

**LEACH®**

*Solutions for Power Switching and Control*



*A Company Profile*

**Esterline**  
Leach International

## An Introduction to Leach International

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A proud member of Esterline Technologies Corporation, Leach International brings to its position as an advanced aerospace and defense engineering company a rich heritage of innovation and technological advancement.

Since its introduction of the first “break-in” relay in 1919, the company has pioneered most of the aerospace relay designs in use today, including the Balanced Armature and Balanced Force relays, rotary solenoids and power contactors, half crystal can and time delay devices, and Solid-State Power Controllers (SSPCs).

And these technological breakthroughs have not ended. For the past two decades, Leach has moved well beyond the role of traditional component supplier and has been focusing on creating solutions-oriented equipment products.



The result is a unique market niche highlighting the company's ability to integrate its components into lower cost, lighter weight, more reliable added-value assemblies. Typical examples include primary and secondary power distribution assemblies, relay panels, anti-ice controllers, thrust reverser control assemblies and other related products.

Leach's range of products is at work in thousands of aerospace, military, rail and high-end industrial applications worldwide. In fact, Leach has been a part of nearly every major military and commercial aerospace program. It is this level of experience and performance that has positioned the company in a place of prominence as it continues to expand its products and services.

## Meet Esterline Technologies Corporation

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*Esterline is a specialized manufacturing company serving principally the aerospace/defense markets of Avionics & Controls, Sensors & Systems, and Advanced Materials. A leading consolidator of Tier 3 Suppliers, Esterline operates more than 25 companies and/or product lines ranging from high-precision temperature/pressure sensors and power distribution control components to specialized medical equipment and high-performance elastomer products.*

## Leach Global Operations and Capabilities

Leach International is comprised of manufacturing facilities in North America, Europe and Asia. In addition to an employee base of more than 1,000 members, the company has representatives in more than 20 countries worldwide.

North America is home to two production facilities—one in Southern California (Buena Park) and one in Mexico. The



*Buena Park, California*

Buena Park facility operates four production lines, including a state-of-the-art hybrid and microcircuit facility that offers extensive design, assembly, manufacturing and testing capabilities. In addition, component and subassembly facilities are located in Buena Park and Tijuana, Mexico, and both have MIL-STD-790 certification.

The Buena Park facility also has ISO 9001:2000, AS9100:2004, Boeing D6-82479 with AQS and other approvals.



*Tijuana, Mexico*

Leach operations in Europe, with production sites in Sarralbe and



*Sarralbe, France*

Niort, France,

have achieved both ISO 9001:2000 and MIL-STD-790 certification.

In addition, a space-qualified Class 100 clean room is operated at the Niort facility, primarily for ESA-qualified relay manufacture.

Leach operations in Asia, with a joint-venture manufacturing facility located in Zunyi City, China, it also has ISO-9001:2000 certification.

While each business unit possesses its own engineering, manufacturing, sales and service capabilities, it in turn functions as an integral part of the total team to provide seamless service to its global customers. The industry's finest research and testing laboratories, coupled with state-of-the-art manufacturing and assembly lines, have enabled Leach International to solidly position itself on the leading edge of its technologies.

Guizhou Leach-Tiany Aviation Electrical Company, Ltd. supplies the company's products to China and, strategically, to the European and American markets. A joint-



*Zunyi City, China*

## Industries Served



Leach International supplies the military and commercial aerospace industries with a wide variety of products. Leach components and assemblies can be found aboard more than 90 percent of all commercial jets flying today, as well as on many helicopters and military jets and vehicles. Moreover, Leach relays are used in major space programs such as the International Space Station and space shuttle, and they are used on many missiles and other launch vehicles and satellites.

Many of the world's finest rail transportation systems use Leach custom equipment and components. Included are the TGV in France and Korea, BART in San Francisco, NYCTA in New York, the Metro in Paris, AVE in Spain, Underground in London, STIB in Belgium and Eurostar.

Leach products also are used in nuclear power plants and other high-end industrial applications where reliability is a critical factor.



## Major Product Lines

### *Relays, Sockets and Contactors*



Leach miniature, subminiature and half crystal can hermetically sealed relays have long set the industry standards for performance and reliability. Designed for a variety of demanding applications, Leach relays range from low level to 75 amps and come in DC and AC versions. A variety of sockets complement these products. The company's balanced armature relays feature power ratings from 10 to 25 amps and are available in a variety of configurations and mounting styles.

With main contacts ranging from 25 to 1000 amps, Leach power contactors are available hermetically or environmentally sealed in DC and AC versions. These contactors also can include an electronic module and sensor to interface with onboard computers. To provide ground fault protection and give added protection to wiring and equipment, Leach's Ground Fault Interrupt (GFI) circuitry can be incorporated into the majority of Leach products, including contactors and smaller relays.

