

PB1/PB2 Low PSI / Monitor Modification		TSB 2012001
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TECHNICAL SERVICE BULLETIN

In response to questions concerning operations of Better Water LLC Portable ROs without dialysis personnel/trained operators in attendance (within visual or audible range of the units) during the entire treatment, Better Water LLC issues the following:

Currently, on all PB1 and PB2 Portable RO units manufactured prior to Jan. 12, 2012, the following occurs during a low pressure default condition:

- 1) A visual alarm light is illuminated.
- 2) The inlet solenoid valve remains open / energized.
- 3) The pump motor is turned off (this is to protect the pump head from running dry).
- 4) The Water Quality Monitor is turned off.
- 5) The water feeding the dialysis machine continues to flow through the Pretreatment, RO membrane and .05 final filter (PB2 only).

If the customer desires changes to their unit allowing the Water Quality Monitor to remain on and the Inlet Solenoid Valve to close in a low water pressure default condition, shutting off water to the dialysis machine, see the following instructions.

In order to determine whether your Portable RO unit can be modified, see Illustrations 1 and 2.

Your control box must match exactly, having either a Contactor Relay (Illustration 1 – see Page 2) or a Blade-type Relay (Illustration 2 – see Page 4), to be modified.

Any deviation in appearance from Illustration 1 or 2 prevents the unit from being modified.

For units matching exactly either Illustration 1 or 2, modifications are available:

Field modifications are simple wire relocations taking about 15 minutes to complete. See illustrations and instructions.

*** Should you wish Better Water LLC to make these wire relocation modifications, verification and testing, please call Better Water LLC to receive a RGA, then issue a Purchase Order for Labor / Testing charge of \$125.00 (as of 1/11/12).

**If you have identified your unit as having a Contactor Relay, see Pages 2, 3 and 6.
If you have identified your unit as having a Blade-type Relay, see Pages 4, 5 and 6.**

If you would like to speak to Technical Support prior to making modifications or need assistance during the process, please call (615) 355-6063, and press “1”.

All Better Water LLC Portable RO units manufactured on or after Jan. 12, 2012 will include this modification as a standard.

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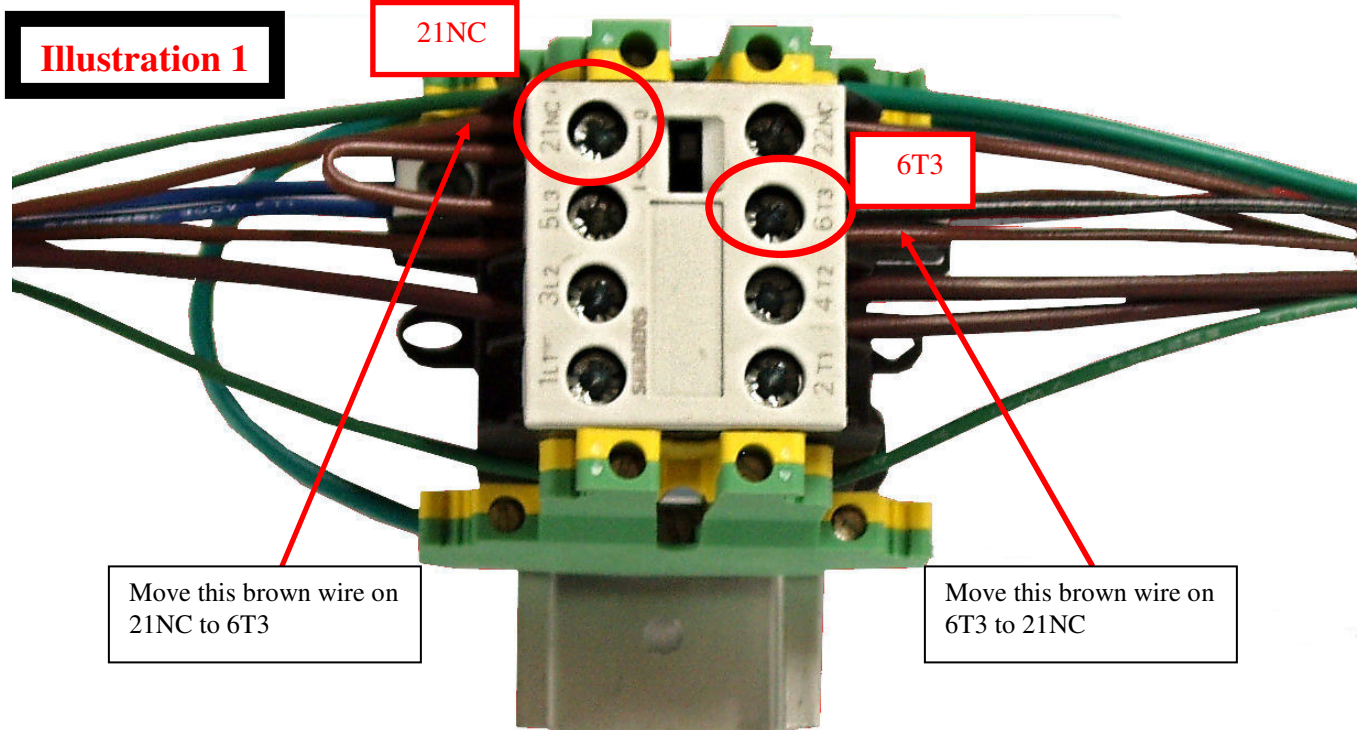
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Contactor type

