

ELITEpro Meters With Optional Line Power Supply - Addendum

December 17, 2007

Operation

Some ELITEpro meters are equipped with an optional Line Power Supply that draws power from the monitored voltage mains to operate the meter. No additional connections need to be made besides those needed to connect the meter for normal metering. The one exception is for single phase loads as described below.

The Line Power Supply (LPS) works by drawing a little power from the high voltage leads and putting it through a custom designed, extremely wide band power supply to make the low-voltage dc power needed to operate the meter. An ELITEpro with an LPS can still operate on its internal battery if no AC power is available (such as when using the ELITEpro to only measure current.) In the even of a loss of power, the ELITEpro will switch to battery operation automatically. (Unless the integration interval is set to 3, 15, or 30 seconds. In that case logging will stop until AC power is restored or an external wall transformer [supplied] is connected.)

The LPS draws its power from the L1 and L2 phase voltage leads. Both of these leads must be connected for the ELITEpro to be powered. A minimum of 50 volts, AC or DC is required across L1 & L2 to power the meter. The maximum is 600 VAC.

When connected to line power the ELITEpro can also supply power to external sensors from the jack on the side. Up to 2W at 5VDC can be supplied. Note that to supply 2W the minimum voltage required between the L1 & L2 phases rises to 70 VAC or 90 VDC.

Line Power Supply Ratings

Temperature Range: -20 °C to +60 °C

Maximum Voltage: 600VAC or VDC Line to Line, 350 VAC Line to Neutral

Minimum Voltage To Operate Logger: 50VAC or VDC

Minimum Voltage To Operate Logger and Supply 2 W External: 70VAC or 90VDC

Maximum External Sensor Power: Up to 2W at 5VDC

Power Requirement With No External Load @ 280VAC L1 to L2: .83W (1.7VA)

Power Requirement With No External Load @ 600VAC L1 to L2: 2.1W (5.1VA)

Power Requirement With 2W External Load @ 280VAC L1 to L2: 6.3W (10VA)

Power Requirement With 2W External Load @ 600VAC L1 to L2: 8.2W (17VA)

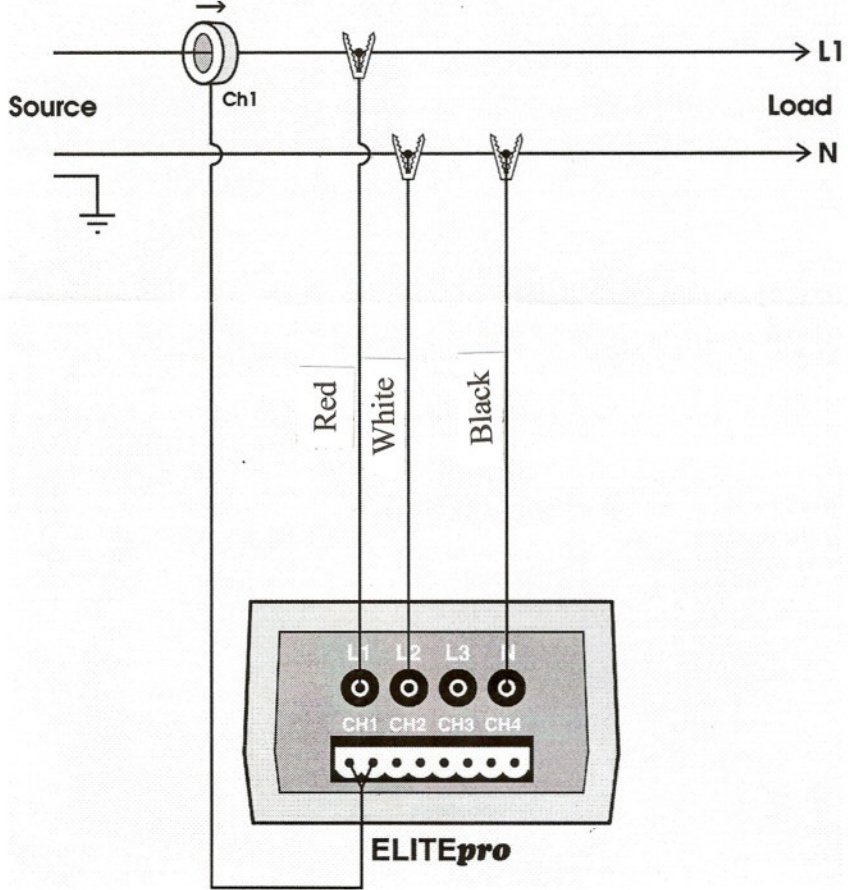
Connection

The Line Power Supply is connected across the L1 and L2 Phases inside the meter. To supply power to the ELITEpro both L1 and L2 phases must be connected. During normal metering, of three phase loads, both 3 wire Delta services and 4 wire Wye services the L1 and L2 phases will be connected.

	www.esis.com.au
	Ph 02 9481 7420
	Fax 02 9481 7267
	esis.enq@esis.com.au
Industrial Electronics	

If used with a single phase load where the metering circuit voltage reference is (for example) L1 to Neutral, the L2 wire of the ELITEpro must also be connected to Neutral. See Figure 1.

Figure 1. Connecting the ELITEpro with internal power supply to a single phase load.



Note that the internal power supply is connected to the L1 and L2 phases. For the ELITEpro to be powered by the line, both the L1 & L2 leads must be connected as shown above. However, the logger Setup Table would not change.

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