

CHANCE[®] Wireless Phasing Set

Operating Instructions Model No. PSC4032916

For Phasing 3Ø 480 V through 765 kV AC, including Capacitive Test Points



NOTICE: Before operating a Chance[®] Wireless Phasing Set (WPS), thoroughly read, understand and follow these instructions. Keep these instructions with product for future reference.



Hubbell has a policy of continuous product improvement. Please visit hubbellpowersystems.com to confirm current design specifications.

Guide to Warnings within Manual

The following is a list of warnings used within this manual and should be read in their entirety to ensure safe practices.

DANGER

A DANGER refers to operating procedures, techniques, etc., that, if not followed carefully could RESULT IN DEATH.

WARNING

A WARNING refers to operating procedures, techniques, etc., that, if not followed carefully could RESULT IN INJURIES OR DEATH.

CAUTION

A CAUTION refers to operating procedures, techniques, etc., that, if not followed carefully could RESULT IN DAMAGE TO EQUIPMENT or LOSS OF SERVICE to customers.

NOTICE

A NOTICE refers to information that is considered important but not hazard related.

Product Safety

⚠️ WARNING

Do not allow the universal coupling to become grounded in any way, or to contact another phase as this will cause erroneous readings and could cause severe personal injury or damage to equipment.

⚠️ WARNING

Always use an appropriate length insulated Hot Stick even when wearing rubber gloves. Contact with the universal coupling or other parts even with rubber gloves will cause erroneous readings. Always use with a universal pole to maintain its calibration.



CORRECT USE



INCORRECT USE

⚠️ WARNING

Before and after each use, always test the linked units on known energized voltage sources (In-Phase and Out-of-Phase). For testing ARVI Mode, see page 22 for details.

⚠️ DANGER

Minimum Approach Distances (MAD) should be adhered to at all times. For the latest information and charts refer to the official OSHA website: <https://www.osha.gov>

⚠️ CAUTION

The equipment covered in this manual must be used and serviced only by competently trained personnel familiar with and following approved work and safety practices. This equipment is for use by such personnel and this manual is not intended as a substitute for adequate training and experience in safe procedures for this type of equipment.

These instructions neither cover all details or situations in equipment use, nor do they provide for every possible contingency to be encountered in relation to installation, operation or maintenance. Should additional information and details be desired or if situations arise which are not covered adequately for the user's purpose, the specifics should be referred to Hubbell Power Systems.

Function and Design Overview

The CHANCE® Wireless Phasing Set (WPS), model PSC4032916, consists of two separate units: a "MAIN" and a "PROBE". It is a portable tool which has two main modes of operation. The first mode of operation utilizes both "MAIN" and "PROBE" units and is designed to determine the phase relationship between two electrical conductors with the same nominal voltage. The second mode of operation only utilizes the "MAIN" unit and emulates the functions of the Auto-Ranging Voltage Indicator (ARVI) model PSC4032915.

Wireless Phasing Set Mode

In Wireless Phasing Set (WPS) Mode, the "MAIN" and the "PROBE" will operate together as a unique pair as long as the blue "COM" LEDs remain solid. The two units communicate via linked digital radios. The WPS is not considered a voltmeter since no wired connection exists between the two units. It is designed to determine the phase relationship between two electrical conductors with the same nominal voltage. This is accomplished by comparing the measurements of the "MAIN" and "PROBE" units to determine whether the two conductors are in phase or out of phase.

The WPS Mode is designed for use on 480 V through 765 kV AC 50/60 Hz Phase-to-Phase nominal voltage, including Capacitive Test Points.

See page 8 for further instructions on the WPS Mode.

ARVI Mode

The Auto-Ranging Voltage Indicator (ARVI) Mode utilizes only the "MAIN" unit. It is used as a secondary means to confirm the condition of an AC (Alternating Current) high-voltage circuit after principal work procedures such as visible open gaps, dispatcher hold orders, and apparatus tag-outs have rendered the circuit de-energized. The ARVI Mode utilizes a single point of contact to the conductor, therefore it is not a voltmeter. It is designed to determine approximate Phase-to-Phase nominal voltage up to 765 kV AC 50/60 Hz.

While in ARVI Mode, the device is an electric field intensity indicator, which is calibrated to illuminate an LED (Light-Emitting Diode) representing the class of voltage that is present on the conductor. It responds to the magnitude of the field gradient between its end probe and a floating electrode. The device indicates the combined field intensity from all other conductors, including ground wires and grounded equipment. If the universal fitting is close to a ground, another phase, or another voltage source the voltage indication will tend to be high. If the universal fitting is close to a jumper or equipment of the same phase, the indication will tend to be low. **The tool must always be used with an appropriate length Hot Stick for safety and to maintain its calibration.**

See page 13 for further instructions on the ARVI Mode.

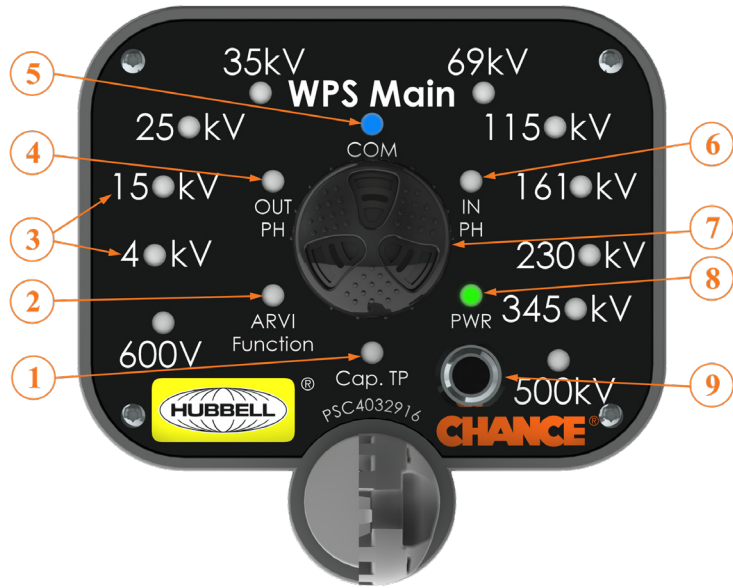
NOTICE

This device is an AC (alternating current/alternating voltage) only indicator; do not use it to detect DC (direct current/non-alternating voltage).

