

### 5.4.3 DATA FORMATS

Air-Sea System II has two types of data records, with File Extensions “.DAT” and “.ENV”.

File Names are automatically generated from Year, Day of Year, and Meter Number.

i.e.	2003_188_S-133.DAT	DAILY SIZE = approx 16.5 MB
	2003_188_S-133.ENV	DAILY SIZE = approx 1 KB

Fields in each record are Comma-Separated Variables (.CSV style for direct import into spreadsheet, etc.).

Fields are normally fixed width as listed below. If a field overflows, the width is expanded to meet the required width, altering the column definitions after that field.

#### 5.4.3.1 DATA RECORD (.DAT FILE)

The Data Record has 21 comma separated fields, recorded once per second.

Example:

\$DAT,2003/ 6/29, 0: 0: 0.55,180,10262.40,10262.18, -10501.98, -0.00,
0.00, 0.00, 0.00, 0.00, 0.01, 0.02, -0.00, 0.12,
0.00, 0.00000000, 0.00000000, 0.000, 0.000,
\$DAT,2003/ 6/29, 0: 0: 1.55,180,10262.40,10262.18, -10410.72, -0.00,
0.00, 0.00, 0.00, 0.00, 0.01, 0.02, 0.01, 0.09,
0.00, 0.00000000, 0.00000000, 0.000, 0.000,
\$DAT,2003/ 6/29, 0: 0: 2.55,180,10262.40,10262.18, -10277.42, -0.00,
0.00, 0.00, 0.00, 0.00, 0.01, 0.02, 0.00, 0.12,
0.00, 0.00000000, 0.00000000, 0.000, 0.000,
\$DAT,2003/ 6/29, 0: 0: 3.55,180,10262.40,10262.18, -10487.27, -0.00,
0.00, 0.00, 0.00, 0.00, 0.01, 0.02, 0.00, 0.11,
0.00, 0.00000000, 0.00000000, 0.000, 0.000,
\$DAT,2003/ 6/29, 0: 0: 4.55,180,10262.40,10262.18, -10507.16, -0.00,
0.00, 0.00, 0.00, 0.00, 0.01, 0.01, -0.00, 0.07,
0.00, 0.00000000, 0.00000000, 0.000, 0.000,
\$DAT,2003/ 6/29, 0: 0: 5.55,180,10262.40,10262.18, -10457.47, -0.00,
0.00, 0.00, 0.00, 0.00, 0.01, 0.01, -0.00, 0.08,
0.00, 0.00000000, 0.00000000, 0.000, 0.000,
\$DAT,2003/ 6/29, 0: 0: 6.55,180,10262.40,10262.18, -10394.30, -0.00,
0.00, 0.00, 0.00, 0.00, 0.01, 0.01, -0.00, 0.09,
0.00, 0.00000000, 0.00000000, 0.000, 0.000,
\$DAT,2003/ 6/29, 0: 0: 7.55,180,10262.40,10262.18, -10442.79, -0.00,
0.00, 0.00, 0.00, 0.00, 0.01, 0.02, -0.00, 0.09,
0 00 0 00000000 0 00000000 0 000 0 000

