

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

ANALOG FEEDBACK INTERFACES

PMAC(1) Optional Analog Inputs

PMAC has three accessories that it can use to read analog signals. These interface boards may be used for either servo loop feedback or for data acquisition. ACC-28B is Delta Tau's most accurate analog to digital converter, which features separate A/D's per channel. Both ACC-36 and ACC-28A have multiplexed A/D's on board. ACC-28A is an externally mounted board with a 16-bit resolution and a higher conversion rate than ACC-36 (12 bit). ACC-36 must be located immediately adjacent to PMAC while ACC-28A or ACC-28B may be placed up to two feet away from PMAC. The three A/D boards are summarized below:

Type	# of Channels	Resolution (bits)	Repeatability (bits)	Voltage Range	Mounting	Optical Isolation?
ACC-28A	4	15	12	± 10V	DIN Rail	Yes
ACC-28B	2 or 4	16	15	± 10V	DIN Rail	Yes
ACC-36P	16	12	11	0-10 V, ± 5V	ISA Bus	No
ACC-36V	16	12	11	0-10 V, ± 5V	VME Bus	No
Option-12	8 or16	12	11	0-5 V, ± 2.5V	On-board option	No
Option-15	1 (2 on Mini)	11	10	0-10 V, ± 10V on Lite and Mini	On-board option	No, Yes on Mini

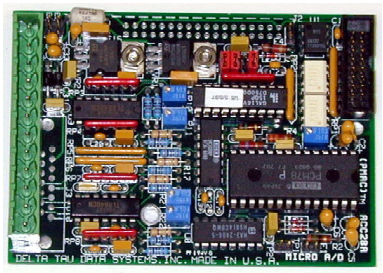
PMAC2 Optional Analog Inputs

PMAC has two accessories that it can use to read analog signals. These entire interface boards may be used for either servo loop feedback or for data acquisition. ACC-28B is Delta Tau's most accurate analog to digital converter, which features separates A/D's per channel. ACC-36 has multiplexed A/D's on board and must be located immediately adjacent to PMAC while the ACC-28B may be placed up to two feet away from PMAC. The two A/D boards are summarized below:

Type	# of Channels	Resolution (bits)	Repeatability (bits)	Voltage Range	Mounting	Optical Isolation?
ACC-28B	2 or 4	16	15	± 10V	DIN Rail	Yes
ACC-36P	16	12	11	0-10 V, ± 5V	ISA Bus	No
ACC-36V	16	12	11	0-10 V, ± 5V	VME Bus	No
Option-12	8 or16	12	11	0-5 V, ± 2.5V	On-board Option	No

ACC-28A, 4-Channel Analog Converter Board

PMAC's ACC-28A Analog-to-Digital Conversion board provides four channels of high-speed high-resolution analog input capability to the PMAC controller. The input voltages, in the range of ±10V, are converted to 16-bit signed values, at an 18 KHz rate (55 µsec conversion). This input can be used for servo position feedback, as from an LVDT or potentiometer, or for general-purpose usage that allows, for instance, monitoring process variables, to allow analog speed control, or to monitor motor currents. The resolution of the A/D conversion can now be selected via jumpers. In addition, the ACC-28A benefits from a design improvement aimed at substantially reducing the noise signals and the cross-talk signals between the four analog input channels. It achieves this by trading off resolution to gain substantially improved cross-talk elimination. Also an improved sample-and-hold circuit design reduces noise and enhances the accuracy of the analog-to-digital conversion process. This accessory is not compatible with the PMAC2 board; use the ACC-28B instead.

