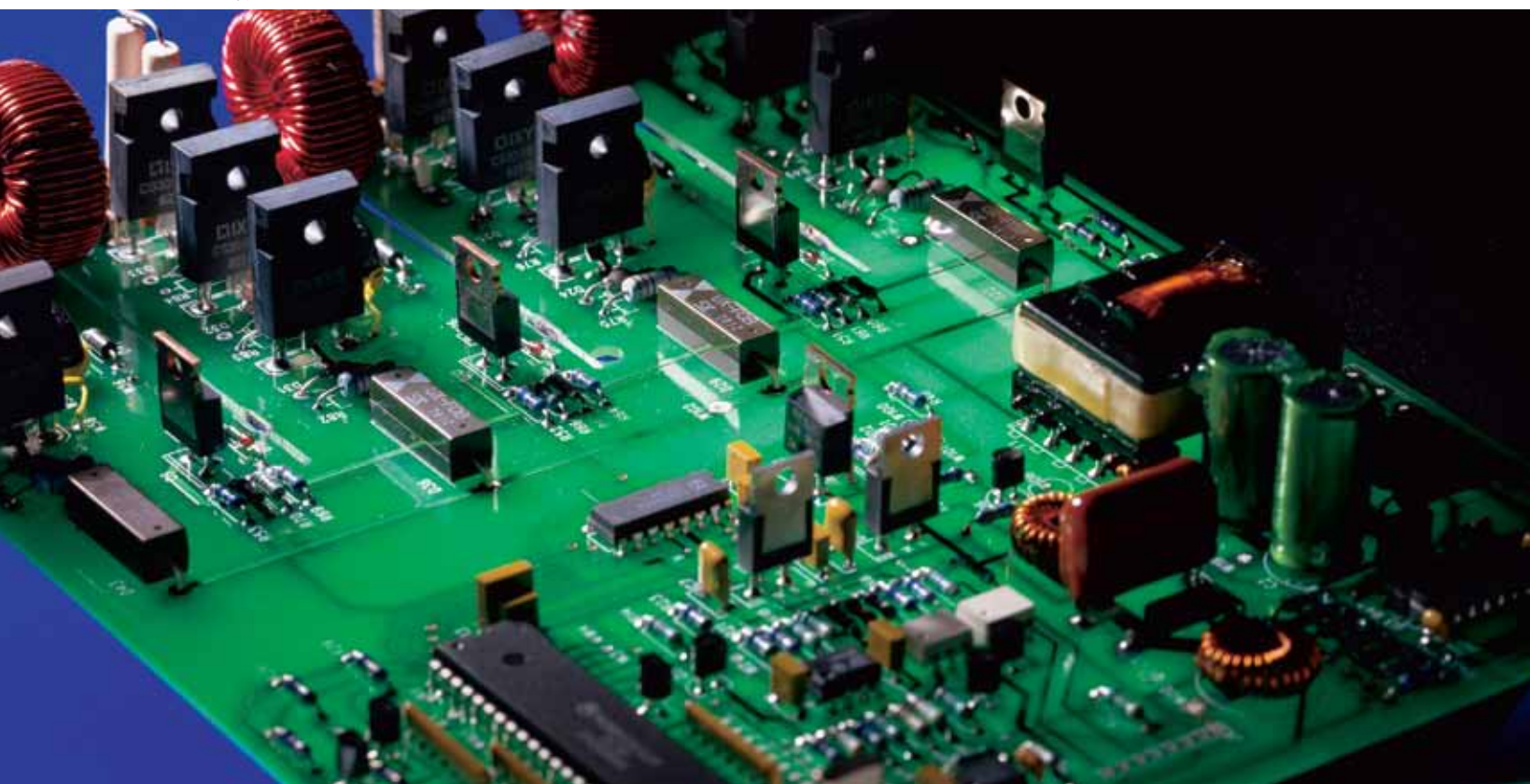




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Extremely Capable In Extreme Conditions

We Built Our Reputation By Taking Care Of Yours.

Few things in the aerospace industry provide more peace of mind than knowing you can count on your electrical systems to deliver time and time again. At Unison, over the last five decades, we've built our reputation in this area by producing electrical systems that provide extraordinary performance, even in the most extreme environments.

From ignition systems and wiring harnesses to sensors and switches, Unison offers the most innovative and reliable technology – all backed by a level of support that is unequalled in our industry.

As Tier 1 integrator, Unison offers you unmatched efficiency and convenience. We can supply all of your controls and accessories package needs and more. We integrate systems and components with other world-class suppliers to create comprehensive solutions for virtually every need.



Ignition System –
Exciter, Leads and Plugs



Igniter Plugs

Hostile Environment Capable

Unison's unique temperature compensating circuitry and other patented design elements make Unison's solid state exciter capable of withstanding severe heat and vibration, while efficiently delivering the industry's highest spark voltage and energy levels.

Benefits of Switching Technology

Unison's solid-state exciters incorporate proprietary single and multiple-device switching technologies, which ensures the exciter always fires the igniter plug at the precise energy level and spark rate to achieve consistent ignition. This maximizes igniter plug life, too.

