

PCU-800 Series II

INTRODUCTION

The PCU-800 Series II integrates analog and digital signal conditioning circuitry with a high speed, fully programmable PCM Encoder. Data acquired by the system is conditioned, digitized and encoded in accordance with IRIG-106 telemetry standards. Multiple outputs are provided to simultaneously support RF telemetry, recording or diagnostic requirements. The user has full software control of all system features including channel gain, offset, and sample rate. Some additional features are controlled via plug in jumpers on the unit's user-accessible control panel. AYDIN TELEMETRY's ADASWARE software is included with the hardware allowing a non-technical operator to control system operation. The software is hosted on an IBM PC-based computer running under the Windows environment. The PCU Series II provides military circular connectors for all PCM "overhead" and power connectors.

The PCU-800 Series I is also available for users who prefer "D" and Double Density "D" connectors for all signal interfaces. If this feature is important for your application, see the PCU-800-I data sheet.

SIGNAL CONDITIONING CARDS

A complete family of analog and digital signal conditioning cards are available for the PCU-800 Series II (refer to the PCU-800 Analog Conditioning Card Selection Guide).

Signal conditioning cards are available with standard "D" style and "Double Density D" style connectors for most analog and digital inputs. Other connector styles such as Coax, twinax and triax are provided for signal connections such as piezo transducers, accelerometers and MIL-STD-1553 bus connections.

SYSTEM DESIGN

The PCU-800 Series II can be configured to accommodate a wide range of requirements from simple systems with several hundred channels, to complex, multi-chassis systems handling several thousand channels. In addition, the user can reconfigure the systems in the field simply by installing or removing a number of plug-in cards, or if more channel capacity is needed, by interconnecting multiple PCU-800's together through the standardized communication bus (10 wire interface).

Systems with several hundred channels can be configured within a single PCU-816 Series II chassis. (The PCU-816 chassis accepts up to 16 plug-in signal conditioning cards). Cards are available for many types of sensors. If the number of channels required in an application exceeds the capacity of a single chassis, multiple chassis' can be configured together as a "system". One possibility for such a system would be to designate one unit as a "master controller" and the remaining chassis' as "remote units". Using this method, systems can be configured to handle in excess of 5,000 channels. The master and remote units can be separated from each other by distances up to 150 cable feet depending on the operating speed of the system. This "distributed system approach" is achieved without compromise in system performance, and indeed often results in performance improvements with significant reduction in cost to the user.

DISTRIBUTED SYSTEM ADVANTAGES

The "Distributed System" is the best system configuration to use when there are large numbers of channels spread throughout different physical areas of the test vehicle. This is most often the case in launch vehicles, multi-stage vehicles, or large aircraft (See Figure on next page). The Distributed System approach spreads one or more PCU-800 Series II remote units throughout the test vehicle and places a single PCU-800 Series II, configured as "master controller unit" in a centrally located area. The sensors and transducers in each area are conditioned and digitized locally. Encoded results are sent to the master unit over a high speed digital communications bus. The benefits of this approach are significant.

■ A Distributed System will reduce the distance between transducer and conditioner resulting in better measurement accuracy and wiring costs reduction. Shorter sensor-to-conditioner cabling reduces the potential for noise pickup and minimizes signal degradation.

■ A Distributed System solves problems associated with limited cable access or routing through aircraft production bulkheads (commercial vehicles), inter-stage segments (launch vehicles), captive carry payloads, or other physical barriers such as firewalls which will not normally support penetration by a large number of wires.

The communication buses used for PCU-800 Series II master/remote communication consist of ten (10) wires (5 differential signals).

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DISTRIBUTED SYSTEM ADVANTAGES (cont.)

■ A Distributed System allows the user to combine the PCU-800 Series II products with other Aydin Telemetry product families. Our microminiature products are extremely effective when used in harsh environmental areas of the vehicle such as engines, landing gear, rotor blades, etc. The results are that reliability is increased and overall measurement costs are reduced.

The PCU-800-II is designed to operate in conjunction with the following AYDIN TELEMETRY products: RPM/E, RTM/E, MMSC-800, MPC-800, ALBUS-1553, MiniARMOR-700, CAIS products, etc.

■ A Distributed System will simplify system wiring in large vehicles by taking advantage of the fact that the communications bus is designed to operate at distances up to 150 feet. The 10 wire interface bus can even be transmitted over slip ring assemblies to support remote measurement on rotating assemblies such as helicopter rotors.

GENERAL SPECIFICATIONS

Configuration:	The PCU-800 Series II operates as stand alone, master unit, or remote unit, field selectable by the user.
Output Data:	Primary PCM output in RS-422 levels. Seven (7) user selectable output codes available (NRZ-L/M/S, Bi-Phase L/M/S and RNRZ-L).
Test Points:	The following RS-422 differential outputs are provided: 2XBCLK, BCLK, WCLK, MNCLK, and MJFCLK. An NRZL PCM output data is also provided which contains the same data as the primary PCM outputs.
Filtered Output:	A single ended Bessel filtered output is provided. The output coding is user selectable. The filter incorporates a 6-pole Bessel response where the cutoff frequency (Fco) and output amplitude /offset are user selected via resistors mounted on a plu in header. Data rates up to 5.0 Mbps (except Bi-Phase = 2.5 Mbps) are supported.
Bit Rate:	Programmable; Maximum bit rate is 5.0 Mbps (standard). (Other rates are available on special order).
Resolution:	Programmable, 8-, 10- 12-, 14- and 16-bits per word. All formats are constant word length.

