POLARA

# Installation Quick Start Guide for iNS3/iPHCU3S

AWG 18 wire is recommended for this installation and should meet all applicable regulatory requirements.

Removing power from the pedestrian signal head during installation is recommended for protection from electric shock. Safety protections may be compromised and warranty voided if installed, utilized, or configured in any way different from factory instructions.

**Note: An iNS2 PBS can operate as an iNS3 PBS (standalone Ped-Head Based System). It comes with a 3-position terminal block capable of connecting a 3-Wire Cable to a Ped-Head Control Unit (iPHCU3S). If changing an installed/existing iNS2 PBS to operate as an iNS3, you must disconnect the ped wires in the cabinet from the Polara Interconnect Board and land to standard ped input terminals.**

**Equipment needed for complete iNS3 installation:**

**iNS3 Push Button Station (PBS)**

**iPHCU3S (Ped Head Control Unit)**

**3-Wire Cable (Polara supplied or equiv.)**

**1. iNS3 PBS**

1.1 Place intersection in PED recall.

1.2 Plan PBS (push button station) locations if they have preprogrammed special messages. If special messages are not used, or will be programmed once each PBS is installed, proceed to next step.

**1.3 The iNS3 PBS must be mounted only in the upright orientation with the connection terminals at the bottom, any other mounting orientation will void the warranty.** If retrofitting these buttons on an intersection with existing buttons, remove existing buttons. Typical push button frames have the wire exit hole in the pole directly behind the center of the button (approx. 3.5” below lower mounting hole). Because our PBS requires the wires to reach the bottom of the unit, verify 8” of wire extends beyond wire exit hole in pole. If enough wire is not available, evaluate whether a new, lower wire exit hole that would line up with the terminal block access point in the bottom of the PBS would provide adequate wire length. If yes, drill and reroute wires, the optimal position of this hole is approx. 6.5” below the lower mounting hole. If not, you need to figure out a way to achieve more wire length.

1.4 The iNS3 PBS is a modular device consisting of a backplate, electronics module, speaker module, arrow button diaphragm, button cover, sign, and optional sign backplate (for larger signs). The PBS is shipped partially assembled to secure it during transport. To prepare for mounting, remove 3 screws from the lower cover. Remove all screws securing the sign and sign backplate if present. Remove EARTH GND (ground) screw located between the two terminal blocks at the bottom of the unit. Store this screw in a safe place, it ensures the unit is grounded to the pole and must be re-installed. Verify the arrow on PBS module is oriented toward the associated crosswalk. If necessary, the button diaphragm assembly may be taken off and rotated as needed. Secure the button diaphragm in the correct orientation by tightening the two retaining screws with a Phillips-head screwdriver. **Please use caution as the metal button diaphragm is sharp.** Remove the electronics module and speaker module together from the backplate.

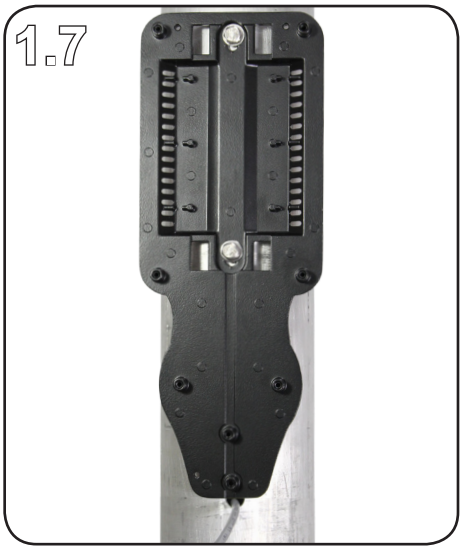
1.5 Position backplate on pole at correct height and orientation so arrow points to ending of crosswalk on the opposite side of the street. Orientation is very important because a blind person uses the arrow and face of the sign to orient themselves to the direction of travel. Mark mounting bolt locations if existing holes not correctly located. MUTCD max. height is 48”. Typical recommended height is 42”, but can be lower. Drill and tap ¼-20 bolt holes and wire access hole (if necessary, see Step 1.3). Route the iN3-Cable (General Cable C2831A, or equiv.) between the pedestrian signal head and the pole.

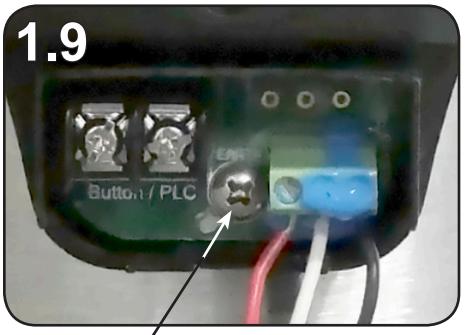
1.6 Position the backplate against the pole and route the wires forward near the bottom end of the backplate. Position the wire such that 3 or 4 inches of wire is available at the bottom of the backplate.

1.7 Attach the backplate to the pole using the provided ¼-20 bolts with washers.

1.8 Re-install the electronics/speaker modules. Re-install the sign (and sign backplate if using), securing the PBS Module in place before wiring. Re-install EARTH GND (ground) connection screw to location between terminal blocks.

