



TDAS G5

Data Acquisition System (DAS)

DTS introduced the TDAS G5 system in 2003 and it has since become the best selling data acquisition system of its kind. Building on that success, DTS introduces an updated and expanded line of TDAS G5 products, once again staying years ahead of the competition. The TDAS G5 is now available in 32-channel and 24-channel versions with options for greatly extended memory. Additionally, we have added a high-bandwidth option for those applications requiring data bandwidths up to 40 KHz. There is virtually no limit to the recording flexibility you can enjoy with the TDAS G5 product line. All that in the world's smallest package!

Applications for TDAS G5 products include vehicle measurement, crash test dummies, biomechanical research, simulated or full-scale crash tests and blast testing in aerospace, automotive and military applications. The ultra-small design makes it possible to record data in demanding environments that were once considered too difficult or dangerous. Each channel has a fully programmable differential instrumentation amplifier, anti-alias filters and a 16-bit A/D converter that records up to 100,000 samples per second.

DTS also offers an expanded range of accessory products to help make the best use of the TDAS G5 technology. From the proven Vehicle Docking Station to the latest sensor connection devices, DTS has the products and experience to make your measurement project a success!



Features and Benefits:

- The world's smallest, fully featured, crashworthy DAS
- Modular 32-channel and 24-channel standalone units
- Virtually unlimited channel counts by linking multiple units
- Designed for easy integration into all sizes of crash test dummies
- Intuitive control software with sensor ID and TEDS support
- A variety of accessory products for easy integration
- Extremely reliable and cost effective
- Comprehensive self-diagnostics identify any problems before testing
- Very low mass, each module weighs approximately 200 grams
- High-speed communication using 100 Mbit Ethernet

Accessory Products:

TDAS G5 VEHICLE DOCKING STATION

TDAS G5 iPORT

TDAS G5 DISTRIBUTOR

TDAS G5 INTERFACE DEVICES

All TDAS products meet or exceed the requirements of NHTSA, SAE J211, ISO 6487 and the FAA. A2LA certified calibration service available.



TDAS G5 Data Acquisition Systems
Modular 32-channel and 24-channel stand-alone DAS systems are low mass, high speed and rated for severe impact conditions



32-Channel TDAS G5 Standalone DAS Module
TDAS G5 products meet and exceed the requirements of testing facilities worldwide.



TDAS G5 Vehicle Docking Station
Designed for on-vehicle applications



TDAS G5 SPECIFICATIONS

ANALOG INPUTS (24 OR 32)

Type:	Differential, individually programmable
Maximum Input Range:	0.1 to 4.8 V (2.5 V center)
Bandwidth:	D.C. to 4 KHz (High-bandwidth option, 40 KHz)
Protection:	EMI, RFI, ESD
Gain Range:	1.0 to 4,000
Gain Accuracy:	0.2% - Automatically checked each use by precision voltage insertion
Auto Offset Range:	100% of effective input range

CALIBRATION

Features:	Software controlled voltage insertion and shunt emulation
------------------	---

Voltage Insertion

Type:	16-bit DAC
Accuracy:	0.1%, 100ppm/°C, software compensated

Shunt Checks

Type:	16-bit shunt emulation
Accuracy:	0.1%, 100ppm/°C, software compensated

EXCITATION

Method:	Independent, current-limited sources
Voltage levels:	5.0 V (Docking Station 2.0, 5.0 V)
Accuracy:	1.0% basic, each channel calibrated and software compensated
Rated Current:	20 mA per channel
Short Circuit Recovery:	<1 msec
On/Off Control:	Excitation sources are turned on and off under software control to minimize total power consumption

ANTI-ALIAS FILTERS

Fixed Low Pass:	4-pole Butterworth, standard knee frequency of 4.0 KHz (HB option = 40 KHz)
Adjustable Low Pass:	5-pole Butterworth set under software control, 50 – 5,000 Hz (HB option = 40 KHz)
Overall Response:	Both filters may be used together to achieve 9-pole effective response
SAE J211:	System response exceeds SAE J211 requirements

DIGITAL INPUTS (8 OR 32)

Type:	5 V logic input or contact closure with built-in pull-up resistor
Propagation Delay:	< 0.05 msec
Protection:	EMI, RFI, ESD

DIGITAL COMMUNICATION BUS

Number of Available Lines:	One per channel plus 2 extra
Methodology:	Dallas (Maxim) 1-Wire®
Typical Uses:	Silicon s/n, TEDS, etc.

ANALOG TO DIGITAL CONVERSION

Type:	One SAR ADC per channel
Resolution:	16-bit
Maximum Sampling Rate:	100K samples/sec/channel
Relative Accuracy:	± 4 LSB
Storage Technique:	Recorder or Circular Buffer modes available. Any portion of the memory may be allocated to pre-trigger data
Memory Capacity:	150 seconds at 10K samples/sec

TRIGGERING SYSTEMS

Each G5 Module:	Optically isolated input with trigger received LED Indicator
Level Triggering:	Available from any channel(s) within each DAS module
Trigger Synchronization:	Control architecture supports multiple module installations

STATUS OUTPUTS

Recording:	5 V, 20 mA driver (for LED or opto-couplers)
-------------------	--

PC INTERFACE

Normal Operation:	Ethernet 100BaseT
Diagnostic Only:	RS 232

POWER REQUIREMENTS

Supply Voltage:	13.8 V nominal (11-15 V)
Maximum Power:	Approximately 800 mA per 32-channel system with 350 ohm bridges at 5 V excitation (depends significantly upon connected sensors)
Power Control:	Remote power control line for switching unit on and off
Protection:	Reverse current protection

ENVIRONMENTAL

Operating Temperature:	0-50°C
Shock:	100 g peak, 4 msec half sine

CONTROL SOFTWARE

Compatibility:	Standard TDAS Control Software compatible with TDAS PRO hardware
Operating Systems:	Windows® XP and Vista

PHYSICAL CHARACTERISTICS

Module Size:	32-channel: 25 mm x 54 mm x 85 mm, 200 grams 24-channel: 25 mm x 44 mm x 74 mm, 135 grams
Connectors:	1) Gold plated PCB contact method 2) Various in-line connectors 3) LEMO connectors with docking station 4) 4 D-Sub with iPort

Specifications may be revised without notice.



Diversified Technical Systems, Inc. Corporate Headquarters

909 Electric Ave., Suite 206
Seal Beach, CA 90740
USA

Phone: +1 562 493 0158
Fax: +1 562 493 3158
Email: sales@dtsweb.com