Command/Response:	The PCU-800 Series II comes with 3 10-wire interface ports.
Extended Resolution:	Data words which require extended resolution beyond the selected number of bits per word are represented in the output format as two consecutive words (e.g. 1553, synchro, counter data, time, etc.). The ADASWARE support software provides a special instruction to read Extended Data.
Format:	Stores up to four PCM definitions each containing up to 64K words, a single 256K word format, or two 128K word formats.
Amplifier:	A common second-stage amplifier provides additional gain programmability and offset capability on all analog samples prior to digitization. This amplifier is programmable on a per-channel basis.
Primary Gain:	Most analog signal conditioning cards are provided with a number of programmable gains. Refer to the PCU-800 Analog Conditioning Card Selection Guide for additional information.
Secondary Gain:	1, 1.4, 1.8 & 2.2., programmable. Other gain combinations also available.
Offset:	±50% in 4,096 steps, programmable
Accuracy:	±0.5% of full scale (including gain, offset, and A to D conversion errors)
Input Power:	+28 ± 4VDC. The PCU-816 Series II chassis provides up to 100 watts for signal conditioning cards. Refer to the card selection guide for the power dissipation requirements of individual cards.
Temp:	-35°C to + 85°C, operation & storage
Altitude:	0 to 50,000 feet
Vibration:	MIL-STD-810D, Method 514.3, Cat. 10, 10 Grms.
Shock:	MIL-STD-810D, Method 516.2, Proc 1, 15g, 11ms, Half Sine.
EMI:	MIL-STD-461/462, CEO3/REO3/RSO3.
Connectors:	Overhead: MIL-C-38999 Series 1, circular MIL;
Signal Conditioners:	"D" and "Double Density D". Optional EMI/ Environmental backshells are available on special order.
Weight:	Exclusive of Signal Conditioning Cards: PCU-808 10.0 lbs. (4.54 Kilograms) PCU-816 15.6 lbs. (7.08 Kilograms)

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OPTIONAL ACCESSORIES AVAILABLE for PCU-800 Series II Hardware

Extender Card

Allows operation of any card while extended from the chassis. Jumpers on card allow the insertion of user designed subcircuits or the monitoring of bus activity.

Note: The accuracy of some signal conditioning cards may be affected when used with an Extender Board.

SIP Frequency Headers:

Provides cutoff frequency selectability in the field for all SCC-1XX, 2XX and 5XX series cards with SIP programmable 6-pole low pass filters. Frequency ranges available are from 14 Hz (no sip) to 5 kHz (10 kHz for the SCC-5XX cards). Consult the factory for a list of standard cutoff frequencies available.

Note: Each SCC card (except 30X and 40X types) default to a specific cutoff frequency if sips are not installed.

Mating Connectors

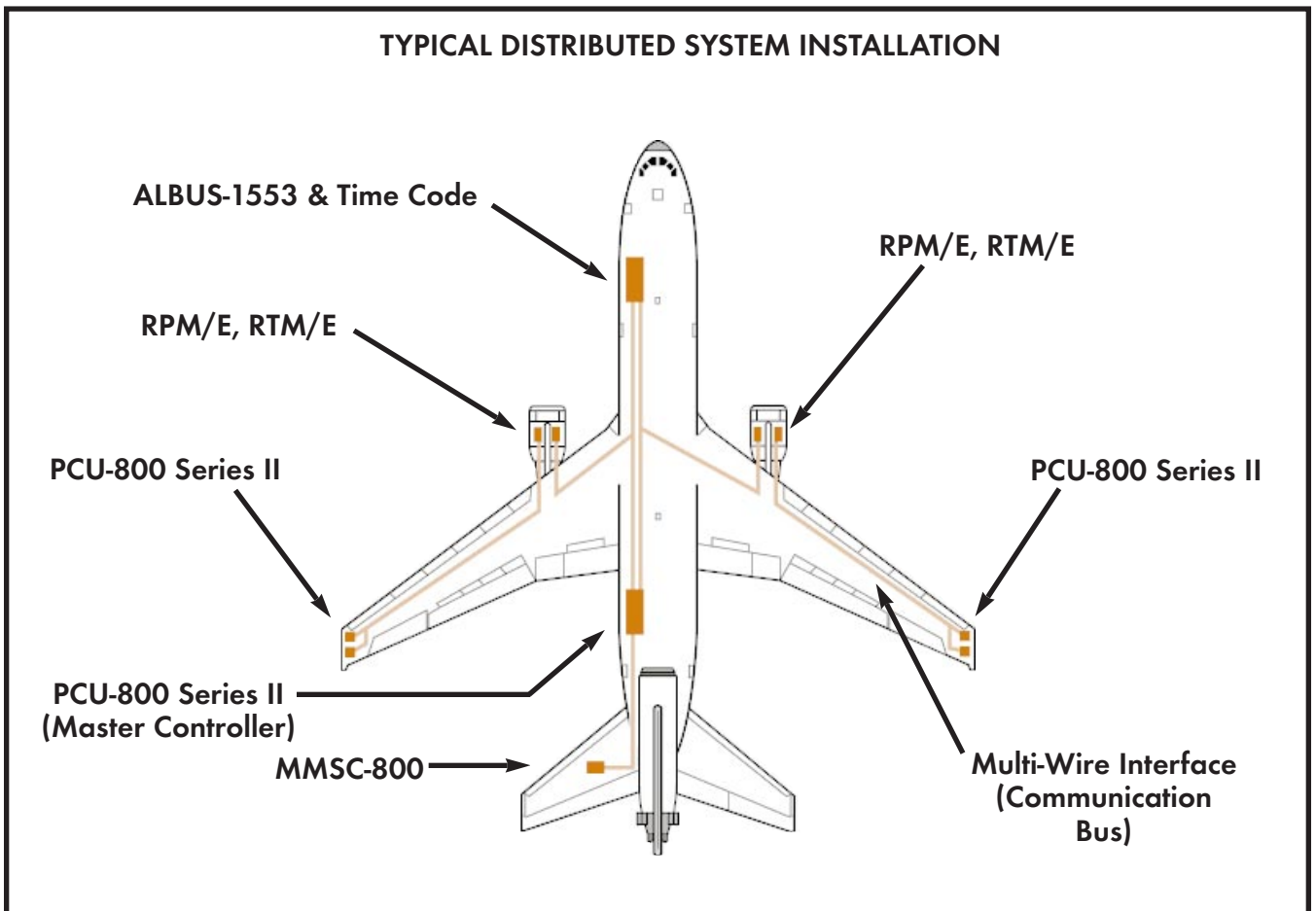
One set is provided with each chassis and card set at no additional cost.

Operating Manuals

One set is provided with each chassis and card set order.

Blank Panel

Used to cover unused slots of the PCU when all available card slots are not occupied. Keeps debris out of the unit. (Enough panels to cover half the total number of slots are provided with each chassis.)



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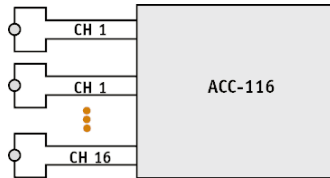
The following is a complete listing of the conditioning cards available for use in the PCU-800 system as of this printing. Up to 16 cards may be used in a single PCU-816 unit unless otherwise specified.

