

Translating harness mechanism

8801 Series

Features

- Based around Ultra's cable control method (UK patent application No. 0807626.7)
- Lightweight durable aluminium construction
- Transfers power and data signals from fixed structures to dynamic surfaces
- Incorporates emergency breakaway
- Facilitates the requirements of EASA CS25 1309C
- Supports provision of electric de-icing on control surfaces

The translating harness mechanisms developed by Ultra Electronics, PALS, facilitate the transfer of power and data across dynamic boundaries such as an aircraft wing to control surface. Designs are specific to an aircraft requirement but are all based around Ultra's cable control method to provide a reliable solution with reduced development timescales.

The latest update of EASA CS25 1309 introduces requirements dictating that information concerning unsafe operating conditions must be provided to the crew to allow corrective action. To satisfy these requirements additional sensors must be located in extreme environments on the aircraft. The safety critical nature of the application creates the need for systems with very high reliability and long service life.

Sensors located on moving wing structures, such as slats or Krueger flaps, need to reliably transfer data in this dynamic and highly aggressive environment.

Variations of the cable control device are applicable to landing gear, where they can be combined with Ultra's advanced conduit system to provide a complete solution for systems such as electronic braking.

Existing applications

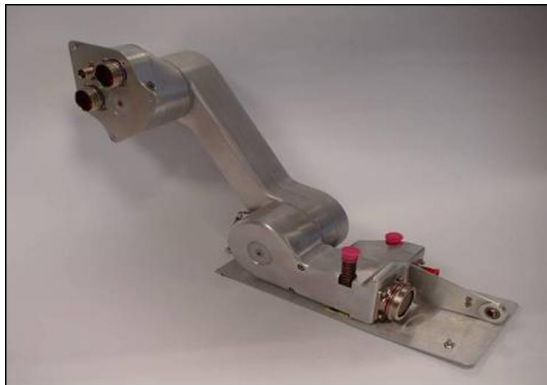
Ultra designs have been adopted for use by a number of key manufacturers including:

- Airbus A350 wing ice protection system
- Boeing B747-8 flap skew detection system
- Boeing B787 electrical wing ice protection system

Translating harness mechanism

As specified by major aircraft manufacturers, Ultra has the capability to offer the full design and development service in accordance with management systems such as GRESS.

Each translating harness mechanism is application specific to incorporate the detailed requirements of the host platform.



Additional features can be designed into the aluminum arm including the ability to break away under emergency conditions such as the separation of a slat from the aircraft or sealing of apertures through which the linkage passes.

Design Testing

Ultra has the facilities to carry out all development testing and the majority of full qualification in-house. This capability informs design and improves flexibility, thus reducing development timescales. CAD modeling and stress analysis of initial designs is carried through into early testing, focusing on endurance and tests specific to the harshest of operating environments.

Key environmental considerations

- Operation at extreme low temperatures
- Operation in an iced condition
- Resistance to contaminants
- Vibration and shock loads



Ultra Electronics
 Precision Control Systems
 Arle Court, Hatherley Lane
 Cheltenham
 Gloucestershire GL51 6PN
 England
 Tel: +44 (0)1242 221166
 Email: sales@ultra-pcs.com
 www.ultra-pcs.com
 www.ultra-electronics.com

Ultra Electronics reserves the right to vary these specifications without notice.
 © Ultra Electronics Limited 2014
 Printed in England
 thm/110721/1