1.9 Connect the two wires from the traffic signal cabinet (if available) to the terminals of the larger black terminal block labeled BUTTON/PLC. Wire polarity is not important. Connect the 3-wire cable to the terminal block on the right. Make sure the wiring matches at both

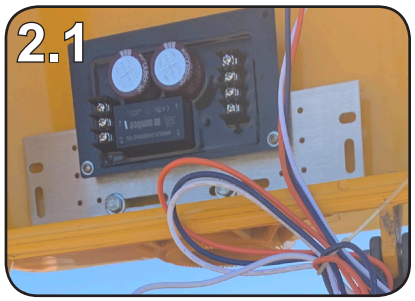




ends according to the DAT, GND, and PWR labels at the terminals. **Install iPHCU3S per #2 below.**

**Note, to maintain corrosion protection, leave the blue dielectric grease intact while tightening the screws.**

**Maximum voltage across PED wires (from PED call inputs): 20VDC or 15VAC rms**




1.10 With the power on, check that the PBS is operational. Recheck tightness of all connections. Re-install the lower cover.

1.11 The iNS3 PBS is now ready to use. For programming and configuration of the iNS3 PBS, please refer to the “Polara iOS Field Service App User Guide” or the “Polara PC App User Guide” in the iNS3 System Manual.

**Note: iNS3 default password is “1234”.**

## 2. iPHCU3S

**Note: Removing power from the pedestrian signal head during installation is recommended for protection from electric shock.**

2.1 The iPHCU3S normally installs inside the Pedestrian Signal Head (PED Head). It is supplied with a hardware kit which includes a mounting plate and associated screws and nuts. The photo shows an example of a typical installation. Typically, tapped ¼-20 holes are present. If they are not, a hole (or holes) to match the mounting plate need to be drilled and tapped. While a single screw is sufficient to secure the iPHCU3S bracket to the PED Head, a second screw may be used for additional stability. Distance between holes should be 9.3”.

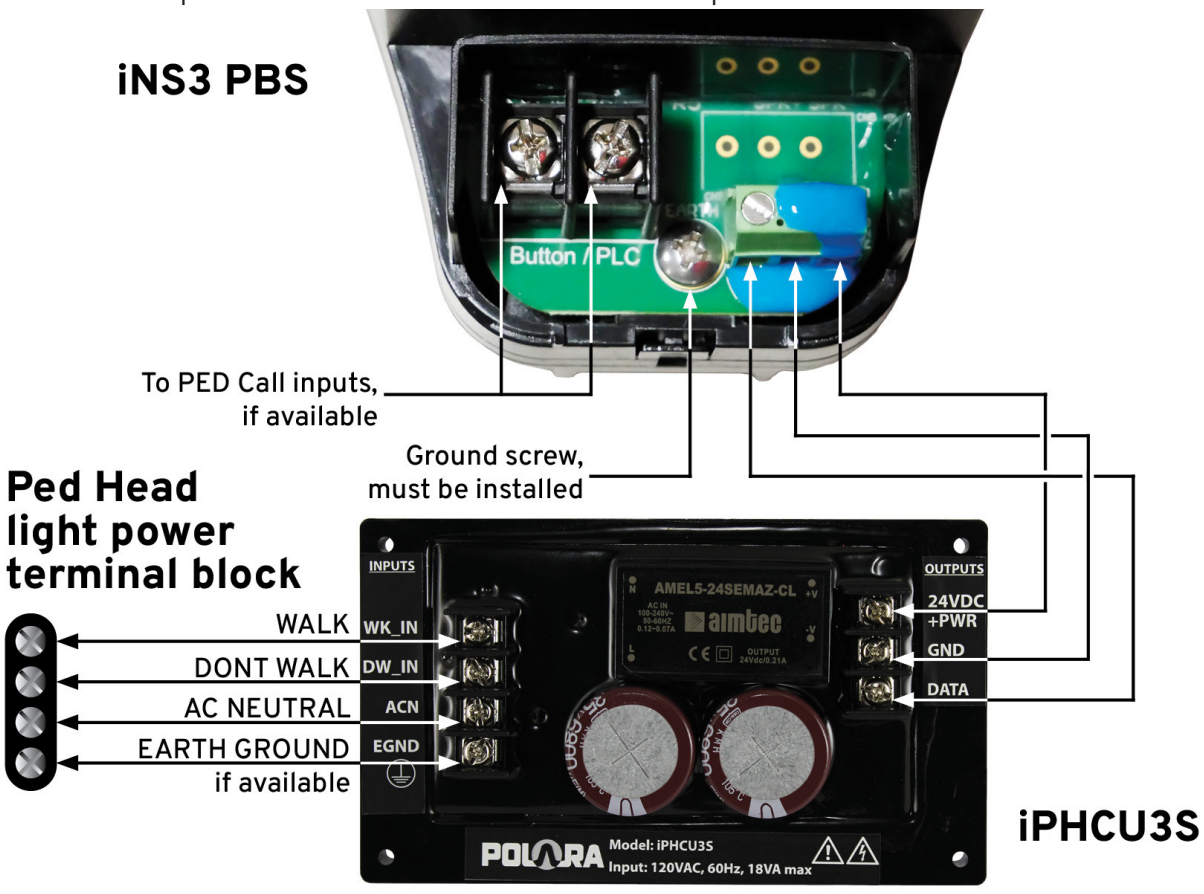
2.1.1 Attach the iPHCU3S to the mounting plate with the supplied hardware. Insert the 6-32 screws and secure with the 6-32 nuts.

2.1.2 Fasten the assembly to the ped head with the 1/4-20 screws.

2.2 Install jumper wires to connect the light power terminal block to the iPHCU3S input power terminal block. Install jumper wires for AC Neutral, Walk, and Don’t Walk. AWG 18 or larger wire is recommended for this installation and should meet all applicable regulatory requirements.

2.3 Connect the wires from previously installed 3-wire cable to the output terminal block of the iPHCU3S. **Once all wire connections are made and double-checked for correct landings, restore power to PED Head.**

## 3. Technical Support Contact

Polara @ 903-366-0300 EXT 4 or 888-340-4872

The latest version of the complete manual is available in PDF format at www.polara.com.