ANALOG CARDS

that require overhead A/D Converter

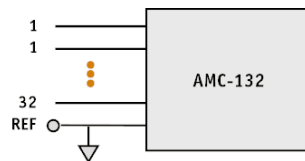
ACC-116 16 channel RMS to DC Converter

Provides RMS value of input waveforms. Frequency response is 125 Hz to 400 Hz. Minimum full scale input is 5 Vrms. Maximum input is adjustable via on card resistors.



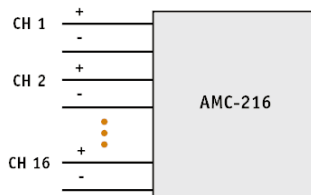
AMC-132 32 Channel Analog Multiplexer

32 single ended inputs with per-channel gain and attenuation capability (customer configured).



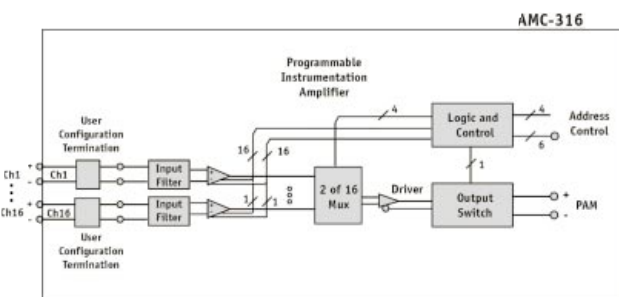
AMC-216 16 Channel Analog Multiplexer

16 differential inputs with per-channel gain and attenuation capability (customer configured).



AMC-316 Programmable Gain Analog Multiplexer Card

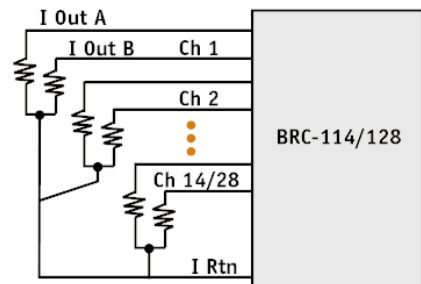
The AMC-316 card is a 16-channel differential input analog multiplexer. Channel gain can be independently programmed (4 steps). The AMC-316 provides a single constant-voltage excitation source, user-set to +10V, +7.5V, +5V, +2.5V. The excitation source can provide up to 40 milliamps. The input is protected from faults up to ± 35 volts power on or off.



BRC-114/128 Dual-Tracking Constant Current Multiplexer

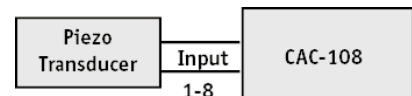
Provides 14 channels (BRC-114) or 28 channels (BRC-128) of constant-current excitation and signal conditioning for RTD's or Potentiometers. Current sources are multiplexed to minimize transducer self-heating. Each channel utilizes precision dual-tracking constant current sources. Four user-selectable gains (choose from 2, 4, 8, 16, or 2, 20, 200, 2000; factory preset) are available for each group of 14 channels. Current sources are user-set to 1.25, 2.5 or 5.0 mA per group of 14 channels.

NOTE: This card is subject to sample rate restrictions. Refer to the applicable product documentation.



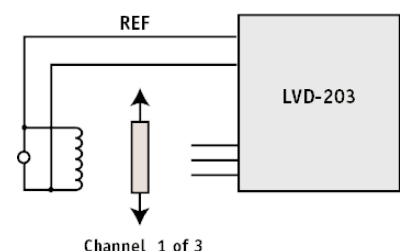
CAC-108 8-Channel Accelerometer Conditioner with Charge Converter

The CAC-108 provides programmable signal conditioning for piezoelectric transducers. The card support gain ranges from 300 to 6000 picocoulomb full scale. User selectable 6-pole filter via plug-in filter SIPs (1 per channel).



LVD-203 3-Channels LVDT/RVDT Conditioner Card

Suitable for precision measurement of displacement. Operates from an external reference of 360Hz to 3kHz, or from the on-card reference frequencies from 350Hz to 20kHz with an amplitude of 2.5 VRMS to 10 VRMS at up to 10 mA. Signal inputs are applied to differential amplifier inputs.

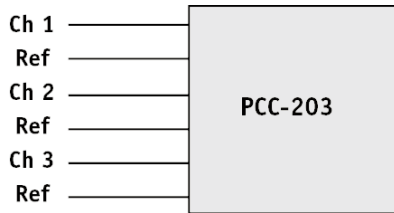


ANALOG CARDS

that require overhead A/D converter (cont.)

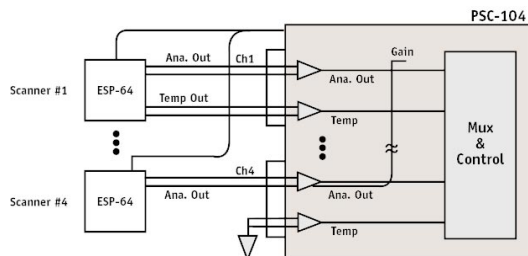
PCC-203 3-Channel Phase Comparator Card

3-channel phase comparator card measures the phase difference between a reference signal and an unknown input. Full scale output is $+120^\circ$ to -120° with respect to the reference. The input range of each channel is adjusted by the user through installation of on-card resistors.



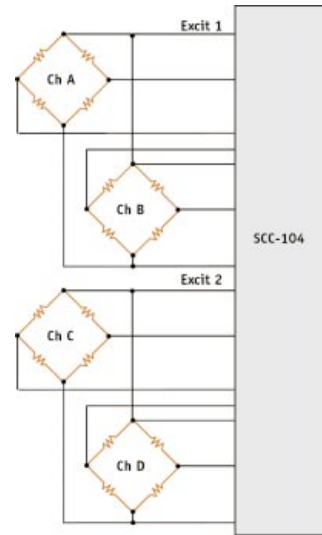
PSC-104 4-Channel Pressure Scanner Card

The PSC-104 is a 4-channel analog multiplexer card specifically designed to interface with up to four Pressure Systems™ Model ESP-64 or Scanivalve™ Model ZOC64PX 64 channel pressure scanners. Contact the factory for compatibility with other commercial pressure scanners. Excitation and channel address data are used to control the pressure scanner. The PSC accepts the analog output from the scanners, digitizes the values, and places the encoded data into the PCU-800 output data stream. Each of the four (4) PSC-104 channels can be used independently and is provided with four adjustable gains. In addition, the PSC monitors the temperature of the ESP-64 scanner. The card will operate at the maximum scan rate of the Scanivalve™ or Pressure Systems™ scanners.