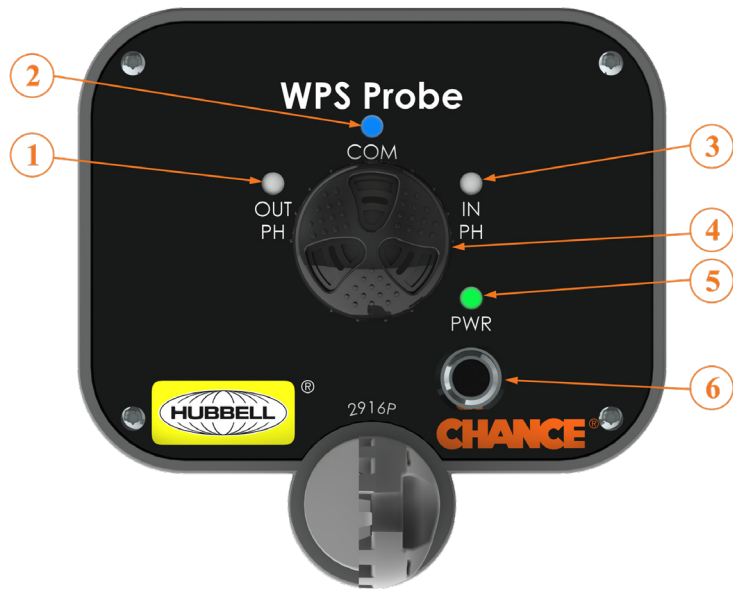
WARNING

Before and after each use, always test the linked units on known energized voltage sources (Phase-to-Phase and Phase-to-Neutral). For testing ARVI Mode, see page 22 for details.

Front Panel Information



- | | |
|--|-----------------------------|
| 1. Capacitive Test Point (Cap. TP) LED | 6. In-Phase (IN PH) LED |
| 2. ARVI Function LED | 7. Adjustable Audible Alarm |
| 3. Range (600 V to 500 kV) LEDs | 8. Power (PWR) LED |
| 4. Out-of-Phase (OUT PH) LED | 9. Power Button |
| 5. COM LED (Link Status) | |



1. Out-of-Phase (OUT PH) LED
2. COM LED (Link Status)
3. In-Phase (IN PH) LED
4. Adjustable Audible Alarm
5. Power (PWR) LED
6. Power Button

Features (Wireless Phasing Set Mode)

- Designed to determine the phase relationship between two electrical conductors with the same nominal voltage
- Communicates wirelessly via linked digital radios
- Linked units can operate up to 300 ft away from each other
- 480 V through 765 kV AC 3Ø for overhead and underground systems
- Works on Capacitive Test Points
- Adjustable audible alarm
- Battery drawer on each unit for simple battery replacement
- Comes with a dual compartment storage bag with a snaphook designed to attach to a lineman's belt
- QR code located in the instructions, Quick Reference guide, and on the unit itself

Features (ARVI Mode)

- Meets intent of OSHA 1910.269 to test for absence of nominal voltage
- Used to determine if power lines are at rated voltage, have induced voltage, or are de-energized
- Capacitive Test Point through 765 kV AC for overhead and underground systems
- Adjustable audible alarm
- Power-saving sleep mode (auto-off)
- Approximate Phase-to-Phase voltage ranges are indicated by LED lights
- Automatic Hold Mode

Accuracy

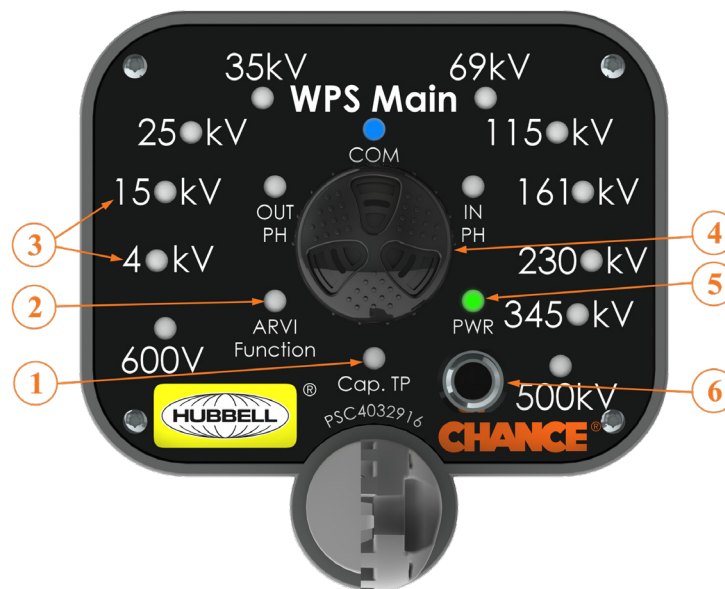
In WPS Mode, this instrument is designed to determine the phase relationship between two electrical conductors with the same nominal voltage. The display will be either "In-Phase" or "Out-of-Phase." If the phase relationship is greater than or equal to 10 degrees, the WPS will display "Out-of-Phase."

