WARNING

IF "FAIL" APPEARS ON THE DISPLAY, THE CALIBRATION REQUIRED LED (LEFT COLUMN) REMAINS LIT, OR THE CALIBRATED LED (RIGHT COLUMN) DOES NOT LIGHT, THE CALIBRATION PROCESS DID NOT COMPLETE. SHOULD THIS HAPPEN, CYCLE THE UNIT POWER AND THEN REPEAT STEP 2 ABOVE. IF "FAIL" APPEARS AGAIN, FURTHER TROUBLE-SHOOTING IS REQUIRED.

3. Remove the test shunt. The RX Occupancy LED should light. If the RX Occupancy LED fails to light, the calibration process has failed (refer to the WARNING above). Inspect all equipment and connections and repeat steps 1 & 2. If the calibration fails again, further troubleshooting is required.
4. The RX Occupancy LED should light once the test shunt has been removed. Repeat steps 1 – 4 for the OT2 Receiver. When the OT2 RX Occupancy LED lights, proceed to Receiver and Transceiver Checkout Procedures, Section 7.5.1.

Receiver and Transceiver Checkout Procedures

1. On the OT1 Transceiver, scroll down the Main Menu of the Receiver until INFO appears on the display.
2. Momentarily press the MENU Button and release it. "+RX SIG LVL =" appears on the Display.
3. Take note of RX SIG LVL. This is the normal receive signal value. Verify the RX SIG LVL value is >300. If not, set TX LVL to High and perform calibration and checkout procedures again. If the value remains below 300 after selecting TX LVL=High, select a lower frequency where RX SIG LVL value is >300.
4. In the WSS containing the transmitter, remove the transmitter's signal to the track by disconnecting a transmitter lead from the track surge equipment
5. On the receiver, take note of the Signal Level. If the Signal Level is greater than 20, an unintended signal of like frequency may be present.

WARNING

DO NOT PROCEED TO STEP 6 AND BEYOND UNTIL THE UNINTENDED SIGNAL OF LIKE FREQUENCY IS NO LONGER PRESENT (THIS MAY REQUIRE A FREQUENCY CHANGE TO AVOID UNINTENDED HARMONICS.) THIS CONDITION MUST BE RESOLVED.

6. Verify that the RX LED found in the Occupancy portion of the face of the unit is de-energized. If the LED remains lit, troubleshoot the unit.
7. Restore the Transmitter signal to the track by reconnecting the lead in the transmitter's track surge equipment.
8. Verify that the RX LED found in the Occupancy portion of the face of the unit energizes. If the LEDs fail to light, troubleshoot the unit, re-calibrate, and perform Steps 1 - 7 again. When the unit passes, repeat steps 1 – 8 for the OT2 Receiver.
9. Verify proper operation of the track circuit equipment before placing in service in accordance with railroad or agency procedures and applicable FRA rules.
10. Verify proper PSO 4000 operation by observing train moves, per railroad or agency policy.
11. The system is now ready for operation.

NOTE

In the text on this side of the document and on the drawing on the reverse side of the document, all references to Section numbers are those section numbers found within the Siemens Phase Shift Overlay 4000 (PSO 4000) Installation and Instruction Manual, SIG-00-07-06.

SIEMENS

QUICK REFERENCE GUIDE
INSTALL PSO 4000 TRANSCIEVER MODULE AS REPEATER

Document Number SIG-QG-10-04
Version A.1

The following procedure should be used when installing Phase Shift Overlay 4000 (PSO 4000) Track Circuits utilizing PSO 4000 Transmitter, 7A471, PSO Receiver, 7A473, and PSO Transceiver Assembly, 7A475.

WARNING

VERIFY THAT THE PSO 4000 RECEIVER'S, AND TRANSCEIVER ASSEMBLY'S SOFTWARE, FREQUENCY, AND ADDRESS FORMATS ARE AS SPECIFIED BY THE RAILROAD'S OR AGENCY'S APPROVED WIRING OR INSTALLATION DIAGRAM. FAILURE TO DO SO MAY LEAD TO INCORRECT OR UNSAFE OPERATION OF THE TRACK CIRCUIT.

IF ANY RECEIVER IS CALIBRATED IN POOR BALLAST CONDITIONS, IT MUST BE RE-CALIBRATED WHEN BALLAST CONDITIONS IMPROVE.

FAILURE TO FOLLOW THE RAILROAD'S OR AGENCY'S APPROVED WIRING OR INSTALLATION GUIDELINES REGARDING RECEIVER SETTINGS AND CALIBRATION MAY LEAD TO POSSIBLE UNSAFE OPERATION OF THE TRACK CIRCUIT.

AFTER CALIBRATION, VERIFY THAT THE TRACK CIRCUIT DE-ENERGIZES WHEN THE TRACK CIRCUIT IS SHUNTED WITH THE APPROPRIATE CALIBRATION RESISTANCE (0.06, 0.2, 0.3, 0.4, OR 0.5 OHMS). FAILURE TO DO SO MAY LEAD TO INCORRECT OR UNSAFE OPERATION OF THE TRACK CIRCUIT.

FOLLOWING INSTALLATION OR AFTER ANY RECEIVER MENU CHANGES HAVE BEEN MADE, RECALIBRATE THE RECEIVER AND TEST FOR PROPER OPERATION PER THE REQUIREMENTS SPECIFIED IN TABLE 7-2 AND TABLE 7-3 OF SIG-00-07-06, PSO 4000 I & I MANUAL.