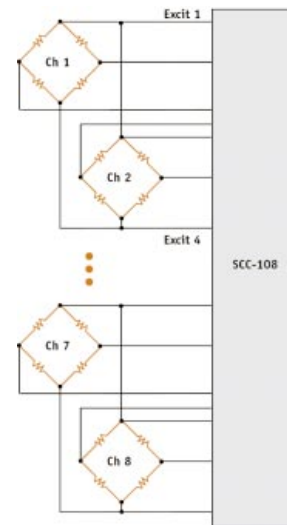
SCC-104 4-Channel Bridge Conditioner

The SCC-104 card is suitable for conditioning up to four bridge or EMF inputs. Each channel provides 8 programmable gains, 6-pole Butterworth filter with user-selectable cutoff frequency via installation of SIPs, V_{sub} and Zero calibration and Resistor shunt calibration. A total of 32 gains can be programmed by the user on a per-channel basis (8 on-card gains and 4 overhead gains). Two (2) constant voltage excitation sources are provided on each card (excitation shared on a 2-channel basis). The sources are, jumper selectable up to $+10V$. The user can install bridge completion components for each input channel. The card can support up to three (3) completion components thereby support 1, 2, or 4 active -arm bridges.



SCC-108 8 Channel Bridge Conditioner (4-arm)

The SCC-108 card is suitable for conditioning up to eight (8) full bridge or EMF inputs. Each channel provides 8 programmable gains, 6-pole Butterworth filtering with selectable cutoff frequency via user-installed filter SIPs, Zero and resistor shunt calibration. A total of 32 gains can be programmed by the user on a per-channel basis (8 on-card gains and 4 overhead gains). Four (4) jumper selectable voltage excitation sources are also provided on each card. These excitation outputs are shared on a 2-channel basis.



SCC-208 8 Channel Bridge Conditioner (sample/hold capability)

The SCC-208 card provides simultaneous sample capability for up to eight (8) full bridge or EMF inputs. This card has the same electrical features as the SCC-108 except that each channel has a Sample/Hold amplifier to support simultaneous sampling.

NOTE: This card has a maximum usage within the PCU-800 chassis (every other slot).

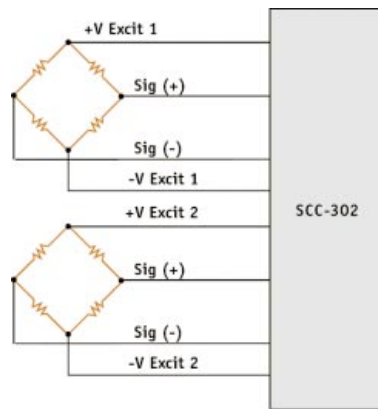
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ANALOG CARDS

that require overhead A/D converter (cont.)

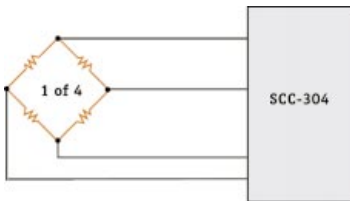
SCC-302 2 Channel Programmable Cutoff Frequency Bridge Conditioner

The SCC-302 provides high-performance signal conditioning for users that require programmability of all signal conditioning features. Each channel provides 8 programmable gains, programmable offset, Zero calibration, shunt calibration, V_{sub} calibration, a 6-pole low pass Butterworth filter with 16 programmable cutoff frequencies, filter bypass mode, 4 levels of voltage excitation, on-board bridge completion and S/H per channel to support simultaneous sample. A total of 32 gains can be programmed by the user on a per-channel basis (8 on-card gains and 4 overhead gains).



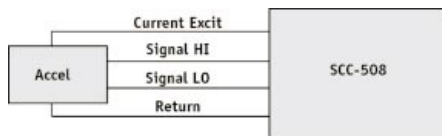
SCC-304 4 Channel Programmable Cutoff Frequency Bridge Conditioner

Same performance as the SCC-302 except has 4 channels per card and accepts full-bridge inputs only (no bridge completion provisions). NOTE: This card has a maximum usage within the PCU-800 chassis (every other slot).



SCC-508 8 Channel Accelerometer Conditioner

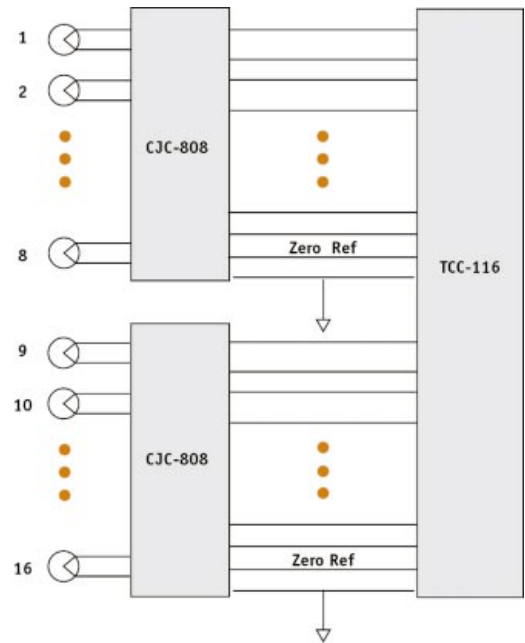
The SCC-508 is used with accelerometers that have embedded electronics (such as the Endevco™ Isotron™ family). 8 gains, 6-pole user-selectable Butterworth filter with AC coupling, programmable input balance (for calibration), and Zero calibration per channel. A total of 32 gains can be programmed by the user on a per-channel basis (8 on-card gains and 4 overhead gains). Also provides user-selectable constant current excitation to 10 mA per channel (user supplies and installs the constant current diodes). 2-, 4-, and 6- channel



versions are available.