In ARVI Mode, this instrument is not a voltmeter; hence, the manufacturer claims no specific accuracy, and therefore, no specific accuracy is to be assumed by the user. Readings will vary with the field intensity, determined by a great variety of field conditions including proximity, size, and orientation of all system components in the vicinity, both energized and grounded. Erroneous readings may result from being too near other energized conductors or being too near another phase or ground. To avoid such field distortions, keep the unit as far away as practical from all system components other than the specific conductor being tested.

Ranges in ARVI Mode

In ARVI Mode, the CHANCE® Wireless Phasing Set (WPS), model number PSC4032916, is a portable tool to test for nominal voltage from Capacitive Test Point through 765 kV AC, 50/60 Hz. The equivalent voltage ranges to provide indication of each of the Voltage Classes are as follows:

Voltage Class	Voltage Range
600 V	480 V to 900 V
4 kV	1 kV to 6.5 kV
15 kV	6.6 kV to 17 kV
25 kV	18 kV to 29 kV
35 kV	30 kV to 50 kV
69 kV	51 kV to 109 kV
115 kV	110 kV to 149 kV
161 kV	150 kV to 199 kV
230 kV	200 kV to 299 kV
345 kV	300 kV to 399 kV
500 kV	400 kV to 699 kV
765 kV	700 kV and above: all LEDs illuminate



1. Capacitive Test Point (Cap. TP) LED
2. ARVI Function LED
3. Range (600 V to 500 kV) LEDs
4. Adjustable Audible Alarm
5. Power (PWR) LED
6. Power Button

WPS Mode Operations for Overhead

Turn the Units On:

1. In order to go into the WPS Mode, the "PROBE" unit must always be turned on before the "MAIN" unit. Momentarily depress the "Power Button" on the "PROBE" unit. Once the "PROBE" unit's blue "COM" LED begins blinking, momentarily depress the "Power Button" on the "MAIN" unit. If the "COM" LED on the "PROBE" unit turns solid before the "MAIN" unit is turned on then there is another "MAIN" unit within range that it has linked to.
 - a. With both the "PROBE" and "MAIN" units on, the blue "COM" LEDs will start blinking. The "COM" LEDs will turn solid once the units are securely linked. These units will only communicate to each other as long as both remain turned on. If a unit is turned off then both units will have to go through the linking process again in order to re-link to each other.
 - b. The maximum designed operating distance of the two linked units is 300 ft. If you lose the link between the units, the blue "COM" LEDs will begin blinking. Once the two units come back into range they will automatically re-link unless either unit has been turned off. If a unit is turned off, then both units will have to go through the linking process again in order to re-link to each other.
 - c. The WPS is now ready for operation.

Take a Reading:

2. Install the supplied Shepherd Hooks and place the units in contact with the power line conductor. Minimum Approach Distances (MAD) should be adhered to at all times.
 - a. Ensure that the blue "COM" LEDs are solid before and during testing.
 - b. The WPS will begin sensing for phase relation when both the "MAIN" and "PROBE" are placed in contact with the conductors to be tested. The audible alarm and phase LED's should indicate an "In-Phase" or "Out-of-Phase" condition approximately every four seconds. For an "In-Phase" indication, both "MAIN" and "PROBE" units will illuminate the green "In-Phase" LED and the audible alarms will emit three short chirps. For an "Out-of-Phase" indication, both "MAIN" and "PROBE" units will illuminate the red "Out-of-Phase" LED and the adjustable audible alarms will emit two short chirps followed by a long tone.
 - c. The WPS will default to an "Out-of-Phase" reading as a safety precaution if the connection on the conductor is momentarily lost while the reading is being taken. **Keep the unit steady and in constant contact with the conductor.**

Turn the Units Off:

3. To turn the WPS units off:
 - a. Press and hold the "Power Button" on each unit for 3 seconds:
 - i. The adjustable audible alarm will generate two series of three tones each.
 - ii. The unit will turn off after the second series of tones.
 - b. Or the "PROBE" unit will automatically power itself down (auto-off) after approximately 15 minutes of inactivity. The "MAIN" unit will automatically power itself down 15 minutes after disconnecting from the "PROBE".

NOTICE

For WPS Mode, the "PROBE" unit must always be turned on before the "MAIN" unit in order to link correctly.

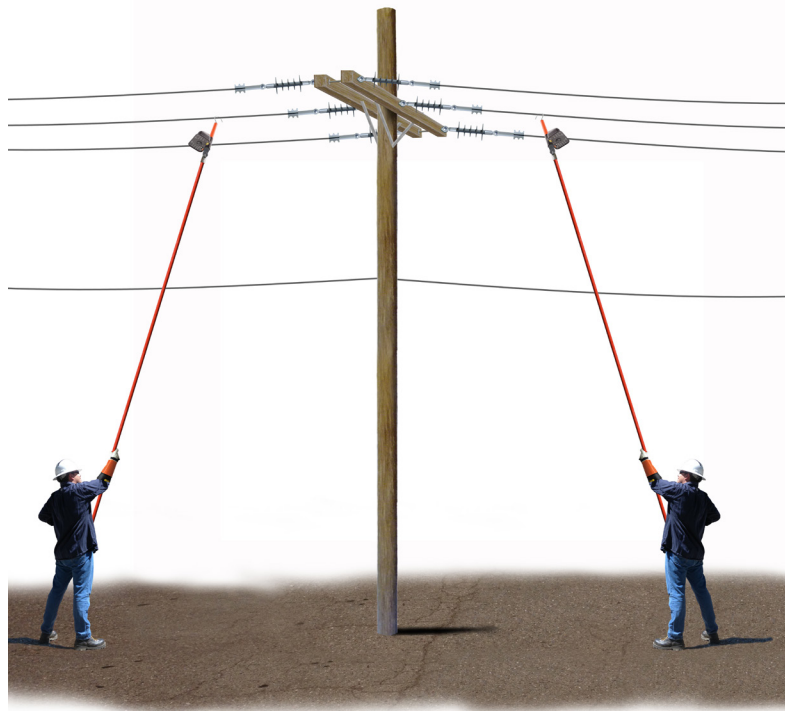
NOTICE

While in WPS Mode, if a unit is turned off then both units will have to go through the linking process again in order to re-link to each other.