Perform the following steps to install the PSO 4000 units:

1. Install and connect all PSO equipment in the Wayside Signaling Station (WSS) per the railroad's or agency's approved wiring or installation diagram.
2. Connect all required wiring per the railroad's or agency's approved wiring or installation diagram.
3. Prior to beginning programming, verify LED functionality using the *CHECK LED portion of the TEST menu per Section 5.2.7.2. If any LED fails to light following test, replace the unit.
4. Program each unit by performing Set to Default. Then proceed through the setup (SETP) menu to program each unit per the railroad's or agency's approved written instructions.

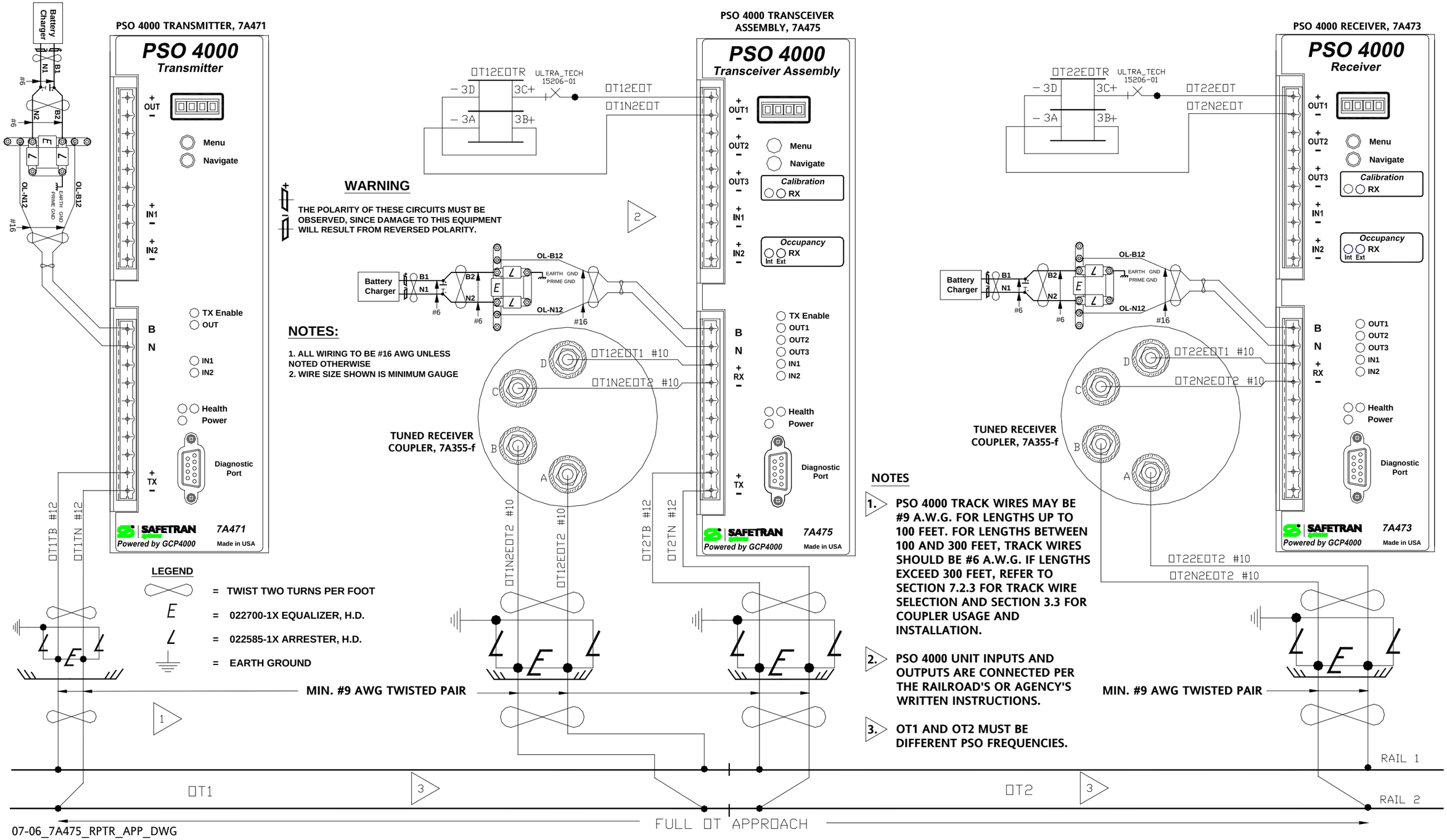
With each unit properly installed and programmed per written instructions, calibrate the OT1 PSO Transceiver Assembly, 7A475 receiver (RX) as follows:

1. When the track ballast is good, connect a track test shunt (hardwire, 0.06-ohm, 0.2-ohm, or as required) across the track at the receiver track connections. When the ballast is poor, connect the shunt across the track at a point 30 feet beyond the receiver track connections. Verify solid connections of the shunt to each rail.
2. Scroll down the Main Menu until CAL appears on the display. Then:
   - Press the MENU Button for two (2) seconds until RX CAL appears.
   - Hold the MENU Button down until the release (REL) message appears. Release the MENU Button immediately once the release (REL) message appears.
   - As soon as the MENU button is released, the armed (ARMD) message appears. Immediately press and release the MENU Button as soon as the ARMD message appears. This starts the calibration process. If the MENU Button is not pressed within two (2) seconds, the calibration process cancels and the calibration process must be restarted.
   - *RX CAL flashes during the calibration process.
   - PASS or FAIL appears for two (2) seconds when calibration is complete. When PASS appears, continue to Step 3. If FAIL appears, the CALIBRATION REQUIRED LED remains lit

PSO 4000 TRANSMITTER, 7A471

PSO 4000 TRANSCEIVER ASSEMBLY, 7A475

PSO 4000 RECEIVER, 7A473



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