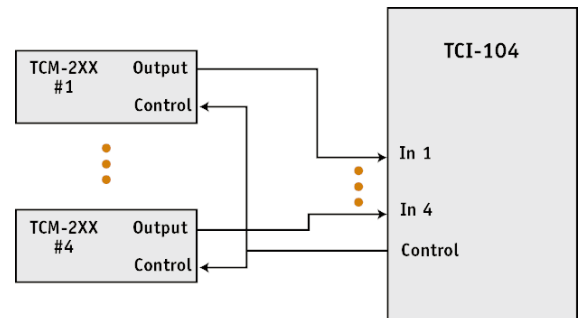
TCC-116 16 Channel Thermocouple Conditioner

Provides conditioning, scaling and cold-junction compensation for 16 thermocouples. Standard thermocouple types are supported (specify at time of order). Each card is supplied with two (2) model CJC-808 Cold Junction Compensator blocks which operate as ice-point references and termination blocks. Each CJC-808 handles 8 thermocouples.



TCI-104 Thermocouple Multiplexer-to-PCU-800 Interface Conditioner Card.

The TCI-104 interfaces with up to four (4) of Aydin Telemetry's model TCM-2XX Series Thermocouple Multiplexers. Addressing and control signals are provided by the TCI-104 to completely control thermocouple channel sampling. Conditioned data is returned to the TCI-104 for encoding and formatting into the PCM output stream of the PCU-800.



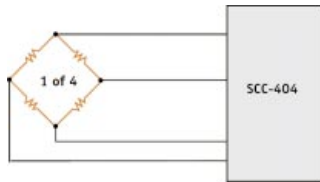
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ANALOG CARDS

With on-card A/D converter. Treated as Digital Output card. (cont.)

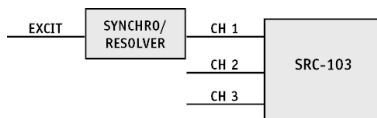
SCC-404 4 Channel Automatic Gain-Ranging Bridge Conditioner

Programmable functions are, Auto/Manual/ Down-range-only gain set, 6-pole Butterworth filter with 4 cutoff frequencies, AC or DC input coupling. Allows maximum flexibility in an environment where the expected magnitude of transducer output is unknown. Constant current or constant voltage excitation versions are available. NOTE: This card has a maximum usage within the PCU-800 chassis (every other slot).



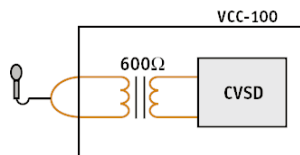
SRC-103 3 Channel Synchro/Resolver Card

Three channel synchro or resolver conditioner with an on-board electronic "Scott T". The card is configured to accept 3-wire synchro and 4-wire resolver inputs directly.



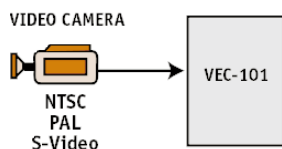
VCC-100 Voice Conditioner and Digitizer Card

The VCC-100 card is designed to acquire pilot voice directly from a microphone or audio system. The card digitizes the voice signal using Continuously Variable Slope Delta Modulation (CVSD) Companding techniques. Digitization rates are between 10 Kbps and 40 Kbps. This technique conserves bandwidth while maximizing input dynamic range and intelligibility. The result is a card that allows the intelligible monitoring of typically noisy cockpit environments. The card has a built in tone generator that provides 10 dBm, 5 dBm, 0 dBm and -5 dBm 1kHz tones for input calibration and setup. Audio coupling is made with an internal 600 ohm transformer. Maximum input voltage is 2.45 VRMS, Bandwidth is 200 Hz to 3.4 kHz.



VEC-101 Single Channel Video Encoder Card

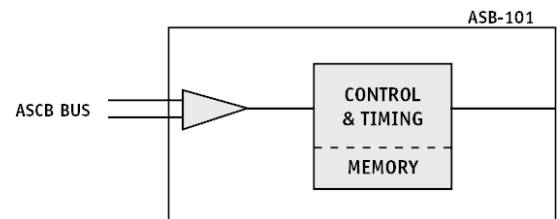
The VEC-101 Card can receive one Channel of input from NTSC, PAL or S-Video in color/B&W and encode it. The encoded information is then merged with the PCU-800's PCM Stream for recording or transmission. This card can encode the video data from 16 Kbps to 3 Mbps with an external clock. A stand alone Video Decoder (VCD-800) unit will be required for video playback onto a video monitor.



DIGITAL CARDS

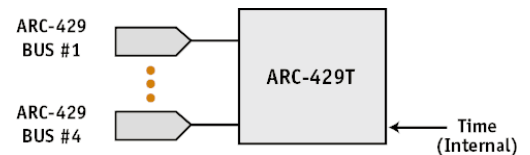
ASB-101 Honeywell ASCB Bus Monitor with Time Tag*

The ASB-101 card is a single channel differential Honeywell ASCB Bus Monitor with Time Tag*. Bus messages are stored in a double buffered RAM. Time tagging of the incoming messages is provided if either a TTE-100 or TKC-100 card is present in the same chassis. Three status bits are available with each message to indicate data staleness, over flow or time clock failure. All 256 messages can be read. Memory depth is 251 words. Output word length is 16 bits.



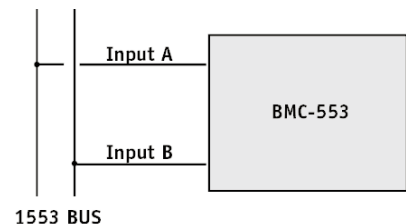
ARC-429T 4 Channel ARINC-429 Bus Monitor with Time Tag*

Monitors and stores data from up to 4 buses. Selectable 12.5 Kbps or 100 Kbps operation. Data is programmed into PCM output stream. On card time tag included*.



BMC-553 1 Channel MIL-STD-1553 Bus Monitor with Time Tag*

Monitors and stores data from 1 dual-redundant bus. Stores up to 240 bus messages as programmed by the user. Select individual data words to appear in the PCM output stream via software programming. Card utilizes double buffering to provide full message coherency.



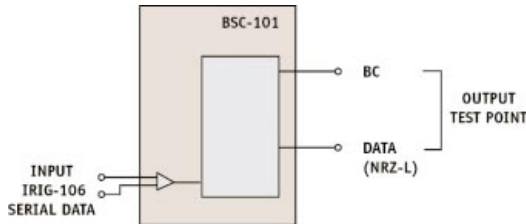
* If TTE-100 or TKC-100 card is installed within the same chassis.

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DIGITAL CARDS (cont.)

