Contacts

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Airbus Crisa designs and produces state-of-the-art electronic products for space applications that range from satellites, deep space probes and orbital infrastructure to space transportation systems. From ensuring proper on-board temperatures, energy management, and providing the delicate control for spacecraft and launchers, Airbus Crisa's innovative solutions build on the company's heritage in almost all types of electronics with the highest precision and performance.

Motivated by a commitment to continuous innovation, and backed by the strategy of investments in research and development, the company's products continually evolve in response to customer's needs.

Airbus Crisa has proven its ability to meet requirements for all types of missions, equipping everything from large telecommunication satellites, new-space constellations and agile Earth observation platforms to scientific and deep space exploration probes.

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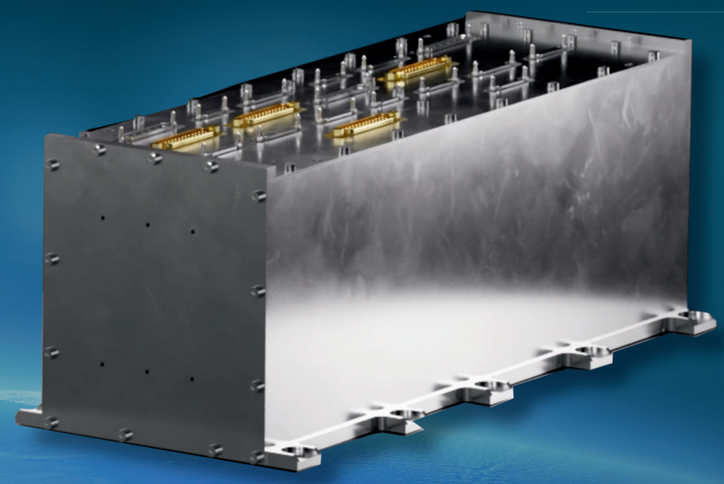
Reference 0278_24_18.

CRISA

MEGA

Main Electronics for Global Access

PCDU



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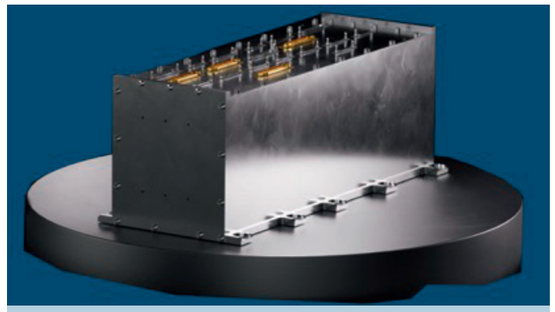
MEGA PCDU: The Power Conditioning and Distribution Unit (PCDU) is part of the Electrical Power Subsystem (EPS) of the Spacecraft. Its main function is the conditioning of the solar array power in order to charge the batteries during sunlight periods and supply platform and payload users. This unit is built around the same type of modules stacked in a vertical arrangement. Three module types are available, Conditioning Module (COND), Control Module (CTRL) and Distribution Modules (DIST). Different configurations are available to suit customer needs.

MEGA

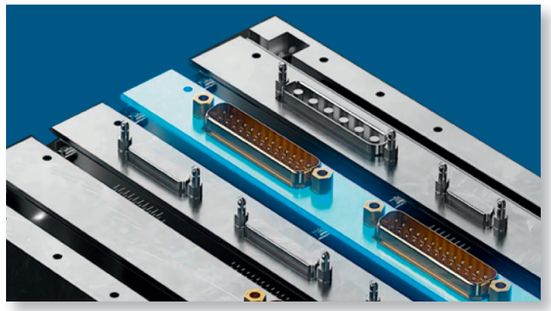
Main Electronics for Global Access

Key Features



- Flight proven reliable automotive-grade parts based design
- Modular design
- Competitive mass and volume
- Scalable up to 4 kW unregulated 28V platforms
- Solar array condition based on DET
- Lithium-ion battery management
- Scalable power distribution:
  - Safe-Open Latching Current Limiters
  - Fuses
  - Heater's drivers
  - Stepper motor drivers
  - Low voltage outlets
- Temperature range: from -25ºC to +60ºC
- Radiation tolerance compatible with LEO
- Life time: 9 years

