ORBIT ELECTRONICS GROUP
Orbit Instrument • Tulip

Integrated Switch Panels

- Standard Interface Units
- Custom Interface Units

Interface With Excellence

Orbit Electronics Group Integrated Switch Panels: the Gold Standard for Rugged, Reliable, Long-Term Performance.

For over 40 years, Orbit's Integrated Switch Panels (ISP) have delivered highly reliable performance while being utilized in the most severe environmental conditions. Integrated into shipboard, airborne, vehicular/ground mobile and fixed applications, these rugged custom HMI solutions provide extended life-cycles in a full range of mission critical applications. Our focus on superior quality is exemplified by our proprietary, robust "Orbit Switch" gold-on-gold contact technology, which has delivered in excess of 30-million failure-free actuations in formal life-testing.

Orbit Electronics Group custom Integrated Switch Panels are available in virtually any size and shape to meet customers' requirements. Our time-tested technologies enable us to provide cost-competitive solutions ranging from basic one-switch designs with tactile feedback, to complex intelligent switch panels programmable to provide specific functions. Options such as labels or legend changes for the switches, audible switch depression feedback, and many other special functions can be incorporated into the design. Orbit Electronics Group can also configure ISPs utilizing customer-specified electrical and mechanical interfaces. Our engineers have the ability to develop Integrated Switch Panel solutions that support new operator functionalities and still deliver form-fit-functional replacement switch panels for existing systems. Orbit Electronics Group can develop fully independent switch panels that will output custom key codes over a specified interface. Our switch panels can be backlit utilizing highly efficient LEDs, with controls that enable the operator to select brightness spanning the ambient lighting range, from sunlight-readable to NVIS lighting capabilities.

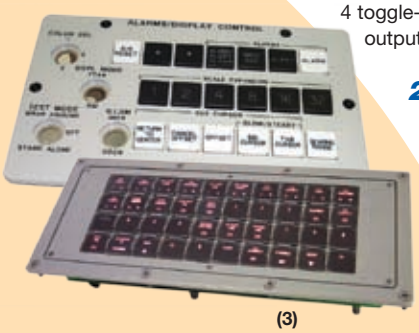
For added functionality, and to ensure that the solution supports all specific mission critical requirements, Orbit can design and manufacture any number of high-quality, cost-competitive additional devices, including cursor controls and displays, into your Integrated Switch Panels.

NOTE:
The products shown in this brochure represent only a few of the many custom designs we have produced. Contact us to discuss what we can custom design and manufacture for your applications.

Standard Interface ISPs

Orbit's standard interface ISPs are designed for use in military airborne, shipboard, vehicular, mobile and fixed applications, as well as in commercial avionics and ruggedized industrial applications. Configured to meet customer specifications, our standard interfaces typically include: RS-232, RS-422, USB and an 'Orbit standard' that features a row/column output that can be connected to a system that will scan the matrix for key actuations. Orbit ISPs can be backlit with either monochromatic or multi-color system requirements, including methods of dimming controls as required.

(1)



Alarms/Display Panel *(1)*

Utilized in airborne applications, this ISP features backlit switches and display panels, 4 toggle-type switches, which are connected to the aircraft wiring harness, plus an output interface designed for a standard row/column.

(3)

2x3 Switch Matrix *(2)*

This ultra-ruggedized basic 6-switch ISP is a high-bright-readability device designed for shipboard console-mounted applications. It utilizes a row/column interface and features Orbit's full-travel key switches with gold-on-gold contacts and bushings for high-quality, reliability, long life and low maintenance.

4x10 Switch Matrix *(3)*

For shipboard applications, this console-mounted ISP includes switches segmented with either 3-part or 2-part indicators. Each segment is individually addressable, and 'film-chip' legends are easily changeable to support various functionality requirements. Orbit's full-travel key switches are designed with gold-on-gold contacts and bushings to provide high-quality, reliable, cost-competitive hardware with long life and low maintenance.

(4)

(2)

Snap Dome Switch Panels *(4)*

Utilized for ground fixed applications, these proven, rugged ISPs have housings and faceplates constructed with ABS plastic to meet high volume demands. They feature superior quality and reliability at an economical cost.

RUGGEDIZED BY ORBIT

Orbit Electronics Group Integrated Switch Panels are rigorously tested and certified to withstand the demands of harsh military and industrial environments. Our products have proven to reliably perform on a broad range of mission critical applications, in even the most extreme temperature, vibration and hazardous conditions.

