

**COSMOS TABLES**

12/3/2019

V 3.2.4

**Table 01 Data Physical Parameter Codes**

Cosmos	2/8/2012
Code	Parameter
01	Acceleration
02	Velocity
03	Displacement (absolute)
04	Displacement (relative)
:	
10	Angular acceleration
11	Angular velocity
12	Angular displacement
:	
20	Pressure, absolute
21	Pressure, relative (gage)
:	
30	Volumetric strain
31	Linear strain
:	
60	Wind speed
61	Wind direction
:	
* Cosmos lhdr(2)	

**Table 02 Data Units Codes**

Cosmos	4/17/2013
Code	Units
01	sec
02	g
03	secs & g
04	cm/sec/sec
05	cm/sec
06	cm
07	in/sec/sec
08	in/sec
09	in.
10	gal
11	mg
12	mg
:	
23	deg/sec/sec
24	deg/sec
25	deg
:	
50	counts
51	volts
52	mvolts
:	
60	psi
61	kpa
:	
70	miles/hour

:	
80	mstrain
:	
* Cosmos Ihdr(3)	

**Table 03 Record Type Codes**

Cosmos	4/17/2013
Code	Record type
01	Seismic trigger
02	Remote trigger
03	Preset trigger
04	Manual trigger
05	Function test
06	Active source test
:	
10	Sensor calibration
11	Amplifier calibration
12	Recorder calibration
13	Other calibration
:	
* Cosmos Ihdr(5)	

**Table 04 Strong Motion Network Codes**

Cosmos	3/3/2017	Abbrev. (4-ltr)
Code	Agency	
01	U.S. Coast and Geodetic Survey <sup>(1)</sup>	C&GS
02	USGS - National Strong Motion Project	USGS
03	U.S. Bureau of Reclamation	USBR
04	U.S. Army Corps of Engineers	ACOE
05	Calif.Geol.Survey/Div.Mines&Geology <sup>(2)</sup>	CGS
06	Calif.Inst.Technology/USGS, Pasadena	SCSN
07	UC Berkeley	BDSN
08	USGS - Northern Calif Regional Network	NCSN
09	UC Santa Barbara	UCSB
10	UC San Diego - ANZA	ANZA
:		
14	UNR - W. Great Basin/E. Sierra Nevada	UNR
15	UW - Pacific NW Regional Network	PNSN
16	Caltech - Tectonics Observatory	CTO
17	UA - Anchorage Strong Motion Network	AEIC
:		
20	Calif. Dept. Water Resources	CDWR
21	Pacific Gas & Electric	PG&E
:		
30	USGS - National Seismic Network	NEIC
31	US Geological Survey Networks	USGS
32	IRIS/USGS Network	IRGS
33	Caribbean USGS Network	CUGS
34	NetQuakes	NQGS
35	US National Seismic Network (USNSN)	USGS
36	Arkansas Seismic Network	ASN

37	Alaska Regional Network	UAGI
38	Arkansas Seismic Observatory, UALR	ASO
39	Alaska Volcano Observatory	AVO
40	Southern Appalachian Seismic Network	CERI
:		
46	Lamont-Doherty Coop. Seism. Network	LCSN
47	LLNL NTS Network	LLNL
48	Montana Regional Seismic Network	MRSN
49	New England Seismic Network	NUSN
50	Coop New Madrid Seismic Network, St Louis Univ	CNMSN
51	Pacific Northwest Regional Seismic Network	PNSN
52	Univ of Utah Seismograph Stations	UUSS
53	Yellowstone Wyoming Seismic Network	YWSN
54	Puerto Rico Strong Motion Program	UPRM
55	South Carolina Seismic Network	SCSN
56	Hawaiian Volcano Observatory Network	HVO
57	New China Digital Seismograph Network	USGS
58	IRIS/IDA Seismic Network	SIO
59	Intermountain West Seismic Network	USGS
60	Central and Eastern US Network	UCSD
61	USArray Transportable Array (EarthScope_TA)	IRIS
62	Eastern Caribbean Seismograph Network	SRTC
63	Univ Chile, Dept of Geophysics	CNSN
:		
100	Taiwan Central Weather Bureau	CWB
:		
107	UC Berkeley - Geysers Seismic Network	BGSN
:		
110	Bosai-Ken (NIED), Japan	NIED
111	Univ. of Oregon Regional Network	UO
:		
199	Unspecified	UNK

\* Notes:

(<sup>1</sup>) IRIS code of "C\_" adopted for C&GS (which was terminated before IRIS was established)

(<sup>2</sup>) CGS and CDMG may be used interchangeably.

Cosmos code is located in lhdr(11) (and secondarily in 12, 13, 14).

