Installation Manual

Active Beacon Version 3.x

Installer Configurable Features

- Up to 8 JSF Active Beacon units can be interconnected in a single network system
- Up to 16 separate network systems can be installed in close proximity
- Both JSF Signature (pulsed) and industry-standard MUTCD flash patterns are supported along with options for alternating the flashing (e.g. in sync or "wig-wag") between the two light heads of a single JSF Active Beacon head or between the various units in a network system
- Flash duration can be adjusted over a range of 5 to 60 seconds

Battery Capacity and Nominal Rated Usage

- The Nominal Rated Usage is 300 activations per day at a flash duration of 20 second
- Beginning with a fully charged battery pack, a JSF Active Beacon unit will meet the nominal rated usage without any solar charging

M.U.T.C.D. References

Chapter 4K. Flashing Beacons
- Section 4K.01 General Design and Operation of Flashing Beacons
- Section 4K.03 Warning Beacon
  - Section 4K.03 - B. Warning Signs
  - Section 4K.03 - C. Crosswalks
  - Section 4K.03 - Standard
- Section 4C.06 - Warrant 5, School Crossing
- Section 4F.02 - Emergency Vehicle Traffic Control Signals

FCC Statement - JSF Technologies

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may undesired operation.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. End-users must be provided with specific operating instructions for satisfying RF exposure compliance requirements.

Caution: Changes or modifications to this equipment, not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This equipment complies with Industry Canada's ICES 003. Operation is subject to the condition that This device may not cause harmful interference.

Cet Apparreil numerique de la Classe A respecte toutes les exigences du Reglement sur le material broilleur du Canada.

Installation Procedure Overview

JSF Technologies recommends that customers observe the following 4 steps as part of their JSF Active Beacon installation procedure:

1. Planning. Plan and recording the installation details using supplied JSF Technologies Active Beacon Installation Record.

2. Configuring. Configure the JSF Active Beacon units by adjusting the network address, flash pattern and duration via the user accessible rotary switches on the unit controllers.

3. On-site Mechanical Installation. Connect the JSF Active Beacon battery pack to the unit controller and perform the mechanical installation of the units.

4. Adjustment.
   a. Adjust the flash pattern so that the desired synchronized or alternating flash behavior between the light heads and units is realized.

   b. Adjust the flash duration of all the units in network systems that have push buttons connected.

   c. Record the final settings of flash pattern and duration in the JSF Technologies Active Beacon Installation Record.

5. Record Storage. Store all of your JSF Technologies Active Beacon Installation Records for future reference.

Planning

The general guidelines for planning are to :

A. Consider the number of JSF Active Beacon units that will be required in a network system in order to provide adequate pedestrian warning to approaching vehicles.

B. Consider any network systems that may already exist in close proximity to a new installation and ensure that a unique network address (0 through 15) can be allocated.

Configuration

Although not absolutely required, for consideration of speed of network system synchronization, JSF Technologies recommends that the following steps be executed with the all control units disconnected from their respective battery packs.

A. Set the network *address switch* to the same value (0 through 15) for all units.

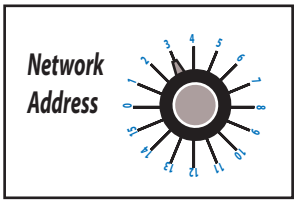

Fig. 1 - Network Address Selector

B. Set the *flash pattern* based on the following table.

Basic Pattern	Pattern Switch Setting	Flash Synchronization with other units in Network	Flash Synchronization between unit heads 1 and 2
JSF Signature (Pulsed)	0	in-phase	in-phase
	1	out-of-phase / alternating	in-phase
	2	in-phase	out-of-phase / alternating
	3	out-of-phase / alternating	out-of-phase / alternating
Industry Standard M.U.T.C.D.	4	in-phase	in-phase
	5	out-of-phase / alternating	in-phase
	6	in-phase	out-of-phase / alternating
	7	out-of-phase / alternating	out-of-phase / alternating

Table 1 - Flash Pattern Selection

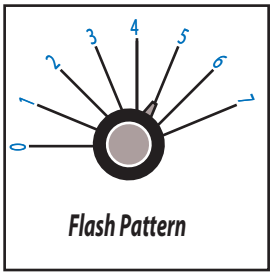

Fig. 2 - Flash Pattern Selector

C. Set the flash duration of all units to the anticipated required value based on the following table:

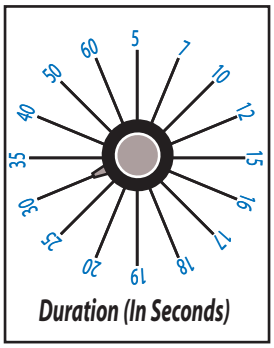

Fig.3- Flash Pattern Selector

Flash Duration Switch Setting	Duration (seconds)
0	5
1	7
2	10
3	12
4	15
5	16
6	17
7	18
8	19
9	20
10	25
11	30
12	35
13	40
14	50
15	60

