



**ECONOMICAL VERSATILE
HI-RESOLUTION MULTICHANNEL
SEISMIC & STRONG MOTION
DATA LOGGERS**
**DAS6102, DAS6102c,
SML6102, SMLA6102**



This extremely versatile high-resolution seismic data acquisition system *can be configured from 4 to 32 channels*, all operating *synchronously up to 2,000 samples per second*. The system is available in a variety of configurations:

- ◆ A field version, **DAS6102**, with graphic VGA display and keypad, packaged in a portable, compact, rugged, weatherproof heavy duty plastic box; mass medium: HDD or CFC.
- ◆ An economical field version, **DAS6102c**, without display and keypad, packaged in a portable, compact, rugged, weatherproof heavy duty plastic box; mass medium: HDD or CFC
- ◆ An industrial version, **SML6102**, packaged in a weatherproof enclosure with or without display and keypad.
- ◆ A strong-motion accelerograph, **SMLA6102**, which includes internal force-balanced accelerometers and an optional rotational seismometer to record up to all six degrees of freedom.

The system has a unique time management circuit which maintains *accurate real time*, and keeps the programmable sampling rates *precisely synchronous* with the real time marks. Re-indexing of data is never required. The time system does not require *continuous or frequent references to GPS* to maintain accuracy. The typical GPS access interval is once every 12 - 24 hours.

The system has been significantly upgraded, including, among other features, increased noise-free resolution, addition of a 90dB analog antialiasing filter, and software-programmable gains.

DAS6102 Specifications:

- ◆ Resolution 22-bit
- ◆ Conversion type: $\Delta - \Sigma$ modulation at 570 kHz
- ◆ Dynamic range: 112dB @ 200 sps sampling rate
- ◆ Sampling range: 1 – 2000 sps, precisely synchronous with time marks
- ◆ No. of Acquisition Channels: Standard 4; 8 to 48 optional; all fully synchronous
- ◆ Recording Formats: CSS or SEED with Steim-2 type compression
- ◆ Antialiasing Filter (analog): 90dB @ 256kHz (primary sampling rate)
- ◆ Antialiasing Filtering: Built-in DSP-based digital filter
- ◆ Analog Inputs: True differential or single-ended $\pm 5V$
- ◆ Analog Gain: Software-programmable 1, 2, 4, 8
- ◆ CMR Rejection: >90 dB @ gain = 1
- ◆ Integral Non-linearity: $\leq 0.003\%$
- ◆ Triggering User defined, STA/LTA, and/or continuous (simultaneous)
- ◆ Trigger Bandpass User defined, up to 5 separate trigger bandpass per event detector.
- ◆ Pre-event Data Up to 90 Sec (100sps), user defined.
- ◆ Post-event Data User configured – no limitations
- ◆ Timing Management System: Intelligent GPS reference access and two phase-locked loops
- ◆ GPS Receiver : Miniature, fully weatherized, integral with antenna; std 5m, optional (RS232) up to 25m cable; optional (RS485) – up to 500m long cable
- ◆ Data Storage / Retrieval Hot-swappable 30 GB hard disk or compact flash card up to 8 GB
- ◆ Data Formats Mini-SEED w/Steim-2 compression up to x6
CSS 3.0: long integer; separate data description in ASCII
- ◆ User Interface (field system) 7” color VGA LCD panel; 12-key keypad; opt. compact full PC-KB
- ◆ I/O Protection Overvoltage, transient, EMI/RFI
- ◆ Connectors Sensors inputs, RS-232, Keyboard, Power, GPS.
- ◆ Optional Remote Access:
 - a. Telephone dial-up automatic data retrieval (periodically program-initiated or on request)
 - b. Radio-Ethernet telemetry for up to 12 miles line-of-sight distance
 - c. Direct recording to LAN (PC or SUN) *via* Ethernet card. Cable or wireless options offered
 - d. Satellite communication
- ◆ Physical Parameters: Dimensions: $\sim 310 \times 250 \times 160 \text{mm}^1$; Weight: ~ 5 kg
- ◆ Operating Temperatures: Standard: $+5$ to $+60$ C² -40 to 60 C with optional HDD heaters³
- ◆ Power Supply: External, Nominal: 12 Vdc; Range 7 - 16 Vdc; Power ~ 5 W⁴.
- ◆ External Power Pack (opt) Dual Gel Cell Batteries (specify capacity, 18Hr to 60Hr)

¹ For DAS6102 systems with 4 to 24 channels; 32-channel system is placed in a larger box; SML systems have steel NEMA6 enclosures and weigh ~ 2 kg more.

² LCD display may not function at subzero temperatures; additional power may be needed to maintain hard drive at operating temperature in subzero conditions.

³ Not required if an industrial-qualified CFC card is used as mass-medium

⁴ With 4 acquisition channels and display normally off.

Specifications subject to change without notice

105-F West Dudleytown Road, Bloomfield, CT 06002 USA

Tel: 1-860-242-8177 Fax: 1-860-242-7812

e-mail: sales@pmdsci.com Web Site: www.pmdsci.com

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