Incorporating the latest developments in counter technology, the LF 826 and LF 827 extend high resolution readings over very wide frequency ranges and make use of calculator modes to meet the needs of assembly line and quality control applications. A technique of high speed reciprocal counting is applied to input A signals to produce high resolution at low frequencies. (Older counters required period readings with calculated reciprocals to obtain similar resolution). Direct counting is applied above 10 MHz and a prescaler technique is applied to B input signals above 80 MHz. The result is accurate, high resolution reading across the entire frequency range.

Measuring modes include frequency, period, totalize, relative and RPM for input A signals. Automatic and manual trigger levels are also applied to input A signals to suit trigger conditions to signal characteristics and to achieve stable readings in the presence of noise. A switchable low pass filter, cutoff below 100 kHz, allows accurate low frequency readings in the presence of RF interference. Sensitivity is excellent: 15 mV rms for input A and 10 mV rms for the B (prescaler) input. Built-in calculator functions include relative and LO-GO-HI comparator modes for judgements. The relative mode works against an operator preset parameter and reads out the deviation from the preset value with 7-digit resolution. The limit function works with a pair of preset parameters and indicates low, within limits, or high readings by means of front panel LO-GO or HI LEDs. Timebase accuracy is ± 3 ppm. Factory options for the LF 827 include a ± 0.03 ppm timebase and a GPIB interface.

### LF 827
- 1.3 GHz (LF827) and 550 MHz (LF826) Top Range
- Extended Low Frequency Range to 0.1 Hz
- High Speed Reciprocal Counting at Low Frequencies
- Frequency, Period, Totalize, Relative and RPM
- 3 ppm Time Base Accuracy Standard

### LF 826
- Relative Mode Against Preset Reference
- LO-GO-HI Judgement with Preset Limits
- High Sensitivity
- Auto-Triggering Minimizes Errors on Noisy Signals
- EMI Protection

COMPARE, RELATIVE section sets up the mode and the means of setting reference values.

FUNCTION selectors and TRIGGER/SENSitivity controls for A input signals.
### Key Specifications (LF 826 / LF 827)

**Measurement Range**
- LF 826: 0.1 Hz to 550 MHz
- LF 827: 0.1 Hz to 1.3 GHz

**Input A**
- Reciprocal
  - dc coupled: 0.1 Hz to 10 MHz
  - ac coupled: 10 Hz to 10 MHz
- Direct Count
  - 10 to 100 MHz
- Accuracy
  - < 10 MHz: time base accuracy +
    \[\frac{(\text{trigger error } \pm \text{time base}) \times \text{input signal frequency} \times \text{gate time}}{(\text{input signal frequency} \times \text{gate time})}\]
  - > 10 MHz: time base accuracy ± 1 count
- Gate Time
  - 10 ms, 0.1 s, 1 s, 10 s

**Input B**
- Measurement Range
  - Prescaler: 80 MHz to 1.3 GHz (LF 827)
  - Prescaler: 80 MHz to 550 MHz (LF 826)
- Accuracy
  - Time base accuracy ± 1 count
- Gate Time
  - 13 ms, 130 ms, 1.3 s, 13 s
- Period (Input A)
- Measurement Range
  - dc coupled: 100 ns to 10 s
  - ac coupled: 100 ns to 0.1 s
- Accuracy
  - Time base accuracy + period of input signal x [(trigger error ± time base)/gate time]
- RPM (Input A)
- Measurement Range
  - dc coupled: 6 rpm to 600 Mrpm
  - ac coupled: 600 rpm to 600 Mrpm
- Accuracy
  - [(time base accuracy + [(trigger error ± time base)/(rpm/60)] x gate time/60]
- Totalize (Input A)
- Measurement Range
  - dc coupled: dc to 10 MHz
  - ac coupled: 10 Hz to 10 MHz
- Minimum Pulse Width
  - 50 ns

**Calculation Functions**
(A Input Totalize Mode Excluded)
- Comparator
  - Compares input with preset upper/lower limits. Results indicated by HI, GO, LO LEDs
- Relative
  - Difference between preset reference value and measured value is indicated with 7 digit resolution maximum

**Input Section**
- Input A
  - Sensitivity
    - 15 mVrms or 150 mVrms
  - Max Input Voltage
    - 100 V rms (≤ 400 Hz)
    - 20 V rms (400 Hz to 100 kHz)
    - 5 V rms (100 kHz to 100 MHz)
- Attenuation
  - X1, X10 switchable
- Impedance
  - 1 MΩ approx.
- Filter
  - 100 kHz low pass filter switchable on/off
- Coupling
  - ac or dc switchable
- AUTO mode: ac coupling

**Input B**
- Sensitivity
  - 10 mV rms
- Maximum Input Voltage
  - 5 V rms
- Impedance
  - 50 Ω approx.
- Coupling
  - ac

**Timebase**
- Frequency
  - 10 MHz crystal controlled
- Accuracy
  - (± 3 ppm) (0 - 40°C)

**General**
- Display
  - Green 7 segment LED, 8 digit decade scale

**Environmental**
- Operating Temperature
  - 0 to 40°C
- Humidity
  - 30 - 85% RH

**Power Requirements**
- 100 - 115 - 230 V ac ± 10%
- 50/60 Hz, 18 VA ± 20%

**Physical**
- Size (W X H X D)
  - 7 7/8 x 3 1/8 x 10 1/4 in.
  - 200 x 80 x 280 mm
- Weight
  - 6.6 lbs., 3 kg

**Supplied Accessories**
- Spare Fuse
- AC Cord

**Available Options**
- GPIB Interface (LF 827)
- High Stability Timebase ± 0.03 ppm, 0-40°C (LF 826/827)