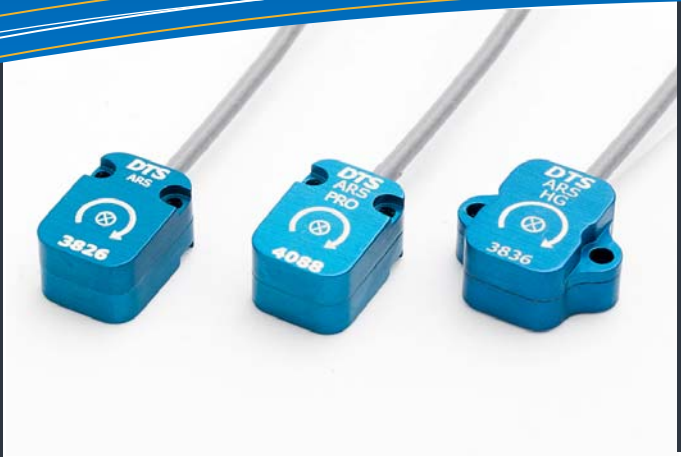
DTS
www.dtsweb.com

TECH NOTES FROM DTS THE LEADER IN DATA ACQUISITION SYSTEMS & SENSORS FOR PRODUCT TESTING

DataPoint

ISSUE 05
2011



FLEXIBLE SOLUTIONS

this issue

PRODUCTS

Diversified Technical Systems designs and manufactures data acquisition systems and sensors for the experienced test professional.

SERVICES

24/7 Worldwide Tech Support
ISO 17025 (A2LA) Calibration
Calibration & Repair Services
Application Support
Software Integration
OEM/Embedded Applications

TECH CENTERS

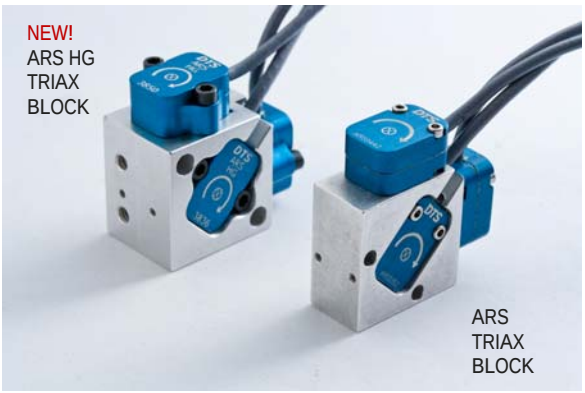
Seal Beach, California USA
Novi, Michigan USA
Sydney, Australia
Shanghai, China
Zorge, Germany
Tokyo, Japan

DTS Expands High-Performance Sensor Line

In response to new testing demands, DTS has expanded its line of angular rate sensors which already includes some of the highest performing, rugged angular rate sensors available today. Often referred to as a gyroscopic sensor, the DTS ARS line is available in three models (ARS, ARS PRO & ARS HG) and a variety of ranges and bandwidths. In addition, DTS offers two triaxial mounting blocks which allow custom configurations of six-degrees-of-freedom sensor packages for ultimate flexibility.

What makes DTS ARS different from others?
SIZE: No other angular rate sensor comes close to the compact size in a rugged, high-impact enclosure.
OPTIONS: DC response and wide range options from ±300 to 50000 deg/sec means there is a DTS ARS to meet just about every application.
GLOBAL CALIBRATION SERVICES: Worldwide service options mean quicker turn-around, reduced shipping time and expense, and less down time for demanding test schedules. On-site calibration services and service contracts are also available.
EXPERT SUPPORT: Experienced test professionals ensure you get the right product for your application and our 24/7 worldwide technical support is there to help you every step of the way.

MODEL	RANGE	BANDWIDTH	APPLICATIONS
ARS-300	±300 deg/sec 5.2 rad/sec	DC-100 Hz	Ideal for non-impact testing such as vehicle handling & braking
ARS-1500	±1500 deg/sec 26.2 rad/sec	DC-1000 Hz	NHTSA specified for FMVSS 202a—rear impact test standard
ARS-8K	±8000 deg/sec 139.6 rad/sec	DC-300 Hz -OR- DC-600 Hz	Ideal for vehicle body measurements for impact & rollover testing
ARS-12K	±12000 deg/sec 209.4 rad/sec	DC-1650 Hz	High rate dummy impact & vehicle component testing
ARS PRO-18K	±18000 deg/sec 314.2 rad/sec	DC-300 Hz -OR- DC-2000 Hz	Improved accuracy in high shock impact environments
ARS HG-50K	±50000 deg/sec 872.7 rad/sec	DC-2000 Hz	Reinforced mounting points for high impact environments like blast testing



ARS Triax Mounting Block (.85 x .85 x .43 in, 10 grams)
Fits both the ARS and ARS PRO sensors.

ARS HG Triax Mounting Block (.85 x .85 x .66 in, 15.6 grams)
Designed to accommodate the reinforced mounting points of the ARS HG. With flexibility in mind, this block fits all DTS ARS models, making it ideal for customers who own a variety of ARS models.