Ignition Exciter Capabilities

- Spark discharge energy in excess of 20 joules
- Spark discharge voltage in excess of 20 kV
- Vibration capability in excess of 20Gs
- Temperature capability ranging from below –65°C to above 125°C
- Low-input voltage operation of 5 VDC
- Output discharge waveshaping
- Burst of Sparks operating mode
- Digital ignition diagnostics
- Hazardous location certified designs

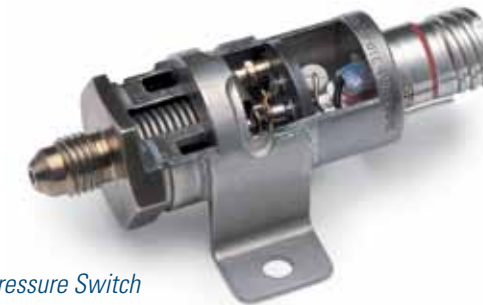
We're Tough. But We're Also Sensitive.

Unison Sensors, Switches, and Bellows are among the most sensitive and precise instrumentation in any application – aviation, industrial, or space. We also offer the most experience and highest level of expertise in the design and manufacture of these critical components. In fact, no one else in the industry has had more success producing sensors, switches, and bellows for everything from small aircraft to jumbo jets and jet engines. We're also proud of our achievements in the oil industry. You can even find Unison's handiwork on NASA's famed Cassini orbiter.



Sensors And Switches

- Speed, Temperature and Proximity Sensors
- Pressure and Limit Switches
- Thermocouples
- Accelerometers



Pressure Switch

Harnesses That Take Anything. Except A Break.

Unison Harnesses are recognized for their outstanding design and harsh environment capabilities. No matter what your harness needs, Unison has the in-depth knowledge to meet any requirement you have. Expect us to leverage the latest technologies and the most advanced design techniques to optimize your harness design. No one is more capable with harnesses than Unison.

Our engineering capabilities can address temperature requirements from –30°C (–65°F) to more than 470 °C (1000°F) and all of our proprietary designs meet or exceed vibration level characteristics of MIL–STD–810 and MIL–STD–1344.

Unison harness designs can meet Electromagnetic Interference (EMI) levels of MIL–STD–461 and MIL–STD–462, including 24-pulse lightning strike survival at 10,000 amps.

Wiring Harnesses

- Open and Closed Bundle
- Closed Bundle Harness Designs
- Overmolded Backshells
- Overmolded Harnesses
- Peek and NOMEX Braided
- Panel Assemblies
- Junction Boxes



Open Bundle Harness

Unison Knows The Fit

Unison has the knowledge and tools to optimize the configuration of your gas turbine engine wiring harnesses and pneumatic tubes and ducts.

Electronic Modeling

Using the latest in electronic modeling and design software, Unison is able to design superior harnesses, tube, and duct systems, including systems routing before manufacturing. Designers use electronic modeling in a "concurrent engineering" design environment whereby engineering is performed in parallel with customer prepared design specifications. This approach helps designers identify potential problems early in the design phase and prior to initiation of fabrication. Electronic modeling provides customers with faster start-up cycles and allows Unison to meet all of its customer design requirements accurately, on time, and without additional cost.



Typical Speed Sensor Characteristics

Speed Range:	50 to 30,000 RPM
Output Amplitude:	0.5 to 125 volts peak to peak
Pulse Shape:	Approximately Sinusoidal, Symmetrical Around Zero
Physical Air Gap:	.015 to .050 inches
Load Impedance:	> 1000 ohms
Operating Temperature:	–65°F to 500°F
Connectors:	Stud, Eyelets, Circular



Speed Sensors



Thermocouple

Typical Unison Thermocouple Sensor Characteristics

Temperature:	Up to 2300°F
Response Time:	0.25 to 0.50 seconds
Accuracy:	Per "special limits of error" material standards
Sheath Material:	Inconel™ 600, Inconel™ X–750, Haynes 188



Resistance Temperature
Detector (RTD)

Typical Unison RTD Characteristics

Temperature:	–100°C to 500°C
Time Constant:	Typically 3 sec at 2ft/sec oil flows
Accuracy:	Per IEC 60751 Class B
Housing:	304L, 347, Inconel™ 600, Inconel™ X–750

Typical Thermal Sensing Bellows Performance Characteristics

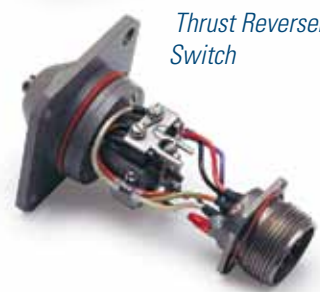
Temperature:	–125°F to 350°F (Oil Filled Goes Up to 800°F)
Operating Pressures:	200–300 psia internal, 2–22 psia external, 180–300 psia differential, up to 1050 PSIG Max
Response:	Less than 6 seconds in agitated liquid baths for 63.3% total stroke
Vibration:	Per MIL–E–8595
Liquid Fill Material:	Methanol, Butyl Alcohol, Oil
Life:	150,000 cycles

Limit/Position Switch Performance Characteristics Ranges

Electrical Rating:	0.25–2.0 amps at 6 to 28 volts (Logic Level Available)
Temperature Range:	–320°F – 1050°F
Terminal Data:	MIL–Spec and other Connectors, Flying Leads, Solder Lugs
Endurance Life:	50,000–100,000 cycles
Case Seal:	Open, Pressure Tight, Hermetic, Environmental
Construction:	Welded, all-metal outer enclosures
Vibration Resistance:	20Gs 10–20,000 hertz
Shock Resistance:	50Gs
Dielectric Strength:	1000 volts max



Pressure Switch



Thrust Reverser
Switch