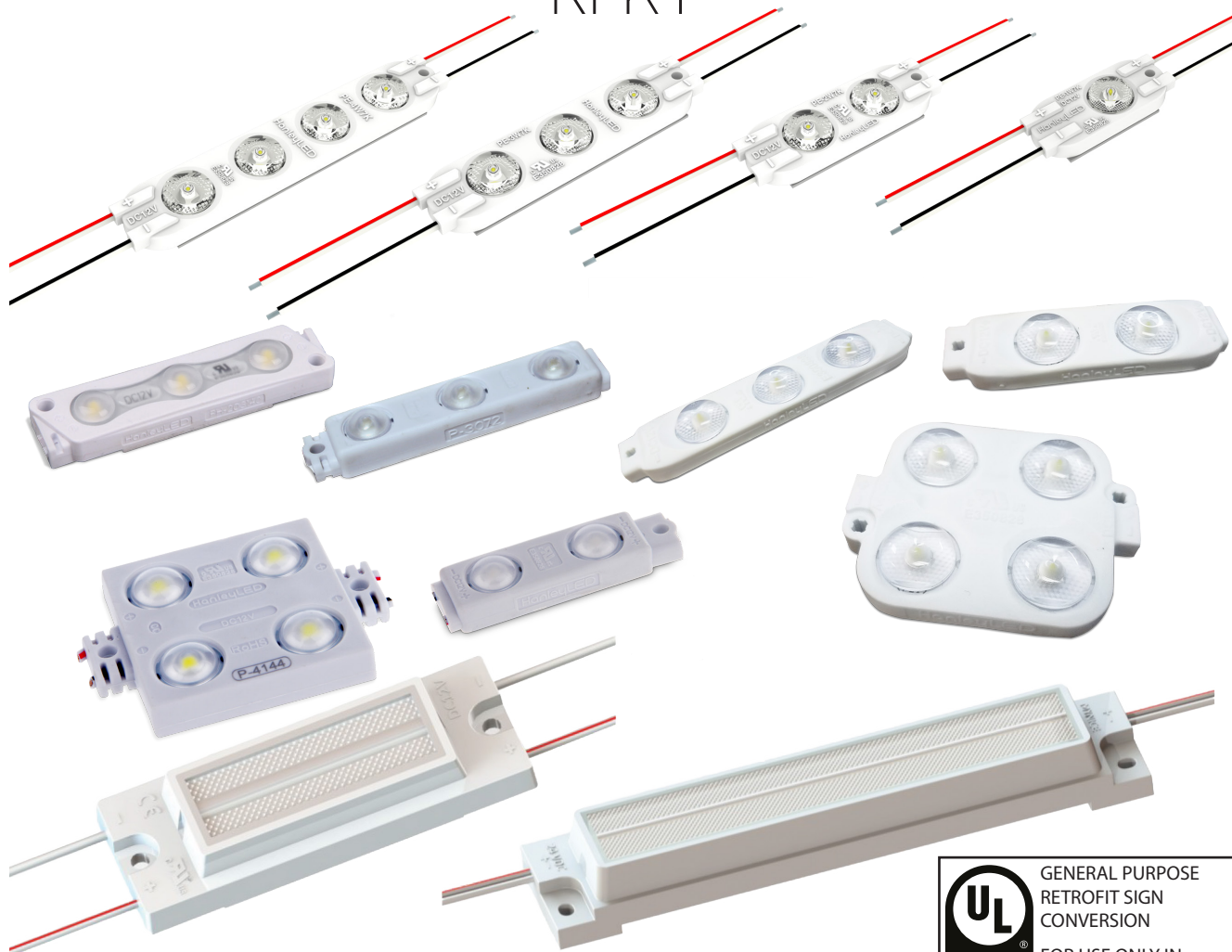


# HanleyLED™

SOLUTIONS THAT MAKE SENSE

## RETROFIT INSTALLATION GUIDE

### RFK1



*Light Up New Markets*  
[www.hanleyledsolutions.com](http://www.hanleyledsolutions.com)