<b>Table 05 Latitude/Longitude Datum Codes</b>	
Cosmos Code	Datum
01	WGS84
02	NAD83
03	NAD27
04	WGS72
:	
* Cosmos lhdr(16)	

<b>Table 06 Station Type Codes</b>	
Cosmos Code	Freefield, Ground Response or Reference Stations

01	Small fiberglass or other shelter (typ. ~1m <sup>3</sup> ; e.g., T-hut)
02	Small prefabricated metal bldg (typ. 1-2m x 1-2m x 2m high; eg, Armco)
03	Sensors buried/set in ground or deployed in shallow ground vault (within ~1m of surface)
04	Reference station (1-2 story, small (<4000 ft <sup>2</sup> or 370m <sup>2</sup> ), light building without basement)
05	Base of building larger than above
06	Freefield, Unspecified
07	Ocean-bottom sensors
08	Sensors in small near-surface vault (1-2m deep)
09	Sensors in underground observatory or large vault (~3m <sup>3</sup> or larger)
:	
	<b>Instrumented Structural or Array Stations</b>
10	Building, sensor in upper levels
11	Bridge
12	Dam
13	Wharf
14	Tunnel or mine adit (3m or more from surface)
15	Other lifeline structure
:	
20	Other structure
:	
50	Geotechnical array (borehole) sensors, 2m or greater deep
51	Other array
52	Borehole
:	
999	Unspecified
* Cosmos Ihdr(19)	

Code	Agency	IRIS Code
01	USGS	US
02	NEIC, Golden, Colo.	US
03	UC Berkeley	BK
04	Caltech, Pasadena	CI
05	NCSN, Northern Calif.	NC
06	SCSN, Pasadena, Calif.	CI
07	UCSD, San Diego, Calif.	AZ
08	UNR, Reno, Nevada	NN
09	USCGS	C_
10	CISN	-
11	CGS	CE
:		
100	CWB, Taiwan	TW
:		
110	Japan Meteorological Agency	JP
111	Bosai-Ken (NIED), Japan	BO
:		
200	Other	

:		
* Cosmos Ihdr(25)		

**Table 08 Recorder Timing Type Codes**

Cosmos		3/29/2011
Code	Time Source for record	
00	None	
01	Recorder clock	
02	Auxiliary clock (e.g., TCG)	
03	Radio time signal (e.g., WWVB, WWVH)	
04	Clock that tracks radio signal (WWVB, etc.)	
05	GPS signal	
06	Network time protocol (NTP)	
:		
20	Other	
:		
* Cosmos Ihdr(47)		

**Table 09 Recorder/Datalogger Codes**

Cosmos		12/3/2019
Code	Recorder/Datalogger	
<b>Analog Recorders</b>		
1	C&GS Standard, USC&GS	
2	AR-240, Teledyne	
3	RFT-250, Teledyne	
4	RFT-350, Teledyne	
5	MO-2 (New Zealand)	
6	RMT-280	
7	SMA-1, Kinematics	
8	SMA-2, Kinematics	
9	SMA-3, Kinematics	
10	CRA-1, Kinematics	
:		
<b>Digital Recorders</b>		
100	DSA-1, Kinematics	
101	DSA-3, Kinematics	
102	PDR-1, Kinematics	
103	PDR-2, Kinematics	
104	SSA-1, Kinematics	
105	SSA-2, Kinematics	
106	SSA-16, Kinematics	
107	SSR-1, Kinematics	
108	K2, Kinematics	
109	Etna, Kinematics	
110	Mt Whitney, Kinematics	
111	Everest, Kinematics	
112	Makalu, Kinematics	
113	Etna-A, Kinematics	
114	Etna-2, Kinematics	
:		
120	QDR, Kinematics	
130	Granite, Kinematics	
131	Basalt, Kinematics	

132	Obsidian, Kinometrics
133	Obsidian Multichannel, Kinometrics
:	
200	DR-100, Sprengnether
201	DR-200, Sprengnether
202	DR-300, Sprengnether
204	DR-3016, Sprengnether
203	DR-3024, Sprengnether
:	
250	Trident, Nanometrics
251	Linx, Nanometrics
252	Titan-SMA
253	Titan-EA
:	
300	DCA-300, Terratech
301	DCA-310, Terratech
302	DCA-333, Terratech
310	IDS-3602, Terratech (IDS)
311	IDS-3602A, Terratech (IDSA)
:	
400	A700, Geotech
401	A800, Geotech
402	A900, Geotech
403	A900A, Geotech
:	
500	GEOS, US Geological Survey
:	
550	GMS-18 (NetQuakes), Geosig
551	GRS-18, Geosig
:	
600	Q4120, Quanterra
601	Q4128a, Quanterra
602	Q730, Quanterra
603	Q736, Quanterra
604	Q980, Quanterra
605	Q330, Quanterra
606	Q680, Quanterra
:	
650	CMG-DM24-EAM, Guralp
651	Minimus, Guralp
:	
700	72A, RefTek
701	130-01, Reftek
702	130-SM, Reftek
703	130-SMA, Reftek
704	130-ANSS, Reftek
705	130-SM5V, Reftek
706	130-MC, Reftek
707	130-SMHR, Reftek
710	148-01, Reftek (QuakeRock)
:	
1000	Other
-	-
:	
	* Cosmos Ihdr(30)

