PRODUCT DATASHEET

APPLICATIONS

- Airbag testing
- Automotive safety
- Biomechanics
- Blast dynamics
- · Pre-tensioner testing
- · Pyrotechnic devices
- Squib fire

SLICE PRO TOM

Air Bag & Squib Fire with Internal Data Recorder



Each SLICE PRO TOM fires up to 4 pyrotechnic devices with squib firing delays from 0 to 99 seconds with 0.1msec resolution. Need more TOM channels? Simply add more modules.

Features

- 4 independently programmable pyrotechnic/squib fire outputs with 0.1 msec timing resolution
- 8 independently programmable digital outputs for controlling other systems requiring timed outputs
- · Continuous monitoring of connected squib resistance
- Software adjustable sampling rates
- Configures with SLICE PRO SIM, SLICE PRO DIM and USB or Ethernet communication via SLICE PRO Controllers
- Shock rated and 100% tested to 100 g
- Small size, low mass each module is 52 x 90 x 80 mm
- Built-in one hour battery with automatic charging circuit
- · Safety features integrated in system design
- LED indicators for channel and module status
- · Intuitive DataPRO software

The SLICE PRO TOM (Timed Output Module) generates precisely timed, high-energy firing signals for a wide variety of pyrotechnic devices and squibs used in air bag and pretensioner testing. It also generates isolated digital outputs which are often needed to initiate or synchronize other events in the test lab. The SLICE PRO TOM includes analog recording of firing voltage and current waveforms and can be used standalone or as part of the modular and crashworthy SLICE PRO onboard data acquisition system.

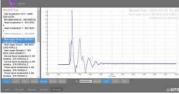


SLICE PRO is a complete solution with Ethernet or USB controllers, plus configurable modules to support sensor inputs, air bag fire, trigger distribution and digital inputs.

Software

DTS DataPRO software offers a full-featured database and user interface for tracking sensor information, creating test objects and test setups, performing diagnostic routines and





running tests. It also features the most advanced self-diagnostics available plus support for EQX and numerous data exchange file formats.

PRODUCTS

Diversified Technical Systems designs and manufactures data acquisition systems, sensors, and software for beginning and advanced test professionals.



Specifications

PHYSICAL

Description: Timed Output Module
Size: 52 x 90 x 80 mm

Mass: 750 g (26 oz)

Connectors: LEMO

ENVIRONMENTAL

Operating Temp.: 0 to 60°C (32 to 140°F)

Contact DTS for extended temperature

applications

Humidity: 95% RH non-condensing Shock: 100 g, 12 msec half sine

17 V

SQUIB FIRE CHANNELS

Number: 4 per module

Energy Delivery: Capacitive discharge, constant current

Source Voltage:

Constant Current Output: 1.0-4.0 A software adjustable in 0.1 A

increments.

Energy Storage: >300 mJ per channel

Rise Time: <50 µ sec

Output Connector: One 6-pin LEMO 2B connector per channel

(+output, -output, +sense, -sense, +ID, -ID)

TIMING CONTROL

Method: Delay for each output channel can be

independently programmed via software

Delay Range: 0-99 seconds after trigger input Squib Duration: 0.2-25.5 msec or continuous Digital Output Duration: 0.2-1.6 msec or continuous

Resolution: 0.1 msec

EVENT INPUT

Each Module: Standard contact closure input, galvanically

and optically isolated to 1 kV EMI. RFI, and ESD protection

False Trigger: EMI, RFI, and ESD protection
Multiple Modules: Event input may be connected in parallel

across several modules

SAFETY FEATURES

General: Three-layer safety protocol. 1) Software key

2) Software arm signal 3) Hardware arming

signal plug

Warning Signals: 1) LEDs indicate when the system is armed

2) 5 V, 20 mA output may be used to drive

facility warning devices

Output Interlock: Outputs cannot be armed without physically

inserting a plug or supplying a remote arming

signal

Automatic Disable: Unless requested to perform a test, energy

storage devices are automatically drained

TEST ARTICLE AUTOMATIC ID

Method: Serial data read from digital I/O line in squib

fire connector

Type Supported: Maxim Integrated (Dallas) "1-wire" silicon

serial number.

SQUIB RESISTANCE TESTS

Method: 1 mA applied current, 2--wire method

standard, 4-wire method optional

Resistance Check: Software programmed pass/fail tolerance

window, measured values recorded

Measurement Range: 0-10 ohms Resolution: 12-bit

OUTPUT WAVEFORM RECORDING

General: Two measurements/ch (8 total per module):

1) current waveform

2) initiation signal/voltage waveform 16-bit SAR (Successive Approximation

Register) ADC, one per channel, simultaneous sample of all channels.

Sampling Capability: Up to 500k sps with adjustable anti-alias filter

automatically set under software control

Memory Type: 16 GB non-volatile flash per module

SELF-TEST FEATURES

Method:

General: Auto checks critical voltages & displays status
Output Verification: Built-in 2.0 ohm dummy loads are used to test

output waveforms during pretest checks

Measurement Self-test used to verify channel gains and

Channels: function

LED Status Indicators: 1) Power (3 color)

4) Squib Channel Status (2 color)
1) Trigger Status (red)

DIGITAL OUTPUT CHANNELS

General: 8 outputs available on a single connector
Output Type: Compatible with devices requiring isolated
contact closure and/or CMOS/TTL-compatible

levels (0-5 V). Logic polarity is software

programmable. > 5 mA per channel

Drive Capability: > 5 mA per channel connector: 19-pin LEMO 2B

POWER

External Voltage: 9-15 VDC; Note: 12-15 VDC required for

charging internal battery

Maximum Power: 800 mA (per 4-channel module)

Protection: Self-resetting fuses plus reverse current and

transient over-voltage protection

Internal Battery

Type: Lithium Polymer with built-in charger.

Run Time: One hour fully armed

Recharge Time: 3-4 hours

SOFTWARE

Control: DataPRO

Operating Systems: Windows® XP/Vista/7/8 (32/64-bit) USB 2.0 or Ethernet 10/100M

Part# 13000-40400 SLICE PRO TOM, with accessories

Includes TOM Terminal Box for easy screw-terminal access to up to 8 digital outputs

Part# 13000-30730 SLICE PRO TOM, no accessories

TECH CENTERS

North America
United Kingdom
Europe
Japan

Asia-Pacific

SERVICES

24/7 Worldwide Tech Support

ISO 17025 (A2LA) Calibration

Onsite Calibration & Training

OEM/Embedded Applications

Application Consulting

Software Integration

HEADQUARTERS

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Designed to support a variety of applications, SLICE PRO is a complete data acquisition solution with software, user-configurable modules and a full line of accessories.



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