# HanleyLED™

Your Local Distributor: Grimco  
US [www.grimco.com](http://www.grimco.com) • 800.542.9941 | Canada [www.grimco.ca](http://www.grimco.ca) • 800.263.1421 | International 305.885.0088

# RETROFIT INSTALLATION GUIDE

## RFK1

### Channel Letter & Cabinet Modules

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This guide is designed to aid in the installation of HanleyLED's channel letter and cabinet modules. Skilled trades people that are familiar with general construction, electrical, and sign installation techniques should do the installation. Licensed electricians should provide all installation and hook-up of both the primary and secondary input/outputs of the HanleyLED power supply. All installation and hook-up should be done in accordance with all National and Local codes and permits. In no way is this document intended to construe warranty or fitness of use of the products described, nor is it intended to provide safety instruction for those installing the product.

THE FIELD INSTALLATION OF THIS RETROFIT SYSTEM INTO A SIGN IS SUBJECT TO THE  
ACCEPTANCE OF LOCAL INSPECTION AUTHORITY.

**CAUTION:** TURN OFF POWER TO THE SIGN BEFORE INSPECTING OR REMOVING EXISTING LIGHT  
SOURCE. THE POWER MUST REMAIN OFF WHILE INSTALLING THE LED RETROFIT KIT.

### Tools Required:

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- Wire cutter & strippers
- Measuring tape
- Marking pens
- Drill
- Standard hardware and supplies in addition to the HanleyLED modules
- installation guides (UL listing may be required on certain items)

### Prepping the Channel Letter or Cabinet

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#### Step 1

Remove existing neon or fluorescent bulbs by having a licensed electrician disconnect and remove the neon transformers or fluorescent ballasts. Remove existing neon and standoffs or fluorescent lamps. Leave fluorescent sockets in cabinets with leads disconnected. This should leave an empty channel letter or cabinet.

**NOTE:** ALL MATERIALS REMOVED MUST BE DISPOSED OF IN ACCORDANCE WITH  
APPLICABLE LOCAL, STATE AND FEDERAL LAWS.

#### Step 2

Using a non- oil based cleaner, clean the back surfaces of the channel letter or cabinet where the LED modules will be mounted. This is an important step for good adhesion of HanleyLED modules mounting tape.

#### Step 3

Installer should examine all parts that are not intended to be replaced by the retrofit kit for damage and replace any damaged parts prior to installation of the retrofit kit. Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation. Any existing holes in the letters or cabinet that will not be used in the installation of HanleyLED modules should be patched to avoid water damage. Openings smaller than ½" diameter may be sealed with the appropriate amount of rated caulk or sealant. Openings larger than ½" should be patched using an aluminum or zinc coated steel patch with rivets and sealant.

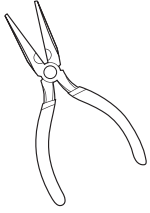
#### Step 4

Proceed with the appropriate HanleyLED module installation guide for your specific product.

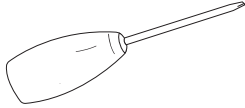
# RETROFIT INSTALLATION GUIDE

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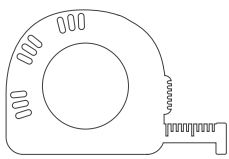
### Tools required:



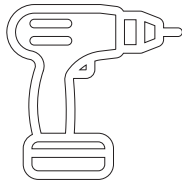
Wire Strippers



Screw Driver/Rivet Gun

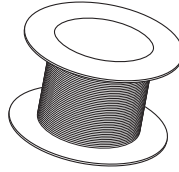


Tape Measure

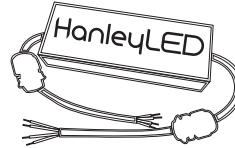


Drill

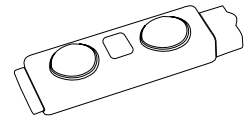
### Components:



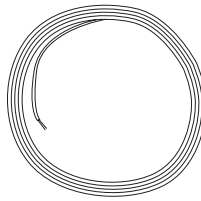
18 AWG Wire UL Approved



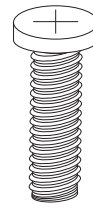
HanleyLED Power Supply



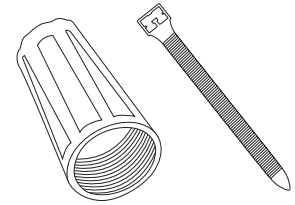
HanleyLED Modules



Power-Limited Tray Cable  
(UL Listed)

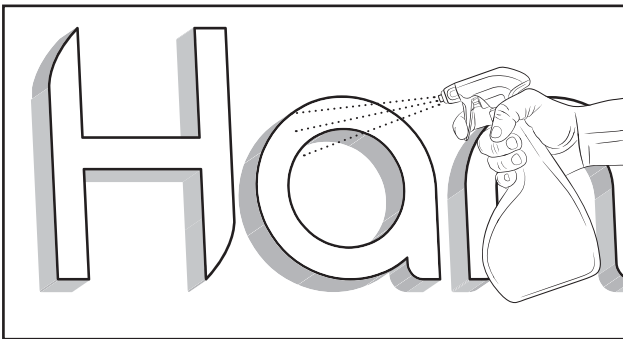


#6 or #8 Screws or  
1/8" rivets or silicone caulk



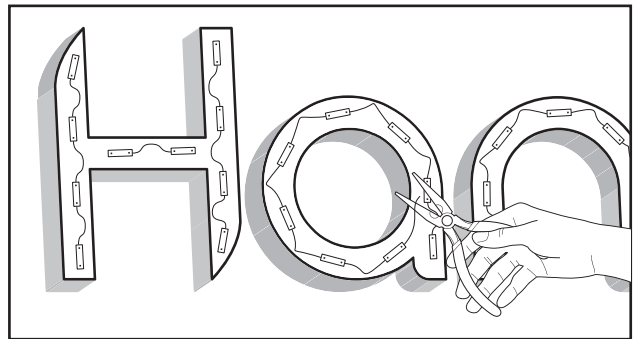
22-14 AWG wire connectors or  
22-18AWG wire nuts, IDC connectors  
Butt splice connectors, Cable ties  
(UL Listed)

### Module Installation:



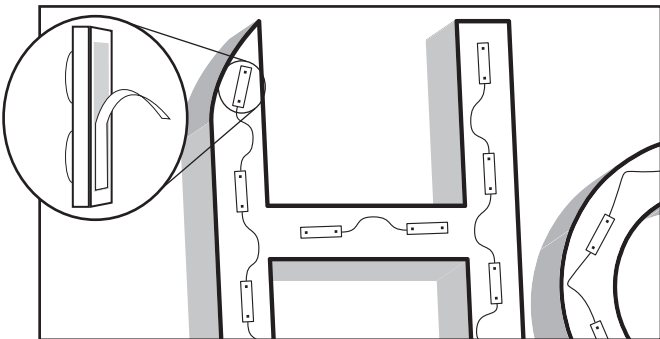
#### Step 1

Remove all debris from the inside of the channel letter or cabinet and clean the inside with denatured alcohol. Allow alcohol to dry before proceeding.



#### Step 2

Place modules in sign according to layout. Cut product accordingly. \*Product may be cut in between modules.



#### Step 3

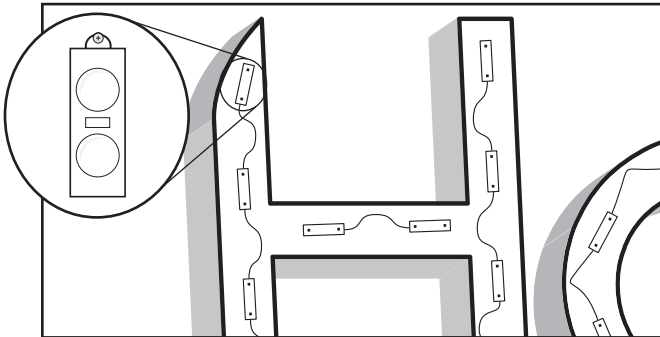
To adhere the product to the cabinet or letters, remove liner from tape and press LED modules in place. Repeat process for the rest of the layout.