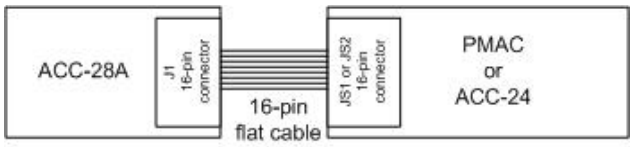


ACC-28A

Part Number 602236

Options

- Option-2A: DB-15 input connector
- Option-2B: 12-pin input terminal block (default)
- Option-3: Rail mount



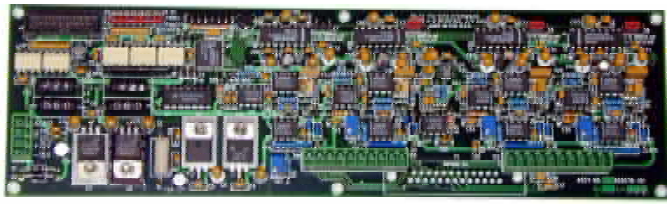
ACC-28B, 2-Channel, 16-Bit Analog to Digital Converter Board

Delta Tau's ACC-28B is a 2 or 4-channel analog to digital converter interface board (Option-1) designed to provide a means for precision voltage measurement as an input to the PMAC. This accessory uses four 16-bit analog-to-digital converters that provide voltage measurements that are accurate to ±2 bits. Jumpers will allow each A-D converter to be selected for Bipolar or Unipolar converting modes. When selected for bipolar mode, differential inputs input voltages to ±10V (20V p-p) can be applied. When selected for unipolar mode, input voltages from 0V to +10V are applied. In unipolar mode, negative input voltages will not damage the A-D converters. Opto-couplers are used to isolate the ACC-28B's circuitry from the PMAC. When used with PMAC1 or ACC-24P, each ACC-28B occupies four channels using the PMAC's JS1 or JS2 interface connector. ACC-28B requires ±15VDC. The PMAC2 board requires the ACC-8T to connect the ACC-28B board. A PMAC2 channel controlling a digital amplifier with current feedback cannot use the ACC-28B board.

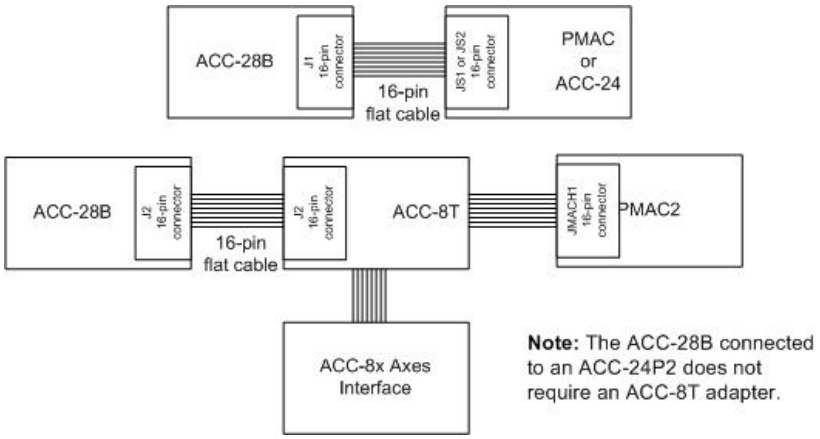
Part Number 602678

Options

- Option-1: Additional on board 2-channels A/D converter
- Option-2A: Analog input connector DB25
- Option-2B: Analog input connector, terminal block
- Option-4: Rail mount



