SLICE IP68

Miniature Data Recorder, IP68 Rated for Water & Dust

APPLICATIONS

- Harsh environments
- Aerospace analysis
- Amusement ride testing
- Automotive safety
- Biomechanics
- Blast dynamics
- Embedded monitoring
- Helicopter & aircraft
- Impact testing
- Injury investigation
- Parachute deployment
- Package testing: truck, air, ship & rail
- Ride & handling
- Acoustic measurement
- Sports & safety equipment
- Vibration testing

PRODUCTS

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

The SLICE IP68 data acquisition system delivers unparalleled performance with IP68 rated connectors and enclosures for dust and water ingress. Modular SLICE can be configured with 3 to 24 channels per stack, and then daisy-chained for higher channel count tests.

SLICE IP68 is a modular data acquisition system featuring unparalleled flexibility, technology and reliability in an ultra-small form factor. Based on the proven architecture of SLICE MICRO, the SLICE IP68 system is engineered to for even more extreme test environments.

SLICE makes it easy to build systems in 3-channel increments by stacking layers with different sensor input configurations. The BASE+ is the foundation of the system with the microprocessor, memory and control circuits. A simple interface provides power, trigger and communication signals and data writes directly to flash memory.

Primary power is provided externally or via the new SLICE IP68 Power Pack that is available in multiple capacity options.

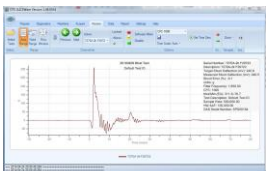
Features

- Modules easily stack to create the exact features and channel count needed. Stack up to 24 channels per base and daisy-chain up to hundreds of channels per test.
- IP68 (20 meters water/10 hours) for dust and water ingress MIL-STD-810G for temperature, altitude and vibration
- Intuitive, easy-to-use software
- Lightweight & extremely small
- 16 GB direct-write flash memory

- Variable sampling rates:
  Minimum 10 sps per channel
  Up to 200k sps on ≤24 channels per stack
  Up to 500k sps on ≤3 channels per stack
- Supports a variety of sensors, including full and half-bridge sensors, strain gauges, IEPE, voltage input, thermocouples
- Modules available with built-in triaxial accelerometers and triaxial angular rate sensors
- Complies with ISO 6487 and SAE J211 recommended practices, as well as NHTSA and FAA requirements

Software

DTS offers two powerful software options for SLICE IP68. SLICEWare provides fast, easy tools for storing sensor information, performing data collection, viewing and exporting data. DataPRO is a fully-featured software package with a comprehensive database and user interface for tracking sensor information, creating test objects and test setups, performing diagnostic routines, and conducting tests. Both options feature the most advanced self-diagnostics, plus support for EQX, ISO MME and many other data exchange file formats.



DTS
www.dtsweb.com

Number of SLICEs Per Stack*	Total Channel Count	Maximum Sampling Rate SPS/Channel
1	3 ch	500000
2	6 ch	400000
3	9 ch	300000
4	12 ch	200000
5	15 ch	200000
6	18 ch	200000
7	21 ch	200000
8	24 ch	200000

*Not including the one required BASE+ SLICE IP68 per stack

SERVICES

24/7 Worldwide Tech Support
ISO 17025 (A2LA) Calibration
Onsite Calibration & Training
Application Consulting
Software Integration
OEM/Embedded Applications

TECH CENTERS

North America
Europe
Asia-Pacific

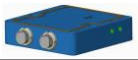
HEADQUARTERS

Seal Beach, California USA

CONTACT US

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

Specifications



BASE+ SLICE IP68
1 per stack – system microprocessor & memory

Size:	60 x 60 x 14 mm (2.36 x 2.36 x 0.55")
Mass:	140 g (4.9 oz)
Connectors:	1T Series 14-pin LEMO

DATA RECORDING

Modes:	Recorder, circular buffer, multiple event, arm on power-up, and other modes available
Memory:	16 GB non-volatile flash per SLICE stack
Sample Rate:	Minimum 10 sps per channel
<See Chart for Max:	Up to 200k sps on ≤24 channels per stack Up to 500k sps on ≤3 channels per stack

TRIGGERING

Hardware Trigger:	Contact closure & TTL logic-level (active low)
Level Trigger:	Positive and/or negative level on any active sensor channel (first level crossing of any programmed sensor triggers system)

POWER

Supply Voltage:	9-15 VDC; 11-15 VDC when using SLICE IP68 Power Pack
Current (Maximum):	70 mA @ 12 V plus sensor input SLICEs
Power Control:	Remote power control input for on/off
Protection:	Reverse current, ESD

SOFTWARE

Control:	SLICEWare, DataPRO, API
Operating Systems:	Windows® 7/8/10 (32/64-bit)
Communication:	USB; Ethernet available via SLICE Distributor

