

AEROSPICE MODULAR SYSTEM

OVERVIEW



System Description

The AeroSpice System is a highly modular signal instrumentation concept which (besides specific I/O boards) utilizes system boards carrying up to five mezzanine modules. Four different CARxxx system boards are available, serving different applications like simple signal routing and conditioning up to complex signal simulation via RS485 or CAN bus. These boards are usually mounted into a 19" rack system. All signal I/O is routed to a standard rear side connector.

Specific functionalities can be configured by simply plugging one of over thirty signal conditioning modules.



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Boards

AeroSpice Modular System

Several types of system boards can serve different applications. Common specification to all system boards is the power supply of $\pm 15V$.

CAR400 is the standard system board without bus interface, whereas CAR450 offers an RS485 interface. These boards contain four adjustable reference voltage sources which are tied to the module slots and to the boards rear connector.

CAR500 and CAR501 introduces the CAN2.0B bus to the AeroSpice system boards. CAR500 contains four adjustable reference voltage sources which are tied to the module slots and to the boards rear connector.

Modules

AeroSpice Modular System

There are several types of functional AeroSpice modules available:

- + instrumentation amplifiers, programmable amplifiers, isolation amplifiers
- + current loop inputs / outputs, current-to-voltage / voltage-to-current amplifiers
- + pwm amplifier, current sources, programmable power resistors
- + digital inputs, relay- and semiconductor switches
- + proximity sensor simulation, LVDT simulation, resolver simulation
- + LVDT demodulator, Resolver demodulator, DC bridge amplifier
- + PT100 sensor input, analog adder, analog multiplier
- + ARINC429 TxD/RxD
- + customer specific

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List of functional modules [alphabetical order]

28VIN	Dual channel isolated 28V digital input module with configurable potentials
9032BGR1000Ao2	Dual 24V digital input
9032BGR1100Ao2	Dual 24V digital output
ADDB	Analog adder module
AMP128	Dual channel instrumentation amplifier
AMULA	Analog multiplier module with optional transformer coupling
ARINCRX	Dual channel ARINC429 receiver module
ARINCTX	Dual channel ARINC429 transmitter module
CA420	A configurable voltage controlled/bus controlled 4-20mA current source
CA510	Voltage controlled current source with monitor output
CURRAMPA	A configurable voltage - to - current converter for 10/50/100mA
CURRINA	A configurable 4-20mA input - to - voltage transformer module with isolation
DA116	Digital-to-analog converter, 16-channel
DACMUXA	Analog multiplexer with 1-to-4 channels and digital sample-hold
DCBRA	DC bridge amplifier with force/sense excitation voltage or current
DRIVEA	Supplementary module to the resolver demodulator module RESODB
FET130	Discrete controlled and isolated solid state switch for high/low side switching
FET220	Dual channel solid state high side switch
IN410	Quad channel 28V digital input module
ISO210	Dual channel isolation amplifier
ISOAMPC	Isolation amplifier with configurable isolation barrier
LVDT420	4-wire LVDT demodulator with isolation
LVDT620	6-wire LVDT demodulator with isolation
LVDTSA	LVDT simulation module with transformer coupling and analog/bus control
M1141	Digital solid-state-output - 4 channel, isolation
M6121	Analog input switch module - 2 channel
M8111	Thermometer simulation
PGA128A	Dual channel bus programmable instrumentation amplifier
PLS110	Power load simulation module with fault stimulation inputs
PSTRIGA	Bus programmable Schmitt-Trigger with instrumentation input
PXS110	Proximity sensor simulation with fault stimulation inputs
RDK314	Resolver demodulator box with lcd-display - 14bit resolution
RELA	Dual signal relay module, discrete and bus controlled
RELB	Dual signal relay module, discrete and bus controlled with locking feature
RELC	Dual channel medium power relay module
RESODA	Resolver demodulator module
RESOSA	Resolver simulator module with transformer coupling
RL221	Bus-controlled electromechanical relays - 21-channel
TEMPSENSA	PT100/NTC input module with excitation and analog output