



'Pico' Series Specifications

PicoDAS32	
Size	3.70"L X 1.50"W X 2.80"H (32 Channels) 94mm X 38mm X 72mm +/- .400" (10,2mm) to W for each 16 Channel Increase or Decrease
Housing	Machined 6061-T6
Weight	Approx. 1.0 lbs. (300gr.)
ENVIRONMENTAL	
Operational Temperature	0 to 70 degrees Celsius
Operational Humidity	98%
Durability	+/- 250 g, 10m sec. ½ Sine Wave Pulse +/- 110 g, 120m sec. ½ Sine Wave Pulse +/- 70 g, 500m sec. ½ Sine Wave Pulse +/- 35 g, 2 sec. ½ Sine Wave Pulse
Vibration	10-200Hz Sine Wave Sweep Amplitude 60 g's
POWER REQUIREMENTS	10 – 14.5 VDC
CURRENT DRAW	.450 amps @ 12 VDC (32 Channel FULL ANALOG MODE) + Excitation current draw (>82% efficient) +/- .200 amps for each 16 Channel Increase or Decrease
INPUT CONNECTORS	
Power/ Back-up Power/100BaseT/Tach/Trig In/Trig Out	15 Pin Airborn
USB 2.0	Mini-USB AB
Digital Input/Output	37 Pin Airborn
Analog Input	37 or 51Pin Airborn
POWER INPUT	Battery override input, reverse polarity protection
SYSTEM LEADS	Power On, ARM condition, Ethernet Link, Ethernet Activity
COMMUNICATIONS	
ETHERNET 100baseT	100 Mbit /s
USB 2.0	450 Mbit /s
ONBOARD MEMORY	
System	Non-volatile 64 MB Standard or 128 MB Optional
Pre-trigger	512 KB
TRIGGER INPUT	Hardwire (high or low), Analog Channel and/or Events
TRIGGER OUTPUT	.1 ohm FET capable of sinking 100ma
VOLTAGE MONITOR	Stored During Acquisition, Viewed in Software
DIGITAL INPUTS/OUTPUTS	32 Fully Programmable
TACHOMETER INPUTS	2 Total Pulse Rate 1 Hz to 10KHz
MULTI STAGE SAMPLING	3 Stages, Sample Rate change triggered by event inputs and/or delays.
START/STOP ACQUISITION	Trigger using hardwire 1 trigger, analog channel, or event channel



MULTIPLE DAS CONTROL Synchronized control of multiple systems through one communications port using the same system clock and trigger input

INTERNAL CHARGER Processor controlled Automatic Peak Charger for NiCAD/NiMH Batteries, 2.5 amp max, software interface

ANALOG SPECIFICATIONS

A/D CONVERTER Individual for each analog channel
Resolution 16 bits

SENSOR IDENTIFICATION DALLAS Single wire ID/MEMORY (i.e. DS2401)
EXCITATION Individual for each channel, fold back current limited
Ranges 2.5 / 5.0 / 10.0 volt
Current Limit 50 / 70 / 100 ma
Accuracy .1 / .05 / .05 %
Drift 40 ppm/°C

Input Range ±5 v @ gain=1
Gain Range 1-10,000
Common Mode Range +12/-7 v
Linearity .03 %

	Gain < 10	10 ≤ Gain < 100	Gain ≥ 100	Units
Gain Resolution	4096 / N	10 * 4096 / N	100 * 4096 / N	
Gain Accuracy Uncal	.1	.1	.15	%
Calibrated	.02	.02	.03	%
Gain Stability	20	20	30	ppm/°C
Noise RTI	600	60	6.3	uv
SND @ fc=2500	82	82	80	dB
CMRR @ DC	90	108	122	dB
@ 2.5 khz	80	90	96	dB
Offset Range RTI (*2)	±15	±1.5	±.15	volt
Stability	20	20	20	ppm/°C

Input Offset Range ±10 v switched to S-
Stability 20 ppm/°C
Accuracy Calibrated ± 2 mv
Offset Resolution ± range / 4096 (normal or input offset configuration)

Pseudo ½ Bridge Completion Input Offset DAC switched to S-
S- Voltage Accuracy .01%
Stability 5 ppm/°C
Shunt Cal 200k .1% switched from S+ to Ex+ or ground.
Stability 20 ppm/°C

Input Overvoltage protection ± 50 v indefinite
± 200v .5 second

Crosstalk DC < -120 dB
@ 1 khz input < - 100 dB

Sample Rate 1 - 100,000 Hz



Variable Digital Filter	6 pole Butterworth (other types optional)
Max Cutoff Frequency	20 kHz
Cutoff Accuracy	.05 %
Cutoff Resolution	.1 %
Fixed Analog Filter	5 pole Butterworth
Cutoff	10kHz \pm 5% (other frequencies optional)





Host Resident Software

Platform	Windows 95/98/NT/2000/Me/XP™
Test Name	Can be set using up to 130 ASCII characters
I/O Setup	Communication Port selection for RS232/RS422, ETHERNET TCP/IP setup
Calibration	Automatic
Channel Definition	User friendly interface, Sensor ID read, Compatible with various DataBase Programs, any number of channels can be allocated to full system memory
Sensor Database	Any sensor can be added to the channel definition from an unlimited sensor database
Calibration Mode	Shunt CAL Mode, Joint Sensor Mode, NoCal using input or output offsetting
Transfer	Any length of time for channel data can be transferred from the DAS
Diagnostics	
Memory Check	Functionality Test for all memory
Comm. Check	Loop-back Test
All Channel Read A/D	Displays the values for all channels updating them continuously
Channel Monitor	Graphically displays a single analog channel or a group of 4 channels, real-time streaming to hard disk, Power Spectrum Density display
Arming Parameters	
TestName	Displays current TestName
DATE	Taken from the computer
Battery	Real-time display during set-up and acquisition
10240 pt Pre Arm Zero	This data is stored in the DAS and is used to provide a zero offset for data taken
Trigger Holdoff	The time the DAS will wait before detecting a trigger
Start On	Trigger High/Trigger Low/Trigger Immediate
Backup Trigger	Sets an analog channel as a trigger input, a trigger threshold is set, and a 2 pole digital filter can be enabled
Advanced Trigger	Selection of up to 4 analog channels and 16 event channels 'AND'ed or 'OR'ed
Pre Trigger Length	Displays how many seconds of pre trigger data is available for the acquisition
Post Samples	The number of samples to acquire for each channel during the acquisition
Post Seconds	Displays the time length for the acquisition
Excitations	Can be switched on before arming
Stage Sampling	3 Stages can be defined, time lengths can be set for each stage, or stages can be changed during the acquisition using Event 1 and Event 2
Armed Screen	After arming, a screen is displayed on the computer containing a real-time monitor of all analog channels, a real-time voltage monitor, and a remote trigger button. The communications connection can be removed at this point and the acquisition can be performed when a trigger is detected, or the acquisition can be performed with the communications connection present.
Graphing	
Up to 5 channel graphs can be overlaid	
Data can be offset using the average of the 10240pt Pre Arm data	
Time length and amplitude can be changed for zooming	
Very User friendly	
Converting	
ASCII or Binary	
Variable Frequency Digital 6 Pole Butterworth	
Decimation	
Zero Offsetting	4
Custom Data Formats	