BRIDGE SLICE IP68
Three (3) inputs for external sensors

Size:	60 x 60 x 14 mm (2.36 x 2.36 x 0.55")
Mass:	94 g (3.3 oz)
Connectors:	0T Series 6-pin LEMO

SIGNAL CONDITIONING

Number of Channels:	3 differential, programmable
Input Range:	±2.4 V (2.5 V center)
Bandwidth:	DC to 35 kHz, programmable
Gain Range:	1.0-1280, programmable
Auto Offset Range:	100% of effective input range
Bridge Support:	Software controlled half-bridge completion
Shunt Check:	Emulation method, automatically calculated
Sensor ID:	Maxim Integrated (Dallas) silicon serial number
Linearity (typical):	≤0.2% (gain 1 to 320), ≤0.5% (gain >320)
Accuracy:	0.5% including reference uncertainty

ANALOG-TO-DIGITAL CONVERSION

Type:	16-bit SAR ADC, one per channel, simultaneous sampling of all channels in each stack

EXCITATION

Method:	Independent regulator for each channel
Voltage:	5.0 V, up to 20 mA, short circuit safe
Power Management:	Shutdown when not armed or recording

POWER

Voltage:	Supplied via SLICE IP68 BASE+
Current (Maximum):	110 mA with 350 ohm bridges all channels Power varies significantly with sensor load

ANTI-ALIAS FILTER

Fixed Low Pass:	4-pole Butterworth, standard knee frequency at 35 kHz
Adjustable Low Pass:	5-pole Butterworth set by software from 1 Hz to 35 kHz
Response:	Meets SAE J211/ISO6487 response corridors

ENVIRONMENTAL

Military Standard:	MIL-STD-810G
IP Rating:	IP68 (20m water, 10 hours)
Operating Temp:	-40° to 60°C (-40° to 140°F) (Method 501,502)
Altitude:	-40°C @ 15240 m (50000 ft) (Method 500)
Vibration (Random):	Exceeds 810-G vibration (Method 514)
Shock:	100 g, 4 msec half sine

IEPE SLICE IP68
Three (3) inputs for external sensors

Size:	60 x 60 x 14 mm (2.36 x 2.36 x 0.55")
Mass:	88 g (3.1 oz)
Connectors:	10-32 Microdot IP68 coaxial

SIGNAL CONDITIONING

Number of Channels:	3
Input Range:	0.5-23.5 V (12 V center)
Bandwidth:	DC to 35 kHz, programmable
Gain:	1 or 10, set by software
Auto Offset Range:	100% of effective input range at gain of 1
Sensor ID:	Works with EID or "TEDS" equipped sensors

ANALOG-TO-DIGITAL CONVERSION

Type:	16-bit SAR ADC, one per channel, simultaneous sampling of all channels in each stack

EXCITATION

Current/Voltage:	2.2 mA constant current with 25 V source Contact DTS for other options if needed
On/Off Control:	Shutdown when not armed or recording

POWER

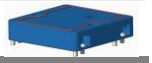
Voltage:	Supplied via SLICE IP68 BASE+
Current (Maximum):	85 mA with sensors connected to all channels

ANTI-ALIAS FILTER

Fixed Low Pass:	4-pole Butterworth, standard knee frequency at 40 kHz
Adjustable Low Pass:	5-pole Butterworth set by software from 1 Hz to 35 kHz
Response:	Meets SAE J211/ISO6487 response corridors

ARS SLICE IP68
Built-in triaxial angular rate sensor

Size:	60 x 60 x 13 mm (2.36 x 2.36 x 0.51")
Mass:	71 g (2.5 oz)
Number of Channels:	3 orthogonal axes
Range Options:	±300, ±1500, ±8k deg/sec
Bandwidth:	0–2,000 Hz
Current (Maximum):	75 mA (power supplied via SLICE IP68 BASE+)



ACCEL SLICE IP68
Built-in triaxial accelerometer

Size:	60 x 60 x 13 mm (2.36 x 2.36 x 0.51")
Mass:	71 g (2.5 oz)
Number of Channels:	3 orthogonal axes
Range Options:	±25, ±100
Bandwidth:	0–400 Hz
Current (Maximum):	65 mA (power supplied via SLICE IP68 BASE+)

SLICE IP68 POWER PACK
Optional primary power source

Li-Po, IP68 rated battery solution for SLICE IP68.
Rechargeable via external charger.

Capacity (mAH)	2200	6600
LxWxH (mm)	64x124x43	64x124x80
Mass (g)	600	1000
Discharge Time (hour) *	3	9

*Estimated based on typical use and 18 channels (1 Base + 6 Bridges)

CALIBRATION

Calibration Supplied:	NIST traceable
ISO 17025:	ISO 17025 (A2LA Accredited) available
Service Options:	Factory or Onsite, Service Contracts available

ACCESSORIES
See website for full line of SLICE IP68 accessories

DTS
www.dtsweb.com

Specifications subject to change without notice.