Custom Interface ISP's

Orbit has designed and manufactured custom ISPs with capabilities that range from the control of an entire system's requirements to simple remote functions. Orbit Electronics Group has designed a number of custom ISPs featuring fully-integrated SBCs (Single Board Computers) for specific customer functionality requirements, including the ability to communicate over either a standard or custom interface, and offering the ability to change key codes 'on-the-fly.' Other Orbit custom ISPs utilize microcomputers or micro controllers to allow custom programming of each panel application.

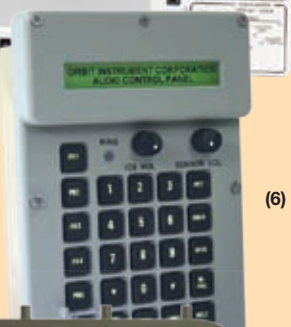
Full Function Switch Bezel *(5)*

Utilized in ground mobile applications, this full function ISP integrates control switches into a bezel that is fitted over a display module. This configuration allows the operator to monitor system data and changes while selecting functions from the switch bezel. The ISP is backlit, with illuminated switches that are dimmable for low-light battlefield combat operations. This full-function switch bezel design allows for additional toggle switches to be connected to a vehicle's wiring harness.

(5)

Audio Control Panel *(6)*

Utilized for shipboard audio control functions, this ISP includes an LCD alphanumeric display with 2 audio volume control potentiometers and 26 backlit switches. This ISP interfaces with an ISDN telephone network and provides/displays keypad, volume control and operator indicator information.



(6)

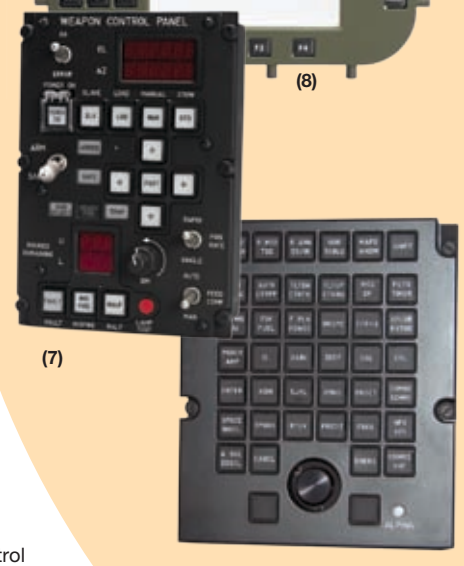
Weapon Control Panel *(7)*

Ruggedized for military airborne applications, this ISP incorporates 4 alphanumeric displays, 13 illuminated switches with engraved keycaps, 4 toggle function switches, 6 status indicators and a dimmer potentiometer all mounted on a backlit panel. This ISP is mounted to standard aircraft 'rails' using 6 Dzus fasteners.

(8)

Towed Artillery Panel *(8)*

This artillery-mounted ISP is designed to withstand high vibration and shock levels, and is compliant to Nuclear, Biological and Chemical (NBC) warfare specifications. This 28-switch ISP is designed to fit over an information display allowing the operator to view real-time information while providing input data during artillery engagements and system operations.



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Aircraft Keyboard and Pointing Device (AKPD) *(9)*

This ISP is designed to support naval aircraft that operate off of aircraft carriers. It allows the tactical officer to simultaneously input data while managing the A/C display system. This ISP incorporates dual PS/2 I/Os, allowing both keyboard and pointing device information to be transmitted directly to the system. It features Orbit Electronics Group's full-travel key switches with gold-on-gold contacts and bushings for high quality, reliability, long life and low maintenance. The AKPD unit has 40 backlit switches with engraved keycaps that simulate a full-function keyboard, and is designed with 'shift' keys that take on the role of function keys. Backlighting controls are integrated with the A/C cockpit dimming control system. This ISP also includes a force-stick display pointing device controller. Meets MIL-STD-810 and MIL-STD-461 for environmental and electromagnetic interference and NVIS specifications.

(9)

Remote Control Unit (RCU) *(10)*

This airborne ISP provides Identify Friend or Foe (IFF) transponder cockpit control for status on multiple targets. It addresses modes 1, 2, 3A, as well as modes 5 and S, and supports T-CAS, M-CAS and ET-CAS functionality requirements. This ISP includes 2 rotary function switches, 1 alphanumeric display, 17 backlit switches with engraved keycaps, a brightness level rocker switch and a light sensor to keep the illumination at the desired levels during night time operational missions. This unit meets MIL-STD-810 for environmental, MIL-STD-461 for electromagnetic interference and MIL-L-85762 for aircraft NVIS compatibility.