WPS Mode Operations for Overhead (Cont.)

⚠ WARNING

Before and after each use, always test the linked units on known energized voltage sources (Phase-to-Phase and Phase-to-Neutral).



WPS Reading In-Phase



WPS Reading Out-of-Phase

WPS Mode Operations for Underground



Always use appropriate length insulated Hot Stick even when wearing rubber gloves. Contact with universal coupling or other parts, even when using rubber gloves, will cause erroneous readings. Also, due to the close proximity of conductive metals, the readings taken in URD cabinets will typically be higher than on an overhead line.

As with overhead, the same basic rules and procedures apply when using the CHANCE® Wireless Phasing Set (WPS) on underground systems. Follow these three very important additional instructions when using the tool on underground equipment:

⚠ DANGER

- 1. When testing dead-front URD equipment, use an appropriate Bushing Adapter on the Bushing Well. On Capacitive Test Points, use the Straight Probe. Never use the Shepherd Hook on URD equipment.**
- 2. Use *extreme caution* when testing live-front URD equipment. Use applicable safe work practices and procedures. Do not use any probes or Bushing Adapters on the WPS when testing live-front URD equipment. Only use a small hex head machine screw (1/4-20 X 3/8" long), see example below.**
- 3. When testing live-front URD equipment, the WPS may detect fields from adjacent conductors, energized parts or grounds, including grounded cabinet components.**



Hex Head Machine Screw for use on Live-Front



#H18766 Straight Probe for use on Capacitive Test Points

WPS Mode Operations for Underground (Cont.)

Turn the Units On:

1. In order to go into the WPS Mode, the "PROBE" unit must always be turned on before the "MAIN" unit. Momentarily depress the "Power Button" on the "PROBE" unit. Once the "PROBE" unit's blue "COM" LED begins blinking, momentarily depress the "Power Button" on the "MAIN" unit. If the "COM" LED on the "PROBE" unit turns solid before the "MAIN" unit is turned on then there is another "MAIN" unit within range that it has linked to.
 - a. With both the "PROBE" and "MAIN" units on, the blue "COM" LEDs will start blinking. The "COM" LEDs will turn solid once the units are securely linked. These units will only communicate to each other as long as both remain turned on. If a unit is turned off then both units will have to go through the linking process again in order to re-link to each other.
 - b. The maximum operating distance of the two linked units is 300 ft. If you lose the link between the units, the blue "COM" LEDs will begin blinking. Once the two units come back into range they will automatically re-link unless either unit has been turned off. If a unit is turned off then both units will have to go through the linking process again in order to re-link to each other.
 - c. The WPS is now ready for operation.

Take a Reading:

2. For dead-front, install the proper Bushing Adapters (see page 23 "Optional Accessories") on both units. For live-front, install the small hex head machine screws (1/4-20 X 3/8" long) on both units. Minimum Approach Distances (MAD) should be adhered to at all times.
 - a. Ensure that the blue "COM" LEDs are solid before and during testing.
 - b. The WPS will begin sensing for phase relation when both the "MAIN" and "PROBE" are placed in contact with the conductors to be tested. The adjustable audible alarm and phase LED's should indicate an "In-Phase" or "Out-of-Phase" condition approximately every four seconds. For an "In-Phase" indication, both "MAIN" and "PROBE" units will illuminate the green "In-Phase" LED and the adjustable audible alarms will emit three short chirps. For an "Out-of-Phase" indication, both "MAIN" and "PROBE" units will illuminate the red "Out-of-Phase" LED and the adjustable audible alarms will emit two short chirps followed by a long tone.
 - c. The WPS will default to an "Out-of-Phase" reading as a safety precaution if the connection on the conductor is momentarily lost while the reading is being taken. **Keep the unit steady and in constant contact with the conductor.**

Turn the Units Off:

3. To turn the WPS units off:
 - a. Press and hold the "Power Button" on each unit for 3 seconds:
 - i. The adjustable audible alarm will generate two series of three tones each.
 - ii. The unit will turn off after the second series of tones.
 - b. Or the "PROBE" unit will automatically power itself down (auto-off) after approximately 15 minutes of inactivity. The "MAIN" unit will automatically power itself down 15 minutes after disconnecting from the "PROBE".

WARNING

Do not allow the universal coupling to become grounded in any way, or to contact another phase as this will cause erroneous readings and could cause severe personal injury or damage to equipment.

NOTICE

While in WPS Mode, if a unit is turned off, then both units will have to go through the linking process again in order to re-link to each other.

WPS Mode Capacitive Test Point

⚠ DANGER

Capacitive Test Points must be free of corrosion and contamination for valid testing. If ever in doubt about interpreting CHANCE® Wireless Phasing Set (WPS) reading under any circumstance, always assume circuit is energized and take appropriate safety precautions.

⚠ WARNING

Failure to use proper safety equipment, procedures, and work rules could result in personal injury or damage to equipment.

