



POWERED SEAT ACTUATION

Independent | Experienced | Innovative

78
years
of Legacy

35
years
of Powered Seat
Actuation Experience

233
Airlines Supported

70,000+
Powered Seats
Delivered



Cabin Systems

CABIN SYSTEMS

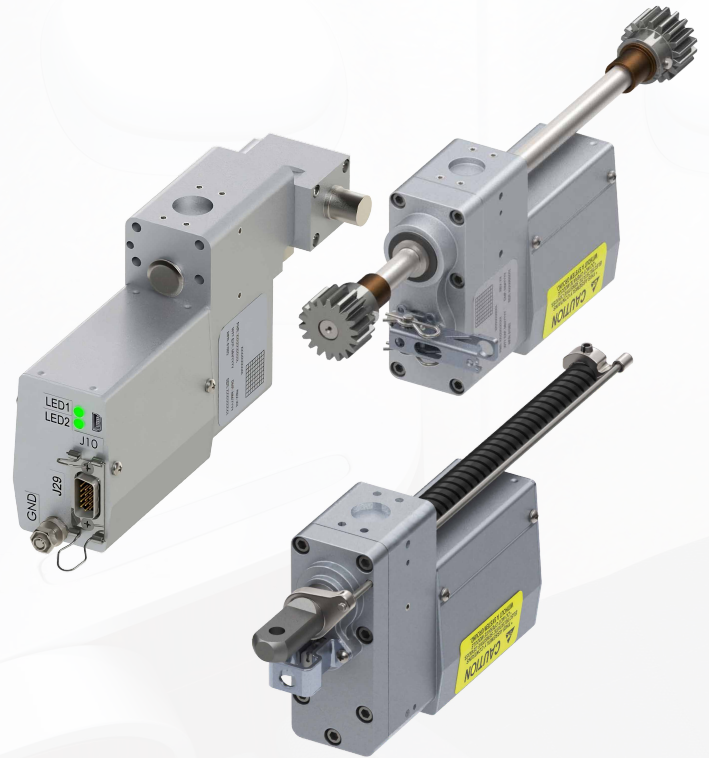


The mcX™ system is a modular, CAN based system architecture allowing simple and flexible seat integration, flexible expansion, and full integration of additional comfort devices.

POWER SUPPLY MODULE (PSM)

The mcX G3 Power Supply Module (PSM) is the core element of the mcX System architecture. It is compact, lightweight, versatile and offers data management and prognostics in the networked aircraft cabin. The high-power rating of the mcX G3 PSM allows integration of seat and passenger comfort elements such as heating, venting, and charging of personal electronic devices (PED) with wireless charger or USB, meeting all requirements for the EU standard of USB-C as future universal PED interface. The mcX system is a modular, CAN based system architecture allowing simple and flexible seat integration, flexible expansion and full integration of comfort devices without the need for additional driver LRUs.

- 300W Max – 250W continuous power -heating, cooling, wireless and USB charger
- 4 electrically independent CAN interfaces – maximum expansion with highest reliability
- Connected cabin ready – expandable with various communication standards
- Numerous IO channels: variable voltage, PWM, low voltage – allows for sophisticated passive passenger controls without the cost of expensive qualification of active devices.
- Analog Inputs – supports passive sensor integration to enhance the passenger experience
- PS-Link for enhanced redundancy – link power supplies for even higher power capability and redundancy
- Advanced software – peripheral controls integrated to eliminate additional controller boxes



ACTUATORS

The mcX G3 Smart Actuators provide motion control within the mcX Actuation System. The actuators support the operating and crash load requirements of numerous seat architectures, while being compact, lightweight, and low noise. The advanced software algorithms allow fluid coordinated motion and superior pinch detection to maximize the passenger comfort and safety. The actuators are designed to significantly exceed 100,000 cycles, which is verified with extensive modeling and life-cycle campaigns.

- Versatile Speed and Load range – supports all actuation applications
- Flexible mounting system – can be adapted to fit in any location – or use existing seat mount points
- Locking brake – extremely high crash loads with no deterioration in hold capability over time
- Brushless motors – highly reliable
- No seat calibration needed for linear actuators – reduces time on the production line
- Slip clutch – abuse load protection for sensitive mechanisms
- 90-degree output – flexible installation for furniture component motion

LUMBAR

Supplementing its portfolio for actuation, Crane also offers a pneumatic 4-way lumbar support with cycling/massage functionality, providing extra comfort for passengers in premium seating.

The subsystem consists of a pneumatic controller and an array of bladders, typically installed in the seat backrest at the lumbar area.

Special applications can be tailored to ergonomic and comfort requirements with custom bladder designs.

