

# TDAS LAB SPECIFICATIONS

## Analog Inputs

Type:	Differential, software programmed
Common Mode Range:	±6.25 volts
Protection:	±50 volts
Impedance:	50 MΩ typical
Gain Range:	0.8 to 2000
Overall Bandwidth:	D.C. to 25 KHz
Noise Spectral Density:	0.06 μV/√Hz RTI Typical, 0-4,000 Hz
Signal to Noise Ratio:	80 dB typical
Crosstalk:	<0.05% under all circumstances
Accuracy:	0.2% - automatically calibrated each use by internal 16-bit DAC
Auto Offset Method:	Dual 12-bit DACs per channel.
Auto Offset Range:	Gain 0.8 to 31: ±5.0 V, Gain ≥32: ±150 mV
Auto Offset Accuracy:	Typically <0.1% of A/D full scale
Bridge Completion:	Software selected per channel

## Anti-Alias Filters – Two per Channel

Fixed Low Pass:	8-Pole Butterworth, customer specified knee point (4.3 KHz standard)
Adjustable Low Pass:	5-Pole Butterworth, set under software control from 50 to 3,000 Hz
SAE J211:	System response meets SAE J211 requirements.

## Event Inputs

Method:	Sensor inputs may be used as event inputs with filters bypassed.
Propagation Delay:	0.02mS

## Excitation

Method:	Individually galvanically/optically isolated and software selected.
Voltage levels:	Off, 5.0, 10.0 volts
Accuracy:	0.25% basic, each channel calibrated and software compensated.
Rated Current:	50mA per channel, individually current limited.
Short Circuit Recovery:	<1 msec in all modes.

## Calibration

Method:	Individually software controlled voltage insertion and multiple shunt calibrations
<i>Voltage insertion</i>	
Type:	16 bit DAC
Accuracy:	Better than 0.1% 100 ppm/°C, NIST traceable and software compensated
<i>Shunt Calibration</i>	
Number:	7 internal and 1 external
Values:	Customer specified, 0.1% 25 ppm
Switching Resistance:	<2 Ω

## Analog to Digital Conversion

Method:	Successive approximation with simultaneous sampling of all channels (up to 25K samples per second per channel)
Resolution:	Standard 16 bit
Maximum Sampling Rate:	304 K samples/sec/module (38K on each of 8 channels, 100K on each of 3 channels, etc.)
Minimum Sampling Rate:	1 sample/sec/channel
Relative Accuracy:	± 4 LSB (0.006%)
Storage Technique:	Circular memory buffer. Any portion of the memory may be allocated to pre-trigger data.
Memory Capacity/type:	Standard 768 KB SRAM, 48 K samples/channel Optional up to 1M samples/channel

## Triggering Systems

Each Module:	Conditioned contact closure input with T=0 received L.E.D. indicator.
Rack System:	Standard contact closure input, galvanically and optically isolated to 1 KV. 5-12 volt optically coupled inputs available.
False Trigger Protection:	EMI, RFI, and ESD protection
Level Triggering:	Available from any channel within each module.

## Sensor ID

Method:	Serial data read from digital I/O line in sensor connector.
Types Supported:	Dallas, or others as specified.

## PC Interface

Module (stand-alone):	RS-232 @ 115.2 KHz, RS-422 @ 460.2 KHz
Rack System, Standard:	RS-232 @ 115.2 KHz and Ethernet 10BaseT
Optional:	RS-422

## Power Requirements and Features

General:	Modules require nominal 12-volt power, which is supplied by integral rack power converter.
Module Power:	Depends largely upon connected sensors. Up to 900 mA at 12-volt per 8-channel module with 350Ω bridges and 10-volt excitation on all channels.
Rack Power Requirement:	90-260 VAC, 47-63 Hz, 3A maximum
Protection:	Self-resetting fuses plus reverse current and transient over-voltage protection.

## Sensor Connectors

Standard:	One 68-pin sub-D per 8-channel module.
Optional:	One Lemo connector per channel.

## Module Dimensions

Size:	4.6 x 6.7 x 2.0" (11.7 x 17.0 x 5.1 cm)
Weight:	1.5 lb (0.7 kg)

## Rack Dimensions

Type:	Standard 19-inch 3U Rack
Capacity:	Holds up to six 8-channel modules (48 channels)
Size:	5.25 x 19.0 x 9.0" (13.34 x 48.26 x 22.86 cm)
Weight:	16.5 lb (7.5 kg) – includes modules

## Environmental

Operating Temperature:	0-50°C
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## Control Software

Operating Systems:	Windows® 98, NT, 2000, ME, XP
Compatibility:	Fully compatible with other TDAS PRO modular devices and systems

Specifications may be revised without notice

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