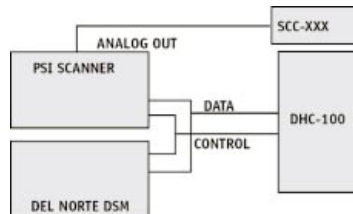
BSC-101 One Channel Bit Synchronizer Card

The BSC-101 is a fully programmable PCM bit synchronizer card. The card accepts one serial PCM stream in either single ended (1V min amplitude) or differential (RS-422) formats. The bit rates can range from 1Kbps to 2 Mbps, programmable by the user in 1 Hz steps, user-programmable via RS232. The card outputs NRZ-L PCM data, 0° and 90° clocks, and a lock indicator. The BSC-101 can be used with the DPR-102 Dual PCM Receiver Card to acquire PCM data and insert this data into the PCM output stream of the PCU-800.



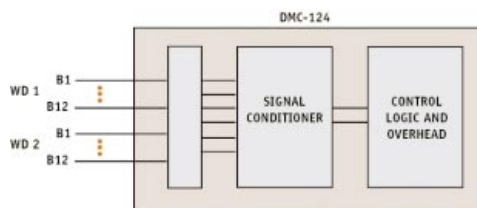
DHC-100 Del Norte DSM/PSI Scanner Interface Card

Provides Del Norte DSM 542 interface and PSI model S856 pressure scanner control. The DSM interface provides 3 control signals and 24 bits of parallel data to acquire data from the DSM unit. The PSI portion of the DHC provides 2 control signals and 16 bits of parallel data needed by the Pressure System S856 scanner. The outputs of the Scanner can be conditioned by an SCC-108 or equivalent card.



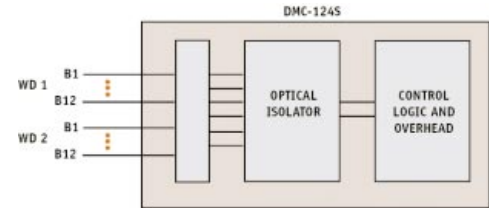
DMC-124 24 Bit Optically-Isolated Programmable Input Discrete Multiplexer with Time Tag*.

Suitable for use in low frequency level or "on/off" measurements (6mS max update rate). Provides two 12-bit discrete words for encoding discrete logic levels. Both words are optically-isolated from the host PCU-800. Each unit provides software selectable trigger (trigger independently on one bit of each word), resistor programmable threshold between -10 volts and +10 volts, Jumper -programmable default high or low. Each word may be latched and reset-on-read or via external signal under software control. Each word may be time stamped. Input accepts up to ±50 volts.



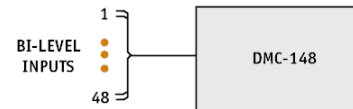
DMC-124S 24 Bit Programmable Input Discrete Multiplexer

Same as DMC-124 except operates up to 100Ksps (10μS max update rate). has no optical coupling and has no time stamp capability.



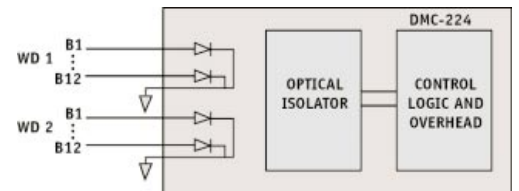
DMC-148 Digital Bit Bi-Level Card

Provides four 12 bit words for encoding of discrete logic inputs. Threshold is factory set to TTL/5V/CMOS levels. Input level to ± 30 volts. NOTE: This card is subject to sample rate restrictions. Refer to the applicable product documentation.



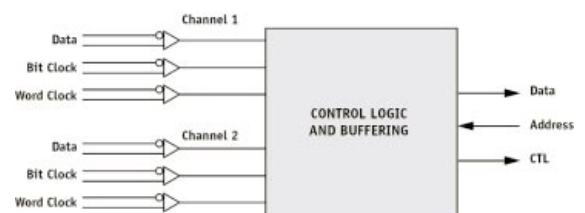
DMC-224 24 Bit Optically Isolated Current Fed Discrete Multiplexer

Two 12 bit discrete optically isolated words for encoding discrete levels. Input must be able to provide 5 milliamps nominal to drive opto diodes. (up to 20 milliamps maximum). Suitable for use in low frequency level or "on/off" measurements (6mS max update rate).



DPR-102 Dual PCM Receiver Card

The DPR-102 accepts 2 independent serial PCM channels. RS-422 (differential) and TTL (single ended) inputs are accepted. Data can be "continuous" or "burst". The data is buffered and placed in the PCU-800 output stream under format control. Flag bits are used to indicate data validity. The card accepts NRZ-L data and a 0° clock. The BSC-101 card is recommended if a 0° clock is not available. The card also has an external word clock input which can be used to preserve word boundaries of the incoming data within the PCU-800 output format. The input data rate can range from 1 Hz up to the maximum bit rate of the PCU-800 system.



* If TTE-100 or TKC-100 are installed in same chassis

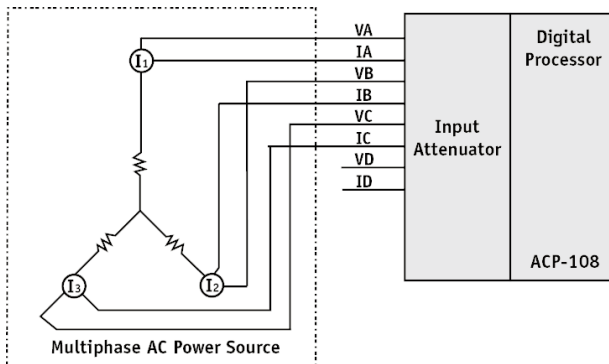
AYDIN TELEMETRY

ANALOG CARDS

**With on-card A/D converter
(Treated as Digital Output card).**

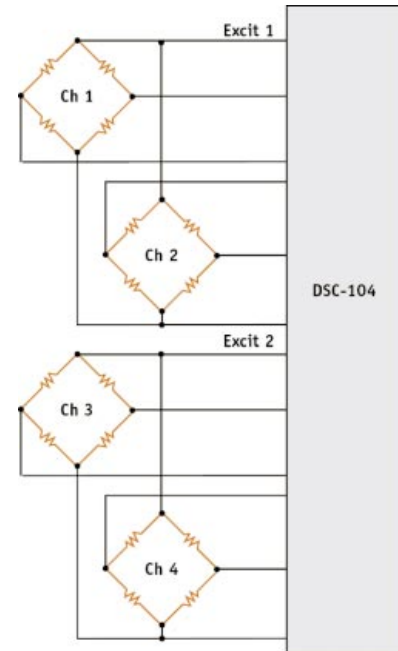
ACP-108 AC Power Monitor Card

The ACP-108 is an eight channel card designed to measure AC voltage multiphase power. Four inputs can be configured (via software) to provide a conditioned voltage representation of multiphase current. The card uses input voltage and current information to compute instantaneous, average, peak minimum and maximum voltage, current and power. The card also provides frequency and phase data on the input signals. Input frequency range is from DC to 1000 Hz. Vector calculations on input data (calculations relating two or more inputs) require that the input frequency of all eight channels to be identical. Provision for user-installed input attenuators is included to attenuate input levels to card-compliant levels.