ACC-28B



ACC-36P, 16-Channel, 12-Bit Analog to Digital Converter Board

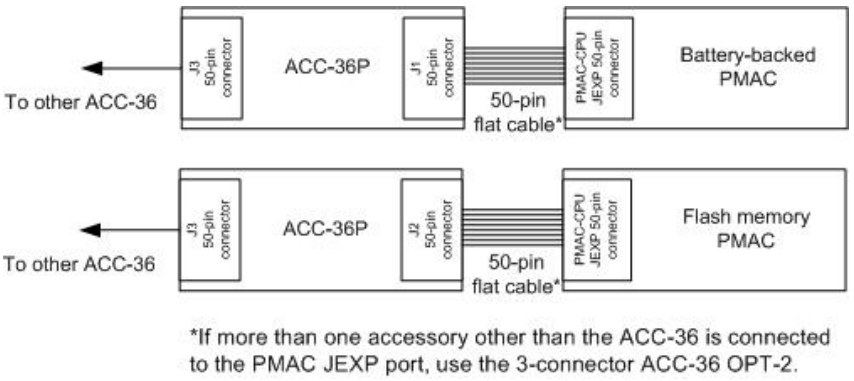
PMAC's ACC-36P is an analog data acquisition board capable of converting 16 analog input signals. The analog inputs can be read in a bipolar fashion with input ranges of ±5V single-ended or ±2.5V differential. If the analog inputs are read in a unipolar fashion, the input ranges are 0 to 10V single-ended or 0 to 5V differential. The basic ACC-36P board is populated for sixteen (16) channels of analog input. ACC-36P's design features make it an ideal analog data-acquisition board for monitoring and collection of signals from a variety of sensors and transducers. Up to 24 ACC-36Ps may be connected to PMAC providing up to 384 possible analog input channels. By using simple M-Variable assignments, the converted data may be used in PLC programs for monitoring and data collection purposes.

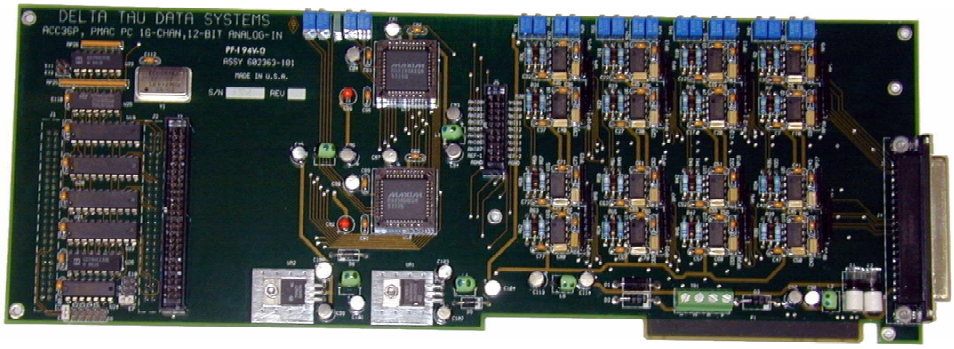
For PMAC firmware V1.15 and above, 16 channels may be read to specified PMAC memory locations automatically. These registers can be monitored using M-Variables or read into PMAC's encoder conversion table for servo feedback control. Only one ACC-36 may be used in this fashion per PMAC. To use this automatic feature, all channels on the card must be read in this manner. The Turbo PMAC firmware has a more efficient method for reading multiplexed analog inputs through the ACC-36P board. In the Turbo PMAC, an automatic conversion table can be set through I-Variables, making the analog inputs reading process more powerful and simple. The ACC-36P can be installed in the ISA PC-bus. Even if the ACC-36P does not use the ISA bus other than for mechanical support and 5V power supply, it is a convenient method for installing it close to PMAC.

Part Number 602363

Options

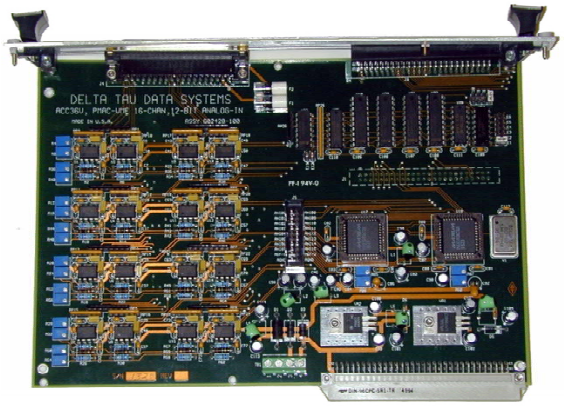
Option-2: 20-cm (8") 50-pin 3-connector cable when ACC-36P is used with PMAC Option-2, ACC-14D or ACC-24P





