TDAS PRO LAB SYSTEMS

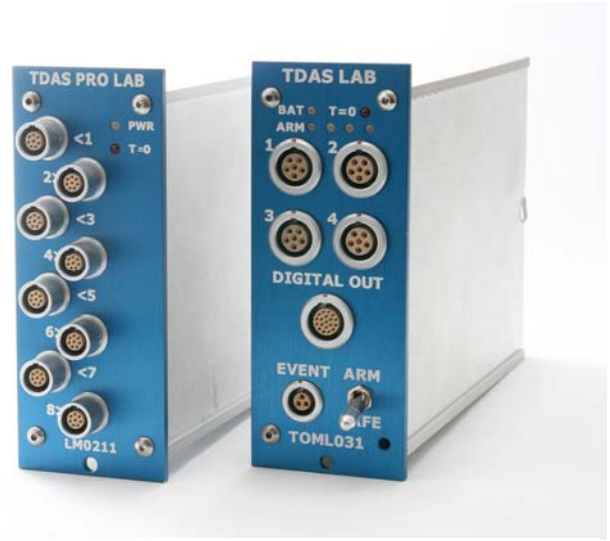
Stationary, Laboratory Data Recorders

APPLICATIONS

- Aerospace
- Automotive safety
- Biomechanics
- Component testing
- Dummy calibration
- Static bench top testing
- Vibration testing

PRODUCTS

DTS offers a full line of dynamic data acquisition systems and smart sensors for high shock testing.



TDAS PRO LAB SIM (left) is a modular, standalone data recorder with 8 fully-programmable sensor input channels.

TDAS PRO LAB TOM (right) is a modular, standalone airbag timer with 4 independent squib fire channels and 8 digital timer outputs.

The TDAS PRO LAB modules from DTS feature the same electronics and flexibility as the crash-hardened TDAS PRO modules, but in laboratory enclosures. Ideal for a variety of static tests, these DAS modules can be used standalone or in TDAS PRO LAB Racks that hold up to 6 modules. Racks can be daisy-chained into large test configurations.

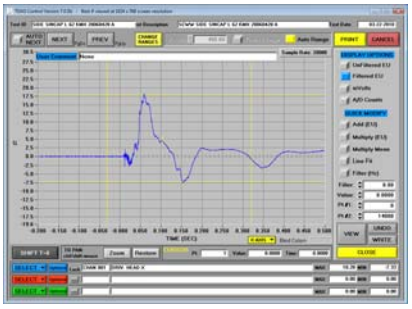
The TDAS PRO LAB Rack is a standard 19-inch size and holds up to 6 modules. The racks can be daisy-chained to support high channel count tests.

Features

- Intuitive, easy-to-use software
- TDAS PRO LAB SIM includes 8 fully-programmable sensor input channels with isolated excitation
- TDAS PRO LAB TOM includes 4 isolated squib fire channels and 8 separate digital outputs for controlling other systems requiring timed outputs—0.1 msec resolution
- Supports a variety of sensors and sensor ID function
- Ultra-low noise, high-speed 16-bit ADC, built-in integral microprocessor control, adaptive signal conditioning and A/D circuitry
- Comprehensive fault detection and self diagnosis. LED indicators for power and event status
- Ethernet and RS-232 communication options
- Certified to NHTSA, FAA, ISO 6487 and SAE J211 data acquisition practices

Software

TDAS Control software provides easy-to-use tools for storing sensor information and performing data collection. Advanced features such as automatic sensor assignment, detailed channel diagnostics, and real-time data display supports successful testing and quality data every time.