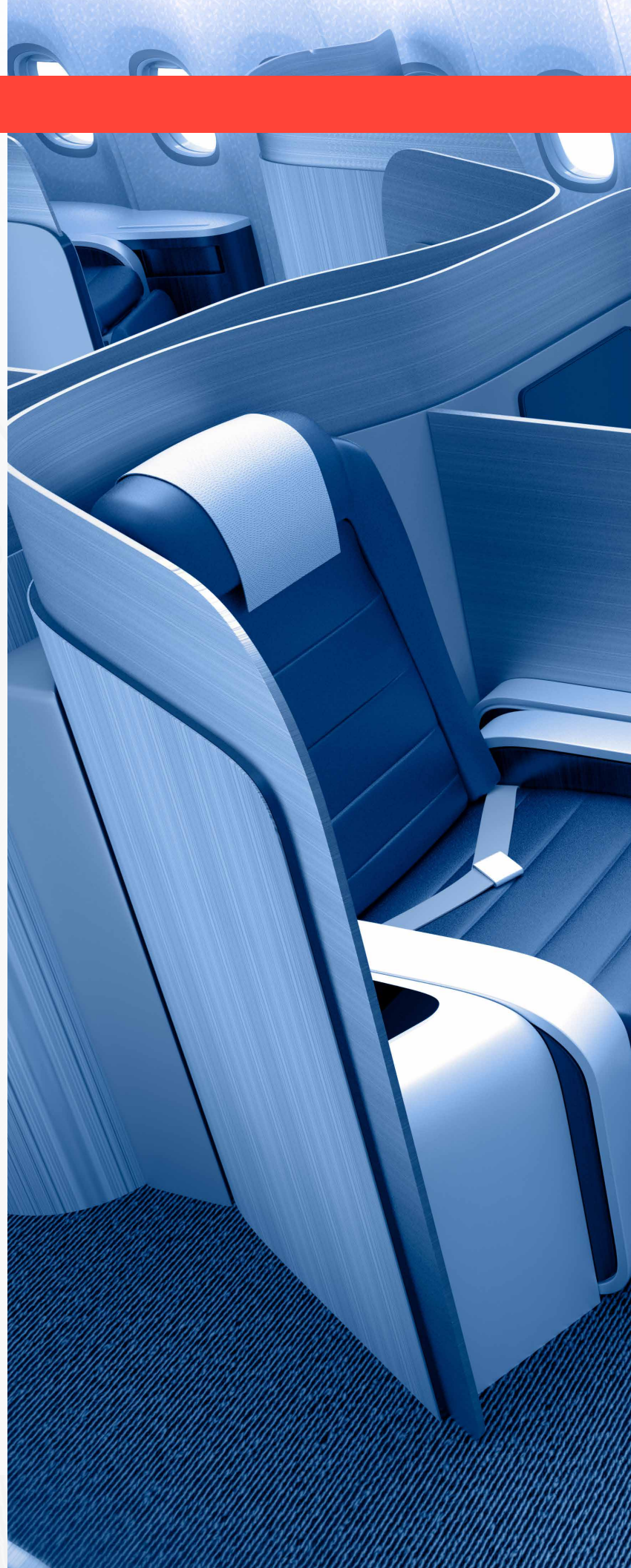


HARNESSES

Providing a turnkey solution, Crane designs and delivers harnesses optimized for the mcX actuation system and integrated third party peripherals. Harnesses are designed for high reliability and qualified to meet all relevant aircraft requirements.

INTEGRATION

The mcX actuation system architecture enables easy integration with peripherals from any supplier. The Crane Aerospace and Electronics team has extensive integration experience with all the major seat peripheral suppliers, this includes but is not limited to passenger controls, lighting, charging, comfort systems, heating, and cooling. We will work with your supplier to develop ICDs and perform integration testing in our labs, reducing your project risk. The capabilities of the mcX system can allow direct control of many devices eliminating the need for additional controller boxes, harnesses, weight with a corresponding reduction in system complexity.



OUR HISTORY



1947

Crane pioneered aircraft seat actuation under its P.L. Porter Brand. In 1947, Percy Lee Porter filed a patent for the Hydrolok, laying the groundwork to become the leader in the seat actuation and control market.



1989

In 1989, P.L. Porter was the first to provide certified powered seat actuation - enabling a new level of comfort exclusively in high-end First-Class applications.



2004

In 2004 P.L. Porter was integrated into Crane Aerospace & Electronics. Being infused with the engineering know-how that provides capabilities such as deep space power converters and aircraft anti-skid brake control, allowed an even higher level of sophistication and technology development. This development culminated in the unsurpassed mcX actuation system and product family.



TODAY

As an independent supplier, Crane supports Seat OEMs worldwide with the mcX actuation system, the most innovative, efficient, versatile, lightweight, and highly reliable powered Seat Actuation System.

OUR LEGACY

Hydroloks, Mechanical Seat Control, Mechlok

In 1947, the Hydrolok set the benchmark for Mechanical Passenger Seat Adjustment in Commercial Aircraft. Over 1.5 Million passenger seats have benefited from superior performance of the Hydrolok. Crane most recently developed the low weight Hybrid Technology HG Lok, providing rigid backrest support with the over 200,000 cycle reliability of a Hydrolok in a package size of a gas lock.

Manual cables and buttons complement the Seat Loks. Crane's AC series and its interface to the Lok set the industry standard.

The Mechlok completes Crane's portfolio as a rugged, maintenance free, versatile, and infinitely adjustable Linear locking device.



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