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C-CODE TABLES FOR CADEX BATTERY ANALYZERS

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This document interprets Configuration Codes (C-codes) used in battery catalogs.

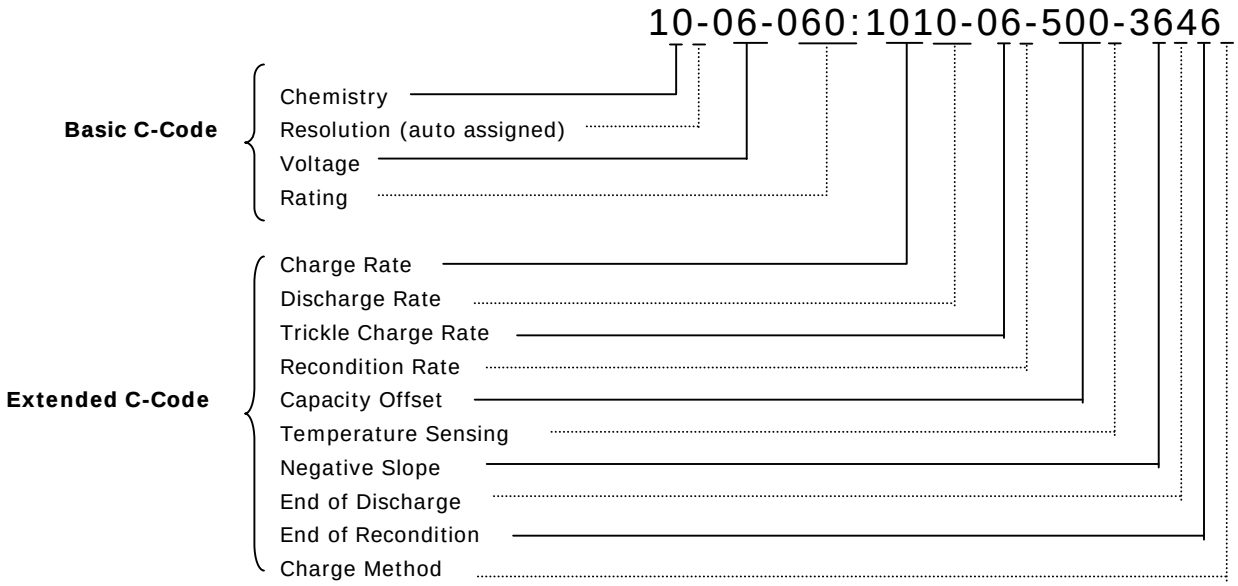
The following exceptions should be made when using this table.

a. The C4000 does not have the capability to service Li-Ion batteries or for DC Charge (use the Rev Load 0% instead).
b. Disable all temperature sensing; use '0' as the temperature sensing value (C4000).
c. Li-Ph is ONLY on C7x00-C series analyzers.
d. Not compatible with C8000 (C8000 uses a different Chemistry Code).

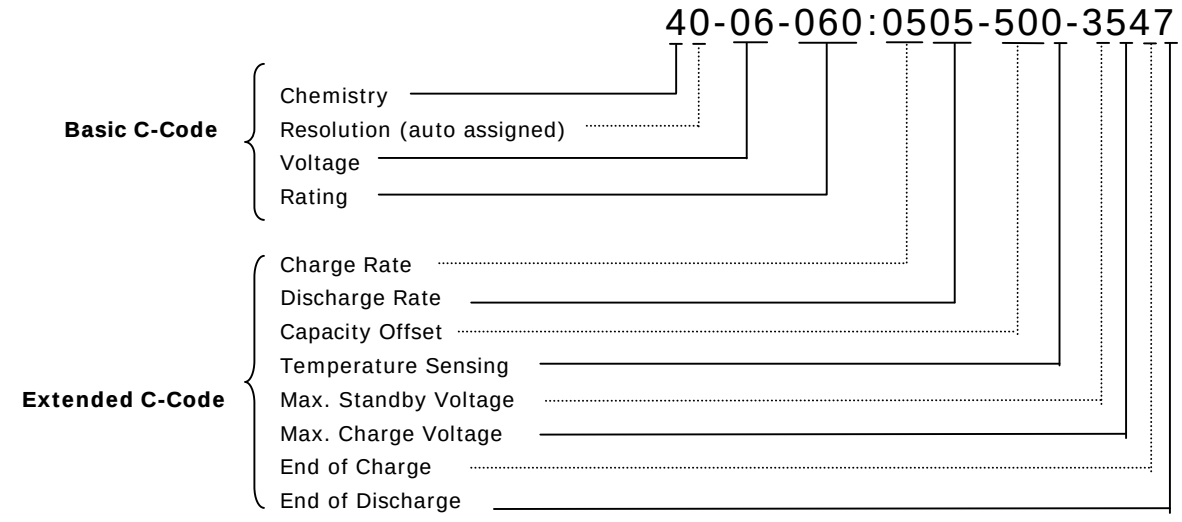
Format

There are two C-Code formats depending on the chemistry:

A. NiCd & NiMH Format



B. SLA, Li-Ion, & Li-Ph Format



BASIC C-Code

1. Chemistry

CODE	BATTERY TYPE
1	Nickel Cadmium (NiCd)
2	Nickel Metal Hydride (NiMH)
3	Sealed Lead Acid (SLA)
4	Lithium Ion (Li-Ion)
5	Lithium Phosphate (Li-Ph)

2. Resolution: this value is automatically set.

CODE	RESOLUTION
0	Standard
1	Fine

3. Voltage

CODE	# of Cells	NiCd & NiMH	SLA	Li-Ion	Li-Ph
01	1 Cell	1.2V	2.00V	3.6V	3.3V
02	2 Cells	2.4V	4.00V	7.2V	6.6V
03	3 Cells	3.6V	6.00V	10.8V	9.9V
04	4 Cells	4.8V	8.00V	14.4V ❶	13.2V❸
05	5 Cells	6.0V	10.00V	18.0V	16.5V
06	6 Cells	7.2V	12.00V	21.6V	19.8V
07	7 Cells	8.4V	14.00V	25.2V	23.1V
08	8 Cells	9.6V	16.00V ❶	28.8V ❷	26.4V
09	9 Cells	10.8V	18.00V	32.4V	29.7V
10	10 Cells	12.0V	20.00V	36.0V❹	33.0V❹
11	11 Cells	13.2V	22.00V	N/A	N/A
12	12 Cells	14.4V ❶	24.00V	N/A	N/A
13	13 Cells	15.6V	26.00V	N/A	N/A
14	14 Cells	16.8V	28.00V ❷	N/A	N/A
15	15 Cells	18.0V	N/A	N/A	N/A
...	...	...	N/A	N/A	N/A
18	18 Cells	21.6V	36.00V❹	N/A	N/A
...	...	...	N/A	N/A	N/A
23	23 cells	27.6V	N/A	N/A	N/A
24	24 cells	28.8V ❷	N/A	N/A	N/A

❶ Maximum value for C7000, C7200, C7200-C, C7400, and C7400-C.
❷ Maximum value for C7000ER.
❸ Maximum value for C7200-C and C7400-C only.
❹ Maximum value for C7400ER (non Li-Ph) and C7400ER-C

4. Rating/Capacity: Multiply the 3-digit code by 25 to obtain the battery rating

CODE	Rating
001	25mAh
002	50mAh
003	75mAh
004	100mAh
...	...
998	24950mAh
999	25975mAh

EXTENDED C-Code

The Extended C-code is not displayed if all its values are default.

5. Charge and Discharge C-Rate

Standard C-Rate (for Chemistry and Resolution Codes 10, 20, 30,40)

Code	C-Rate
01	0.1C ❸
02	0.2C
03	0.3C ❷
04	0.4C
05	0.5C
06	0.6C
07	0.7C
08	0.8C
09	0.9C
10	1.0C ❶
11	1.1C
12	1.2C
13	1.3C
14	1.4C
15	1.5C
16	1.6C
17	1.7C
18	1.8C
19	1.9C
20	2.0C

Code	C-Rate
21	2.1C
22	2.2C
23	2.3C
24	2.4C
25	2.5C
26	2.6C
27	2.7C
28	2.8C
29	2.9C
30	3.0C
31	3.1C
32	3.2C
33	3.3C
34	3.4C
35	3.5C
36	3.6C
37	3.7C
38	3.8C
39	3.9C

Default Values
❶ CH & DCH for NiCd, NiMH, Li-Ion and Li-Ph
❷ CH for SLA
❸ DCH for SLA

Fine C-Rate (For Chemistry and Resolution Codes 11, 21, 31,41)

Code	C-Rate
01	0.01C
02	0.02C
03	0.03C
04	0.04C
05	0.05C
06	0.06C
07	0.07C
08	0.08C
09	0.09C
10	0.10C
11	0.11C
12	0.12C
13	0.13C
14	0.14C
15	0.15C
16	0.16C
17	0.17C
18	0.18C
19	0.19C
20	0.20C

Code	C-Rate
21	0.21C
22	0.22C
23	0.23C
24	0.24C
25	0.25C
26	0.26C
27	0.27C
28	0.28C
29	0.29C
30	0.30C
31	0.31C
32	0.32C
33	0.33C
34	0.34C
35	0.35C
36	0.36C
37	0.37C
38	0.38C
39	0.39C
40	0.40C