Note: Before performing any maintenance or modification on a PB2, ensure the unit has been removed from the power source and water source.

TOOLS / PARTS REQUIRED: Voltmeter, Phillips screwdriver, 7" 18ga wire, and 1 wire nut or Butt splice.
For your convenience you can order these parts from Better Water LLC, specifying Part # EQPB2RETROFIT, for \$3.50

- 1) Unplug portable RO from outlet
- 2) On PB1 models, remove 4 screws in top cover of control box to access relay block. On PB2 models, remove 2 bolts in top corners of cabinet to access relay block.
- 3) On portables with a contactor locate 21NC on the contactor block. There should be 2 brown wires there.
 - a) Locate the brown wire connecting 21NC to 16 pin connector #5 using volt meter set to continuity. See Illus. 1
 - b) Remove that wire from position 21NC.
 - c) Locate the brown wire at position 6T3.
 - d) Remove that wire.
 - e) Add the 7" wire extension to the brown wire removed from 21NC using the wire nut.
 - f) Connect this assembly to 6T3.
 - g) Locate the brown wire removed from 6T3.
 - h) Connect to position 21NC.



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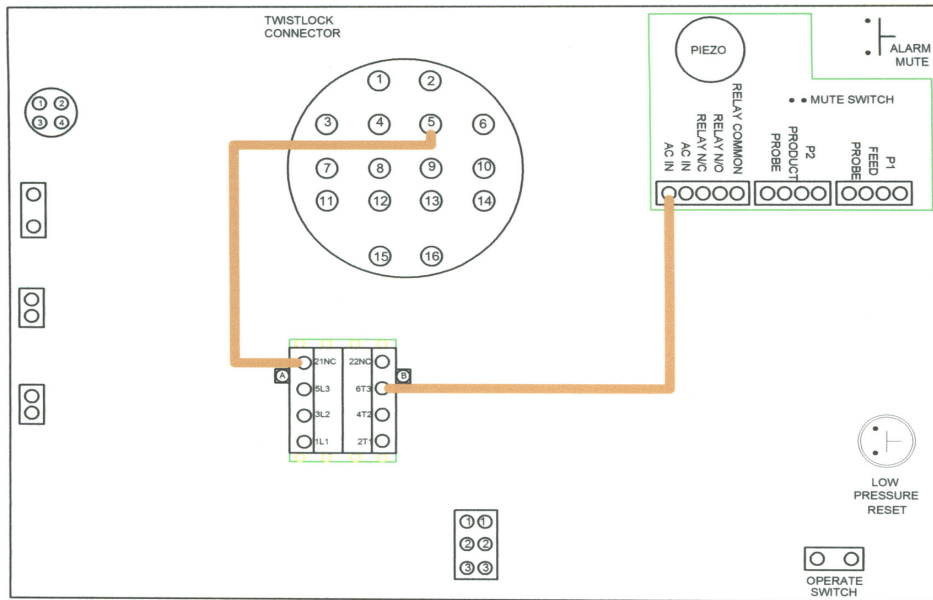
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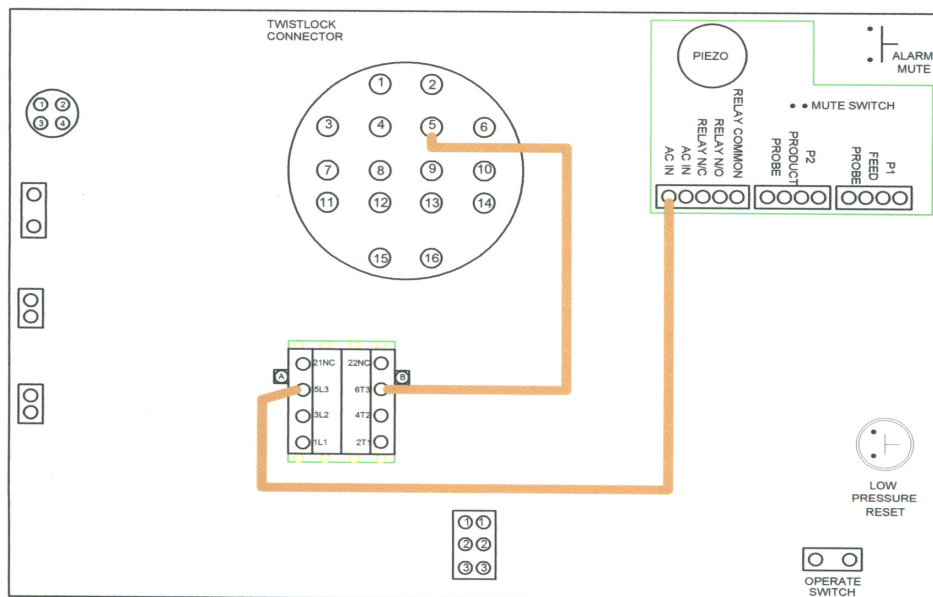
Note: There are 2 brown wires on 21NC currently. To locate the correct brown wire, a volt meter must be used to determine continuity between #5 on the twist lock connector and the target brown wire on 21NC