1. To test Capacitive Test Points on dead-front URD equipment, safely remove the protective cap/cover from the Elbow by using appropriate work practices and procedures. Follow the Elbow manufacturer's recommendations on proper use of all Capacitive Test Points. Capacitive Test Points must be free of corrosion and contamination for valid testing.
2. While observing all required safe work practices, and with an appropriate length insulated Hot Stick attached to the WPS's universal coupling, touch the short Straight Probe of the WPS to the Elbow Test Points and observe the phase reading LEDs.
3. When taking a reading, the area of and around the Capacitive Test Point must be dry and free of contaminants. The Capacitive Test Point has no direct connection to the conductor. It uses an impedance capacitance tap and only high impedance indicating instruments designed for this application should be used. If a reading is indicated, the Cable is energized, but if no reading is indicated this is not sufficient to establish a de-energized circuit. For safety reasons, use other approved safe procedures, such as direct contact, to determine if the Cable is de-energized.



#H18766 Straight Probe



ARVI Mode Operations for Overhead

Turn the Unit On:

1. As a secondary mode of operation, the "MAIN" unit can function as a standalone Auto-Ranging Voltage Indicator (ARVI). For ARVI Mode, only the "MAIN" unit is used. Ensure that no "PROBE" units are turned on within range.
2. Momentarily depress the "Power Button" for approximately 2 seconds.
 - a. Upon power-up, each LED will illuminate individually from the lowest voltage to the highest followed by the adjustable audible alarm. These tests verify the function of the LEDs, alarm, batteries, and internal circuitry.
 - b. Following the adjustable audible alarm, the blue "COM" LED will flash for approximately 5 seconds. This is indicating that it is looking for a "PROBE" unit. If a "PROBE" unit is within range, the "MAIN" unit will link and go into WPS Mode. Turn both units off and then turn only the "MAIN" unit on.
 - c. The "PWR" LED will flash and the "ARVI Function" LED will be solid. After a single audible beep, the unit's ARVI Mode is now ready for use.
 - d. Always install the unit on an appropriate length insulated Hot Stick.

Take a Reading:

3. Install the supplied Shepherd Hook and place the unit in contact with the power line conductor. Minimum Approach Distances (MAD) should be adhered to at all times.
 - a. Ensure that the yellow "ARVI Function" LED is solid before, during, and after testing.
 - b. The audible alarm will begin to beep as the unit senses the electric field. The Range LED that corresponds with the system voltage level present on the conductor will begin to blink. The higher the voltage, the faster the beeping occurs. Audio and visual indications may begin before contact is made.

Hold Mode: Refer to page 19.

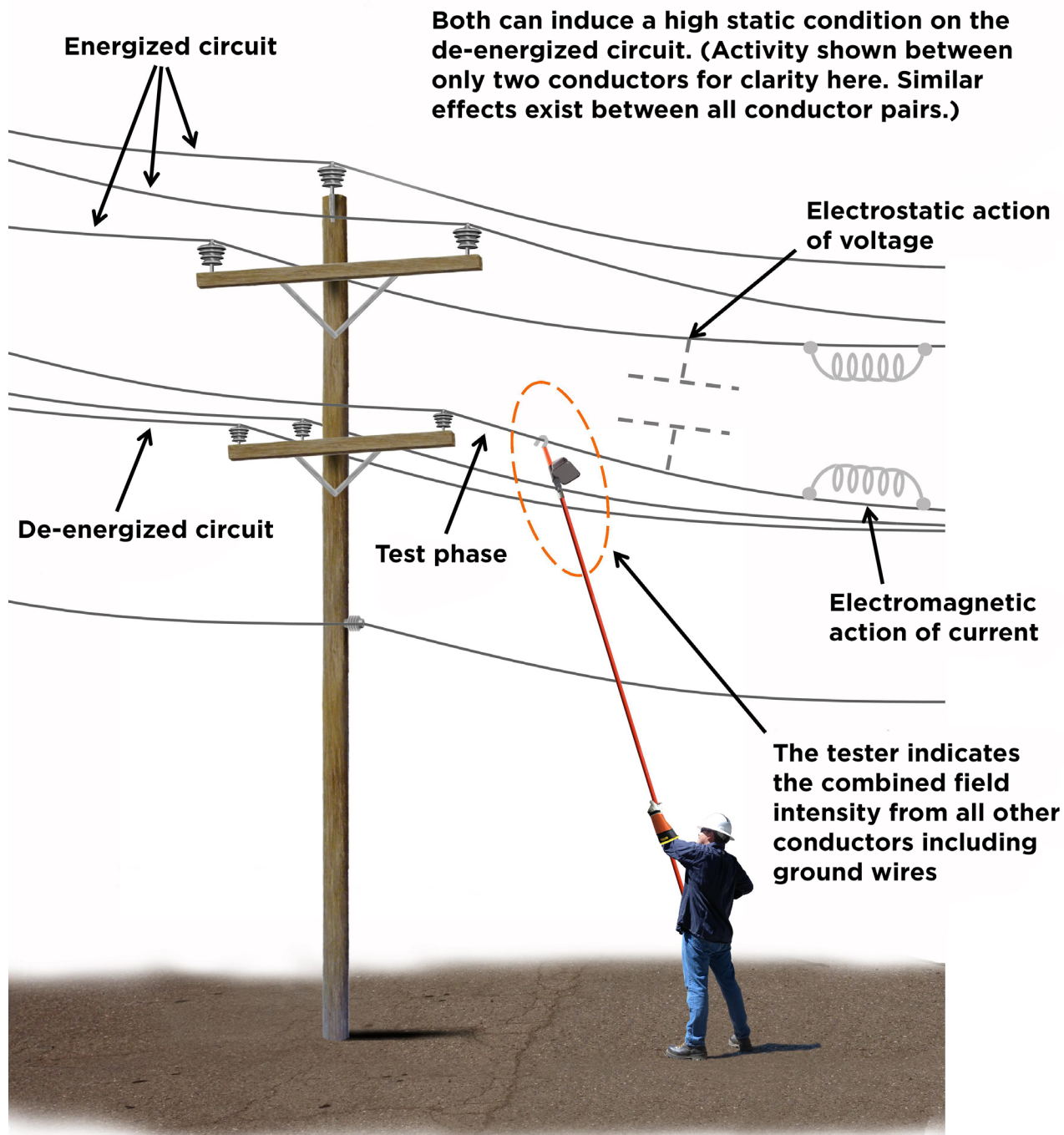
Turn the Unit Off:

4. To turn the WPS "MAIN" unit off:
 - a. Press and hold the "Power Button" on the unit for 3 seconds:
 - i. The adjustable audible alarm will generate two series of three tones each.
 - ii. The unit will turn off after the second series of tones.
 - b. Or the "MAIN" unit will automatically power itself down (auto-off) after approximately 15 minutes of inactivity.

ARVI Mode Operations for Overhead (Cont.)

NOTICE

Both the electromagnetic action of current and electrostatic action of voltage can induce a high static condition on the de-energized circuit. Activity effects can exist between all conductor pairs. The ARVI indicates the combined field intensity from all other conductors, including ground wires.



ARVI Mode Operations for Underground



Using ARVI Mode on Dead-Front URD



Using ARVI Mode on Live-Front URD

Always use appropriate length insulated Hot Stick even when wearing rubber gloves. Contact with universal coupling or other parts, even when using rubber gloves, will cause erroneous voltage indication. Also, due to the close proximity of conductive metals, the readings taken in URD cabinets will typically be higher than on an overhead line.

As with overhead, the same basic rules and procedures apply when using the CHANCE® Wireless Phasing Set (WPS) on underground systems. Follow these three very important additional instructions when using the tool on underground equipment:

⚠ DANGER

- 1. When testing dead-front URD equipment, use an appropriate Bushing Adapter on the Bushing Well. On Capacitive Test Points, use the Straight Probe. Never use the Shepherd Hook on URD equipment.**
- 2. Use *extreme caution* when testing live-front URD equipment. Use applicable safe work practices and procedures. Do not use any probes or Bushing Adapters on the WPS when testing live-front URD equipment. Only use a small hex head machine screw (1/4-20 X 3/8" long), see example above.**
- 3. When testing live-front URD equipment, the WPS ARVI Mode may detect fields from adjacent conductors, energized parts or grounds, including grounded cabinet components. Indication of an energized field may not be sufficient to isolate one specific conductor.**

⚠ WARNING

Before and after each use, always test the linked units on known energized voltage sources (Phase-to-Phase and Phase-to-Neutral). For testing ARVI Mode, see page 22 for details.

ARVI Mode Operations for Underground (Cont.)

Turn the Unit On:

1. As a secondary mode of operation, the "MAIN" unit can function as a standalone Auto-Ranging Voltage Indicator (ARVI). For ARVI Mode, only the "MAIN" unit is used. Ensure that no "PROBE" units are turned on within range.
2. Momentarily depress the "Power Button" for approximately 2 seconds.
 - a. Upon power-up each LED will illuminate individually from the lowest voltage to the highest followed by the adjustable audible alarm. These tests verify the function of the LEDs, alarm, batteries, and internal circuitry.
 - b. Following the adjustable audible alarm, the blue "COM" LED will flash for approximately 5 seconds. This is indicating that it is looking for a "PROBE" unit. If a "PROBE" unit is within range, the "MAIN" unit will link and go into WPS Mode. Turn both units off and then turn only the "MAIN" unit on.
 - c. The "PWR" LED will flash and the "ARVI Function" LED will be solid. After a single audible beep, the unit's ARVI Mode is now ready for use.
 - d. Always install the unit on an appropriate length insulated Hot Stick.

Take a Reading:

3. For dead-front, install the proper Bushing Adapter (see page 23 "Optional Accessories") on the "MAIN" unit. For live-front, install the small hex head machine screw (1/4-20 X 3/8" long). Minimum Approach Distances (MAD) should be adhered to at all times.
 - a. Ensure that the yellow "ARVI Function" LED is solid before, during, and after testing.
 - b. The audible alarm will begin to beep as the unit senses the electric field. The Range LED that corresponds with the system voltage level present on the conductor will begin to blink. The higher the voltage, the faster the beeping occurs. Audio and visual indications may begin before contact is made.

Hold Mode: Refer to page 19.

Turn the Unit Off:

4. To turn the WPS "MAIN" unit off:
 - a. Press and hold the "Power Button" on the unit for 3 seconds:
 - i. The adjustable audible alarm will generate two series of three tones each.
 - ii. The unit will turn off after the second series of tones.
 - b. Or the "MAIN" unit will automatically power itself down (auto-off) after approximately 15 minutes of inactivity.

WARNING

Do not allow the universal coupling to become grounded in any way, or to contact another phase as this will cause erroneous voltage indication and could cause severe personal injury or damage to equipment.

CAUTION

Once in the ARVI Hold Mode, the unit must be reset for the LEDs to indicate higher or lower voltages.

ARVI Mode Capacitive Test Point

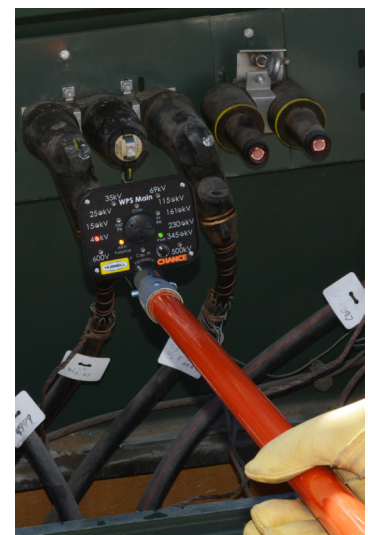
⚠ DANGER

Capacitive Test Points must be free of corrosion and contamination for valid testing. If ever in doubt about interpreting the CHANCE® Wireless Phasing Set reading under any circumstance, always assume circuit is energized and take appropriate safety precautions.

