

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.

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