Drawing 1

PBII / PBRO CONTROL BOX WITH CONTACTOR



WIRE BEFORE CHANGE



WIRE AFTER CHANGE

01/06/12

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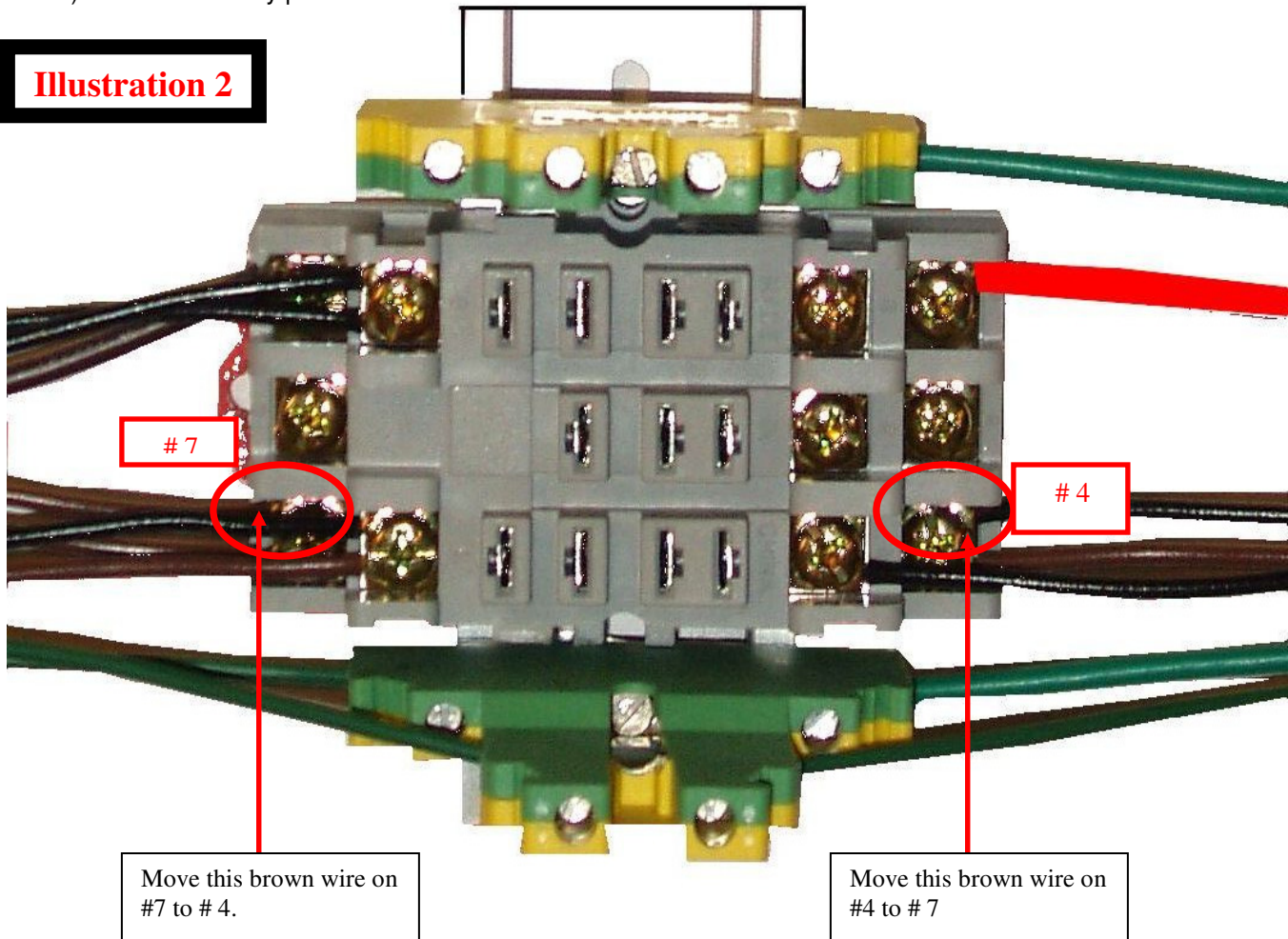
Blade-type Relay

Note: Before performing any maintenance or modification on a PB2, ensure the unit has been removed from the power source and water source.

TOOLS / PARTS REQUIRED: Voltmeter, Phillips screwdriver, 7" 18ga wire, and 1 wire nut or Butt splice.
For your convenience you can order these parts from Better Water LLC, specifying Part # EQPB2RETROFIT, for \$3.50

- 1) Unplug portable RO from outlet.
- 2) On PB1 models, remove 4 screws in top cover of control box to access relay block. On PB2 models, remove bolts in top corners of cabinet to access relay block.
- 3) On portables with a relay locate #7 on the relay block. There should be 2 brown wires there.
 - a) Locate the brown wire connecting #7 to 16 pin connector #5 using volt meter set to continuity. See illus.2
 - b) Remove that wire from relay position #7.
 - c) Locate the brown wire at relay position #4.
 - d) Remove that wire.
 - e) Add the 7" wire extension to the brown wire removed from #7 using the wire nut.
 - f) Connect this assembly to #4.
 - g) Locate the brown wire removed from #4.
 - h) Connect to relay position #7.