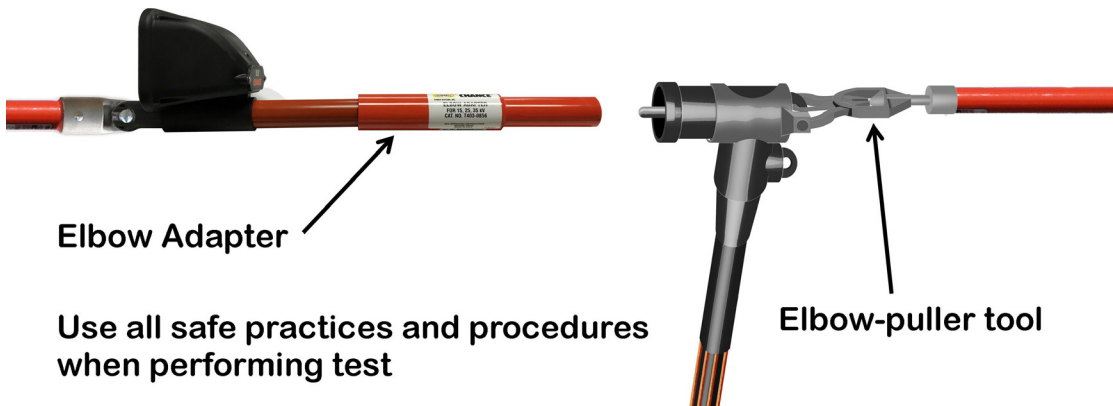
⚠ WARNING

Failure to use proper safety equipment, procedures, and work rules could result in personal injury or damage to equipment.

1. To test Capacitive Test Points on dead-front URD equipment, safely remove the protective cap/cover from the Elbow by using appropriate work practices and procedures. Follow the Elbow manufacturer's recommendations on proper use of all Capacitive Test Points. Capacitive Test Points must be free of corrosion and contamination for valid testing.
2. Refer to "To Turn the Unit On" on page 16 "ARVI Mode Operations for Underground (Cont.)" for instructions on how to turn on the WPS in ARVI Mode.
3. While observing all required safe work practices, and with an appropriate length insulated Hot Stick attached to the WPS's universal coupling, touch the short Straight Probe of the "MAIN" unit of the WPS to the Elbow Test Point. Depending on the condition of the Test Point, either the "Cap. TP" or one of the Range LEDs should be illuminated.
4. When taking a reading, the area of and around the Capacitive Test Point must be dry and free of contaminants. The Capacitive Test Point has no direct connection to the conductor. It uses an impedance capacitance tap and only high impedance indicating instruments designed for this application should be used. If a reading is indicated, the Cable is energized, but if no reading is indicated this is not sufficient to establish a de-energized circuit. For safety reasons, use other approved safe procedures, such as direct contact, to determine if the Cable is de-energized.



Optional Procedure for Elbow/Cable Test



It is recommended that two linemen perform this procedure.

1. Utilizing all safe practices and procedures, Operator #1: pull the elbow with elbow-puller tool, then orient the elbow so it is safely accessible for testing.
2. Utilizing all safe practices and procedures, Operator #2: with the installed elbow adapter on the WPS, safely test the elbow/cable.
3. Minimum Approach Distances (MAD) should be adhered to at all times.

⚠ WARNING

Failure to use proper safety equipment, procedures, and work rules could result in personal injury or damage to equipment.

ARVI Hold Mode (for Overhead and Underground)

The ARVI Mode has a hold feature (Hold Mode) built into the circuitry, which automatically holds a reading when the unit is left on an energized conductor or senses constant voltage for a period of approximately 15 seconds. In the Hold Mode, the LED representing the voltage range being indicated will become solid. The audible beeping will become continuous for 1 to 2 seconds followed by 5 to 6 very rapid beeps, then 1 to 2 seconds of silence. The unit then will return to the normal audible mode, but one LED will remain solid until reset.

To reset the unit after a held reading is displayed:

Remove the unit from the conductor and press and hold the "Power Button" until you hear three rapid beeps then release. If you hold the "Power Button" for too long then you will hear two series of three rapid beeps (six beeps total), which means the unit is powered off. You will then need to turn the unit back on.

⚠ CAUTION

Once in the Hold Mode, the unit must be reset for the LEDs to indicate higher or lower voltages.

⚠ CAUTION

In the Hold Mode, the unit is waiting for a steady (consistent) voltage reading before holding a reading. Loss of contact with the conductor during the Hold Mode will cause a delay in capturing the reading.

Battery Replacement



A low battery condition is indicated by chirps from the adjustable audible alarm when no electric field is present and the green "PWR" LED flashes at an increased rate. Batteries can be replaced by carefully removing the two screws on the battery drawer and sliding the drawer away from the housing to expose the battery holder. Replace the two "AA" batteries, noting proper polarity. Either Alkaline or Lithium batteries may be used. We recommend that you replace both units' batteries at the same time.

NOTICE

This device contains no user serviceable components. Do not remove the front panel assembly.

CAUTION

Ensure that the wires connected to the battery holder remain connected and are not damaged. After the battery drawer and screws are replaced in the housing, test the function of both units by following the WPS linking process as described on page 8.

