

# HIGH ENERGY Ignition of Light Oil/Gas



## Chentronics

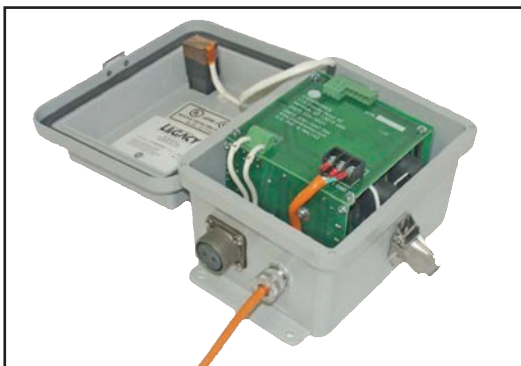
### *Patented Solid State*

New Technology provides  
Superior Performance & Reliability  
at a Lower Cost

High Energy Ignition Diagnostics  
Identifies Ignition Faults  
**BEFORE THEY HAPPEN!**

The 5" X 5" X 5" internal assembly  
is easily removed...

- 12 Joules Stored
- 4 SPS
- 75°C Operate
- 10 lb. Net Wt.



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## High Energy Ignition Diagnostics

Igniters (spark plugs) will “skip” as they approach the end of their useful life. Chentronics offers a system that observes the release of energy, and indicates if the average is below minimum. In addition, this option integrates “Zero Voltage Contact” ON/OFF control and observes the quality of the input power source (allowing the operator to distinguish between the two most likely reasons for an ignition fault.) The diagnostic circuit is fail-safe; any fault of the diagnostic circuit will not affect normal operation.

## SPARK GAPS – The root cause of many ignition problems

Many high-energy ignition systems today use spark gap tubes as a precision high voltage switch. In effect, the tube releases the stored energy of a capacitor when the charge has accumulated to a set level.

However, this set level decreases over time. Gap internal electrodes wear out through a process called sublimation. As the electrode material erodes, it is deposited on the tube inner glass surface...in effect creating a parallel path inside the tube. *The exciter output voltage decreases as the exciter ages.*

Many *igniter tips require more voltage to fire, as they wear.* As a result, igniter tips are often replaced before they have reached “end of life”. Operators often replace an intermittent sparking plug with a new one; when in fact, the exciter is the root cause. Indicators of gap wear out are an increased spark rate and “weak sparks”.

Solid State electronics eliminate this concern. The new technology is smaller, lighter, more powerful and lower cost. In fact, since the output voltage does not decline with age, the output spark will only increase in intensity as the igniter tip wears.

## Solid State Features & Benefits

The most common problems with burner operation are associated with starting. We have used decades of experience to develop features that minimize the chance that the spark is ever an issue. Consider the following features and the benefits:

- SAFETY** ○ — The flexible harness connecting the exciter to the rod is covered with PVC insulation AND the discharge path is isolated from frame. This approach minimizes current flow through the input ground reference. *Arcing to frame is virtually eliminated.* In addition, the output of each section is female: this *minimizes the chance of personnel getting shocked*, should the exciter be operated open circuit.
- MODULAR ASSEMBLY** ○ — *Each section is easily replaced:* the harness has large military type twist connectors that can be removed with a gloved hand, and the igniter tip threads are coated with a high temperature graphite compound at the factory. The internal sub-assembly is mounted as a single block that is easily removed.
- NO YELLOW METALS** ○ — H<sub>2</sub>S is commonly called “Sour Gas”. It is often a byproduct of many industrial processes. H<sub>2</sub>S gas accelerates erosion of yellow metals: in particular copper, bronze and brass. This system does not use yellow metals; the exposed metal of the rod and igniter are *high-grade stainless steel and inconel.*
- ADVANCED ELECTRONICS** ○ — *The exciter accepts a wide input voltage range:* 85-265 VRMS (50-60 Hz). The discharge circuit *does not use a gas discharge tube.* These improvements yield these benefits:
  - *Increased spark size and intensity*, for improved ignition
  - Reduced power draw and physical volume which allows *easy retrofit of older designs. The internal assembly is 5”X5”X5” and weighs 3 lb.*
  - Control options include *24VDC Relay or “Zero Voltage Contact” closure for ON/OFF control.*