Illustration 2



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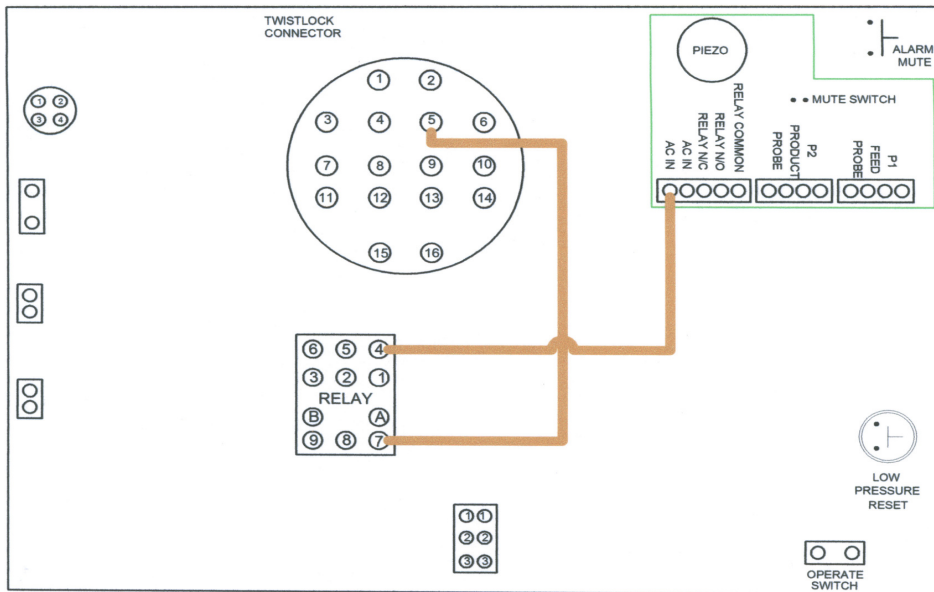
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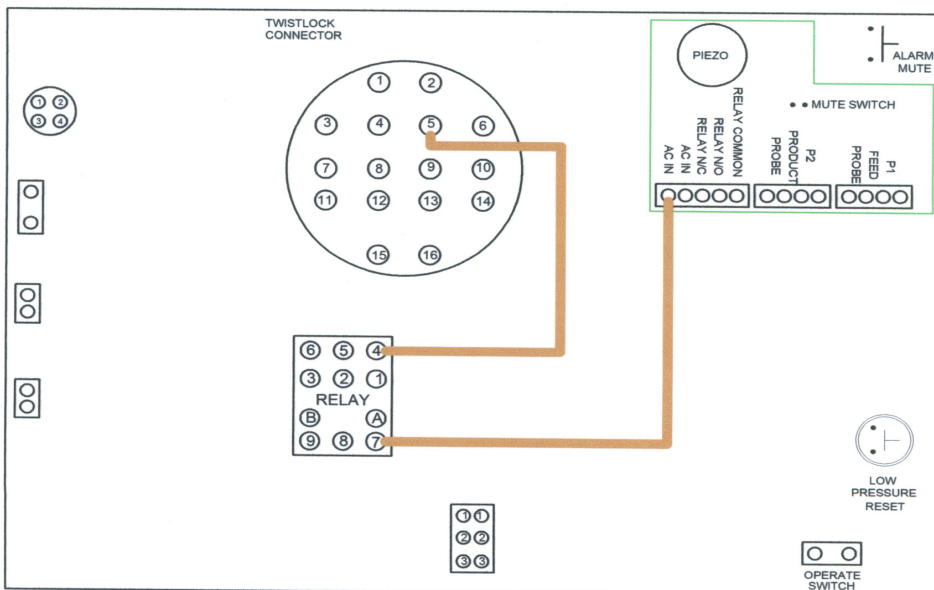
Note: There are 2 brown wires on #7 currently. To locate the correct brown wire, a volt meter must be used to determine continuity between #5 on the twist lock connector and the target brown wire on #7.

Drawing 2

PBII / PBRO CONTROL BOX WITH RELAY



WIRE BEFORE CHANGE



WIRE AFTER CHANGE

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Verifying Modifications:

After the modification is complete, BEFORE the cabinet is closed and put into service, you must ensure the accuracy of the work performed for safety and proper operation by doing the following:

- 1) When in operate mode, the Water Quality Monitor should power ON and remain ON after pressing the Reset Button.
- 2) Simulate a low water pressure condition by turning the tap water supply OFF to the RO unit. The following should happen:
 - a) Inlet Solenoid Valve should close,
 - b) pump will shut down,
 - c) Water Quality Monitor will remain on.
- 3) Verify the Inlet Water Solenoid Valve is closed by removing red drain line from drain – after a few seconds, there should be no constant water flow.
- 4) After verification of the modification:
 - a) turn the tap water supply ON,
 - b) close / replace the control box cover.

IMPORTANT OPERATIONAL NOTE:

After this modification and BEFORE pressing the START button, during initial startup or filter change, air will need to be purged from the unit at the labcock on the inside of the cabinet.