Maintenance

The CHANCE® Wireless Phasing Set (WPS) is an electronic instrument and, if properly cared for, will provide many years of trouble-free service. Keep all parts clean and dry. **Clean only with cloth dampened with water. Do not use chemical solvents.** Do not use CHANCE® Moisture Eater II wipes on any part of the WPS as it will cause damage.

Abuse or misuse will damage the unit. Store in a dry location, do not drop, and protect from jostling or impacts during storage, carrying, or use. See "Specifications" on page 25 for operating and storage temperatures and humidity ranges.

CAUTION

Do not drop tool as accuracy may be impaired. Do not use if damaged or malfunctioning.

Repairs

For Hubbell Power Systems authorized repair or factory calibration, please contact:

BEVINS
Protecting crews since 1957

M.W. Bevins Co.
9903 E. 54th St.
Tulsa, OK 74146
(918) 627-1273
(918) 627-1294 (FAX)
www.bevinsco.com

Optional Voltage Indicator Tester (#PSC4033582)



1. Power-up only the "MAIN" unit of the WPS into the ARVI Mode and verify that the automatic self-test has been successfully completed. The "PROBE" unit should not be turned on during this test.
2. Insert the plug of the Voltage Indicator Tester into the jack located on the back of the housing of the "MAIN" unit of the WPS that is in ARVI Mode.
3. Connect the alligator clip onto the Shepherd Hook of the "MAIN" unit of the WPS.
4. One of the Range LED's in the 4 kV to 25 kV range of the WPS should begin blinking and the adjustable audible alarm should emit a beeping sound.
5. Leave the Voltage Indicator Tester connected to the WPS for 15-20 seconds. The WPS should go into the AUTO-HOLD mode. The Range LED should light continuously and the audible beeping should convert to a continuous signal for 1-2 seconds followed by 5-6 very rapid beeps, followed by 1-2 seconds of silence, and finally return to the normal audible mode until the WPS is reset.
6. The Voltage Indicator Tester procedure tests all components of the circuitry on the main unit of the WPS that was not already tested by the power-up self-test. In order to test the "PROBE" unit of the WPS, link the "MAIN" and "PROBE" and verify "In-Phase" and "Out-of-Phase" readings are correctly displayed utilizing known energized voltage sources.
7. If the WPS operates as described, it is operating properly. If not, replace the batteries in the Voltage Indicator Tester and the WPS units, and repeat the above procedure. If the WPS still does not operate as described, either the WPS or Voltage Indicator Tester may not be operating properly. Both units should be returned to the manufacturer for repair.

NOTICE

Only use the Voltage Indicator Tester with the WPS in ARVI Mode.

Optional Accessories



Indicator Tester - PSC4033582



15 kV Bushing Adapter - T4030428



15 kV, 25 kV, 35 kV Bushing Adapter - T4030857



Elbow Adapter - T4030856

Standard Carrying Bag for PSC4032916



Optional Hard Case PSC4033811 (ordered separately)

The optional hard case does **NOT** include a WPS or any accessories.



Specifications

"MAIN" Unit Specifications

Weight (w/o batteries): 661 g (23.3 oz)

Dimensions: 12.55" L X 5.15" W X 5.06" H

Battery requirements: Two (2) Alkaline or Lithium "AA" batteries

"PROBE" Unit Specifications

Weight (w/o batteries): 558 g (23.2 oz)

Dimensions: 12.55" L X 5.15" W X 5.06" H

Battery requirements: Two (2) Alkaline or Lithium "AA" batteries

Both Unit Specifications

Out-of-Phase detection: Greater than or equal to 10 degrees of phase shift between conductors

Adjustable audible alarm: 92 ± 5 dB(A) at 24 inches (61 cm), at 25°C

Operating voltage range(s): 480 V to 765 kV AC 50/60 Hz Phase-to-Phase nominal voltage, including Capacitive Test Points

Operating temperature range: -20° to +80°C

Operating humidity range: 5% to 95% Rh

Storage temperature: -20° to +60°C (Recommended storage at 21°C +/- 2°C)

Storage humidity range: 5% to 95% Rh (Recommended storage at 45% Rh +/- 8% Rh)

Shock Testing: per IEC 60068-2-27, "Test Ea and guidance: Shock"

Level 1 - 500 m/s² (50g), 11ms Half-sine pulse, 3 pulses Positive & Negative, each axis.

Level 2 - 1000 m/s² (100 g \pm 4 g), 1.5 to 2.5ms Half-sine pulse, 3 pulses Positive & Negative, each axis

Vibration Testing: per IEC 60068-2-6, "Test Fc: Vibration (sinusoidal)"

1.5 mm p-p from 10 Hz to 40 Hz, 5g rms from 40 Hz to 2000 Hz for 3.3 hrs each axis

Limitations: Do not use if damaged or malfunctioning. Always use appropriate length insulated Hot Sticks even when wearing rubber gloves. To verify proper operation, always test both units on known energized voltage sources before and after each use. The "MAIN" unit's ARVI Mode can also be tested with the Voltage Indicator Tester.

Maximum Designed Operating Distance between "MAIN" and "PROBE": 300 ft. Obstructions between the units may reduce the operating distance.

FCC

FCC ID: OUR-XBEEPRO

IC: 4214-XBEEPRO

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 cause undesired operation.

Hubbell Power Systems, Inc.
210 N. Allen St
Centralia, MO 65240
www.hubbellpowersystems.com

Hubbell has a policy of continuous product improvement. Please visit hubbellpowersystems.com to confirm current design specifications.

PSP4033798
TD_09_110_E
Rev C.



©2019 Hubbell Incorporated | hpsliterature@hubbell.com | hubbellpowersystems.com

