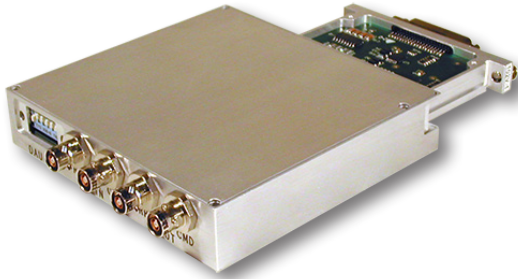


SCDAU-2000 and Modules

**CURTISS-
WRIGHT**

Single Module CAIS Data Acquisition Unit

CURTISSWRIGHTDS.COM



Overview

The small CAIS distributed acquisition unit (SCDAU-2000) performs the function of a “remote CAIS overhead” with one plug-In signal-conditioning module available from the PMCDAU-2000 product line. This unit provides the interface with the “master” via the CAIS Bus (command/response bus), and provides the internal data interface for most remote I/O modules. This unit allows the user to place signal conditioning near the sensor, or used when space is at a premium.

Key Features

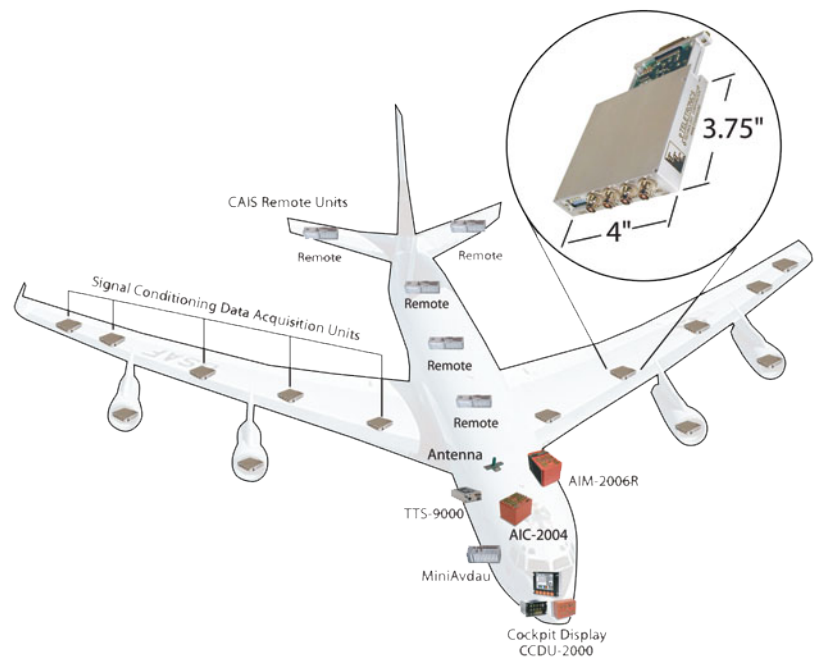
- Single module CAIS remote unit
- Smallest CAIS remote unit on the market
- Over 40 modules are available for use in this configuration
- User reconfigurable through pluggable conditioning module
- Provides true CAIS distributed conditioning modules
- Best suited for
 - + Limited space
 - + Distance between sensors and conditioning circuit must be as short as possible
 - + Pressure and temperature scanner conditioner

Applications

- Flight test instrumentation
- Missile applications
- Air vehicle test, certification or development
- Distributed systems
- CAIS applications
- Research measurements and experiments

Additional Features

- CAIS Bus port for communication with the “Master” and daisy-chain CAIS Bus output for connection to downstream remote units
- Has remote unit ID strapping provisions (1 of 60, i.e. 6 lines)
- Operates at up to 416 KSPS (5 MBPS at 12 bits-per-word)
- Operates from aircraft 28VDC supply
- Microsoft® Windows® application software included



SCDAU-2000 units in a distributed data acquisition system

INFO: CURTISSWRIGHTDS.COM
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TRUSTED
PROVEN
LEADER



CAIS
Compatible

Specifications

General

- RMIF-105: CAIS remote I/F, and 28V DC to DC supply
- Plug-in module: Remote signal conditioning module. See list of available plug-in modules.
- Remote capacity: Operates as a single CAIS remote unit
- Remote DAU: Operates as 1 of 60 remote DAUs
- DAU ID: 1 =< DAU ID =< 60; DAU ID of 0, 61,62, or 63 not allowed
- Signals: Uses a 4-wire communication bus (two 2-wire cables). Signals include “Command” (CMD) and “Reply” (RPLY).
- Requirements: The SCDAU-2000 unit operates in compliance with the “CAIS Bus” communication standard (document A00.00-C001, “CAIS Bus Interface Standard”, Rev A) as a remote slave unit.
- Data rate: CAIS operates at a fixed 10 Mbps rate. Maximum effective rate is 5.0 Mbps (416.7 KSPS at 12-bit resolution).
- Resolution: CAIS operates at 10, 12, 14, or 16 bits per word
- Coupling: Transformer coupling on all interface signals
- Operating modes: As a remote unit the SCDAU complies with all CAIS operating modes: Acquisition, Program, Verify, BIT, Configuration, Format, and Simultaneous Sample.
- Calibration: Supports three calibration signals via the CAIS bus. Refer to CAIS controller specification for details on calibration modes.

Dimensions and Mechanical

- Dimensions (W x L x H): 4.00 x 3.75 x 0.80”
- Weight: 10 oz
- Connectors:
 - + CAIS CMD: (2) BJ157FL (4 lugs)
 - + CAIS RPLY (2) BJ157 (3 lugs)
 - + Power: MM223-009-261-00WE-900
 - + For conditioning module connectors see module data sheet
- Mating connectors:
 - + CAIS CMD: (2) PL155FL (4 lugs)
 - + CAIS RPLY: (2) PL155 (3 lugs)
 - + Power: MM212-009-161-45WD
 - + For conditioning module mating connectors see module data sheet

Electrical

- Input power: +28 ±4VDC
- Power consumption: 4 to 8W (depending on the type of conditioning module used)

Environmental

- Operating temperature: -35 to 85°C (box ambient temp)
- Storage temperature: -55 to 100°C
- Random vibration: 15 grms, 20 to 2,000 Hz, 10 minutes, any axis
- Acceleration: 25g, indefinite duration, any axis
- Shock: 25g, half-sine, 11 mS, 6 shocks, any axis
- Humidity: 5-95% RH, non-condensing
- Altitude: 0 to 200,000 ft (unlimited)

Input/Output Modules

Analog, Audio, Current, Potentiometer, and Voltage Sensors; Acceleration, Air Velocity, Flow/Force, Pressure, Shock (Amplified Output) Sensors

- PMAMS-124B: 24 Channel, Single Ended Analog Multiplexer Module (Digital output)
- PMATD-104F: BEI Motion pack interface module, programmable Gain and 4 Pole filter, 3 accelerometer or rate input channels 1 temperature input channel
- PMRMS-108: 8 Channel RMS to DC Converter

Acceleration, Bridge, Acoustical, (Piezoresistive); Analog (Low Level), Bridge, Current, Force (Millivolt Output), Load Cell, Potentiometer, Strain Gage; Torque, Bridge (Piezoresistive); Vibration, and Voltage Sensors

- PMISA-102A: 2 Channel Isolated Analog Module with programmable gain of 1 to 10
- PMSCD-102S: 2 Channel Signal Conditioning Module with Voltage Excitation, Programmable Filtering, & Simultaneous Sampling
- PMSCD-102T: 2 Channel Signal Conditioning Module with Voltage Excitation, Programmable Filtering, & Simultaneous Sampling with thinning function
- PMSCD-104D: 4 channel Signal Conditioner, Voltage Excitation, Programmable Digital Filtering and Simultaneous sampling
- PMSCD-112A: 12 channel Multiplexed Signal Conditioner with Programmable Gain, Constant Voltage Excitation, two-pole filter
- PMSCD-404T: 4 Channel AC/DC Coupled Signal Conditioning Module with ± 15 VDC Excitation, Programmable 6-Pole Butterworth Filter, Simultaneous Sampling and Thinning Function
- PMSCD-702T: 2 Channel AC/DC coupled signal conditioning module with 3.9mA current excitation, constant voltage excitation, 6 pole Butterwoth filter, phase matched

RTD, Temperature, and Thermocouple Sensors

- PMRTD-110A: 10 Channel RTD Conditioner Module with Constant Current Excitation for 3 and 4 wire RTDs
- PMRTD-118A: 18-Channel RTD Conditioner Module with Constant Current Excitation, Gain = 1, 2, 4, 8, with 142 ohm internal completion resistor
- PMTCD-108V: 8 Channel Thermocouple conditioner with RJC-108 ref Junction Compensation, 10 Hz
- PMTCD-208V: 8 Channel Thermocouple 250 / 1000 Hz sampling rate, 16 bit / 12 bit output

Pressure Systems Inc. Pressure Scanners

- PMPSSI-164: 64 Channel Pressure Scanner I/F Module. Supports one ESP scanner.
- PMPSS-101: 64 Channel Pressure Scanner I/F module w/ programmable gain and offset. Supports one ESP scanner

Acceleration (Variable Capacitance); Acoustical, Force, Pressure, Shock (Piezoelectric); Vibration Sensors

- PMCAS-102W: 2 Channel Charge amplifier module with double integration
- PMCAS-104D: 4 Channel Charge Amplifier Module with Programmable Digital Presample Filter and Simultaneous Sampling Capability
- PMSCD-602T: 2 Channel Signal Conditioning Module with 3.9mA Current Excitation, Programmable Filtering, & Simultaneous Sampling with thinning function
- PMSCD-604D: 4-Channel AC/DC-Coupled Signal Conditioning Module with 3.9 ma Current Excitation, programmable, DSP based, digital FIR filter