### *Control Devices*

Leach control devices combine many proven features of standard relays with highly reliable hybrid microelectronic circuits. Products include: time delay, solid-state time delay and programmable time delay devices, as well as a variety of power monitors and sensors that protect and monitor current, voltage, frequency, and phase.



### *Solid-State Power Controllers (SSPCs)*

Ideal for today's modern computer-controlled systems, Leach SSPCs employ FET output stages and are constructed using thick film surface mount technology in hermetically sealed metal or ceramic packages. Responding to customers' needs, Leach has incorporated Built-in-Test capabilities and data bus compatibility, as well as many other features, into its Next Generation SSPCs and Secondary Power Distribution Units (SPDUs).

### *Switches*

Lighted and pushbutton switches and indicators are designed and manufactured to exacting military and aerospace specifications.



## Equipment

Leach's added-value Electrical Power Distribution Assemblies (EPDAs), used in both primary and secondary power distribution systems, feature the company's standard components housed in a variety of customer-selected assemblies. Through its extensive design, engineering and manufacturing skills, Leach offers a variety of services tailored to customers' equipment and component needs including:

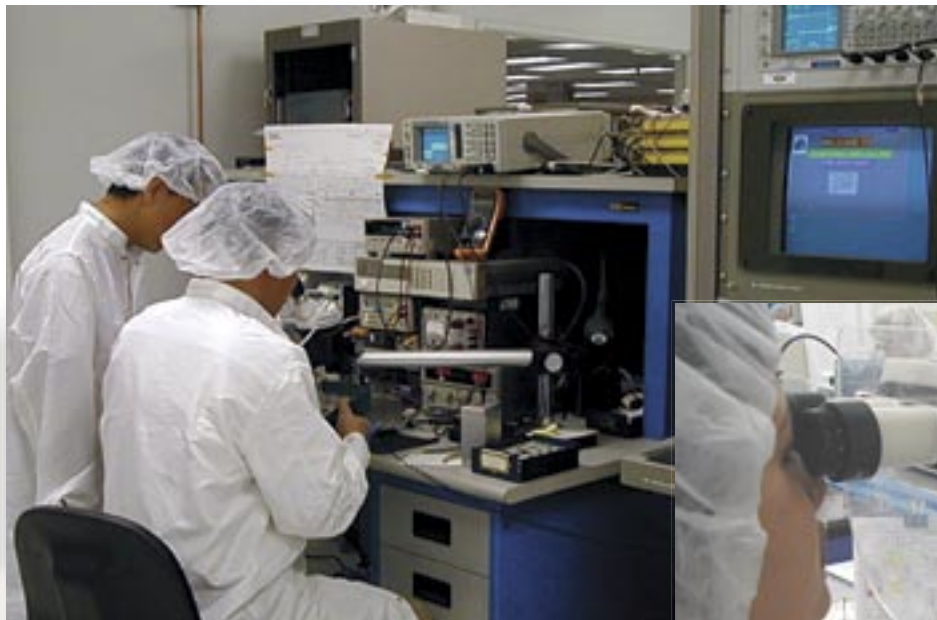
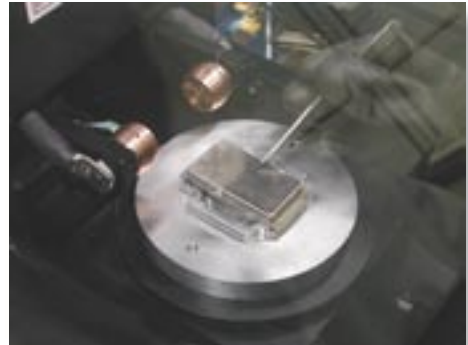
- Design to Requirement—specification, design, development, integration and qualification
  - Design to Specification—design, development and qualification
  - Design to Replace—joint design with customer, development and qualification
  - Build to Print—development of a product per existing design
  - Product Customization—adaptation of an existing Leach component to fit a customer's exact specifications
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## The Leach Difference

*Meeting the demands of today...anticipating the needs of tomorrow*

Unlike its technology, Leach International's business philosophy is neither sophisticated nor complex—it's actually quite simple: *consistently deliver the highest quality, most technically advanced products and services in the industry.*

Since its inception, Leach has dedicated its resources and managerial expertise to develop value-rich products and to foster mutually beneficial business relationships. Its emphasis on solutions is underscored by a steadfast commitment to provide the broadest range of advanced-design and cost-efficient components available from a one-source partner.



A unique combination of innovation and quality has been the cornerstone of Leach International's business for nearly 90 years. From research and development to design and engineering, from tooling and lean manufacturing to product testing and continuous improvement, the Leach commitment to quality and innovation permeates all aspects of the company's operations.

Unparallel research and development efforts enable Leach to continually extend its vision and capabilities, while engineering and manufacturing expertise help transform technical breakthroughs into an ever-expanding product line.

As the newest member of the Esterline family of high technology companies, Leach International has a blueprint for the future and the resources to ensure continued advancement.



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