

# Ruggedized: Triple Digital Channel Control Unit



## Key Characteristics:

- Wide ranging interface
- Safety relevant applications
- 3 channels architecture (channel A, B and safety)
- Multiple X-ATA chapter applications (ATA 21 and 36)
- Channel A and B are independent
- Dissimilarity between channels A/B and safety
- Design assurance level:
  - Channel A and B: DAL B
  - Safety channel: DAL A
- ARINC 600 size 3 connector
- Developed according to RTCA/DO-178C and RTCA/DO-254
- Qualified according to RTCA/DO-160
- High vibration level compliance (C/C1)

## Designed for civil and military aerospace applications

### Suitable for:

- Complex multi-system control (e.g. air systems)
- System control and monitoring logics computation with digital communication, sensor acquisition and valves/actuators control

# LIEBHERR

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## Electrical Characteristics:

### CPU Channel A/B

- Processor: MPC 5554
- Memory:
  - Flash EPROM (MPC5554 internal): 2 Mbyte
  - Flash EPROM (optional): 4 Mbyte
  - Buffered internal SRAM: 32 kbyte
  - SRAM: 512 kbyte (optional up to 4 Mbyte)
  - EEPROM: 64 kbyte
- Digital buses:
  - ARINC 429 (6 x input/2 x output)
  - 2 x RS422 input/output
  - 2 x CAN interface
  - SPI communication (leak loops, resolver)
- Analog inputs:
  - 9 x analog PT500 sensor input
  - 2 x analog PT500/NTC10000 sensor input
  - 10 x analog 0-10 V differential input
  - 1 x analog 0-10 V/10 mV/K differential Input
  - 1 x analog potentiometer input
  - 1 x cabin pressure acquisition (pressure, temperature)
- Digital inputs:
  - 79 x discrete input (GND/OC, 28 V/OC)
  - 2 x discrete input (internal)

### Safety Channel

- Processor: TMS320F28335
- Memory:
  - Flash EPROM: 256 kbyte
  - EEPROM: 32 kbyte
  - SRAM internal : 32 kbyte
  - SRAM external: 128 kbyte
- Digital buses:
  - ARINC (2 x input/1 x output): 1
  - RS422 input/output: 1
- Analog inputs:
  - Analog PT500 sensor input: 3
  - Analog PT500 cHA/B sensor input: 2
  - Analog 0-10 V differential input: 4
  - Analog 0-10 V/10m
- V/K differential input: 2
  - Cabin pressure: 2
  - Leak detection loop: 12
- Digital inputs:
  - Discrete input (GND/OC, 28 V/OC): 18
- Discrete input (internal): 4
- Power outputs

### Hardware Key Data:

- Supply voltage: 3 x 28 VDC
- Power dissipation: 43 W
- Thermal management: natural convection
- Housing: ARINC 600, 6 MCU
- Weight: 5.5 kg
- Typical MTBF: >21,000 FH