(10)

Superior Human-Machine Interface Solutions for Mission Critical Applications

Orbit Electronics Group hardware and software solutions provide the critical HMI link in many of the most demanding airborne, shipboard, sub-surface, ground-based and handheld mission critical applications. With superior quality as a mandatory design and manufacturing criteria, we deliver leading-edge products with extreme environmental and operational survivability. Downtime is simply not an option to our customers, and our products' proven ability to operate in extreme battlefield conditions for extended periods of time has made us a reliable source for military and non-military government and industrial programs requiring the highest degree of long-term operational reliability.

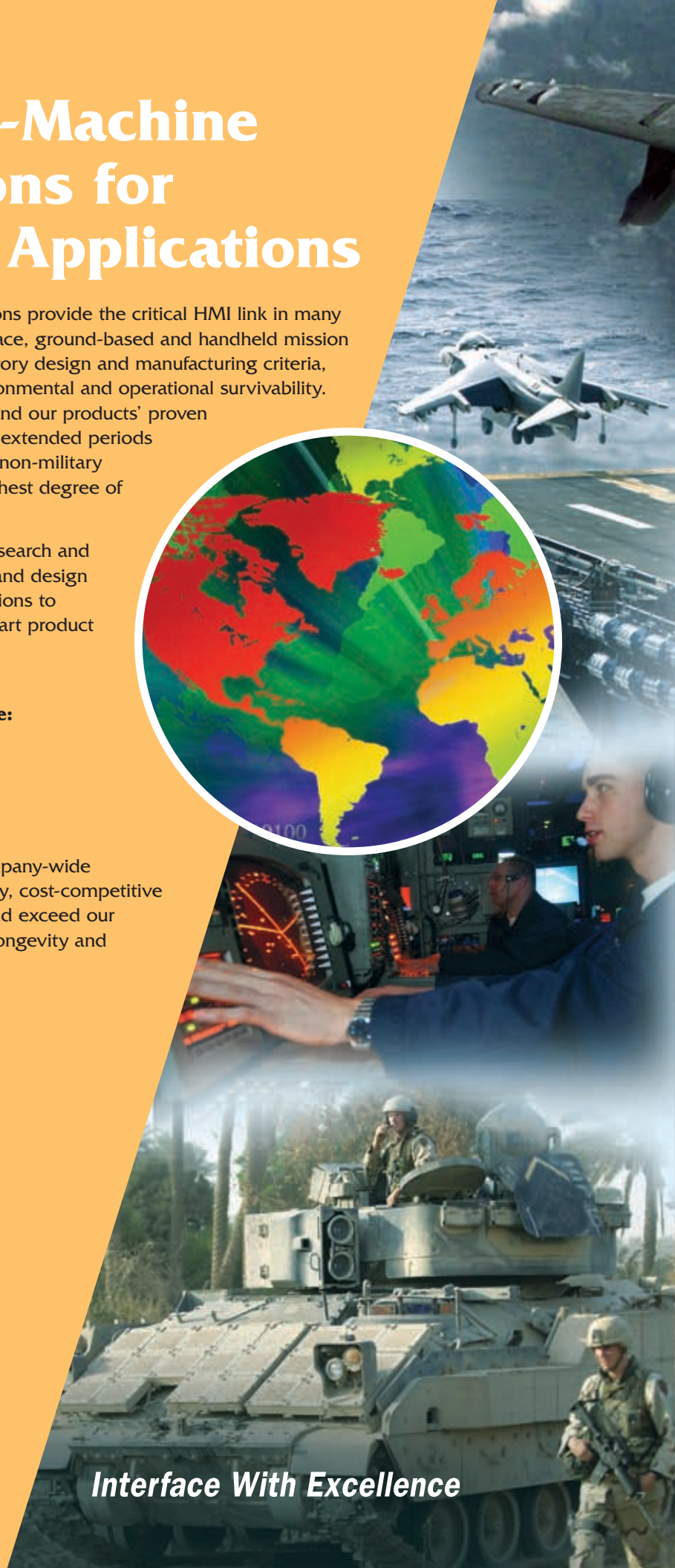
Orbit's longstanding relationships with government research and development laboratories help keep our engineering and design capabilities at the industry's forefront, where our solutions to technical challenges consistently result in state-of-the-art product advancements.

In addition to our Integrated Switch Panels, Orbit Electronics Group product categories include:

- **Keyboards/Keypads**
- **Control Display Units**
- **Flat Panel Displays**
- **Cursor Controllers**

Our focus on superior customer support, and our company-wide commitment to the continuous improvement of quality, cost-competitive hardware, enables us to deliver solutions that meet and exceed our customers' requirements for performance, reliability, longevity and economy.

For information or a quotation, contact the Orbit Electronics Group.



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