Table 2 - Flash Duration Selection

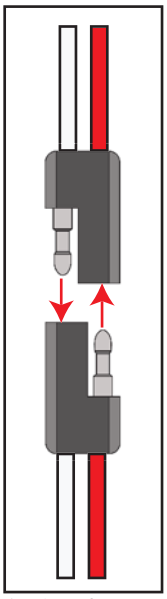
Fig. 4 - Battery Connectors

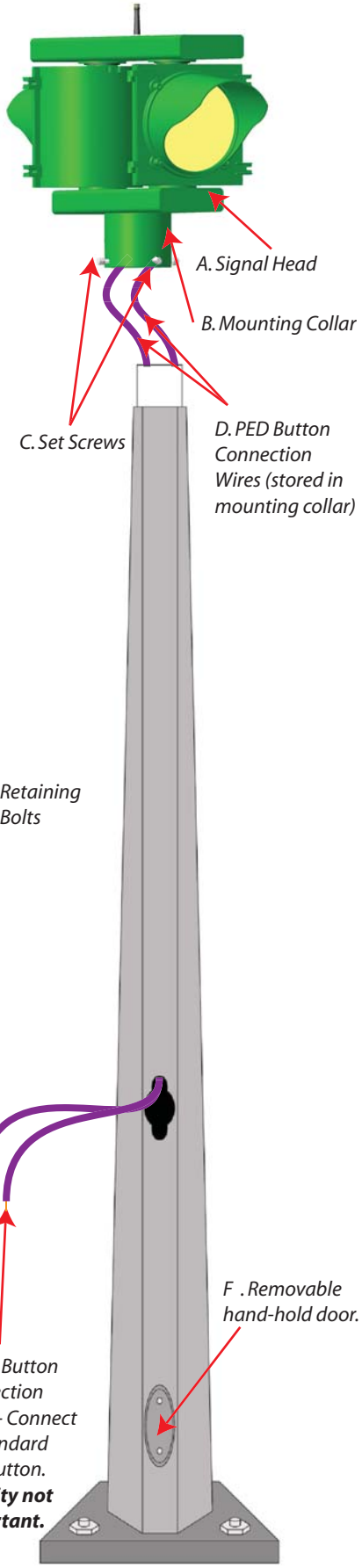

Fig. 6- Installation In Detail

Mechanical Installation

Please note: these installation notes assume that the flash pattern, flash duration, and network address have all been configured to the desired setting.

Tools Required

3/4" crescent wrench
1/2" socket or crescent/box wrench
Robertson #2 (red) screwdriver
Wire strippers/crimpers (for PED Button)

Fig. 5 - Retaining Bolts

1. Connect the battery connector in each head. See ***Figure 4***. Standard practice is to connect the Primary Head (the enclosure that contains the control box) first before connecting the other head(s).

2. Uncoil the purple PED button wires that are packed inside the mounting collar. To ease installation, attach the two purple PED button wires to a weighted object to allow the wires to travel easily through the signpost.

3. Raise the assembly to the top of the post while feeding the wires down through the sign post. Mount the assembly to the post using the mounting collar.

4. Orient the bracket to be parallel to the roadway. Tighten the four setscrews on the bracket collar.

5. Adjust the angle of each signal head to be perpendicular to the road.

6. Tighten the retaining bolts. ***See Figure 5.*** Check that the bolts are tightened enough to bury the teeth on the top and bottom of the signal head into the gasket.

7. Mount the PED button, feeding the two PED button wires to the hand hole or to the PED cutout and pull the wire through.

8. Connect the PED button to the wires. Polarity is not important.

Battery Replacement

The sealed lead-acid battery has a lifespan of approximately 3 years. The battery is a standard model that is available from JSF Technologies or through the battery manufacturer.

1. Disconnect the battery's power connector.
2. Release the battery's retaining straps. ***See Figure 8.***
3. Installation is the reverse of removal.

Fig. 8 - Battery and Straps

Warranty

JSF Technologies warrants its products against defects in materials and workmanship for a period of one year from the date of purchase. Products that are returned the JSF Technologies will be repaired or replaced at the discretion of JSF. Shipping costs are not included. Products that have misused, vandalized, or struck by a vehicle are not covered by this warranty. This warranty excludes batteries.

Troubleshooting

If the problem behavior you are experiencing is not covered below, please visit www.jsftech.com and refer to our frequently asked question page or contact us via e-mail at info@jsftech.com.

Problem: Pushing the push-button on one unit does not cause all the other units in the network system to flash.

Potential solutions:

1) If units were powered up before bringing them to installation site, disconnect and then reconnect their battery packs, then wait for 7 minutes.

2) If units have just been installed, wait for 7 minutes after installation to allow all devices in the network to complete synchronization checks.

3) Adjust the network address switch setting so that all units in the network system same network address.

Note: Changing the network address after powering up the unit will cause the associated device to reset. This will be, effectively, the same as cycling the power.

Problem: A unit in the network system is flashing with a double-pulsed pattern instead of the pattern indicated by the flash pattern switch.

Potential solutions:

1) The stored energy in the battery is low and the unit has entered a power conservation mode.

A) If the unit was installed more than 3 years ago, try replacing the battery.

B) If the site has experienced a long period of low sunlight, monitor the unit daily as the battery should eventually recharge and resume its normal flash pattern.

C) If the unit is installed in an area of insufficient sunlight, contact JSF Technologies to discuss options for installation of additional solar panels.

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