Acceleration, Bridge or Piezoresistive Sensors

- PMGRC-102W: 2 Channel Gain Ranging Conditioner V exc. Freq = 500, 2000, 5000, 10000 Hz, 6 pole Butterworth filter with digital average output
- PMGRC-202W: 2 Channel Gain Ranging Conditioner Current Excitation. Freq = 500, 2000, 5000, 10000 Hz, 6 pole Butterworth filters with digital average output

Input/Output Modules

Synchro/Resolver

- PMLRV-102E: 2-Ch LVDT/RVDT Conditioner Module - 2 or 3/4 Wire Configuration, 1 to 10 VRMS reference, programmable Excitation
- PMSRD-101V: 1 Channel Synchro/Resolver Conditioner Module
- PMSRD-102A: 2 Channel Synchro/Resolver Conditioner Module 26 VRMS Ref, 11.6 VRMS Line to Line

Digital Sensors

- PMBLS-124H: 24 Channel Bi-Level Multiplexer Module with Programmable Threshold (20M compatible)
- PMBLS-124V: 24 Channel Bi-Level Multiplexer Module
- PMBLS-124W: 24 Channel Bi-Level Multiplexer Module with Time Tag capability
- PMFPD-102B: 2 Channel Frequency/Period Conditioner Module with Totalizer backup
- PMFPD-102V: 2-Channel Frequency/Period Conditioner Module
- PMISD-112A: 12 Channel Isolated Bi-Level Multiplexer Module
- PMVFE-100: Voice, Frequency, and Event module

Bus/Avionics Interface

- PMBCT-553: MIL-STD-1553 Bus Controller Module
- PMBIM-232: 2 Channel RS-232 Bus Monitor Module
- PMBIM-429-4: 4 Channel ARINC-429 Bus Monitor, Chapter 4 compatible Module
- PMBIM-553E-4: 1-dual redundant 1553 bus monitor Chapter 4 Expanded Module
- PMBRT-553: 1- dual redundant 1553 R/T Module
- PMBSD-110: Bit Sync Module, 10 Mbps
- PMSDI-102: 2 Channel Serial PCM Input Module
- PMTDM-100: TDMS bus interface Module

GPS/Time Code

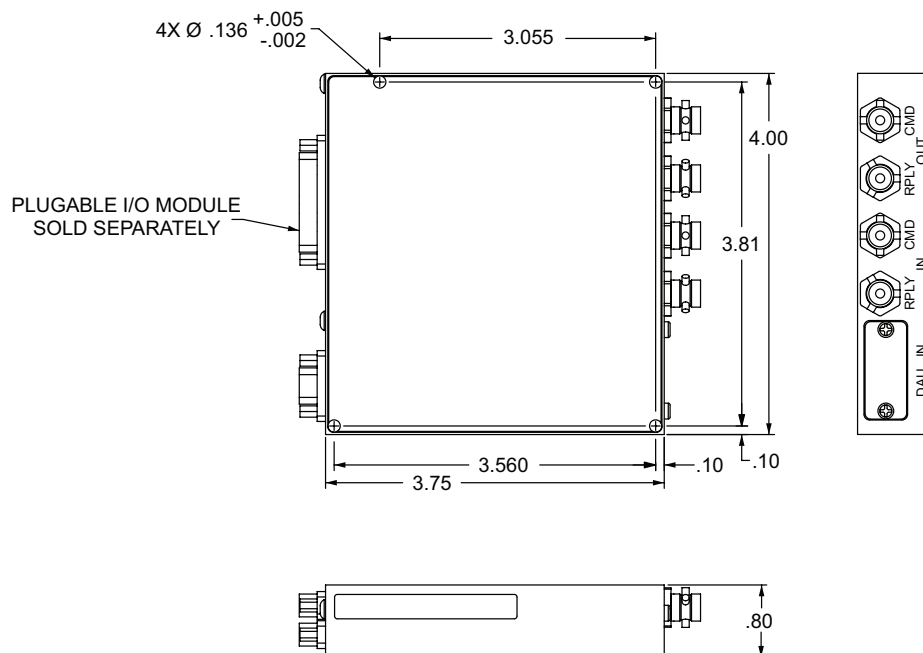
- PMGPS-101A: Miniature GPS Position/Time Code Generator Module
- PMIRG-120B: High Speed IRIG Time Reader/Generator Module

Voice

- PMCVS-101V: 1 Channel CVSD Voice Conditioner Module
- PMCVS-102V: 2 Channel CVSD Voice Conditioner Module

Ordering Information

Contact Curtiss-Wright for ordering information



SCDAU-2000 outline drawing