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 and sensors for experienced test professionals.

Designed for harsh test environments, the SLICE IP68 data acquisition system features IP68-rated connectors and enclosures. SLICE IP68 is modular and supports a variety of external sensors to measure acceleration, strain, voltage, temperature, plus offers layers with built-in sensor options.

SLICE IP68 is a modular data acquisition system featuring unparalleled flexibility and reliability for extreme test environments. SLICE IP68 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. Data writes directly to non-volatile flash memory.

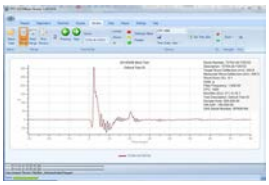
Shown here in a 9-channel configuration with a variety of sensor input layers, SLICE IP68 includes full signal conditioning and 16 GB non-volatile flash memory.

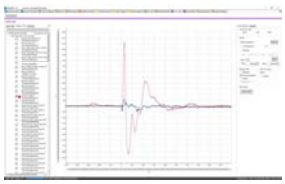
Features

- Modules stack to create the required channel count. Stack up to 24 channels per base and daisy-chain up to hundreds of channels per test.
- IP68 rated for dust & water ingress (20 meter water/10 hours) MIL-STD-810G rated for temperature, altitude and vibration
- Data writes directly to 16 GB non-volatile 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
- 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
- Intuitive, easy-to-use software
- Primary power provided externally or via the SLICE IP68 Power Pack

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 software packages offer the most advanced self-diagnostics, plus support for EQX, ISO MME and many other data exchange file formats.





DTS

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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
On-site Calibration & Training
Application Consulting
Software Integration
OEM/Embedded Applications

WORLDWIDE SUPPORT

HELP CENTER (24/7/365 Access)
DTS Technical Centers
Global Sales Partners

HEADQUARTERS

Seal Beach, California USA

CONTACT US

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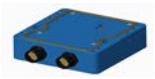
Specifications



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- and 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

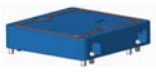
Method:	Independent regulator for each channel
Voltage:	5.0 V, up to 20 mA, short circuit safe
Power Management:	Shutdown when not armed or recording

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

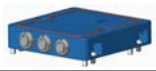
Fixed Low Pass:	4-pole Butterworth, standard knee frequency at 40 kHz
Adjustable Low Pass:	5-pole Butterworth set by software from 1 Hz to 35 kHz
Response:	Meets SAE J211/ISO6487 response corridors



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+)



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

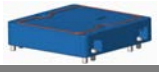
Current/Voltage:	2.2 mA constant current with 25 V source Contact DTS for other options if needed
On/Off Control:	Shutdown when not armed or recording

POWER

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

ANTI-ALIAS FILTER

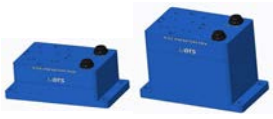
Fixed Low Pass:	4-pole Butterworth, standard knee frequency at 40 kHz
Adjustable Low Pass:	5-pole Butterworth set by software from 1 Hz to 35 kHz
Response:	Meets SAE J211/ISO6487 response corridors



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+)



SLICE IP68 POWER PACK

Optional primary power source

Li-ion IP68-rated battery solution for SLICE IP68.
Rechargeable via external charger.
*Estimated based on typical use and 18 channels (1 Base + 6 Bridges)

Capacity (mAH)	2200	6600
L x W x H (mm)	64 x 124 x 43	64 x 124 x 80
Mass (g)	600	1000
Discharge Time (hour) *	3	9

ENVIRONMENTAL

Military Standard:	MIL-STD-810G
IP Rating:	IP68 (20m water*, 10 hours) *Note: use in liquids other than fresh water requires special handling
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

CALIBRATION

Calibration Supplied:	NIST traceable
ISO 17025:	ISO 17025 (A2LA Accredited) available
Service Options:	Factory, On-site & Service Contracts available

DTS
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