DTS

Advanced Measurement Solutions
www.dtsweb.com

REV 10.2010

Specifications

PHYSICAL

Size:	16.5 x 5.2 x 13.3 cm (6.50 x 2.05 x 5.22")
Module Weight:	LAB SIM 0.73 kg (1.60 lb) LAB TOM 0.73 kg (1.60 lb)
Compatibility:	Fits in standard TDAS PRO LAB Racks
6 Module Rack Size:	48.3 x 22.9 cm x 3U high (19" x 9" x 3U)
6 Module Rack Weight:	~9.57kg (~21 lb) – includes modules

ENVIRONMENTAL

Operating Temp:	0-50°C (32-122°F)

ANALOG INPUTS

Type:	Differential, software programmed
Common Mode Range:	±6.25 V
Protection:	±50 V
Impedance:	50 megaohm typical
Gain Range:	0.8 to 2000, adaptive
Overall Bandwidth:	D.C. to 25 kHz
Noise Spectral Density:	0.06 µV/√Hz RTI typical, 0-4000 Hz
Signal to Noise Ratio:	80 dB typical at gains from 1-128
Crosstalk:	<0.25% 10 V pp sq wave signal connected to any channel with all other channels set to a gain of 128 with 350 ohm bridges connected
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 0.8-31: ±5.0 V, Gain ≥32: ±150 mV
Auto Offset Accuracy:	Typically <0.1% of A/D full scale
Bridge Completion:	Software selected per channel, 1000 ohm std

ANTI-ALIAS FILTER –TWO PER CHANNEL

Fixed Low Pass:	8-pole Butterworth, 4.3 kHz standard (2.9 kHz and 3.0 kHz also available)
Adjustable Low Pass:	5-pole Butterworth, set under software control from 50-3000 Hz
Filter Off:	Turned off per channel ≈25 kHz roll-off (filter by-pass)
SAE J211:	System response meets SAE J211 requirements

EXCITATION

Method:	Individually galvanically/optically isolated and software controlled
Voltage Levels:	5 V/10 V or 2 V/10 V options
Accuracy:	Each ch software compensated (typ .1%)
Rated Current:	50 mA per channel, continuous operation, individually current limited at ≈ 65 mA
Short Circuit Recovery:	<1 msec typical

DIGITAL INPUTS

Method:	Sensor inputs may be used as event marker channels with filters bypassed
Propagation Delay:	0.02 msec

CALIBRATION

Method:	Software controlled precision voltage insertion with multiple shunt check options
Voltage Insertion Type:	16-bit DAC
Accuracy:	Better than 0.1% 100 ppm/°C, NIST traceable and software compensated
Shunt Checks Using Resistors	
Number:	7 internal and 1 external
Values:	10k to 649k standard values, 0.1% 25 ppm
Switching Resistance:	<2 ohm, connected between +Ex and +Signal
Shunt Checks Using Emulation Method	
Description:	Precision current applied to +Signal. Allows virtually unlimited shunt check resolution.

ANALOG-TO-DIGITAL CONVERSION

Resolution/Method:	Standard 16-bit successive approximation with simultaneous sampling of all channels (up to 25 ksps/channel)
Max. Sampling Rate:	304k samples/sec/module (38k on each of 8 ch., 100k on each of 3 ch., etc.)
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:	1 M samples/channel
Memory Type:	Battery backed SRAM, retention >7 days

TRIGGERING SYSTEMS

Each Module:	Conditioned contact closure input with T=0 received LED indicator
Rack System:	Standard contact closure input, galvanically and optically isolated to 1 kV. 5-12 V optically coupled inputs available.
Level Triggering:	Available from any channel in each module

SENSOR ID

Method:	Serial data read from a digital I/O line in each sensor connector
Types Supported:	Maxim/Dallas

POWER

External Voltage:	12-15 V
Maximum Power:	Depends largely upon connected sensors. Up to 900 mA per 8 channel module with 350 ohm bridges and 10 V excitation on all channels (≈8.0 A maximum for 64 channels)
Protection:	Self-resetting fuses plus reverse current and transient over-voltage protection.
Idle Power:	≈350 mA per 8 channel module

PC INTERFACE

Module (standalone):	RS-232 @ 115.2 kHz (USB adapter available)
Rack System (standard):	Ethernet 10BaseT and RS-232 @ 115.2 kHz
Options:	Wireless Ethernet and USB adapter available

CONTROL SOFTWARE

Compatibility:	Standard TDAS Control Software
Operating Systems:	Windows® XP, Vista, 7

SERVICES

24/7 Worldwide Tech Support
Calibration & Repair Services
Application Consulting
Software Integration
OEM/Embedded Applications

TECH CENTERS

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