# RETROFIT INSTALLATION GUIDE

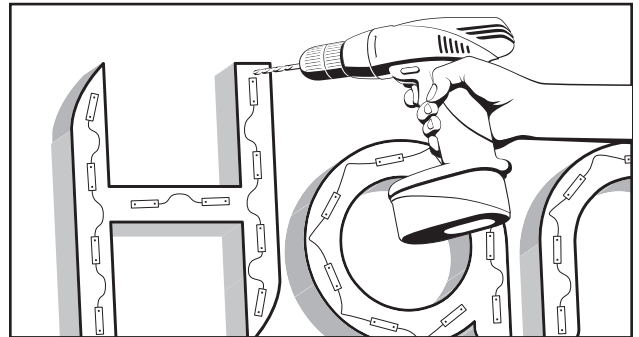
## RFK1

### Module Installation:



#### Step 4

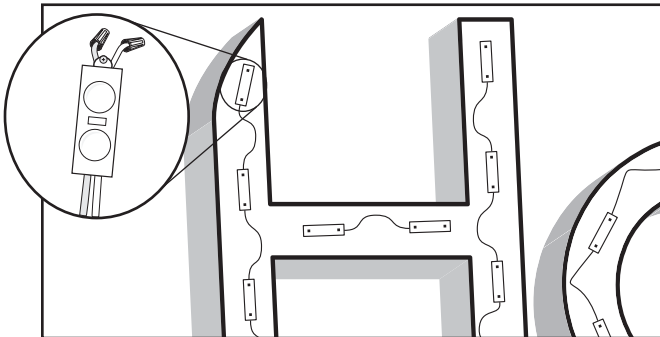
Screws, rivets or silicone may also be used to attach LED modules to backs if mechanical fasteners are required or desired. (use #6 or #8 sheet metal or 1/8" rivets)



#### Step 5

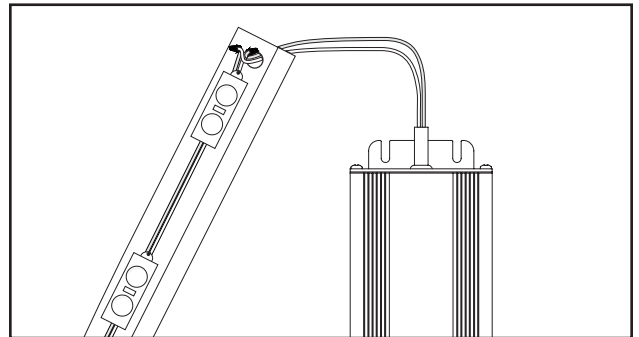
Drill an access hole if needed in the desired location and fit with an insulator for feeding supply wire to product.

### LED Module Wiring Instructions:



#### Step 1

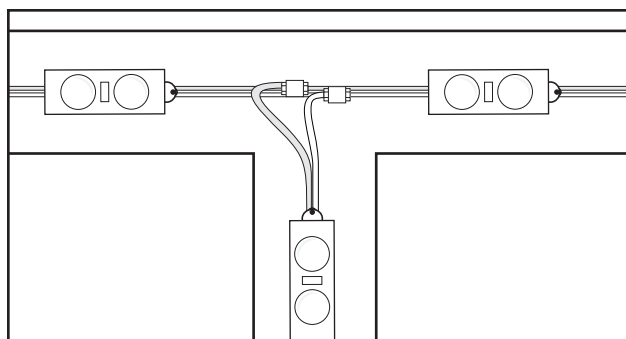
Use appropriate wire connectors to cover the ends of the exposed wires not being used as a connection point.