Code	C-Rate
41	0.41C
42	0.42C
43	0.43C
44	0.44C
45	0.45C
46	0.46C
47	0.47C
48	0.48C
49	0.49C
50	0.50C
51	0.51C
52	0.52C
53	0.53C
54	0.54C
55	0.55C
56	0.56C
57	0.57C
58	0.58C
59	0.59C
60	0.60C

Code	C-Rate
61	0.61C
62	0.62C
63	0.63C
64	0.64C
65	0.65C
66	0.66C
67	0.67C
68	0.68C
69	0.69C
70	0.70C
71	0.71C
72	0.72C
73	0.73C
74	0.74C
75	0.75C
76	0.76C
77	0.77C
78	0.78C
79	0.79C
80	0.80C

Code	C-Rate
81	0.81C
82	0.82C
83	0.83C
84	0.84C
85	0.85C
86	0.86C
87	0.87C
88	0.88C
89	0.89C
90	0.90C
91	0.91C
92	0.92C
93	0.93C
94	0.94C
95	0.95C
96	0.96C
97	0.97C
98	0.98C
99	0.99C
00	1.00C

6. Trickle Charge (NiCd, NiMH only)

CODE	TRICKLE CHARGE
1	1%
2	2% ❷
3	3%
4	4%
5	5% ❶
6	6%
7	7%
8	8%
9	9%
0	10%

❶ Default NiCd
❷ Default NiMH

7. Recondition Discharge (NiCd, NiMH only)

CODE	RECON DISCHARGE
1	2%
2	4%
3	6%
4	8%
5	10%
6	12%❶
7	14%
8	16%
9	18%
0	20%

❶ Default for NiCd & NiMH

8. Capacity Offset

Code	Offset		Code	Offset		Code	Offset		Code	Offset		Code	Offset
50	0%❶		60	+10%		70	+20%		80	+30%		90	+40%
51	+1%		61	+11%		71	+21%		81	+31%		91	+41%
52	+2%		62	+12%		72	+22%		82	+32%		92	+42%
53	+3%		63	+13%		73	+23%		83	+33%		93	+43%
54	+4%		64	+14%		74	+24%		84	+34%		94	+44%
55	+5%		65	+15%		75	+25%		85	+35%		95	+45%
56	+6%		66	+16%		76	+26%		86	+36%		96	+46%
57	+7%		67	+17%		77	+27%		87	+37%		97	+47%
58	+8%		68	+18%		78	+28%		88	+38%		98	+48%
59	+9%		69	+19%		79	+29%		89	+39%		99	+49%

50	0%❶		40	-10%		30	-20%		20	-30%		10	-40%
49	-1%		39	-11%		29	-21%		19	-31%		09	-41%
48	-2%		38	-12%		28	-22%		18	-32%		08	-42%
47	-3%		37	-13%		27	-23%		17	-33%		07	-43%
46	-4%		36	-14%		26	-24%		16	-34%		06	-44%
45	-5%		35	-15%		25	-25%		15	-35%		05	-45%
44	-6%		34	-16%		24	-26%		14	-36%		04	-46%
43	-7%		33	-17%		23	-27%		13	-37%		03	-47%
42	-8%		32	-18%		22	-28%		12	-38%		02	-48%
41	-9%		31	-19%		21	-29%		11	-39%		01	-49%

❶ Default for all chemistries

9. Temperature Sensing

Code	Temp Sensing
0	Disabled ❶
1	0-40 °C
2	0-45 °C ❷
3	0-50 °C
4	5-40°C
5	5-45°C
6	5-50°C

❶ For C4000 only
❷ Default for all chemistries and if adapter has temperature sensing.

10. Negative Slope (for NiCd, NiMH only)

CODE	Negative Slope
1	16mV/cell ❶
2	24mV/cell
3	32mV/cell ❷
4	40mV/cell
5	48mV/cell
6	56mV/cell
7	64mV/cell

❶ Default NiMH and NiCd (C7x00 and C7x00-C)
❷ Default NiCd (C7000 only)

11. End Of Discharge

CODE	NiCd, NiMH
0	0.76V/cell
1	0.80V/cell
2	0.84V/cell
3	0.88V/cell
4	0.92V/cell
5	0.96V/cell
6	1.00V/cell ❶
7	1.04V/cell
8	1.08V/cell
9	1.12V/cell

CODE	Lead Acid
0	1.36V/cell
1	1.43V/cell
2	1.49V/cell
3	1.56V/cell
4	1.62V/cell ❸
5	1.68V/cell
6	1.75V/cell ❷
7	1.81V/cell
8	1.88V/cell
9	1.94V/cell

