

Underground Power Supply

When automating legacy pad-mount or underground switchgear without auxiliary power availability, Lindsey's patented* underground power supply installs quickly and easily to provide a self-contained source of DC power for meters, radios, and controls. Continuous power back-up is provided via an integral 5.2 A-Hour lithium ion battery.

The Lindsey underground power supply uses a split-core CT to generate DC energy to power control and communication systems. Excess power is automatically routed to charge a built-in 12V, 5 Amp-hour battery. In the event of loss of input power, the battery provides continuous power to the connected devices.



Method of Operation

The CT harvests power from any non-magnetically shielded phase of a 200A/600A underground cable system. The power supply harvests about 1A at 12VDC for 100A of line current (4A output maximum). If the amount of power required by the connected control/communication equipment exceeds the power produced by the harvesting circuit, the balance is drawn from the battery. If more power is produced by the harvesting circuit than needed, the excess is used to charge the battery. Additional CTs are available to lower the minimum current required. Consult factory for more information.

Average line current needed to operate the power supply over a 24 hour period is:

$$\text{Required Average Daily Line Current} = (\text{DC Current} * 66) + 27 \text{ Amps}$$

Note that a minimum of 27A is required for charging to occur.

Example:

Communications and control equipment that draws a total of 700mA at 12VDC is connected to the underground power supply.

$$\text{Required Average Daily Line Current} = (0.7 * 66) + 27 = 72A$$

Specifications

DC Output voltage:	12VDC nominal, 14VDC max
DC Output current:	4.0 Amax
Battery:	12VDC, 5.2 A-Hour
Operating temperature:	-30C to 60C (-20F to 140F)
Power supply/CT weight:	6.8kg (15lbs)
Dimensions:	240mm L x 195mm H x 120mm H (9.5" L x 7.625" D x 4.625" H)
Mount:	Magnetic

*US Patent 7,633,262 and other Patents Pending

