

Important Precautions For Use of Lubell Labs LL-1424HP Transducer

1. Before using product, please download latest instructions and data from: http://www.lubell.com/LL1424HP_Info_Pack.zip
2. If the LL-1424HP was ordered with optional installed Swagelok pressure fitting (SS-400-1-OR), this compression fitting **MUST** be plugged (SS-400-P plug) OR sealed to the line and bladder before transducer is used. Use Swagelok tubing and fittings only, and tighten carefully using Swagelok_Instructions.pdf. Use dry air only in transducer, line, and bladder. **CAUTION:** Do not allow the transducer to flood with water -- repair will be very expensive and is not covered under the warranty.
3. The LL-1424HP transducer must be used with the Lubell AC-1424HP bridging transformer box, which provides necessary 2 ohm 1kV series resistance and a 1:1 toroid isolation transformer (isolates grounded transducer body from floating amplifier output). Make sure that the amplifier mode switch is switched to the bridged position, then connect amplifier's + + bridged speaker terminals to the + + **INPUT** terminals on the AC1424HP transformer box using 12 gauge wire. (Phase is not important since balanced output.) The AC1424HP bridging transformer's **GROUND** terminal must be connected to an approved ship or service ground. The **1424HP OUTPUT** connector on the AC1424HP box is fitted with a Neutrik NLT4MP connector (coding: +1 = hot/white, -1 = return/black, -2 = ground/green). This connector mates with the Neutrik NL4FX connector fitted on one end of the 50 meter 14/3 SO transducer cable. The other end of the cable is overmolded with a Seacon XSEE3CCP connector for connection to the mating XSEE3BCR connector on the LL-1424HP.
4. Refer to the LL-1424HP data plot (see data pack or download from http://www.lubell.com/LL1424HP_Data.PDF) before using the transducer. Voltage, current, and duty-cycle must be monitored during use, so as not to damage the transducer. **Damage to transducer, cable, transformer box, or amplifier as a result of excess voltage or current will not be covered under the warranty.** Use extreme caution when reproducing white noise or swept sine waves, as current increases as frequency increases (80V @ 600Hz = 8.5A, but 80V @ 3.8kHz = 25.6A!). The LL-1424HP's 80 volt rating proves useful for operating in the 600Hz region or for reproducing short duration pulses at higher frequencies (observing published duty-cycle ratings).
5. Maximum Voltage: 80 Vrms
6. Maximum Current: 10 amperes continuous, 14 amperes (50% D.C.). Monitor current and use fuse (10A for ultimate safety)!
7. Minimum Depth: 3 feet (1.83 meters)
8. Maximum Uncompensated Depth: 40 feet (12.19 meters) *
9. Maximum External Housing Pressure: 17.76 psi (1.249 Kg/cm, 1.225 Bar)
10. Do not allow internal pressure to exceed external case pressure under any condition or seals **WILL** blow out
11. Do not remove the LL-1424HP from its protective cage
12. Do not operate the LL-1424HP out of the water
13. Do not lift the LL-1424HP by the power cable
14. Do not tow the LL-1424HP unless mounted in approved towed body
15. Do not pressurize the LL-1424HP using compressed air -- instead use a self-compensating bladder of sufficient volume *
16. Do not exceed 180dB if divers are in the vicinity of transducer
17. The sound level produced in water close to the LL-1424HP can be harmful to human hearing

*Note: Users wishing to operate unit at depth greater than 40' rating may wish to order the LL-1424HP with a factory installed Swagelok SS-400-1-OR pressure fitting (\$75) allowing connection to an aftermarket bladder. When operating at 100' depth, the pressure exerted on the LL-1424HP would be 44.4 psi (.444 psi/ft seawater x 100'). At this depth, the bladder volume to LL-1424HP volume ratio would be 3.02:1 (.444 psi/ft seawater x 100' depth / 14.7 psi atmospheric pressure at sea level). Since the internal volume of the LL-1424HP is 5619cc, the required bladder volume would be 16,969cc (5619cc x 3.02). Use bladder type compensation only as pressure compensation is safe and automatic. Bladder may be located in any convenient position within 5' of the transducer.

[BACK](#) to LL-1424HP page

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