CODE	Li-Ion
0	2.30V/cell
1	2.40V/cell
2	2.50V/cell ❺
3	2.60V/cell
4	2.70V/cell
5	2.80V/cell
6	2.90V/cell
7	3.00V/cell ❹
8	3.10V/cell
9	3.20V/cell

CODE	Li-Ph
0	1.90V/cell
1	1.95V/cell
2	2.00V/cell ❻
3	2.05V/cell
4	2.10V/cell
5	2.15V/cell
6	2.20V/cell
7	2.25V/cell
8	2.30V/cell
9	2.35V/cell

❶ NiCd, NiMH Default
❷ SLA Default for C7000 (Gel setting), C7x00, and C7x00-C units
❸ SLA Default for C7000 (Hawker setting)
❹ Li-Ion Default for C7000 (Graphite setting), C7x00, and C7x00-C units
❺ Li-Ion Default for C7000 (Coke setting)
❻ Li-Ph Default for C7x00-C.

12. End of Recondition (for NiCd, NiMH only)

CODE	End of Recond.
4	0.4V/cell ❶
5	0.5V/cell
6	0.6V/cell
7	0.7V/cell
8	0.8V/cell
9	Disabled

❶ Default for NiCd and NiMH

13. Charge Method (for NiCd, NiMH only)

Code	Charge Method
0	DC Charge
1	Rev. Load 0%
2	Rev. Load 0%
3	Rev. Load 6%
4	Rev. Load 7%
5	Rev. Load 8%
6	Rev. Load 9%❶
7	Rev. Load 10%
8	Rev. Load 11%
9	Rev. Load 12%

❶ Default for NiCd and NiMH

14. Maximum Standby Voltage (for SLA, Li-Ion, and Li-Ph only)

CODE	SLA
8	2.15V/cell
9	2.20V/cell
0	2.25V/cell ❶
1	2.30V/cell
2	2.35V/cell ❷
3	2.40V/cell
4	2.45V/cell
-	-
-	-
-	-

CODE	Li-Ion
0	3.90V/cell
1	3.95V/cell
2	4.00 V/cell
3	4.05V/cell ❸
4	4.10V/cell
5	4.15V/cell ❹
6	4.20V/cell
7	4.25V/cell
8	4.30V/cell
9	4.35V/cell

CODE	Li-Ph
0	3.20V/cell
1	3.25V/cell
2	3.30 V/cell
3	3.35V/cell
4	3.40V/cell
5	3.45V/cell ❺
6	3.50V/cell
7	3.55V/cell
8	3.60V/cell
9	3.65V/cell

❶ SLA Default for C7000 (Gel setting), C7x00, and C7x00-C units
❷ SLA Default for C7000 (Hawker setting)
❸ Li-Ion Default for C7000 (Graphite setting), C7x00, and C7x00-C units
❹ Li-Ion Default for C7000 (Coke setting)
❺ Li-Ph Default for C7x00-C

15. Maximum Charge Voltage (for SLA, Li-Ion, and Li-Ph only)

CODE	SLA
0	2.55 V/cell
1	2.60 V/cell ❷
2	2.65 V/cell
3	2.20V/cell
4	2.25V/cell
5	2.30V/cell
6	2.35V/cell
7	2.40V/cell ❶
8	2.45V/cell
9	2.50V/cell

CODE	Li-Ion
0	3.90 V/cell
1	3.95 V/cell
2	4.00 V/cell
3	4.05 V/cell
4	4.10V/cell ❸
5	4.15 V/cell
6	4.20V/cell ❹
7	4.25 V/cell
8	4.30 V/cell
9	4.35 V/cell

CODE	Li-Ph
0	3.40 V/cell
1	3.45 V/cell
2	3.50V/cell
3	3.55 V/cell
4	3.60V/cell ❺
5	3.65 V/cell
6	3.70 V/cell
7	3.75 V/cell
8	3.80 V/cell
9	3.85 V/cell

❶ SLA Default for C7000 (Gel setting), C7x00, and C7x00-C units
❷ SLA Default for C7000 (Hawker setting)
❸ Li-Ion Default for C7000 (Graphite setting), C7x00, and C7x00-C units
❹ Li-Ion Default for C7000 (Coke setting)
❺ Li-Ph Default for C7x00-C

16. End of Charge (for SLA, Li-Ion, and Li-Ph only)

Code	End of Charge
0	0.10C
1	0.01C
2	0.02C
3	0.03C ❷
4	0.04C
5	0.05C ❶
6	0.06C
7	0.07C
8	0.08C
9	0.09C

❶ Default for SLA and Li-Ion
❷ Default for Li-Ph (C7x00-C Only)

- END -