ACC-36P

ACC-36V, 16-Channel, 12-Bit Analog to Digital Converter Board



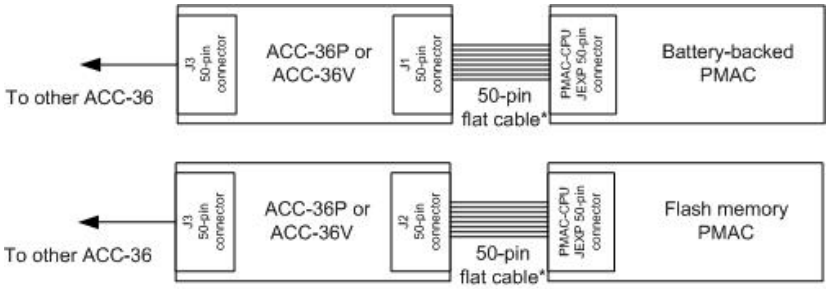
PMAC's ACC-36V is an analog data acquisition board capable of converting 16 analog input signals. The analog inputs can be read in a bipolar fashion with input ranges of ±5V single-ended or ±2. 5V differential. If the analog inputs are read in a unipolar fashion, the input ranges are 0 to 10V single-ended or 0 to 5V differential. The basic ACC-36V board is populated for sixteen channels of analog input. The ACC-36V's design features make it an ideal analog data-acquisition board for monitoring and collecting signals from a variety of sensors and transducers. Up to 24 ACC-36Vs may be connected to PMAC providing up to 384 possible analog input channels. By using simple M-Variable assignments, the converted data may be used in PLC programs for monitoring and data collection purposes.

For PMAC firmware V1.15 and above, 16 channels may be read to specified PMAC memory locations automatically. These registers can be monitored using M-Variables or read into PMAC's encoder conversion table for servo feedback control. Only one ACC-36 may be used in this fashion per PMAC. To use this automatic feature, all channels on the card must be read in this manner. The Turbo PMAC firmware has a more efficient method for reading multiplexed analog inputs through the ACC-36P board. In the Turbo PMAC, an automatic conversion table can be set through I-Variables making the analog inputs reading process more powerful and simple. The ACC-36V can be installed in the VME bus. Even if the ACC-36V does not use the VME bus other than for mechanical support and 5V power supply, it is a convenient method for installing it close to PMAC.

Part Number 602428

Options

Option-2: 20-cm (8") 50-pin 3-connector cable when ACC-36V is used with ACC-24V, or ACC-14V



*If more than one accessory other than the ACC-36 is connected to the PMAC JEXP port, use the 3-connector ACC-36 OPT-2.

OPT-12, On-Board Analog to Digital Converters

The JANA port is present only if the PMAC Option-12 is ordered and this option is available for most PMACs. Option-12 provides eight 12-bit analog inputs (ANAI00-ANAI07). Option-12A provides eight additional 12-bit analog inputs (ANA08-ANAI15) for a total of 16 inputs. The analog inputs can be used as unipolar inputs in the 0V to +5V range, or bi-polar inputs in the -2.5V to +2.5V range.

OPT-15, Onboard Voltage to Frequency Converter

The Wiper analog input (0 to +10V on PMAC PC, VME; -10V to +10V on PMAC Lite, referenced to digital ground) provides an input to a voltage-to-frequency converter (V/F) with a gain of 25 kHz/V, providing a range of 0-250 kHz. The output of the V/F can be connected to the Encoder 4 counter using jumpers E72 and E73. If these jumpers are on, nothing else should be connected to the Encoder 4 inputs. Make sure that the Encoder 4 jumper E24 is set for single-ended signals, connecting pins 1 and 2.

The Wiper analog input information is processed in PMAC through the encoder conversion table resulting in a number proportional to the analog input value. In this fashion, it results on a single low-resolution analog to digital converter. This option is not available for the PMAC2 board.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP