The LTC2946 is a very wide range I²C system monitor that monitors the energy, charge, current, voltage and power of any 0V to 100V rail. The LTC2946 has flexible power supply options, deriving power from a 4V to 100V monitored supply, a 2.7V to 100V secondary supply or from the onboard shunt regulator. These supply options eliminate the need for a separate buck regulator, shunt regulator or inefficient resistive divider while monitoring high voltages. An internal shunt regulator allows monitoring of supplies >100V and negative voltages. The LTC2946 is a simple, single-IC solution that uses an internal ΔΣ ADC, multiplier and internal or external time base to provide 12-bit current and voltage measurements, 24-bit power readings and 32-bit charge and energy readings.

Features
- Monitors DC Supply Voltage, Current, Charge, Power and Energy Use
- 0V to 100V Monitoring Range, >100V with Internal Shunt Regulator
- 12-Bit ADC with Scan/Snapshot Modes
- Guaranteed Accuracy: ±1% for Power and Energy
- Internal ±5% or External Time Bases
- Bias Supply Range: 4V to 100V or 2.7V to 5.9V
- Split SDA Pin Eases Opto-Isolation
- 16-Pin MSOP and 4mm × 3mm DFN Packages
Flexible Power Supply Options

LTC2946 Derives Power from the Supply Being Monitored

LTC2946 Derives Power Through High Side Shunt Regulator

LTC2946 Derives Power from a Wide Range Secondary Supply

LTC2946 Derives Power Through Low Side Shunt Regulator in High Side Current Sense Topology

LTC2946 Derives Power from a Low Voltage Secondary Supply

LTC2946 Derives Power Through Low Side Shunt Regulator in Low Side Current Sense Topology