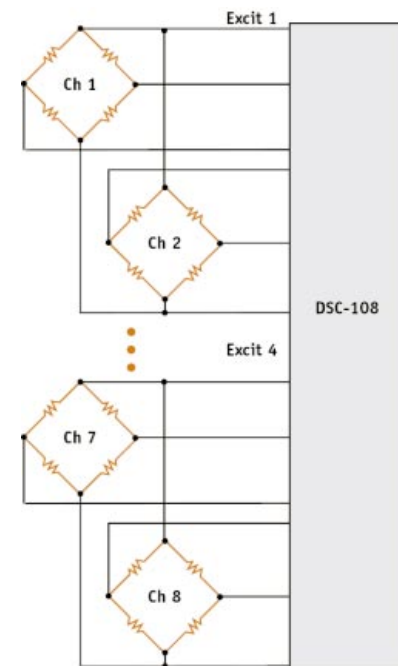
DSC-104 Digital Signal Processor Card

The DSC-104 Analog Acquisition Card provides programmable FIR Digital Filtering. This 4-channel card is ideally suited for the acquisition of any transducer data requiring extreme accuracy and flexibility in conditioner gain, offset, and frequency. Each channel has 18 programmable filter selections from 1 Hz to 1220 Hz, and a direct (unfiltered) mode with a bandwidth to 2 kHz. Transducer trim and balance is fully programmable to remove channel-to channel scatter or to eliminate the effects of bridge preloading or excitation imbalance. The DSP provides 16 programmable gains per channel with a ambient gain error of less than 0.09%. The card is compatible with 1-, 2-, or 4- element bridge inputs. Two selectable constant voltage sources are available for bridge excitation. Zero cal, shunt cal, and voltage cal are provided for each channel.



DSC-108 Digital Signal Processor Card

The DSC-108 card is an eight channel version of the DSC-104. The two cards are identical except that the DSC-104 provides bridge completion for up to 3 elements of a bridge on-card while the DSC-108, requires bridge completion off-card, the DSC-108 provides 8 channels while the DSC-104 provides 4 channels, and the DSC-108 provides 4 excitation outputs while the DSC-104 provides 2.

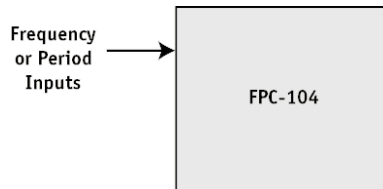


PCU-800 Series II

DIGITAL CARDS

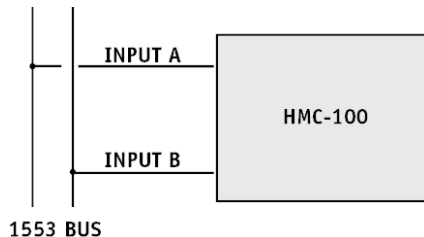
FPC-104 Frequency and Period Conditioner Card

The FPC-104 provides 4 independent channels for frequency or period measurement. An internal time base oscillator is used to make accurate measurements of frequency or period with up to 20 bit resolution. User-programmable time-base settings support a wide range of signal inputs. Front-end signal conditioning accepts variable-amplitude inputs normally found with magnetic or inductive sensors.



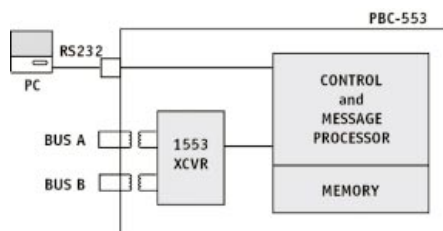
HMC-100 MIL-STD-1553 Acquisition per IRIG-106-93, Chapter 8 with Time Tag*

The HMC-100 card (Hundred Percent Merger) acquires MIL-STD-1553B information acting as a "bus monitor" and formats this information per the requirement of IRIG-106-93, Chapter 8 standards. The HMC-100 front end selects entire message(s) from among those occurring on the 1553 bus and directs all data words from these messages into a FIFO buffer. Message selectivity is user controlled via an EEPROM-based look up table. ADASWARE software supports this programming through the use of a host PC and RS-232 serial interface. Command words are time tagged to 1 μ S resolution before FIFO buffering. High Time, Low Time, or Micro Time words are individually programmable to appear in the output for all data acquired through a single card.



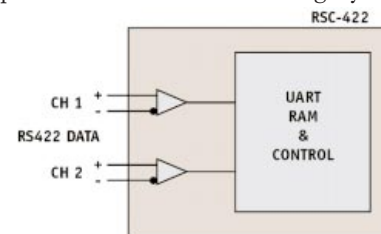
PBC-553 MIL-STD-1553 Programmable Bus Controller

The PBC-553 is a programmable MIL-STD-1553 bus controller card that can initiate all communications on a MIL-STD-1553 A/B bus. The card can communicate with up to 30 RTs for data extraction. The card has programmable message scheduling and message update time. The card is able to initiate up to 128 messages on the 1553 bus. Individual 1553 messages may be loaded via the on-card RS-232 port. Data on the 1553 bus may be monitored using a BMC-553 card.



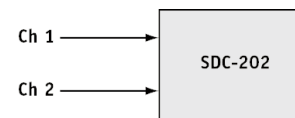
RSC-422 Asynchronous Serial Data Card with Time Tag*

The RSC-422 provides two (2) independent, asynchronous serial data acquisition channels. It accepts differential TTL (RS-422) type inputs via a UART. Data is stored in on-card RAM that can hold up to 4096 words per channel. The PCU's overhead polls the RAM and extracts data from it. Each inputs data rate can be independently programmed to 2400, 4800, 9600, or 19200 bits per second. Messages can be segregated according to the presence of an intermessage gap whose length is software programmable between 11 and 255 bits. The card also can be configured to segregate messages based on sync bit patterns from one to six RS422 words. The pattern itself is user-defined via software. Stale and overflow bits are provided to maintain data integrity.