#### Step 3

Connect the power supply to the product

- Use the proper gauge wire for connecting the power supply to product
- Must use certified (UL Recognized or Listed) Hanley Class 2 power supply (12V, 60 or 100 watt- 100-347V)
- Fill in all holes 0.5 in. (13 mm) or smaller with the appropriate amount of rated caulk or sealant. For holes greater than 0.5 in. (13 mm), use an aluminum or zinc coated steel patch with rivets and sealant.
- Connect the power unit to the supply line in accordance with the applicable local, state, and country electrical codes, and the instructions found in the power supply installation guide. All primary connections must be in a suitable enclosure.
- If required, the disconnect switch shall be installed by qualified personnel, in accordance with applicable local, state, and country electrical codes.



#### Step 2

To connect (splice) wires, use an in-line (IDC) connector or twist on wire connector.

# RETROFIT INSTALLATION GUIDE

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### Power Supply Load Chart:

	Number of Modules					
Model	<b>60Watt 12VOLT</b> (H60W-MD-12, H60W-PPSEM, H60W-PPS7SLM, H60W-SD-12, H60W-PPS5, H60W-PPS277, H60W-PPSE, H60W-PPS734712V)	<b>100Watt 12VOLT</b> (H100W-PPSEM, H100W-PPS5, H100W-PPS277)	<b>120Watt 12VOLT</b> (H120W-SD-12)	<b>150Watt 12VOLT</b> (H150W-PPS5)	<b>180Watt 12VOLT</b> (H180W-SD-12)	<b>240Watt 12VOLT</b> (H240W-PPS5)
P-2072	83	138	166	207	249	332
P-3072	83	138	166	207	249	332
P-3120	50	82	100	123	150	200
P-4144	41	68	82	102	123	164
PH20-3027	83	138	166	207	249	332
PH20-3140	42	70	84	105	126	168
KS-2100	60	100	120	150	180	240
PF-2080	75	124	150	186	225	300
PF-3120	50	82	100	123	150	200
PF-4180	33	54	66	81	99	132
PE-1	133	222	266	333	399	532
PE-2	96	160	192	240	288	384
PE-3	60	100	120	150	180	240
PE-4	41	68	82	102	123	164
S-1270	22	36	72	54	66	88
Model	<b>60Watt 24VOLT</b> (H60W-PPS524V, H60W-PPS7334724V, H60W-PPSEM24V)	<b>96Watt 24VOLT</b> (96W-SD-24)	<b>100Watt 24VOLT</b> (H100W-PPS524V, H100W-PPSEM24V)	<b>150Watt 24VOLT</b> (H150W-PPS524V)	<b>288Watt 24VOLT</b> (H288W-SD-24)	<b>240Watt 24VOLT</b> (H240W-PPS524V)
KS-210024V	60	96	100	150	288	240
PN2-24	96	154	161	240	462	387
PN4-24	41	66	69	104	198	165
S-1720	8	13	13	20	39	33
WS-3360	16	25	26	40	75	64
WS-6600	8	14	14	22	42	35

\*All power supplies are Class 2 under E350828

# RETROFIT INSTALLATION GUIDE

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### Troubleshooting:

Malfunction & Solutions		
Malfunctions	Possible Causes	Solutions
All LEDs do not work	The power supply did not connect to power grid	Power on
	No electricity due to short-circuit of external power supply.	Remove the malfunction caused by short-circuit, power on again
	The wires of module connect to power supply output reversely	Check the connection and ensure the wires are connected correctly
Part of LEDs do not work	Part of power supplies do not have output	Check the power supply system
	Part of module wires have malfunction	
Brightness of LEDs is weak or uneven	Overloaded power supply	Replace it with higher power supply
	The power loss of power circuit is huge or the power loss to each existing circuit	Ensure working voltage of modules is within $\pm 5\%V$ of rated voltage. (1. Shorten the length of wires between the first module and power supply or replace with wires with bigger diameter; 2. Ensure the cascading qty of string is less than or equal to the allowed maximum cascading qty, and each module cascading qty is well-balanced.)
	Too many modules in series/cascade	Lessen the cascading qty for module and ensure the qty for each electrical circuit is within the maximum cascading qty
LEDs are blinking	Poor wiring connections	Check all wiring connections immediately
	Failures in power supply	Replace power supply

**WARNING** – Risk of fire or electric shock. LED Retrofit Kit installation requires knowledge of sign electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.

