Guidelines in using fewer, higher intensity strobes within the same protected area.

CAUTION: Check the installation instructions of the manufacturers of other equipment used in the system for any guidelines or restrictions on wiring and/or locating Notification Alarm Circuits (NAC) and notification appliances. Some system communication circuits and/or audio circuits, for example, may require special precautions to assure electrical noise immunity (e.g. audio crosstalk).

IMPORTANT: READ SEPARATE "GENERAL INFORMATION" SHEET FOR INFORMATION ON THE PLACEMENT, LIMITATIONS, INSTALLATION, FINAL CHECKOUT, AND PERIODIC TESTING OF NOTIFICATION APPLIANCES.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1) Reorient or relocate the receiving antenna, 2) Increase the separation between the equipment and receiver, 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected, and 4) Consult the dealer or an experienced radio/TV technician for help.

Limited Warranty

These products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained and operationally tested in accordance with these instructions at the time of installation and at least twice a year or more often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters' Laboratories (UL), Underwriters' Laboratories of Canada (ULC), National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, province, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ). These products when properly specified, applied, installed, operated, maintained and operationally tested as provided above are warranted against mechanical and electrical defects for a period of three years from date of manufacture (as determined by date code). Correction of defects by repair or replacement shall be at manufacturer's sole discretion and shall constitute fulfillment of all obligations under this warranty. THE FOREGOING LIMITED WARRANTY SHALL IMMEDIATELY TERMINATE IN THE EVENT ANY PART NOT FURNISHED BY THE MANUFACTURER IS INSTALLED IN THE PRODUCT. THE FOREGOING LIMITED WARRANTY SPECIFICALLY EXCLUDES ANY SOFTWARE REQUIRED FOR THE OPERATION OF OR INCLUDED IN A PRODUCT. THE MANUFACTURER MAKES NO REPRESENTATION OR WARRANTY OF ANY OTHER KIND, EXPRESS, IMPLIED OR STATUTORY WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER.

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9/18/97