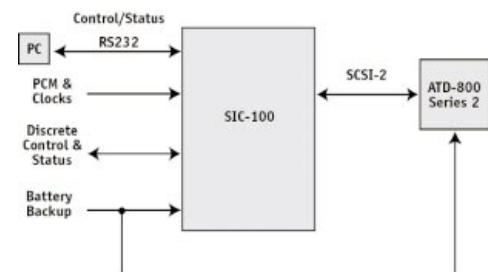
SDC-202 Serial Digital Input Card

The SDC-202 card is a 2-channel RS232/422 Receiver providing features such as user-selectable input type (RS232 or RS422), programmable baud rate, and programmable bits/word, parity, and stop bit. All data is accepted in a uni-directional, nonsynchronous fashion. FIFO buffering of the data allows placement in the PCM output stream in the same sequence as originally received.



SIC-100 SCSI Interface Card

The SIC-100 SCSI Interface Card is used to connect the PCU-800 with AYDIN TELEMETRY's ATD-800 Series II Tape Deck Products. The card accepts the serial PCM and clock outputs from the PCU-800 and converts them to SCSI-2 format for recording by the ATD-800-II. User control and status are supported via discrete input/output lines or under host PC control via serial RS-232. The SIC-100 card is user-programmed to control ATD-800-II operation including power failure/recovery mode, compression enable, SCSI ID and SCSI termination enable. The card has provisions for external battery backup to allow operation under power fault conditions.



* - If TTE-100 or TKC-100 are installed in same chassis.

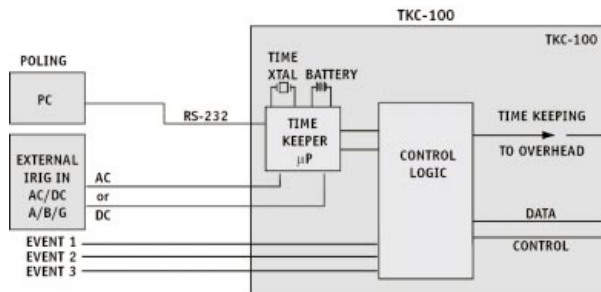
AYDIN TELEMETRY

PCU-800 Series II

DIGITAL CARDS

TKC-100 Time Keeping Card

The TKC-100 provides an IRIG-A/B/G Time Code Reader/Generator with internal backup battery for time keeping of up to one year. The card accepts either AC or DC inputs. The card may be synchronized to or operated from an external time code source. Card time continues to count when the external source is removed. "Battery low" indicator is available as an output from the card. The TKC-100 contains three event inputs that latch time on the rising edge of an TTL or RS-422 signal. Time may be jammed via a host computer over standard RS-232 port. The TKC provides time-of-year with microsecond resolution for frame time tagging on other cards such as the BMC-553, ARC-429, DMC-124, etc.



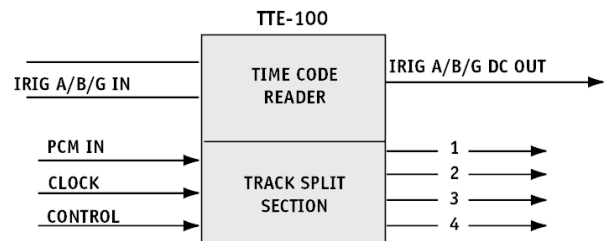
TTE-100 Time Code

Card available with 4 Channel Track Split

The TTE-100 time code section reads and generates IRIG A, B, or G time formats. The Time Code section reads and generates IRIG A, B or G time formats. The Time Code section also provides continuous time keeping with battery backup (external battery is required).

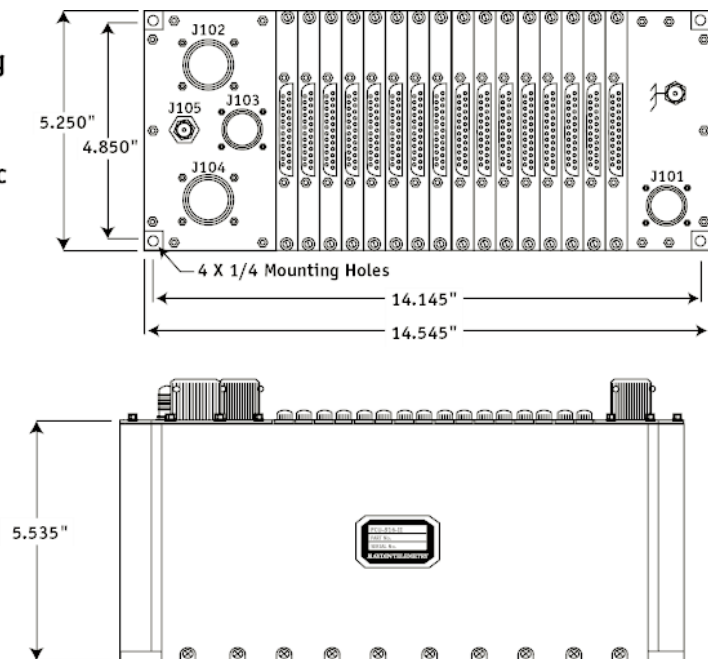
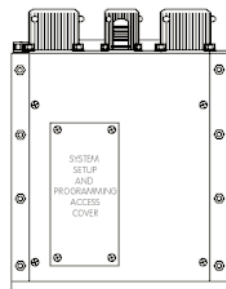
The Track Split section provides multiple track split outputs to provide data to multiple track tape recorders.

NOTE: If the TTE-100 Tracksplit option is chosen, this card must be installed in slot #1 of the PCU-800.



PCU-816 Series II Outline Drawing

- J1- Power Supply
- J2- Set-Up Calibration and Diagnostic
- J3- RS-232 and 1 x 10 Wire I/F
- J4- 3 x 10 Wire Interfaces
- J5- Filtered PCM Output



Specifications subject to change without notice

AYDIN TELEMETRY

47 Friends Lane, P.O. Box 328, Newtown, PA 18940-0328 — Tel: 215-968-4271 — Fax: 215-968-3214/4175 — www.aydin.com