**WARNING** – Risk of fire or electric shock. Install this kit only in host signs that have been identified in the installation instructions and where the input rating of the retrofit kit does not exceed the input rating of the sign

**WARNING** – Risk of fire or electric shock. Installation of this LED retrofit kit may involve drilling or punching of holes into the structure of the sign. Check for enclosed wiring and components to avoid damage to wiring and electrical parts.

**WARNING** – To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.

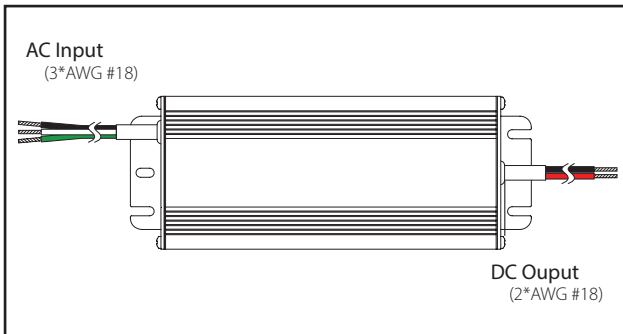
Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation. Only those open holes indicated in the photographs and/or drawings may be made or altered as a result of kit installation.

Repair and seal any unused openings in the electrical enclosure. Openings greater than 12.7 mm (1/2 in.) diameter require a metal patch secured by screws or rivets and caulked with non-hardening caulk. Smaller openings may be sealed with non-hardening caulk.

# RETROFIT INSTALLATION GUIDE

## RFK1

### Power Supply Wiring Instructions:

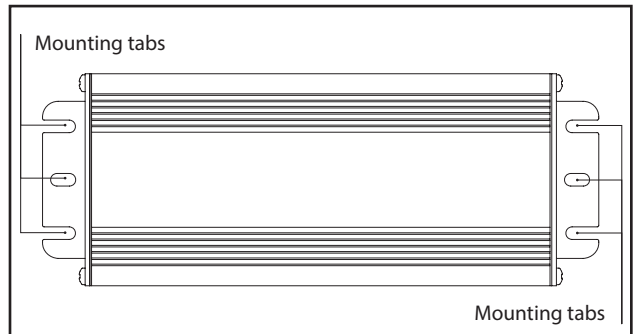


AC Input wires:

- Black - Line, White - Neutral, Green - Ground

DC Output wires:

- Black - Negative (-), Red - Positive (+)



For mounting purposes, there are mounting tabs on either end of the power supply with several different positions to aid in ease of mounting.

### Power Supply Box Installation:

- Determine desired location of box.
- Attach the box to the substrate. Screw through the middle and lower channels. (For use in a wet location, attach box using screws with rubber gasketed heads.)  
\*The Transformer box is to be attached in all applications with the 13/16" holes always facing down.
- Using the maximum 1/2" long self-tapping screw, attach the transformer\* to the raised platform.  
\*See transformer manufacturer's specification for clearances.

The bottom of the box has 3 standard 13/16" diameter holes and 2 pilot holes for additional 13/16" holes.

- Use the middle back 13/16" hole. Attaching your metal conduit nipple from the safety disconnect switch box. It is important that the primary (120 VAC) wires be separated from the secondary (DC) circuit wires as much as possible. Make all the 120 VAC splices in the safety disconnect box. No excess 120 VAC wiring should be in the transformer box.

\*Keep all secondary wiring as far away from the primary wiring as possible.

\*\*Remember that this location is a dry/damp area. Use appropriate conduit & strain relief products.

- Use the included #8 x 1/2" machine screw as the grounding lug. This lug can be attached to the box either with the threads and two green nuts facing the inside of the box or so they face outside the box. The hole in the bottom of the box between the two 13/16" holes is for the attachment of the grounding lug. Attach the grounding wires from the LED letters to the box (if grounding of the letters is required). Place the faceplate on the box, push up under the lip and secure with self-drilling screws to the box.

