

LAUL-LAUX



LAUL

- Line power from 12 V external battery
- Consolidation of the FDU data for transmission to the recording system
- Buffering of local data
- Rerouting of data through secondary transverse section
- Processing of instrument tests

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One Line Acquisition Unit, Line (LAUL) provides power to 48 FDU's with 55 meters (172 ft) of cable between FDU's. When longer cable lengths are used, the increased power drop in the cable limits the number of units powered. With 75-meter (234 ft) intervals, a LAUL will power 30 FDU's. With shorter intervals there is less power loss in the cable so with 30-meter (94 ft) intervals, 60 FDU's can be powered from a LAUL. For three channel FDU3's, the LAUL will power 18 with 55 meters (172 ft) intervals between FDU.

To minimize atmospheric noise pickup, the line power does not connect through the LAUL. Each LAUL and its associated FDU's are isolated.

The voltage supplied from the LAUL to the FDU's is a safe ± 24 volts.

Any type of 12-volt battery may be used to operate the LAUL. Typically batteries with a capacity in the range of 30 – 66 amp-hours are used. These batteries will operate a LAUL and its associated FDU's for one to several days depending on the type of operation and ambient temperature. For example, one 60 amp-hour would use approximately 50% of its capacity after 27 hours of continuous vibroseis operation at 20°C.

Two battery connectors are available on the LAUL to allow a replacement battery to be connected without powering down the line.



LAUL

The LAUL does not require any special orientation when being connected.

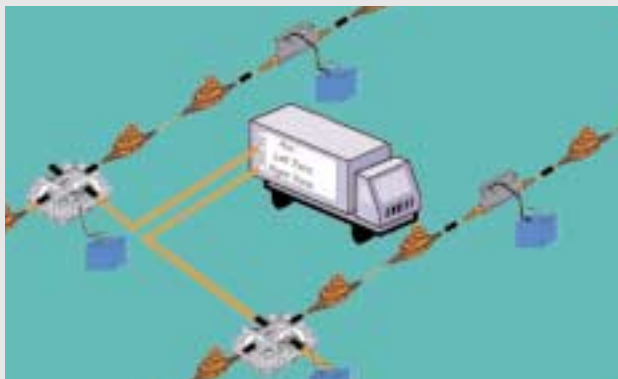
The FM4 connectors mate directly with connectors on the LINKs.

When a LAUL and its associated set of LINKs is deployed in the field, a 408UL Line Tester may be plugged into the LAUL to completely test the set of LINKs. A full set of instrument tests (noise, distortion, phase, gain, CMRR) and geophone group tests (tilt, group resistance, leakage, and noise) are performed and analyzed. Results are displayed on the Line Tester screen.

The LAUL provides a critical element in the seismic data quality assurance and quality control. The LAUL checks each packet of data coming from outboard LAUL's. If any errors are detected it requests data retransmission.

There are three LED's giving status of the unit and line. There is one for each battery input, giving an indication of the battery state.

The third unit indicates the state of the LAUL.



LAUX

The Line Acquisition Unit, Crossing (LAUX) is used to connect each line in a 3D spread to the higher speed transverse connection to the recording system. Data from the local line is merged in the LAUX with data from other lines to be transmitted to the recording system.

Each LAUX has two line connections which connect to LINKS of the local line. It also includes two transverse connections ; one for a transverse cable connection toward the recording system and one may be connected to another transverse

cable to lines away from the recording system.

The LAUX may provide power to 48 FDU's (with 55-meter intervals) each direction on the line. As with the LAUL, the number of FDU's which can be powered will vary with the interval distance between FDU's.

One or two 12-volt batteries provide power for the LAUX. Because the LAUX may power FDU's in both directions, plus providing the transverse telemetry it will need approximately twice the battery capacity as the LAUL.

As with the LAUL, a 408UL Line Tester may be connected to an LAUX to test the local spread in the field.

Transverse cable

Normally each line will contain at least one LAUX. The Transverse cable provides the high-speed telemetry between LAUX's. Three types of cable are available for the Transverse : ST (Standard), WPSR (Water Proof Stress Relief) and fiber optic. The ST and WPSR cables are limited to 200-meter length. A special type of transverse cable is available to go to 500 meters. The Fiber Optic cable may be as long as 2000 meters.



LAUX

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