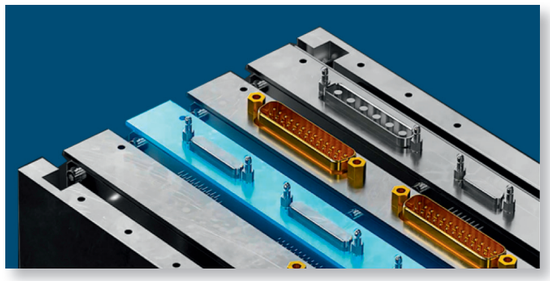
Modules types and capabilities



COND Module

COND module, provides the electronics to condition the solar array sections by a serial switch Direct Energy Transfer (DET) approach. The following table shows the COND capabilities:

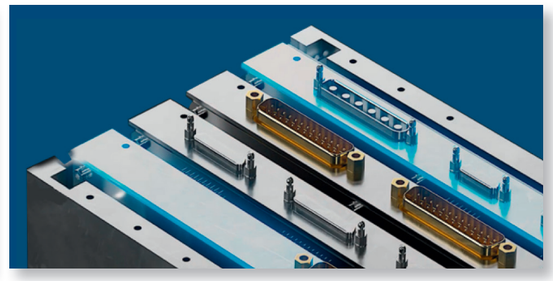
COND MODULE		
Type	**Qty**	**Remarks**
Solar Array sections	16	Direct Energy Transfer architecture
		V_{BUS} + 4V < Voc < +75V
		V_{BUS} > +22V
		Isc < 6.2A
		Capacitance < 3 µF
		Inductance < 1 µH
Battery current	–	Charge current: 80A
		Discharge current: 90A



CTRL Module

CTRL module provides the following functions: TM/TC via CAN Bus serial bus, Auxiliary Power Supply for internal electronics, distribution capabilities, telemetry acquisition and input/output telecommand management. The following table shows the CTRL capabilities:

CTRL MODULE		
Type	**Qty**	**Remarks**
Unswitched outlets	4	Nominal current 3A protected by fuses.
Switched outlets	10	Protected by LCLs: • x8 LCL Class 6A • x2 LCL Class 3A
Release power lines	10	2 groups of 1 ARM LCL Class 5A + 5 FIRE switches
Regulated switched lines	2	+5V non-isolated protected by LCL Class 1.5A: • Ppwer capability : 5W • Current capability: 1.15A
TM/TC interface	1N+1R	CAN BUS 1 Prime + 1 Redundant
Battery current acquisition	2N+2R	Full scale current: -135A±2.5% to +75A ±2.5%. Voltage conditioning range: -104mV@-138A to +58mV@77A
Temperature acquisition	5N+5R	S-Temp type: • Betatherm (10kOhm @ 25°C)
Temperature acquisition	3N+3R	X-Temp type: • PT-1000 (1000 Ohm @ 0°C)
Output Telecommands	4N+4R	SLPL received bi-level type: • Active level: 2.9V to 5.5V • Quiescent level: 0V to 0.4V when sinking a current up to 100µA • 1µs < trise/tfall < 3ms
Input Telecommands	1N+1R	SLPL received bi-level type



DIST Module

DIST is a module that provides the following power distribution capabilities:

DIST MODULE		
Type	**Qty**	**Remarks**
Temperature acquisition	5N+5R	S-Temp type: • Betatherm (10kOhm @ 25°C)
Temperature acquisition	2N+2R	X-Temp type: • PT-1000 (1000 Ohm @ 0°C)
Switched outlets	16	Protected by LCLs: • x4 LCL Class 6A • x2 LCL Class 15A • x7 LCL Class 3A • x3 LCL Class 1A
Motor drivers	3	Stepper motor (2 coils): • V_{coil} = 21V • R_{coil} > 60Ω • 80mH < L_{coil} < 220mH • C_{coil} (coil to structure) < 1nF Note: any Motor driver can be bypassed to generate a regulated outlet, +20V non-isolated protected by LCL Class 3A: • Power capability : 40W • Current capability: 2A
Position sensor signal	2N+1R	Dry contact acquisition (DCA): • Closed : R < 50Ω • Open: R >1MΩ
Position sensor power supply	2N+1R	Current consumption < 4mA