# Micro-g LaCoste Air-Sea Gravity Meter – System II

## DATA RECORD Field Descriptions:

DATA FIELD	START COLUMN	FIELD WIDTH	UNITS	FILTERING	
				HARD DISK DATA	SERIAL OUT DATA
ID	1	4	“\$DAT”	N/A	N/A
DATE	6	10	YYYY/MM/DD	N/A	N/A
TIME	17	11	HH:MM:SS.SS	N/A	N/A
DAY OF YEAR	29	3	DDD	N/A	N/A
GRAVITY	33	8	CU	QC FILTERED	QC FILTERED
SPRING TENSION	42	8	CU	1-SEC AVERAGE	SERIAL FILTER
BEAM POSITION	51	11	Volts x 750,000	1-SEC AVERAGE	SERIAL FILTER
VCC	63	8	See Appendix	1-SEC AVERAGE	SERIAL FILTER
AL	72	8	See Appendix	1-SEC AVERAGE	SERIAL FILTER
AX	81	8	See Appendix	1-SEC AVERAGE	SERIAL FILTER
VE	90	8	See Appendix	1-SEC AVERAGE	SERIAL FILTER
AX2	99	8	See Appendix	1-SEC AVERAGE	SERIAL FILTER
XACC2	108	8	See Appendix	1-SEC AVERAGE	SERIAL FILTER
LACC2	117	8	See Appendix	1-SEC AVERAGE	SERIAL FILTER
CROSS ACCEL	126	8	GAL	1-SEC AVERAGE	SERIAL FILTER
LONG ACCEL	135	8	GAL	1-SEC AVERAGE	SERIAL FILTER
EOTVOS CORR	144	8	MGAL	1-SEC AVERAGE	SERIAL FILTER
LONGITUDE	153	13	DEGREES	1-SEC AVERAGE	SERIAL FILTER
LATITUDE	167	13	DEGREES	1-SEC AVERAGE	SERIAL FILTER
VELOCITY	181	8	KNOTS	1-SEC AVERAGE	SERIAL FILTER
HEADING	189	8	DEGREES	1-SEC AVERAGE	SERIAL FILTER

## 5.4.3.2 ENVIRONMENT RECORD (.ENV FILE)

The Environment Record contains information about system conditions during data acquisition. It is written to the Hard Disk and Serial Port every 10 seconds.

Example:

```
%ENV,2003/ 6/30, 0: 0: 6.43,181,S-132/V1.0,    0.15,    46.37,
24.43,1.020809E-1, 0.00000, 0.08000, 0.00000, 0.00000, 0.00000,    1, 180
%ENV,2003/ 6/30, 0: 0:16.43,181,S-132/V1.0,    0.15,    46.37,
24.41,1.020809E-1, 0.00000, 0.08000, 0.00000, 0.00000, 0.00000,    1, 180
%ENV,2003/ 6/30, 0: 0:26.43,181,S-132/V1.0,    0.15,    46.37,
24.39,1.020809E-1, 0.00000, 0.08000, 0.00000, 0.00000, 0.00000,    1, 180
%ENV,2003/ 6/30, 0: 0:36.43,181,S-132/V1.0,    0.15,    46.37,
24.39,1.020809E-1, 0.00000, 0.08000, 0.00000, 0.00000, 0.00000,    1, 180
%ENV,2003/ 6/30, 0: 0:46.43,181,S-132/V1.0,    0.15,    46.37,
24.39,1.020809E-1, 0.00000, 0.08000, 0.00000, 0.00000, 0.00000,    1, 180
%ENV,2003/ 6/30, 0: 0:56.43,181,S-132/V1.0,    0.15,    46.37,
24.39,1.020809E-1, 0.00000, 0.08000, 0.00000, 0.00000, 0.00000,    1, 180
%ENV,2003/ 6/30, 0: 1: 6.43,181,S-132/V1.0,    0.15,    46.37,
24.39,1.020809E-1, 0.00000, 0.08000, 0.00000, 0.00000, 0.00000,    1, 180
%ENV,2003/ 6/30, 0: 1:16.43,181,S-132/V1.0,    0.15,    46.37,
24.40,1.020809E-1, 0.00000, 0.08000, 0.00000, 0.00000, 0.00000,    1, 180
%ENV,2003/ 6/30, 0: 1:26.43,181,S-132/V1.0,    0.15,    46.37,
```

NAME	START COL	WIDTH	UNITS	FILTERING
ID	1	4	"\$ENV"	n/a
DATE	6	10	YYYY/MM/DD	n/a
TIME	17	11	HH:MM:SS:SS	n/a
DAY OF YEAR	29	3	DDD	
METER ID	33	10	Meter/Software ID	n/a
METER PRESSURE	44	8	inch-Hg	2-minute avg
METER TEMP	53	8	°C	2-minute avg
AMBIENT TEMP	62	8	°C	2-minute avg
K-FACTOR	71	11		
VCC COEFF	83	8		
AL COEFF	92	8		
AX COEFF	101	8		
VE COEFF	110	8		
AX2 COEFF	119	8		
SERIAL FILT LENGTH	128	4	seconds	n/a
QC FILT LENGTH	133	4	seconds	n/a