<b>Table 10 Sensor Codes</b>	
Cosmos	12/3/2019
Code	Sensor
<b>Accelerometers</b>	
1	Optical-mechanical (SMA,RFT,etc)
2	FBA-1, Kinematics
3	FBA-3, Kinematics
4	FBA-11, Kinematics
5	FBA-13, Kinematics
6	FBA-13DH, Kinematics
7	FBA-23, Kinematics
8	FBA-23DH, Kinematics
20	Episensor, Kinematics
21	Episensor ES-U, Kinematics
22	Episensor ESDH, Kinematics
23	Episensor ES-US, Kinematics
:	
50	FBX-23, Sprengnether
51	FBX-26, Sprengnether
:	
100	SSA 120, Terratech
101	SSA 220, Terratech
102	SSA 320, Terratech
:	
150	731A, Wilcoxon
:	
200	CMG-5, Guralp
201	CMGXXX
202	Fortis, Guralp
:	
250	131A-02/1, Reftek
251	131A-02/3, Reftek
252	131A-02/BH, Reftek
253	131B-01/1, Reftek
254	131B-01/3, Reftek
255	131A-02/3/INT, Reftek
256	131-8019, Reftek
257	131-8050
258	147A-01/1, Reftek
259	147A-01/3, Reftek
260	131-X (Unk)
:	
300	ADXL325, Analog Devices
:	
330	SF2005 MEMS, Colibrys
:	
350	LIS344ALH, STMicroelectronics
:	
380	7751-500, Endevco
:	
400	AC63, Geosig
:	

450	Titan, Nanometrics
:	
480	TSA-100S, Metrozet
:	
900	Other accelerometer
:	
<b>Velocity Sensors/Seismometers</b>	
1001	SS-1 Ranger, Kinematics
1002	MBB-2 Broadband, Kinematics
:	
1050	S-3000, Sprengnether
1051	S-6000, Sprengnether
:	
1100	Trillium 240, Nanometrics
:	
1201	CMG-1, Guralp
1202	CMG-3T, Guralp
1203	CMG-3ESP, Guralp
1204	CMG-40, Guralp
:	
1250	STS-1, Strecheisen
1251	STS-2, Strecheisen
:	
1300	L4, Mark Products
1301	L22, Mark Products
:	
1900	Other seismometer
:	
<b>Other Sensors</b>	
3000	Pressure series
3001	PDCR-35/D, Druck
3002	PDCR-940, Druck
3003	PTX/PCDR-1830, GE/Druck
:	
3010	30, MEAS/KPSI
3011	330, MEAS/KPSI
3012	730, MEAS/KPSI
:	
3020	8WD, ParoScientific
:	
3200	Wind Series
3201	Young - Speed
3202	Young - Direction
:	
3500	Dilatometer series
:	
4000	Relative displacement series
4001	UltraS, Senix Ultrasonic
4002	TS-30S1, Senix Ultrasonic
:	
4020	Extensometer, FirstMark
:	
4500	Rotational series



4501	EENT
:	
4800	Tiltmeter Series
4801	Model 801-S Longitudinal, Jewell Inst.
4802	Model 801-S Transverse, Jewell Inst.
:	
9000	Other sensor
:	
* Cosmos Ihdr(52)	

Cosmos Code	Orientation	12/7/2011	Abbrev. (4-ltr)
1-360	Horizontal azimuth, clockwise (east) from North		n/a
:			
400	Up		Up
401	Down		Down
402	Vertical, sense not indicated		Vert
:			
500	Radial, inward (-500 for outward)		Radl
501	Transverse, 90 deg CW from radial comp. (-501 for CCW from radial comp.)		Tran
:			
:			
600	Longitudinal (relative to structure)		Long
601	Tangential (relative to structure)		Tang
:			
700	H1 (horiz. sensor, azimuth unknown)		H1
701	H2 (horiz. sensor, azimuth unknown)		H2
702	X (horiz. sensor, azimuth unknown)		X
703	Y (horiz. sensor, azimuth unknown)		Y
704	Z (horiz. sensor, polarity not indicated)		Z
:			
1001-1360	Horizontal azimuth relative to Chn 1, if absolute not known (e.g., Chn 2 is 1090 if it is 90 deg clockwise of Chn 1)		n/a
:			
:			
2000	Other (described in comments)		Othr
:			
*Notes:			
1) The direction specified is the direction of motion of the ground (or the structural element the sensor is attached to) that corresponds to upward motion of the trace and positive-going signal values.			
2) Referenced in Cosmos Ihdr(54) for absolute, and in Ihdr(55) for relative values.			

Cosmos Code	Filter type	5/23/2008
0	None	
1	Rectangular	
2	Cosine bell	

3	Ormsby
4	Butterworth, single direction (causal)
5	Butterworth, bi-directional (noncausal)
6	Bessel
:	
Note:	
Used in Cosmos Ihdr(61) and Ihdr(62)	