Both blocks include mounting holes for Endevco and MSI sensors to create a custom 6-degrees-of-freedom sensor package.

DTS

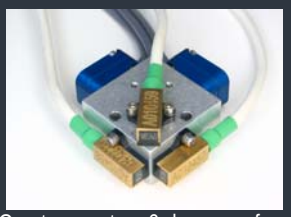
TECH NOTE

Q: What options are there since the 6DX is no longer available?

A: The most flexible option is to create a custom 6-degrees-of-freedom sensor package using standard products available from DTS.

Specify the sensor ranges that meet your test requirements. Plus you have the ability to easily replace elements that may be damaged during testing.

- DTS ARS: 8 options
- Accelerometers: multiple MSI and Endevco options
- DTS Triax Block: 2 options



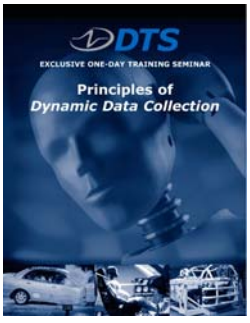
Create a custom 6-degrees-of-freedom sensor package with DTS ARS, DTS mounting block and accelerometers.

TRAINING DOES MAKE THE DIFFERENCE

Would your team benefit from a customized training class? DTS has helped hundreds of test engineers be more effective and productive in their daily test routines, and collect the most accurate test data possible.

Learning from our many years of experience in the field, following best practices, and understanding the full features and capabilities of DTS DAS, sensors and software can make the critical difference.

Contact sales@dtsweb.com for more information about custom on-site training or our popular seminar Principles of Dynamic Data Collection.



DTS ARS & DAS HELP COMPARE ATD vs. HUMAN RESPONSES

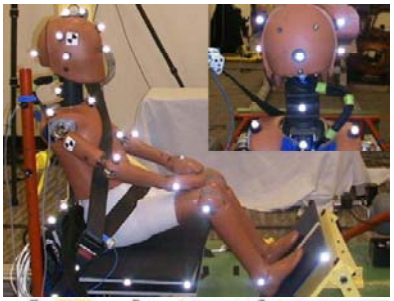
According to several studies, traumatic head injuries are the most common serious injury sustained by children in car crashes. Head injuries also account for one-third of all pediatric related injury deaths.*

In continued efforts to reduce such injuries through vehicle safety systems such as restraints and airbags, a study titled *Kinematic Comparison of Pediatric Human Volunteers and the Hybrid III 6-Year-Old Anthropomorphic Test Device** used DTS sensors and TDAS data recorders to compare the responses of an anthropomorphic test device (ATD) to human volunteers. The comprehensive study simulated a low-speed frontal crash using a pneumatically actuated, hydraulically-controlled low acceleration sled. A safe, non-injurious crash pulse was derived from an amusement park bumper car impact.

Signals from the DTS ARS, accelerometer and load cells were sampled at 10,000 Hz using the DTS TDAS Sensor Input Module (SIM) data acquisition system. The sled acceleration data, seat belt loads, and forces and moments at the seat pan and foot rest were filtered at SAE (Society of Automotive Engineers) channel frequency class CFC 60 as specified in the SAE J211 recommended practice. The ARS signal was filtered at CFC 1000.

The study quantified specific differences which will help provide continued insight into the biofidelity of ATDs compared to human responses, and will lead to improvements in a variety of safety measures and products even beyond the automotive industry.

** Studies By: Center for Injury Research and Prevention-The Children's Hospital of Philadelphia, Center for Applied Biomechanics, University of Virginia, TK Holdings*



DTS ARS sensors and a TDAS data acquisition system were used to record the responses of an anthropomorphic test device (ATD) and human volunteers. Comparing & evaluating the test results will help improve safety devices with the goal of reducing injuries sustained by children, especially in car accidents.

CALIBRATE TO VALIDATE—Schedule 2012 Services Now

Routine maintenance is key to protecting your investment in DAS, sensors and critical data. Annual calibration services allow DTS technicians to check every component, as well as verify the integrity of test data collected. DTS offers several options:

FACTORY CALIBRATION: Send your equipment to one of our DTS Tech Centers around the world.

ON-SITE CALIBRATION: Let DTS come to your facility. Available worldwide, reduces downtime, shipping expenses and hassle.

ISO 17025 (A2LA Accredited): Do you require ISO 17025 certification? This option is available for factory and on-site calibrations for most DTS products.

SERVICE CONTRACTS: Budget all your calibration, repair and training needs on one PO and reduce paperwork. In addition, the option for multi-year contracts allow you to budget and forecast expenses.

To maintain the integrity of your data and equipment, DTS recommends annual factory calibration services. DTS offers a variety of options to meet your specific needs and budget.

Diversified Technical Systems, Inc.
909 Electric Ave., Suite 206
Seal Beach, CA 90740 USA
Phone: +1 562 493 0158
Email: sales@dtsweb.com
www.dtsweb.com