



Main Deck Cargo Loading System Boeing B747-400 SF

After having established its state-of-the-art technology in the field of cargo loading systems on numerous Airbus aircrafts Airbus DS Airborne Solutions GmbH (ADAS) has also stepped inside the market of Boeing 747-400 conversions together with the American company Ancra International.

The development activities for the Cargo Loading Control System started in late 2004. One of the main design aspects was the usage of proven hardware technologies in combination with adaptation of Boeing handling procedures in the field of software. The system comprise various controller units for power control and local control of non- steerable and steerable power drive units, as well as numerous control panels to be arranged in the full length of the cargo compartment. Furthermore, ADAS is responsible for the wiring of the entire cargo loading system.

In cooperation with Ancra International, our company supplies the main deck cargo loading system for the new Boeing special freighter conversion program

of IAI in Tel Aviv. The 747-400 Special Freighter Conversion program at IAI expects a firm number of aircrafts to be converted within the next years.

The partnership combines huge experience in aftermarket with excellent expertise in the filed of the OEM-market offering the airlines reliable and efficient cargo loading and cargo loading control systems.

Within the combi-to-freighter and pax-to-freighter conversions programs our system is certified by the Federal Aviation Administration (FAA).

Technical Data

System Componentes	Technical Features
Main functions	<ul style="list-style-type: none"> Independent from other CLCS Manual/semi-automatic loading and unloading of ULDS Two man operation standard Load/unload process in pull-mode for operational safety ULD transport with electrical power drive units ULD turning and transfer functions Monitoring of electrical system components Indication of CLCS fault data on the maintenance display Communication by a CAN bus system for CLCS internal communication
Power Distribution Panel (PDP)	<ul style="list-style-type: none"> Aircraft AC and DC power supply interface AC power distribution to 4 internal AC power lines DC power distribution to 3 internal DC power lines
Power Control Unit (PCU)	<ul style="list-style-type: none"> Controls and monitors the AC and DC power (each phase) Monitoring and control of PDU's in nose area Monitoring of NCP and E/E hatch door switch
Control Unit (CU)	<ul style="list-style-type: none"> Three functions depending on installation position Local control function Control and monitoring of up to 10 PDU's and 10 lcps Steerable control function Control and monitoring for PDU's and steerable turn actuators Human interface control function Control and monitoring of MCP, RCP and 20ft control panel
Master Control Panel (MCP)	<ul style="list-style-type: none"> Main command interface for operator Mode selection (remote control, 20ft manual, automatic turn, crosswise loading, Main drive load / unload modes) Manual retract and orientation of turntable PDU's Turn orientation indication
Remote Control Panel (RCP)	<ul style="list-style-type: none"> Provide option of selecting RH from LH side operations RH side main drive operations All IN operations and right side OUT control
20ft Control Panel (FCP)	<ul style="list-style-type: none"> Manual retract and orientation of turntable PDU's, if selected at MCP
Local Control Panel (LCP)	<ul style="list-style-type: none"> Local drive for ULD handling in local area Main drive for global longitudinal ULD handling from the cargo door
Health Maintenance Display (HMD)	<ul style="list-style-type: none"> Monitoring of all electronically controlled CLCS components Detection and localisation of failed components 12" display with Simplified view of cargo compartment Display status of ECLS components Display failure data with actual time/date stamp Display maintenace data
Power Drive Unit (PDU)	<ul style="list-style-type: none"> Self erect PDU Turntable PDU with steerable actuator Provide ULD hold function Equipped with ULD present sensor